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Market study into the retail fuel sector

Final report

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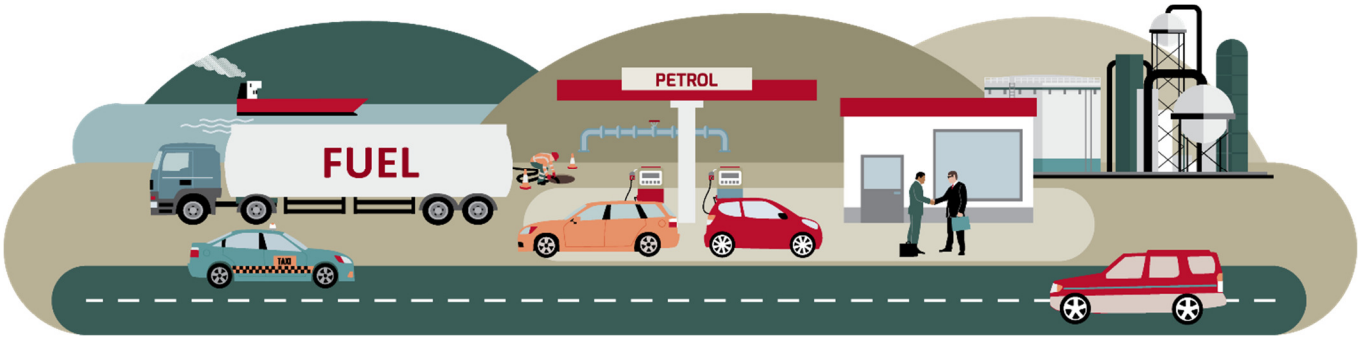


Associated documents

Publication date	Reference	Title
12 December 2018	ISBN 978-1-869456-74-0	Draft market studies guidelines
12 December 2018	ISBN 978-1-869456-75-7	Market Study into the Retail Fuel Sector – Statement of Process: Our intended process and how you can contribute
31 January 2019	ISBN 978-1-869456-81-8	Market study into the retail fuel sector: Invitation to comment on preliminary issues
18 April 2019	ISBN 978-1-869456-92-4	Market Study into the Retail Fuel Sector: Working paper – Focus areas
18 April 2019	ISBN 978-1-869456-91-7	Market Study into the Retail Fuel Sector: Working paper on assessing profitability
20 August 2019	ISBN 978-1-869457-20-4	Market study into the retail fuel sector: Draft report

Commerce Commission
Wellington, New Zealand

Confidential material in this report has been removed. Its location in the document is denoted by [ ].

Contents

Acronyms and abbreviations

AA	New Zealand Automobile Association
Act	The Commerce Act 1986
AFSD Inquiry	Auckland Fuel Supply Disruption Inquiry
Allied	Allied Petroleum Limited
Board price	The retail fuel price displayed on large price boards outside retail sites
BP	BP Oil New Zealand Limited
Caltex Australia	Caltex Australia Limited
cpl	Cents per litre
Challenge	Dealer Co (NZ) Limited, whose owners trade under the brand name "Challenge"
Chevron	Chevron New Zealand (acquired by Z Energy in 2016)
COLL	Coastal Oil Logistics Limited
Commission	New Zealand Commerce Commission
Competition study	The term used under the Commerce Act 1986 to describe a market study, which is the term we use in this document
Consumer Information Notice or CIN	A notice that a motor vehicle trader is required to display in the window of a vehicle that is for sale. The CIN includes information about the vehicle, such as year of registration, make, model, odometer reading, dealer information and price.
Dealer sites or Dealer-owned sites	Retail sites that carry the brand of one of the major fuel firms or Gull but are owned and operated by individual owners who generally set the retail price
Dealers	The individual owners of dealer retail sites
Discounts	Discounts off the board price for fuel. These discounts may be offered through discount and loyalty programmes or through fuel cards

Discount and loyalty programmes	Programmes that offer discounts off the board price for fuel and may provide other benefits or rewards unrelated to fuel (for example, the accumulation of Fly Buys points or Air New Zealand AirPoints). These programmes are typically targeted at households rather than businesses. Examples include AA Smartfuel, supermarket discount vouchers, and Mobil Smiles
Distributors	Firms that acquire fuel on a wholesale basis then sell and distribute that fuel to commercial customers and/or through a network of truck stops and retail sites that carry their brand. Examples include Allied, Waitomo, NPD, McKeown and Farmlands
Farmlands	Farmlands Co-operative Society Limited
Foodstuffs	Collective term for Foodstuffs (N.Z) Limited, Foodstuffs South Island Limited and Brands Limited. Foodstuffs North Island Limited and Foodstuffs South Island Limited own Foodstuffs (N.Z) Limited and Brands Limited
Fuel	Petrol and diesel fuels (unless specified otherwise)
Fuel cards	A card that enables fuel (and other products) to be purchased on credit at affiliated retail sites at a discount. Fuel cards are targeted at, and sometimes restricted to, business customers
GAS	Gasoline Alley Services Limited
GRM	Gross refining margin
Gull	Gull New Zealand Limited
Importers	Collective term used for BP, Mobil, Z Energy and Gull. These companies each import fuel to New Zealand
Importer owned and operated sites	Retail sites that are directly owned by one of the majors or Gull. These sites are also typically operated by the majors or Gull or through an agent
Main Port Price (MPP)	A weekly average of retail prices in Auckland, Hamilton, Wellington, and Christchurch
Majors	Collective term for BP, Mobil and Z Energy
Market study	The term used in this document to describe the study and commonly used to describe studies of this nature. A market study is referred to as a "competition study" in Part 3A of the Commerce Act. The term used to describe the study does not affect our approach to it

McFall	McFall Fuel Limited
McKeown	McKeown Group Limited
Mean of Platts Singapore (MOPS)	The average price for a Singapore-based oil product, reported by the price assessment agency Platts
Mobil	Mobil Oil New Zealand Limited
MTA	Motor Trade Association
New-to-industry or NTI	Newly built retail sites
NPD	NPD Limited
Premium petrol or premium fuel	95 octane and 98 octane fuel
RAP	Refinery to Auckland Pipeline
RD	RD Petroleum Limited
Refinery	Refinery operated by Refining NZ
Refining NZ	The New Zealand Refining Company Limited
Regular petrol	91 octane petrol
Reseller	All firms selling fuel at retail sites other than the structurally vertically integrated majors or Gull
Retail fuel consumers (or consumers)	Consumers that purchase fuel from retail sites. This includes two broad groups: households (or private vehicle owners), and small-medium sized businesses (SMEs)
Retail sites	Collective term used to refer to a broad range of sites selling fuel, including service stations, unmanned sites and some truck stops (only those that are accessible to the public and light passenger vehicles)
Rural Fuel	Rural Fuel Limited (acquired by McFall in 2017)
Shell	Shell New Zealand (now Z Energy)
Singapore benchmark cost index data	This benchmark cost index provides an estimate of the per litre landed cost in New Zealand dollars for each type of refined fuel retailed in New Zealand. It relies on the daily Mean of Platts Singapore (MOPS) price. The average daily USD/NZD exchange rate is used to adjust the daily MOPS price to estimate the daily per litre landed cost in NZD for each type of refined fuel retailed in New Zealand

Southfuels	Southfuels Limited
Service stations	Retail sites that provide a full service that could include a convenience store, takeaway food, barista coffee, toilets and/or a car wash
Study	The Commission's market study into retail fuel markets
TGP	Terminal Gate Price
TOSL	Timaru Oil Services Limited
Truck stop	A fuel station often on a major highway where truck drivers stop for fuel. Some truck stops are accessible to the public and light passenger vehicles, while others are only accessible to larger vehicles and payment can only be made by a fuel card
Unmanned sites	Retail sites that offer no additional services, or very few, and provide pay-at-pump facilities allowing the customer to fill their own tank
Waitomo	Waitomo Petroleum Limited
Wealleans	Wealleans Allied Petroleum Limited
Weighted average cost of capital (WACC)	Our estimate of a normal rate of return for firms in the New Zealand fuel sector, used to compare against the actual and expected level of returns being made by firms in the New Zealand fuel sector
WOSL	Wiri Oil Services Limited
Z Energy	Z Energy Limited

Executive summary

Purpose of this paper

X1 This report sets out the findings of our study into New Zealand's retail fuel markets. The study considers factors that may affect competition for the supply of retail petrol and diesel used for land transport in New Zealand, whether competition to supply retail petrol and diesel is functioning well for consumers, and if not, how it could be improved.

X2 Fuel is an essential purchase for many New Zealanders and money spent on petrol and diesel can be a significant proportion of household and company bills.

X3 Roughly 3.2 billion litres of petrol and 3.6 billion litres of diesel are consumed annually in New Zealand. Fuel purchased at service stations, unmanned sites and truck stops accounts for about 98% of the petrol and 73% of the diesel consumed, at an annual cost of more than $10 billion.

X4 Petrol and diesel prices have attracted considerable public attention, with concerns raised about whether New Zealanders are getting a fair deal at the pump. Public interest in fuel prices prompted the Minister of Commerce and Consumer Affairs to ask us to undertake this study.

X5 The study looks at a range of outcomes that we would expect to see in a market that is working well for consumers over the long term. These include the choices available to consumers, the price and quality of the fuel and services on offer, as well as levels of investment, innovation and profitability in the sector.

X6 New Zealand consumers pay relatively high prices for petrol and diesel. Our pre-tax fuel prices are currently amongst the highest in the OECD and have trended upward and departed from other OECD countries since about 2010.

X7 The price consumers pay at the pump is affected by a range of factors, including New Zealand being a lightly populated country located a long way from the major global sources of imported crude oil and refined fuel, the global crude oil price, the level of the New Zealand dollar, taxes and changes in fuel company operating and distribution costs.

X8 Whether consumers consider fuel prices to be high or low does not necessarily mean the market is, or is not, workably competitive. When it comes to price and profitability, an important outcome in a workably competitive fuel market is that both will tend to reflect normal rates of return over time, after covering efficient supply costs.

X9 In the study we are not concerned with short-term profits, which can be high for many reasons, including strong performance. They are not necessarily indicative of competition concerns. Rather, we are focused on longer term profitability and whether this is persistently high, as that could suggest prices are 'too high' and competition is not working as well as it could.

X10 As a result of our study, we consider that many fuel companies are achieving a level of profitability in New Zealand that is persistently higher than what we estimate a reasonable return would be in a workably competitive market.

X11 For consumers, this means they are currently paying higher pump prices for petrol and diesel than could be expected in a competitive market.

X12 We have identified several factors we consider are hindering competition and contributing to these high returns. In our view, the core problem is that an active wholesale market does not exist in New Zealand. This is weakening price competition in the retail market.

X13 In addition, there are features of retail markets that limit the intensity of price competition. These markets are geographically dispersed, purchase sizes are small, service levels are differentiated and discount and loyalty programmes draw consumer attention away from board prices. Retail markets are also vulnerable to leader-follower pricing conduct, partly because low purchase sizes limit the risk of attempts to lead prices higher.

X14 We have made recommendations that we consider could improve competition in wholesale and retail markets and improve outcomes for New Zealand consumers. These take into account our views on the factors affecting competition at all levels of the market.

X15 In reaching these recommendations we have had regard to information gathered throughout our study, including feedback received on our draft report, published on 20 August 2019. Submissions on our draft report were received in writing and during our consultation conference in September 2019 from a range of parties, including industry participants, motoring and consumer representatives and everyday consumers.

X16 We have reported our findings and recommendations to the Minister. It is now up to the Government to decide how to respond to this report.

Market context

X17 The competition issues affecting retail fuel prices in New Zealand have their historical origins in a time of government funded infrastructure and regulated wholesale pricing.

X18 Prior to 1988, the wholesale price of fuel was regulated with the aim of providing a 13% return to importers. These importers – BP, Mobil, Caltex and Shell – were prohibited from being retailers and instead supplied fuel to independent retail sites at regulated prices.

X19 To reduce costs and maximise production and distribution efficiencies, importers set up a series of joint ventures that enabled them to share key infrastructure assets. This included the construction of the Marsden Point refinery in the 1960s and the creation of a coastal shipping network to transport refined fuel to shared terminals at regional ports.

X20 When the fuel industry was deregulated in 1988, the majors immediately entered the retail market, buying prominent retail sites of their own and securing long-term supply contracts with independent retailers. This effectively prevented the development of a competitive wholesale market.

X21 As a result, New Zealand's fuel industry is now essentially a vertically integrated oligopoly. The three majors (Z Energy, BP and Mobil) benefit from the cost efficiencies of their infrastructure sharing arrangements. They supply more than 90% of the retail fuel sold through a network of retail sites they own and operate, dealer owned retail sites that carry their brands, and distributors which in turn supply their own dealers and/or retail sites that they own and operate.

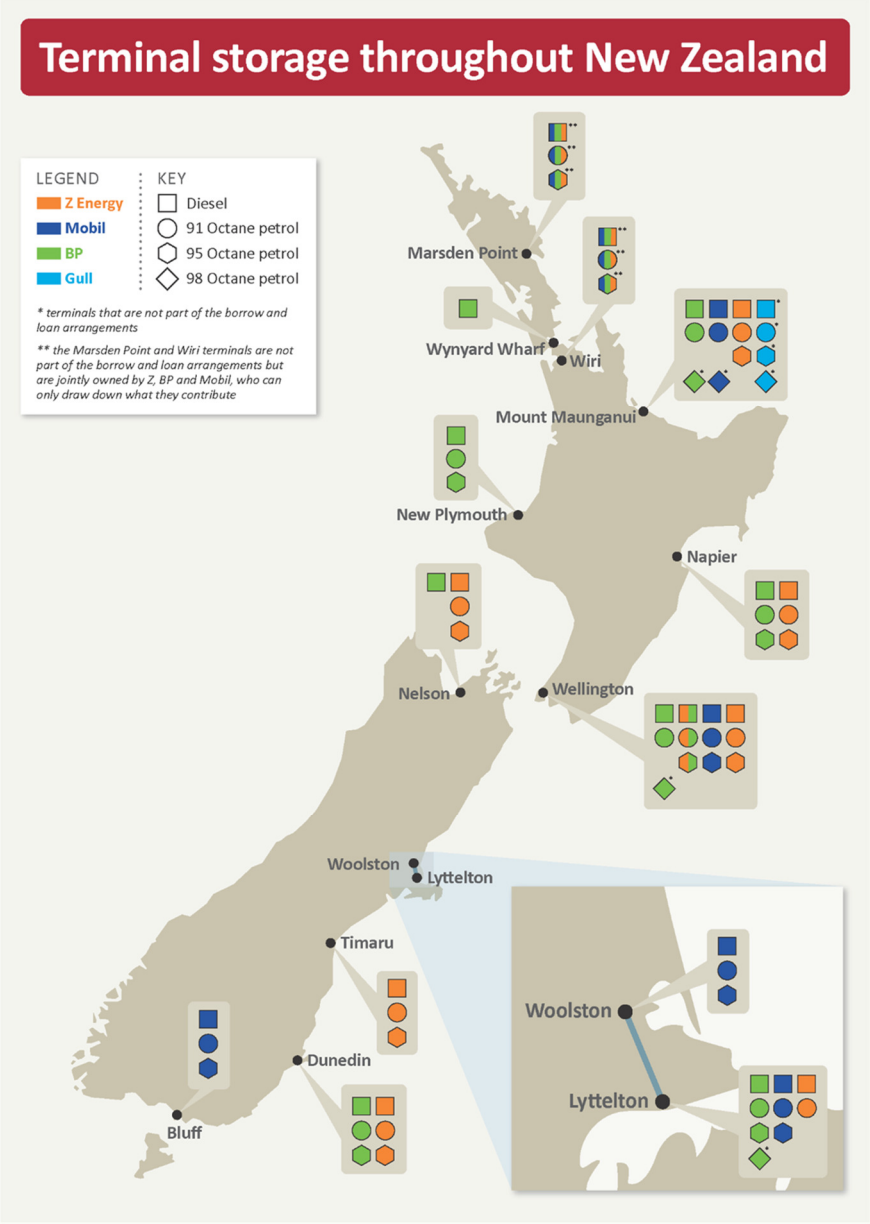
X22 Z Energy, BP and Mobil each import crude oil to be refined at Marsden Point, which produces approximately 58% of the petrol and 67% of the diesel used in New Zealand. From here it is transported either by pipeline – to service Auckland and Waikato – or by coastal shipping to the companies' storage terminals at regional ports.

X23 These three companies also import refined fuel, which generally arrives at ports in Mt Maunganui, Wellington and Lyttelton.

X24 New Zealand's only other fuel importer, Gull, is not party to any of the infrastructure sharing arrangements. Gull imports fuel into its Mt Maunganui terminal and from there trucks it to its North Island retail outlets. Gull has recently opened its first South Island site and plans to open six more sites over the next two years. However, its ability to expand and compete in the South Island depends on securing wholesale supply arrangements. Gull has had a positive impact in reducing prices for consumers in some areas where it operates. However, it is also incentivised to maximise its own profits and can do so by setting its prices beneath the majors' average retail prices, without the threat of additional competition driving prices down further.

X25 Figure X1 below shows the location and ownership of terminals throughout New Zealand.

Figure X1 Terminal storage throughout New Zealand[1]



Source: Commerce Commission analysis of industry participants' data.

X26 Currently, retail consumption is a near even split between petrol and diesel. Premium fuel (95 and 98 octane) makes up about 23% of total petrol consumption.

[1] In addition, Z Energy has a small amount of private storage of B100 (bio-diesel) at its plant in Wiri, the Wiri terminal and at its Mt Maunganui terminal. Z Energy currently operates no other private storage.

X27 Collectively, Z Energy, BP, Mobil and Gull control the supply of fuel to more than 1,300 retail sites under 20 different retail brands, either directly or indirectly through a distributor or reseller. About 200 sites have been added to the New Zealand retail landscape since 2010, with an increase in the number of sites operated by non-majors and a reduction in the number of sites operated by the majors.

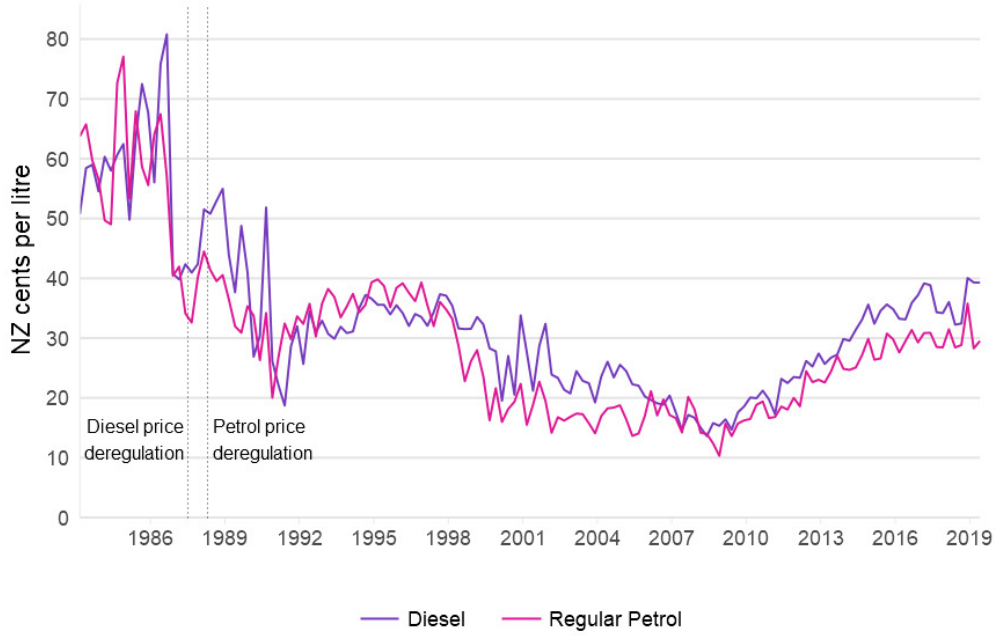
X28 Approximately 60% of retail sites carry brands outside of the majors. However, these sites only account for 20% of petrol volumes sold in 2018, up from 11% in 2011. Many of these sites are outside the major metropolitan areas.

X29 In addition, a new importer – Timaru Oil Services Limited (TOSL) – is currently building terminal storage at the Port of Timaru with the aim of commencing trading from 2020.

Rising fuel margins

X30 Following deregulation, importer margins initially fell before rising again until Gull and Challenge entered the market in the late 1990s. As shown below, margins were then on a downward trend until around 2008. Shell exited the market in 2010, selling its assets to the newly created Z Energy.

Figure X2 Quarterly regular petrol and diesel importer margin (Real June 2019 prices)



Source: MBIE (2019).[2]

[2] MBIE "Weekly fuel price monitoring'' (2019) <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/weekly-fuel-price-monitoring/ >. (Viewed on 26 November 2019).

X31 At the time, the majors considered the margins were not sustainable, or at least not sufficient to attract investment. Shell's desire to compete on price to drive volumes can help explain these relatively low margins prior to it exiting New Zealand.

X32 BP submitted the past trends in margins could be explained by the business cycle, with a decline in the number of retail sites when margins were low subsequently followed by an increase in margins.[3] In a workably competitive market, rising margins can be expected to encourage new entry and the resulting increase in competition can be expected to reduce margins to competitive levels. If margins fall below sustainable levels, this will prompt retail sites to exit once again. However, we have not observed this happening in retail fuel markets. In fact, margins have continued to rise even as the number of retail sites has grown.[4]

X33 When Z Energy purchased Shell it publicly stated its intention to increase fuel margins. Consistent with this, the importer margin has been rising since around 2010.

X34 Between 2012 and 2017 Z Energy published its Main Port Price (MPP) – the price that is used at most of Z Energy's retail sites in the South Island and lower North Island. Figure X3 shows the average national board price margins of diesel and regular petrol respectively, and the number of retail sites, over the past decade. The time period during which Z Energy published the MPP is indicated by the black vertical lines. Z Energy ceased publishing the daily MPP in July 2017 following MBIE's review of the fuel industry.[5]

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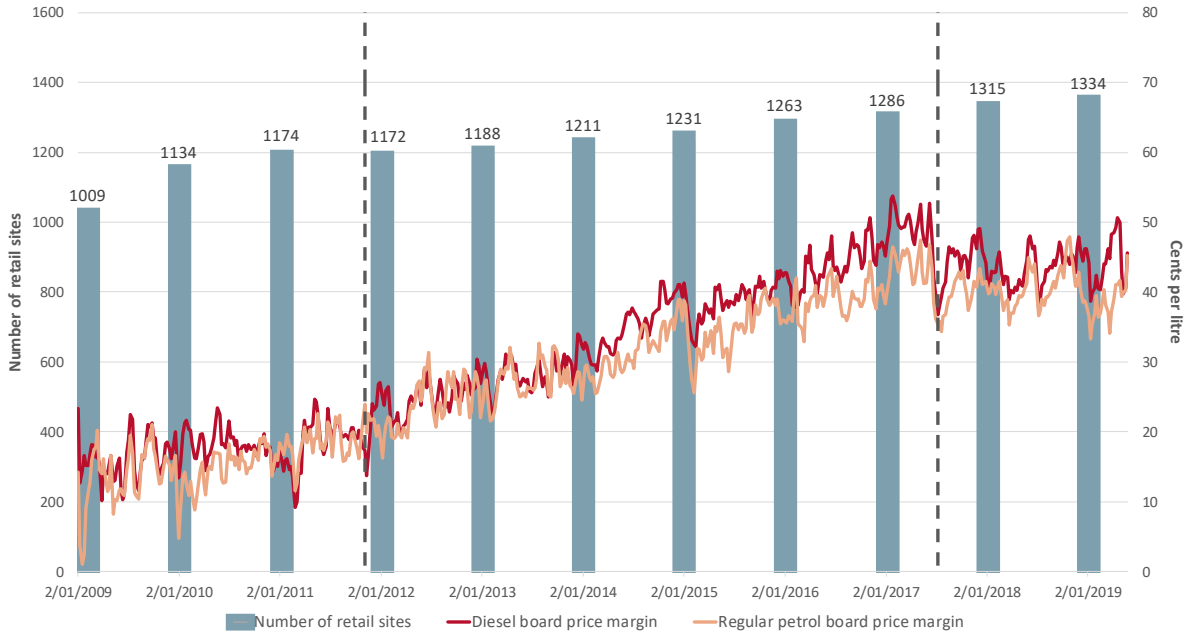
3 CRA, on behalf of BP. Transcript of retail fuel study consultation conference – Day 1 (24 September 2019) at 65 (lines 10-21).

4 Ibid at 64 (lines 11-13).

5 The 2017 Fuel Study identified that Z Energy's publication of its MPP potentially serves as a retail pricing signal that can dampen competition. NZIER, Grant Thornton, Cognitus Economic Insight "New Zealand fuel market financial performance study" (prepared for the Ministry of Business, Innovation and Employment, 29 May 2017) at v. Available at <https://www.mbie.govt.nz/assets/dd96ac0bb4/fuel-market-financial-performance-study-report-back.pdf>. (Viewed on 17 November 2019).

Figure X3 Average weekly national board price margins and number of retail sites (Jan 2009 to May 2019)



Source: Commission analysis of MBIE data and information provided by industry participants.[6]

X35 Despite an increase in the number of retail sites since 2012, it appears that average margins increased during the period when the daily MPP was published and have levelled off or decreased since publication ceased. While there may be other explanations for this, it would be consistent with at least one market participant's suggestion that the MPP was used as an indicator of market list prices.[7]

X36 This evidence therefore appears to support a conclusion that the retail market is vulnerable to accommodating behaviour through price transparency and leader-follower pricing. We also consider that this conduct has been, and may remain, at least a contributing factor to the margins that we observe.

X37 We consider that measures to improve competition at wholesale and retail levels of the fuel supply chain will reduce their vulnerability to accommodating behaviour as well the potential effect of any such behaviour that does occur.

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6 MBIE monitors and publishes weekly importer margins for retail petrol and diesel. We used this data to calculate average weekly board price margins for diesel and regular petrol, inclusive of GST and other taxes. Available at <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/weekly-fuel-price-monitoring/>. (Viewed on 7 November 2019). We calculated the total annual number of active retail sites in New Zealand using information provided to us by fuel retailers.

7 [ ]

X38 There is evidence to suggest the recent growth in margins and profits has levelled off and may have peaked. It is difficult to forecast future margins and we have not sought to do so in this study. Nonetheless, we have not been persuaded that the industry's experience of excess returns has come to an end.

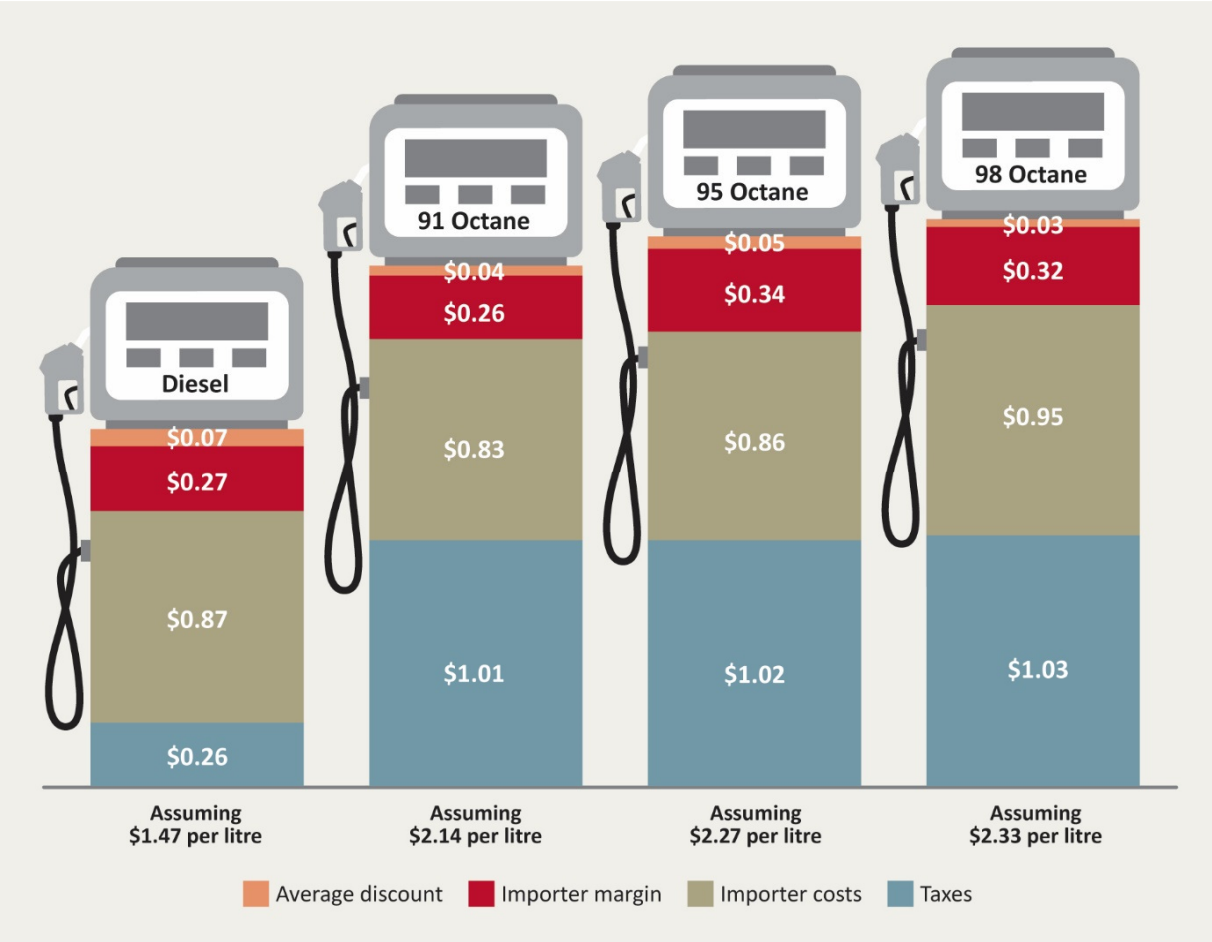
X39 Indeed there is a clear risk that competition could weaken. This is because the new retail sites which have opened are predominantly supplied with fuel by Mobil[8]and are therefore potentially exposed to a change in strategy from Mobil relating to wholesale pricing and access. Competition which depends on the individual strategy of one market participant may not endure over time.

Retail price components

X40 While most headline fuel prices are openly advertised on service station price boards for consumers to see, the wholesale price of fuel is not easily observed. However, we can break down retail fuel prices to show what components it is made up of including government taxes, the landed cost of the fuel itself, and the gross margin importers earn (which includes domestic operating costs as well as profit). We also calculated the average discount consumers claimed at the counter.

[8] This is very evident in the graphs on new openings in the South and North Islands from 2014 to 2019 in BP's own submission. See, BP New Zealand "Submissions on the August 2019 Draft Report" (13 September 2019) at [3.5-3.6]. NPD, Waitomo, Allied and Gull (until January 2019) were all supplied with fuel by Mobil.

Figure X4 Estimated components of the board price of fuel (2018 calendar year)



Source: Commerce Commission analysis of data provided by industry participants.

X41 Figure X4 shows that in 2018 the average board price for a litre of regular fuel (91 octane) was $2.14 and the average discount was 4 cents. Taxes accounted for roughly $1.01 a litre and the estimated landed cost of fuel was 83 cents, leaving 26 cents as the gross margin for importers. It also shows that the average gross margin was higher for diesel and premium fuels in percentage terms.

X42 The breakdown outlined is the national average. The gross margins importers earn on any given litre of fuel will vary by region.

Fuel market outcomes

X43 Fuel companies have made several innovations in the retail market that they compete over, such as fast lanes, coffee ordering apps, improved service and better equipped convenience stores. Improvements in pay-at-the-pump technology are also lowering the cost of entry for retailers wanting to offer a basic service to price-sensitive consumers. These developments can offer benefits to consumers.

X44 However, we consider price competition in fuel markets is not working as well as it could be for consumers. Our reasons for this are:

X44.1 fuel companies appear to have been making persistently high profits over the past decade;

X44.2 regional differences in retail fuel prices are not all explained by cost differences;

X44.3 discounting does not compensate for higher pump prices; and

X44.4 there is an increasing price difference between regular and premium petrol which is not all explained by cost differences.

X45 Each of these reasons are explained in more detail below.

High prices and persistently high profitability

X46 There are a range of indicators that in our view suggest the profitability of New Zealand fuel companies is high. These include:

X46.1 import margins have more than doubled since 2008;

X46.2 fuel company returns on new investment have averaged 20% per annum over the past 5 years – well above our estimate of a reasonable return (6.9 - 8.6%) and the average historic returns made by international comparator companies;

X46.3 new retail sites often exceed the company's own profitability expectations, with some achieving unusually fast pay back on investment for what are long-lived assets; and

X46.4 ratios of fuel firms' market value (sale price or sharemarket value) to replacement cost (value of its assets) are approximately 1.5-1.8, meaning they are valued significantly higher than their physical costs to build. We would expect values closer to 1 in a workably competitive market.

X47 While any one measure of profitability will have its limitations, a range of measures consistently indicate that fuel companies have been achieving a level of profitability in New Zealand that is persistently higher than what we estimate a reasonable return would be in a workably competitive market.

X48 High profitability is also reflected in the fact that the number of retail sites is growing faster than the volume of fuel sold. For example, in a May 2019 presentation Z Energy stated that 35 new sites had been built across the retail fuel industry, growing capacity by 2% over a period in which petrol sales declined by 1.5%.[9]

X49 By implication, the average volume of fuel sold at each site is declining slightly, yet firms on average expect to generate strong profits on new investment. The high returns expected seem to be attributable to high margins, and not new investment growing volumes.

X50 Commentary in internal fuel firm documents we reviewed indicates firms have been aware that margins were high enough to attract new entrants since around 2012. However, these documents also noted that entry would be difficult due to the cost involved in building a distribution network in New Zealand.

X51 However, retail sites can still be added by existing firms. Gull and other relatively low-priced retailers, particularly those supplied fuel by Mobil (Waitomo, NPD and Allied) have grown their retail presence, primarily through less costly unmanned sites.

X52 This retail expansion does not appear to have materially reduced the profits observed across the fuel industry.

There is no clear trend towards more competitive levels

X53 There are indications that returns may have now peaked but their future trajectory appears stable. The majors and financial market analysts expect profitability to remain at elevated levels for some time. This is an indication that competition is not working well to bring profitability back to a more competitive or 'normal' level. It is uncertain what will happen to margins and returns in the future. However, we are not convinced the industry's experience of excess returns has come to an end under current policy settings. The underlying factors affecting retail fuel competition have not changed.

X54 We also note that while most fuel companies in New Zealand are profitable, some retail sites owned by individual dealers are not. Certain dealer-owned sites operate on relatively slim margins compared to the majors who supply them.

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9 Z Energy "2019 Results Presentation for the year ended 31 March 2019" (2 May 2019) at 6. Z Energy's submission to us on the preliminary issues paper made a similar point using data from 2016. See, Z Energy "Market Study into the Retail Fuel Sector: Z Energy's Response to Invitation to Comment on Preliminary Issues" (21 February 2019) at [12].

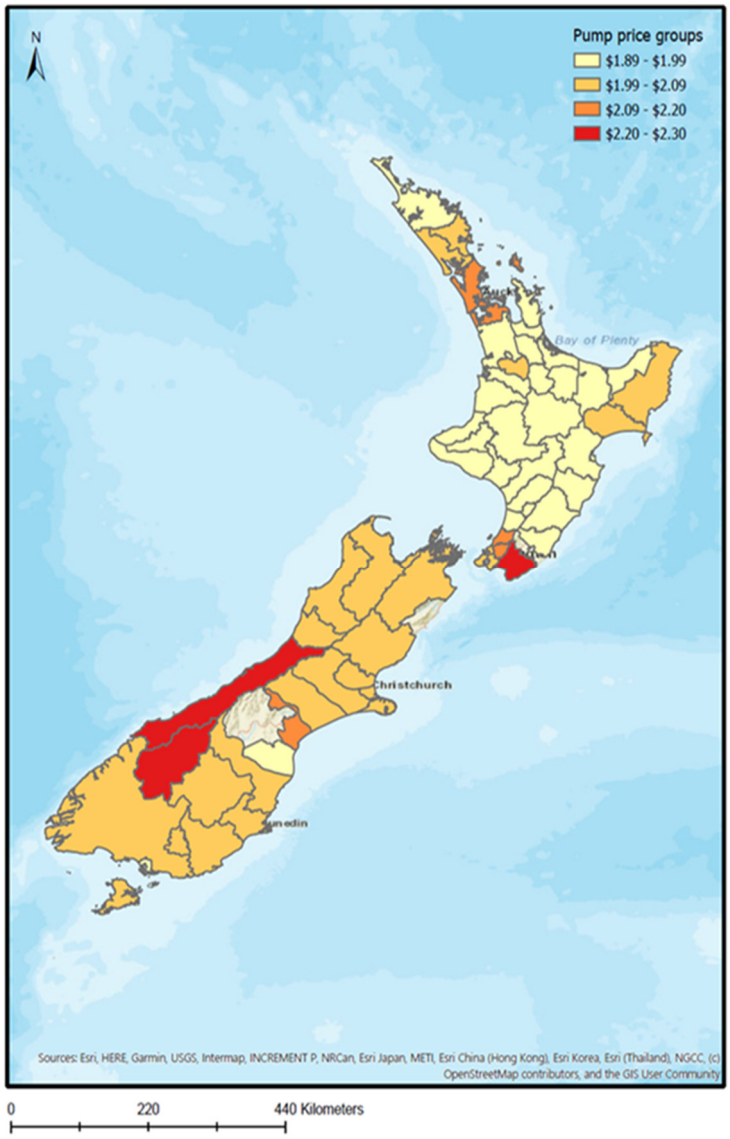
Regional differences in retail fuel prices

X55 It is well known that there are material variations in fuel prices between regions and locations. These differences are shown in Figure X5, which shows average retail board prices across New Zealand in 2019 for regular petrol. In some cases, regional price differences can be partly explained by differences in cost or taxes. For example:

X55.1 the West Coast of the South Island has some of the highest prices in the country. There is no storage terminal on the West Coast, so fuel needs to be trucked long distances from other terminals (at relatively high cost); and

X55.2 Auckland prices are subject to the regional fuel tax introduced in 2018.

Figure X5 Average retail board prices across New Zealand for regular petrol (2019)



Source: Analysis of data provided by industry participants.

X56 In many cases regional price differences are better explained by differences in competitive conditions. For example, prices are generally higher in Wellington than Masterton, although it is more expensive to truck fuel to Masterton from Wellington. The price difference is likely to be partly explained by Gull having a service station in Masterton, but not in Wellington.

X57 The fact that all fuel sold in the South Island originates from the majors also appears to be linked to weaker price competition and therefore higher prices. The opening of new NPD sites, which only operate in the South Island, appears to have had the greatest impact on reducing the majors' prices.

X58 Prices in Wellington and the South Island may reduce in the future if comparatively low-priced retailers expand into these areas and TOSL's entry in Timaru is successful.

X59 Our recommendations could also assist with this, especially in relation to the contractual restrictions applying to potential wholesale customers.

Discounting is not a substitute for more generalised price competition

X60 Discount and loyalty programmes like AA Smartfuel, Z Energy's Pumped and Mobil Smiles, as well as supermarket dockets, are a prominent feature of New Zealand's retail markets.

X61 In 2018 more than 41% of petrol and diesel sales were made at a discount to the advertised pump price. This has almost doubled since 2011. The average size of the discounts offered has also increased from 2 cents to 11 cents per litre for petrol and from 2 cents to 16 cents per litre for diesel over this period. The majors have submitted that this is a sign of strong retail competition. However, in our view, discounting is a poor substitute for more generalised price competition.

X62 Discounts are correlated with higher board prices and have increased as margins have increased over the past decade. The greater use of discount and loyalty programmes avoids direct competition on board prices.

X63 Discounting can in effect 'sort' or discriminate between customers who claim discounts and those who do not. Some consumers may be excluded from discount offers due to the criteria in place.

X64 Discounts can also shift consumer focus away from the actual price they pay to the size of the discount or reward. They can also make it more difficult for consumers to compare post-discount prices between retailers and understand which one is offering the lowest actual price. In those circumstances, consumers are less likely to switch in response to competing offers and retailers have weaker incentives to offer them.

X65 Discount and loyalty programmes are costly for the fuel firms to provide and for consumers to take advantage of. There is no evidence they increase the total volume of fuel sold. While discounting provides benefits to some consumers, those who do not participate pay higher board prices and discounting has been associated with higher margins overall. If board price competition was stronger, margins could be lower, there would be less discounting, and all consumers could benefit from lower prices.

Commercial fuel cards

X66 Although the study is focused on the retail market, sales to commercial fuel card holders – typically small and medium-sized businesses – account for about a quarter of volumes sold at retail sites.

X67 Fuel cards can deliver significant benefits to buyers by enabling them to receive a single bill at the end of the month, place limits on purchases made (for example, fuel can only be purchased during certain hours), and receive discounts off pump prices. However, these benefits may come at the cost of softening price competition in a similar way to consumer discount and loyalty programmes.

X68 Fuel cards are valuable to retailers as they provide a steady base of buyers who are relatively indifferent to the pump price at the retail site they obtain their fuel.

X69 Fuel card holders are known as 'sticky' customers and are unlikely to shop around in response to a short-term price rise, as they may be more focused on the benefits they consider their card offers them. This tends to weaken competition on board prices.

X70 We also consider fuel cards may soften competition by reinforcing the majors' control of their supply chains.

Premium petrol margins

X71 Premium petrol, which is retailed at higher prices and margins than regular petrol, is also contributing to high industry profitability.

X72 Premium (95 octane) petrol prices currently tend to be about 13-15 cents above the price of regular (91 octane) petrol, after accounting for discounts. The difference was about 7-8 cents in 2011. 98 octane petrol prices carry an additional price premium. This has meant the premium petrol margin has increased faster than regular petrol.

X73 The extra margin fuel companies are earning on this product does not appear to reflect actual cost differences between premium and regular petrol.

X74 We believe one explanation is that premium petrol prices are seldom displayed on price boards, making it difficult for consumers to compare prices. Premium petrol consumers may also be less price sensitive.

X75 We also consider that some consumers may be purchasing premium petrol unnecessarily, potentially due to a lack of understanding about whether it is needed for their car or the benefits it provides.

Causes of these outcomes

X76 We believe the market outcomes described above indicate that competition is not working as well as it could be in wholesale or retail markets. While we have identified some retail market measures that should assist competition, our most significant recommendations involve changes further up the supply chain in the wholesale market.

X77 The most significant problem, in our view, is that an active wholesale market does not exist in New Zealand and has not existed since deregulation 30 years ago. The majors operate through vertically integrated networks and often through long-term exclusive wholesale supply agreements. These arrangements have removed the scope for meaningful price competition at the wholesale level. This is where we would normally expect to see particularly strong price competition given the large volumes resellers are prepared to purchase and the commodity nature of each grade of fuel.

X78 Without an effective wholesale market, competition is largely limited to retail markets, where strong price competition is less likely to occur because the markets are smaller, geographically scattered and retailers have differentiated their service offerings. In addition, the retail market is more vulnerable to leader-follower pricing behaviour. The absence of wholesale competition increases the cost of fuel for retailers which places a floor under retail prices.

X79 Resellers, predominantly those supplied fuel by Mobil, can and do offer petrol and diesel prices below the majors and Gull, primarily by offering low cost service offerings like unmanned, pay-at-the-pump stations. However, there is a limit to the price competition they can offer. This is dictated by the wholesale price they pay their suppliers and the individual strategies of the majors, which may change.

X80 There are two interrelated factors that we consider limit wholesale competition:

X80.1 The majors' joint infrastructure network gives them an advantage over current and potential rival resellers, who are unable to acquire fuel from terminals throughout the country other than under contract with a major; and

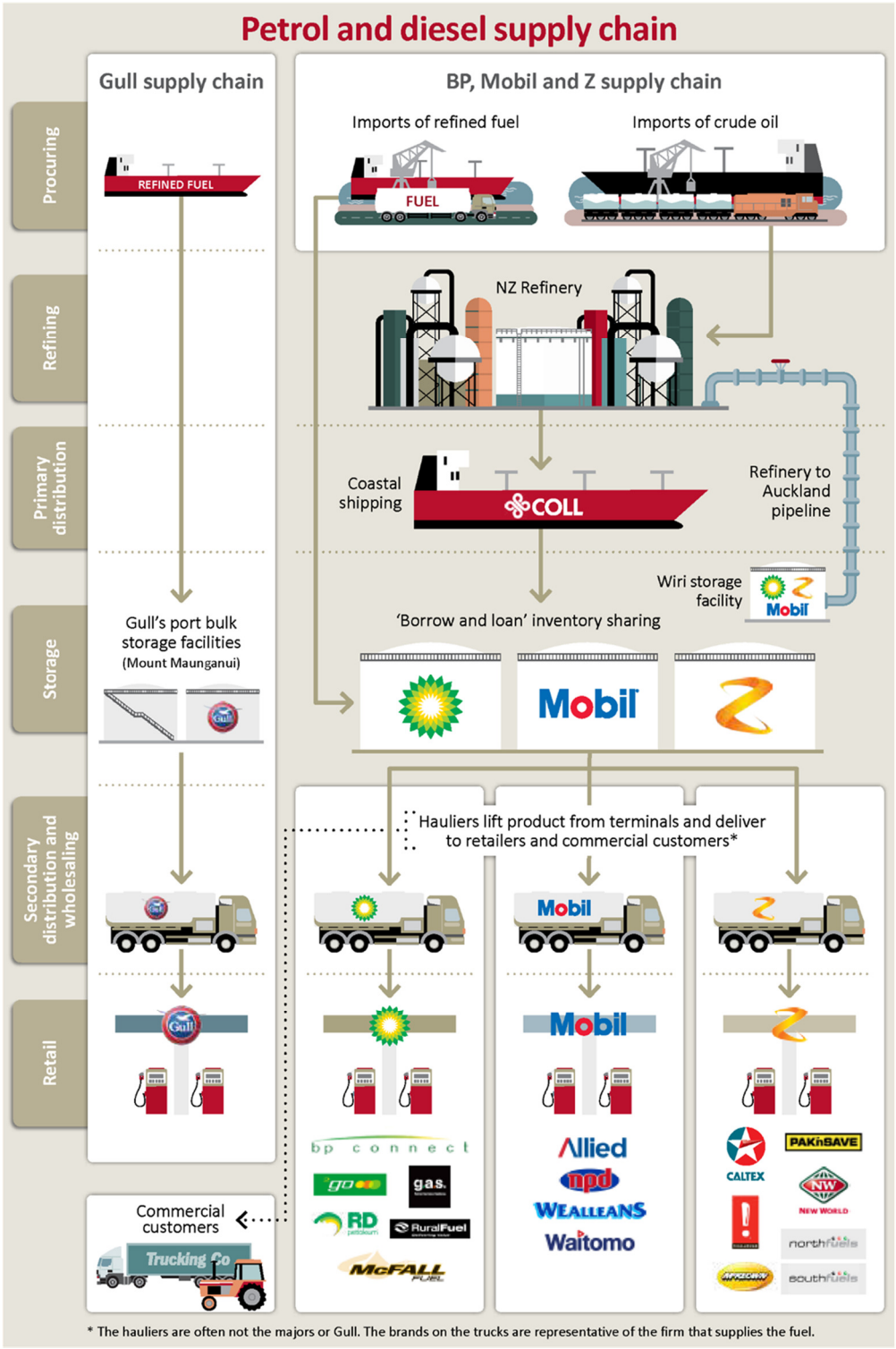
X80.2 Wholesale supply relationships, including restrictive contract terms, between the majors and their resellers reduce competition and limit resellers' ability to switch supplier.

X81 The combination of infrastructure sharing arrangements and restrictive supply relationships has also helped to prevent rival fuel importers from entering the market or competing more vigorously against the majors. In addition, the majors have limited incentive to compete strongly against each other on price at either the wholesale or retail level.

Infrastructure sharing and effects on competition

X82 The majors have overcome some of the challenges associated with delivering fuel to New Zealand consumers by sharing key infrastructure. This includes a complex mix of interrelated arrangements covering everything from the processing of crude oil, coordinated scheduling of distribution of refined fuel by pipeline and coastal shipping vessels, and access to a nation-wide fuel inventory through shared terminal storage facilities under the 'borrow and loan' arrangement (see Figure X6 below).

Figure X6 **The petrol and diesel supply chain**



X83 By combining their resources in this way, the majors have reduced their costs of supply compared to any rival importers that need to establish separate stand-alone supply chains.

X84 While there are terms and criteria under which a rival importer may participate in any of the infrastructure sharing agreements, this has never happened. In reality, these terms are untested, the majors appear to have considerable discretion on allowing participation, and the process and criteria for applying to participate are not made readily available.

X85 We consider a published process and criteria for participating in these shared infrastructure arrangements would be expected in a workably competitive market. We have made a recommendation to this effect.

Refinery allocation

X86 We also consider that current refinery arrangements may be limiting competition between the majors. Capacity at the refinery is allocated based on a three-year average of market shares. This means there is a significant lag before an increase in market share flows through to greater refinery allocation.

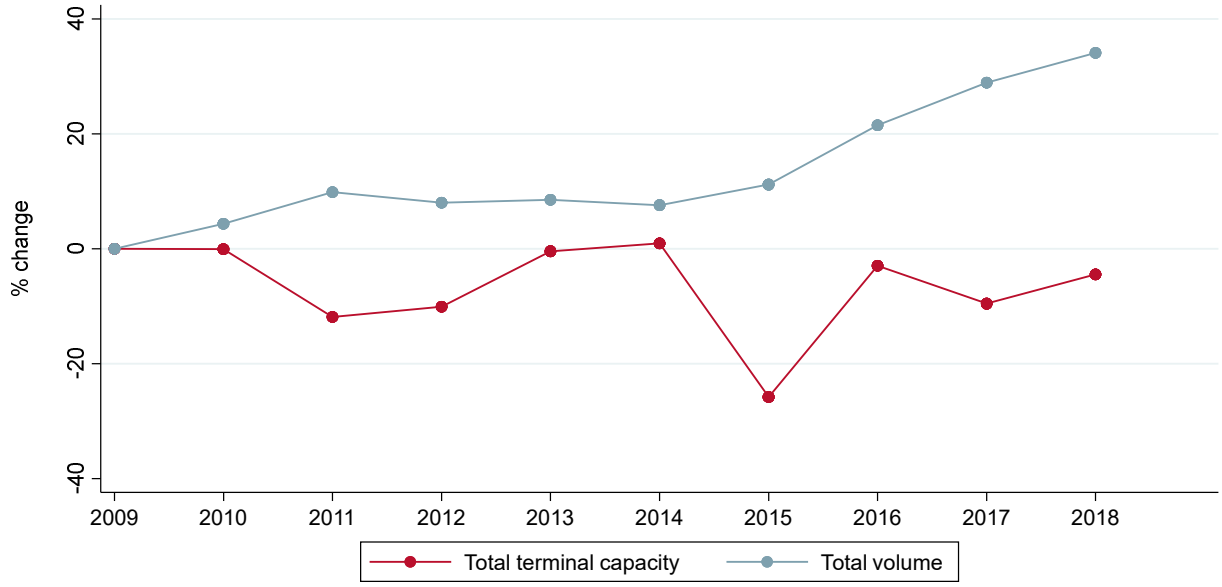
X87 If a major wants to grow its market share it would initially need to import more refined fuel to meet increased demand. This is likely to lead to a cost disadvantage in the short term, particularly in the Auckland market which receives fuel directly from the refinery via pipeline. We consider a shorter allocation process would be preferable to reduce the impact of this lag and the costs of this change are low.

X88 Further, the refinery allocation and borrow and loan arrangements currently require that information on past and future demand be shared between the majors. This may improve their understanding of each other's likely strategies and help them to accommodate one another's market behaviour. We recommend changes to the allocation process to reduce the current level of information sharing.

Capacity constraints are increasing

X89 We consider that infrastructure sharing arrangements may be diluting incentives to invest in infrastructure, contributing to tight supply conditions at many ports. This is reflected in insufficient investment being made in shared storage terminals over the past decade, despite increased demand for fuel from the majors (see Figure X7).

Figure X7 Total fuel volumes and shared storage capacity indexed to 2009



Source: Commission analysis of refinery production data, majors' import data and industry storage.

X90 The impact of limited investment in storage on capacity constraints is evidenced by port coordination events, which are used to ration out available supply between the majors and their downstream partners, when terminals are forecast to run out of supply before the next shipment arrives. While coordination events have fallen recently, some ports have been under coordination up to 40% of the time for certain fuel types.

X91 However, the case for significant future investment in terminals is uncertain, particularly given the signalled entry of TOSL and future expectations of relatively flat fuel demand. We recommend reviewing features or rules that may be acting to disincentivise investment in shared storage, to ensure timely investment occurs if and when it is required.

X92 There is evidence suggesting this tight supply position serves to limit competition between the majors at the wholesale level. The formulas used to ration fuel during port coordination events reduce the ability and incentive of the majors to compete for additional contracts; and large resellers appear to be deterred from seeking to switch suppliers out of fear their needs may not be met during a coordination event.

Wholesale supply relationships

X93 Switching at the wholesale level is rare. Resellers, comprising of independent dealers and distributors, rarely use the same competitive tendering processes used by large commercial customers and typically continue to obtain supply from the same major. This reflects a combination of:

X93.1 non-contractual features of the relationship between resellers and majors that have evolved over time; such as security of supply, access to fuel card schemes, and the location of resellers' retail sites, which result in resellers being dependent on their existing suppliers; and

X93.2 restrictive contract terms that make switching difficult.

X94 The lack of switching we see in the wholesale market also reflects some distributors' relatively comfortable position, where they are sharing in the high profitability we are seeing across the industry.

Relationship dependence reinforces barriers to switching

X95 Many of the wholesale supply relationships majors have with resellers have been in place for decades. In some cases, a major helped establish the reseller through transfer of assets, financial investment, technical assistance, or access to customer lists.

X96 Since their establishment, many distributors have grown materially by building their own customer base, and in some cases acquiring other distributors. Increasingly they are building their own retail sites, particularly unmanned pay-at-pump sites.

X97 Despite this growth, resellers are not diversified businesses. Maintaining a reliable supply of fuel is critical to their success and they purchase all of their core product, petrol and diesel, from a single supplier. In most cases this is the same supplier they have always had.

X98 The established relationships between the majors and their resellers appear to discourage switching between suppliers. This is reflected in some resellers:

X98.1 needing access to the majors' fuel card;

X98.2 being unwilling to open new retail sites in locations where they would directly compete with their own supplier; and

X98.3 factoring security of supply risks into their decisions.

X99 As mentioned previously, commercial fuel card holders are often valuable to retailers. Resellers can therefore be relatively dependent on their suppliers' fuel card scheme. The majors' fuel cards, which are accepted at a nationwide network of sites, are particularly valuable to resellers. The potential loss of fuel card volumes at resellers retail sites acts as a disincentive to switch to another supplier, or switch to a new importer that does not have a fuel card scheme.

X100 Access to fuel card schemes also potentially influences where resellers choose to open new retail sites and what services they offer at those sites. Resellers may seek to avoid establishing new retail sites too close to those of the major they are supplied by in case the major does not enable its fuel card scheme to be used at the reseller's new retail site.

X101 Resellers often open new retail sites at locations that complement their supplier's retail network, rather than competing directly with them. Even if a reseller wished to switch supply to a different major fuel company, the location of their established retail sites may mean they are unlikely to get a better wholesale price from a new supplier they would then be competing against.

X102 Another factor influencing resellers' decisions appears to be the supply risk associated with port coordination events or shortages. For example, a reseller may be concerned that a major may choose to prioritise supply to other resellers who that major has long-term relationships with. This may be especially so if the major's existing resellers have retail sites that are complementary to that major. This acts as a further disincentive to resellers to switch suppliers.

Restrictive contract terms

X103 In our view the wholesale supply agreements between the majors and resellers have a combination of features that are not consistent with what we would expect to see in workably competitive fuel markets in New Zealand. These agreements:

X103.1 are typically exclusive, preventing resellers from obtaining any of their fuel from an alternative supplier, for example to trial a new supplier or diversify their supply;

X103.2 commonly have long durations (for example, 10 to 15 years, but in some cases much longer), further limiting resellers' ability to regularly test the market and 'shop around';

X103.3 are sometimes tied to retail prices or are unclear on the methodology for calculating wholesale prices, and typically provide the majors the ability to change wholesale prices at their discretion, making it difficult to compare offers between suppliers; and

X103.4 include other contract terms, such as 'first right of refusal' and restraint of trade clauses, which reduce a reseller's ability and incentive to switch supplier.

X104 We acknowledge terms like these can be found in commercial contracts in workably competitive markets. They can have a range of benefits and may be required to achieve efficiencies, such as securing long-term demand to justify investment.

X105 However, we consider that in many cases the benefits claimed could be achieved through means that are less restrictive of competition in the wholesale fuel market. In other cases, any historical justification these terms may have had, no longer appear relevant.

X106 In addition to these contract terms, if a reseller does consider switching it can be hard to find the best offer because some of the key information they need, such as the future supply price, may not be provided by a major. There is no wholesale spot market in New Zealand, which would potentially provide a useful reference point when considering entering a new supply agreement.

X107 Resellers' lack of switching contrasts with large commercial buyers who typically enter much shorter contracts and actively test the market by inviting tenders from multiple suppliers.

X108 We have made recommendations to limit the use of certain terms in wholesale supply contracts to give resellers' more freedom to obtain competitive supply arrangements.

Land use restrictions

X109 Separately, we have also observed that when fuel companies close retail sites they sometimes place 'restrictive covenants' on the land that prevent its future use by another fuel retailer.

X110 Given retail site locations are often selected based on traffic flows and accessibility, as well as local zoning restrictions, the reduced ability to access suitable land potentially raises a new competitor's cost of entering the retail market or limits their ability to expand into new areas.

The impacts of infrastructure sharing and a locked-up wholesale market

X111 The combination of infrastructure sharing arrangements and restrictive wholesale supply relationships has restricted rival fuel importers' entry into the market and has limited competition.

X112 Rival importers do not have the ability to match the majors' comparatively low cost of production and distribution, and on entering New Zealand would find it difficult to attract wholesale customers who are committed to restrictive wholesale supply agreements.

X113 This has the effect of restricting competition primarily to the retail level.

X114 We have made recommendations to address these issues.

Stimulating competition and improving outcomes for New Zealanders

X115 We consider that competition in the wholesale fuel market is not delivering the benefits for New Zealand consumers that it could. Under current practices, New Zealand consumers appear likely to continue paying more for fuel than we would expect if a workably competitive wholesale market existed.

X116 There are signs that the market is responding to the high margins being earned over the past decade. Developments that could improve outcomes for consumers in the long term include the following.

X116.1 The successful establishment of TOSL's new import terminal in Timaru has the potential to bring lower fuel prices to some South Island drivers, if it can secure supply agreements with existing resellers.

X116.2 Further expansion by Gull and resellers like Waitomo and NPD may provide consumers with the option of lower priced fuel in more locations.

X116.3 The development of alternate sources of energy like electricity or hydrogen to power our cars and trucks may help reduce the retail price of petrol and diesel.

X117 However, these developments will not address the core problem we have identified with the wholesale market.

Recommendations to improve competition

X118 The following recommendations are made in light of what we have heard throughout the study, what we consider to be feasible and our views of the potential costs of the recommendations in relation to the likely benefit to consumers. Cost benefit analysis may be undertaken as part of the decision-making process about which recommendations the Government chooses to take forward and in what form.

X119 Our recommendations reflect our views on factors affecting competition at all levels of the supply chain. We consider them to be interdependent of one another.

X120 Our view is that the recommendations most likely to improve competition will be those directed towards the creation of an effective wholesale market, in which all fuel importers compete to supply wholesale customers. In the long-term this is likely to be the greatest driver of increased competition in retail markets.

X121 We recommend the introduction of a Terminal Gate Pricing (TGP) regime. A TGP is a spot price at which wholesale suppliers will sell fuel to wholesale customers at storage terminals. We recommend this regime is based on the Australian equivalent, with some adaptation for New Zealand market conditions.

X122 We consider a TGP regime will improve competition at the wholesale level by:

X122.1 creating the potential for a liquid wholesale spot market to develop;

X122.2 lowering barriers to entry and expansion for both importers and distributors;

X122.3 providing greater pricing transparency for wholesale customers; and

X122.4 providing competitive benchmark information for industry and government, including for those wholesale customers negotiating prices for their wholesale supply agreements.

X123 We consider a credible threat of further regulation if a TGP regime does not facilitate competitive wholesale prices within a reasonable period of time would also incentivise the majors to offer competitive TGP prices.

X124 This type of regulatory intervention is likely to be lower cost and with a reduced risk of unintended adverse consequences compared to regulated participation in infrastructure sharing arrangements or price control. It would be complementary to the borrow and loan arrangements and would preserve access to fuel at all terminals even if terminals were removed from those arrangements.

X125 We also recommend that parties to the coastal shipping joint venture and borrow and loan arrangements improve industry understanding of them, including publishing their process and criteria for considering applications to participate in the arrangements. We also recommend that parties to the arrangements review aspects of the borrow and loan arrangements that may be acting to disincentivise investment in shared storage.

X126 We recommend regulation to limit the use of certain terms in wholesale supply contracts to allow greater contractual freedom for resellers to compare offers and switch suppliers. In particular, we recommend the following.

X126.1 All wholesale contracts should be written in clear and concise language and should include a transparent cost-based pricing clause.

X126.2 Wholesale contracts should permit a distributor to take a prescribed minimum percentage of their supply from other suppliers.

X126.3 Distributors should not be committed to wholesale supply contracts exceeding a prescribed maximum period without a right to terminate on notice, unless a longer term is directly connected to relationship specific investment and reasonably necessary for that investment to occur.

X126.4 Other terms of wholesale fuel supply contracts should be regulated to prevent unjustifiable limitations on the ability of distributors to compete.

X127 We consider an enforceable Industry Code of Conduct would be an effective way to give effect to a TGP regime and recommendations relating to restrictive contracts.

X128 While our recommendations are primarily focussed on stimulating wholesale competition, we also recommend several changes to more directly improve competition in retail fuel markets.

X129 These are directed at improving the ability of consumers to make more informed purchasing decisions when it comes to buying premium fuels which we observed are more expensive than regular fuel, sold at higher margins and with margins increasing over time.

X130 We recommend that Government regulates to require retail sites to display premium petrol prices on price boards to better enable consumers to compare the available prices of premium fuels without needing to drive into the retail site to check the pump price.

X131 We recommend the introduction of regulation to require fuel cap or fuel flap stickers specifying the minimum octane level required for a vehicle to assist consumers to better understand whether they need to buy premium fuel for their vehicle. This will help to avoid consumers unintentionally buying premium fuel when they only need regular fuel, spending more than they need to, or inadvertently buying regular petrol when their vehicle in fact requires premium fuel.

X132 We do not recommend regulation, but we do recommend monitoring, of the display of discount pricing on price boards. The display of discount pricing on price boards has evolved over the course of our study. Some retailers display discounted prices alongside undiscounted prices for regular fuel. It is unclear whether this practice benefits consumers and some industry participants have suggested it might limit competition. Further, the practice may cause consumers to focus more on the level of discount available than the price they actually pay for fuel.

X133 Other potential interventions that could be considered in retail markets are not being recommended at this time. For example, we consider that care is required before pursuing options that could facilitate coordination, such as the promotion of price comparison tools. In addition, no recommendations are made in relation to the use of discount and loyalty programmes, although we encourage retailers to consider the potential for their discount and loyalty programmes to cause consumer detriment.

X134 We have also made several other recommendations that support our primary recommendations. These include:

X134.1 improving information and record keeping about the fuel market for future market analysis; and

X134.2 changes to current industry practices that may enhance the potential for the majors to coordinate and weaken competition through information sharing in relation to their joint shipping network and refinery capacity allocation.

X135 Further details about our recommendations are outlined in Chapter 8.

Chapter 1 Introduction

1.1 This report sets out the findings of the New Zealand Commerce Commission (Commission) competition or market study into retail fuel markets (study).[10] In preparing this report, we have had regard to comments received on our draft report, which we published on 20 August 2019.[11]

1.2 The Minister of Commerce and Consumer Affairs initiated the study under the Commerce Act 1986 (Act) through the issue of terms of reference that are described below.

1.3 The purpose of the study is to identify and assess factors that may affect competition for the supply or acquisition of retail fuel, and to make any recommendations that we consider may improve competition.[12]

1.4 The study focuses on the retail supply of petrol and diesel for use in land transport. It is not concerned with other fuels, such as aviation and marine fuel, but it does consider wholesale supply and the whole supply chain that delivers petrol and diesel to retail markets.

1.5 Motor transport plays a key role in our day-to-day lives, for example, getting us to work, to school and away on holiday. Many businesses also rely on fuel. Each year New Zealanders spend around 1.4 million hours travelling in total, and 83% of that time travelling is spent as a driver or a passenger in a car or van.[13]

1.6 Fuel is a homogeneous product and can be described as an essential "grudge purchase" that many people make frequently. Because of this, and because of the major role that motor transport plays in our lives, New Zealanders tend to pay attention to the price of fuel at the pump.[14]

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10 In accordance with section 51D(1) of the Act, we have made this report publicly available, at least five working days after providing this report to the Minister of Commerce and Consumer Affairs. A market study is referred to as a "competition study" in Part 3A of the Act. We refer to the study as a market study because this is a term commonly used to describe studies of this nature. The term used to describe the study does not affect our approach to it.

11 Section 51C(1) and (2) of the Act. Our draft report is available on our website at: <https://comcom.govt.nz/about-us/our-role/competition-studies/fuel-market-study>.

12 Section 51 and section 51A of the Act.

13 The Ministry of Transport "Household Travel Survey (2015-2018)" <https://www.transport.govt.nz/mot-resources/household-travel-survey/>. (Viewed on 26 June 2019).

14 For example, see <https://www.ipsos.com/en-nz/ipsos-nz-issues-monitor-fuel-price-concerns>. (Viewed on 28 July 2019); Consumer Magazine, Issue 595 February/March 2019, at 48. Data from a nationally representative survey of 1069 New Zealanders aged 18 years and over, carried out online in December 2018; and The AA "Member Research – Spring 2018 Petrol Price Spike Response Survey" (October 2018) at 27.

1.7 This is particularly the case when prices rise above recent norms and because retail fuel prices can vary quite significantly over short periods of time.[15] In advance of this study, public attention and concern about high fuel prices was particularly evident when board prices for regular petrol reached highs of about $2.50 a litre in October 2018, before falling towards the end of the month. This compared to $2.23 a litre three months prior.[16]

1.8 Various news reports also drew attention to the high prices of fuel in New Zealand, compared to other countries, and to price differences between regions within the country.[17] Questions about whether New Zealanders are getting a fair deal at the pump also raised queries about the state of competition in retail fuel markets. Well-functioning retail fuel markets are important, given the key role retail fuel plays in our day-to-day lives.

1.9 This report draws on evidence that we have collected and identifies market features that we consider may be hindering competition and affecting retail fuel prices. We have made recommendations that we consider could potentially improve competition and outcomes for New Zealand consumers and we have identified issues that the Government may wish to contemplate when it considers these recommendations.[18]

What are we studying?

1.10 On 5 December 2018 the Hon Kris Faafoi, Minister of Commerce and Consumer Affairs (Minister), published a notice under section 51(1) of the Act requiring the Commission to undertake a study into the factors affecting competition within retail fuel markets.

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15 See Figure 2.3: Quarterly retail fuel prices, Dollars per litre (January 2006–March 2019) in Chapter 2 of this report.

16 This price comparison reflects the main port price in the week ending 12 October 2018 and 13 July 2018. The main port price is based on a weekly average of retail prices in Auckland, Hamilton, Wellington, and Christchurch. MBIE weekly fuel price monitoring available at: < https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/weekly-fuel-price-monitoring/>. (Viewed on 20 June 2019).

17 For example, see: "AA calls on petrol companies to explain price discrepancies to motorists" <https://www.stuff.co.nz/motoring/news/85156243/aa-calls-on-petrol-companies-to-explain-price-discrepancies-to-motorists>; "NZ motorists pay a high price with petrol the most expensive in the OECD – report" <https://www.stuff.co.nz/business/industries/99574344/minister-joins-aa-call-for-petrol-price-cut>; "Big variations in South Island petrol prices unexplained by big companies" <https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=12058390>. (Viewed on 8 August 2019).

18 The Commission is not obliged to recommend that any actions be taken by the Government or any other person. The types of recommendations that may be made are described in section 51B(3) of the Act.

1.11 The Minister issued terms of reference for the study, setting out matters we may analyse and report on, and the timeframe for doing so.[19] A copy of the terms of reference for the study is provided in the box below.

Terms of reference for competition study into retail fuel markets

I, Kris Faafoi, Minister of Commerce and Consumer Affairs, pursuant to section 51(1) in Part 3A of the Commerce Act 1986, require the Commerce Commission to carry out a competition study into any factors that may affect competition for the supply of retail petrol and diesel used for land transport throughout New Zealand.

Matters to be considered in the study may include, but are not restricted to:

1. the structure of the industry;
2. the extent of competition at the refinery, wholesale and retail levels, including the role of imports;
3. any factors that may hinder competition between industry participants;
4. the conditions for entry by potential competitors, including independent suppliers, and/or the conditions for expansion;
5. whether wholesale and retail price and service offerings of petrol and diesel are consistent with those expected in workably competitive markets; and
6. features of retail petrol and diesel markets that are not in the long-term interests of consumers.

The Commerce Commission must make its final report for this study publicly available by 5 December 2019.

1.12 The Minister considered it would be in the public interest to require a study into retail fuel markets, given such things as:[20]

1.12.1 the more than doubling of petrol and diesel importer margins over the past decade;

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19 "Terms of reference for competition study into retail fuel markets" (5 December 2018) *New Zealand Gazette* No 2018-go6158 (terms of reference).

20 Cabinet Paper, "Initiation of the first market study to be carried out by the Commerce Commission" (December 2018) at [5]. This is available at: <https://www.mbie.govt.nz/business-and-employment/business/competition-regulation-and-policy/market-studies/>. (Viewed on 24 November 2019). Section 51(1) of the Act provides that the Minister may require the Commission to carry out a competition study if the Minister considers it to be in the public interest to do so.

1.12.2 the size of the market (around 6 billion litres of petrol and diesel are consumed for land transport use annually); and

1.12.3 the inability of previous studies to definitively answer whether or not there is a competition problem in the market.

1.13 The most recent study that looked at competition in the New Zealand fuel market – prior to the present – was the 2017 New Zealand Fuel Market Financial Performance Study, commissioned by the Ministry of Business, Innovation and Employment (MBIE). That study concluded that:[21]

> We cannot definitely say that fuel prices in New Zealand are reasonable, and we have reason to believe that they might not be.

1.14 The Minister cited this conclusion as an indication of a potential competition problem in the market.[22]

Our framework for analysing competition

Competition that works well for consumers

1.15 The study considers whether competition is working well for retail fuel consumers. We must carry out the study in accordance with the terms of reference.[23]

1.16 The purpose of the study is to identify and assess factors that may affect competition for the supply of retail petrol and diesel used for land transport throughout New Zealand, and to make any recommendations that we consider may improve competition.[24] We are not evaluating competition in the supply of other fuels such as aviation or marine fuels.

1.17 The study does not enquire into compliance with the provisions of the Act relating to anticompetitive conduct or mergers. Therefore, a conclusion that particular conduct affects competition, and may be the subject of a recommendation, is not a conclusion that it breaches other provisions of the Act. The Commission retains the ability to separately investigate anticompetitive conduct if information collected during the study, or outside of it, gives the Commission reason to believe that anticompetitive conduct may be occurring.

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21 The 2017 Fuel Study identified limits in the time available for the study and the ability to obtain data as factors that prevented it from reaching more definitive conclusions. NZIER, Grant Thornton, Cognitus Economic Insight "New Zealand fuel market financial performance study" (prepared for the Ministry of Business, Innovation and Employment, 29 May 2017) at i. Available at: <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-generation-and-markets/liquid-fuel-market/fuel-market-financial-performance-study-2017/>.

22 "Initiation of the first market study to be carried out by the Commerce Commission" (December 2018) at [14.1].

23 Section 51A(4) of the Act.

24 Sections 48, 51A and 51B of the Act and our terms of reference.

1.18 The overriding aim of the study is the same as the purpose of the Act itself: to promote competition in markets for the long-term benefit of consumers within New Zealand.[25]

1.19 Competition is defined in the Act as meaning "workable or effective competition".[26] It does not mean the theoretical concept of *perfect competition*. The Court has noted that there is no consensus on precise conditions that define *workable competition*, rather:[27]

> … workable competition is a practical description of the state of an industry where government intervention to make the market work better is not justified because the socially desirable outcomes generated by competition already exist to a satisfactory degree.

1.20 Our Draft Market Studies Guidelines describe in more detail some outcomes that may be observed in competitive markets that are working well and those that may be observed in markets that are not working well. They also describe market features that could affect competition that are relevant to the study.[28] In summary, when markets work well for the long-term benefit of consumers, firms compete to win customers based on factors such as price, quality, choice, and service.

1.21 What matters when considering workably competitive markets, is their tendency over time to move towards the outcomes that would be expected in strongly competitive markets.[29]

1.22 Whether consumers consider fuel prices to be high or low does not necessarily mean the market is, or is not, workably competitive. However, one important outcome that can be expected over the long run in a workably competitive market is that firms will tend to earn normal rates of return and prices will reflect efficient costs. Considering this outcome is an important part of the study. The Court has elaborated upon this as follows:[30]

> … what matters is that workably competitive markets have a tendency towards generating certain outcomes. These outcomes include the earning by firms of normal rates of return, and the existence of prices that reflect such normal rates of return, after covering the firms' efficient costs.

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25 Section 1A of the Act. This was emphasised by the Transport and Infrastructure Select Committee in its report-back to Parliament on the draft market studies legislation - Commerce Amendment Bill 2018 (45-2) (Select Committee report) at 1. Available at <https://www.parliament.nz/en/pb/sc/reports/document/SCR_80263/commerceamendment-bill>.

26 Section 3(1) of the Act.

27 *Wellington International Airport Ltd and Others v Commerce Commission* [2013] NZHC 3289 at [13].

28 Commerce Commission "Draft Market Studies Guidelines" (12 December 2018) at [12]-[20].

29 *Wellington International Airport Ltd and Others v Commerce Commission* [2013] NZHC 3289 at [20]-[23].

30 *Wellington International Airport Ltd and Others v Commerce Commission* [2013] NZHC 3289 at [18]-[22].

> Of course, firms may earn higher than normal rates of return for extended periods. On the other hand, firms may earn rates of return less than they expected and less than commensurate with the risks faced by their owners when they made their investments. They may even make losses for extended periods. Prices in workably competitive markets may never exactly reflect efficient costs, including a normal rate of return.
>
> But the tendencies in workably competitive markets are towards such returns and prices. By themselves, these tendencies will also lead towards incentives for efficient investment (investment that is reasonably expected to earn at least a normal rate of return) and innovation. That is to say, the prices that tend to be generated in workably competitive markets will provide incentives for efficient investment and for innovation.
>
> The same tendencies towards prices based on efficient costs and reasonable rates of return will lead also to improved efficiency, provision of services reflecting consumer demands, sharing of the benefits of efficiency gains with consumers, and limited ability to extract excessive profits.
>
> In short, the tendencies in workably competitive markets will be towards the outcomes produced in strongly competitive markets. The process of rivalry is what creates incentives for efficient investment, for innovation, and for improved efficiency. The process of rivalry prevents the keeping of all the gains of improved efficiency from consumers, and similarly limits the ability to extract excessive profits.

1.23 Our approach to assessing profitability (Attachment A) explains further how the profitability of firms is relevant to our consideration of whether the prices for retail fuel are consistent with those expected in a workably competitive market.[31] In summary, in a workably competitive market, the prices for goods and services will tend towards the efficient costs of supplying them. Firms that cannot achieve efficient costs will be undercut by competitors offering lower prices and will lose market share.

1.24 When firms' profits are persistently above a minimum level required to keep the business operating (a normal rate of return), this may indicate that competition is not working effectively for the long-term benefit of consumers.[32]

1.25 Nevertheless, prices in workably competitive markets may never exactly reflect efficient costs, including a normal rate of return. Real markets demonstrate varying levels of competition, and no two markets are the same.[33] As noted above, when looking for workable competition in a market, what is important is its tendency over time to move towards the outcomes that would be produced in strongly competitive markets.

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31 In April 2019, we published a working paper on assessing profitability. Attachment A of this report updates that working paper to reflect submissions we have received throughout this study and notes changes to our approach since that working paper was issued.

32 See Attachment A of this report.

33 *Wellington International Airport Ltd and Others v Commerce Commission* [2013] NZHC 3289 at [16] and [24(c)].

Our approach to assessing competition in this market

1.26 Therefore, our assessment of whether competition is working well asks whether the current level of competition in retail fuel markets can be expected to move the market towards efficient outcomes for the long-term benefit of consumers.

1.27 We do this by focusing on:[34]

1.27.1 the outcomes we are observing in the retail fuel markets; and

1.27.2 the factors affecting competition in retail fuel markets.

1.28 We then draw these components together to make recommendations that we consider may improve competition for the long-term benefit of New Zealand retail fuel consumers.

1.29 Our approach is summarised in Figure 1.1 below.

Figure 1.1 Summary of our approach to assessing competition

[34] Commerce Commission "Market Study into the Retail Fuel Sector: Working paper – Focus areas" (April 2019) at [20]-[22].

Structure of this report

1.30 The remainder of this report is structured in the following way:

1.30.1 Chapter 2: *Characteristics of New Zealand retail fuel markets* provides information on New Zealand retail fuel markets as relevant context to the chapters that follow.

1.30.2 Chapter 3: *Outcomes in retail fuel markets* discusses the outcomes we are observing in retail fuel markets over time, based on the information and evidence we have collected, and the extent to which these outcomes are consistent with those we would expect to see in a workably competitive market.

1.30.3 Chapter 4: *Structural and regulatory conditions of entry and expansion* examines the structural conditions and regulatory requirements that are associated with the technologies, resources or inputs a firm would need to enter or expand in the retail fuel supply chain.

1.30.4 Chapter 5: *Infrastructure sharing arrangements* examines the infrastructure sharing arrangements between the major fuel firms and discusses our views on how these arrangements may affect competition between existing firms and affect new entry and/or the expansion of firms.

1.30.5 Chapter 6: *Wholesale supply arrangements* examines the contractual and non-contractual features of the relationships between the firms that import fuel and the firms that sell fuel to end consumers. This chapter discusses our views on how these relationships may affect both competition between existing firms and new entry and/or the expansion of market participants.

1.30.6 Chapter 7: *The retail price and product offer* explains how features of the wholesale market affect competition in retail fuel markets and identifies features in retail fuel markets that affect retail competition. This includes discussion on how retailers compete, structural changes in the retail fuel market and information available to consumers.

1.30.7 Chapter 8: *Recommendations* makes recommendations that we consider could improve outcomes for New Zealand consumers and issues that the Government may wish to contemplate when it considers our recommendations.

1.30.8 Attachment A: *Our approach to assessing profitability* discusses why we assess the profitability of firms supplying retail fuel. It sets out our approach to assessing profitability, taking account of submissions received throughout the course of our study.

1.30.9 Attachment B: *Estimating the level of normal returns in the fuel sector* explains how we have estimated a normal rate of return for firms in the New Zealand fuel sector (the weighted average cost of capital (WACC)). This estimate of WACC is used as a benchmark to compare against the actual and expected level of returns being made by firms in the New Zealand fuel sector.

1.30.10 Attachment C: *Measures of the profitability of firms in the retail fuel sector* discusses whether we consider the profitability of the retail fuel sector to be in excess of a normal or competitive level.

1.30.11 Attachment D: *The persistence of excess returns* discusses the extent to which we consider excess levels of profitability in the fuel sector to be persistent rather than temporary.

1.30.12 Attachment E: *Cost pass-through rate* provides technical detail on the empirical analysis we undertook to assess the pass-through rate of replacement costs of fuel into retail fuel prices.

1.30.13 Attachment F: *The correlation between short-term discounts and board prices* provides technical detail on the empirical analysis we undertook to assess the short-term impact of discount and loyalty programmes on retail site board prices.

1.30.14 Attachment G: *Regional variations in retail fuel prices and margins* provides technical detail on the empirical analysis we undertook to assess the regional variations in retail fuel prices and margins over time.

1.30.15 Attachment H: *The impact of new entry by fuel retailers* provides technical detail on the empirical analysis we undertook to assess the location of new retail sites and the impact of new entry by fuel retailers on prices and volumes of existing retail sites in local markets.

1.30.16 Attachment I: *Overview of retail fuel distributors* provides further information on the distributors that operate in the retail fuel markets.

1.30.17 Attachment J: *The impact of Electric Vehicles on future fuel demand* provides further information on the impact of EVs, which is discussed in Chapter 2.

Our process throughout this study

1.31 On 12 December 2018 we released our statement of process, outlining the process we intend to follow over the course of the study.[35]

[35] Commerce Commission "Market Study into the Retail Fuel Sector – Statement of Process: Our intended process and how you can contribute" (12 December 2018).

1.32 On 31 January 2019 we released our preliminary issues paper, seeking responses from interested parties on preliminary issues we may explore during our study.[36] Public submissions we received are available on our website.

1.33 On 18 April 2019 we released our Working paper – Focus areas; and Working paper on assessing profitability. Public submissions we received on these working papers are available on our website.

1.34 On 20 August 2019 we released our draft report into the retail fuel sector.

1.35 On 13 September 2019, we received written comments on our draft report. These comments are available on our website.

1.36 From 24 to 27 September 2019, we held a consultation conference to test our preliminary findings and options to improve competition, including by clarifying and testing comments received on the draft report. The consultation conference was attended by a range of interested parties, including industry participants and motoring industry and consumer representatives. Transcripts of the public sessions at the consultation conference and the conference agenda are available on our website.

1.37 On 11 October 2019, we received further written comments on our draft report and on matters raised at the consultation conference and in published comments made by others. These comments are available on our website.

1.38 On 28 November 2019, we provided this report to the Minister of Commerce and Consumer Affairs.

Information collection

1.39 We have collected information and documents from a wide range of sources and met with a range of parties.[37] This includes industry participants, consumer and motoring industry representatives, and government agencies.

Confidential information shared with us

1.40 We are making this report publicly available in accordance with statutory requirements.[38]

1.41 We have endeavoured to make it as accessible to readers as possible. However, much of the information we have collected in the course of our study is considered confidential or commercially sensitive by the supplying party, and therefore cannot

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36 Commerce Commission "Market study into the retail fuel sector: Invitation to comment on preliminary issues" (31 January 2019).

37 We have issued some compulsory information notices under section 98 of the Act as well as being provided with information voluntarily by interested parties and sources.

38 Section 51D(1) of the Act.

be included within the material that is made publicly available. It is important that interested parties and sources of relevant information continue to feel confident participating in market studies and supplying us with information that we can use to develop our views.

1.42 We balance these considerations against our competing obligations to adhere to the principles of natural justice, operate transparently where practicable, and comply with our legal obligations under the Official Information Act 1982 (OIA).

1.43 Accordingly, we note that some information within this report must of necessity be redacted from view, as is indicated by the use of square brackets like this: [ ].

1.44 The release of information in this report to any person will be controlled by the Commission applying the principles of the OIA.

The Minister must respond to our report

1.45 This report sets out the findings of our study, and makes recommendations to improve competition, having had regard to comments we have received throughout the study, including on our draft report.

1.46 The Minister is required to respond to this report within a reasonable time after it is made publicly available.[39]

[39] Section 51E of the Act.

Chapter 2 Characteristics of New Zealand retail fuel markets

Introduction to this chapter

2.1 This chapter provides information about New Zealand retail fuel markets as relevant context to the chapters that follow.

Structure of this chapter

2.2 This chapter discusses the following matters:

2.2.1 New Zealand's reliance on the motor vehicle;

2.2.2 retail fuel consumption in New Zealand;

2.2.3 the price of fuel at the pump;

2.2.4 the retail fuel offering;

2.2.5 overview of the fuel retailers and wholesaling of fuel;

2.2.6 the fuel supply chain; and

2.2.7 factors affecting future retail fuel demand.

New Zealand's reliance on the motor vehicle

2.3 New Zealand is heavily reliant on motor vehicles. We own a lot of cars per capita compared to other countries and spend a large share of our income on fuel.[40] According to Bloomberg, New Zealanders spend more income on fuel each year than people in 55 other countries (out of a total of 61 countries) with the average New Zealand driver purchasing 673 litres of fuel a year, making up 2.5% of the typical salary.[41]

2.4 Table 2.1 below compares the typical weekly household expenditure on petrol for different income groups, and compares this to other household necessities, electricity and food.

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[40] In 2015 New Zealand had the third highest number of passenger cars per 1000 people compared to other OECD countries at 617 vehicles. International Transport Forum <https://www.itf-oecd.org/search/statistics-and-data?f%255B0%255D=field_publication_type%3A648>. (Viewed on 9 July 2019). Ministry of Transport at: <https://www.transport.govt.nz/news/land/we-are-driving-further-and-more-than-ever-before/>. (Viewed on 28 June 2019).

[41] Bloomberg <https://www.bloomberg.com/graphics/gas-prices/#20191:New-Zealand:NZD:l>. (Viewed on 9 July 2019).

Table 2.1 Typical weekly household expenditure on petrol, electricity and food

Typical weekly consumption ($ and percentage of income)	Lowest income	Middle income	Highest income
Petrol	$21.00 (4.1%)	$51.90 (4.7%)	$63.80 (3.7%)
Electricity	$40.30 (7.9%)	$49.10 (4.4%)	$57.00 (3.3%)
Food[42]	$109.50 (21.3%)	$221.00 (19.8%)	$319.70 (18.3%)

Source: Commerce Commission analysis of Statistics New Zealand data.[43]

2.5 In 2018 there were 0.80 light passenger vehicles per person on New Zealand's roads and around 4.3 million vehicles registered.[44] About 96% of these 4.3 million vehicles were light vehicles or motorcycles[45] and nearly all (about 99.7%) primarily relied on petrol or diesel.[46]

2.6 New Zealand's population is small and spread over a relatively large area, compared to other countries. This means that mobility is particularly important and large public transport networks may be less viable, compared to other countries with larger populations that are less dispersed. These conditions may also support a higher reliance on motor transport and vehicle ownership.

Retail fuel consumption in New Zealand

2.7 In New Zealand there are, broadly speaking, two main groups of retail consumers that purchase fuel from retail sites. The first are households (or private vehicle owners), and the second are small-medium sized businesses (SMEs).

2.8 We use the term "retail sites" to include a broad range of sites selling fuel, including:

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42 Food includes the following subcategories: grocery food, fruit and vegetables, meat, poultry and fish, non-alcoholic beverages, restaurant meals and ready-to-eat food.

43 Statistics New Zealand "Explore living-costs in New Zealand" <https://statisticsnz.shinyapps.io/livingcostsexplorer/>. (Viewed on 16 August 2019). Note that "Lowest income" includes annual income less than $17,943, "Middle income" includes annual income between $19,892 and $55,367, and "Highest income" includes annual income of $55,368 and above.

44 Ministry of Transport "Annual Fleet Statistics 2018" (2019) <https://www.transport.govt.nz/mot-resources/vehicle-fleet-statistics/>. (Viewed on 26 November 2019).

45 The Ministry of Transport notes that the light fleet is made up of cars, vans, utes, four-wheel drives, sports utility vehicles (SUVs), buses and motor caravans (camper vans) with a gross vehicle mass up to 3.5 tonnes. For our purposes, we have also included motorcycles and mopeds when we refer to "light vehicles". Ministry of Transport "2018 New Zealand Vehicle Fleet Annual Spreadsheet" (2019) at tab 1.1 and 1.2. <https://www.transport.govt.nz/mot-resources/vehicle-fleet-statistics/>. (Viewed on 26 November 2019).

46 Based on Ministry of Transport "Annual fleet statistics 2018" (2019) at 7.

2.8.1 service stations, which provide a full service that could include a convenience store, takeaway food, barista coffee, toilets and/or a car wash;

2.8.2 unmanned sites, which offer no additional services, or very few, and provide pay-at-pump facilities; and

2.8.3 truck stops or fuel stops that are accessible to the public and light passenger vehicles but primarily cater to heavier vehicles, such as trucks.

2.9 About 3.2 billion litres of petrol and 3.6 billion litres of diesel are consumed annually in New Zealand.[47]

2.9.1 About 98% of the petrol and 73% of the diesel consumed annually is purchased at retail sites (see Table 2.2 below).[48]

2.9.2 The remaining 2% of petrol consumption and 27% of diesel consumption mostly relates to fuel sold to business (see Table 2.2 below). Most of this is likely sold under commercial contracts.

2.9.2.1 Some large businesses do not buy fuel from retail sites and instead receive bulk deliveries of petrol and diesel from a terminal to their own storage facility.

2.9.2.2 Customers of bulk deliveries include transport firms, construction sites, power generators, loggers, mining operations, and small rural farmers who have a storage tank on the farm.

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47 MBIE "Data tables for oil" (2018) <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/oil-statistics/#data-tables-for-oil>. (Viewed on 12 June 2019).

48 This includes truck stops that we do not consider "retail sites" for the purposes of our study, as they are only accessible to commercial vehicles and in some cases, payment can only be made by a fuel card.

Table 2.2 Retail fuel consumption in 2018

		Petrol			Diesel
		Regular	Premium	Total	
Total consumption - billion litres[49]		2.484	0.729	3.213	3.607
Retail consumers	Fuel purchased at service stations, unmanned sites and truck stops[50]	2.426 (97.6%)	0.724 (99.4%)	3.150 (98.0%)	2.647 (73.4%)
Commercial consumers	Agriculture, forestry and fishing	0.034b (1.4%)	0.001 (0.2%)	0.036 (1.1%)	0.416 (11.5%)
	Industrial[51]	0.003 (0.1%)	0.000 (0.1%)	0.003 (0.1%)	0.378 (10.5%)
	Commercial and public services	0.021 (0.9%)	0.002 (0.3%)	0.023 (0.7%)	0.163 (4.5%)

Source: Commerce Commission analysis of MBIE data.[52]

2.10 Consistent with the terms of reference for the study, we are focusing on the two main groups of retail customers we have identified - households and SMEs - rather than large commercial customers.[53] We are referring to these groups when we refer more generally to "consumers" in the context of the study.

2.11 Figure 2.1 below breaks down retail fuel consumption by fuel type from 2000 to 2018. Diesel consumption has grown by about 80% over this period.[54]

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49 We understand that in addition to the categories in this table, residential consumption accounts for less than 0.1% of petrol and diesel consumption.

50 MBIE "Data tables for oil" (2018) <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/oil-statistics/#data-tables-for-oil>. (Viewed on 12 June 2019). The fuel consumed in this category is described as "domestic land transport". We understand this category consists of fuel sold to retail service stations and self-service truck refuelling stops. This also includes fuel sold to fuel distributors that is not on-sold to other sectors (included under 'commercial customers') in this table.

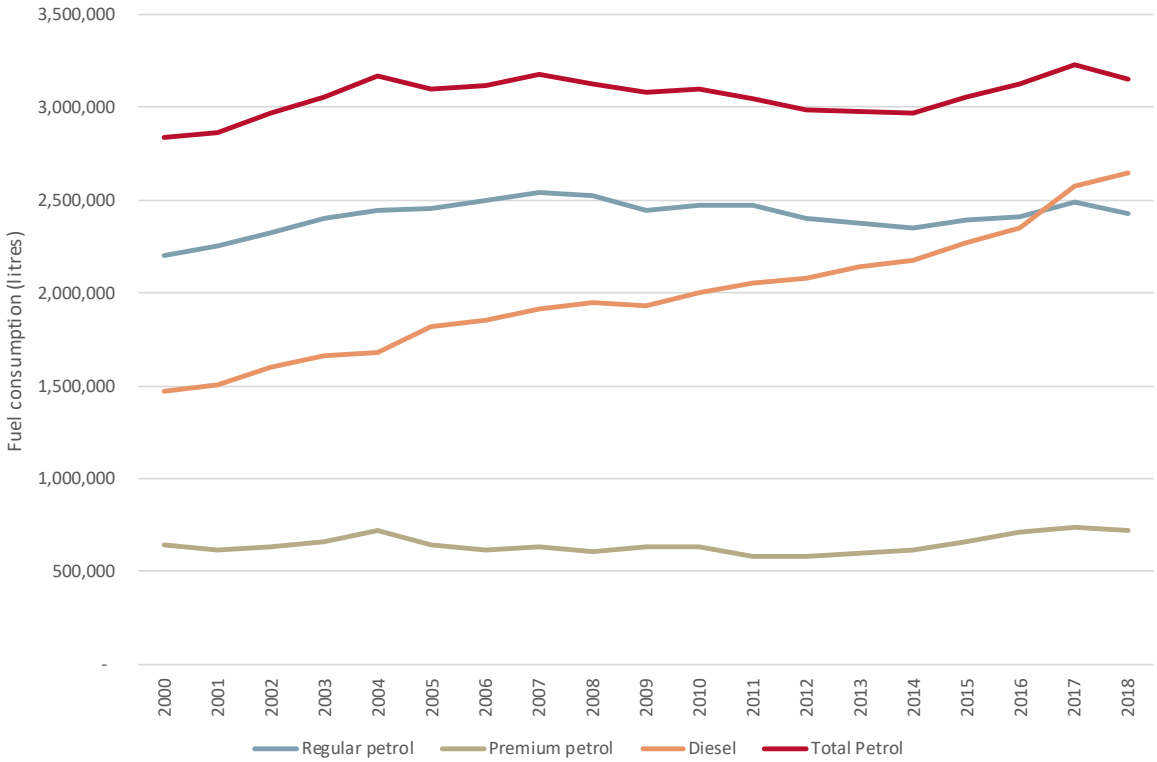
51 Industrial excludes fuel used for electricity generation. This is accounted for under energy transformation.

52 MBIE "Data tables for oil" (2018) <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/oil-statistics/#data-tables-for-oil>. (Viewed on 12 June 2019).

53 While we do not focus on the supply of petrol and diesel to commercial customers, we do comment on this where it provides insight into understanding how competition operates in the retail fuel markets. This approach was noted in our preliminary issues paper. Commerce Commission "Market study into the retail fuel sector - Invitation to comment on preliminary issue" (31 January 2019) at [22].

54 As per Table 2.2 above, this attributes fuel purchased at service stations, unmanned sites and all truck stops (domestic land transport) to retail fuel consumption. We note that this includes truck stops that we do not consider "retail sites" for the purposes of our study, as they are only accessible to larger vehicles and in some cases, payment can only be made by a fuel card. We do not consider this inclusion likely to materially affect the trend of retail fuel consumption.

Figure 2.1 Retail consumption by fuel type (2000 – 2018)



Source: Commerce Commission analysis of MBIE data.[55]

2.12 Currently, fuel purchased at service stations, unmanned sites and truck stops is evenly split between petrol and diesel (about 54 and 46 percent respectively as per Figure 2.1 above).

2.12.1 Households' light vehicles tend to consume petrol. Most of these light vehicles consume regular petrol (91 octane), but some vehicle owners purchase premium petrol (95 or 98 octane petrol).

2.12.2 Premium petrol makes up about 23 percent of total petrol consumption. There are some vehicles for which higher octane ratings (ie, 95 and/or 98) are a minimum requirement specified by the engine manufacturer, and the vehicle would likely risk serious damage to its engine if a lower fuel octane was used. There are also motorists that do not require premium fuel for their vehicles to run safely but they choose to purchase it.

[55] MBIE "Data tables for oil" (2018) <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/oil-statistics/#data-tables-for-oil>. (Viewed on 12 June 2019).

2.12.3 Diesel is more likely to be used in heavier vehicles and is used in over 97 percent of trucks and buses. The number of diesel vehicles has increased steadily since 2000, particularly light diesel vehicles. In 2018, diesel vehicles made up about 19.2 percent of all light vehicles.[56]

The price of fuel at the pump

2.13 This section discusses the main factors that impact fuel prices. Those factors include:

2.13.1 components of retail fuel prices;

2.13.2 consumers are slow to change their fuel purchasing behaviour when prices change;

2.13.3 Government fuel price monitoring; and

2.13.4 deregulation of fuel prices (and the fuel industry).

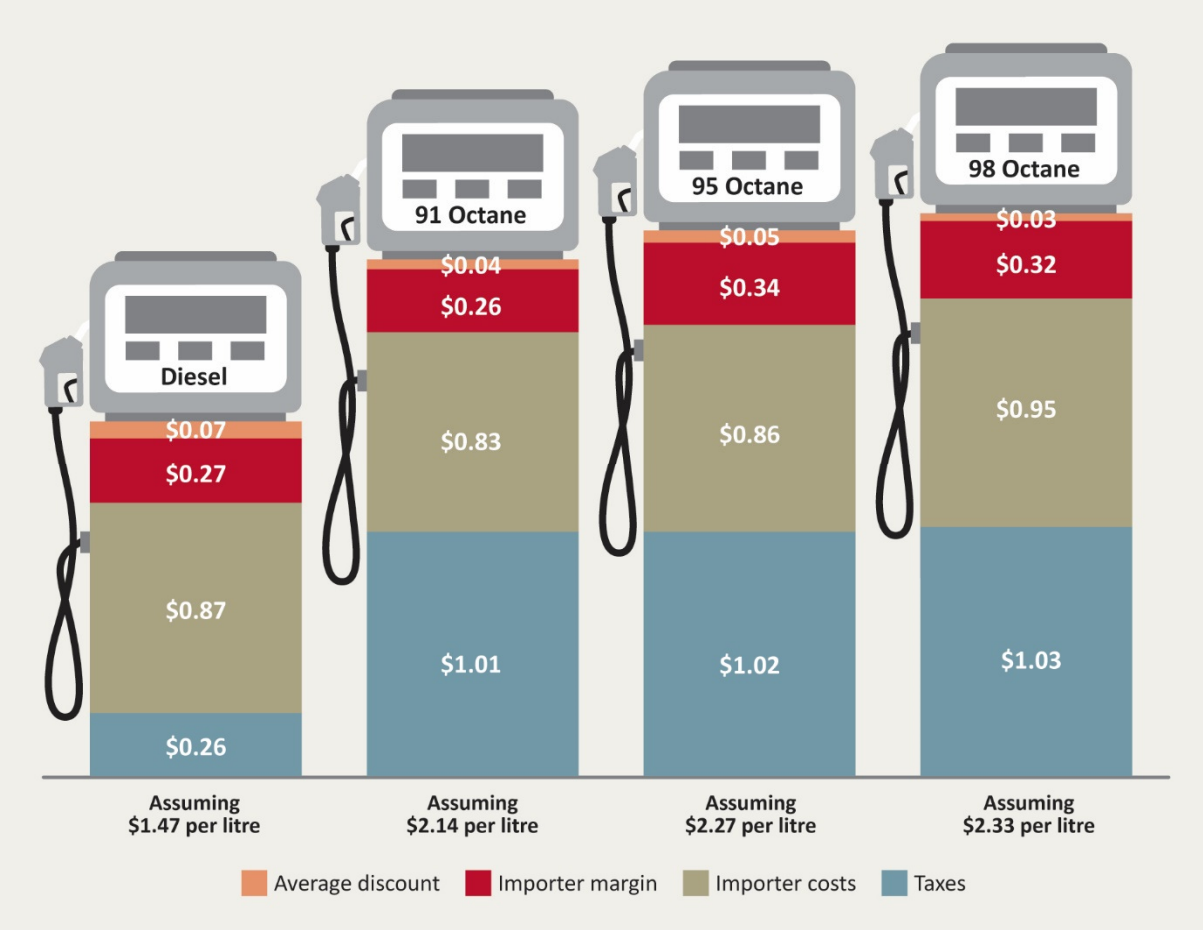
Components of retail fuel prices

2.14 Headline fuel prices are readily observable on large price boards outside retail service stations (we refer to these as "board prices"), except for premium fuel prices which are generally not displayed. Board prices can vary daily or a number of times a day.

2.15 Figure 2.2 below illustrates the components that make up fuel board prices, across different types of fuel. This is representative of average prices over the 2018 calendar year.

[56] Ministry of Transport "Annual Fleet Statistics 2018" (2019) <https://www.transport.govt.nz/mot-resources/vehicle-fleet-statistics/>. (Viewed on 26 November 2019).

Figure 2.2 Components of the average board price of fuel (2018 calendar year)



Source: Commerce Commission analysis of the Singapore benchmark cost index data and retail sales data.

2.16 Figure 2.2 shows that in 2018 the average board price for a litre of regular petrol was about $2.13 per litre. However, discount and loyalty programmes targeted at households are widespread in New Zealand's retail fuel market. Fuel cards (which typically include discounts) are widely used by SMEs. We use the general term "discounts" to refer to them all unless specified otherwise.

2.17 The average discount was about $0.04 per litre (or 2% of the board price) during 2018. This represents discounts off the board price that some consumers receive, averaged across the purchases of all consumers. This means that actual discounts for those consumers who received them were larger than $0.04 per litre.

2.18 After accounting for discounts, the remaining $2.10 per litre is made up of the following.

2.18.1 Taxes (about $1.01 per litre). These taxes include fuel excise,[57] ACC levies, Emissions Trading Scheme levy, and the Auckland regional fuel tax.[58] Fuel excise tax makes up the majority, at $0.595 per litre until 30 September 2018 when it increased to $0.63. As of 1 July 2019, it is set at $0.66 per litre.

2.18.2 Importer costs (about $0.83 per litre). This is the cost of importing fuel to New Zealand —including the cost of purchasing the fuel in Singapore, shipping it to New Zealand and any cost adjustments for meeting New Zealand's fuel specifications.[59]

2.18.3 Importer margins (about $0.26 per litre). This represents the gross margin available to fuel importers to cover domestic transportation, distribution and retailing costs in New Zealand, as well as profit margins.

2.19 Figure 2.2 also shows that:

2.19.1 the importer margin on premium fuels (octane 95 and 98) is higher than on regular petrol and diesel, but as a percentage of the price, the importer margin on diesel is higher; and

2.19.2 diesel is cheaper than petrol, largely owing to taxes making up a smaller proportion of the price. Diesel vehicle users pay road user charges, which are designed so that on average, diesel vehicle users contribute the same in road user charges as petrol vehicle users do in fuel excise tax.

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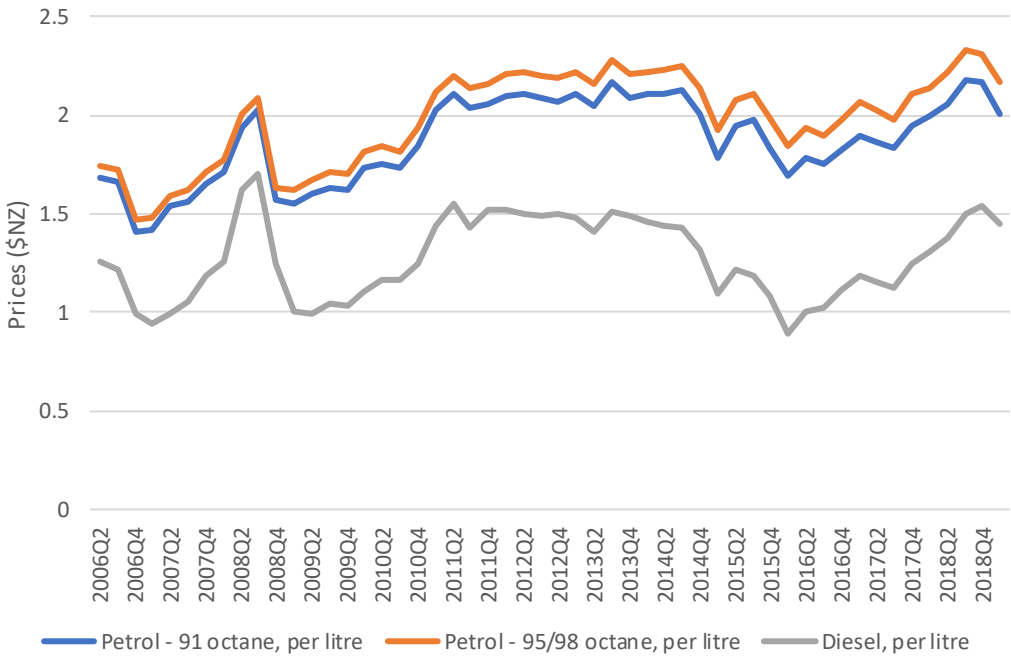
57 Fuel excise contributes towards new roads and road maintenance through the National Land Transport Fund.

58 The Auckland regional fuel tax applies to about 30% of fuel volumes sold.

59 Importer costs are calculated primarily using the Singapore benchmark cost index, which relies on the daily Mean of Platts Singapore (MOPS) price and provides an estimate of the per litre landed cost of fuel in NZD for each type of refined fuels retailed in New Zealand. The daily average USD/NZD exchange rate is used to adjust the daily MOPS price to estimate the daily per litre landed cost in NZD. The Singapore spot market price is a reasonable indicator of the cost of refined fuel imported into New Zealand since world fuel prices are closely connected and New Zealand importers purchase fuel from Singapore. While fuel is also refined in New Zealand, the refinery prices its services based on 'import parity price' – that is, the cost of landing imported refined fuel in New Zealand. Some adjustments have been made to the Singapore benchmark cost index to account for quality premia costs of different grades of petrol to meet New Zealand's fuel specifications. [ ]; [ ]; and [ ] The per litre landed cost estimate for premium fuel has been applied to both 95 octane fuel and 98 octane fuel. This may slightly understate the importer cost of 98 octane fuel and as a result, slightly overstate the importer margin of 98 octane fuel.

2.20 Retail fuel prices can vary quite significantly over short periods of time. Figure 2.3 below illustrates changes in prices between 2006 and early 2019. This figure also shows an increasing gap between the price of regular and premium petrol.

Figure 2.3 Quarterly retail fuel prices, Dollars per litre, (January 2006 – March 2019)[60]



Source: Commerce Commission analysis of data from Statistics New Zealand.[61]

Consumers are slow to change their fuel purchasing behaviour when prices change

2.21 Overall fuel expenditure tends to increase when prices go up because fuel consumption does not reduce significantly in response to price increases, both for short-term fluctuations and longer term trends.[62] This is because fuel is an essential purchase for many consumers that cannot be suitably "stocked up" when prices are low for use later when prices rise. Neither can many consumers delay their purchases when prices are high while they wait for prices to drop. Over time consumers may switch to more fuel efficient vehicles, but the evidence suggests they do not stop using vehicles altogether.

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60 Statistics New Zealand notes that these prices are not statistically accurate measures of average transaction price levels, but do provide a reliable indicator of percentage changes in prices. These prices are calculated by applying index movements to weighted average prices for the June 2006 quarter.

61 Statistics New Zealand <http://archive.stats.govt.nz/infoshare/SearchPage.aspx>. (Viewed on 25 July 2019).

62 Estimates of low price responsiveness to price changes (low price elasticity) for petrol demand in New Zealand can be found in: D Kennedy and I Wallis "Impacts of fuel price changes on New Zealand transport" (Land Transport New Zealand Research Report, 2007) at 9; Miller (1989 at 11) and Baas, Hughes and Treloar (1982) as cited in Michael Pickford and Cameron Wheeler "The petrol industry: Deregulation, entry and competition" (2001) NZ Trade Consortium Working Paper No. 12 at 17.

2.22 A 2007 Land Transport New Zealand study indicates that consumers change their fuel purchasing behaviour little in response to price changes. By looking at petrol data from 1978 to 2006, the study found that demand for regular petrol was relatively unresponsive to changes in its price in both the short and long run (it had a low price elasticity).[63]

2.23 We expect that consumers' purchasing behaviour for fuel is unlikely to have materially changed since these estimates were calculated.

2.24 While overall demand is relatively unresponsive to changes in retail price, some consumers are price sensitive and motivated to switch retail brand or outlet to benefit from small differences in prices. We discuss the range of factors influencing consumers' fuel purchases below from paragraph 2.30 and further in Chapter 7.

Government fuel price monitoring

2.25 In New Zealand, there is no specific regulatory regime that limits the pricing of retail fuel. Prices are determined by market participants.

2.26 MBIE monitors and publishes weekly importer margins for retail petrol and diesel. MBIE describes the importer margin as the gross margin available to fuel retailers to cover domestic transportation, distribution and retailing costs in New Zealand, as well as profit margins.[64] This monitoring was introduced following the 2008 New Zealand Petrol Review, to promote transparency in retail petrol and diesel pricing.[65]

Deregulation of fuel prices and the fuel industry

2.27 While fuel prices are now market-driven, prior to 1988 the fuel industry was heavily regulated, with wholesale prices of diesel and petrol controlled. In addition, there were prohibitions applied to importers retailing petrol, all wholesalers and retailers of petrol products were licensed by the Government, and restrictions applied to imports of refined products.

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63 D Kennedy and I Wallis "Impacts of fuel price changes on New Zealand transport" (Land Transport New Zealand Research Report, 2007) at 9. The study found that the short-run (1 year) elasticity of demand was -0.15. This means that that a 10% increase in price leads to a fall in petrol consumption of 1.5% over one year. The study also found that this short-run elasticity was relatively stable over a longer period of time. The long-run (15 years) elasticity was found to be relatively low as well, at -0.3. These estimates were calculated based on data from 1974 to 2006.

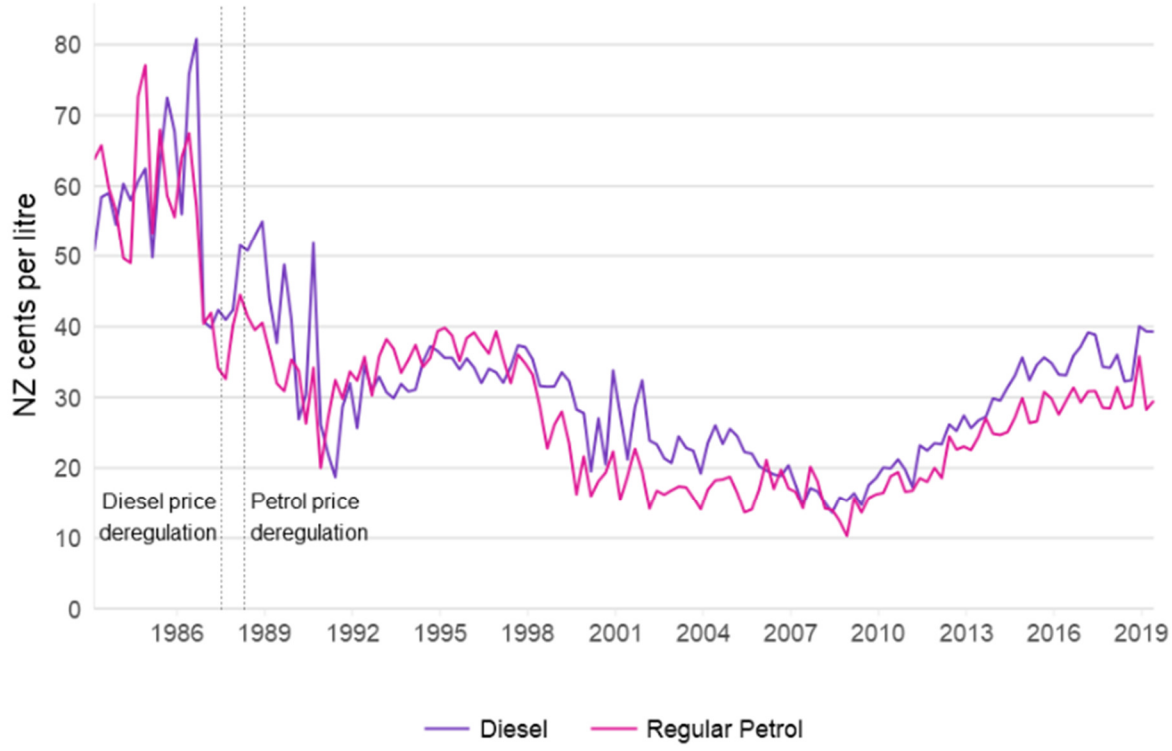
64 Specifically, MBIE notes that the importer margins is calculated as the difference between the: discounted price less duties, taxes, levies, the New Zealand Emissions Trading Scheme (ETS), and importer cost (cost of importing the fuel to New Zealand —including the cost of purchasing the fuel in Singapore, shipping it to New Zealand, insurance and losses, and wharfage and handling). See <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/weekly-fuel-price-monitoring/>. (Viewed on 16 August 2019).

65 Hale and Twomey "2007 ACCC report into Australian petrol prices – Review of applicability to the New Zealand petrol market" (2008). Prepared for the Ministry of Economic Development, July 2008. Available at <https://www.mbie.govt.nz/assets/2bb46874e9/2007-accc-report-australian-petrol-prices.pdf>.

2.28 Deregulation of the fuel industry in 1988 removed these restrictions. Deregulation was intended to increase competition and improve the efficiency of the industry.[66]

2.29 Figure 2.4 below indicates that fuel margins fell substantially in anticipation of deregulation. This downward trend broadly continued for two to three years following deregulation and then reversed in the 1990s. No new industry participants entered the market until 1998, giving rise to discussion among commentators about the existence and/or strength of entry barriers.[67]

Figure 2.4 Quarterly regular petrol and diesel importer margin (real June 2019 prices)



Source: MBIE weekly fuel price monitoring (June 2019).[68]

66 Michael Pickford and Cameron Wheeler "The petrol industry: Deregulation, entry and competition" (2001) *NZ Trade Consortium Working Paper No. 12* at 11.

67 Margins rising in the 1990s raised concerns about barriers to entry in the wholesale and retail markets by the then Ministry of Commerce. A 1996 report by NZIER supported the Ministry's concerns. However, a further report in 1997 by ACIL Economics and Policy found no evidence of entry barriers. See NZIER "Petrol Prices: An Investigation into Petrol Prices in New Zealand" (1996) Report to the Ministry of Commerce, Wellington; and ACIL "Barriers to Entry to the New Zealand Downstream Oil Market: A Report to the Ministry of Commerce" (1997) Wellington: Ministry of Commerce.

68 See MBIE <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/weekly-fuel-price-monitoring/>. (Viewed on 25 November 2019).

The retail fuel offering

2.30 This section outlines key characteristics of retail sites and what influences consumers to purchase fuel from one retail site over another. It contains the following sub-sections:

2.30.1 retail fuel is ultimately supplied by four firms;

2.30.2 retail site offerings vary;

2.30.3 non-price factors influence where motorists buy fuel;

2.30.4 discount and loyalty programme offerings are widespread; and

2.30.5 the number of retail sites has increased over recent years.

Retail fuel is ultimately supplied by four firms

2.31 As context for the description of retail fuel markets in this section, it is useful to provide a brief overview of the different roles of industry participants in the fuel supply chain, the relationships between them, and the supply of fuel to retail sites. These matters are discussed in more detail later in this chapter and in Chapter 6.

2.32 Z Energy Limited (Z Energy), BP Oil New Zealand Limited (BP) and Mobil Oil New Zealand (Mobil) (we refer to these firms as the "majors"):

2.32.1 have access to New Zealand's only refinery at Marsden Point (the refinery) and they each import crude oil to be refined into a range of products there;

2.32.2 each takes fuel from the refinery and imports refined fuel for supply throughout New Zealand; and

2.32.3 each supplies:

2.32.3.1 their own company owned and operated (or agent operated) retail sites;

2.32.3.2 dealer retail sites that carry the brand of the major but are owned and operated by individual owners; and

2.32.3.3 distributors which in turn supply their own commercial customers and/or dealers and/or their own company owned and operated retail sites.

2.33 Gull New Zealand Limited (Gull) imports and supplies fuel in the North Island to its owned and operated retail sites and a small number of dealer operated Gull branded sites. It has also recently entered the South Island, opening its first retail site in October 2019 in Maheno. Gull has indicated that it plans to open six more

sites in the South Island over the next two years, including four in Christchurch's central city and suburbs.[69]

2.34 Timaru Oil Services Limited (TOSL) is expected to commence importing fuel to the South Island in 2020. TOSL is currently building a fuel storage terminal in Timaru.[70] There has also been speculation that TOSL may build a new terminal in Tauranga.[71]

2.35 New Zealanders can choose between 20 brands of retail fuel. However, the fuel supplied under every brand ultimately originates either from the refinery or from fuel imported by one of the three majors or Gull. We refer to these four firms collectively as the "importers".

2.36 Figure 2.5 below shows the relationship between each importer and each retail brand. However, it does not indicate whether retail sites under each brand are owned and operated by a major, Gull, or a distributor, or a dealer that carries that brand but is owned and operated by an individual owner. For more information relating to retail fuel distributors see Attachment I. The next section in this Chapter *Overview of the fuel retailers and wholesaling of fuel* and Chapter 6 further discusses these relationships and arrangements.

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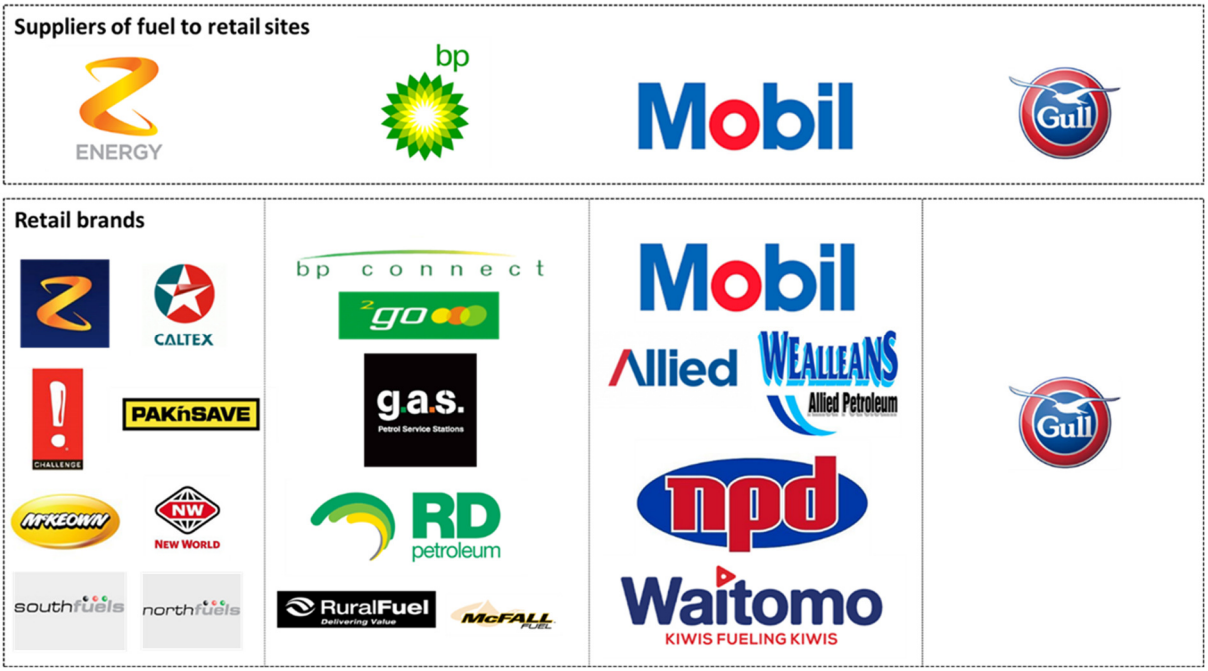
69 For example, see "Gull opens first South Island site, south of Oamaru" <https://www.stuff.co.nz/business/116253459/gull-opens-first-south-island-site-south-of-oamaru>. (Viewed on 25 October 2019).

70 TOSL is a relatively new company, incorporated in October 2016. Its parent company owns Pacific Energy Limited, a key supplier of fuel in some of the South Pacific Islands.

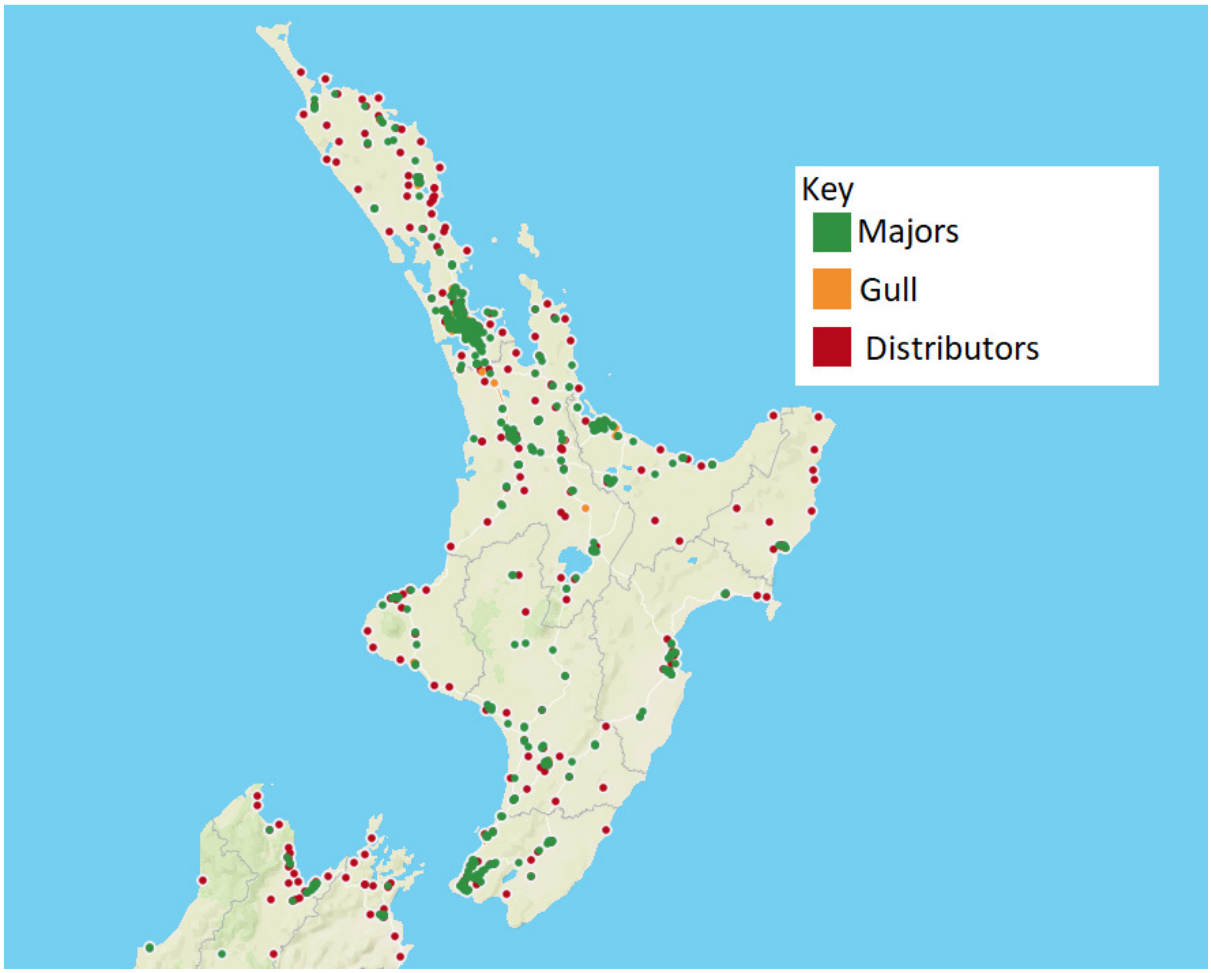
71 Z Energy "Z Energy Submission on the Commerce Commission's market study into the retail fuel sector: Draft report" (13 September 2019) at [100]; BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [8.2] and Scoop "Broad South Island reach for new Timaru fuel terminal" (30 August 2019). Available at <http://www.scoop.co.nz/stories/BU1908/S00864/broad-south-island-reach-for-new-timaru-fuel-terminal.htm>. (Viewed on 23 October 2019).

Figure 2.5 Retail site brands and relationship with fuel importer



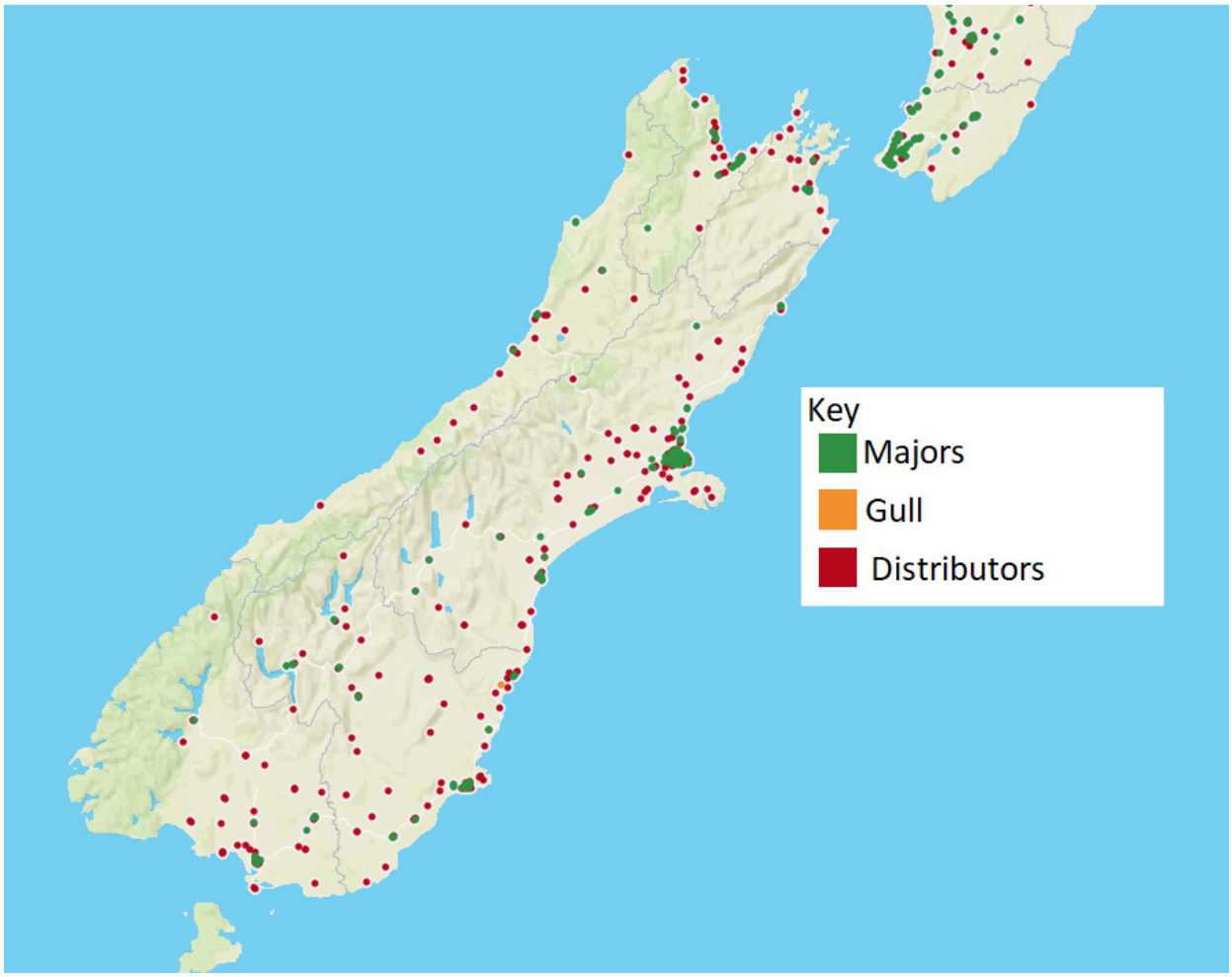
2.37 As shown in Figure 2.6 and Figure 2.7 below, the majors typically operate retail sites in urban centres or along high-traffic routes such as major highways. Distributors' retail sites, on the other hand, tend to be located outside of the most densely populated urban areas.

Figure 2.6 North Island retail fuel sites of majors, Gull and distributors



Source: Commerce Commission analysis of retail site data provided by fuel firms.

Figure 2.7 South Island retail fuel sites of majors, Gull and distributors



Source: Commerce Commission analysis of retail site data provided by fuel firms.

Retail site offerings vary

2.38 Consumers purchase petrol and diesel from retail sites. We estimate there are 1,351 retail sites in New Zealand. About 97% of retail sites sell regular petrol and nearly all sell diesel. Fewer sites sell premium petrol. About 75% sell 95 octane petrol and only 22% sell 98 octane petrol.[72]

2.39 As noted above, retail sites vary in the range and type of products and services provided and the prices they offer, even within brands.

[72] Based on retail site information provided by fuel companies as at March 2019, supplemented by our own research as at October 2019. An additional few hundred truck stop sites are not included. These primarily cater to heavy commercial vehicles, although some also cater to light passenger vehicles. A small number of sites included only sell diesel and may only cater to heavy commercial vehicles.

2.39.1 Service stations provide a full service that could include a convenience store, takeaway food, barista coffee, toilets and/or a car wash. About 84% of retail sites have a convenience store.[73]

2.39.2 Unmanned sites offer no additional services, or very few and provide pay-at-pump facilities. About 16% of retail sites are unmanned[74]

2.40 Fuel stops or truck stops primarily cater to heavier vehicles, such as trucks. Some of these sites are accessible to the public and light passenger vehicles.

2.41 The variation in retail sites and their offerings has emerged from recent investment and innovation. This provides consumers with an expanded set of choices.[75]

2.42 The size of retail sites varies. Each year, some smaller sites (25th percentile) sell around 1.91 million litres of fuel and collect $3.31 million of revenue annually, while some larger sites (75th percentile) sell around 5.38 million litres and collect $10.25 million revenue. The average site sells around 3.68 million litres of fuel and collects $6.86 million of revenue.[76]

Non-price factors influence where motorists buy fuel

2.43 Fuel company research suggests that between a quarter and a half of consumers may be relatively price sensitive and motivated to switch between brands – either looking out for the cheapest prices or actively searching for discounts from loyalty programmes.[77] Up to half of consumers are less price sensitive and value various non-price aspects of the fuel offering more highly than price.[78] However, as noted earlier, overall demand is relatively unresponsive to changes in retail price.

2.44 While many motorists are aware of fuel prices, market research shows that:

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73 This is based on a sample of 1,249 retail sites for which we have information, provided to us by fuel companies.

74 This is based on a sample of 1,249 retail sites for which we have information, provided to us by fuel companies. Note that a small number of sites that have a convenience store may also operate as an unmanned site at night (and offer a 24-hour service).

75 See Z Energy "Market study into the retail fuel sector: Z Energy's response to invitation to comment on preliminary issues" (February 2019) at 34; BP "Market study into the retail fuel sector – BP New Zealand comment on preliminary issues" (February 2019) at 3 and BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [3.3] and [3.20].

76 Price per litre of fuel sold (revenue divided by volume) varies between sites. This partly reflects that the proportion of diesel, regular petrol and premium petrol sold varies between sites and each of these fuels is sold at different prices. These estimates of litres of fuel sold and associated revenue are based on a sample of 395 retail site observations over 2018. This retail site information was provided by fuel companies.

77 [ ]

78 [ ]

2.44.1 convenience of location is more important than price for many, if not most, consumers choosing where to fill up their car.[79] Convenience of location can incorporate both the proximity of the retail site to consumers when they need to fill up their car and whether the retail site is in a prime location (eg, main road that is easily accessible); and

2.44.2 consumers generally realise that different brands of the same fuel grade are very similar.[80] When purchasing fuel, there is less of a need to compare quality or make price-quality trade-offs in the way consumers might when buying other products, such as a household appliance.

2.45 Nonetheless, there are several reasons why motorists may choose one retail site over another that are unrelated to location, the fuel, or price. These include:[81]

2.45.1 forecourt features (ranging from service stations with attendants and canopies to unmanned sites where customers fill up themselves);

2.45.2 shop features, including the variety and quality of food and drink choices;

2.45.3 ease of purchase (eg ease of payment, fast in and out);

2.45.4 attractiveness of the loyalty programme on offer including benefits offered other than discounts on fuel prices; and

2.45.5 branding and connection with the brand.

2.46 Individual customers will place different weight on each of these factors. Individuals' preferences for using a retail site at a particular location or with particular features may also depend on the time of day or day of the week. We discuss the range of motivations behind consumers' fuel purchases further in Chapter 7.

Discount and loyalty programme offerings are widespread

2.47 The actual retail price paid for fuel reflects any discounts or other promotions offered. This includes discounts targeted at households, such as those offered through AA Smartfuel, supermarket discount vouchers, and firms' own discount programmes such as Mobil Smiles. We refer to these collectively throughout this report as "discount and loyalty programmes".

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79 [ ]; [ ] and [ ]

80 This includes premium fuel which market research concludes there to be little brand preference attached to. [ ].

81 For example [ ]; [ ] and [ ]

2.48 The Australian Competition and Consumer Commission (ACCC) has categorised discount and loyalty programmes into three main types.[82]

2.48.1 Coalition schemes (with multiple partners) – schemes which bring together a variety of partners under one programme, and generally allow members to earn and redeem points with a number of different merchants across the economy.

2.48.2 Standalone schemes (with no partners) – which generally do not have a variety of different partners participating in the programme and cover only the products or services of the business operating the scheme.

2.48.3 Member benefit schemes - schemes in which members may be provided access to discounts, exclusive offers, VIP events, competitions and gifts, often through a member portal or an instant discount on purchases. Discounts may extend to products unrelated to the goods or services sold by the loyalty scheme operator, such as gift cards, movie tickets, accommodation, experiences and dining.

2.49 Each of the majors has either established their own discount and loyalty programme and/or is a partner in one and there is at least one New Zealand retail fuel discount and loyalty programme in each of the broad categories identified by the ACCC. In New Zealand, discount and loyalty programmes such as AA Smartfuel, Fly Buys and Airpoints are coalition schemes.

2.49.1 AA Smartfuel customers can earn fuel discounts at merchants that are partners in the programme and can avail themselves of the discounts at BP and GAS branded stations. One of the key merchant partners where fuel discounts can be earned in the AA Smartfuel programme is Woolworths NZ which operates the Countdown chain of supermarkets in New Zealand.[83]

2.49.2 Fly Buys and Airpoints customers can earn fuel discounts and reward points via purchases at Z Energy fuel stations and redeem their points on purchases with merchants who are partners in the programmes.

2.50 The Mobil Smiles and the My Challenge programme have characteristics of the standalone schemes referred to by the ACCC. Consumers can claim fuel discounts and earn reward points when they buy fuel and can redeem them on in-store purchases at Mobil retail sites.[84]

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82 ACCC "Customer Loyalty Schemes – Draft Report" (September 2019) at 7.

83 See <https://www.aa.co.nz/aasmartfuel/>, <https://www.airnewzealand.co.nz/airpoints> and <https://www.flybuys.co.nz/> (Viewed on 17 November 2019).

84 See <https://www.mobilsmiles.co.nz/> and <https://mychallenge.co.nz/> (Viewed on 17 November 2019).

2.51 Supergold cards and Greypower cards are member benefit schemes. They allow members to receive fuel discounts at some retailers (e.g. Challenge, NPD) and may also provide benefits to members at non-fuel merchants.[85]

2.52 In addition to these discount and loyalty programmes, supermarket dockets enable consumers to receive fuel discounts at some fuel retailers as well. Consumers can redeem FuelUp vouchers earned at Foodstuffs supermarkets (Pak N' Save and New World) at Z Energy retail sites.[86] Progressive and Woolworths (Countdown) supermarket dockets can both be redeemed at NPD retail sites.

2.53 In Chapter 7 we discuss the range of costs and benefits that discount and loyalty programmes provide for both retailers and consumers, as well as the effects that we consider they may be having on competition in retail markets. The competition effects of a discount and loyalty programme can depend on whether it is a standalone, coalition or member scheme. Where relevant in this report, we take into account the type of scheme when assessing its effect on competition in retail fuel markets.

2.54 The majors (and other smaller retailers) also offer discounts on company branded fuel cards, which are targeted at, and sometimes restricted to, businesses. We refer to these as fuel cards. Fuel cards require a PIN to use and they enable fuel to be purchased on credit.

2.55 We discuss and compare discount and loyalty programmes and fuel cards in more detail below.

Discount and loyalty programmes

2.56 The discount and loyalty programmes targeted at households have a large range of terms, conditions and reward options. For instance, discounts provided under the AA Smartfuel scheme can either be redeemed immediately or accumulated over multiple purchases within a given time period for a larger discount before the discounts expire.

2.57 All discount and loyalty programmes are free to join and consumers can participate in any number that they choose. It is common for consumers to participate in multiple programmes. Fuel company research suggests that consumers may multi-home, purchasing fuel using multiple discount and loyalty programmes and are not necessarily loyal to one programme.[87]

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85 See <https://www.supergold.govt.nz/> and <https://greypower.co.nz/benefits/> (Viewed on 17 November 2019).

86 See <https://www.fuelup.co.nz/home/service-stations/> and <https://www.npd.co.nz/fuel-discount-offers/supermarket-dockets/> (Viewed on 17 November 2019).

87 [ ]

2.58 There are about 2.8 million Fly Buys cardholders across 80% of New Zealand households,[88] 3.2 million Air New Zealand AirPoints (AirPoints) members,[89] and 2.6 million registered AA Smartfuel cardholders.[90] These numbers suggest a large degree of overlap between participating consumers and tend to confirm that many households may use more than one discount and loyalty programme when purchasing fuel.

2.59 There appear to be a few million active participants across the Fly Buys, AirPoints, AA Smartfuel and Mobil Smiles discount and loyalty programmes, although for the reasons described above, this is unlikely to represent unique customers.[91]

2.60 Figure 2.8 below provides an overview of the range of discount and loyalty programmes on offer.

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88 See <https://www.loyalty.co.nz/about-us/>. (Viewed on 25 October 2019).

89 See "Is it time to scrap frequent flyer programmes like Airpoints to combat the climate crisis?" <https://www.stuff.co.nz/travel/news/116765608/is-it-time-to-scrap-frequent-flyer-programmes-like-airpoints-to-combat-the-climate-crisis>. (Viewed on 16 August 2019).

90 AA Smartfuel "Feedback on working paper – Focus areas" (25 July 2019).

91 This is based on 2018 estimates of [ ] active users of FlyBuys and Airpoints at Z Energy sites, [ ] users of AA Smartfuel cards at Caltex sites and [ ] at BP sites, and [ ] registered Mobil Smiles users. [ ]; [ ]; and [ ]

Figure 2.8 Overview of discount and loyalty programmes

Scheme	Participant/s	Typical discounts; min/max spend	Other rewards
AA Smartfuel* *(est 2011)*	bp, gas.	– 6 cpl, occasionally 10 cpl – Min $40, max 50L	– Fuel discounts can be accumulated, but subject to expiry – BP has removed the minimum $40 spend, if the discount is redeemed and not accumulated
Countdown Onecard (linked to AA Smartfuel) *(est 2016)*	bp, gas.	– 3 cpl on $100/week supermarket shop – 6 cpl on $200/week supermarket shop – Min $40, max 50L	– Fuel discounts in addition to AA Smartfuel discount – BP has removed the minimum $40 spend, if the discount is redeemed and not accumulated
Pumped – Flybuys *(est 2016)*	Z Energy, Caltex	– 6 cpl, occasionally 10 cpl – Min none, max 50L	– Flybuys points accumulated, which can be used to purchase products at participating retail outlets – Fuel discounts can be accumulated ("stacked") for a larger discount later, subject to $40 minimum spend
Pumped – Airpoints *(est 2016)*	Caltex	– 6 cpl, occasionally 10 cpl – Min none, max 50L	– Airpoints accumulated, which can be used towards Air New Zealand flights – Fuel discounts can be accumulated ("stacked") for a larger discount later, subject to $40 minimum spend
Pumped – New World and Pak' n Save Fuel vouchers** *(Z since 2018, previously Mobil)*	Z Energy	– 6 cpl, occasionally higher, including offers of up to 40 cpl when spending $200 at Pak' n Save or New World – Min none (but a min spend of $1 at supermarket to receive FuelUp voucher), max 100L	– Flybuys points or Airpoints can be accumulated if scanned when using FuelUp voucher
Mobil Smiles *(est 2017)*	Mobil	– 6 cpl, occasionally 10 cpl – Min $40, max 100L	– Mobil Smiles points accumulated, which can be redeemed for fuel savings and products in a Mobil store
My Challenge *(est 2018)*	Challenge	– 6 cpl minimum – Min $40	– Points earned which can be redeemed in a Challenge store or donated to charities, schools, etc

Woolworths New Zealand / Foodstuffs	**Progressive and Foodstuffs dockets**	npd	– Up to 12 cpl regardless of the docket, max 200L – NPD voluntarily chooses to honour these vouchers	– Discounts cannot be combined with other offers
SuperGold	**SuperGold card**	Challenge, npd	– Challenge: 6 cpl or between 8-15cpl if signed up to My Challenge, no min, max 100L – NPD: up to 15 cpl, No min, max 200L	– No accumulation
	Grey Power card	Challenge	– 6 cpl, or between 8-15cpl if signed up to My Challenge – Min none, max 100L	– No accumulation
Farmlands co-operative	**Farmlands card**	Z Energy, Caltex, Challenge	– 12 cpl (as a rebate on a Farmlands account)	– Farmlands reward points accumulated

Source: Commerce Commission analysis based on publicly available sources.
* From 1 August 2019, GAS replaced Caltex as an AA Smartfuel participant. Prior to this, only BP and Caltex retail sites accepted AA Smartfuel.
** Pak N' Save and New World fuel vouchers can also be redeemed at a small number of third party retail sites displaying the FuelUp logo. These sites are in areas where Z Energy does not have a retail site and has enabled other retail sites to accept FuelUp vouchers.

Fuel cards targeted at SMEs

2.61 Fuel cards provide access to fuel at a discounted price at multiple retail sites including the card issuers' own sites and often sites operated by affiliated retailers. Fuel cards offer discounts on fuel like the discount and loyalty programmes described above, but they also provide a range of other benefits to businesses.

2.62 A fuel card is like a credit card and requires a PIN to use. Instead of paying cash or charging a credit card, a fuel card charges a fuel purchase to the card holder's account. Fuel cards typically have no volume limits and consolidate all fuel purchases into a single monthly invoice. This simplifies accounting for businesses. For example, 'Z card' enables the invoice to be directly fed into Xero accounting software.[92] A business may also limit the types of product purchased on a fuel card. This helps limit the card's use by employees to business expenses only, for example by excluding the purchase of food or cigarettes. A business can also arrange for purchases on two or more fuel cards to be aggregated on a single invoice.

2.63 SMEs have identified discounts and convenience (including "one bill for all fuel/vehicle expenses") as the two main benefits of fuel cards.[93]

2.64 The discounts available on fuel cards differ significantly between users depending on the fuel volumes they purchase and their relationship with the card issuer. Not all fuel card discounts are publicly disclosed. Some examples of fuel card discounts range from 12-16 cpl.[94] Some fuel cards charge users a fee, although this is typically small.

2.65 Fuel card volumes represent a significant proportion of sales volumes through retail sites. Overall, fuel card volumes appear to represent around 30% of retail sales.[95] We note that the importance of fuel card sales can vary considerably across individual sites. Our analysis of sales data suggests fuel card sales can be as low as 10% of volumes at some retail sites, but as high as 70% at others.[96]

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92 See <https://business.z.co.nz/seamless-payments/#xero-integration>. (Viewed on 16 August 2019).

93 [ ]

94 For example, see <https://store.nzfarmsource.co.nz/partnerships/fuel-partners> and Ruralco "Fuel Directory" available at:< https://www.ruralco.co.nz/Fuel-Energy/Fuel-Directory>. Note that fuel card discounts can be offered on the board price or a 'national' list price.

95 [ ]; [ ]; [ ]; and [ ]

96 [ ]; [ ]; [ ]; [ ]

Comparison between discount and loyalty programmes and fuel cards

2.66 There are some similarities between discount and loyalty programmes and fuel cards. Both provide incentives to use affiliated retail sites more frequently, and both offer discounted prices for fuel. However, there are also some key differences.

2.66.1 Fuel cards enable deferred payment for fuel purchases and other goods, and allow the type of products and spending limits to be set and customised by the company using the card. Discount and loyalty programmes do not offer these functions.

2.66.2 Discounts offered on fuel cards may be customised by the supplier depending on the value of the customer's relationship to the card issuer, while discount and loyalty programmes tend to offer standardised discounts across all card holders.[97]

2.66.3 A fuel card user's loyalty to a retail brand (or its affiliated sites) appears to be much stronger than the loyalty of household consumers participating in discount and loyalty programmes.[98]

2.66.3.1 Unlike discount and loyalty programme cards, the convenience benefits to a fuel card user are stronger when one card brand is used and invoicing is on one account.

2.66.3.2 Most SME fuel card users only hold one card and choose to remain with the same card provider for a number of years. A card holder's company policy typically requires the employee to use the card whenever possible.[99]

The number of retail sites has increased over recent years

2.67 The number of retail sites throughout the country has increased over recent years, expanding consumer choice and the variety of retail service choices. Based on site data provided to us, there has been a net increase of 88 retail sites since 1 January

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97 The formula for calculating the fuel prices on fuel cards varies. For some larger businesses, who have negotiated individual deals with the fuel card issuer, they may pay prices linked to MOPS. Other fuel card users may pay prices calculated from the board price or a national price.

98 For example, [ ]; [ ]; and [ ]

99 We draw these conclusions from fuel company research relating to the use of fuel cards by SMEs. [ ] Z Energy submitted that in its experience, fuel card customers hold more than one card and are particularly price conscious. This is inconsistent with fuel company research relating to the use of fuel cards by SMEs. Z Energy "Z Energy Submission on the Commerce Commission's market study into the retail fuel sector: Draft report" (13 September 2019) at [120].

2016 to October 2019 (from 1,263 to 1,351).[100] This includes an additional 97 sites established under non-major brands (including new site builds and brand switches) and a reduction of nine sites under majors' brands.

Newly built retail sites

2.68 In recent years, there has been a significant increase in the number of newly built retail sites.[101]

2.68.1 Gull has opened 20 new sites since January 2016; and

2.68.2 Brands distributing and retailing Mobil fuel have been particularly active in building new sites. NPD Limited (NPD), Waitomo Petroleum Limited (Waitomo), and Allied Petroleum Limited (Allied) have built around 19, 17 and 7 sites respectively, since January 2016.

2.69 Z Energy notes that over the last year, 35 newly built sites have been added across the retail fuel industry and of these, 32 are unmanned sites.[102] Z Energy also reports that there are up to 60 new-to-industry retail sites (4% more capacity) to be built over the next three years across all brands.[103]

Increase in the number of retail sites operating under distributors' brands

2.70 Since January 2016, the number of sites operating under the majors' brands has changed marginally, with the exception of Z Energy which divested 20 retail sites over this time.[104]

2.71 Z Energy has suggested that the majors prefer network rationalisation through the closure or upgrade of a retail site rather than the sale of a retail site as a going concern. It noted that collectively, the majors have added two sites between 2013 to 2018.[105]

2.72 By contrast, Gull and some distributor brands, particularly those brands supplied by Mobil, have expanded their retail presence in recent years. Waitomo submitted during the study that it "is in rapid expansion mode" and that by September 2019 it

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100 As at October 2019, based on retail site information provided by fuel companies and our own research. A small number of these sites may only sell diesel and cater to heavy commercial vehicles.

101 Based on retail site data provided by fuel companies.

102 Z Energy "Investor Presentation on Z Energy and NZ downstream fuel market" (May 2019) at 10.

103 This is based on review of resource and building consents, as concluded by informed sources and Z Energy's internal estimates. Z Energy "NZX:ZEL Investor Day 2019 Thursday, 1 August 2019" (1 August 2019) at 7.

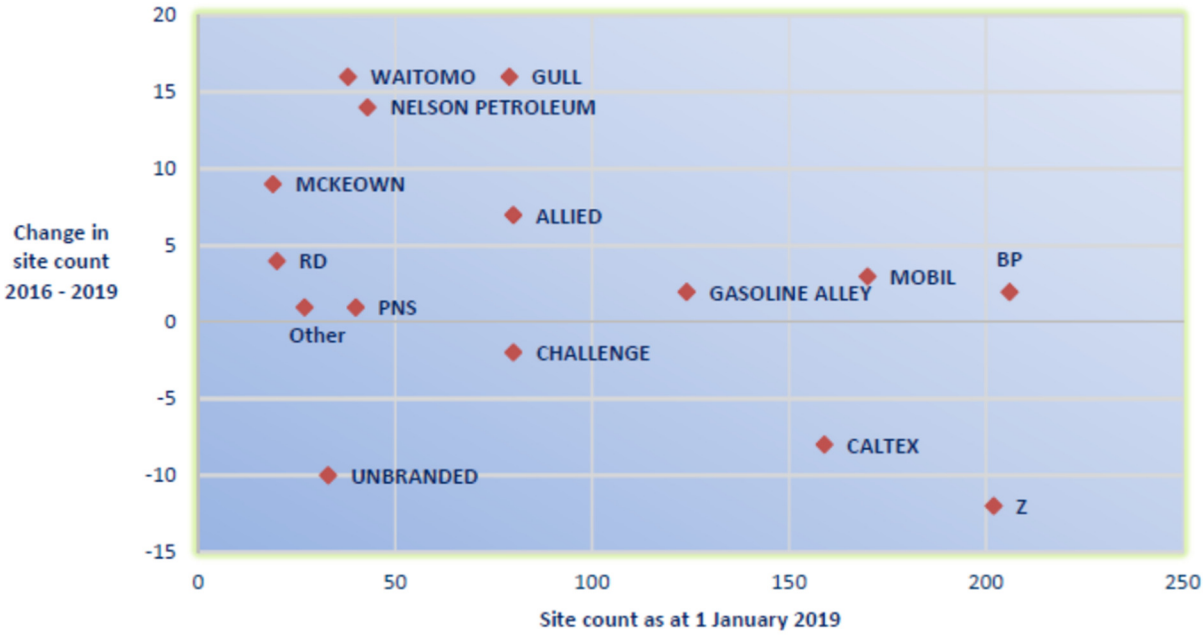
104 Twenty divestitures were required under the Z/Chevron merger decision (19 service stations and one truck stop). Seven went to Mobil, four went to BP, four went to Waitomo, two went to GAS, two went to NPD and one went to Allied.

105 Z Energy "Investor Presentation on Z Energy and NZ downstream fuel market" (May 2019) at 10.

would have opened 7 sites this year, with others in development, including its first site in the South Island.[106]

2.73 Changes in retail site count by brand between 2016 and 2019 are shown in Figure 2.9 below.

Figure 2.9 Total and change in site count by brand (1 Jan 2016 to 1 Jan 2019)[107]



Source: Z Energy "Market study into the retail fuel sector: Z Energy's response to invitation to comment on preliminary issues" at 3.

2.74 Gull and other growing distributors such as Waitomo, Allied, and NPD together have increased the number of their branded retail sites at a greater rate than the majors, and have increased their share of total fuel volumes sold at the expense of the majors.

2.75 In August 2019, Z Energy reported that on its estimate there were 760 sites carrying brands outside of the majors', representing 60% of the number of sites in the industry and that these sites accounted for 20% of petrol demand, up from 11% in 2011. This is shown in Figure 2.10 below.

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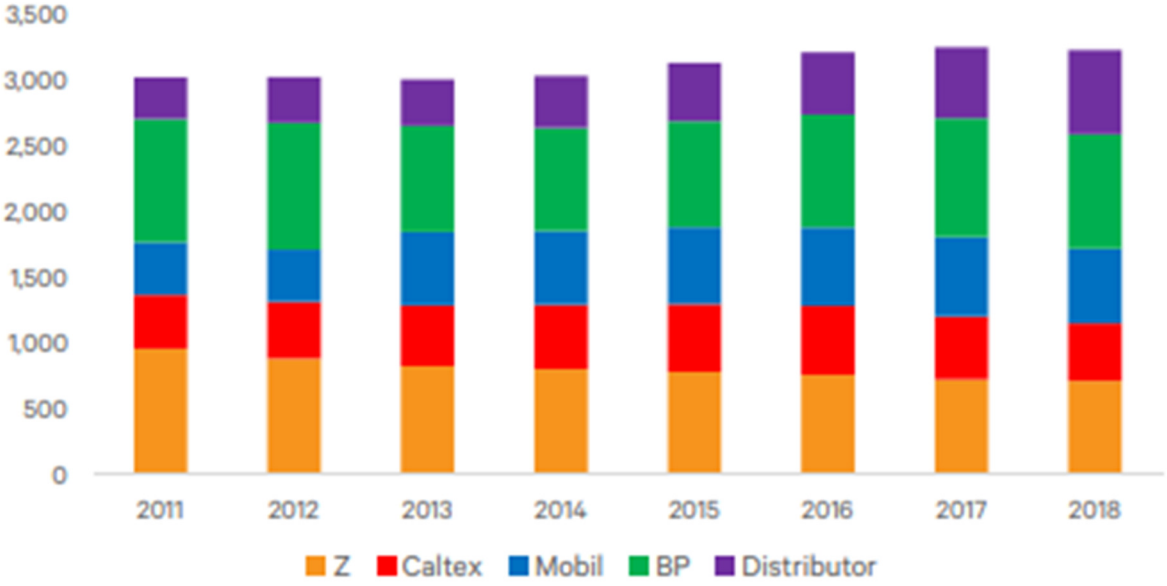
106 Waitomo "Written comment on the Market Study into the retail fuel sector – Draft Report" (13 September 2019) at [2.5].

107 The 1,320 retail sites represented in this figure is slightly less than the 1,351 retail sites we cited at paragraph 2.67. This is due to a slightly different make up of sites (for example, the inclusion or exclusion of some truck stops and non-branded sites. In addition, the time period differs slightly (January 2019 compared to October 2019). The data provided in this figure was provided by Z Energy. BP provided similar data in its submission on our draft report. BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at figures below [3.18].

Figure 2.10 Petrol Volumes (mL) as at 1 August 2019



Source: Z Energy "NZX: ZEL Investor Day 2019 Thursday, 1 August 2019" (1 August 2019) at 7.

2.76 BP acknowledged the growth of distributors' retail presence in recent years. In its submission on our draft report, BP cited evidence showing distributors' market shares in three key South Island regions had steadily increased over the past two years to August 2019, while that of the majors had declined.[108]

2.77 While there are a growing number of retail sites that are not owned by the majors, as noted above, the fuel supplied at all retail sites ultimately originates from one of the four importers by direct supply to the retail site, or indirectly through a distributor.

2.78 The roles of the majors, Gull, distributors and dealers, the relationships between them, and the supply of fuel to retail sites is discussed in more detail in the next section.

Overview of the fuel retailers and wholesaling of fuel

2.79 The fuel industry can be characterised as a vertically integrated oligopoly.

2.79.1 Each of the majors and Gull are vertically integrated - they are fuel wholesalers and they own some of their own branded retail fuel outlets.

2.79.2 Each of the majors also has long-term stable wholesale supply relationships with distributors and/or dealers which gives rise to similar effects as vertical integration.

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[108] BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [3.16]-[3.17].

2.80 This section contains sub-sections describing that:

2.80.1 the majors are large integrated firms with interests throughout the fuel supply chain;

2.80.2 Gull is currently the only independent fuel importer; and

2.80.3 apart from Gull branded retail sites, the fuel sold at all retail sites originates from one of the majors.

The majors are large integrated firms with interests throughout the fuel supply chain

2.81 The majors – Z Energy, BP and Mobil – are large integrated fuel firms with interests throughout the fuel supply chain in New Zealand.

2.81.1 Each major owns shares in the refinery and they each import crude oil for refining and in combination draw all the refinery's output. The majors also share use of the Refinery to Auckland (RAP) pipeline, coastal shipping and storage terminals at ports around the country.

2.81.2 BP and Mobil also have offshore assets, but Z Energy does not.

2.82 The majors' brand presence in service stations and unmanned sites is currently around:[109]

2.82.1 203 Z Energy branded sites and 138 Caltex branded sites (which form part of Z Energy's portfolio of assets);

2.82.2 213 BP branded sites; and

2.82.3 173 Mobil branded sites.

2.83 Together, these sites operating under the majors' brands represent about 54% of the total 1,351 retail sites we have estimated.

2.84 There are a further few hundred truck stops operating under these brands.

2.85 Some of these sites are owned and operated by the relevant major (or their agent), while others are dealers – they carry the brand of one of the majors but are owned and operated by individual owners.

2.86 In addition to the majors' branded retail sites, there are distributors that also operate at the retail level that are reliant on wholesale fuel supply from one of the major fuel firms. This was highlighted in Figure 2.5 above.

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[109] Commerce Commission analysis of data received from industry participants, as at March 2019. We are aware of a small number of sites carrying a major's brand that are owned/operated by a distributor. [ ]

Z Energy comprises assets previously owned by Shell and Caltex

2.87 Z Energy is listed on the New Zealand and Australian stock exchanges. It comprises of some of the former assets of Shell New Zealand (Shell) and Chevron New Zealand (Chevron). Chevron owned the Caltex brand. Both Shell and Chevron previously had interests throughout the supply chain.[110]

2.88 Z Energy was formed following the purchase of Shell's New Zealand downstream business by Infratil Limited and the Guardians of the New Zealand Superannuation Fund in 2010.[111] The new owners of Shell changed the strategy of the firm. Key changes included:

2.88.1 Shell being rebranded as Z Energy in 2011;

2.88.2 Z Energy changing its service stations to create a premium offer with services such as forecourt attendants and pay-at-pump;[112] and

2.88.3 Z Energy engaging in a strategy to raise industry margins, having publicly stated the desire to do so.[113]

2.89 In June 2016, Z Energy acquired Chevron from Chevron South Asia Holdings Pte. Ltd. This acquisition was cleared by the Commerce Commission, contingent on Z's divestment of 19 service stations and one truck stop.[114] This acquisition resulted in Z Energy adding Chevron's Caltex branded sites to Z's portfolio of assets.

The majors have operated in New Zealand for many decades

2.90 The majors and their antecedents have operated in the New Zealand fuel market for many decades.

2.90.1 Mobil has had interests in supplying fuel products in New Zealand since 1896, while BP entered in 1946 through a joint venture with the New Zealand Government. BP and Mobil are part of global, vertically integrated firms.[115]

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110 Shell and Chevron were involved in exploration and extraction of crude oil (through their global parents). However, Z Energy did not purchase Shell and Chevron's exploration assets and it is not involved in exploration or extraction of crude oil.

111 Z Energy was listed on the New Zealand and Australian stock exchanges in 2013.

112 *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10 at [170].

113 Ibid, at 110.

114 The Majority (Dr Mark Berry, Sue Begg and Anna Rawlings) cleared the merger. Dr Walker dissented from the decision to give clearance. *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10 at [X3]-[X4].

115 BP New Zealand Holdings Limited is the parent company of BP. ExxonMobil New Zealand Holdings is the parent company of Mobil. BP's ultimate parent is BP p.l.c. Mobil's ultimate parent is Exxon Mobil Corporation.

2.90.2 Shell and Chevron (which now comprise Z Energy) and Europa (acquired by BP in the 1970s) were also early entrants in the New Zealand petroleum products market, entering in 1912, 1920, and 1931 respectively.[116]

2.90.3 BP, Mobil, Shell, Caltex and Europa were all importers of refined fuel from their overseas parents until the Marsden Point refinery was completed in 1964. The refinery was established as a joint venture between these five participants and the New Zealand Government and provided for crude oil to be imported and refined in New Zealand.

2.91 For many decades, the majors have been large shareholders and the only users of the refinery and they have individually and jointly owned most of the infrastructure used to distribute, store and supply fuel to retail customers in New Zealand. They share infrastructure, governed by a series of ownership and contractual arrangements. This infrastructure includes coastal shipping vessels which deliver fuel from the refinery to storage terminals, storage terminals, and pipelines. Ultimately, fuel refined or imported by the majors is delivered to the majors' own retail sites as well as retail sites owned by distributors and dealers.

2.92 These infrastructure sharing arrangements are discussed further below from paragraph 2.111.

Historic origins of the majors' infrastructure sharing and wholesale relationships

2.93 The sharing of infrastructure among the majors dates back to a period when the fuel industry was highly regulated. From the 1960s the majors and their antecedents had an agreement with the Government to use the refinery to its maximum feasible level, and to cooperate over the coastal shipping system.[117] Firms faced identical unit costs of coastal shipping because the total cost to all ports was allocated in proportion to their individual offtakes from the refinery.[118]

2.94 In addition, prior to deregulation, the wholesale price of fuel was regulated with the aim of returning a 13% return to importers, who were prevented from directly retailing. Retail sites were independently owned by parties that were supplied fuel by the majors at regulated prices. Some majors already had distribution contracts in place with separate firms that are still active participants in the fuel industry today. This includes NPD, which was established in 1966 and today owns/operates its own retail fuel sites.

2.95 The constraint on vertical integration into the retail sector was removed with deregulation in 1988. The majors subsequently acquired a large proportion of retail

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116 Europa was also an early entrant wholesaling petroleum products in New Zealand (1931). Europa was acquired by BP in 1972 (40%) and 1977 (the remaining 60%).

117 Michael Pickford and Cameron Wheeler "The petrol industry: Deregulation, entry and competition" (2001) *NZ Trade Consortium Working Paper No. 12* at 8.

118 Clough et al. (1989, p. 17) as reported by Ibid at 11.

sites, particularly high volume sites, and entered into long-term supply contracts with other distributors and dealers.[119] There were around 3,000 retail sites in 1985. This compares to around 1,200 in 2012,[120] and over 1,300 today.

2.96 Vertical integration of the fuel industry, and relationships with a similar effect to vertical integration, were therefore implemented partly through ownership and partly through long-term wholesale supply contracts. Wholesale trading of fuel was governed by these long-term contracts. This largely continues today. We discuss wholesale supply contracts further in Chapter 6.

2.97 Since deregulation, there has been some wholesale consolidation. This includes the acquisition of Chevron by Z Energy. New retail brands have also emerged, facilitated by the wholesale supply arrangements established between the majors and distributors.

Gull is currently the only independent fuel importer

2.98 Gull is a supplier of refined fuel that entered the market in 1998 as a fully vertically integrated supplier, importing refined fuel rather than refining it in New Zealand. Gull is currently the only independent importer – all other fuel retailers are dependent on fuel that originates from one of the majors.

2.99 Gull has its own storage terminal in Mount Maunganui, which opened in 1999.[121] It lands imported refined fuel here and then distributes this fuel to its network of retail sites. In October 2019, there were 91 Gull branded retail sites throughout the North Island and one in the South Island. These retail sites include:

2.99.1 sites that Gull owns/operates and at which Gull sets the price; and

2.99.2 sites that are owned and operated by individuals. These dealers are supplied with fuel by Gull, but Gull does not set the retail price. Dealers set their own retail prices.

2.100 In 2017, Caltex Australia Limited acquired Gull New Zealand Limited through CAL Group Holdings NZ Limited. Caltex Australia Limited has retail operations in

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119 Michael Pickford and Cameron Wheeler "The petrol industry: Deregulation, entry and competition" (2001) *NZ Trade Consortium Working Paper No. 12* at 15. It has also been suggested that the majors tried to place first right of refusal clauses into supply contracts with retailers before deregulation. Motor Trades Association, quoted in Clough et al. (1989, p. 38) as reported by Pickford and Wheeler (2001) at 28.

120 Z Energy "The downstream fuels industry: Strongly competitive or operating with uncertainty?" <https://z.co.nz/about-z/news/submissions-and-presentations/the-downstream-fuels-industry-strongly-competitive-or-operating-with-uncertainty/>. (Viewed on 8 March 2012) at 5.

121 Max Bradford "Opening of Gull (Terminals NZ Ltd) Petroleum Tank Farm" (20 April 1999) <https://www.beehive.govt.nz/speech/opening-gull-terminals-nz-ltd-petroleum-tank-farm>. (Viewed on 16 August 2019).

Australia and is not related to the Caltex brand that is used in New Zealand. That brand is owned by Z Energy.

Alongside Gull's entry, Challenge attempted independent entry to the retail fuel markets

2.101 Alongside Gull's successful entry in 1998, Challenge (a division of Fletcher Challenge Energy Ltd) entered the fuel market by importing refined fuel and opened a network of retail sites. Challenge and Gull were the first new suppliers of refined fuel after deregulation of the industry in the 1980s.[122] At this time, Challenge assessed the viability of accessing the refinery, but decided not to pursue this.[123] Challenge was later acquired by Caltex in 2003.[124]

2.102 Today, Z Energy owns the Challenge brand having acquired it from Chevron in 2015. Challenge sites are typically dealer sites, whose owners set the retail price. Challenge branded sites are supplied by distributor Farmlands Fuel (a division of Farmlands Co-operative Society Limited), which is in turn supplied by Z Energy.

Apart from Gull branded retail sites, the fuel sold at all retail sites originates from one of the majors

2.103 There are broadly three categories of retail sites. These are set out below.

Importer owned and operated retail sites

2.104 The majors and Gull each supply fuel to their own branded retail sites, which they own and operate themselves or through an agent. They also set the price at these sites. This comprises of:

2.104.1 around half of BP sites (namely, "BP Connect" Sites);

2.104.2 almost all Z Energy sites and a handful of Caltex sites;

2.104.3 around two thirds of Mobil sites; and

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122 Soon after, Melbourne-based Liberty Oil announced its intentions to enter the New Zealand retail fuel market but did not do so. For example, see "Liberty Oil deal leaves queries" <https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=137493>. (Viewed on 9 August 2019).

123 Refining NZ notes that Challenge's decision not to become an additional refinery customer was on the basis that it was not attractive to take the full slate of products from the refining operation and Challenge was only interested in retail fuel supply. Refining NZ "Response by Refining NZ to the New Zealand Commerce Commission's preliminary issues paper for the retail fuel market study" (21 February 2019) at [8.3] and Transcript of "Meeting with NZRC 30 April 2019" at 21-22 (line 39-50). At the refinery, each barrel of crude refined produces a mix of different refined products, including petrol, diesel, aviation fuel and other products. Fuel firms cannot select only some of these products.

124 Commerce Commission "Decision No. 434: Caltex New Zealand Limited and Challenge Petroleum Limited" (28 June 2001). As Caltex was a joint venture company between two other US oil companies, Texaco Inc and Chevron Corporation, who subsequently merged, Challenge was ultimately owned by Texaco Inc and Chevron Corporation.

2.104.4 around two thirds of Gull sites.

2.105 We estimate that approximately 57% of retail fuel by volume in New Zealand is sold through importer owned and operated retail sites.[125]

Importer-branded, dealer-owned retail sites

2.106 The majors and Gull each supply fuel to dealer-owned retail sites that carry the brand of the major or Gull but are owned and operated by individual owners who generally set the retail price. The owners of dealer-owned retail sites tend to have long-term wholesale supply agreements with the importer that supplies them.[126] These importer-branded, dealer-owned retail sites comprise of:

2.106.1 around half of BP sites (namely "BP 2GO" sites);

2.106.2 almost all of Caltex sites;

2.106.3 around one third of Mobil sites; and

2.106.4 around one third of Gull sites.

2.107 We estimate that approximately 27% of retail fuel by volume in New Zealand is sold through importer-branded, dealer-owned retail sites.[127] Consequently, when this group is combined with importer owned fuel sales discussed above, around 84% of retail fuel sold in New Zealand is sold through sites carrying an importer's brand.

Retail sites owned or supplied by distributors, or independently branded retail sites owned by an independent retailer

2.108 The majors each supply fuel to distributors, who purchase fuel from one of the majors on a wholesale basis, at the terminals. Distributors then on-sell the fuel they purchase in bulk to commercial customers and/or through a network of truck stops and retail sites that carry their brand and/or to other independently operated dealer-owned retail sites. Majors also supply separately branded retailers, like Foodstuffs. Most distributors have had ongoing business relationships in some form with a single major fuel firm for decades.

2.108.1 Distributor branded retail sites include: Waitomo, NPD, Allied, Gasoline Alley Services Limited (GAS), RD Petroleum Limited (RD Petroleum), McFall Fuel Limited (McFall), Challenge (which is delivered fuel by the distributor Farmlands), Southfuels Limited (Southfuels), and McKeown Group Limited (McKeown). Each of these distributors is described in Attachment I.

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125 Commerce Commission analysis of industry participants' internal documents.

126 See Chapter 6 for further information on supply agreements between dealers and importers. A small number of these dealers do not set the retail price and receive commission for selling at a price set by the importer under agency agreements.

127 Commerce Commission analysis of industry participants' internal documents.

2.108.2 In some instances, distributors' branded retail sites may be dealer-owned retail sites, meaning that they carry the brand of the distributor but they are owned and operated by individual owners who set the retail price.[128]

2.108.3 Foodstuffs is similar to these distributors, with its own Pak N' Save and New World branded retail sites. Foodstuffs provides its supermarket customers with shopper dockets that enable them to obtain discounts at selected retail sites. Foodstuffs retail sites sell fuel currently supplied by Z Energy and its shopper dockets can be redeemed at Z Energy and Caltex retail sites.

2.109 We estimate that approximately 16% of retail fuel by volume in New Zealand is sold through retail sites owned or supplied by distributors or through Foodstuffs.[129]

2.110 Distributors and dealers may be granted access to a major's branded fuel card and discount and loyalty programme(s). Fuel card sales can account for a large share of a retail site's sales and therefore provide an important source of revenue for many distributors and dealers. Majors control the acceptance of their fuel cards and can choose whether to provide value to dealers by granting them the ability to accept fuel cards.

The fuel supply chain

2.111 In previous sections we have noted that the majors are large integrated fuel firms with interests throughout the fuel supply chain in New Zealand, individually and jointly owning most of this infrastructure alongside the refinery.

2.112 In this section, we outline the stages of the fuel supply chain and provide more detail on the infrastructure used to distribute and store fuel, as well as to supply it to commercial customers, distribute it to retail sites, and ultimately on-sell it to retail customers.

2.113 Figure 2.11 below illustrates the key steps in the supply chain for petrol and diesel and the various industry participants' roles at each stage. Below that, we explain each of these steps in the following sub-sections:

2.113.1 refining imported crude oil;

2.113.2 procuring refined fuel overseas and shipping it to New Zealand;

2.113.3 primary distribution of petrol and diesel; and

2.113.4 storing petrol and diesel in terminals.

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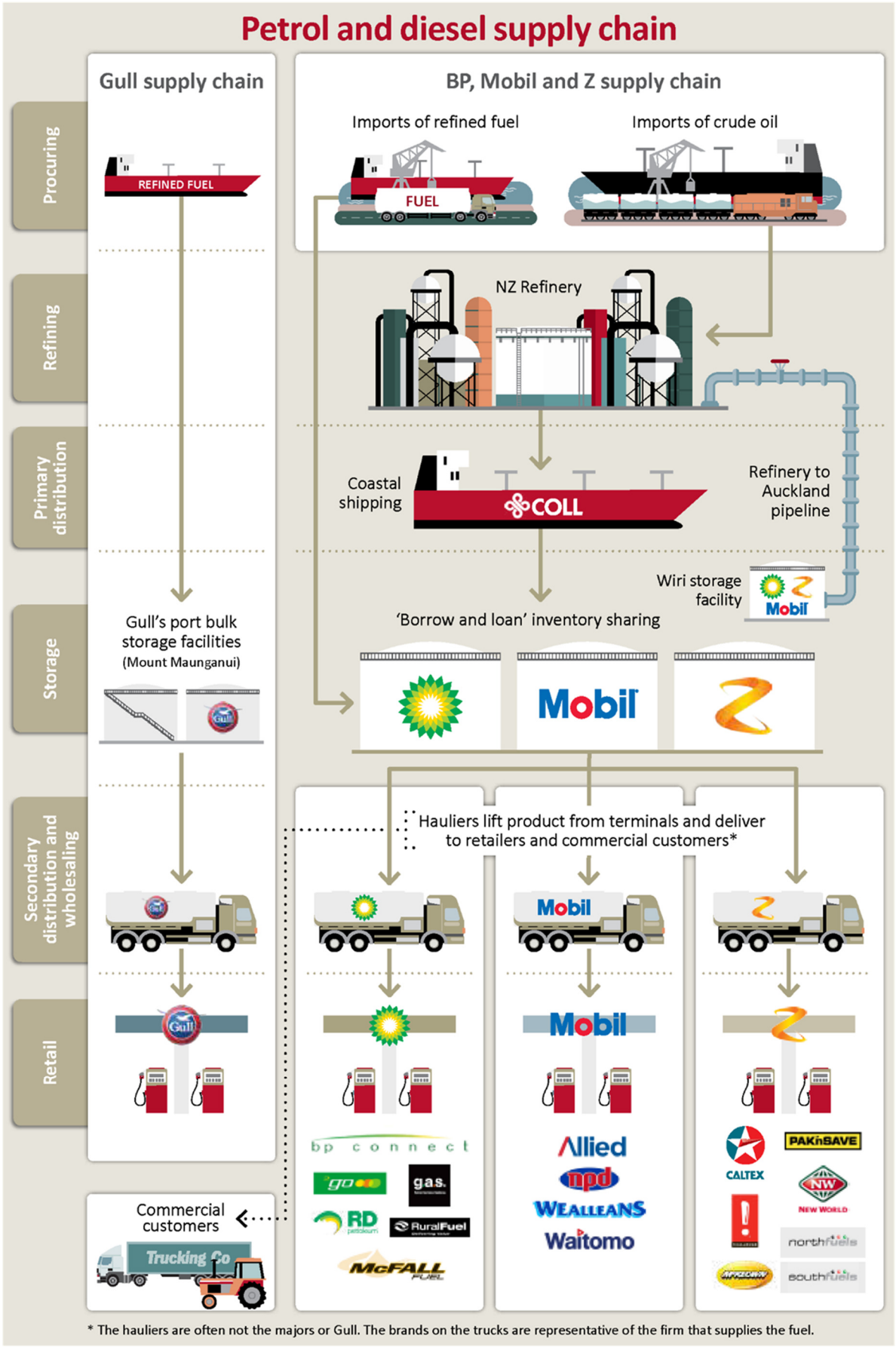
[128] There are also a small number of unbranded dealer sites that have a supply agreement with a distributor.

[129] Commerce Commission analysis of industry participants' internal documents.

Figure 2.11 The petrol and diesel supply chain



Refining imported crude oil

2.114 Petrol and diesel are produced by refining crude oil. While New Zealand has several productive oil fields, its locally-produced oil is generally exported because of its high quality and therefore high value on the international market. Australia buys most of this oil.[130] None of the majors or Gull are involved in the exploration and extraction of crude oil in New Zealand.[131]

2.115 The majors purchase crude oil on global markets and deliver it to New Zealand's only oil refinery at Marsden Point. The refinery processes crude oil into petroleum products, including petrol, diesel, aviation and marine fuel. Gull does not use the refinery, instead importing refined fuel only.

2.116 The refinery has a crude oil capacity of 135,000 barrels a day, and produces around 58% of New Zealand petrol demand, around 85% of New Zealand's jet fuel demand and around 67% of New Zealand's diesel demand.[132] The shortfall is made up by imports of refined fuel, primarily from South Korea and Singapore.[133] All three majors import refined fuel alongside Gull.

2.117 The refinery commenced production in 1964 with financing provided by the five majors then operating and with government and private equity participation. Government funding was also used to expand the production capacity of the refinery in the early 1980s.

2.118 The refinery is now owned and operated by the New Zealand Refining Company (Refining NZ), which in turn is owned by the three majors (43%) and other shareholders (57%).[134]

The majors' access to the refinery

2.119 The refinery operates on a toll manufacturing basis.[135] This means that each major retains ownership of the crude oil and the resulting output that is refined petroleum products. The refinery does not take ownership of the products itself.

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130 MBIE "Oil statistics" <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/oil-statistics/>. (Viewed on 5 March 2019).

131 Mobil's and BP's wider corporate groups are involved in exploration and extraction operations, and refining operations overseas. Z Energy purchased both Shell and Chevron, which were both involved in exploration and extraction of crude oil (through their global parents) but did not purchase Shell and Chevron's exploration assets.

132 Refining NZ <https://www.refiningnz.com/media/key-facts/>. (Viewed on 3 May 2019).

133 Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) at [2.3].

134 Mobil owns 17.2%, Z Energy owns 15.36% and BP owns 10.10%. Refining NZ "Annual report 2018" at 56.

135 Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) at 5.

2.120 The current agreements between Refining NZ and the majors came into effect on 1 January 1995, several years after the deregulation of the energy industry in 1988 with the introduction of the Petroleum Sector Reform Act.[136]

2.121 Access to the refinery is determined by each firm's user processing agreement with Refining NZ. Processing agreements determine how much processing capacity the majors are allocated and the processing fee they are required to pay Refining NZ for processing services.

2.122 Under the current processing agreements, refinery capacity is allocated between the majors based on their retail market share by product over the previous three years.[137]

2.123 The capacity allocation procedure is coordinated by a Technical Committee, comprising one representative from each major and one representative from Refining NZ. Decisions made by the Technical Committee are by consensus.[138]

2.124 To allocate capacity (in accordance with formulae set out in majors' processing agreements), the Technical Committee receives various data from Refining NZ and collates other information, including each user's historical three-year market share volumes of fuel sold to distributors and end consumers.[139]

2.125 The Technical Committee also reviews technical aspects of the refinery's operation.

Pricing of refinery services

2.126 The refinery prices its services based on import parity price – that is, the cost of landing imported refined fuel in New Zealand. It achieves this by charging each refinery user 70% of the refinery's Gross Refining Margin (GRM), subject to a fee floor and margin cap.[140] The GRM is a notional margin representing the difference between the benchmarked cost of importing and landing refined product, and the benchmarked cost of importing and landing crude oil.[141]

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136 Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) at [1.6].

137 Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) above n 87 at [7.17] at 5.

138 Majors' processing agreements with Refining NZ [ ]

139 Majors' processing agreements with Refining NZ [ ]

140 The fee floor for the year 2018 was $134m ($131m in 2017) and margin cap of USD9.00 per barrel for each refinery user. Refining NZ "Annual Report" (2018) at [111]. The fee floor and margin cap manage the downside and upside risk of movements in the refining margin, ensuring the refinery does not earn below the fee floor and the refinery users do not pay above the margin cap.

141 The GRM is calculated as the typical market value of all the products produced, minus the typical market value of all feedstock processed. The typical market value of products is determined by using quoted prices for the products in Singapore plus the typical freight cost to New Zealand plus product quality

2.127 Refining NZ explains the GRM as follows:[142]

> A gross refining margin (GRM) is the difference between prices for refined products (including product freight), and the costs of materials to manufacture those products (such as crude and crude freight).
> …
> In a New Zealand context, GRM is essentially the difference between landing all refined products at New Zealand ports where they will be used (e.g. Wellington, Tauranga and Lyttelton), and the landed crude prices at the refinery in Whangarei.

2.128 Each major incurs additional costs (eg, stockholding crude oil and coastal shipping costs) and so retains 30% of the GRM. The aim of this is to incentivise refinery users to maximise the use of the refinery. A high GRM increases the cost competitiveness of using the refinery relative to importing fuel, while a low GRM has the opposite effect.

2.129 Hale and Twomey provided an independent review of the processing arrangements that Refining NZ has with the refinery users. It concluded that the 30% GRM retained by the refinery users provided for competitively priced refined product (relative to the import equivalent) over a 10-year business cycle. Hale and Twomey noted that the benefit over the cycle is not excessively in the refinery users' favour, acknowledging there have been periods where refinery users would be financially better off importing. Specifically, over the period 1997 to 2016, Hale and Twomey found that Refining NZ fuel supply was more competitive than imports except during the period 2012-2014, when the costs the refinery users incurred in refining were greater than the income from retaining 30% of the GRM.[143]

2.130 In summary, although the cost advantage of domestically refined fuel has fluctuated, Hale and Twomey found that domestically refined fuel has been more cost effective than imported fuel between 1997 and 2016, except between 2012-2014.

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premia. The typical value of feedstock is determined by using the market value for crude oil and other feedstock at the point of purchase, plus the typical cost of freight to New Zealand. Refining NZ, "Annual Report" (2018) at [111].

142 Refining NZ "Explanation of the Refining NZ processing fee" <https://www.refiningnz.com/refininglogin/wp-content/uploads/2018/06/explanation_of_the_refining_nz_processing_fee.pdf> at [2]. (Viewed on 25 November 2019).

143 Hale and Twomey "Independent Review of the Refining NZ Processing Agreement" (April 2017) at 3 – 9.

Procuring refined fuel overseas and shipping it to New Zealand

2.131 As noted, the refinery produces about two thirds of New Zealand's petrol and diesel demand. Imports of refined fuel predominantly come from refineries located in Singapore and South Korea.[144]

2.131.1 Gull imports refined fuel directly to its own storage facility in Mount Maunganui, which it opened in 1999. Gull does not refine crude oil domestically at the Marsden Point refinery.

2.131.2 The major fuel firms also import refined petroleum products, including petrol and diesel.

2.131.3 Generally, imported fuel arrives at three ports in New Zealand: Mount Maunganui (Gull and the majors), Wellington and Christchurch (the majors). Collectively, imports to these three ports account for about 75% of all fuel imports into New Zealand. The remainder is transported to other ports.[145] Importing fuel to other ports is possible but is generally limited by draught restrictions and available storage capacity. We discuss this further in Chapter 4.

Primary distribution of petrol and diesel

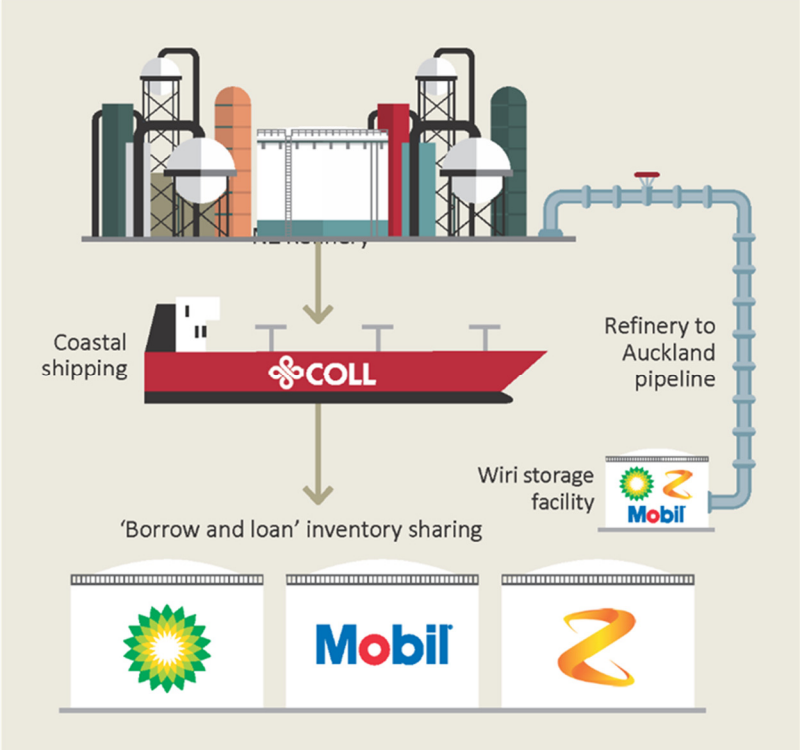
2.132 Once fuel has been refined at Marsden Point, pipelines and coastal shipping assets are the primary distribution assets currently used to transport refined fuel to storage terminals throughout New Zealand. Gull does not use these assets.

2.133 These primary distribution assets are shown in Figure 2.12 below.

144 Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) at [2.3].

145 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [2.4(c)].

Figure 2.12 Primary distribution assets



Most of Auckland's fuel is transported via the RAP pipeline from the Marsden Point refinery

2.134 Most of the fuel consumed in Auckland is delivered from the refinery via a 170km long pipeline (the refinery-Auckland pipeline, referred to as the RAP). The RAP was built in 1985 using Government funding, as part of the expansion of the refinery.[146]

2.135 The RAP connects the refinery to the Wiri storage terminal in Auckland, where it delivers about 52% of the fuel refined at Marsden Point.[147]

2.136 The Wiri storage terminal is operated by Wiri Oil Services Limited (WOSL), a company jointly owned by the majors.[148] Specifically:[149]

2.136.1 the RAP can transmit around 320,000L of fuel per hour and can hold about 9 million litres of fuel product;

2.136.2 automotive fuels (regular petrol, premium petrol, and diesel) and jet fuel are pumped down the RAP one after the other and delivered to the Wiri Terminal;[150]

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146 Michael Pickford and Cameron Wheeler "The petrol industry: Deregulation, entry and competition" (2001) *NZ Trade Consortium Working Paper No. 12* at [6]-[7].

147 Refining NZ, "Annual Report" (2017) at [17].

148 WOSL is jointly owned by BP (28%), Mobil (28%), and Z Energy (44%).

149 See Refining NZ <https://www.refiningnz.com/media/rap-line/>. (Viewed on 16 August 2019).

2.136.3 automotive fuels are distributed throughout Auckland and Waikato regions by road; and[151]

2.136.4 jet fuel is distributed to the Auckland Airport by a pipeline that connects the Wiri Terminal to the airport.

2.137 The RAP is currently being upgraded to increase capacity. The upgrades aim to lift capacity on the pipeline in three stages, with an expected increase in overall throughput of around 15% by 2019.[152]

2.138 As noted, about 52% of the fuel refined at Marsden Point is distributed through the RAP. The refinery's remaining fuel production is mostly distributed to terminals at ports throughout New Zealand using coastal shipping (40%). A small portion (about 5%) is distributed through a truck loading facility, which is adjacent to the refinery and administered by WOSL. This fuel is then distributed by road to the Northland region. The remaining 3% of refined fuel is exported.[153]

Access to the Refinery to Auckland Pipeline

2.139 Access to the RAP is not separate from the access arrangements to the refinery[154] and is also governed by the processing agreements between Refining NZ and the majors. Users of the RAP are allocated capacity based on the previous one year market share of refined products' sales volumes in the Auckland and Waikato markets.[155] This one year allocation period is notably shorter than the three-year retail market shares used to allocate refinery capacity. We comment on this further in Chapter 5.

2.140 The majors, as users of the RAP, are charged a fee for using the RAP in the order of one cpl.[156] This fee is set with reference to the cost of shipping refined fuel from Marsden Point to Auckland.[157] Information provided to us suggests that the RAP fee

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150 There is some mixing at the interface which can be switched into special tanks at Wiri for blending later.

151 Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) at [2.6(a)].

152 See <https://www.refiningnz.com/media/rap-line/> (Viewed on 16 August 2019).

153 Refining NZ, "Annual Report" (2017) (15 March 2018) at [17].

154 Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) at [2.6(a)].

155 The New Zealand Refining Company Limited Processing Agreement (1 January 1995) at Schedule 1.

156 [ ]. Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) at [7.21].

157 Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) at [7.21].

is considerably cheaper than the cost of transporting fuel from the next best alternative, Mount Maunganui, by road.[158]

2.141 The RAP enables the refinery to move petroleum products quickly from the refinery. The refinery has limited storage capacity and so finished products must be moved to the refinery delivery points as soon as they are processed.[159] The refinery's production schedule is dependent on RAP availability. Refining NZ will not commit product to the RAP unless it is certain that product can be received at the Wiri Terminal.[160]

Government Inquiry into the Auckland Fuel Supply Disruption

2.142 In September 2017 the RAP was shut down for 10 days due to a rupture, which resulted from damage caused by a digger three years earlier. Over time, the pipe weakened and eventually ruptured.

2.143 While the main impact of the RAP outage was a rationing of jet fuel supplied to Auckland Airport, the outage also resulted in more trucking of fuel to retail sites and intermittent fuel outages (mainly of premium petrol) at a small number of retail sites around Auckland. The majors and Refining NZ faced costs following the RAP outage.

2.143.1 Z Energy reported the RAP outage increasing its costs by $7m in the 2018 financial year due to using alternative distribution channels and lost GRM.[161]

2.143.2 Refining NZ reportedly spent $6 million repairing the RAP and lost $6.3 million in processing fees (from the users of the refinery) and a further $2 million distribution fees, attributable to the disruption to fuel supply. Refining NZ received a pay-out of $2.9 million from insurers to cover environmental damage resulting from the RAP leak.[162]

2.144 A government inquiry into the Auckland Fuel Supply Disruption (AFSD Inquiry) has made several recommendations on how the fuel sector can better prevent, prepare

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158 For example,
[
]

159 Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) at [2.6]

160 Ibid, at [2.7].

161 Z Energy "Full year results announcement for the year ended 31 March 2018" (3 May 2018) at 30. Available at: <https://investors.z.co.nz/static-files/fffd8894-08a0-4d83-995b-4de1ba1b8dc3>. (Viewed on 25 November 2019).

162 NZ Herald <https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=12003417> (Viewed on 26 July 2019).

for, respond to, and recover from an incident, such as the RAP outage. The aim of that inquiry was to improve the resilience of fuel supply to Auckland.[163]

2.145 The AFSD Inquiry's findings and recommendations were published in August 2019 and are currently before the Minister of Energy and Resources for consideration.[164]

2.146 The AFSD Inquiry concluded that it was generally satisfied with the resilience of the infrastructure that provides ground fuels to the Auckland region.[165] However, it made a number of recommendations to improve resilience and weak investment incentives. It also considered that open access to infrastructure in the fuel supply chain is likely to reduce barriers to entry for third parties to supply jet fuel. Its findings and recommendations included:

2.146.1 that the fuel companies closely monitor the resilience of the arrangements for supplying diesel to Auckland and give early consideration to the investment in new storage tanks that will be needed to maintain an appropriate level of resilience, while recognising the multiple supply chain routes to the Auckland region;[166]

2.146.2 recommendations to improve the resilience of jet fuel supply infrastructure and the incentives of the majors to make the needed investment;[167] and

2.146.3 that potential new entrants supplying jet fuel face barriers to entry, including a lack of transparency around terms of access to key infrastructure jointly owned by the majors. The AFSD Inquiry was persuaded that open access to this infrastructure would be likely to reduce the barriers to entry and remove the perceived conflict of interest associated with the majors both selling jet fuel and controlling access to infrastructure necessary to enable third parties to sell jet fuel.[168]

2.147 We comment on some of the AFSD Inquiry's findings and recommendations throughout this report where they are relevant to our findings about factors affecting competition in retail fuel markets.

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163 "Government Inquiry into The Auckland Fuel Supply Disruption" (August 2019) at v.

164 The final report of the Government Inquiry into the Auckland Fuel Supply Disruption is available at: <https://www.dia.govt.nz/Government-Inquiry-into-the-Auckland-Fuel-Supply-Disruption>.

165 "Government Inquiry into The Auckland Fuel Supply Disruption" (August 2019) at x.

166 Ibid, at 81.

167 Ibid, at x – xi and [18.35] – [18.40].

168 Ibid, at [17.27] – [17.46].

Coastal shipping vessels transport fuel to other storage terminals outside of Auckland

2.148 COLL operates coastal shipping vessels to deliver fuel from the refinery at Marsden Point to various storage terminals around New Zealand. COLL is a joint venture company owned by the majors. Gull does not participate.

2.149 COLL is responsible for:[169]

2.149.1 scheduling the shipping of refined fuel from the refinery to ten coastal ports around New Zealand;

2.149.2 scheduling imports to ensure import deliveries do not conflict with coastal shipping deliveries of domestically refined fuel; and

2.149.3 assessing capacity utilisation at each terminal to ensure terminals do not run out of fuel.

2.150 COLL's responsibility for these activities supports the running of borrow and loan arrangements, whereby the majors share the use of each other's terminal assets. The borrow and loan arrangements are discussed in more detail below.

2.151 COLL's costs are shared by the majors based on each firm's usage. COLL operates at capacity to maximise efficiency.[170] Most fuel is delivered to terminals that are individually owned by one of the majors but jointly used by each of them under the borrow and loan arrangements.

2.152 The COLL joint venture agreement sets out the functions of COLL. In addition, it sets out the terms on which shipping capacity may be increased, the terms under which excess capacity may be allocated to third parties and the conditions under which a third party may join the joint venture.[171]

Storing petrol and diesel in terminals

2.153 Each of the majors' own fuel terminals at various ports in New Zealand, although not at every port or for every refined product.

2.154 To avoid duplication, the major fuel firms share the use of each other's terminal assets by way of the borrow and loan arrangements mentioned above, where terminals and the refined product held within the terminals are declared as industry storage. Each major can draw down fuel from anywhere in the system as long as they match it with an equivalent amount of fuel added somewhere in the system, but not necessarily at the same place. This arrangement allows the majors

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169 Schedule 1 to COLL Joint Venture Agreement (29 November 2007) and Shared Stock Arrangements Principles (1 October 2007).

170 *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10 at [37].

171 COLL Joint Venture Agreement (29 November 2007) [ ], [ ] and [ ] – [ ]

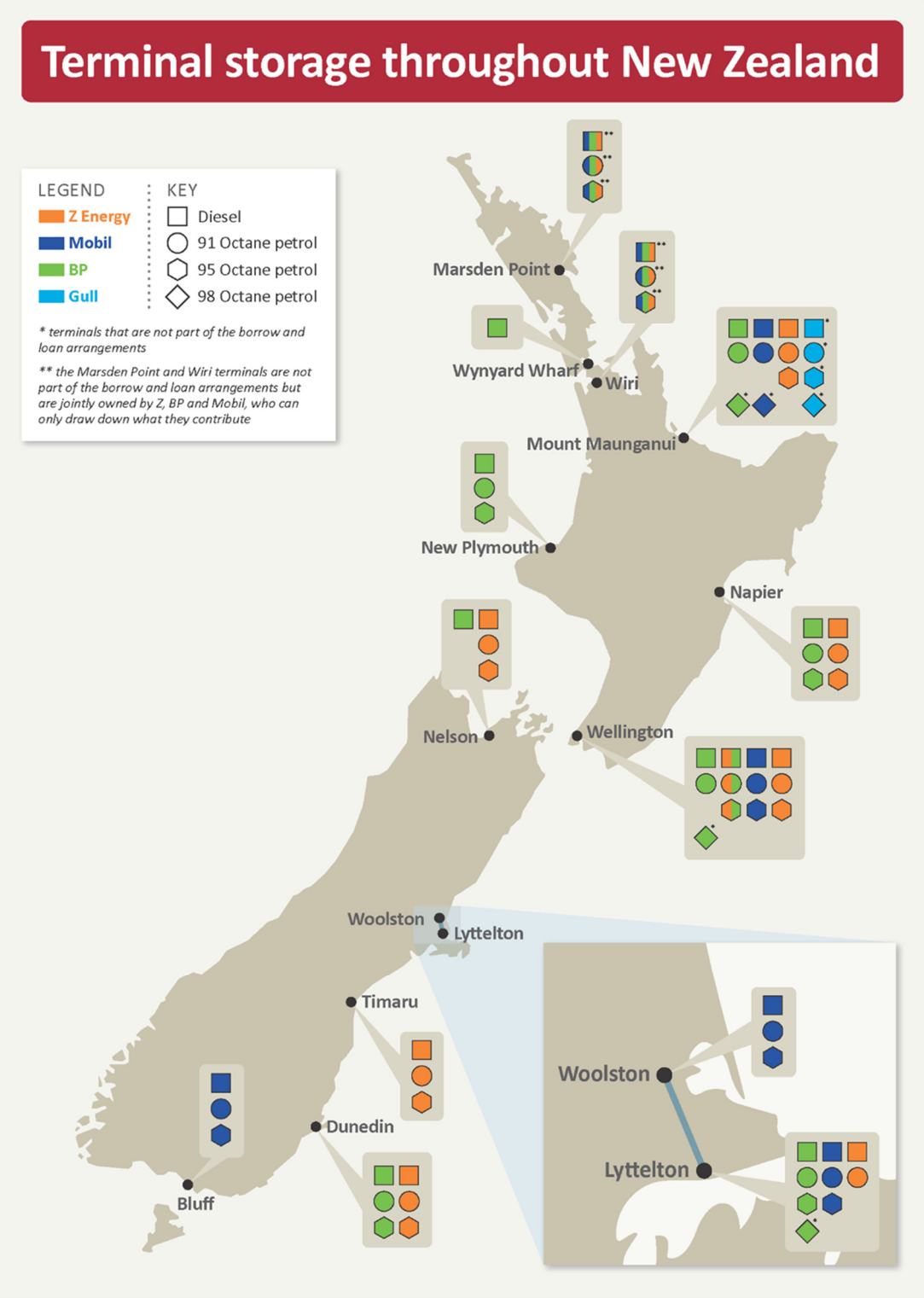
to draw product from one another's terminals without having to buy or sell that product.[172]

2.155 The borrow and loan arrangements do not include the Wiri and Marsden Point terminals, which are jointly owned by the majors. At the Wiri and Marsden Point terminals, each major can only draw down what they contribute. Gull does not participate in the borrow and loan arrangements.

2.156 A map of all firms' petrol and diesel terminals throughout New Zealand is shown in Figure 2.13 below.

[172] [ ]

Figure 2.13 Terminal storage throughout New Zealand[173]



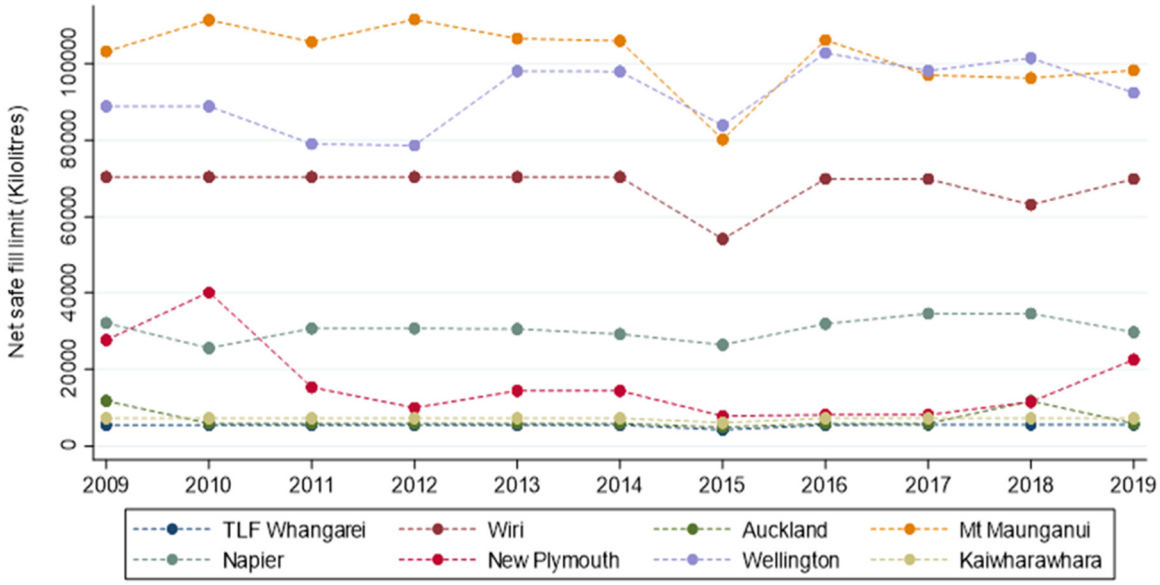
Source: Commerce Commission analysis of industry participants' data

[173] In addition, Z Energy has a small amount of private storage of B100 (bio-diesel) at its plant in Wiri, the Wiri terminal and at its Mount Maunganui terminal. Z Energy currently operates no other private storage.

2.157 As Figure 2.13 shows, not all majors are represented at every port. At the time of deregulation in 1988, the then four major fuel firms had separate terminals at each port except for Timaru, Bluff and Whangarei.[174] Since then, terminal storage has undergone some rationalisation.

2.158 Figure 2.14 and Figure 2.15 below show changes in capacity at the various port locations over time.

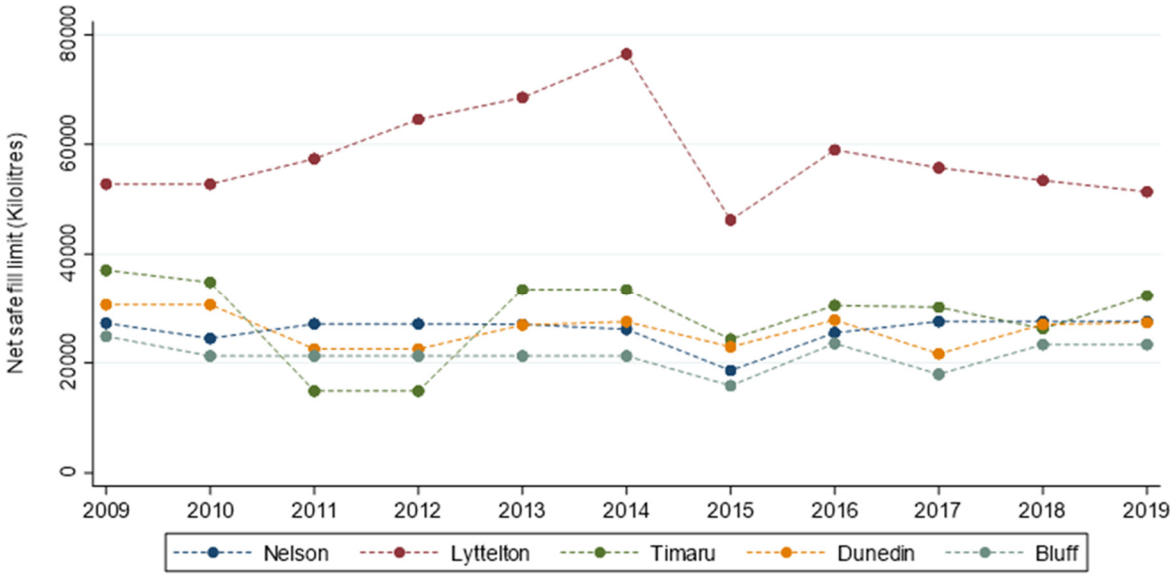
Figure 2.14 North Island terminal capacity (2009 - 2019)



Source: Commerce Commission analysis of COLL terminal capacity data (2009 – 2019).

[174] Michael Pickford and Cameron Wheeler "The petrol industry: Deregulation, entry and competition" (2001) *NZ Trade Consortium Working Paper No. 12* at 22.

Figure 2.15 South Island terminal capacity (2009 - 2019)



Source: Commerce Commission analysis of COLL terminal capacity data (2009 – 2019)

Sharing storage under the borrow and loan arrangements

2.159 Under the borrow and loan arrangements, a major may draw on as much refined fuel as it wishes as long as it contributes an equivalent amount to the system.

2.160 The borrowing and lending of refined fuel is accounted for by COLL. If a major has borrowed more product than it has contributed to the system, COLL requires that firm to contribute more product to reduce the deficit.

2.161 COLL also notifies the majors when existing terminal stocks are to be rationed among them (a "coordination event"). We understand a coordination event at a particular petrol or diesel terminal is triggered when fuel stocks are estimated to be below three days' cover at the time the next supply shipment is due to arrive.[175]

2.162 In order to receive fuel during a coordination event a major must ensure that it has, at the time of the coordination event, contributed a minimum amount of the total fuel stock held within the shared storage system. This minimum amount is determined by the terminal capacity it has contributed to the national system and means a firm with more tankage capacity is required to hold more fuel (working capital) at any given time.[176]

2.163 Although there is no financial transaction at a terminal for refined fuel, the owner of a terminal charges a throughput fee to the firm that draws down fuel from its terminal.

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175 Transcript of meeting with Mobil Oil New Zealand (21 June 2019) at 5 (lines 23-26).

176 [ ]

2.164 Throughput fees are charged to the major on whose account the product is drawn down on a cents per litre basis, rather than to any reseller or third party distributor that might physically uplift or deliver the product. These charges may be passed on to distributors.

2.165 Throughput fees are set by the terminal owner, who may choose to do this on a cost recovery basis or may enter into bilateral negotiations with other terminal owners. Fees set through bilateral negotiations may be set above cost recovery, for example taking account of the cost of the competitor's next best alternative (ie, the cost of supplying fuel to a given geographic region by accessing an alternative terminal). It is possible that a terminal owner's scope to increase its returns by increasing throughput fees may be constrained by its competitors' ability to retaliate by increasing their throughput fees of terminals that a terminal owner maybe reliant upon.

2.166 Where possible, majors draw down fuel from their own terminals rather than from a rival fuel firm's terminal. This is to maximise throughput of their own terminals rather than contributing revenue to assist their rivals in recovering costs.

Secondary distribution and wholesaling of petrol and diesel

2.167 Secondary distribution refers to the road transport of fuel from terminals to retail sites. This activity is typically contracted out by majors to third parties and/or undertaken by distributors who also own/operate retail sites, such as Waitomo and NPD. Allied Petroleum has a nationwide contract to distribute fuel for Mobil, as well as owning and operating retail outlets.

2.168 Fuel is sold between firms before reaching the end consumer at a retail site. This was discussed from paragraph 2.79 above.

Factors affecting future retail fuel demand

2.169 In the previous sections, we have described aspects of retail fuel markets, including some factors influencing demand from a consumer's point of view.

2.170 In this section, we briefly discuss factors affecting fuel demand in the future, with a focus on the potential impact of electric vehicles (EVs).[177] This is relevant to the study as changes in fuel demand could affect the competitive dynamics in the fuel

[177] We note there are other technologies that may impact future fuel demand, such as the role of hydrogen in powering vehicles. However, we focus on electrification of the vehicle fleet because this currently appears to be the most likely future substitute to fuel powered vehicles. This is supported by Z Energy's recent House View on Hydrogen, which states that it is too soon to commit to hydrogen as a decarbonisation option, but it should not be dismissed. Further, Z Energy notes that hydrogen is technically ready, and manufacturing scale-up can occur if market conditions are right. However, it currently has significant economic and affordability challenges. Z Energy "House View – Hydrogen – Making a positive contribution to New Zealand" (August 2019) at 2.

industry, including incentives to enter, expand and/or exit as well as to invest in long-lived assets.

Drivers of fuel demand

2.171 The primary drivers for transport fuel demand in New Zealand have historically been population growth, economic growth (gross domestic product (GDP)), and fuel efficiency gains.

2.172 Fuel demand has been growing slowly over recent years, led by demand for diesel. Over the past three years, national demand for petrol and diesel has been growing at an average rate of 3% and 13% respectively.[178] One fuel firm has suggested recent diesel demand has been strongly driven by the economic growth of exports and tourism.[179]

2.173 The growth in the light vehicle fleet and in overall kilometres travelled has also been a factor increasing fuel demand.[180] These factors are positively related to population growth and economic growth, which are key drivers of increasing fuel demand. Fuel efficiency gains have also played a role in dampening the demand growth.

2.174 Future demand is more uncertain, however, due to changes in technology, such as the advent of EVs which do not rely on fuel and increased vehicle efficiency.[181]

2.175 The timing and speed of future EV adoption will directly affect the demand for retail fuel in future and be affected by the incentives for investment in EV technology. Hybrid EVs consume less petrol or diesel, while EVs do not consume any.

Material impact on fuel demand of improved vehicle efficiency and electric vehicle uptake is likely some time away

2.176 It appears that demand for petrol in New Zealand is likely to remain reasonably flat over the next decade or more before potentially declining as a consequence of improved fuel efficiency and more extensive uptake of EVs. At the same time, demand for diesel (and aviation fuel) is expected to increase.

2.177 Given these timeframes and demand expectations, we do not expect the uptake of EVs or increased fuel efficiency to have a meaningful impact on fuel sales for at least 10 years. However, we acknowledge that they are likely to reduce demand for retail fuel over a longer timeframe.

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178 "Government Inquiry into The Auckland Fuel Supply Disruption" (August 2019), [13.14] and [13.17].

179 [ ]

180 [ ]

181 [ ]

2.178 Despite the small growth in petrol demand nationally in recent times, Refining NZ and the fuel suppliers expect petrol demand to be reasonably flat across the coming decade, especially in light of the New Zealand Government's intention to become carbon neutral by 2050.[182] BP Global expects demand for fuel used by cars to be broadly flat out to 2040.[183] In addition, other commentary suggests that fuel companies do not expect electric vehicle uptake to have a significant impact on fuel demand in the medium term.[184]

2.179 We have also been provided with fuel demand forecasts that suggest that over the short-medium term, New Zealand petrol demand is expected to remain relatively flat while diesel demand is expected to grow marginally. These forecasts include annual growth estimates that range from below 1% to up to 6%, depending on the fuel type (petrol or diesel).[185]

2.180 Hale and Twomey have recently modelled long-term fuel demand in New Zealand, producing results which are broadly consistent with the outlook described above. Hale and Twomey forecast that:[186]

2.180.1 petrol demand is expected to decline due to changes in efficiency and fuel composition within the passenger vehicle fleet;

2.180.2 diesel growth in the short-term will be driven by the International Maritime Organisation's implementation of a global cap on sulphur in marine fuel. Demand growth in the mid to longer term is likely to be low; and

2.180.3 jet fuel growth is expected to be driven by increased demand from international long haul aircraft. The high case forecast has the Auckland Airport long-term jet fuel demand growth at 4% per annum.

2.181 Hale and Twomey's forecast decline in petrol demand over the longer term due to changes in efficiency and fuel composition reflects the same industry expectation.

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182 This expectation was shared with the Auckland Fuel Supply Disruption Inquiry. "Government Inquiry into The Auckland Fuel Supply Disruption" (August 2019) at [13.15].

183 BP "BP Energy Outlook – 2019 edition" <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/energy-outlook/bp-energy-outlook-2019.pdf> at 51. (Viewed on 25 November 2019).

184 [ ] and [ ]

185 Macquarie Research "Z Energy" (2 August 2018) at 12. [ ]; [ ] and [ ]

186 Hale and Twomey (June 2018) as cited in Fueltrac "Options to achieve better resilience and security of fuel supply for Auckland, in particular for jet fuel" (June 2019) at 21.

It is also consistent with an expectation that the uptake of EVs will eventually have a meaningful impact on reducing demand for retail fuel.

2.182 However, given that demand is predicted to remain relatively flat over the short to medium term, we consider that neither fuel efficiency improvements nor the uptake of EVs are likely to have a substantial impact on fuel sales for at least 10 years.

2.183 We recognise that uncertain expectations of EV uptake, improved fuel efficiency and reductions in retail fuel demand, even in 10 to 20 years' time, may discourage some investment in expensive and long-lived assets that help supply retail fuel. Z Energy submitted that demand risk is asymmetric, as a meaningful increase in demand for retail fuel is highly unlikely.[187]

2.184 Nonetheless, any negative effect on fuel firms' investment strategies and viability is likely to be somewhat offset by expectations of increasing growth in diesel and aviation fuel demand, which are less affected by EV uptake.[188] For example, Z Energy's 2019 annual report notes (emphasis added):[189]

> This year the Board travelled overseas to learn how other countries and industry participants are preparing for a lower carbon future. As a result of the trip the Board is confident that we will have adequate time to properly navigate the expected market transition. **We accept that our industry faces long-term disruption, but it will not manifest as material demand destruction in New Zealand for some considerable time.**

2.185 Given this context, we do not consider the impact of EVs on the fuel market further in this report, but provide some more detail in Attachment J.

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187 Z Energy "Z Energy Submission on the Commerce Commission's market study into the retail fuel sector: Draft report" (13 September 2019) at [70] – [72].

188 A 2018 report from the Columbia Centre on Global Energy Policy notes that "…any decline in oil demand from the passenger vehicle sector could be offset by demand growth in the petrochemical, aviation, or freight transport sectors, which have fewer and more costly substitutes for oil." Columbia Center on Global Energy Policy "Electric vehicles and their impact on oil demand: Why forecasts differ" (July 2018), at 1. See also Hale and Twomey long term fuel demand forecasts in Fueltrac "Options to achieve better resilience and security of fuel supply for Auckland, in particular for jet fuel" (June 2019) at 21.

189 Z Energy "Annual Report" (2019) at 15. This is also supported by [ ]

Chapter 3 Outcomes in retail fuel markets

Summary of our findings

- We have considered whether outcomes in New Zealand's retail fuel markets are tending towards outcomes consistent with a workably competitive market. There are a range of outcomes that would be expected in a market that is working well for consumers over the long-term. These include the choices available to consumers, the price and quality of the fuel and services on offer as well as levels of investment, innovation and profitability.
- Variation in retail sites and their offerings has emerged from recent investment and innovation which provides consumers with an expanded set of choices.
    - There are a range of offers at retail sites, from unmanned truck and fuel stops offering only fuel (sometimes only diesel), to large service stations offering a variety of fuel grades with additives, extensive services, large convenience stores with coffee, food and café-style facilities. Consumers can pay at the pump, using smart-phone apps or in-store. Some sites offer 24/7 access, making it easier to fill up in remote locations.
    - Most of the new site openings in recent years are under a non-major fuel firm brand, particularly Gull and Mobil supplied distributors, such as Allied, Waitomo and NPD. In particular, the number of unmanned sites has increased. Unmanned sites tend to offer lower prices than service stations and operate in provincial and secondary locations.
- Prices vary at retail sites, depending on location and the range of services offered. In terms of overall retail prices, we find:
    - real retail fuel prices have trended upwards since about 2015 to 2016, following an initial rise in retail petrol and diesel prices around 2010 to 2011;
    - New Zealand's pre-tax retail fuel prices are relatively high compared to other countries and have increased relative to other OECD countries since earlier this decade;
    - the price differential between retail prices of regular and premium fuel have risen over the last decade from about 7-8cpl to about 13-15cpl;
    - higher discounts are associated with higher retail board prices; and
    - regional differences in retail fuel prices and importer margins, including lower prices in the North Island and higher prices in the South Island and Wellington. This is partly due to firms moving away from offering "national prices" to offering lower prices in areas where Gull operates in.
- New NPD retail sites appear to have the greatest impact on majors' prices – in most cases those new sites were service stations rather than unmanned sites. This suggests that service stations impose a stronger competitive constraint than unmanned sites on the majors' retail sites (which are almost exclusively service stations).

Summary of our findings (continued)

- A range of forward-looking and backward-looking indicators suggest that the retail fuel industry appears to have earned excess returns since early this decade and that margins and returns are expected to remain at elevated levels for some time. For instance:
    - firms' expected returns on new investment to support fuel retailing significantly exceed normal levels, despite the low industry demand growth; and
    - returns on capital exceed our estimate of WACC for the industry and have been consistently above the returns on capital being achieved by international comparator firms since 2011.
- Some dealer-owned retail sites are not experiencing high profits, and are instead operating on quite slim margins and facing financial pressure. This seems to reflect the relatively high wholesale price they pay for fuel (compared to the total margin available).
- There is evidence to suggest the recent growth in margins and profits has levelled off and may have peaked. It is difficult to forecast future margins and we have not sought to do so in this study. Nonetheless, we have not been persuaded that the industry's experience of excess returns has come to an end. Chapters 4-7 discuss factors affecting competition, including factors that may help give rise to excess profits.
- There has been limited investment in terminal storage capacity over the last decade, leading to an increasing divergence between fuel volumes and storage capacity.
    - Infrastructure sharing arrangements may be diluting incentives to invest in infrastructure. In our view, incentives to alleviate tight supply and improve wholesale competition could be improved (see Chapter 5 and Chapter 8 for more details).
    - Nonetheless, the case for significant future investment in terminals is uncertain, particularly given the signalled entry of TOSL and future expectations of relatively flat fuel demand.

Introduction to this chapter

3.1 This chapter discusses the outcomes we have observed in retail fuel markets over time and our views on the extent to which these outcomes are consistent with those we would expect to see in workably competitive markets.

3.2 Markets may demonstrate varying levels of competition depending on their characteristics.

3.3 As discussed in Chapter 2, the retail fuel industry can be characterised as a vertically integrated oligopoly. While there are a large number of market

participants offering retail fuel, they tend to have long-term stable relationships with one of the importers that have interests throughout the fuel supply chain.

3.4 A range of outcomes are possible given the oligopoly market structure, from those approximating workable competition to those closer to a monopoly outcome - where the price and quality of the good or service depends on one supplier that does not face competition.

3.5 The outcomes we look at in this chapter relate to consumer choice, fuel quality, profitability and prices and levels of investment.[190]

3.6 These outcomes provide indications of how well the retail fuel market is performing for the long-term benefit of consumers. They may also help identify the factors affecting competition and inform any recommendations we may make to improve competition.

3.7 As signalled in Chapter 1, we focus on whether these outcomes are tending towards outcomes consistent with a workably competitive market.

3.8 In the chapters that follow, we discuss the factors affecting competition in retail fuel markets that give rise to the outcomes discussed in this chapter. These factors relate to the market structure (for example, the number of firms in the market and barriers to entry and expansion), conduct by market participants (the way those firms behave), and other features of the retail fuel markets. These are factors that help to explain why we are observing the outcomes described in this chapter.

Structure of this chapter

3.9 This chapter discusses:

3.9.1 choices available to consumers;

3.9.2 fuel quality;

3.9.3 profitability of firms in New Zealand retail fuel markets;

3.9.4 retail fuel prices; and

3.9.5 the level of investment and innovation.

Choices available to consumers

3.10 Choice is important because consumers have different expectations, and these can change over time. In a well-functioning market, suppliers have incentives to improve their offer to better serve, retain and attract more customers.

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190 These outcomes were identified in: Commerce Commission "Market study into the retail fuel sector: Working paper – Focus areas" (18 April 2019) at Figure 1 and [23]–[33].

3.11 The choices available to consumers in retail fuel markets have increased in recent years.

3.11.1 New Zealand has 20 retail brands, although several are small with only a few retail sites or are concentrated in one geographic area.

3.11.2 The range of offers at retail sites is also broader, from unmanned truck and fuel stops offering only fuel (sometimes only diesel), to large service stations offering a variety of fuel grades with additives, extensive services, large convenience stores with coffee, food and café-style facilities.

3.11.3 There is a wide range of payment options available from pay-at-pump, in app payments, to cash and card payment options in-store.

3.11.4 There is a greater variation in prices between sites, depending on location and range of services offered. Some unmanned sites offer lower prices, reflecting their low costs and seeking to attract customers primarily through their lower prices.

3.11.5 More self-serve fuel sites have opened in provincial and secondary locations (for example, on side roads rather than prime metropolitan sites). This reduces the travel distance required to purchase fuel. Pay-at-pump options and 24/7 access increases the ease of filling up in some remote locations.

3.12 We consider that there is a diversity of choice available to retail fuel consumers that is consistent with a degree of workable competition. This view was not contested by interested parties during the study and BP agreed with this conclusion.[191]

3.13 As a result, we do not consider this further in this chapter. However, in Chapter 7 we consider the role that the retail product and service offerings have as a factor affecting other competition outcomes that we observe.

Fuel quality

3.14 The quality of petrol, diesel, ethanol, biodiesel and biofuel in New Zealand is governed by a set of regulations designed to protect consumers and the environment.[192] We are aware that New Zealand's fuel quality specifications are comparatively more prescriptive than other countries, which may raise the costs of supplying fuel in New Zealand. This is discussed in Chapter 4.

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191 BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [3.3].

192 Further details and a link to the Engine Fuels Specification Requirements 2011 can be found on MBIE's website: <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-generation-and-markets/liquid-fuel-market/engine-fuel-quality/>.

3.15 Petrol and diesel are essentially homogeneous products, with little scope for differentiation. There are differences between 91, 95, and 98 octane fuels but there is no evidence of quality differences within these categories. Fuel firms have sought to differentiate their fuel offerings however, through the inclusion of fuel additives and biofuels.[193]

3.16 Industry participants and consumers have not raised concerns with us regarding the quality of fuel offered for sale to New Zealand retail consumers, and we are aware of only a small number of quality issues. We understand that:

3.16.1 reports of contaminated fuel, or occasions when a retail site mixes fuel types in its tanks, are infrequent;[194] and

3.16.2 dry tanks at retail sites are relatively infrequent, in part because companies try to maintain service station tanks at levels which reduce the risk of stock-outs.[195]

3.17 BP submitted that fuel quality – both in terms of product quality and the reliability of supply – is consistent with a workably competitive market.[196]

3.18 We agree that fuel product quality is not inconsistent with outcomes we would expect in a workably competitive market. Given this, we do not consider issues of fuel product quality further.

3.19 However, we discuss the impact of the majors' various infrastructure sharing arrangements on the reliability of fuel supply at the wholesale level in Chapter 5.

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193 Some fuel firms include additives after the fuel has been dispensed from the terminal. For example, BP comments that it has "competitors across the market who have the equivalent of a 98 octane but they're using ethanol blend, so it's a different product from my pure 98 octane. And then there's another competitor who takes a 95 and puts an additive in it to boost it to 100." Transcript of retail fuel study consultation conference on Day 1 (24 September 2019) at 27 (lines 20-23). Additives are further discussed in Chapter 7. Biofuels are produced from renewable materials such as plant and animal matter. Gull offers Gull Force 10 (with a 10% bioethanol blend) and Gull Diesel Max (with 5% biodiesel). Z Energy offers Z bio D (with 5% biodiesel).

194 See <https://www.stuff.co.nz/national/109619865/caltex-christmas-mix-up-causes-pain-at-the-pump>. and [ ]

195 [ ] and [ ] The Auckland Fuel Disruption Inquiry notes that during the RAP outage in 2017 (over 10 days), a small number of individual petrol stations ran out of high octane fuels, but there was no region-wide shortage. It added that towards the end of the outage period, it was clear that ground fuel stocks were running low and that two days after the RAP had begun operating again, at least one fuel company reported a risk of a large number of petrol stations running dry if stocks were not replenished soon. "Government Inquiry into The Auckland Fuel Supply Disruption" (August 2019) at [11.25].

196 BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [3.4].

Profitability of firms in New Zealand retail fuel markets

3.20 In this section, we summarise our conclusions on the level of profitability in the fuel industry, and whether we consider there to be excess profitability that is persistent rather than temporary.

3.21 Attachments A to D provide more detailed information on our approach to assessing profitability and our findings.

Our approach to assessing profitability

3.22 As indicated above, we are focused on whether the retail fuel market tends over time towards outcomes that would be expected in a workably competitive market. This includes firms earning normal rates of return, and prices that reflect efficient costs.

3.23 We noted in Chapter 1 that when firms' profits are persistently above a minimum level required to keep the business operating (a normal return), this may indicate that competition is not working effectively for the long-term benefit of consumers.

3.24 Levels of profit above normal returns do not necessarily indicate there is a competition problem. Profits are a reward to businesses which can achieve lower costs than their rivals or attract additional customers by improving their offers.

3.25 High levels of profitability provide a signal for new entry or expansion in a market economy. When competition is effective, entry or expansion will increase output and should lead to a subsequent fall in prices and profitability. If competition is working well, and/or if new market participants can enter the market, then excess profitability is likely to be temporary.

3.26 However, where levels of profitability are persistently above a normal return this suggests that current competition and the threat of entry by others are not effective in maintaining sufficient rivalry between incumbent firms to push prices close to efficient costs. In a workably competitive market, we would expect that over time, firms will tend to earn normal rates of return and prices will reflect efficient costs.

Excess returns appear to have persisted for most of a decade and may continue

3.27 A range of forward-looking and backward-looking indicators suggest that the retail fuel industry has earned excess returns since early this decade and that margins and returns are expected to remain at elevated levels for some time.

3.28 The recent growth in margins and profits appears to have levelled off and may have peaked.[197] It is difficult to forecast future margins and we have not sought to do so in this study. Nonetheless, for reasons explained below, including in Attachment C,

[197] We discuss this further in Attachment D.

we doubt that the industry's experience of excess returns will come to an end under current policy settings. Chapters 4 to 7 discuss factors affecting competition, including factors that may help give rise to excess profits.

3.29 Levels of profitability in the fuel industry are persistently above the returns earned by comparable firms internationally and above estimates of the cost of capital. This is the case for many firms.

3.30 However, some dealer-owned retail sites are operating on quite slim margins and facing financial pressure. In our view, this seems to reflect the relatively high wholesale price they pay for fuel (compared to the total margin available across the wholesale and retail level). The high margins in the industry are largely being captured by majors and distributors. Some dealers are also impacted by a nearby unmanned site which has low costs to serve and often can offer more competitive retail prices for petrol and diesel.[198] The Motor Trade Association (MTA) submitted that "these businesses are not achieving anything like the profits attributed to the fuel firms and in many cases [are] finding it difficult to make ends meet".[199]

3.31 We acknowledge that market participants have invested in a range of retail market innovations that have expanded consumer choice. However, these innovations should be incrementally profitable by themselves, and not reliant on high fuel margins that would be competed away in workably competitive fuel markets.

3.32 In particular, the evidence available to us shows:

3.32.1 profits being achieved or anticipated that are materially above normal rates of return (estimates of the cost of capital);

3.32.2 returns expected and/or earned on additional retail investment clearly exceeding the cost of capital; and

3.32.3 excess returns appear to have persisted for most of a decade and seem likely to continue under current policy settings.

3.33 Different analytical approaches and techniques support these findings. That is, the results are not a function of one particular analytical approach or the use of one dataset.

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198 The MTA supports these views on the causes of financial pressure that dealer-owned retail sites may face. MTA "MTA Submission – Commerce Commission Market Study into the Retail Fuel Sector – Draft Report" (13 September 2019) at [7.2.6].

199 The MTA's stated that these views were based on its own limited analysis of profitability at the independent retailer level in conjunction with anecdotal accounts. MTA "Further comment to Commerce Commission on market Study into the Retail Fuel Sector" (11 October 2019) at 8.2.1.

3.34 We summarise some of our key findings below. Attachments A to D discuss these findings in more detail and our responses to related submissions on our draft report.

3.35 The next sections summarise our findings that:

3.35.1 business cases show high expected returns from opening new or rebuilt sites;

3.35.2 Tobin's q estimates suggest the value investors place on the profits expected from three fuel firms (Z Energy, Chevron, and Gull) are well in excess of the cost of replacing the assets of these firms;

3.35.3 New Zealand retail fuel firms are achieving high levels of return on average capital employed (ROACE), above the cost of capital, and the ROACE earned by international fuel firms and a wide range of other NZ firms;

3.35.4 importer margins have grown above previously acceptable levels; and

3.35.5 market participants view recent returns as above competitive levels.

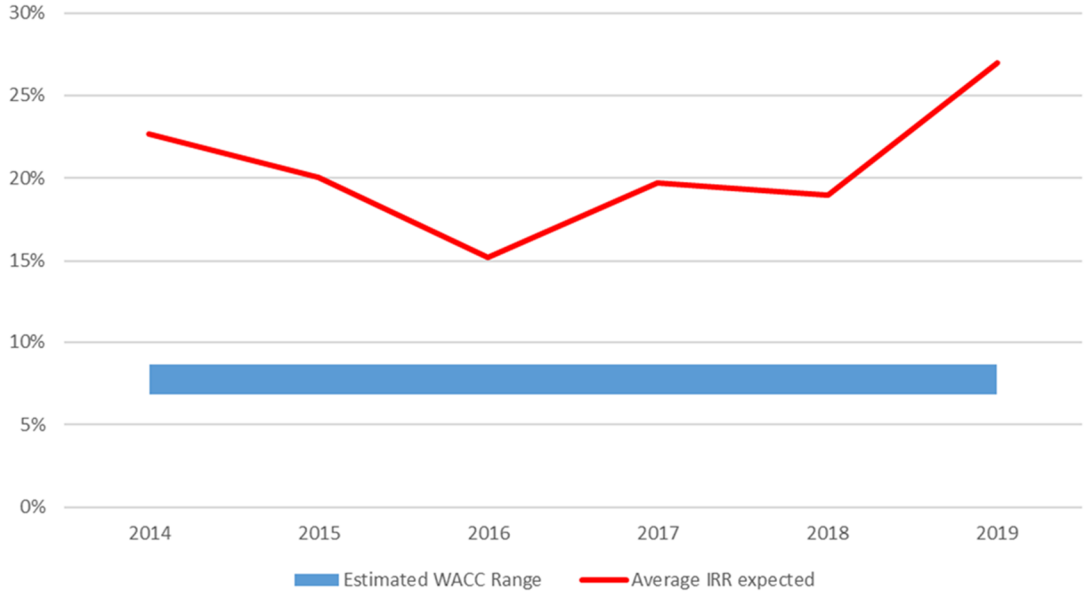
Business cases show high expected returns from opening new or rebuilt sites

3.36 We have looked at a range of firms' business cases for new or rebuilt retail sites, including a variety of site locations, sizes and types (full service and unmanned). In these business cases, firms expect returns on these new investments that are, on average, more than double our estimate of the cost of capital (WACC) required to fund those new investments. This has consistently been the case over the 2014-2019 period for a range of firms building new retail fuel sites.

3.37 Figure 3.1 shows that the weighted average internal rate of return (IRR) expected from these projects is 20% per annum and materially exceeds our estimated WACC range for all years in the period from 2014-2019.[200] Our estimated WACC range for a New Zealand fuel company is 6.9% to 8.6% and is discussed in more detail in Attachment B.

[200] As discussed in Attachment B, the bottom end of the WACC range is the most appropriate estimate of WACC to assess the attractiveness of proceeding with the investment, since that reflects the cost of raising incremental capital needed to fund the investment at the time of investment.

Figure 3.1 Internal Rate of Return expected on investment in retail sites (2014-2019)



Source: Commerce Commission analysis of information provided by various fuel firms.

3.38 Most sites are expected to pay back their initial investment within four to seven years, suggesting firms are expecting rates of return that are materially above our estimated WACC.

3.39 We acknowledge that forecasts can be over optimistic and may not reflect actual experience, as submitted to us by some industry participants.[201] Nonetheless, there are few indications that the high average IRRs reported in Figure 3.1 are largely due to over optimistic forecasts. Among other factors, the continued strong rates of new and proposed site openings and firms' internal management commentary suggests that firms are satisfied with the actual performance of their new sites.[202] In addition, available information on the actual performance of some new sites indicates that many have exceeded their pre-opening projections, a number significantly so.[203]

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201 For example, BP New Zealand "Feedback on Working paper – Assessing profitability" (14 May 2019) at [5.3]. We also received comments on this point in response to our draft report. This is acknowledged in Attachment C.

202 For example, [ ]; [ ]; [ ] and [ ]

203 See Attachment C for further discussion and evidence.

3.40 Firms' expected profits from opening new or rebuilt sites has not declined over the 2014-2019 period, despite the growth in the number of sites. Nor is there any apparent slowdown in the rate of new builds.[204]

3.41 It appears that the additional competition from these new sites has not, to date, reduced firms' expectations of future profits from investment in new retail fuel sites.

3.42 High returns on new retail investment could occur in a competitive market if overall growth was strong, but we do not consider this is the case for retail fuel. On the contrary, retail capacity has been growing faster than total demand, so the average volume sold at each site is declining.[205] We consider that high returns on investment in new sites is likely to reflect high margins.

3.43 Z Energy submitted that business cases are a poor proxy for average returns and that the incremental IRR for an individual project provides no insight into average returns.[206] However, we consider that the expected and actual profitability of new sites does provide useful insights into the profitability of the retail fuel industry. We balance this analysis by also looking at a range of measures which focus on returns from the portfolio in total.

Tobin's q estimates suggest investors expect ongoing high profits

3.44 Tobin's q can be used as a measure of profitability and of market power. It is the ratio of a firm's market value to the replacement cost of its assets.

3.45 In a competitive market, this ratio – "q" – would tend towards one. When a firm's q is greater than one, the market value of the firm is greater than its replacement cost. In that case, the market value of an additional unit of capital likely exceeds its replacement cost. This incentivises new entry and expansion. If there is free entry, new firms will enter and/or existing firms will expand, and over time q will be driven down towards one.[207] However, if a firm has market power and if entry or expansion of competitors continues to be restricted, that firm will earn excess returns that will persist (ie, q will persist at values above one).[208]

3.46 We have estimated Tobin's q for three New Zealand retail fuel firms, where we have recent, reliable estimates of market value: Z Energy (publicly listed), Chevron

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204 Waitomo and Gull have announced their intention to enter the South Island market. Other distributors also continue to open new sites.

205 For example, in a May 2019 presentation Z Energy stated that "35 NTI sites had been built, growing capacity by 2% in a market where petrol sales declined by 1.5%".

206 Z Energy "Z Energy submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" (13 September 2019) at [60]-[61].

207 Lindenberg, E., and S. Ross "Tobin's q Ratio and Industrial Organization" (1981) Journal of Business 54:1 at 2.

208 Ibid at 2.

NZ (acquired by Z Energy in 2016), and Gull NZ (acquired by Caltex Australia in 2017).

3.47 Tobin's q estimates for these three firms suggest the market value of their fuel businesses are about 1.5 to 2.0 times the estimated current cost of replacing each firm's assets.[209]

3.47.1 Our estimate of q for Chevron is between 1.8 and 2.2 as at 1 June 2016 when it was acquired by Z Energy.

3.47.2 Our estimate of q for Z Energy is between 1.6 and 2.0 as at 31 March 2019. This range excludes the book value of contracts that Z Energy acquired when purchasing Chevron for reasons discussed in Attachment C.

3.47.3 Our estimate of q for Gull – using only estimates of full replacement cost – is between 1.3 and 1.6 as at July 2017 when it was acquired by Caltex Australia.

3.48 These estimates of q suggest the market values of each fuel business materially exceeds its estimated replacement costs. This suggests that current and recent investors expect ongoing high profits and that those investors do not expect: [210]

3.48.1 a significant increase in competitive intensity from current competitors; or

3.48.2 new entry, or if entry does occur they expect it will be sufficiently small-scale or localised, it would not drive price to the competitive level and such that those excess profits are expected to remain significant.

3.49 In our view, values of Tobin's q above one seem to be primarily explained by weak competition. This is consistent with other analysis in Chapters 4 to 7 of this report of ineffective competition, and a range of barriers to entry, deterring new wholesale entry.

Most retail fuel firms are achieving high levels of ROACE

3.50 We have estimated returns on average capital employed (ROACE) for the New Zealand fuel firms that have a significant retail focused fuel business. These firms are: BP, Chevron (until 2015), GAS, Gull, Mobil, NPD, Shell (until 2010), Waitomo, and Z Energy (from 2010).

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209 For Chevron and Z Energy, these ranges of Tobin's q estimates are calculated using both estimates of full replacement costs of specialised assets and estimates of depreciated replacement costs for specialised assets. For Gull, the Tobin's q estimates are calculated using only estimates of full replacement costs of specialised assets as there were no reliable estimates of its depreciated replacement costs.

210 We note that these Tobin's q estimates are for only a few firms and for a broader range of activities than retail fuel for two of the companies.

3.51 Our estimate of the average ROACE over the last three financial years for fuel firms with a significant retail focused fuel business:

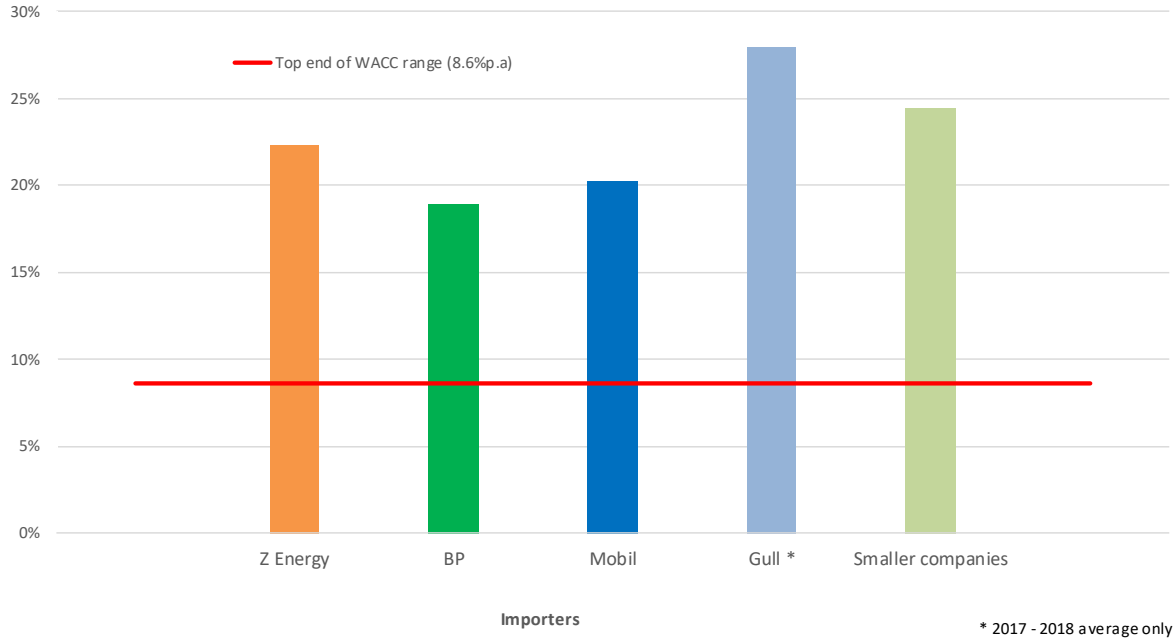
3.51.1 is above the top of our estimated WACC range of 6.9% to 8.6%;

3.51.2 is above the levels being achieved by comparable fuel firms internationally and companies in the NZX50;[211] and

3.51.3 appears to be growing.

3.52 Some of these comparisons are shown in Figure 3.2 and Figure 3.3 below.

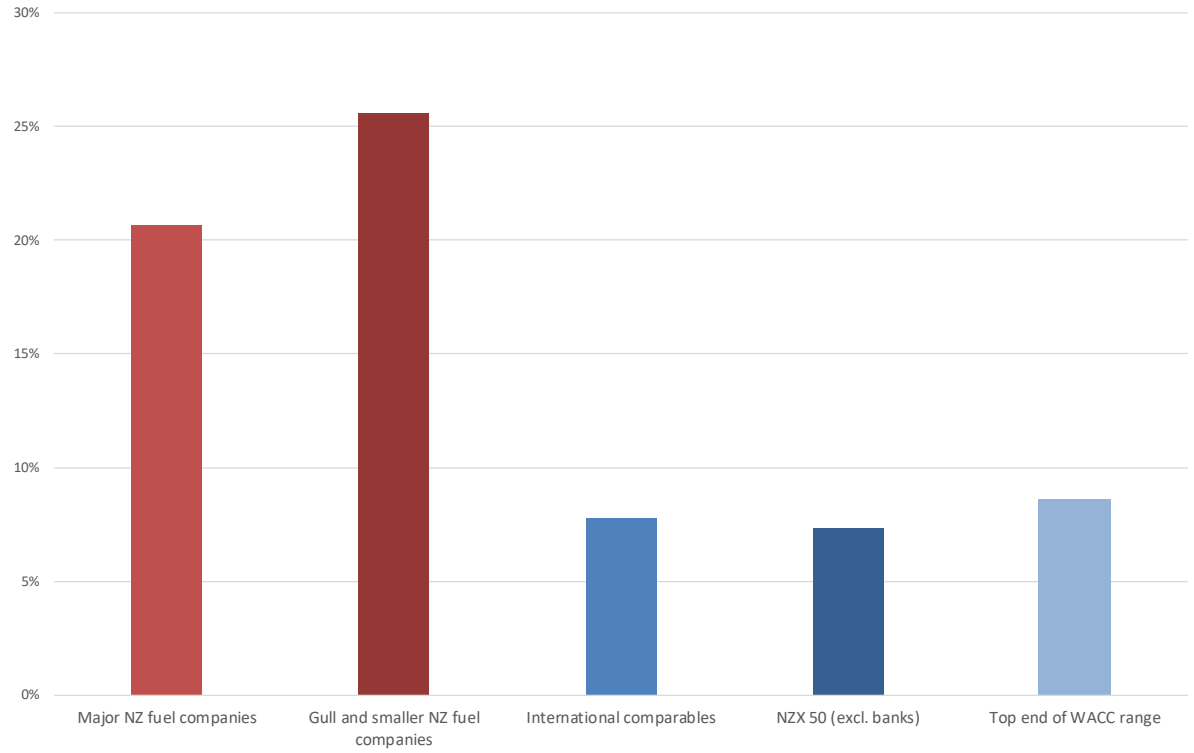
Figure 3.2 Return on average capital employed (2016–2018)



Source: Commerce Commission analysis of data reported by various NZ fuel companies.

211 The NZX50 is the main stock market index in New Zealand and comprises the 50 biggest stocks by free-float market capitalisation trading on the New Zealand Stock Exchange. Our analysis does not change the make-up of the NZX50 year-by-year, we take the NZX50 as at July 2019 and use that for all years of our analysis.

Figure 3.3 Fuel companies' return on average capital employed (2016–2018)



Source: Commerce Commission analysis of data reported by various NZ fuel companies, international energy companies and NZX50 companies.

3.53 High levels of ROACE appear to be enjoyed by several companies in the fuel industry, including a number of distributors who appear to be earning substantially higher returns on capital employed than the majors.

3.54 While Gull and a number of distributors have achieved higher returns on their capital employed, the majors appear to be accruing most of the excess returns in dollar terms.[212] This reflects the considerably larger size of the majors' businesses.

3.55 We also estimated an IRR for the business acquired from Shell (now known as Z Energy) over its life from entry in 2010 until 2 August 2019. We find that the original equity investment in 2010 in what is now Z Energy has generated an IRR of around 34% per annum.

3.56 We received a large number of submissions on ROACE and comment on these in detail in Attachment C.

212 This is calculated as the amount by which the firm's estimated ROACE exceeds the top of our WACC range, multiplied by the amount of capital employed for each firm.

3.57 Overall, our estimate of ROACE for New Zealand fuel firms contributes to our view that the majors and a number of distributors are all benefitting from retail prices above competitive levels. The cost of this is borne by consumers.

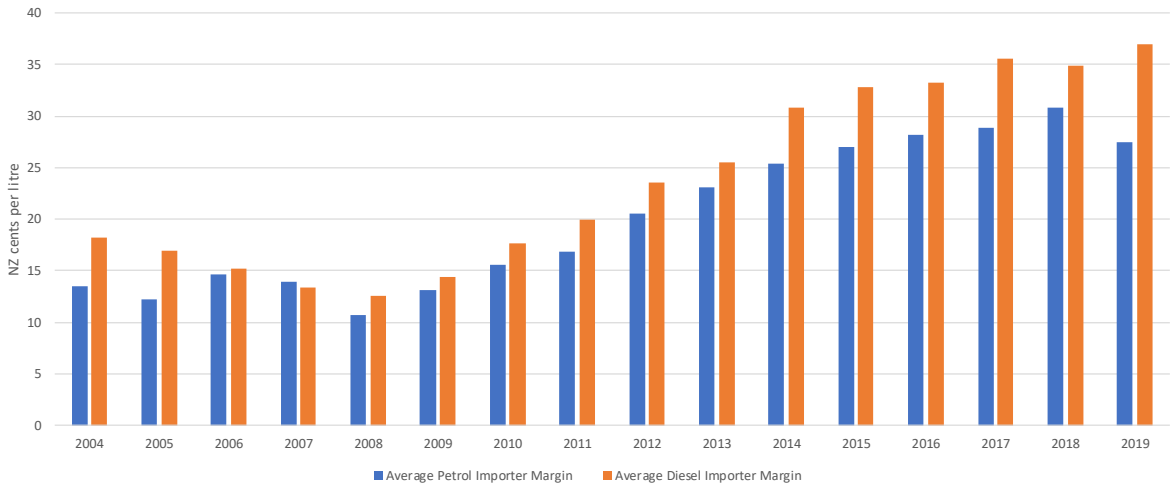
Importer margins have grown above previously acceptable levels

3.58 Our findings that profits have been persistently high over the last decade are consistent with the trend of growing importer margins over this time. In our view, and as evidenced by companies' internal views, margins are an indicator of trends in profitability and consequent likelihood of new entry if these markets were workably competitive, rather than a measure of profitability in and of itself. The discussion below supplements our other profitability analyses.

3.59 The estimated importer margins, which were low in the decade prior to 2010, have grown strongly since, as have the margins reported publicly by Z Energy. Reported importer margins have been largely flat since about 2017 but remain at levels well above those seen early this decade and in the prior decade.

3.60 This is shown in Figure 3.4 below.

Figure 3.4 Average yearly importer margins (2004–2019)[213]



Source: Commission analysis based on MBIE data[214]

3.61 Figure 3.4 above shows that:

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213 Figure 3.4 reports average importer margins over the calendar year, with the exception of 2004 which reports data from April to year end and 2019 which includes data for the period January to September 2019.

214 These are average calendar year petrol and diesel importer margins. The petrol (diesel) importer margins are the discounted petrol (diesel) price less duties, taxes, levies, ETS and the importer cost. MBIE weekly fuel price monitoring available at <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/weekly-fuel-price-monitoring/>. (Viewed on 9 November 2019).

3.61.1 the level and growth rate of diesel importer margins have consistently outpaced petrol importer margins;

3.61.2 importer margins reached historical lows in about 2008 of about 10 to 12 cents per litre of petrol and 10 to 15 cents per litre for diesel; and

3.61.3 between 2008 and 2018, importer margins have more than doubled. This is shown in Table 3.1 below, which also compares the magnitude of these changes to the change in fuel taxes over the same period. As noted below, evidence suggests firms considered margins in 2008 to be low and possibly unsustainable.

3.61.4 over 2019, diesel importer margins have increased while petrol importer margins have declined to levels last seen in about 2014-2015, which were already considered to be high and at levels that may attract new entry.

Table 3.1 Changes in importer margins and taxes (cpl, 2008-2018)

	Average petrol importer margin	Petrol taxes	Average diesel importer margin	Diesel taxes
2008	10.7	71.7	12.5	16.5
2018	30.8	96.5	34.8	21.1
Increase	+20.1cpl (187%)	+24.8cpl (35%)	+22.3cpl (178%)	+4.6cpl (28%)

Source: Commerce Commission analysis based on MBIE data (2019).[215]

Market participants view recent returns as above competitive levels

3.62 We find that returns have persisted above competitive levels for many years. Returns may have now peaked but they do not look likely to decline significantly. Several sources, including the firms, indicate that margins and returns are expected to remain at elevated levels for some time, even though recent growth in margins and profits appears to have levelled off and may have peaked.

3.63 Several market participants have said that the sector is competitive and/or that competition is intensifying.[216] It appears that some of the majors' retail fuel volumes have been negatively impacted by the increasing presence of distributors'

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215 These are average calendar year petrol and diesel importer margins. The petrol (diesel) importer margins are the discounted petrol (diesel) price less duties, taxes, levies, ETS and the importer cost. MBIE weekly fuel price monitoring available at <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/weekly-fuel-price-monitoring/>. (Viewed on 9 November 2019).

216 For example, Mobil submitted that "In [Mobil's] experience, New Zealand continues to be a very tough, competitive, dynamic petroleum market". Mobil "Submission to the Commerce Commission New Zealand in response to the Statement of Preliminary Issues for the Market Study into the Retail Fuel Sector" (February 2019) at [17]. See also Z Energy "Market study into the retail fuel sector: Z Energy's response to invitation to comment on preliminary issues" (February 2019) at [30.2] and [164] and BP "Market study into the retail fuel sector – BP New Zealand comment on preliminary issues" (February 2019) at 3.

participation in retail fuel sales.[217] Nonetheless, market participants have spoken favourably about margins from as early as 2010, soon after margins started rising. These favourable views may be in comparison to lower margins during 2008/2009, which market participants considered low and not sustainable.

3.64 There is some evidence to suggest the lower margins during the 2008/2009 period may have been driven by Shell's desire to drive volumes for its overseas refinery (when Z Energy bought Shell in 2010, it did not purchase Shell's overseas exploration assets).[218] Some of the majors were seeking to exit the market during that period of low margins and consolidate.[219] Shell exited in 2010 and Mobil has been unsuccessfully marketed for sale at least twice since 2008. Exit of Shell, a volume-focused major, was apparently a factor that supported growth of margins.

3.65 Evidence also suggests that market participants have considered margins to be favourable in absolute terms and attributable to changes Z Energy made to Shell's strategy when it acquired the Shell assets. Market participants also commented that they expected high margins would attract new entrants and sustained discounting, since around 2012 or 2013.[220]

3.66 For example, in late 2010 one company commented that:[221]

> Very good margins… [other companies] appear to be looking to greater retail margins in the market with Shell (now Greenstone) being significantly slower to drop market prices… Greenstone appear to be significantly less aggressive on retail price than Shell. [Other companies] appear to be happy to follow this lead giving less pressure on margins.

3.67 In 2017, the same company considered that:[222]

> The change of ownership of the Shell assets has changed the margin landscape. Since 2010 margins have increased significantly.

3.68 Another company, in mid-2013, noted that:[223]

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217 See paragraphs 3.143 - 3.153 below for further discussion.

218 For example, [ ]

219 [ ]; [ ]; and [ ]

220 [ ] and [ ]

221 [ ] When Shell's retail assets were acquired by Infratil Limited and the Guardians of the New Zealand Superannuation Fund in 2010, the holding company was renamed from Shell NZ to Greenstone Energy Holdings Limited, before its name was changed to Z Energy Limited in 2011.

222 [ ]

223 [ ]

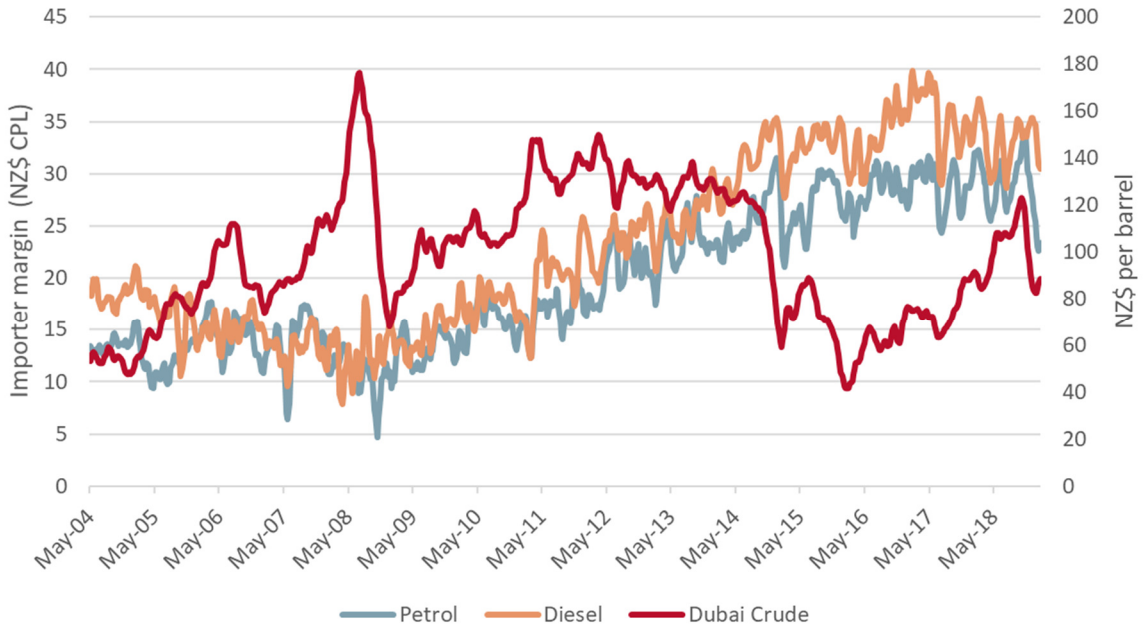
> Fuel margins currently at an all-time high. Whilst NZ is a stable market, such high margins will attract new entrants or sustained discounting of margins.
>
> In 2010 Shell exited the NZ market, selling out to Z. Since 2009: On-road and Primary diesel sectors have significantly increased margins (~55%), ULP [regular petrol] margins in this time have increased 45%, whilst PULP [premium petrol] has increased 94%... NZ is experiencing very strong margins in both Wholesale and Retail.

3.69 A company's 2012 board paper noted that the high margins at that time could attract a new retailer to the market. In the same document, the company proposed steps it would take in anticipation of such entry and which may help to deter a new entrant.[224]

3.70 Margins and returns on capital have increased further since 2012 and 2013.

3.71 Figure 3.5 below shows the four-week rolling averages of importer margins for petrol and diesel relative to an international oil price benchmark (plotted against the right-hand axis). It shows that margins continued to rise even after global prices slumped in 2014.

Figure 3.5 Importer margins and crude oil prices (four-week rolling average, 2004-2019)



Source: Commerce Commission analysis based on MBIE data (2019).[225]

[224] [ ]

[225] MBIE weekly fuel price monitoring available at: <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/weekly-fuel-price-monitoring/>.

3.72 Market participants have responded to higher margins by expanding their retail site presence. They have also responded through greater use of discount and loyalty programmes, which we discuss in Chapter 7.

3.73 To date, entry has been concentrated in new retail sites and the impact from that entry on industry margins appears to have been limited. Apart from Gull in 1998, only TOSL plans to enter at the importer level and the success of this entry has not yet been tested.

Growth in margins and profits appear to have levelled off and may have peaked

3.74 As noted above, profits have been persistently high over the last decade and are consistent with the trend of importer margins growing over time. Comments from several sources, including the firms, indicate that they are not expected to decline. Firms' own views support expectations that returns will remain at current levels for the next few years or grow in the years ahead.[226]

3.75 Nevertheless, some firms have experienced lower margins in recent times and some expect competition to dampen retail margins. This, along with a levelling off of growth in importer margins in recent years, suggests that returns may have peaked and levelled off.[227]

3.76 For example, Z Energy recently reported lower margins in its fuel business, and across the fuel industry generally.[228] Z Energy highlighted that 90% of the deterioration in its forecast profit guidance was attributable to its performance in retail.[229]

3.77 Recent research from Macquarie Bank separately forecasts the fuel margin for Z Energy. That forecast shows a decline in fuel margins.

3.77.1 Macquarie Bank forecast a fuel margin for Z Energy's 2021 financial year of $650 million (down from $692 million at the time of publishing our draft report in August 2019).[230]

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226 See Attachment D for further details.

227 See Attachment D for further details.

228 Z Energy "2020 Interim Results Presentation for the six months ended 30 September 2019" (31 October 2019) at 17. On the webcast, Z Energy identified a 5 cpl lower margin was indicative of the decline in retail margins. Available at <https://investors.z.co.nz/announcements/webcasts-presentations>.

229 Ibid at 17.

230 These Macquarie's forecasts were published in October 2019 and July 2019 respectively. Alongside its updated (and reduced) 2021 financial year forecasts, Macquarie noted that "[t]he financial outcomes (risk to retail fuel margins) are uncertain and it will be some time before they become any clearer, made more uncertain by the fact that it will be the Government's (MBIE) response to the final ComCom report in December that will ultimately determine outcomes". See Macquarie Bank "Z Energy Increased dividend certainty" (31 October 2019) at 1 and 14, and Macquarie Bank "Z Energy Solid start to FY20" (17 July 2019) at 4.

3.77.2 This represents a 5% decline over the fuel margin in FY2018, and a 7% decline from FY2019.

3.78 We acknowledge that it is uncertain what will happen to margins and returns in the future. As noted, it is difficult to forecast future margins and we have not sought to do so in this study.

3.79 Nevertheless, in our view the New Zealand fuel industry appears to be earning, and expecting to earn, significant excess returns on a persistent basis. Although the growth in margins appears to have levelled off and may have peaked, and Z Energy has reported lower net profit, we are not persuaded that this evidences an industry trend towards declining profitability. The underlying factors affecting retail fuel competition have not changed. We discuss these factors in Chapters 4 to 7, including a range of conditions of entry and expansion in New Zealand fuel markets. We consider that historical persistent excess returns are not consistent with a workably competitive market.

3.80 Finally, we note that under current settings there is a clear risk that competition could weaken. This is because the new retail sites which have opened are predominantly supplied with fuel by Mobil and are therefore potentially exposed to a change in strategy from Mobil (or a buyer of Mobil's NZ business) over wholesale pricing and access. Competition which depends on the individual strategy of one player may not endure over time.

Retail fuel prices

3.81 This section contains observations about New Zealand's retail fuel prices. We compare prices over time, across fuel types, across regions, and across countries. We also consider the extent to which global fuel price changes are passed through into domestic pump prices, and how the size of fuel discounts may impact board prices.

3.82 In this section, we observe:

3.82.1 real retail fuel prices have trended upwards since about 2015–2016;

3.82.2 New Zealand's pre-tax retail fuel prices are relatively high compared to other countries;

3.82.3 growing price differentials between retail prices of regular and premium fuel;

3.82.4 how changes in costs are passed on through retail price changes;

3.82.5 higher discounts are associated with higher retail board prices; and

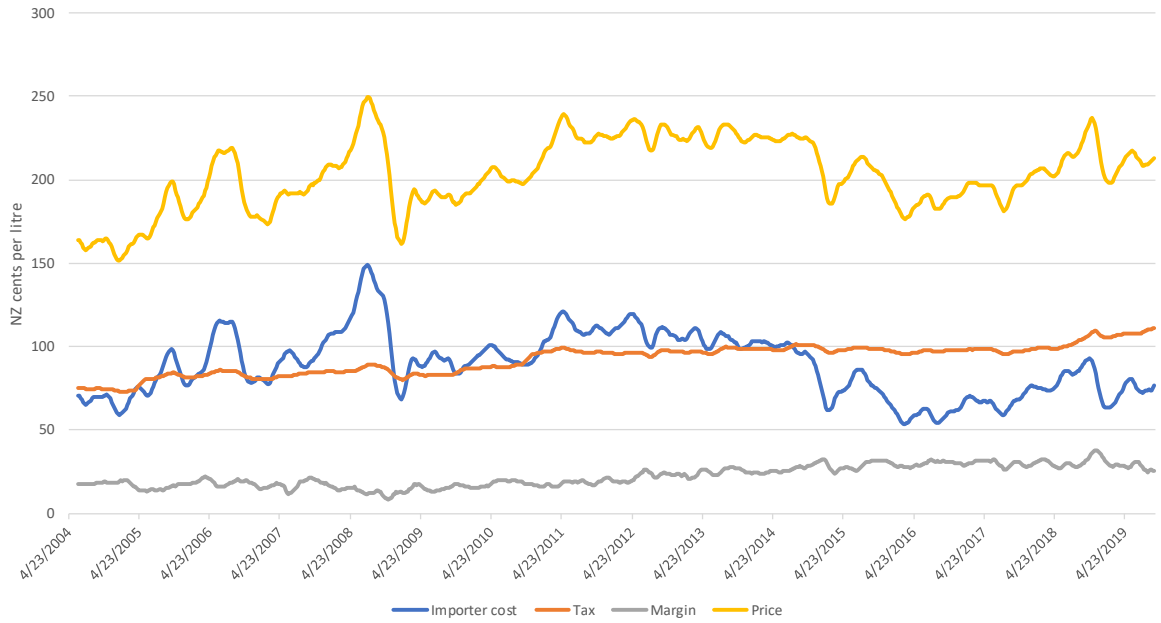
3.82.6 regional differences in retail fuel prices and importer margins.

Retail fuel prices have trended upwards since 2015-2016

3.83 Figure 3.6 and Figure 3.7 below shows the rolling average (eight weekly) of regular petrol and diesel prices. These prices are adjusted for inflation (using the third quarter of 2019 as the base).

3.84 Figure 3.6 shows that real prices for regular petrol have remained relatively steady, while real importer costs have been declining. Figure 3.7 shows that real prices for diesel have risen since about 2016 (after initially declining around 2014-2015). This follows an initial rise in regular petrol and diesel real prices around 2010-2011.

Figure 3.6 Eight week rolling average real price components for regular petrol (cpl) (2004-2019)

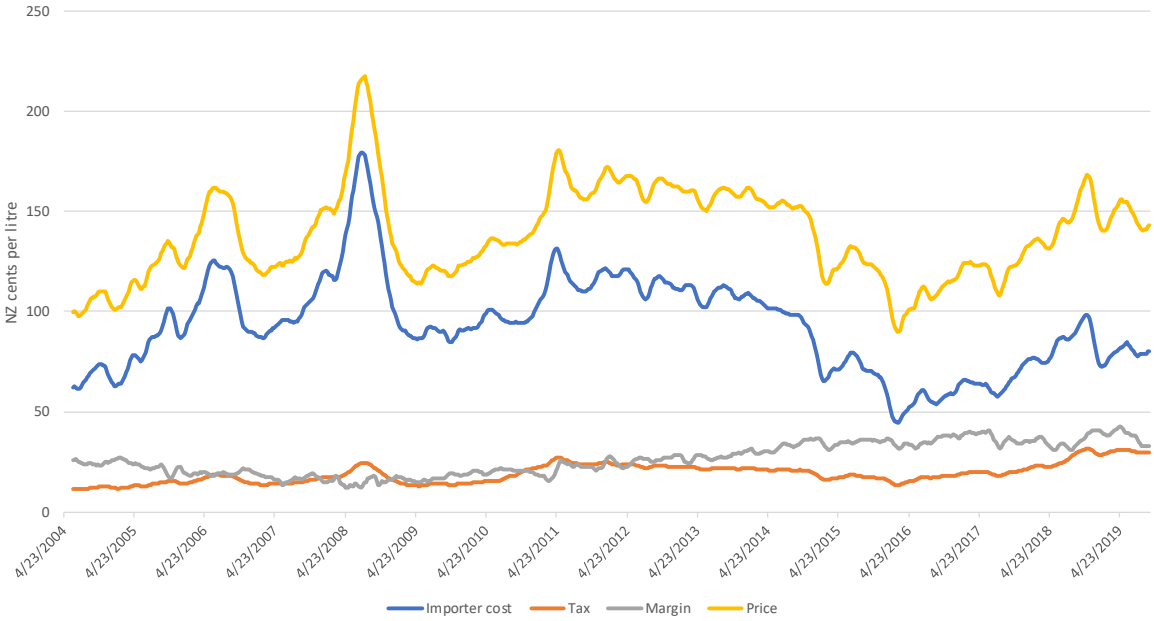


Source: Commerce Commission analysis based on MBIE petrol price component data and Statistics NZ CPI data (2019)[231]

3.85 Figure 3.7 below shows movements in the real price of diesel. An obvious difference is that taxes make up a smaller proportion of the price of diesel. Instead, diesel vehicle users (including non-commercial diesel users) pay road user charges.

231 These prices reflect MBIE's estimate of the discounted retail price. MBIE weekly fuel price monitoring, available at: <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/weekly-fuel-price-monitoring/>. Prices have been rebased to the third quarter of 2019 using Statistics NZ CPI data. <http://archive.stats.govt.nz/infoshare/ViewTable.aspx?pxID=6d98a247-df70-4619-8107-8d514323c22b>.

Figure 3.7 Eight week rolling average real price components for diesel (cpl) (2004-2019)



Source: Commerce Commission analysis based on MBIE diesel price component data and Statistics NZ CPI data (2019)[232]

New Zealand's pre-tax fuel prices are relatively high compared to other countries

3.86 New Zealand consumers pay relatively high pre-tax prices for petrol and diesel, compared to consumers in other countries.

3.87 Figures 3.8–3.10 below compare the New Zealand pre-tax ($US) prices of premium petrol, regular petrol and diesel over the last two decades to those in other OECD countries. These figures show that earlier this decade New Zealand's pre-tax fuel prices began to depart from, and increase relative to, those in other OECD countries. Prior to that, New Zealand's pre-tax prices were closer to those in other OECD countries. This trend is particularly prevalent for premium fuel, where New Zealand's pre-tax prices have sat comfortably above other OECD countries since about 2013 (with the exception of Korea and Mexico).[233] This is consistent with

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232 These prices reflect MBIE's estimate of the discounted price. MBIE weekly fuel price monitoring, available at: <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/weekly-fuel-price-monitoring/>. Prices have been rebased to the third quarter of 2019 using Statistics NZ CPI data. <http://archive.stats.govt.nz/infoshare/ViewTable.aspx?pxID=6d98a247-df70-4619-8107-8d514323c22b>.

233 In 2018, Korea's pre-tax ($US) prices were $0.86UScpl compared to New Zealand's $0.88 and Mexico's $0.87. Despite Korea's relatively high pre-tax prices, Z Energy points out that Korean data inherently captures all discounts offered off the pump price, whereas other OECD countries' data may ignore or merely estimate discounts. Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" at [82.3].

other evidence that suggests that firms considered margins were high from as early as 2010.

Figure 3.8 Pre-tax regular petrol prices in OECD countries (2000-2018)[234]

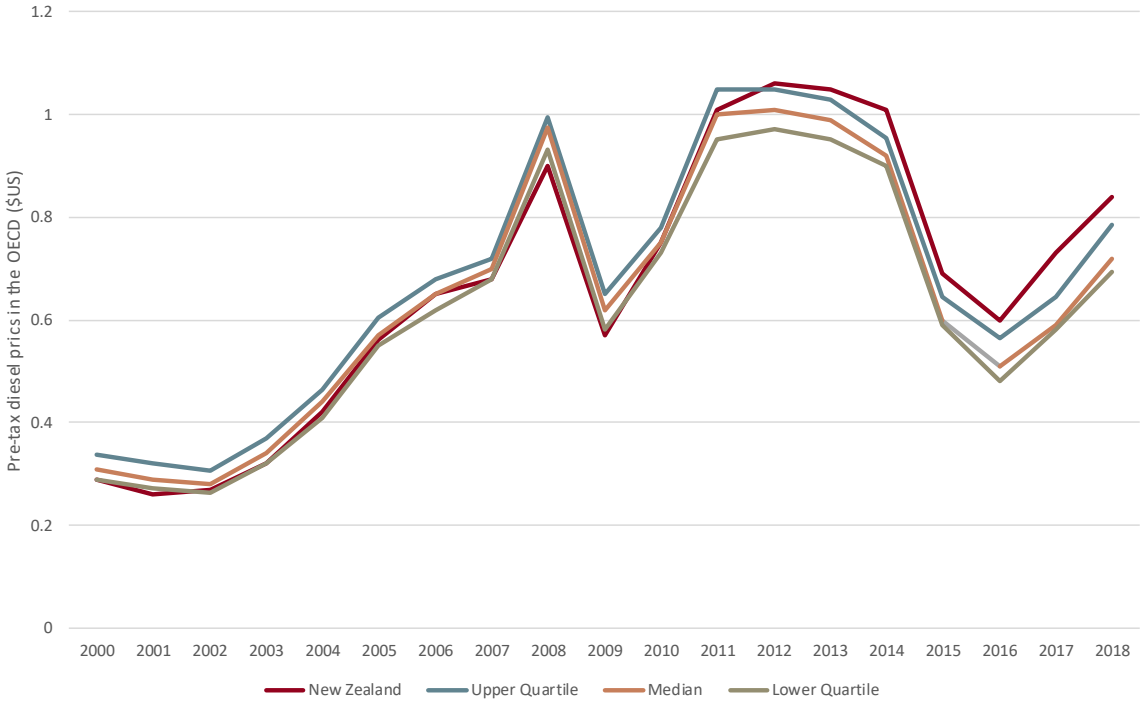
Source: International Energy Agency, Energy Prices and Taxes (2000-2018)

[234] About a third of OECD countries are represented in this chart (14 for the majority of the period and 10 from 2014 onwards. There is less OECD country price data available on regular petrol compared to premium petrol and diesel.

Figure 3.9 Pre-tax premium (95 octane) petrol prices in OECD countries (2000-2018)

Source: International Energy Agency, Energy Prices and Taxes (2000-2018)

Figure 3.10 Pre-tax diesel prices in OECD countries (2000-2018)



Source: International Energy Agency, Energy Prices and Taxes (2000-2018)

3.88 In 2018, New Zealand's pre-tax fuel prices were ranked first, second and third equal across 95 octane petrol, regular petrol, and diesel respectively. We do not draw strong conclusions about New Zealand's relative prices at a specific point in time.

Our draft report included similar OECD comparisons but only over the first quarter of 2019. It showed that New Zealand's pre-tax fuel prices ranked third highest across all fuels. EconomicsNZ submitted that the OECD comparison of fuel prices should be made on a purchasing power parity basis, noting that "[b]ecause spot market exchange rates are volatile, you shouldn't be drawing any long-term competition policy conclusions about petrol (or anything else) on the basis of an exchange rate that might show a quite different picture a few months down the track."[235]

3.89 We agree that the time trend is relevant and have shown the trends above. However, we consider that prices should reflect fuel costs using market exchange rates, given importer costs are a key component that is traded at market rates. Figures 3.8–3.10 above include average annual exchange rates, which smooth some of the volatility inherent in spot exchange rates.

3.90 We acknowledge Z Energy's submission that there are some differences in methods for collecting data in each country and that there are reasons why New Zealand ought to be one of the more expensive countries for fuel in the OECD, such as geographic isolation and relatively high fuel specifications.[236]

3.91 However, we consider the OECD comparison holds value in comparing New Zealand's relative position over time. New Zealand specific characteristics do not assist in explaining the trend of New Zealand's increasing relative prices.

Growing price and margin differentials between regular and premium fuel

3.92 Premium petrol prices currently tend to be about 13-15cpl above the price of regular petrol. This price difference between regular and premium petrol has grown over the last decade, from about a 7-8cpl difference in 2011.[237]

3.93 This pricing conduct has meant that the premium petrol importer margin has grown at a faster rate than the regular petrol importer margin. This is shown in Figure 3.11 below. Premium petrol currently provides an additional margin of about 8-10cpl compared to regular petrol. In 2011, this additional margin was about 4-5cpl.[238]

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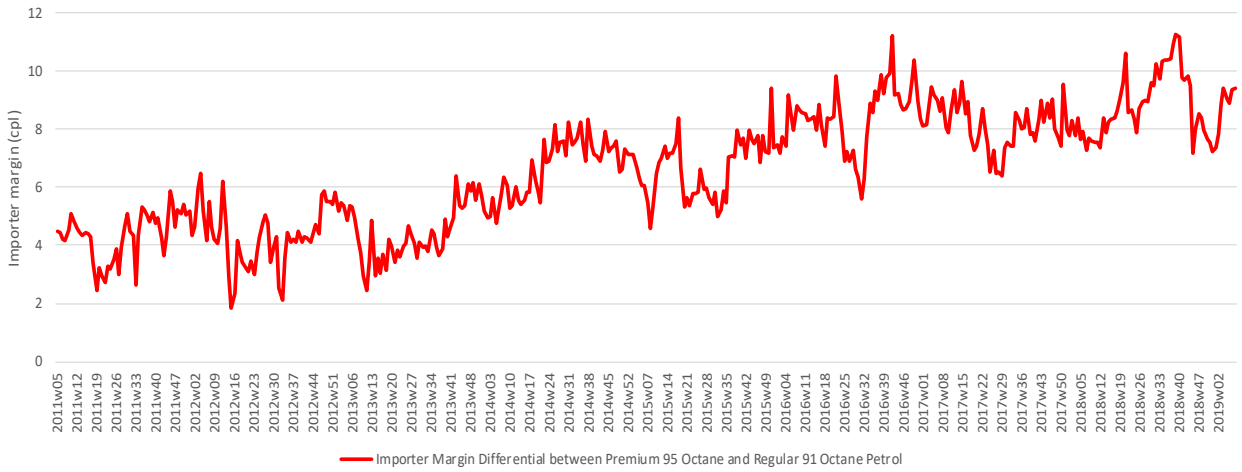
235 Economics New Zealand "Submission from Economics New Zealand on the draft petrol market report" at 1-2.

236 Z Energy "Submission on the Commerce Commission's Market Study into the retail fuel sector: draft report" (13 September 2019) at [78.1-78.3].

237 Commerce Commission analysis based on data provided by industry participants.

238 Commerce Commission analysis based on retail sales data provided by fuel companies, the Singapore benchmark cost index data, and taxes and levies for different fuel types, published by the Ministry of Business, Innovation & Employment. Available at: <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/weekly-fuel-price-monitoring/>.

Figure 3.11 Difference between importer margin of regular and premium petrol[239]



Source: Commerce Commission analysis based on data provided by industry participants.

3.94 There has not been any corresponding increase in the costs of producing premium petrol that can explain the increasing gap between importer margins on regular and premium petrol.[240] In addition, fuel companies tend to charge their retail and wholesale customers a higher margin on premium fuel than regular fuel.[241]

3.95 Premium petrol prices are seldom displayed on price boards. In Chapter 7, we discuss retail strategies for premium petrol and why consumers may purchase it. These features may be contributing to the growing price and margin differentials between regular and premium petrol.

Changes in costs are passed on through retail price changes

3.96 In workably competitive markets, we expect to see a close association between prices and industry-wide cost changes. If prices are high and become too disconnected from industry-wide costs, the additional profit available will tend to attract firms to enter the industry until prices decline to better reflect underlying costs. The reverse is also true – if prices are too low relative to industry-wide costs, expected profits fall and firms will be incentivised to exit the industry until profits improve to better reflect underlying costs.

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239 Importer margins represents the gross margin available to fuel importers after covering importer costs, which are the cost of importing fuel to New Zealand —including the cost of purchasing the fuel in Singapore, and shipping it to New Zealand and any cost adjustments for meeting New Zealand's fuel specifications.

240 Some adjustments have been made to the Singapore benchmark cost index to account for quality premia costs of both 91 and 95 octane petrol to meet New Zealand's fuel specifications.
[ ]

241 A range of fuel companies' internal documents supports this.

3.97 We have analysed the extent to which changes in the costs of refined fuel are associated with changes in retail fuel prices, using daily site-level board prices for the period January 2011 to February 2019. Refined fuel is a key marginal cost component for all market participants. As such, we would expect to see the cost of refined fuel reflected in board prices.

3.98 We refer to the relationship between these industry-wide input costs and board prices as the pass-through rate. Pass-through describes how participants in fuel retailing change their board prices following a change in the cost of fuel. We use the Singapore spot market price (NZ$) as our indicator of input cost and examine the extent to which changes in that variable show up in board prices, after controlling for other factors such as the location of the retail site (which affects the cost of its fuel through land transport costs).

3.99 In a competitive fuel market, we would not expect to observe any pass-through rates greater than 100% except in circumstances that do not apply in the case of retail fuel.

3.100 The main results of this analysis are summarised below. We provide more detailed information on these findings and underlying assumptions in Attachment E.

Summary of key findings

3.101 We allowed for pass-through rates to differ across years and for cost changes to show up in retail prices immediately and with time lags of up to four weeks. Our analysis has found the following main results.

3.101.1 We find that pass-through rates are either statistically indistinguishable from, or below 100% for most years and across all fuel types. This is not inconsistent with a workably competitive fuel market. However, we note that pass-through rates significantly greater than 100% (such as those we observe in 2015 to 2017 for some fuel types) are inconsistent with our expectations of pass-through rates in a workably competitive fuel market.

3.101.2 The speed of pass-through varied considerably, but around 18% to 20% of cost changes showed up in retail prices on the same day, a further 43% to 48% showed up in retail prices after a week, and a further 25% after two weeks. Smaller additional pass-through was also detected after three and four weeks.

3.101.3 The Auckland regional fuel tax is estimated to have been passed through fully into retail prices (ie, one-to-one).

3.101.4 We examined whether pass-through was asymmetric, for example whether cost increases show up more fully or quickly in retail prices than cost decreases. We found no evidence of this asymmetric pass-through.

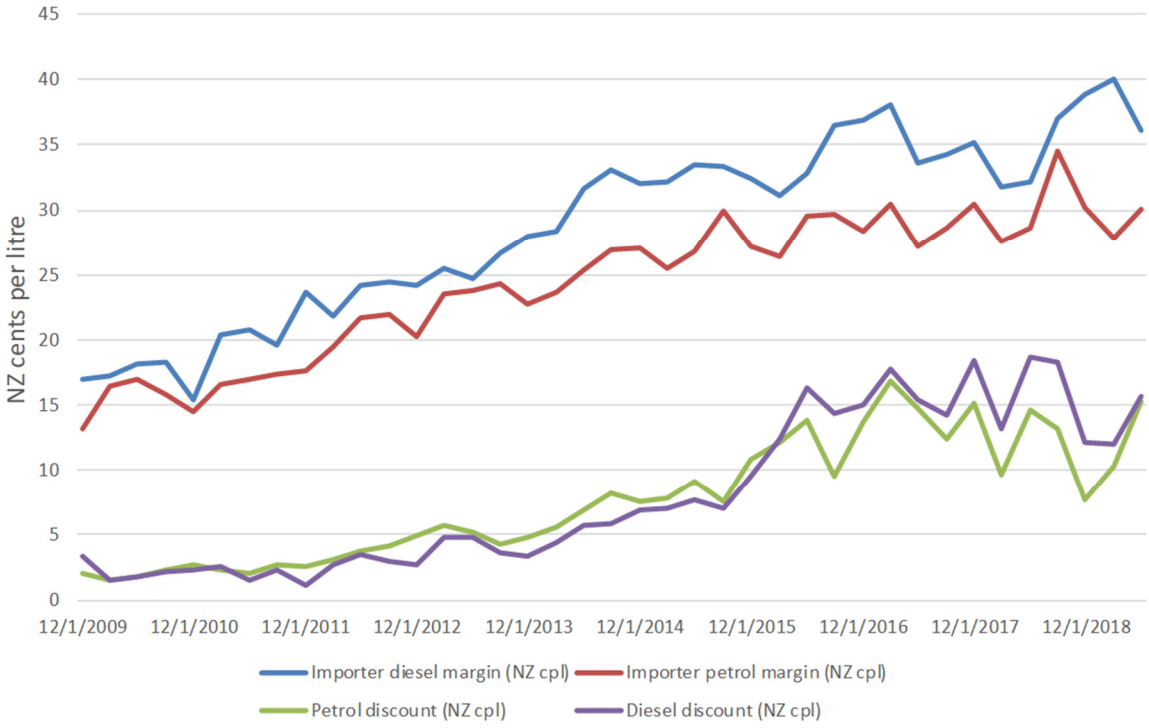
Relationship between board prices and discounts

3.102 As noted in Chapter 2, the actual retail price paid for fuel reflects any discounts or other promotions available to a consumer. There are a wide range of discount and loyalty programmes that provide fuel discounts, which some consumers receive.

3.103 We find that the size of discounts has increased significantly in the past decade, in line with increasing importer margins. At the same time, the proportion of fuel sold at a discount appears to have increased.

3.104 MBIE analysis indicates that fuel discounts are on average more significant today than they were in 2010, as indicated in Figure 3.12 below.

Figure 3.12 Estimated quarterly fuel discounts and importer margins (after discounts)



Source: Commerce Commission analysis of data from MBIE (2019).[242]

3.105 Z Energy submitted that "MBIE's estimate of discounting is flawed". Z raised several concerns about MBIE's methodology, including Statistics New Zealand data which is used as an input to the calculation.[243]

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242 The importer margins are calculated as the difference between discounted prices, less taxes and importer costs. MBIE "Discount forecast tracking" (2019). Available at <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/weekly-fuel-price-monitoring/>. (Viewed on 16 August 2019).

243 Z Energy "Market study into the retail fuel sector: Z Energy's response to invitation to comment on preliminary issues" at [54]-[56]. Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" at [84].

3.106 However, in terms of the *trend* in discounting, it is not clear that any bias has systematically increased over the period.

3.107 We have similarly observed an increasing trend in the off-board discount sizes. Data provided to us on a sample of retail sites indicates that:[244]

3.107.1 annual discounts for regular and premium fuels were around or below three cpl prior to 2014;

3.107.2 annual discounts for diesel were around or below five cpl prior to 2014; and

3.107.3 as at early 2019, depending on fuel type and firm, annual discounts for regular petrol, premium petrol and diesel have since approximately doubled or more than doubled.

3.108 In 2016, a company noted that:[245]

> Cost of discounting continues to be offset by high available margin…

3.109 We observe that board prices rising alongside discounts is consistent with discount and loyalty programmes and other discounts serving as a form of price discrimination – where higher prices are charged to less price sensitive customers that do not use discounts or participate in discount and loyalty programmes.

3.110 Larger discounts benefit customers who are motivated to shop around for the lowest prices (those who are more price sensitive). Customers that are not focused on seeking out the lowest price (those who are less price sensitive) do not benefit from these discounts. Customers paying board prices would be better off if discounts were not present and retailers charged a lower, uniform price to all consumers. We discuss the use of discount and loyalty programmes and their impact on consumers further in Chapter 7.

3.111 We also examined whether short run changes in board prices can be explained by changes in discount size and whether the magnitude of these changes vary across years (measured in cpl).[246] This analysis is complementary to the long-term trend

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244 Our observations are based on analysis of discounts received by consumers (calculated as the difference between the average annual board price and the average annual discounted price (volume weighted) at BP and Z Energy retail sites). The discount price is calculated by dividing daily revenues by daily volume per site, this is then weighted by volume for an average annual discount price. This analysis is based on retail sales data provided to us by BP and Z Energy.

245 [ ]

246 Discount size is calculated by subtracting the discounted price (ie, revenue from discounted sales divided by volume from discounted sales) from the pump price. For example, the pump price, revenue and volume from discounted sales for site A's 91 octane petrol on a given day are $2.10, $100,00 and 50,000 litres, respectively. The discount size would therefore be $2.10 - $100,000 / 50,000 = $0.10.

analysis that shows discounting rising over the last decade more or less in line with importer margins. Our results suggest that:

3.111.1 Board prices appear to increase slightly when discounts increase and decrease slightly when discounts decrease for the years between 2016 and 2019.

3.111.2 A 10 cents increase in discount size per litre is associated with an estimated board price increase of 1.0 to 2.7 cents per litre for regular petrol and 2.4 to 4.9 cents per litre for diesel within the period 2016 to 2019.

3.112 We provide more detail on this analysis, including responding to comments we received, in Attachment F.

Regional differences in retail fuel prices and importer margins

3.113 Consumers pay different retail prices depending on where they are located. We have looked at differences in prices and importer margins for fuel across different areas in New Zealand between 2011–2019.[247] Our findings are set out below.

3.113.1 Board prices and importer margins tend to be lowest in the upper North Island. Board prices and importer margins in Wellington and the South Island tend to be higher.

3.113.2 Since 2014-2015, prices in the North Island have started to diverge from those in the South Island and Wellington. This divergence has increased over time.

3.113.3 There are some differences between the locations which may help to explain why consumers pay different retail prices.

3.113.3.1 Each location faces different costs, including the costs to set up and operate a retail site and the cost to deliver fuel to the retail site.

3.113.3.2 There are a different set of competitors depending on the location. For example, the North Island has Gull as an independent competitor to the major fuel firms whereas Gull has not operated in the South Island until late 2019. In the South Island, NPD and McKeown are present but do not operate in the North Island.

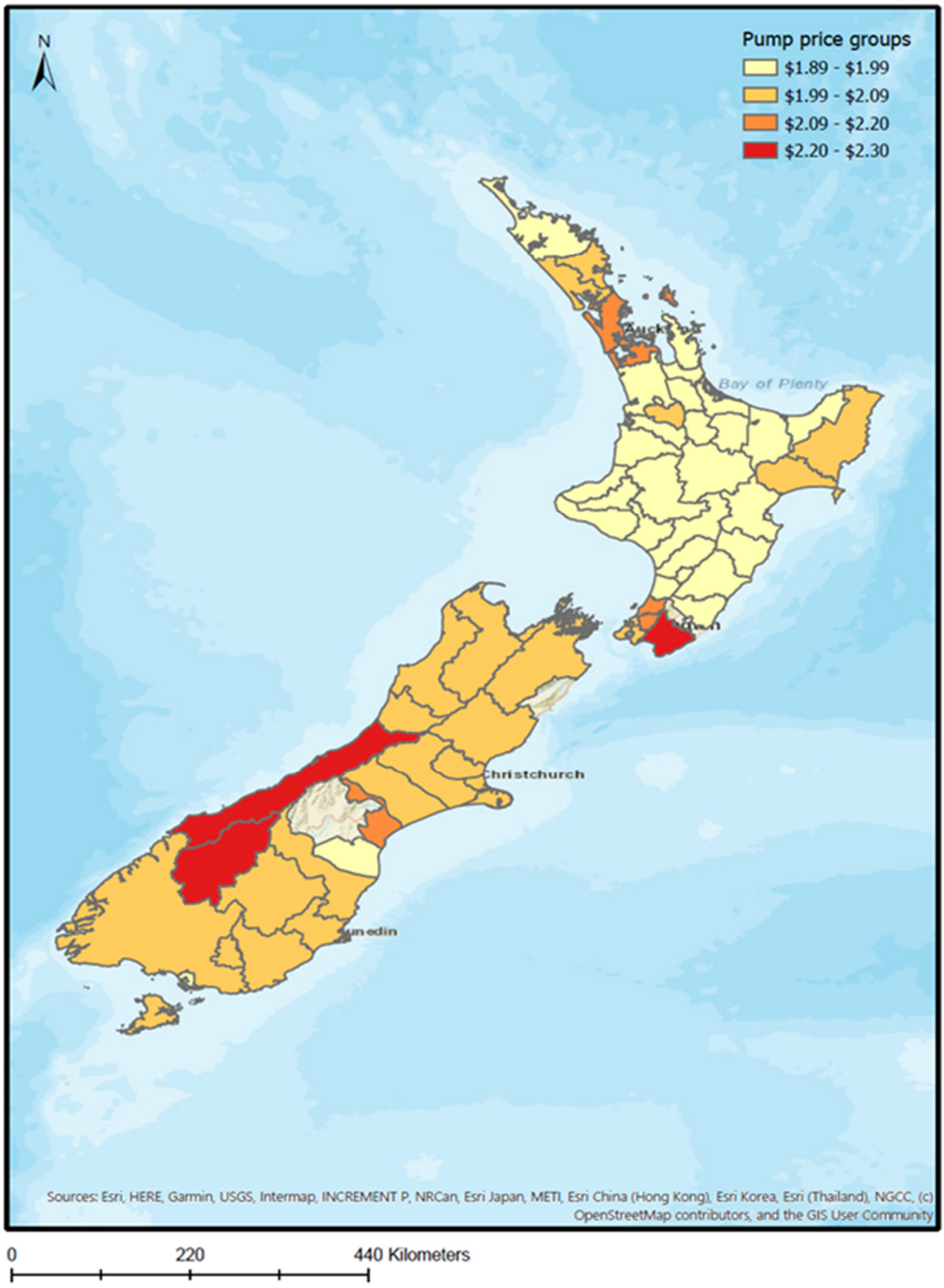
[247] Unless indicated, "importer margin" in this section represents the board price less Singapore benchmark cost index data, less fuel taxes (sourced from MBIE data). It does not take account of off-board discounts.

3.113.3.3 Fuel firms have used different pricing strategies in response to competition, in particular competing on board prices or using discounts.

Current differences in retail prices and margins between regions

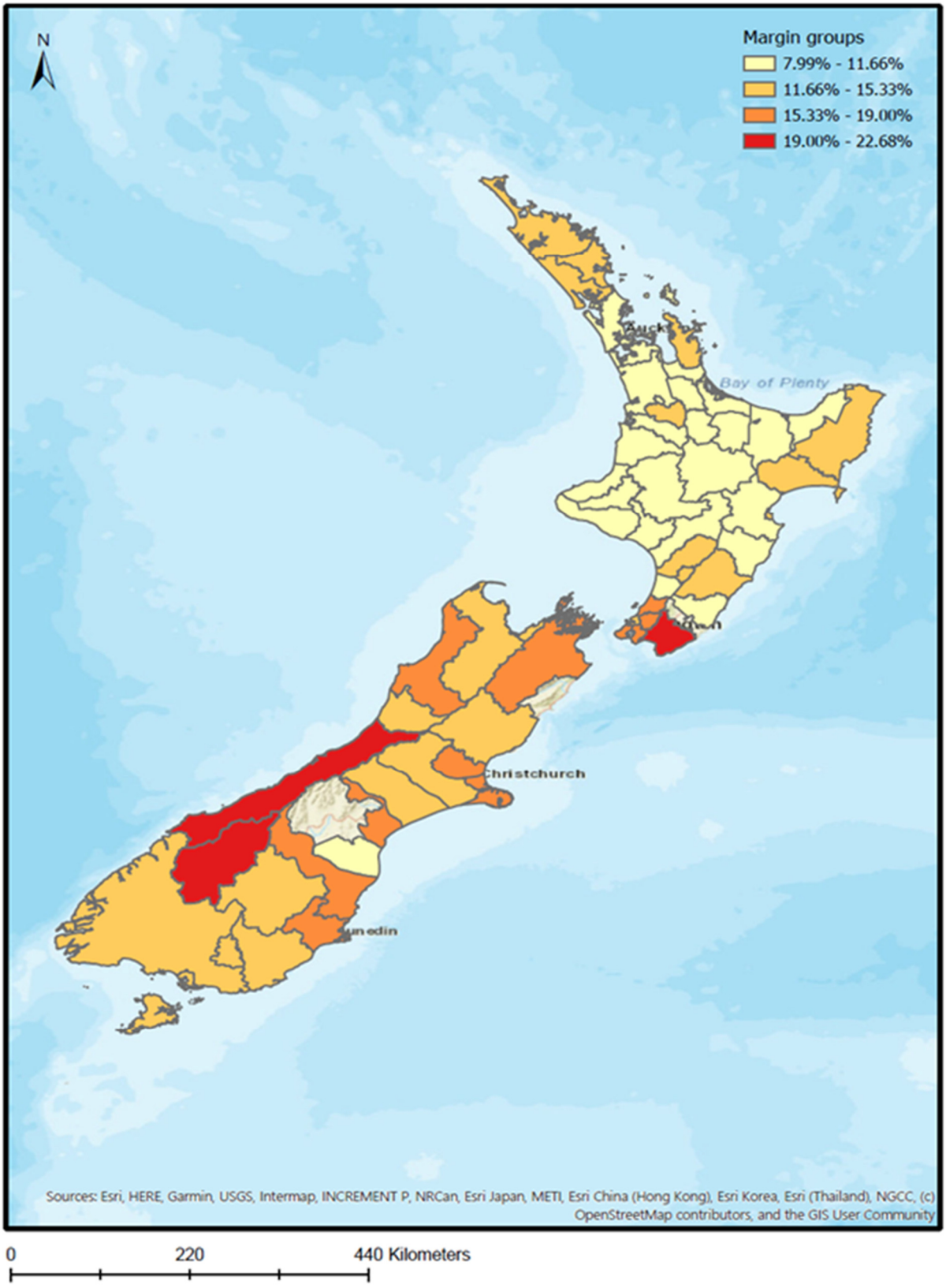
3.114 Figure 3.13 and Figure 3.14 below show board price and importer margin differences across regions in New Zealand in 2019. These figures show the average regular petrol board prices and importer margins in 2019 across regions within New Zealand, with average pump prices ranging from $1.89 to $2.30 cpl, and average importer margins ranging from 7.99% to 22.68%.

Figure 3.13 Retail petrol board prices across New Zealand (2019)



Source: Analysis of data provided by industry participants.

Figure 3.14 Retail petrol importer margins (pre-discounts) across New Zealand (2019)

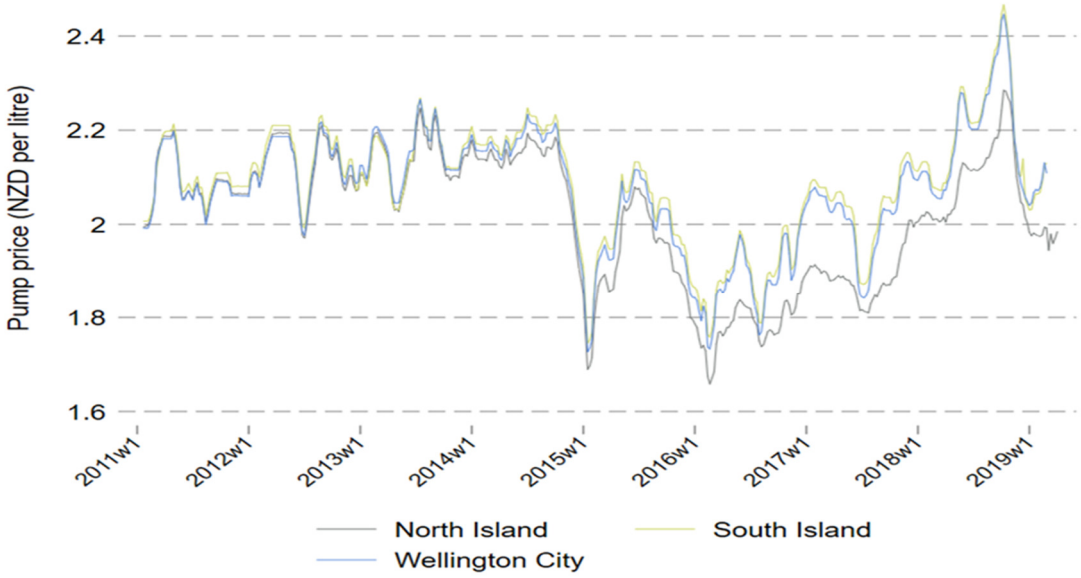


Source: Analysis of data provided by industry participants.

3.115 Figure 3.15 below compares retail prices between the North and South Island and Wellington City between 2011 and February 2019. The differences in retail prices have widened materially since 2014.

3.116 We find that board prices and margins in Wellington City are similar to those in the South Island and are therefore higher than those in other regions within the North Island. Those in the Wellington region, while still higher than those in other regions and territories within the North Island, are slightly lower than those in the South Island. This has not always been the case.

Figure 3.15 North and South Island and Wellington City board prices (2011 – February 2019)



Source: Analysis of data provided by industry participants.

3.117 Figure 3.15 shows the following.

3.117.1 Until 2015, board prices were relatively consistent across the North and South Island. In 2015, board prices across the country progressively increased over the year (after an initial reduction), and then trended downwards until early 2016.

3.117.2 Since 2014-15, board prices in the North Island have started to diverge from those in the South Island and Wellington City. This divergence has increased over time.

3.117.3 Overall, board prices have generally trended up since 2016. However, in the North Island we observe smaller board price increases compared to the South Island and Wellington City. We note that this is the case for all fuel types.[248]

Regional cost differences only partly explain retail price differences

3.118 Differences in costs may help explain why consumers pay different prices for fuel in different locations. Differences in costs may include differences in the cost of delivering fuel to the site, costs of opening and operating a retail site, and local taxes.

3.119 The cost of delivering the fuel to the site includes:

3.119.1 the cost of primary distribution to a terminal. The major fuel firms use shared infrastructure to deliver fuel to terminals. The RAP delivers fuel directly to Auckland from the refinery, which avoids the need to use coastal shipping. In principle this ought to make delivery costs to Auckland for the majors low. In comparison the terminals in Bluff need to be filled using coastal shipping; and

3.119.2 the cost of secondary distribution from the terminal to retail sites. In general, the further from a terminal the higher the costs. For example, the West Coast of the South Island is supplied from terminals in the Canterbury region. This might help explain the high retail price of fuel on the West Coast. Costs will also be higher if retail sites are spread out, which makes it more costly for a fuel tanker to do multiple stops. For example, Z Energy highlighted that the South Island has a smaller, and more widely spread, population than the North Island.[249]

3.120 The cost of opening and operating a retail site might include the price of land or rent, and resource consents. For example, it will be more expensive to buy land in metropolitan areas where land is scarcer than in rural areas. We compare retail prices across territories within high population density regions below.

3.121 There may be differences in local taxes. For example, the Auckland regional fuel tax of 11.5 cents per litre (including GST) has had a direct impact on the retail price of fuel in Auckland.

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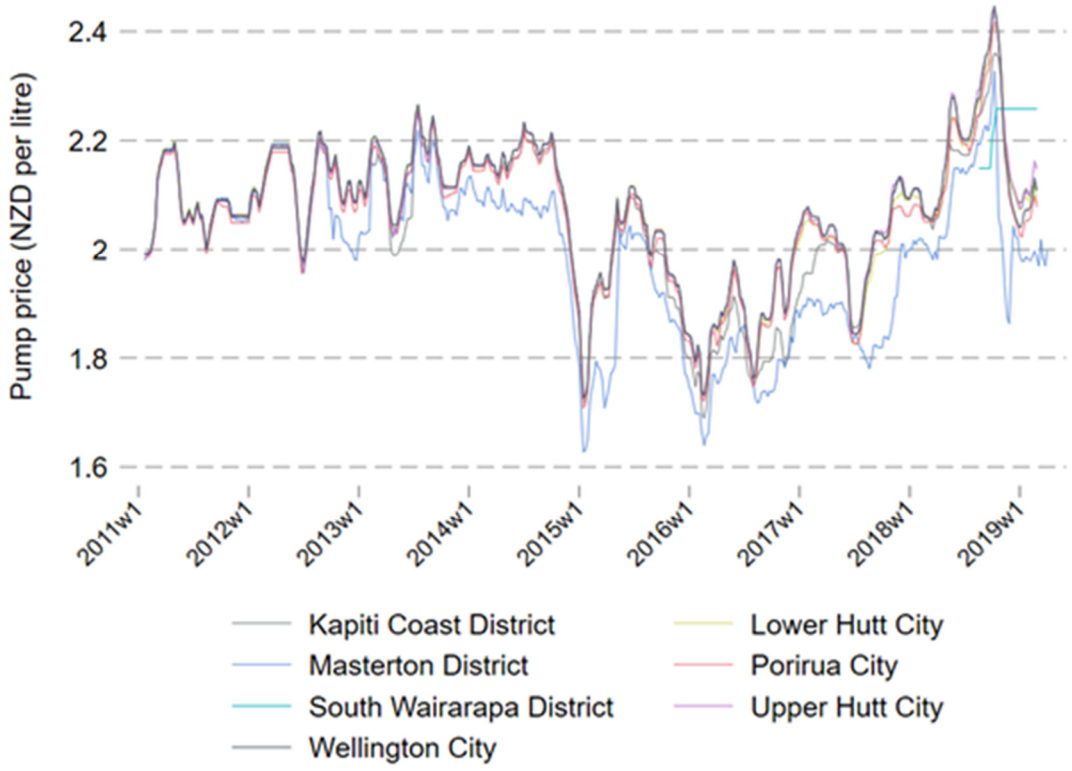
248 Similarly, in the Z/Chevron investigation, we identified that retail prices in Wellington and the South Island tended to be higher than in the upper North Island. *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10. The 2017 Fuel Study, commissioned by MBIE, identified that regional gross margins (between FY2013-FY2017) increased at a faster rate in Wellington and the South Island than margins in the North Island. NZIER, Grant Thornton, Cognitus Economic Insight "New Zealand fuel market financial performance study" (prepared for the Ministry of Business, Innovation and Employment, 29 May 2017) at iii.

249 Z Energy "Market study into the retail fuel sector: Z Energy's response to invitation to comment on preliminary issues" at [44].

3.122 We comment further on differences in the costs of trucking and establishing retail sites in Chapter 4 and the impacts that infrastructure sharing may have on competition in Chapter 5.

3.123 Our view is that these costs do not fully explain the differences we observe across locations. This is because there are some locations where the level of retail prices are inconsistent with what we would expect if costs were the primary driver of prices. For example, Figure 3.16 below shows that within the Wellington region, retail prices in the Masterton District are lower than those in other territories. This is despite Masterton being more costly to deliver fuel to from Wellington terminals compared to other retail sites in Wellington City. One key difference between Masterton and Wellington City sites is the presence of Gull in Masterton.

Figure 3.16 91 Octane petrol board prices in the Wellington region (2011 – February 2019)



Source: Analysis of data provided by industry participants.

There are different competitors in some regions

3.124 The differences in retail prices might in part be explained by different competitors in certain locations, and the strategy the firms have used to respond to those competitors.

3.125 In the North Island, more price aggressive retailers have been present for some time such as Gull and Waitomo. These firms primarily operate low-cost unmanned sites in secondary locations, away from central metropolitan areas. More recently

in the South Island, NPD has grown rapidly with a similar strategy. The impact of these retailers on prices was also observed in the 2017 Fuel Study.[250]

3.126 Evidence from firms' internal documents suggest the divergence in retail prices and margins between the North Island and the South Island and Wellington is at least partly due to Gull's presence.[251] This phenomenon is observed from as early as 2012. In 2015-2016, the price differences between Gull and non-Gull regions increased further, with Gull's average retail price sitting between 10 to 20cpl below the "national retail price" and in some Gull regions, prices were observed to be 30cpl below regions where Gull was not represented.[252] Internal documents suggest that Mobil sites and distributors have provided a key competitive constraint on prices in areas where Gull was operating.[253] In 2016, one participant observed that majors matched Gull's prices while still making "very good returns".[254]

3.127 Firms' internal documents suggest they consider some regions to display more aggressive price competition than others and suggest firms pricing behaviour takes account of this. In recent years, regions in the top half of the North Island appear to be identified as most aggressive.[255] Internal documents have identified reductions in volumes of fuel sold by sites in areas considered to be more price aggressive, and that responses sometimes include a firm matching the lower price or reducing its price to sit closely above.[256] Evidence also suggests that regional price increases led by a major were matched by some competitors and were successful in restoring margins in some locations where more aggressive discounting had previously been

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250 NZIER, Grant Thornton, Cognitus Economic Insight "New Zealand fuel market financial performance study" (prepared for the Ministry of Business, Innovation and Employment, 29 May 2017) at 38. Waitomo submitted that over time, the continued expansion of low-cost distributors will deliver price competition and reduce variations in regional pricing. Waitomo "Submission on Commerce Commission draft report into the retail fuel sector" (September 2019) at [2.7].

251 In the industry, and in this report, we refer to this broadly as the Gull effect.

252 For example, [ ]; [ ]; [ ]; [ ]; [ ] and [ ]

253 For example, [ ]; [ ]; [ ]; [ ]; [ ]; [ ]; [ ]; [ ]; [ ]; [ ]; [ ] and [ ]

254 [ ]

255 [ ]; [ ] and [ ]

256 [ ]; [ ] and [ ]

common.[257] Recent openings of sites are identified as impacting volumes and margins of sites in close proximity. We discuss this from paragraph 3.143 to 3.153 below.

3.128 To the extent that firms such as Gull, Waitomo and NPD affect the price consumers pay, the greatest impact is likely to be in the area close to where the competitor is located. As we note in Chapter 2, location is one of the most important factors for a consumer in choosing where to buy fuel. As such, retail sites that are further away from a price aggressive competitor may not need to adjust their price.

Different retail pricing strategies

3.129 The major fuel firms may have used different retail pricing strategies which means that board price may not reflect the actual price consumers pay.

3.130 Z Energy suggests that the retail price and margin growth divergence observed between the North and South Islands is explained by the fact that, up until recently, there tended to be less board price competition in the South Island and more competition through the use of discounts. It states that:[258]

> …price competition where only the midstream participants are present [such as in areas of the South Island and Wellington] tends to occur more by way of off-board promotions, discounts and loyalty offers than price board discounting (e.g. for particular periods and/or locations) because such activity is inherently more difficult for competitors to monitor and directly counteract…

3.131 Put another way, Z Energy is suggesting that the majors are more likely to compete through lower board prices in regions where non-major fuel firms operate. This includes Gull, Waitomo and NPD (particularly unmanned sites) which tend to compete more aggressively on the board price. Further, it suggests a preference to engage in more complex pricing strategies through off-board discounts where price aggressive market participants are not present.

3.132 Figure 3.17 below supports Z Energy's statement about differences in regional discounts offered. It shows that over recent years, the size of discounts offered in Wellington (relative to the board prices) has been persistently larger than in other regions, and in recent years the size of discounts offered in the South Island have tended to be larger than in the North Island.

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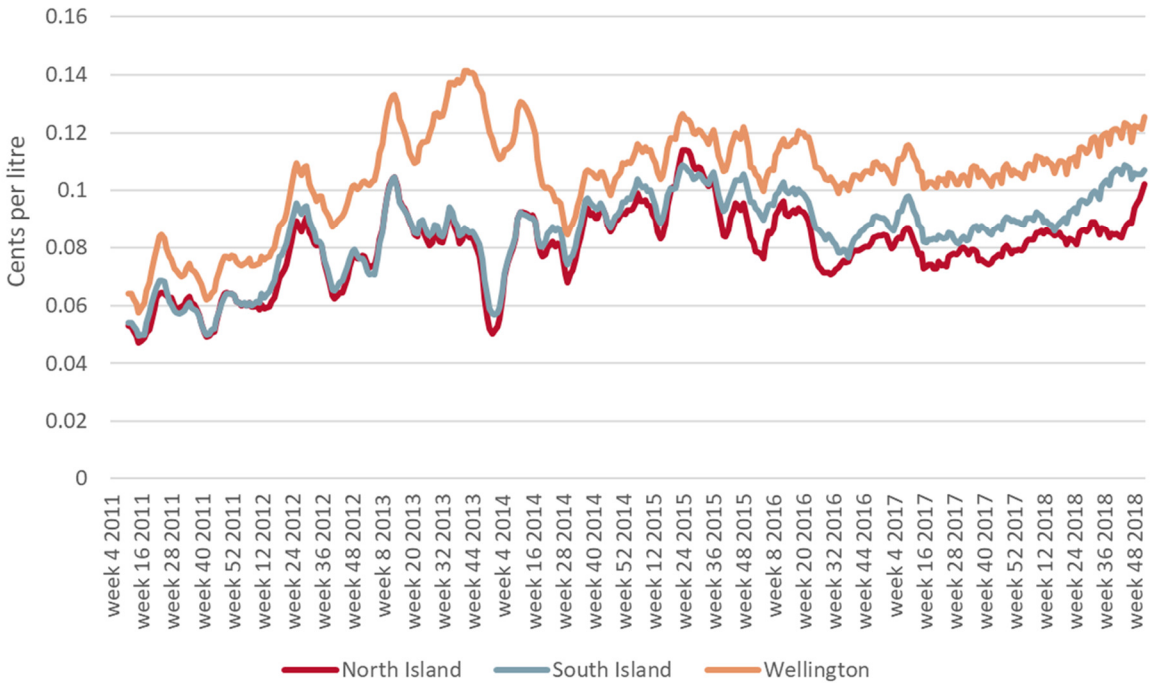
257 [ ]; [ ] and [ ]

258 Z Energy "Market study into the retail fuel sector: Z Energy's response to invitation to comment on preliminary issues", at [42].

Figure 3.17 Discount sizes in the North and South Island and Wellington (2011 – February 2019)



Source: Commerce Commission analysis based on data provided by industry participants.[259]

3.133 Z Energy suggests this trend of higher board prices in the South Island has not continued, in part due to the growth of South Island resellers "with their localised strategies and lack of midstream investment burden."[260] Z Energy notes that as a consequence, the competitive dynamic in the South Island has now begun to more closely mimic the North Island, with significant on board price competition in addition to discount and loyalty programme promotion activity.[261]

3.134 At this point we think it is too early to tell whether there has been a significant improvement in board prices in the South Island. Gull and Waitomo's planned entry in the South Island may provide downward pressure on board prices in some local markets in the South Island.

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259 The discount size has been calculated as the difference between the board price and the discounted price, where the discounted price is calculated by daily revenue from fuel sold at a discount divided by daily volumes of fuel sold at a discount.

260 Z Energy "Market study into the retail fuel sector: Z Energy's response to invitation to comment on preliminary issues" (February 2019) at [41] – [43].

261 Z Energy "Market study into the retail fuel sector: Z Energy's response to invitation to comment on preliminary issues"(February 2019) at [41] – [43].

The level of investment and innovation

3.135 We noted above that in a workably competitive market, we would expect high margins and profits to attract new entry and expansion and be competed down to competitive levels. We would also expect to see firms investing and innovating, including maintaining and upgrading assets, so as to meet consumer demands both now and in the future.

3.136 In this section we:

3.136.1 review the overall pattern of investment;

3.136.2 discuss retail site investment and innovation; and

3.136.3 explain why we have concerns about terminal investment.

Importance of investment and the overall pattern

3.137 Significant infrastructure, much of it specialised in nature, is required to refine and deliver fuel to New Zealand consumers from oil fields offshore. Investment is needed at every level of the supply chain including, shipping, refinery, storage terminals, distribution, and retailing.

3.138 It is important in any infrastructure industry that there are incentives for continued investment. Much of the New Zealand infrastructure was a result of investment in the 1950s and 1960s but continued investment is required to maintain it, ensure safe and reliable fuel supply, and to develop the supply chain to meet the current and future needs of New Zealand consumers.

3.139 There are numerous examples of significant recent investment in the fuel supply chain.

3.139.1 In August 2019, Z Energy submitted that it had invested $625 million in "growth and integrity capex" since FY11 (in addition to its acquisition of Chevron NZ in 2016 for $785m).[262]

3.139.2 Mobil advises that since 2012 it has spent $200 million maintaining and improving its fuel supply and retail operations. This includes additional storage capacity in Bluff in 2014.[263] Mobil has commenced construction of two tanks in Lyttelton to replace those damaged by a 2014 landslide.[264]

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262 Z Energy "Investor Day 2019" (1 August 2019), at 13.

263 Mobil "Re: Information following meeting on 21 June 2019", (28 June 2019) at 1.

264 See <https://corporate.exxonmobil.com/en/Locations/New-Zealand/News-releases/20171115_Mobil-to-restore-Lyttelton-terminal-storage-capacity>. (Viewed on 7 November 2019).

3.139.3 BP has invested almost $350 million over the five years 2014-2018 primarily into its retail assets.[265]

3.139.4 Refining NZ completed a $365m upgrade at Refinery in Te Mahi Hou, and is now seeking to dredge the harbour to allow larger oil tankers to supply crude to the refinery, and is increasing the capacity of the RAP.[266]

3.139.5 COLL has leased two new ships, with greater capacity.[267]

3.139.6 Recent years have seen rapid growth in the number of retail sites, reversing a several decades long decline in the number of retail sites in New Zealand.[268] Many retailers are building new retail sites.

3.139.7 A new 44 ML terminal is under construction at Timaru by TOSL – the first major new fuel import terminal in New Zealand in 20 years. There is also speculation that TOSL may build a terminal in Tauranga.[269]

3.140 When competition is working well, price and profit signals play an essential role in ensuring investment occurs and is directed to providing the right services. The range and extent of investment in New Zealand in recent years may suggest we should have few concerns over investment levels in the fuel industry.

3.141 However, there are two aspects of investment which we have considered further as part of the study:

3.141.1 the relationship between investment in retail capacity, and the levels of profit being achieved by firms in the retail fuel sector; and

3.141.2 the level of investment in new terminal storage capacity.

3.142 These issues are discussed in the next two sub-sections.

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265 [ ]

266 Refining NZ "Te Mahi Hou" <https://www.refiningnz.com/keyproject/te-mahi-hou/>. (Viewed on 16 August 2019).

267 NZ Herald "New Tanker MT Kokako shipping fuel from Marsden Pt Oil Refinery to New Zealand ports" <https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11992363>. (Viewed on 16 August 2019).

268 Refer to Chapter 2 of this report and Z Energy "The Downstream Fuels Industry Strongly Competitive or Operating with Uncertainty?" (8 March 2012) at 5.

269 Z Energy "Z Energy Submission on the Commerce Commission's market study into the retail fuel sector: Draft report" (13 September 2019) at [100], BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [8.2] and Scoop "Broad South Island reach for new Timaru fuel terminal" (30 August 2019). Available at <http://www.scoop.co.nz/stories/BU1908/S00864/broad-south-island-reach-for-new-timaru-fuel-terminal.htm>. (Viewed on 23 October 2019).

Strong investment in retail sites

3.143 The relationship between investment in retail capacity, and the levels of profit being achieved by firms in the retail fuel sector, is an area of focus in this study. As discussed earlier in this chapter, many fuel retailers appear to be highly profitable notwithstanding the strong investment in new retail sites. This is surprising, since additional retail sites would be expected to take volumes from existing sites, and to increase downward pressure on prices (and therefore profits) at existing retail sites. Yet, our analysis of profitability suggests that firms continue to earn returns above competitive levels. This is a central line of inquiry in the study and we consider this further in Chapters 4 to 7, and in Attachments C and D.

3.144 We noted in Chapter 2 that most of the new site openings in recent years are under a non-major fuel firm brand, particularly Gull and Mobil supplied distributors, such as Waitomo and NPD.

3.145 Industry parties have submitted that the observed growth in retail site openings shows that competition is working in the market.[270] Z Energy submitted that:[271]

3.145.1 distributors can be very competitive in their pursuit of new sites;

3.145.2 Gull and distributors competitively constrain the majors, particularly at a local site level; and

3.145.3 consistent with the trend in the growth of their site numbers, the effect of Gull and distributors on competition has grown materially even since the Commission granted clearance for Z Energy to acquire Chevron.

3.146 BP has submitted that "[t]he substantial (and ongoing) growth of independent retail chains, and therefore the growth of overall retail capacity in a flat to declining market, is the strongest possible indicator of strong competition at both the wholesale and retail levels."[272]

3.147 We agree that new site openings could be a sign of a workably competitive market and have sought to understand the impact that new sites have had on competition. Overall the upward trend in margins has not been ameliorated by new site openings. We discuss this further in Chapter 7.

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270 For example, Mobil "Submission to the Commerce Commission New Zealand in response to the Statement of Preliminary Issues for the Market Study into the Retail Fuel Sector" (February 2019) at [9]-[10]; Z Energy's response to invitation to comment on preliminary issues" (February 2019) at 3-4 and BP "Market study into the retail fuel sector – BP New Zealand comment on preliminary issues" (February 2019) at 2-3.

271 Z Energy's response to invitation to comment on preliminary issues" (February 2019) at 3-4, BP "Market study into the retail fuel sector – BP New Zealand comment on preliminary issues" (February 2019) at [17] and [24].

272 BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [1.11(d)].

3.148 We have considered the potential benefits to consumers in areas where new retail sites of Gull, resellers and distributors have opened. We have looked at 50 new site openings from January 2014 – February 2019 for NPD, Gull, GAS, Allied and Waitomo to assess the impact on prices and volumes of nearby sites of the majors. We also looked at the location of new retail sites in proximity to those of the majors, based on 515 currently active retail sites of Allied, Challenge, GAS, Gull, McFall, McKeown, NPD, RD Petroleum, Southfuels and Waitomo. The results of this analysis are summarised below and discussed further in Chapter 7 and Attachment H.

3.149 To summarise, we find that:

3.149.1 Gull, Waitomo and Challenge are most likely to locate their new retail sites within close proximity (2km driving distance) to those of the majors;

3.149.2 resellers and distributors are generally not located within close driving distance of their respective wholesale fuel suppliers and generally not building new sites in locations close to existing unmanned sites;

3.149.3 new NPD retail sites appear to have the greatest impact on majors' prices (after discounts), and in most cases those new sites were service stations rather than unmanned sites, suggesting that service stations impose a stronger competitive constraint on retail sites of the majors (which are almost exclusively service stations; and

3.149.4 there were a few examples where the majors' prices or volumes clearly fell after a Gull, Allied or GAS site opened. Evidence of the "Gull effect" occurred when established Gull sites were not already located within at least 20km driving distance from the new Gull site.

3.150 Other evidence provides examples where new sites have impacted on the majors in some locations and where majors cited some distributors' new unmanned site openings as a risk to their volumes and margins.[273] For example, a major's internal document from 2018 states:[274]

> [A Distributor] have opened their un-manned site [at a location near one of the major's sites]. This is having an impact on [the major's site's] diesel volumes with last week -20% on the same week last year. Mogas not as impacted only down -9%. …Risks or Issues: The number of [another distributor's] sites planned and the impact on volumes in [various locations]. …Continued growth of competitor un-manned networks eroding margin and volume.

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[273] For example, [ ]; [ ]; [ ] and [ ] See Chapter 7 for further discussion.

[274] [ ]

3.151 Firms' internal documents also support our findings from our new site analysis that suggested service stations compete more closely with other service stations.[275] For example, in 2017 one firm noted that:[276]

> … unmanned sites at times enjoy a break of 3 – 4 cents per litre on the price board against their manned opposition.

3.152 There are consumer benefits from having a broader range of purchasing options. With more sites, consumers will not have to travel as far to find a retail site. Some consumers may prefer to use an unmanned site offering relatively lower prices with fewer additional features. Some consumers may also place a high value on service quality.

3.153 Nonetheless, as noted above, Mobil's distributors have been particularly active in expanding their retail site presence and are therefore potentially exposed to a change in Mobil's strategy (or a buyer of Mobil's NZ business). Competition that depends on the individual strategy of one player may not endure over time.

Investment and innovation in retail site offerings

3.154 We noted in Chapter 2 that consumers have a range of preferences for offerings at a retail service station. While some consumers care primarily about price, others have a stronger preference for convenience and service features.

3.155 In a workably competitive market, we would expect firms to compete to satisfy this diverse range of preferences.

3.156 While the majors have either reduced or not greatly expanded their retail site footprint, they have invested in improving the quality of service stations and service speed. This increase in service differentiation has been observed by industry participants and submitters, who have associated it with increased competition and choice for consumers.[277]

3.157 We agree that there has been investment and innovation in retail site offerings that deliver greater choice to consumers. Fuel firms are seeking to differentiate their product offering, competing on elements other than pump prices by investing in speed of service, service quality and the range and quality of offerings at a retail site forecourt including food, toilets, barista coffee and other conveniences. Together with the growth of unmanned sites that offer no-frills service (and typically lower price), these additional offerings increase the range of choices available to consumers at retail sites.

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275 [ ]

276 [ ]

277 For example, the NZAA "Submission on Market Study into retail fuel sector – preliminary issues" (February 2019) at 5; Z Energy "Market study into the retail fuel sector: Z Energy's response to invitation to comment on preliminary issues" (February 2019) at [30.1]-[30.2] and [164] and BP "Market study into the retail fuel sector – BP New Zealand comment on preliminary issues" (February 2019) at 3.

3.158 Key examples of this include:

3.158.1 A range of payment alternatives have been introduced. These include the BPMe app, which allows users to pay for fuel at BP using their smartphone, Gull Speedlanes and Z Energy payment by automated number plate scanning. These initiatives are likely beneficial to consumers who value convenience and speed. They also give consumers greater choice about how to pay for their fuel.

3.158.2 Improvements in electronic payment technology have helped facilitate the rise of unmanned, pay-at-pump, service stations. The ability to operate unmanned sites reduces barriers to entry because less land is required. This has enabled relatively lower cost entry and expansion in the retail markets.[278]

3.159 The observed investment and innovation in differentiating the retail site offerings may be indicative of workable competition where consumers value these additional features and so are prepared to pay for them.

3.160 However, product differentiation can also provide a way for retailers to avoid price competition while still seeking to attract consumers from one another. Some consumers might prefer less differentiation and lower prices.

3.161 The impact of product differentiation on consumers will depend on the extent of competition between retail sites across the full spectrum of price and service levels. This issue is discussed further in Chapter 7.

Limited investment in terminal storage capacity

3.162 While we observe investments in retail sites, we observe limited investment further up the fuel supply chain in terminal storage over the last two decades. In a 2012 presentation, Z Energy notes that "[t]erminal infrastructure is under stress" and cites diverging trends between storage capacity and overall fuel volumes in the industry. In that presentation Z Energy noted capital expenditure was lower than depreciation, there were terminal and site closures, and terminal capacity was not keeping up with the growth in demand.[279] Figures 3.18 to 3.20 below show the trends that Z Energy cites.[280]

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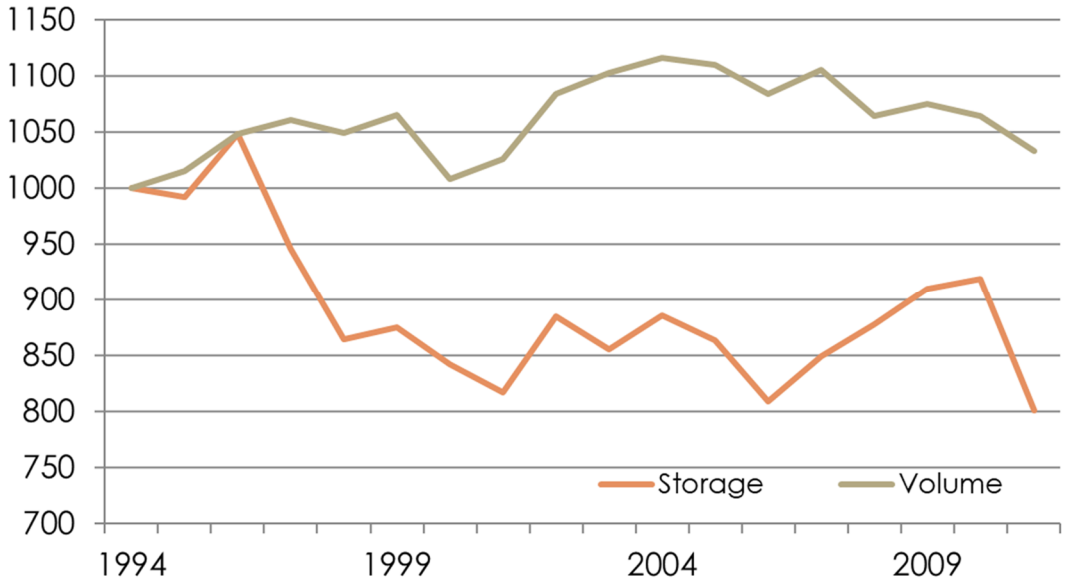
278 AA "Submission on Market Study into retail fuel sector – preliminary issues" (22 February 2019) at 3.

279 Z Energy "The downstream fuels industry: Strongly competitive or operating with uncertainty?" (8 March 2012) at 2-3. Available at <https://z.co.nz/about-z/news/submissions-and-presentations/the-downstream-fuels-industry-strongly-competitive-or-operating-with-uncertainty/>. (Viewed on 16 August 2019).

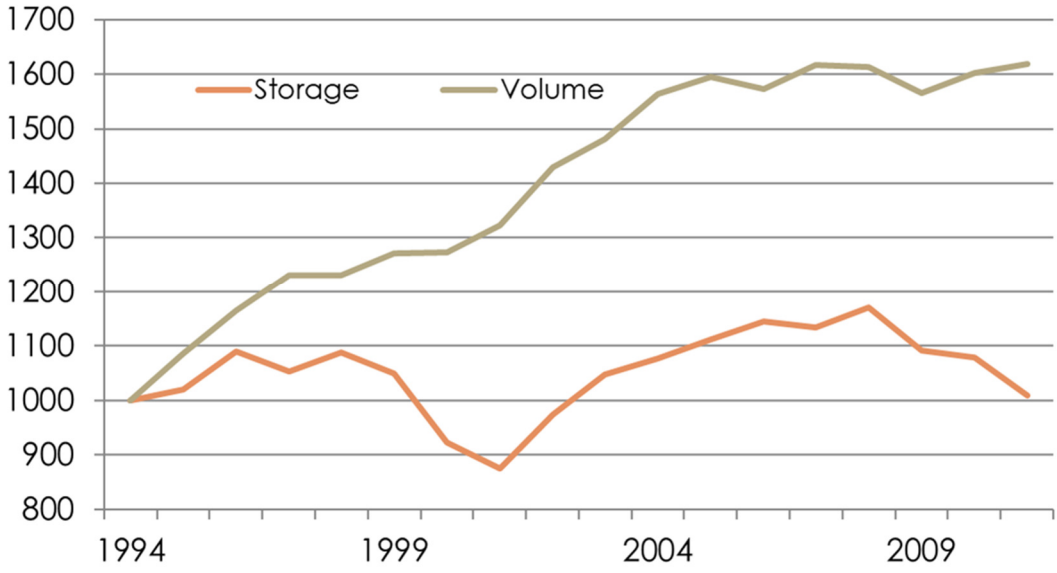
280 Ibid.

Figure 3.18 Petrol volumes & storage indexed to 1994



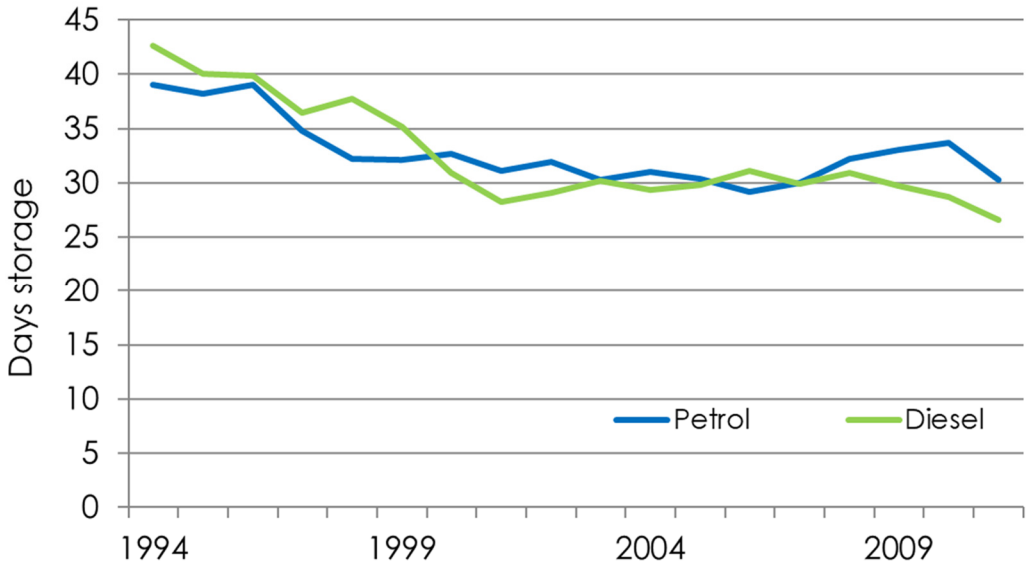
Source: Z "The downstream fuels industry: Strongly competitive or operating with uncertainty?" (8 March 2012) at 3.

Figure 3.19 **Diesel volumes & storage indexed to 1994**



Source: Z Energy "The downstream fuels industry: Strongly competitive or operating with uncertainty?" (8 March 2012) at 3.

Figure 3.20 **Terminal storage in terms of days cover**



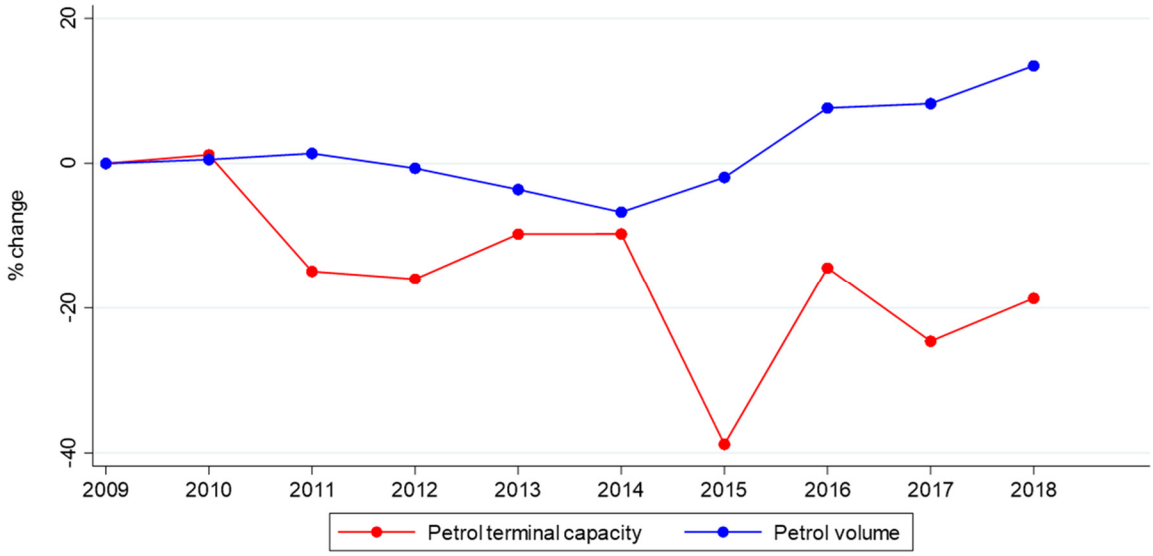
Source: Z Energy "The downstream fuels industry: Strongly competitive or operating with uncertainty?" (8 March 2012) at 3.

3.163 At the time, Z Energy attributed the terminal infrastructure being under stress to low margins and higher crude oil prices.[281] Since then, margins have increased materially, yet investment in increasing terminal capacity by the majors appears to have been modest, despite terminals being a key strategic asset. While firms continue to maintain their terminal assets, we understand there is very little capacity being added despite Z Energy's view on the historic level of investment and the gradual growth since 2012.

3.164 Our analysis of the trend in volumes of refined and imported fuel supplied into New Zealand by the majors in comparison to industry storage suggests that the trend identified by Z Energy in 2012 has continued. Figures 3.21 to 3.23 below shows changes in petrol, diesel and total volumes of the majors and respective industry storage, indexed to 2009.

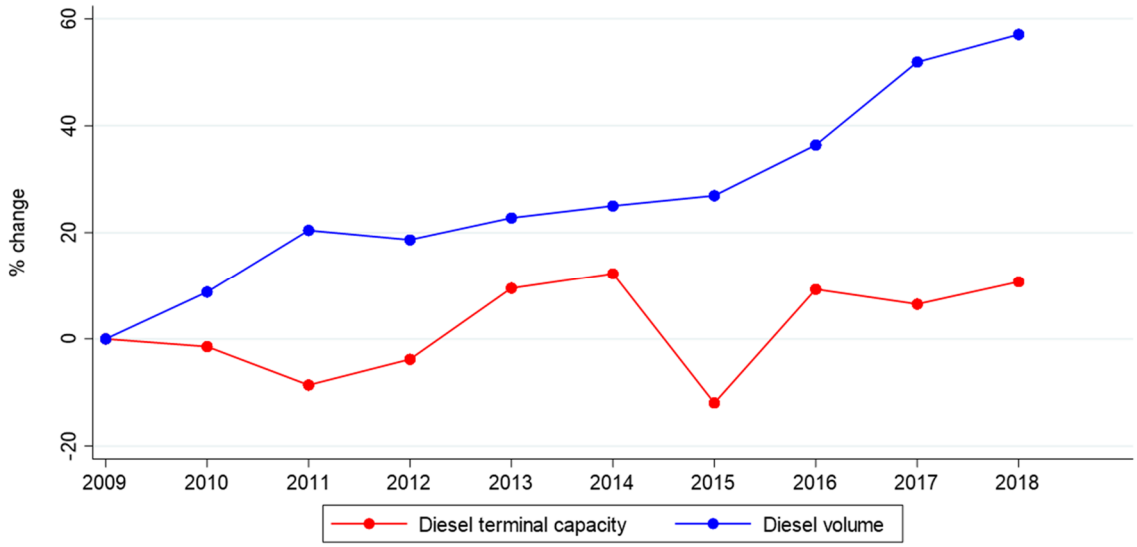
[281] Z Energy "The downstream fuels industry: Strongly competitive or operating with uncertainty?" (8 March 2012) at 6. Available at <https://z.co.nz/about-z/news/submissions-and-presentations/the-downstream-fuels-industry-strongly-competitive-or-operating-with-uncertainty/>.

Figure 3.21 **Petrol volumes & storage since 2009[282]**



Source: Commission analysis of refinery production data, major's import data and industry storage data.

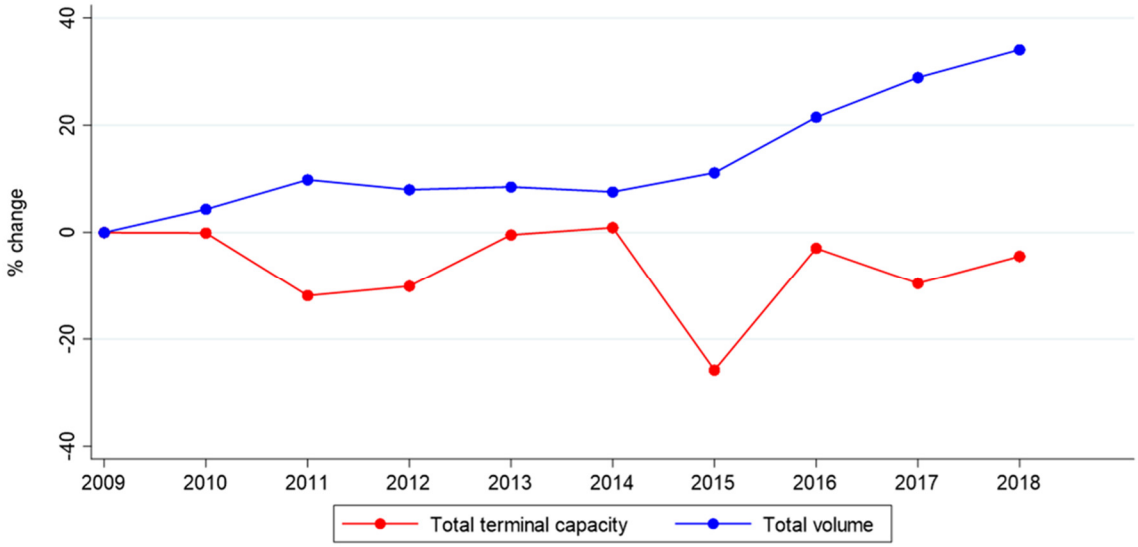
Figure 3.22 **Diesel volumes and storage since 2009**



Source: Commission analysis of refinery production data, major's import data and industry storage.

[282] We have endeavoured to understand why there was a sudden reduction in terminal capacity in 2015. It appears that part of the reduction stems from damage to terminals in Lyttelton during a landslide at Mobil's Naval Point facility. We have had confirmation that the industry storage data used for our analysis is accurate.

Figure 3.23 **Total fuel volumes and storage since 2009**



Source: Commission analysis of refinery production data, major's import data and industry storage.

3.165 Figures 3.21 to 3.23 show the trends in fuel volumes and industry storage from 2009 to 2018. The overall trend suggested by Figures 3.18 to 3.23 above would appear to be rising volumes since 1994 with industry storage not matching those increases over time. Indeed, it appears that terminal storage capacity has largely fallen since 1994.

3.166 Chapter 2 described minimal changes in fuel terminal storage capacities over the last decade. Most of the terminal storage is shared between the majors under the borrow and loan arrangements which are subject to relatively frequent port coordination events (where fuel is rationed among the majors and the resellers to which they supply). Gull does not participate in these arrangements.

Infrastructure sharing arrangements may be diluting incentives to invest in infrastructure

3.167 The increasing divergence between fuel volumes and fuel storage capacity shown above is consistent with views expressed by some industry participants that terminal investment has not kept pace with demand.[283] These views may also be reflective of the relatively frequent port coordination events and suggestions of regular shortages at some terminals.[284] We note that fuel supply adequacy may be impacted by factors other than terminal capacity, including shipping frequency and the feasibility of trucking fuel from alternative ports. We discuss this further in Chapter 5.

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283 See Chapter 5 for further discussion.

284 [ ]; [ ] and [ ]

3.168 We have observed the fuel industry to be both profitable and growing over the past decade. Persistent capacity constraints in a profitable, growing industry are a sign that competition is not working well. When suppliers face vigorous competition, they are incentivised to invest in a timely manner to avoid the risk of losing customers due to constraints on their ability to supply product to their customers.

3.169 In the New Zealand fuel supply chain, however, product shortages resulting from coordination events affect all majors (and distributors whom they each supply fuel) at the same time under the borrow and loan arrangements. This means the risk of losing a reseller as a customer is low as customers cannot secure supply by switching suppliers. This weakens the incentive for an individual major fuel firm to ensure that they have sufficient capacity to meet their reseller customers' needs. Similarly, the Auckland Fuel Supply Disruption Inquiry observed that:[285]

> the [majors, who jointly own key infrastructure in the Auckland region,] appear to be focused on meeting the demand curve such that their investments are made just in time (or, as is the current situation, to catch up with the curve to meet a rapid increase in demand). Inadequate weight appears to be given to the public interest in ensuring that infrastructure is, and remains, resilient. Until we raised our proposed resilience measures with the fuel sector participants, we had not seen any evidence that they were considering the issue of resilience, in terms of minimum resilience standards, when making investment decisions.

3.170 In our view, the risk of product shortages and the ability and incentive of the majors to invest and compete is affected by the majors' various infrastructure sharing arrangements, particularly the borrow and loan arrangements. These arrangements and the impact they may have on competition in the retail fuel market are discussed in more detail in Chapter 5.

3.171 In Chapter 8, we recommend that changes are made to the features and rules within the borrow and loan arrangements that may disincentivise investment in shared terminal storage. We also discuss how the risk of tight supply imposes costs and how more efficient levels of stockholdings and/or investment may be incentivised.

Unclear whether significant additional investment in terminals is needed

3.172 While we consider that incentives to alleviate tight supply and improve wholesale competition could be improved (see Chapter 5 and Chapter 8 for more details), the case for significant future investment in terminals is less certain.

3.173 We acknowledge that current incentives to increase terminal capacity may be muted given the entry of additional terminal capacity by TOSL at Timaru and speculation that it intends to build additional terminal capacity at Mount Maunganui. Alongside this are future expectations of relatively flat demand for petrol and limited growth in diesel demand and associated risks of reductions in

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[285] "Government Inquiry into The Auckland Fuel Supply Disruption" (August 2019) at [18.14].

fuel demand over the longer term. BP and Z Energy submitted that in light of TOSL's plans and future demand expectations, it is unlikely that there will be significant investment in new terminal infrastructure in the future.[286]

3.174 The Auckland Fuel Supply Disruption Inquiry concluded there is sufficient storage in the system to manage petrol demand in the Auckland region from a resilience perspective, taking account of flat demand forecasts over the coming decade and the multiple supply routes available.[287] In respect of diesel, it considered that additional storage tanks may need to be built soon to meet expected increasing demand, but the amount and location will depend on the way the supply chains develop over the next few years.[288]

Next chapters

3.175 In the chapters that follow, we discuss further the factors that we consider affect competition in the retail fuel market and how these factors may help explain the outcomes we have observed in this chapter.

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286 Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" at [100] and BP "Submission on issues raised at the Commerce Commission's Fuel Study Conference of 24 -26 September (11 October 2019) at [5.2].

287 "Government Inquiry into The Auckland Fuel Supply Disruption (August 2019)" at [13.15] – [13.16].

288 Ibid, at [13.17] – [13.24].

Chapter 4 Structural and regulatory conditions of entry and expansion

Summary of our findings

- The economics of the fuel sector constrain entry and expansion of independent fuel companies, affecting outcomes for New Zealand consumers. These constraints provide existing firms with durable market power, resulting in high prices to consumers.
- Structural barriers to entry and expansion, particularly resulting from economies of scale and sunk costs, are generally greater further up the fuel supply chain. This has led to a small number of firms operating at the refinery level and as importers.
- Further entry at the refinery level appears highly unlikely. Given Refining NZ already produces approximately two thirds of New Zealand's fuel at Marsden Point, and there are high sunk costs of entry, there is little prospect of a new refinery at efficient scale.
- Entry by importing refined fuel to New Zealand appears possible from a structural and regulatory perspective – particularly by constructing terminals at ports relatively close to large areas of demand. There is a greater chance of obtaining sufficient market share to support imports of efficient size at these ports.
    - However, the scale of regional markets and port depth restrictions are likely to significantly limit the ability of entrants to successfully build and operate import terminals at smaller provincial ports.
    - This appears to have limited the geographic scope of independent competition based on imports. Gull opened its Mount Maunganui terminal in 1999 and TOSL is currently building a terminal in Timaru.
- Entrants at the importer level are likely to face a cost disadvantage when supplying customers in smaller provincial areas. This is due to relatively high costs of trucking long distances. Entrants' distribution costs would be lower and better aligned with those faced by the majors (who participate in the borrow and loan arrangement) if they could obtain competitive wholesale supply in locations where they do not have their own terminals.
- Entry and expansion is occurring at the retail level, where structural barriers are lower than at the refinery and importer levels of the supply chain. Most retail entry in recent years has been with low-cost unmanned sites (helped by developing payment technologies). Unmanned sites often occupy secondary locations (for example, on side roads rather than prime metropolitan sites).
- Entering with full service stations in prime metropolitan locations is the most challenging, given the additional costs and complexities involved in providing a premium offering (for example, convenience stores). In addition, the best sites have often already been secured by existing suppliers.

Introduction to this chapter

4.1 This chapter sets out our assessment of the structural and regulatory conditions of entry and expansion in New Zealand fuel markets. We are particularly interested in any structural or regulatory conditions in the market that have the potential to prevent, impede or slow the entry into the market of new competitors, or the expansion of existing competitors.

4.2 Under this topic we discuss:

4.2.1 the size and nature of any structural or regulatory barriers to competition at each level of the supply chain; and

4.2.2 how these conditions affect new entry, and the expansion of existing firms, at each level.

4.3 Structural conditions relate to the cost and feasibility of establishing an independent source of supply or supply chain relative to expected (risk-adjusted) earnings. The significance of economies of scale and sunk costs are relevant, as are regulatory conditions including resource or planning consent requirements (which in some cases could prevent entry or expansion), and other requirements governing the standard and quality of fuel supplied to New Zealanders.

4.4 Although the focus of the study is on fuel supplied at the retail level, we have examined conditions of entry throughout the supply chain. This is because barriers to entry at any stage can affect outcomes in retail markets.[289]

4.5 Structural and regulatory barriers can limit the number of competing suppliers in the market. We are interested in structural and regulatory conditions of entry and expansion because the threat of entry by new firms, and the potential for existing firms to readily expand, can significantly constrain the behaviour of existing firms. If entry and expansion are difficult or prohibited, then high margins (and resulting high prices and inefficiencies) are more likely to persist in the longer term, to the detriment of New Zealand consumers.

4.6 We discuss other conditions of entry and expansion in New Zealand fuel markets, such as those associated with the conduct of incumbent firms, in Chapters 5, 6 and 7.

Structure of this chapter

4.7 This chapter discusses:

[289] The terms of reference for this market study recognise this relationship between conditions of entry at different levels of the supply chain and competition in the retail fuel market. For example, they expressly refer to "the extent of competition at the refinery, wholesale and retail levels" as matters we may consider in our study.

4.7.1 our approach to analysing structural and regulatory conditions which could limit entry and expansion in New Zealand fuel markets; and

4.7.2 our findings on how structural and regulatory conditions are affecting the potential for entry and expansion at each of the key stages in the supply chain.

Our approach to analysing structural and regulatory conditions

4.8 This section explains:

4.8.1 that we have adopted a relatively expansive approach to considering conditions of entry and expansion; and

4.8.2 what structural and regulatory conditions of entry and expansion are, focusing on the context of the New Zealand fuel market.

We have adopted an expansive approach to considering conditions of entry and expansion

4.9 In this report the phrase 'conditions of entry and expansion' is related to, but broader than, the economic concept of 'barriers to entry'.

4.10 There are several possible definitions of barriers to entry. An OECD policy roundtable document on barriers to entry notes that the question of exactly what constitutes an entry barrier has never been universally resolved.[290] Economist Dennis Carlton notes that focusing on whether a barrier to entry exists according to a particular definition is a "barrier to understanding" how an industry will behave in the next few years.[291]

4.11 We have not adopted a specific definition of barriers to entry for this study. Instead we have taken an expansive approach to the factors that we consider might affect conditions of entry and expansion. There are two key reasons for this approach.

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290 OECD "Policy roundtables: Barriers to entry (2005)" *DAF/COMP(2005)42* (6 March 2006) at 9.

291 Dennis Carlton "Why Barriers To Entry are Barriers to Understanding" (2004) 94(2) American Economic Review at 466.

4.11.1 First, the scope of a market study is likely to be broad. A market study is a study of "any factors that may affect competition for the supply or acquisition of goods or services".[292] In this particular study, our terms of reference require us to carry out a study into "*any factors* (emphasis added) that may affect competition for the supply of retail petrol and diesel used for land transport in New Zealand". The terms of reference also expressly refer to "any factors that may hinder competition between industry participants" and "the conditions for entry by potential competitors… and/or the conditions for expansion" as matters we may consider.[293]

4.11.2 Second, this is consistent with the approach adopted by the High Court in *Commerce Commission v New Zealand Bus* and *Air New Zealand v Commerce Commission*. In those cases, the courts emphasised that the question of whether conditions in a market qualify as a barrier to entry, however defined, is less important than considering whether those conditions have the potential to prevent, impede or slow entry and expansion.[294]

4.12 Comments from BP suggest that it considers costs or obstacles that an entrant would face, but which have previously been overcome by incumbent firms, are not barriers to entry.[295]

4.13 We consider that BP's implicit approach to considering conditions of entry and expansion is not well suited to our task of assessing whether those conditions hinder competition between current and potential industry participants.

4.13.1 Forward-looking asymmetries faced by entrants relative to incumbent firms are important when considering the likelihood of increased competition. Observing that incumbents have overcome barriers to entry that they faced when entering tells us little about the current and likely future conditions of entry and expansion for entrants.

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292 Section 48 of the Act.

293 "Terms of reference for competition study into retail fuel markets" (5 December 2018) New Zealand Gazette No 2018-go6158.

294 *Commerce Commission v New Zealand Bus Ltd* (2006) 11 TCLR 679 (HC) at [147]-[155], citing Dennis Carlton "Why Barriers To Entry are Barriers to Understanding" (2004) 94 American Economics Review 466, and *Air New Zealand v Commerce Commission (No 6)* (2004) 11 TCLR 347 (HC) at [102]. This approach was confirmed by the Court of Appeal in *New Zealand Bus Ltd v Commerce Commission* [2007] NZCA 502 at [252].

295 For example, see BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.9], [4.13] and [4.14]. Similarly, Mobil submitted that "[t]he cost of building terminal infrastructure is not a barrier to entry and is a cost incurred by any party who wishes to participate in the market (including the existing participants)". Mobil "Submission to the New Zealand Commerce Commission in response to the Market Study into the Retail Fuel Sector Draft Report" (13 September 2019) at 4.

4.13.2 As discussed in paragraph 4.11.2 above, New Zealand case law highlights the importance of considering whether conditions in a market have the potential to prevent, impede or slow entry and expansion. We consider that this approach is equally relevant in the context of a market study, where we are seeking to understand market conditions that may be impeding competition.

4.14 Even if we were to adopt the narrower definition of barriers to entry supported by BP, we would also consider how incumbents have overcome any costs of or obstacles to entry, compared with the likely position of an entrant. We understand that the New Zealand Government assisted some existing firms to overcome those costs and obstacles and enter the New Zealand fuel industry, including by providing government funding. For example, BP entered through a joint venture with the government in 1946.[296] Such assistance is unlikely to be available to an entrant. As a result, an entrant may face costs of or obstacles to entry that were not in fact fully faced by all existing participants. Those costs and obstacles would constitute barriers to entry under BP's approach.

What are structural and regulatory conditions of entry and expansion?

4.15 In this study we have grouped our analysis of conditions of entry and expansion into the following categories.[297]

4.15.1 *Structural and regulatory conditions*, which are discussed in this chapter. Structural conditions are 'exogenous', which means that they are underlying market conditions independent of the conduct of firms in the market. Although this chapter primarily focuses on structural conditions of entry and expansion, regulatory conditions are also discussed where relevant.

4.15.2 *Conditions associated with firms' conduct*, such as contractual arrangements that raise barriers to entry (reinforcing any exogenous barriers). Conditions associated with firms' conduct are 'endogenous', which means that they are generated by the behaviour of established firms in the market. Conditions associated with firms' conduct are discussed in Chapters 5, 6 and 7.

4.16 *Structural* conditions are associated with the technologies, resources or inputs a firm would need to enter or expand.[298] Structural conditions of entry and expansion which we consider are particularly relevant to the New Zealand fuel market include:

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296 See paragraph 2.86.1.

297 Our mergers and acquisitions guidelines describe a variety of forms of conditions of entry and expansion, including structural, regulatory and strategic. Commerce Commission "Mergers and acquisitions guidelines" (July 2019) at [3.108]-[3.111].

298 Commerce Commission "Mergers and acquisitions guidelines" (July 2019) at [3.109].

4.16.1 economies of scale, which refers to per unit costs falling as production or supply increases;

4.16.2 sunk costs, which are costs a firm incurs on entry and which it would not be able to recover if it later exits the market; and

4.16.3 first mover advantages, which are advantages gained by early entrants to the market.

4.17 Significant economies of scale can potentially deter entry. Fuel markets exhibit substantial scale economies in refining, bulk shipping and, to a lesser extent, with terminal storage and retail outlet operation.[299]

4.18 Where production is characterised by economies of scale, an entrant may be at a competitive disadvantage since it will be unlikely to have a sufficient share of the market to have low enough costs to compete effectively. Economies of scale may prevent profitable entry if, in the process of achieving efficient scale, an entrant would drive prices down so that the entrant's expected returns do not justify entry.[300]

4.19 Entry may also require a substantial investment in sunk costs which cannot be recouped upon exit. This may include start-up costs such as developing and testing products, installing specialised equipment and facilities, and advertising and marketing costs. There can also be exit costs associated with environmental clean-up which are not able to be recovered.

4.20 Sunk costs can make entry more challenging because a firm, when entering, will consider the costs it would be likely to recoup if it exited. The greater the sunk costs, the greater the risk faced when contemplating entry into the market.[301]

4.21 In addition, incumbent firms may enjoy first mover advantages of lower costs from being first on the learning curve,[302] securing access to the best sites for terminals and retail sites, or entering in a previous era assisted by government funding. These advantages may make it difficult for an entrant to compete with established firms.

4.22 *Regulatory* conditions include resource management or other planning consent requirements, licensing requirements for a business or product, and regulations governing standards and quality of fuel supplied to New Zealanders.[303] Resource

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299 Michael Pickford and Cameron Wheeler "The petrol industry: Deregulation, entry and competition" (2001) *NZ Trade Consortium Working Paper No. 12* at 32-33.

300 Commerce Commission "Mergers and acquisitions guidelines" (July 2019) at fn 97.

301 Commerce Commission "Mergers and acquisitions guidelines" (July 2019) at fn 62.

302 Michael Pickford and Cameron Wheeler "The petrol industry: Deregulation, entry and competition" (2001) *NZ Trade Consortium Working Paper No. 12* at 33.

303 Commerce Commission "Mergers and acquisitions guidelines" (July 2019) at [3.110].

consent requirements are particularly relevant when constructing assets such as fuel storage terminals and retail sites.

Our findings on structural and regulatory conditions

4.23 This section discusses structural and regulatory conditions of entry and expansion throughout the fuel supply chain. We discuss the structural and regulatory conditions associated with:[304]

4.23.1 refining crude oil into petroleum products;

4.23.2 procuring and importing refined fuel into New Zealand;

4.23.3 storing refined fuel in terminals;

4.23.4 distributing refined fuel by pipeline, coastal shipping and truck; and

4.23.5 retailing refined fuel from retail sites.

4.24 Structural and regulatory barriers to entry and expansion generally appear to increase further up the supply chain.[305] Unless they can be overcome (for example, by asset sharing) these barriers are likely to result in a highly concentrated market structure at the importing level.

4.25 Upstream assets such as the refinery and terminals are long-lived and exhibit economies of scale. High throughput levels are required to minimise the cost of each unit of production. Owners of assets such as terminals and the refinery also need access to downstream distribution channels and/or customers to compete effectively.

4.26 Although retail entry also involves significant investment, it does not require the same level of sunk costs or scale as upstream assets. For example, retail entry is possible with wholesale supply agreements from existing importers, instead of the entrant needing to build its own storage terminal(s).

4.27 However, if we focused solely on entry conditions at the retail level, we could miss important factors affecting competition arising at other levels of the supply chain which affect retail prices. Although there are many retailers competing in some local retail markets, all of them ultimately rely on one of the importers for fuel supply.

4.28 If there is no likelihood of entry at the refinery level and significant barriers to import competition, this could mean that wholesale prices are higher than they

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304 Figure 2.9 illustrates the key steps of New Zealand's fuel supply chain.

305 A possible exception to this is barriers associated with the Resource Management Act at the retail level. However, barriers associated with the Resource Management Act may also be present higher up in the supply chain (for example, in relation to terminals).

would otherwise be. If that is the case, even in a retail market where competition is otherwise strong, prices may not promote the long-term interests of consumers.[306]

Refining crude oil into petroleum products

4.29 Further entry at the refinery level appears highly unlikely. This sub-section discusses the conditions of entry and expansion at the refinery level which have led us to this finding, noting our views that:

4.29.1 barriers to entry (and exit) at the refinery level are very high;

4.29.2 the size of the New Zealand market is likely to limit Refining NZ's ability to expand to operate at minimum efficient scale; and

4.29.3 the New Zealand experience is consistent with overseas markets where there has been significant consolidation of refineries over time.

Barriers to entry (and exit) at the refinery level are very high

4.30 Given the significance of economies of scale and large sunk costs of entry, a new entrant refinery would be at a cost disadvantage and highly unlikely to enter in New Zealand. About one third of New Zealand's fuel demand that is currently met by imports of refined fuel could potentially be supplied by a new entrant refinery.[307] However, this would require building a refinery of less than the incumbent's current capacity. Building a larger refinery would result in excess capacity, driving down prices and expected returns.

4.31 Economies of scale are particularly important for oil refineries.[308] Larger facilities are more efficient, and minimum efficient scale (MES) for refineries appears to have increased over recent decades.[309]

4.32 Refining NZ has a crude oil capacity of 135,000 barrels a day. The refinery meets around 58% of New Zealand's petrol demand, around 85% of New Zealand's Jet fuel demand and around 67% of New Zealand's diesel demand.[310]

4.33 Refining NZ's capacity is small compared to larger, more modern, refineries in other countries where most of New Zealand's imports are sourced.[311] The distillation

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306 See Chapter 1 for further discussion.

307 In theory, a new entrant refinery could increase its scale by taking share from Refining NZ. However, even a refinery serving all New Zealand's fuel demand would be unlikely to meet the estimate of MES discussed in paragraph 4.34 below.

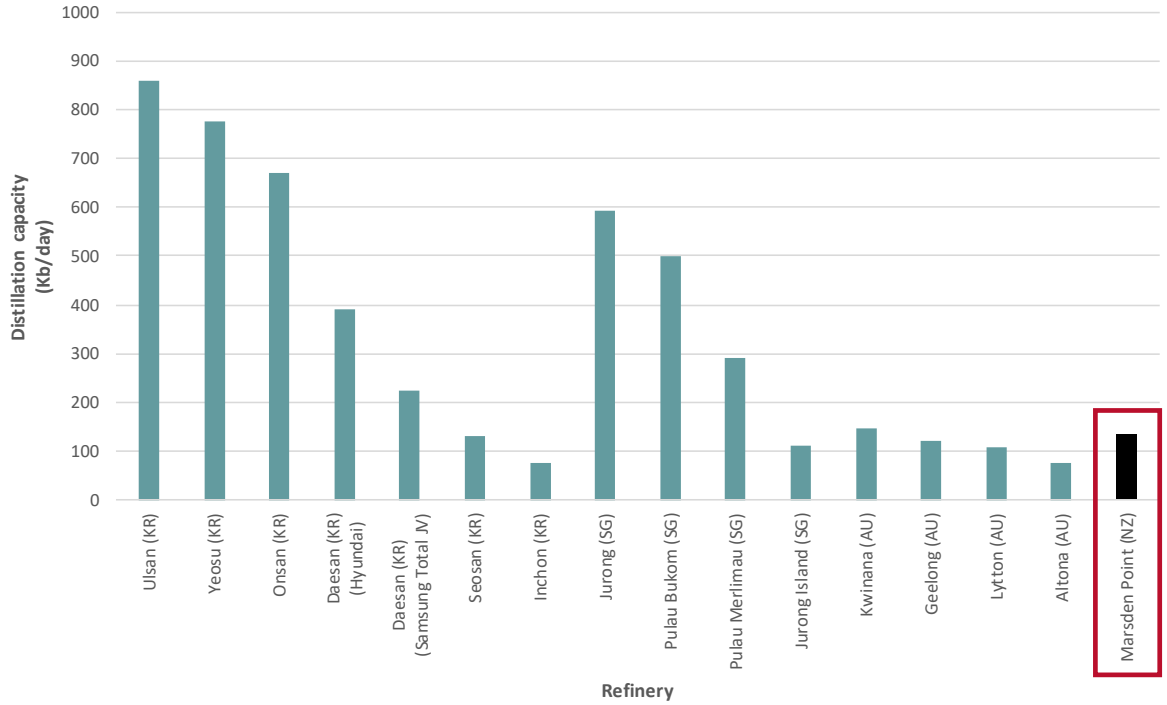
308 Canadian Fuels Association "The Economics of Petroleum Refining Understanding the business of processing crude oil into fuels and other value added products" (December 2013) at 7.

309 Minimum efficient scale is the level of output that minimises average cost, relative to the size of demand. HR Varian *Intermediate Microeconomics: A modern approach* (6th ed, W.W.Norton & Company, New York, 2003) at 432. See paragraph 4.34 below for further discussion of MES for refineries.

310 Refining NZ "These key facts give a general overview of our operation" (2019). Available at <https://www.refiningnz.com/media/key-facts/>. (Viewed on 13 August 2019).

capacities of refineries in South Korea (KR), Singapore (SG), Australia (AU) and New Zealand (NZ) are shown in Figure 4.1 below.

Figure 4.1 Refinery capacities in South Korea, Singapore, Australia and New Zealand



Source: Commerce Commission analysis of data from McKinsey Energy Insights and Refining NZ.[312]

4.34 ACIL (1997) has previously noted that for refineries "the minimum efficient scale (MES) of plants is usually governed by the size of the least cost distillation tower which may now be as high as 200,000 barrels of crude oil processing per day".[313] This equates to approximately 73 million barrels per year. The recent consolidation of refineries overseas suggests that this may now underestimate MES.[314]

4.35 Refining NZ's annual throughput is approximately 55% of this estimate of MES.[315] Throughput at the Marsden Point refinery has been relatively consistent over the

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311 As shown in Figure 4.4 below, in 2018 over 80% of New Zealand's imports were sourced from Singapore (52.4%) and South Korea (29.3%). The capacity of Australian refineries is also included for comparison.

312 McKinsey & Company "Energy insights by McKinsey: Refinery list". Available at <https://www.mckinseyenergyinsights.com/resources/refinery-reference-desk/refinery-list/>. (Viewed on 13 August 2019). Refining NZ "These key facts give a general overview of our operation" (2019). Available at <https://www.refiningnz.com/media/key-facts/>. (Viewed on 13 August 2019).

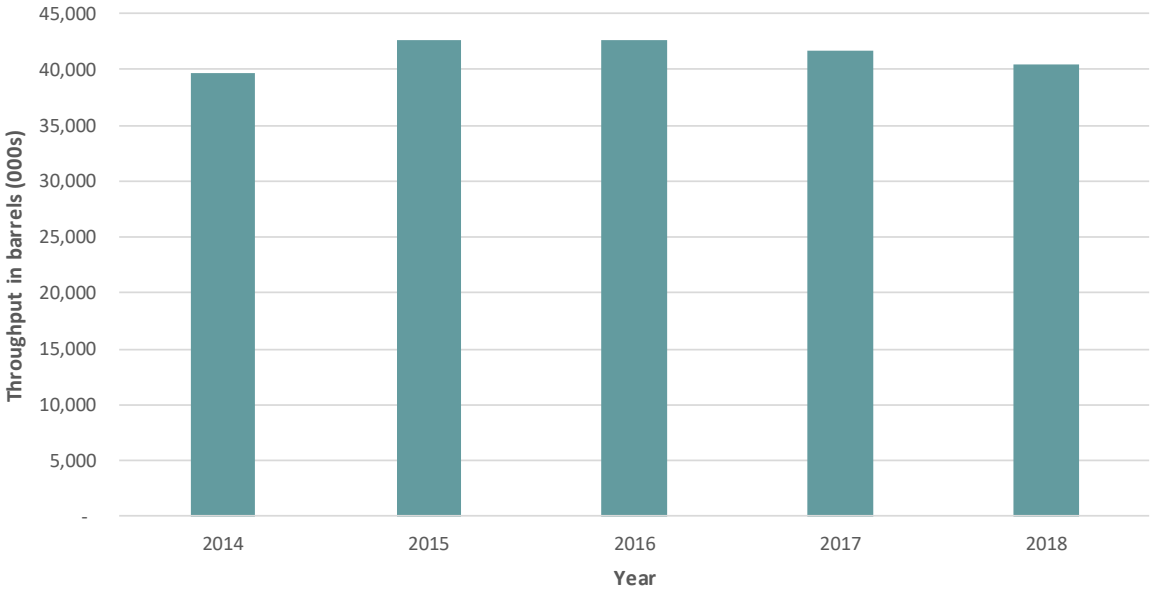
313 ACIL "Barriers to entry to the New Zealand downstream oil market: A report to New Zealand Ministry of Commerce" (August 1997) at 103.

314 See paragraphs 4.45 to 4.48 below for discussion on consolidation of refineries.

315 When expressed in terms of daily crude oil processing capacity, Refining NZ's capacity of 135,000 barrels is approximately 68% of the estimated MES of 200,000 barrels.

last five years, at approximately 40 million barrels per year.[316] This is shown in Figure 4.2 below.

Figure 4.2 Refining NZ annual throughput



Source: Commerce Commission analysis of Refining NZ Throughput and Margin Report for November/December 2018 (17 January 2019).[317]

4.36 There are large sunk costs associated with oil refineries. Refineries require substantial investment in specialised equipment and facilities, most of which would be lost if the refiner later decided to exit. For example, the ACCC's 2007 report *Petrol prices and Australian consumers* noted "BP stated that the capital cost of a new refinery would be in the order of A$3 billion".[318]

4.37 Further entry at the refinery level is highly unlikely due to these large sunk costs, and the need to ensure refinery capacity is fully utilised to compete with importing refined fuel.[319] Given Refining NZ already produces approximately two thirds of

316 The refinery typically operates at capacity. Refining NZ "NZCC market study into the retail fuel sector: Response by Refining NZ to the New Zealand Commerce Commission's preliminary issues paper for the retail fuel market study" (21 February 2019) at [7.16].

317 Refining NZ "Announcement to NZX: Refining NZ Throughput and Margin Report for November/December 2018" (17 January 2019). Available at <https://www.refiningnz.com/refininglogin/wp-content/uploads/2019/01/Throughput-and-Margin-Report-for-November-December-2018-1.pdf>. (Viewed on 26 July 2019).

318 ACCC "Petrol prices and Australian consumers: Report of the ACCC inquiry into the price of unleaded petrol" (December 2007) at 216.

319 Fully utilising capacity enables fixed costs to be spread over a greater number of units, lowering the average cost of production. Refining NZ has noted that "because of the small size of the New Zealand market, the economics of the refinery depend on it being fully utilised at all times" and "running the refinery with excess capacity is unlikely to be either efficient or profitable" Refining NZ "NZCC Market

New Zealand's fuel, and the refinery is significantly sub-scale by modern standards, it seems extremely unlikely a new refinery could enter at efficient scale.

4.38 No industry participant disagreed with this view during the study and the MTA and BP commented directly in agreement. MTA noted that entry at this level is unlikely due to current refinery capacity and the prohibitive cost of upgrades to increase capacity.[320] BP noted that Refining NZ:[321]

4.38.1 is already a very small-scale refinery by global standards, with its daily output falling well below MES; and

4.38.2 must constantly improve its operating margins to remain competitive with overseas refineries.

4.39 Environmental clean-up costs associated with refineries are also high, increasing the risks of entry. The New Zealand Institute of Economic Research (NZIER) estimates that if the Marsden Point refinery were to close "the site remediation cost could be in the order of $300 million".[322]

4.40 Previous studies of the New Zealand fuel industry have also identified high barriers to entry at the refinery level, concluding that:[323]

4.40.1 it would be impractical for a new entrant to build its own refinery; and

4.40.2 therefore, entry can only occur lower down the supply chain (probably using imported refined product).

New Zealand's market size is likely to limit Refining NZ's ability to expand to minimum efficient scale

4.41 Refining NZ could expand its capacity, despite further entry at the refinery level being unlikely. Refining NZ has previously undertaken projects within the last decade which have increased its capacity, including:[324]

Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) at [5(b)].

320 MTA "MTA Submission: Commerce Commission Market Study into the Retail Fuel Sector – Draft Report" (13 September 2019) at 22.

321 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.3]-[4.4].

322 NZIER "Crude shipping project: Economic assessment of channel deepening at the Marsden Point Refinery" (2 August 2017) at 14.

323 Michael Pickford and Cameron Wheeler "The petrol industry: Deregulation, entry and competition" (2001) *NZ Trade Consortium Working Paper No. 12* at 32 and ACIL "Barriers to entry to the New Zealand downstream oil market: A report to New Zealand Ministry of Commerce" (August 1997) at 103.

324 Refining NZ "Profile of Refining NZ – Marsden Point – Whangarei" (2017) at 3-4. Available at <https://refiningnz.com/refininglogin/wp-content/uploads/2018/06/Refining-NZ-Profile-2017.doc>. (Viewed on 15 August 2019).

4.41.1 the Point Forward project (2009), which cost $190m and increased the refinery's overall capacity by 15% to around 135,000 barrels per day; and

4.41.2 the Te Mahi Hou project (2015), which cost $365m and reduced fuel losses across the refinery and increased petrol capacity by 2 million barrels per annum.

4.42 However, even if Refining NZ increased its capacity to be able to serve the entire New Zealand market, it would still be unlikely to reach the estimate of MES discussed in paragraph 4.34 above.

4.43 In addition, given that Refining NZ would be adding extra capacity to relatively old technology, its cost curve may sit higher than other more modern refineries in the Asia-Pacific region.[325] This potentially adds to the challenges in competing with imports of refined fuel.

4.44 Although Refining NZ could potentially expand its capacity beyond the size of the New Zealand market, and export some of its output, it is unlikely that New Zealand has a comparative advantage in refining given its location.[326]

New Zealand experience is consistent with consolidation of overseas refineries

4.45 The consolidation of refineries in overseas markets also suggests that the entry of a new refinery in New Zealand is unlikely.

4.46 There has been significant consolidation of refineries in Australia. There are now only four refineries operating, down from eight in 2002.[327] In a December 2014 report, the ACCC noted that "the Australian refinery sector is facing a challenging future due to competitive pressure from large, low-cost Asian refineries".[328]

4.47 The Australian experience is consistent with the global trend towards fewer refineries with larger capacities in recent years. This is shown in Figure 4.3 below.

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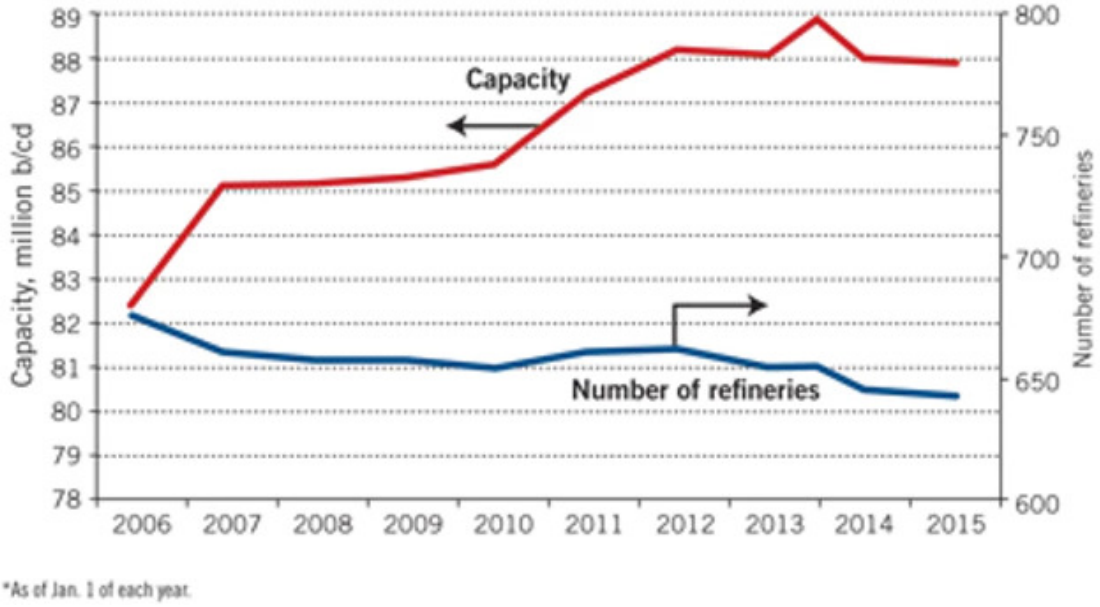
325 As discussed in paragraph 4.48 below, NZIER has noted that "addition of new capacity, new technology, greater refinery scale and access to very large crude carriers has lowered the supply cost curve for crude oil in the Asia-Pacific region". NZIER "Crude shipping project: Economic assessment of channel deepening at the Marsden Point Refinery" (2 August 2017) at 5.

326 Michael Pickford and Cameron Wheeler "The petrol industry: Deregulation, entry and competition" (2001) *NZ Trade Consortium Working Paper No. 12* at fn 23.

327 ACCC "Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profit of unleaded petrol in Australia" (December 2014) at 11.

328 Ibid, at ix.

Figure 4.3 Worldwide refining capacity and number of refineries



Source: Oil and Gas Journal "Asia-Pacific refining primed for capacity growth" (1 December 2014).

4.48 Refining NZ is facing similar challenges. A 2017 report by NZIER, providing an economic assessment of proposed channel deepening at the Marsden Point refinery, noted that:[329]

4.48.1 Refining NZ operates in a highly competitive market for refined oil products, where addition of new capacity, new technology, greater refinery scale and access to very large crude carriers has lowered the supply cost curve for crude oil in the Asia-Pacific region; and

4.48.2 new ways of improving operating margins at Marsden Point are needed to remain competitive with much larger refineries in Singapore, Korea, India and the Middle East.

Procuring and importing refined fuel into New Zealand

4.49 Given our view that there are high barriers to entry at the refinery level, another possible form of entry is by importing refined fuel into New Zealand. This requires shipping refined fuel to New Zealand, storing this fuel in storage terminals, and then distributing and selling it to consumers.

4.50 There are several challenges when procuring and shipping refined fuel into New Zealand. This sub-section explains our views that:

4.50.1 there are economies of scale in shipping fuel to New Zealand;

329 NZIER "Crude shipping project: Economic assessment of channel deepening at the Marsden Point Refinery" (2 August 2017) at 5.

4.50.2 some of New Zealand's smaller regional ports are too shallow to receive standard import cargoes;

4.50.3 import cargoes may need to be unloaded across multiple ports due to depth or storage limitations;

4.50.4 differences in fuel specifications may create difficulties for an importer shipping fuel to multiple countries; and

4.50.5 New Zealand's distance from key import refineries can affect security of supply.

4.51 Despite these challenges, entry at the importer level appears feasible from a structural and regulatory perspective – at least at current importer margins. This is demonstrated by Gull's presence in the New Zealand market and the upcoming entry of TOSL.[330]

4.52 Importer entry appears most feasible at ports able to serve large areas of demand, where there is greater chance of obtaining sufficient market share to support import cargoes of efficient size. None of the challenges listed above are likely to be insurmountable, and they are faced by both the majors and other independent importers.

4.53 Once imported refined fuel has landed in New Zealand it needs to be stored in a terminal. Terminal storage is discussed in the next sub-section at paragraphs 4.85 to 4.128 below.

There are economies of scale in shipping fuel to New Zealand

4.54 There are significant economies of scale associated with bulk shipping and large fixed costs associated with sending a fuel tanker to New Zealand. Data on imports to New Zealand suggest the cost of chartering an import vessel is about $1.5m per shipment.[331] Transporting smaller cargoes leads to higher freight costs per litre of fuel.[332]

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330 BP supports our view that entry at the importer level is feasible, as demonstrated by Gull and TOSL. BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.5].

331 [ ] In addition, NZIER has estimated that reducing the number of annual crude tanker deliveries to Marsden Point from 59 to 48 would save $17m per year in delivery costs ($1.5m per delivery). NZIER "Crude shipping project: Economic assessment of channel deepening at the Marsden Point Refinery" (2 August 2017) at 13.

332 We understand that an importer can include multiple fuel types on a ship to help realise economies of scale. For example, one shipment could include petrol, diesel and jet fuel. [ ]

4.55 Medium range (MR) fuel tankers are generally used to import refined fuel into New Zealand.[333] We understand that the standard size of petrol and diesel cargoes traded in Asia is approximately 30,000 MT.[334] Gull told us that this would be the standard industry assumption generally.[335] However, Refining NZ noted that product tankers coming to New Zealand are typically between 36,000 and 40,000 MT.[336]

4.56 The ACCC has noted that the most efficient and economical way to import fuel is by vessel with a minimum 30,000 MT cargo, fully loaded at one port and fully discharged at another port.[337] There are diseconomies of small-scale operation because:[338]

4.56.1 if spot-chartered for a specific voyage, the minimum freight lump sum cost is usually based on a cargo load of 30,000 MT, regardless of the size of the cargo actually loaded (this means that on a per litre basis, the smaller the cargo the higher the freight cost); and

4.56.2 shipping a non-standard cargo size can increase product cost (ie, the cost of refined fuel) per barrel, to compensate the supplier for the supply chain inefficiencies associated with a smaller cargo.

4.57 We consider that 30,000 MT is a reasonable simplifying assumption for our analysis of the potential for importer entry but note that this may somewhat understate economies of scale in shipping fuel to New Zealand.

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333 MR tankers range from approximately 25,000-45,000 deadweight tonnes (which is a measure of a ship's capacity to carry cargo). U.S. Energy Information Administration "Oil tanker sizes range from general purpose to ultra-large crude carriers on AFRA scale" (16 September 2014). Available at <https://www.eia.gov/todayinenergy/detail.php?id=17991>. (Viewed on 13 August 2019).

334 ACCC "Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia" (December 2010) at 71 and S&P Global Platts "Specifications guide: Asia Pacific and Middle East refined oil products" (July 2019).

335 Gull indicated that 30,000 MT is "a reasonable number from an industry perspective", noting that this would be "the standard industry assumption generally, unless you have a large capability port with deep draft and lots of storage". Gull also referred to 30,000 deadweight tonnes being used in the standard pricing calculations. Transcript of confidential session with Gull (25 September 2019), at 32 (lines 1-16). [ ]

336 Refining NZ "NZCC market study into the retail fuel sector: Response by Refining NZ to the New Zealand Commerce Commission's retail fuel market study draft report" (13 September 2019) at [2.3].

337 ACCC "Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia" (December 2010) at 68. Given Australia and New Zealand's geographic proximity, the ACCC's work provides useful context when considering the requirements of importing refined fuel to New Zealand.

338 ACCC "Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia" (December 2010) at 71.

4.58 As discussed later in this chapter, a storage terminal of at least 40-45 ML is required to support a 30,000 MT import cargo.[339]

Some New Zealand ports are too shallow to receive standard import cargoes

4.59 The depth of some coastal ports in New Zealand limits the cargo size able to be delivered by MR tankers. To be cost-competitive, an importer will want to use a ship with a minimum cargo load of 30,000 MT.

4.60 Heavier ships, carrying larger parcels of fuel, sit lower in the water. The fuel tanker berth at each coastal port in New Zealand has a maximum allowable draught, which reflects the depth of water a ship can safely navigate.[340]

4.61 We understand that a draught of approximately 10-11 metres is needed to support a 30,000 MT import cargo of fuel.[341] It is possible to import a cargo of this size at most of New Zealand's larger ports, including Auckland, Mount Maunganui, New Plymouth, Wellington (Seaview) and Lyttelton.

4.62 However, several of New Zealand's ports are not deep enough for an MR tanker to berth with a 30,000 MT cargo. These ports include Napier, Wellington (Aotea Quay #3 and Miramar), Nelson, Timaru, Dunedin and Bluff.

4.63 An importer seeking to ship fuel to a port with draught (or storage) limitations may need to first unload some of its cargo at another port. This is discussed in more detail in paragraphs 4.66 to 4.71 below.

4.64 Maximum draughts for fuel tanker berths at relevant New Zealand ports are shown in Table 4.1 below. Theoretical maximum cargo sizes for an MR tanker are also included.

339 The requirements associated with building and operating import terminals are discussed in paragraphs 4.85 to 4.128 below.

340 The draught of a ship's hull is the vertical distance between the waterline and the bottom of the hull (keel), with the thickness of the hull included.

341 Based on the data provided by COLL in Table 4.1 below.

Table 4.1 New Zealand port draught comparison (for fuel tanker berths)

Port	Berth	Maximum draught (m)*	Theoretical maximum cargo size (MT)**
Auckland	Wynyard Wharf	10.3	30,900
Tauranga	Oil Berth #16	11.2	34,200
Napier	Oil Berth (2 South)	10.1	29,900
New Plymouth	Newton King #1	12.5	41,000
	Newton King #2	12.5	41,000
Wellington	Seaview	10.2	30,400
	Aotea Quay #3	9.9	28,900
	Miramar	8.5	21,900
Nelson	Main wharf south	9.4	26,300
Lyttelton	Oil Berth	11.1	33,600
Timaru	No. 1 Extension	9.5	28,600
Dunedin	Oil Jetty (Upper Harbour)	7.2	15,700
Bluff	Town Wharf (No. 11)	8.8	23,400

Source: COLL.[342]

Notes: * The maximum permitted draught is based on chart datum, ie, no allowance has been made for variable tidal heights. ** The maximum cargo size is based on the sum of all products that could be discharged at a particular port from COLL's time-chartered MR vessel 'Kokako', given the available draught. It does not take into consideration the availability of shore-based tankage at these ports.

4.65 Marsden Point in Whangarei Harbour is deeper than the ports listed in Table 4.1, with a current maximum draught of 14.7 metres.[343] The Marsden Point refinery provides an example of the economies of scale generated by larger ships. Refining NZ is currently proposing to deepen the entrance to Whangarei Harbour to 16.6 metres, to enable larger deliveries of crude oil to the refinery.[344]

Imports may need to be unloaded across multiple ports due to depth or storage limitations

4.66 Although single port discharge of import cargoes is generally preferred to minimise freight costs, unloading at multiple ports may be necessary where there are port

342 Kensington Swann (on behalf of COLL) "Response to information request" (4 June 2019) at 2-3.

343 Navigatus Consulting "Report in support of an assessment of the effects on the environment: Navigational risk assessment of engineered channel designs" (15 August 2017) at 3.

344 Refining NZ notes that it began consulting on this proposal in 2014. It submitted its resource consent application in August 2017, which was granted by the Northland Regional Council on 17 July 2018. Refining NZ chose to appeal some of the conditions of the approval. The Environment Court confirmed the resource consents on 14 December 2018, subject to minor revisions as agreed between the parties. Refining NZ "The deeper story". Available at <https://deeperstory.co.nz/>. (Viewed on 13 August 2019).

depth or tank storage capacity limitations.[345] An importer would need to own (or have access to) terminals at multiple ports for this strategy to be effective.

4.67 For example, where an importer faces restrictions which prevent it from unloading a full 30,000 MT cargo at a single port, it may be able to:

4.67.1 first unload some of the cargo at a deeper port with sufficient tank storage; and

4.67.2 then unload the remaining cargo at a second port, which is shallower or has greater storage constraints.

4.68 The ACCC has noted that distributing a single 30,000 MT cargo across multiple ports improves the freight economics, compared with directly importing two separate smaller cargoes.[346] However, as noted in paragraph 4.56 above, this is not as efficient as fully loading a 30,000 MT cargo at one port and fully discharging it at another port.

4.69 According to BP, "no importer in New Zealand currently achieves [the] theoretically optimal shipping voyage".[347] BP noted that importers do not import to a single port for several reasons, including available tankage and the combination of grades being imported on each vessel. BP submitted:[348]

> …it is not only feasible, but is the normal situation for many New Zealand importers to discharge at more than one port, including ports with smaller draft, because the ship will visit the smaller port after discharging much of its cargo.

4.70 Other information provided to us suggests that it is normal for multiple ports to be visited when discharging import cargoes.[349]

4.71 In contrast, Gull noted at the consultation conference that it imports full MR tanker cargoes to its Mount Maunganui terminal, with a one port call.[350] This is discussed further in paragraph 4.146 below.

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345 A major noted that "multiple port discharges are tolerated as they enable bulking-up of cargoes or larger vessels". [ ]

346 ACCC "Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia" (December 2010) at 71.

347 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.6].

348 Ibid.

349 [ ]

350 Transcript of retail fuel study consultation conference – Day 2 (25 September 2019) at 6 (lines 33-34) and 7 (lines 1-6).

Differences in specifications may create difficulties when shipping fuel to multiple countries

4.72 It may be possible to overcome draught limitations, and realise economies of scale in international shipping, by adding New Zealand to an existing distribution network in the region.[351] This could avoid needing to drop off fuel to more than one New Zealand port.

4.73 Adding New Zealand to an existing distribution network may enable an importer to:

4.73.1 lower the incremental cost of shipping fuel to New Zealand;

4.73.2 avoid the need to own (or have access to) more than one terminal in New Zealand; and

4.73.3 increase the amount of fuel unloaded at a new terminal over time as market share builds.

4.74 However, differences in fuel specifications of different countries may create challenges for a company shipping refined fuel to multiple import locations.

4.75 For example, an importer shipping fuel from Singapore or South Korea to New Zealand, but unloading some of the cargo in a different country on the way, needs to ensure that the fuel meets the relevant specifications in each country. TOSL has noted that "one of our dreams would be to have all the countries out there speaking all together and making sure that they actually want the same grades of products, that would make our life much more simple".[352]

4.76 New Zealand's Engine Fuel Specifications Regulations provide comprehensive fuel specifications for petrol, petrol/ethanol blends, diesel, biodiesel, and diesel/biodiesel blends.[353] The regulations were last amended in 2016/17, which included reducing the sulphur level allowed in petrol from 50 to 10 parts per million (ppm).[354]

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351 For example, TOSL has noted that Timaru will need to be a second or third port of call due to draught restrictions. Transcript of meeting with TOSL (21 June 2019) at 12 (lines 18-22).

352 Transcript of meeting with TOSL (21 June 2019) at 12 (lines 31-33).

353 Engine Fuel Specifications Regulations 2011 available at <http://www.legislation.govt.nz/regulation/public/2011/0352/latest/whole.html>. (Viewed on 15 August 2019).

354 MBIE "2016/17 updates to fuel specifications" available at <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-generation-and-markets/liquid-fuel-market/engine-fuel-quality/>. (Viewed on 13 August 2019). These changes took effect on 2 October 2017, except for the change to the maximum sulphur level which took effect on 1 July 2018.

4.77 Z Energy's submission on the preliminary issues paper noted that New Zealand's fuel specifications are "stringent" and make "New Zealand fuel relatively difficult to blend". Z Energy submitted that:[355]

> The specifications target minimum performance and reducing fuel's environmental impact. While other countries do have tight specifications, they are generally not as constrained as many of those in New Zealand. For example, while Australian specifications are in many respects similar to New Zealand's, Australia is significantly more lenient in relation to sulphur levels.

4.78 The relatively tight specifications in New Zealand, particularly the sulphur levels, limits the overseas refineries from which fuel can be imported. A 2015 report by Stratus Advisors noted that, at the time of writing:[356]

4.78.1 only three countries in the Asia-Pacific region (Japan, South Korea and Taiwan) set maximum sulphur levels of 10 ppm for gasoline; and

4.78.2 a further four countries (China, India, Singapore and Vietnam) had plans to set maximum sulphur levels of 10 ppm for gasoline in the next 6 years (ie, by 2021).

4.79 BP submitted that New Zealand's fuel specifications affect the majors' import costs as much as they do independents and are not a barrier to entry.[357]

4.80 We agree with BP's statement when all fuel in a shipment is sold in New Zealand. However, a barrier to incremental entry could arise if an entrant needs to first unload some fuel in another country with different specifications on the way to New Zealand. This could restrict the potential for entry at scale.

New Zealand's distance from key import refineries can affect security of supply

4.81 New Zealand's distance from import refineries also increases the risk of running out of fuel, if there is disruption to supply. The shipping time to New Zealand from the main import refineries in Singapore and South Korea is significant, at approximately 20 days.

4.82 The main sources of New Zealand's imports of refined fuel are shown in Figure 4.4 below. In 2018, over 80% of imports were sourced from Singapore (52.4%) and South Korea (29.3%).

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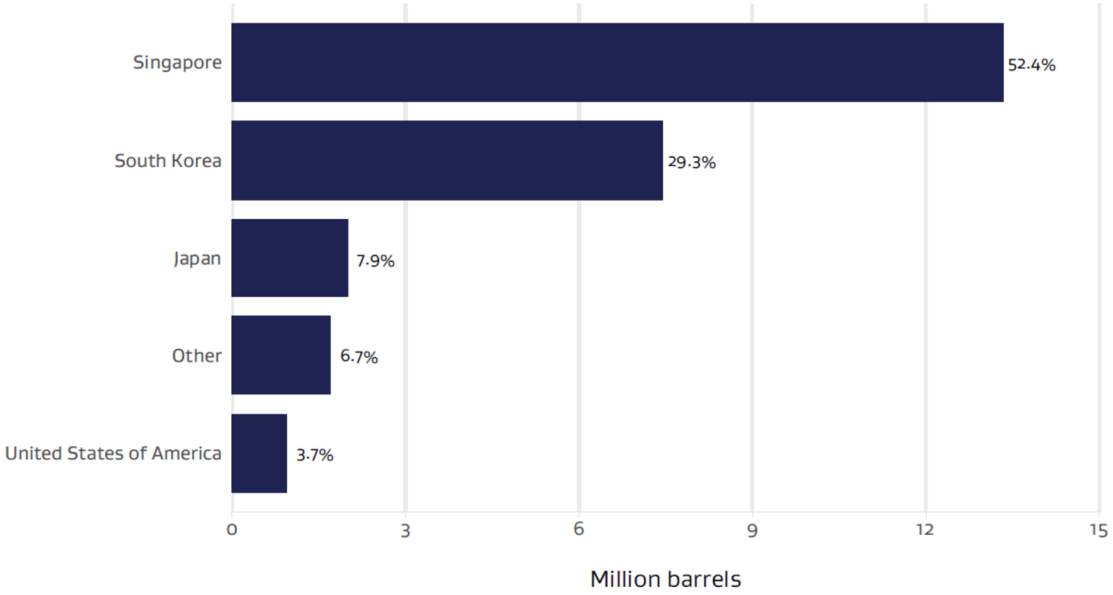
355 Z Energy "Market study into the retail fuel sector: Z Energy's response to invitation to comment on preliminary issues" at [36].

356 Stratus Advisors "Information on Asia-Pacific Fuel Quality Standards and their Implications for New Zealand" (February 2015) at 30.

357 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.9].

Figure 4.4 Source of New Zealand's imports of refined fuel by country (2018)



Source: MBIE "Energy in New Zealand 2019" at 45.

4.83 The infrastructure sharing arrangements discussed in Chapter 5 mitigate international transport risks for the majors. However, these arrangements are not currently available to an entrant importer of refined fuel.

4.84 BP submitted that "[t]here is no "transport risk" for new entrants importing which would constrain their ability to compete", noting that Gull has been able to successfully manage any issues it has had in the 20 years since it entered.[358] However, we note that an entrant may not be able to compete as vigorously as it otherwise would have due to the need to manage these transport risks.[359]

Storing refined fuel in terminals

4.85 Once an import vessel has arrived in New Zealand, the refined fuel it is carrying needs to be stored in tanks (referred to as 'terminals').

4.86 Entry is possible at the terminal level, particularly at larger ports which are well located to serve large areas of demand by truck. However, the scale of regional markets and port depth restrictions are likely to significantly limit the ability of entrants to successfully build and operate terminals at smaller provincial ports.

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358 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.7].

359 [

]

4.87 This sub-section discusses the challenges associated with entering at the terminal level that lead us to these views. It notes that:

4.87.1 terminals require large capital investment, with high fixed and sunk costs;

4.87.2 access to suitable land and associated resource consents is required;

4.87.3 significant market share is required to support efficient terminal throughput rates; and

4.87.4 the geographic scope of past entry at the terminal level has been limited.

4.88 At the end of this sub-section we summarise our views on the potential for importer entry from a structural and regulatory perspective. This is based on our analysis of the challenges associated with both shipping refined fuel to New Zealand and operating terminals.

Terminals require large capital investment

4.89 Terminals are long-lived assets, with high fixed and sunk costs. This increases the risks faced by a new importer, making entry more difficult, because the costs it would be able to recover if it later exits the market are likely to be limited.[360]

4.90 Significant capital investment is required to construct a new terminal at sufficient scale to support a standard 30,000 MT import cargo. The ACCC has noted that at least 40–45 ML of clean tank storage is required to efficiently discharge a 30,000 MT cargo.[361] Similarly, a major has noted that a full import cargo from a MR tanker is approximately 40-55 ML.[362]

4.91 Although building a smaller terminal would reduce upfront investment costs, the resulting storage capacity limitations would likely increase freight costs per litre. The diseconomies of small-scale importing are discussed in paragraph 4.56 above.

4.92 Based on public and confidential information we have received from several parties, we estimate the cost of a new 45 ML storage terminal as approximately $40-60 million.[363]

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360 As noted in paragraph 4.119 below, Gull's terminal in Mount Maunganui was initially constructed by relocating second hand tanks from the closed Marsden Point Power Station by barge, suggesting that investments in terminals may not be fully sunk.

361 ACCC "Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia" (December 2010) at 68.

362 [ ]

363 See paragraph C119 for further details of information considered in reaching this estimate. Land costs are not included (we have assumed that the land is leased).

4.93 Z Energy has provided gross replacement cost estimates for the terminals it occupies. These estimates were prepared by an independent valuer as part of Z Energy's financial reporting processes.[364]

4.94 Using this information, we have plotted the estimated gross replacement cost of each of Z Energy's terminals against the corresponding storage capacity.[365] This analysis is consistent with the cost estimate for a 45 ML terminal in paragraph 4.92.

4.95 This analysis also provides some evidence of economies of scale for terminals, although the reduction in replacement cost per unit as capacity increases is relatively small. This may be because terminals are modular – they are typically comprised of multiple tanks (of varying capacities). A new tank can be added when additional capacity is required at a terminal (subject to land availability). Further, land costs are excluded from this analysis, which is likely to have contributed to the result.[366]

4.96 BP indicated that building a new "greenfield" terminal is generally cheaper than building at an existing site, which is a working dangerous goods facility. BP submitted:[367]

> It is true that adding a tank to an existing facility can give some economic advantages as a significant cost is the secondary containment (bund) and fire protection systems. However, if the new tankage requires modification of existing bunds or retrospective application of fire protection systems, the unit cost of tankage can far exceed a new build.

4.97 We acknowledge the relatively high cost of modifications to existing terminals to meet modern health and safety standards.[368] However, this does not detract from our conclusion that the high fixed and sunk costs associated with terminals make entry at this level of the supply chain challenging.

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364 Jones Lang LaSalle (JLL) estimated gross replacement cost estimates for Z Energy's terminals, [ ] The estimates exclude goodwill, stock and materials in trade, items not scheduled, land, buildings, GST and third party assets. JLL "Valuation Report: Z Energy Limited – Terminal Plant & Equipment Assets" (31 March 2017) at 9 and 14. Total capacities are calculated by summing the "Tanks (Fuel)" asset category for each terminal using the spreadsheet accompanying JLL's report.

365 Attachment C contains further discussion on the replacement costs of terminals.

366 See footnote 364 above for further details of items excluded from the terminal cost estimates used in this analysis.

367 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.12].

368 For example, BP noted that the unit cost of new tankage at an existing facility can far exceed a new build where fire protection systems are retrospectively added. BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.12]. TOSL also referred to additional safety measures following the Buncefield fire in England. Transcript of meeting with TOSL (21 June 2019) at 32 (lines 15-26).

Access to suitable land and associated resource consents is required

4.98 There is limited availability of land near deep-water coastal ports that is suitable to build an import terminal. Associated resource consents (such as land-use consent and stormwater discharge permits) are also required, which can be a lengthy process.[369] These factors may limit both the prospect and speed of entry.

4.99 A major has previously noted that "the optimal terminal configuration is large enough to take the largest possible bulk delivery (minimising primary distribution unit cost of supply) and close enough to the largest possible demand centres to minimise road transport costs".[370]

4.100 BP considers that while the definition of the "optimal" terminal configuration is not controversial, it does not match most of New Zealand's current terminal operations. BP noted that:[371]

4.100.1 TOSL is building a terminal in Timaru (a relatively shallow port, not located at a large demand centre); and

4.100.2 access to land is not insurmountable albeit in cases it will require commercial negotiation and time to secure it (referring to the process it went through in Seaview 10 years ago).[372]

4.101 Other evidence we have received suggests that there is limited availability of suitable land for new storage terminals at certain ports. For example, one industry participant has indicated that although Lyttelton port is well located given Christchurch is one of New Zealand's biggest cities, suitable land for a new storage terminal is not available.[373]

4.102 In some cases there can be challenges associated with getting resource consent approvals for terminals, including to meet urban planning requirements and to address environmental matters.[374] BP noted that existing operators also face

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369 [ ]

370 [ ]

371 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.13].

372 BP also noted that in some cases the optimal land is owned by local government through their ownership in local port companies. BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.13(b)].

373 [ ]

374 [ ]

constraints from resource consents and development of their surrounds, citing restrictions placed on the WOSL terminal as an example.[375]

Significant market share is required to support efficient terminal throughput rates

4.103 The scale of regional markets (and market share required) is likely to significantly limit the ability of entrants to successfully build and operate terminals at smaller provincial ports.

4.104 In terms of the minimum volume throughput required to support a terminal, the ACCC has noted that to manage both quality control and working capital costs, it is common for terminal owners to aim to turn tanks (that is, have them filled and emptied) at least every three months.[376]

4.105 However, on average, independently owned import terminals in Australia have a turnover rate of over six times per annum.[377] This suggests annual terminal throughput of 180,000 MT to support deliveries of 30,000 MT cargoes. This is equivalent to approximately 214 ML of diesel or 241 ML of petrol per year.[378]

4.106 Assuming a turnover rate of six times per year, and that volumes (and tank capacities) are split equally between petrol and diesel, we estimate annual throughput at an efficiently utilised new import terminal to be 228 ML. This is approximately 3% of New Zealand's total demand for petrol and diesel in 2018.[379]

4.107 A new entrant is likely to need to obtain significant wholesale market share in certain regions to support this throughput. Table 4.2 below estimates the market share required by a new 45 ML terminal at each port, based on our estimate of:

4.107.1 total offtakes of petrol and diesel from existing terminals at each port in 2018;[380] and

4.107.2 the annual throughput at an efficiently utilised new terminal.

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375 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.13].

376 ACCC "Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia" (December 2010) at 72.

377 Ibid.

378 Assuming product densities of 1,339 litres per MT for petrol and 1,189 litres per MT for diesel. These densities are calculated using data for 2019 in the "Fuel_Properties" sheet of MBIE's "Oil data tables" available at <https://www.mbie.govt.nz/assets/Data-Files/Energy/nz-energy-quarterly-and-energy-in-nz/Oil.xlsx>. (Viewed on 11 November 2019).

379 The "Annual_kt" sheet of MBIE's "Oil data tables" (see fn 378 above) notes that, in 2018, total consumption of petrol and diesel was 2,410.32 kt and 3,032.42 kt respectively. This converts to approximately 3.2 billion litres of petrol and 3.6 billion litres of diesel (6.8 billion litres total), using the product densities in fn 378.

380 MBIE notes that port offtakes can be used as a proxy measure of fuel demand by region. However, care should be taken in interpreting this data, as oil products are transported between regions. MBIE "Energy in New Zealand 2019" at 47.

4.108 For simplicity, this analysis assumes all the ports listed in Table 4.2 below can receive a standard 30,000 MT import cargo. However, as discussed in paragraphs 4.59 to 4.65 above, in practice there are depth restrictions at several of New Zealand's ports which mean this is not possible.

Table 4.2 Estimated market share required by new 45 ML terminal by region

Port	Total offtakes of petrol and diesel (2018) (ML)	Estimated market share required by new import terminal
Whangarei (Marsden Point)	370	62%
Auckland (Wiri + Wynyard)	1,793	13%
Mt Maunganui	1,267	18%
Napier	316	72%
New Plymouth	99	230%
Wellington (Aotea Quay + Seaview)	852	27%
Nelson	328	69%
Christchurch (Lyttelton)	787	29%
Timaru	253	90%
Dunedin	385	59%
Bluff	260	87%

Source: Data on terminal offtakes supplied by COLL, WOSL and Gull.

4.109 The estimates of the regional market share that would be required by a new terminal in Table 4.2 range from 13% to 230%, depending on the port.

4.110 We acknowledge that the estimates for each individual port are likely to overstate the market shares required to enter, given that multiple regions can be served from a single terminal.[381] For example:

4.110.1 Gull supplies retail sites throughout most of the North Island from its Mount Maunganui terminal; and

4.110.2 TOSL indicated that given Timaru is in the middle of the South Island, it can serve all the way from Kaikoura to Bluff (including Queenstown).[382]

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381 BP submitted that our analysis "quite clearly demonstrates that looking at terminal storage and fuel distribution on a regional basis does not provide any meaningful information", noting that "[b]uilding bigger terminals and trucking longer distances clearly is a feasible business model". BP noted our analysis suggests "TOSL's investment case was premised on achieving a 90% share of the Timaru region fuel market". BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.15]-[4.16].

382 Transcript of phone call meeting with TOSL (2 April 2019) at 4 (lines 44-48).

4.111 It may be feasible to enter with a smaller terminal, and therefore with smaller shipments and less need to obtain large market shares. However, as noted in paragraph 4.56 above, there are diseconomies of scale associated with smaller import cargo sizes. The ACCC has noted that this could increase both freight and product costs:[383]

> For an independent reseller, if a discharge port location has less than 40–45 ML tank storage capacity and/or draft restrictions, additional costs for freight and product could be incurred and may result in the cargo being uneconomic compared with prices offered by the refiner-marketers. The increased freight cost results from the diseconomies of small-scale operation.

4.112 Similarly, Refining NZ's submission on our preliminary issues paper noted:[384]

> New Zealand is geographically sizable but has a very low population density. This makes it costly to service small demand centres with fuel, as the demand at each coastal port is insufficient to warrant the investment in adequate tankage to allow a product import tanker to discharge a full cargo into a single coastal port. Product tankers are therefore required to make multiple port calls, which increases distribution costs.

4.113 Table 4.2 above also suggests it is possible that new importer entry at larger ports, based on a 45 ML import terminal, could potentially result in excess capacity. However, we do not consider this to be a significant concern for the reasons discussed in Chapter 5. In particular, our analysis suggests:

4.113.1 there has been limited investment in terminal capacity over time; and

4.113.2 the resulting low level of tank storage is likely to be having a detrimental effect on wholesale competition.

4.114 BP submitted that the analysis in paragraphs 4.103 to 4.113 above is deficient because it does not specifically consider the option of establishing a large terminal in one location, and one or more smaller terminals elsewhere. BP noted that "[d]ropping imported product at more than one terminal is a common approach for the majors, and there is no reason that the independents could not operate in an equivalent manner were they to make such investments".[385]

4.115 While this is a possible option for an import entrant, there is little evidence to suggest it would be a viable strategy.

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383 ACCC "Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia" (December 2010) at 71.

384 Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) at [9.2].

385 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.14].

4.115.1 Entering with a large terminal and one or more smaller terminals elsewhere would be a multi-market entry strategy with higher sunk costs. This strategy would appear to contradict the optimal terminal configuration referred to in paragraph 4.99 above, which BP did not consider to be controversial.[386]

4.115.2 As discussed below, the geographic scope of past entry at the terminal level has been limited.[387] We consider this is likely to reflect inefficiencies associated with operating smaller terminals, given the challenges discussed in paragraphs 4.89 to 4.102 above. The majors have been able to overcome these inefficiencies through infrastructure sharing, but entrants do not currently participate in these arrangements.

The geographic scope of past entry at the terminal level has been limited

4.116 Despite the challenges associated with building new terminals, there has been some entry at the importer level in New Zealand.

4.117 However, previous entry at the terminal level (at least in the post-deregulation period) has been limited to specific ports and has not led to construction of a larger network of terminals throughout New Zealand. This supports our view that the geographic scope of new import-based competition is likely to be limited.

4.118 Gull has its own terminal in Mount Maunganui, which opened in 1999.[388] Gull's Mount Maunganui terminal currently has a total storage capacity of 90 million litres.[389]

4.119 Gull's terminal was originally constructed by purchasing four second-hand tanks from the closed Marsden Point Power Station, suggesting that investments in terminals may not be fully sunk.[390] The four tanks were relocated from Marsden Point to Mount Maunganui by barge.[391]

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386 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.13].

387 As noted below, Gull has one relatively large-scale terminal (90 ML) terminal in Mount Maunganui and has not built additional smaller terminals elsewhere.

388 Max Bradford, Minister of Energy and Commerce, "Opening of Gull (Terminals NZ Ltd) Petroleum Tank Farm" (20 April 1999). Available at <https://www.beehive.govt.nz/speech/opening-gull-terminals-nz-ltd-petroleum-tank-farm>. (Viewed on 16 August 2019).

389 Gull "Our terminal" <https://gull.nz/about-us/business/our-terminal/>. (Viewed on 11 November 2019).

390 Max Bradford, Minister of Energy and Commerce, "Opening of Gull (Terminals NZ Ltd) Petroleum Tank Farm" (20 April 1999). Available at <https://www.beehive.govt.nz/speech/opening-gull-terminals-nz-ltd-petroleum-tank-farm>. (Viewed on 16 August 2019).

391 Gull "Gull Makes Multi-Million Dollar Investment In Mt Maunganui" (press release, 7 December 2011) available at <http://www.scoop.co.nz/stories/BU1112/S00227/gull-makes-multi-million-dollar-investment-in-mt-maunganui.htm>. (Viewed on 15 August 2019).

4.120 Challenge previously had its own terminals in New Plymouth and Timaru. Challenge was acquired by Caltex in 2001, after entering in 1998.[392]

4.121 As noted above, TOSL is also currently constructing a new 44 ML terminal in Timaru. TOSL has indicated that:

4.121.1 there will be six bulk fuel storage tanks, with four 8 ML tanks in the first stage and two additional 6 ML tanks to be added later;[393] and

4.121.2 it is on schedule to be operating around July 2020.[394]

4.122 We also understand further construction of new terminals, or additional tanks being built at existing terminals, is under discussion. For example:

4.122.1 Gull is seeking to expand into supplying jet fuel to Auckland Airport, which may require additional storage capacity;[395] and

4.122.2 there has been speculation that Pacific Energy, which owns TOSL, may build a new terminal in Tauranga.[396]

4.123 The storage capacities of existing terminals in New Zealand, as at 2018, are shown in Figure 4.5 below. Gull's 90 ML terminal in Mount Maunganui and TOSL's 44 ML terminal in Timaru (which is not included) account for a relatively small proportion of total storage capacity in New Zealand, though they represent relatively high shares of capacity at their ports.[397]

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392 Caltex New Zealand Limited and Challenge Petroleum Limited [2001] Decision 434 at [13] and [78].

393 Transcript of phone call meeting with TOSL (2 April 2019) at 8 (lines 35-47).

394 Transcript of meeting with TOSL (21 June 2019) at 3 (lines 49-50).

395 NZ Herald Business Desk "Gull seeks to supply jet fuel at Auckland Airport" *The New Zealand Herald* (7 June 2019). Available at <https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=12238207>. (Viewed on 15 August 2019).

396 Z Energy "Submission on the Commerce Commission's market study into the retail fuel sector: Draft report" (13 September 2019) at [100], BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [8.2] and Scoop "Broad South Island reach for new Timaru fuel terminal" (30 August 2019). Available at <http://www.scoop.co.nz/stories/BU1908/S00864/broad-south-island-reach-for-new-timaru-fuel-terminal.htm>. (Viewed on 23 October 2019).
[

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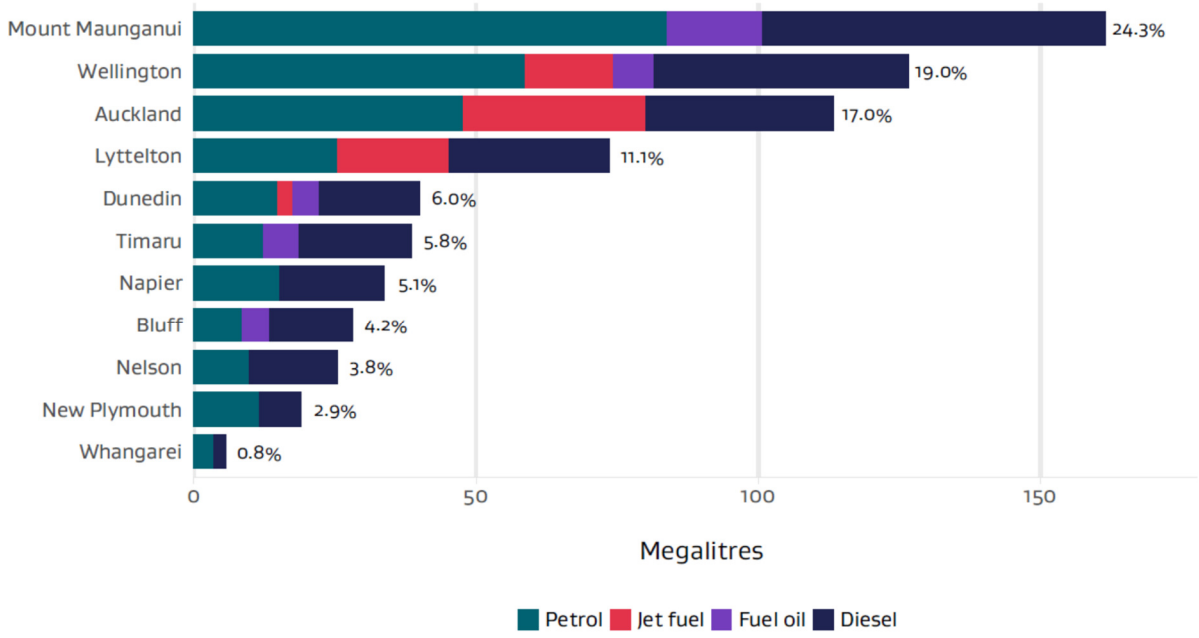
397 For example, based on Figure 4.5, Gull's 90 ML terminal represents greater than 50% of the total terminal storage capacity in Mount Maunganui.

Figure 4.5 Terminal fuel capacities (2018)



Source: MBIE "Energy in New Zealand 2019" at 48.

Summary of our findings on the potential for importer entry

4.124 Overall, entry at the importer level appears to be possible from a structural and regulatory perspective. In particular, there is a greater chance of obtaining sufficient market share to support a terminal large enough for efficiently sized import cargoes at ports located near large areas of demand.

4.125 However, the scale of the regional markets and port depth restrictions are likely to significantly limit the ability of entrants to successfully build and operate terminals of efficient size at smaller provincial ports.

4.126 By contrast, the majors have existing access to a nationwide network of terminals, through the borrow and loan arrangement. They also have distribution cost advantages through access to COLL's coastal shipping vessels and the RAP, as discussed further in paragraphs 4.129 to 4.149 below.

4.127 Although importer entry appears possible from a structural and regulatory perspective, our view is that barriers associated with existing contractual arrangements make entry challenging in practice.

4.127.1 As discussed in Chapter 5, infrastructure sharing by the majors has allowed them to overcome entry costs, particularly at smaller ports not suited to terminals. The majors' joint infrastructure gives them a cost advantage over potential fuel-importing rivals.

4.127.2 As discussed in Chapter 6, wholesale market relationships limit distributors' and retailers' ability and/or incentive to switch fuel supplier to a new importer.

4.128 We have made recommendations designed to reduce the non-structural barriers to entry described in Chapters 5 and 6. Our recommendations are discussed in Chapter 8.

Distributing refined fuel by pipeline, coastal shipping and truck

4.129 Refined fuel stored in terminals needs to be distributed to consumers throughout New Zealand. There are two main categories of distribution assets.

4.129.1 *Primary distribution assets:* Coastal shipping vessels and the RAP are the primary distribution assets currently used to transport refined fuel from the Marsden Point refinery to storage terminals throughout New Zealand.

4.129.2 *Secondary distribution assets:* Fuel tanker trucks are used to transport fuel from storage terminals to retail sites and commercial customers by road.

4.130 We consider that entrants at the importer level are likely to face a transport cost disadvantage when looking to supply smaller provincial areas, due to relatively high trucking costs. Therefore, it is likely to be challenging for a new terminal operator to establish competitive nationwide fuel supply without obtaining lower cost distribution, for example, through wholesale supply from other terminals.

4.131 This sub-section explains the reasons for this view, noting that:

4.131.1 trucking is generally considered to be competitive and primary distribution assets are currently only used by the majors;

4.131.2 despite this, the cost of trucking long distances is high compared to primary distribution costs; and

4.131.3 obtaining wholesale supply from existing terminals would help reduce an entrant's distribution costs and better align their costs with the majors' distribution costs.

Trucking is generally considered competitive and primary distribution is only used by majors

4.132 We have not undertaken a detailed analysis of the structural and regulatory conditions of entry and expansion for primary and secondary distribution. This is because:

4.132.1 road transport is generally considered competitive; and

4.132.2 primary distribution assets are currently only used by the majors.

4.133 Structural and regulatory barriers to entry for trucking appear to be relatively low. There are many trucking companies capable of transporting fuel to retail sites and commercial customers.[398]

4.134 In terms of primary distribution, the RAP and COLL's coastal shipping vessels are used to transport fuel from the Marsden Point refinery to the majors' terminals throughout New Zealand.[399] Potential barriers associated with access to these distribution assets resulting from the current contractual arrangements are discussed in Chapter 5.

The cost of trucking long distances is high compared to primary distribution costs

4.135 Despite road transport generally being considered competitive, trucking costs over long distances can be significantly higher than the cost of transporting fuel via COLL and the RAP.

4.136 We have estimated the approximate cost of trucking fuel various distances, based on confidential information provided by industry participants. As shown in Table 4.3 below, the estimates range from 1.5 - 2.5 cents per litre for trucking 100 km to 7.5 - 8.5 cents per litre for trucking 500 km.

Table 4.3 Estimated trucking costs

Distance, one-way (km)	Estimated trucking cost for return trip (cpl)
100	1.5 - 2.5
200	3.0 - 4.0
300	4.5 - 5.5
400	6.0 - 7.0
500	7.5 - 8.5

Source: Commerce Commission analysis of data provided by industry participants.[400]

4.137 The costs of transporting fuel by pipeline and coastal shipping are relatively low in comparison.

4.137.1 The fee for using the RAP is in the order of 1 cent per litre and is calculated by reference to the cost of shipping refined fuel from Marsden Point to Auckland.[401]

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398 For example, BP has noted that secondary distribution "is a competitive market being undertaken by third party contractors". BP "Market study into the retail fuel sector – BP New Zealand comment on preliminary issues" (21 February 2019) at 8.

399 As discussed in paragraph 2.149.2, COLL also schedules imports of refined fuel for the major fuel firms.

400 Trucking cost estimates are based on our analysis of data provided by [ ]

4.137.2 COLL's cost of delivering refined fuel from Marsden Point to ports throughout New Zealand varies by port and by fuel type.[402] COLL's average costs for coastal shipping are consistently within or lower than our estimate of the cost of trucking fuel 200 km (and often significantly lower).[403]

4.138 Some industry participants have emphasised the importance of truck driving shifts in efficiently transporting fuel. BP submitted that "[a] simple supply chain of supplying imported product into a single terminal and then delivering to an area within one truck driving shift of the terminal is a highly efficient and effective mechanism for delivering fuel to retail outlets".[404]

4.139 We understand that drivers can work a maximum of 13 hours in any cumulative work day (legally defined as no more than 24 hours). Drivers must then take a break of at least 10 hours (as well as the standard half-hour breaks required every 5½ hours).[405]

4.140 The trucking cost estimates in Table 4.3 above are based on transporting fuel within one truck driving shift.[406] Information provided to us indicates that the additional cost associated with an overnight stop is low on a cents per litre basis (when spread across a tanker load).[407]

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401 Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) at [7.21]. [ ]

402 When comparing COLL's cost of shipping fuel to two different ports, COLL's costs will not necessarily be lower for shipping to the nearer port.

403 [ ]

404 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [5.11].

405 NZTA "The official New Zealand road code for heavy vehicle drivers" available at <https://www.nzta.govt.nz/resources/roadcode/heavy-vehicle-road-code/information-for-heavy-vehicle-drivers/work-time-and-logbooks/>. (Viewed on 22 October 2019).

406 As a rough rule of thumb, we estimate than trucking fuel distances less than 500 km (one way) is generally likely to be achievable within one driving shift.

407 [ ]

4.141 However, the downtime associated with an overnight stop also suggests the truck may not be used as efficiently as it could be.[408] A safe and secure place to park the truck is also required, even if it is empty.[409]

Access to wholesale supply from existing terminals would help reduce an entrant's distribution costs

4.142 The transport costs discussed above suggest that being able to obtain fuel from a wider network of storage terminals is likely to significantly reduce distribution costs when compared against the alternative of trucking.

4.143 Although a new entrant importer is likely to face an overall transport cost disadvantage relative to the majors, it may still be able to compete in a relatively large geographic area at current importer margins. For example, Gull currently supplies most of the North Island from its Mount Maunganui terminal.

4.144 BP submitted that "access to 'primary distribution' as opposed to secondary distribution does not have a material influence on retail fuel prices in New Zealand and does not give rise to barriers to entry or expansion".[410] However, the discussion in this section is focused on the cost of supply, rather than retail fuel prices.

4.145 At the consultation conference, BP acknowledged that an entrant importer with a single terminal would face higher trucking costs than the majors which can import directly or ship via COLL into regional ports. However, BP suggested that the entrant's total cost to serve the particular region may be lower, because they may be able to rely on the simplicity and scale which they have from a single terminal.[411]

4.146 We acknowledge that an importer with a single terminal may have a lower overall cost to serve when supplying regions relatively close to its terminal. For example, Gull believes it has "a very efficient model for distribution" given it uses a one port call for its imports:[412]

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408 Transcript of retail fuel study consultation conference – Day 2 (25 September 2019) at 6 (lines 12-25). In addition, MTA submitted that it "understands that the biggest inefficiency in fuel transport occurs when a tanker has delivered its load and must return empty to the bulk terminal to collect a new load". MTA "MTA Submission: Commerce Commission Market Study into the Retail Fuel Sector – Draft Report" (13 September 2019) at 23.

409 Transcript of retail fuel study consultation conference – Day 2 (25 September 2019) at 6 (lines 15-18).

410 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.18].

411 Transcript of retail fuel study consultation conference – Day 2 (25 September 2019) at 3 (lines 32-34) and 4 (lines 1-3).

412 Transcript of retail fuel study consultation conference – Day 2 (25 September 2019) at 6 (lines 33-34) and 7 (lines 1-6).

> …we bring in what's known as an MR tanker into Mt Maunganui now, we discharge that whole tanker and we send it back to Asia. So that is a one port call, that is a cheaper hire for the ship, more efficient discharge taking all of that fuel off the ship in one go rather than in teaspoons, and you'll find that some of the ports around the country will be draft restricted, so you actually have to download the ship before she comes into that port to discharge fuel. So you get some incremental costs to each of those ports.

4.147 In comparison, BP has noted that it "is the normal situation for many New Zealand importers to discharge at more than one port, including ports with smaller draft, because the ship will visit the smaller port after discharging much of its cargo".[413]

4.148 However, we consider any efficiencies gained by importing to a single terminal are likely to be outweighed by the costs associated with trucking long distances. This is particularly likely to be the case when transporting fuel further than one truck driving shift.

4.148.1 Confidential information provided to us indicates that dropping off product at two ports rather than one increases costs by significantly less than one cent per litre across an entire shipment.[414] This suggests that the shipping efficiencies gained from importing to a single port are relatively low.

4.148.2 In comparison, we estimated the cost of trucking 500km as approximately 7.5-8.5 cents per litre (see Table 4.3 above).

4.149 Consistent with this, Gull noted at the consultation conference that if a terminal gate pricing mechanism was available, allowing potential access to fuel in terminals other than its own, it probably would not lift fuel from existing terminals in Napier and New Plymouth given the proximity to its Mount Maunganui terminal.[415] However, Gull indicated that if it could access terminals further than a driving shift from Mount Maunganui it would likely "…be there like a robber's dog".[416]

Retailing refined fuel from retail sites

4.150 Ultimately, all fuel refined at Marsden Point or imported into New Zealand is sold through retail sites or directly to commercial customers.

4.151 Entry and expansion is possible (and occurring) at the retail level, where structural barriers are lower than at the refinery and importer levels. As discussed in Chapters

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413 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.6].

414 Specifically,
[
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415 Transcript of retail fuel study consultation conference – Day 2 (25 September 2019) at 10 (lines 6-13).

416 Transcript of retail fuel study consultation conference – Day 2 (25 September 2019) at 10 (lines 15-21).

2 and 6, new retailers have entered and expanded in recent years, particularly with low cost unmanned sites. Distributors such as Allied, NPD and Waitomo have typically entered and expanded in the retail market by leveraging off their existing bulk supply and commercial businesses.

4.152 Retail entry and expansion appears particularly feasible in secondary locations (for example, on side roads), where there is greater availability of suitable land. Recent entry has often been in these secondary locations, rather than prime metropolitan sites.

4.153 Land in large, high volume, metropolitan areas appears to be the most challenging for an entrant to acquire. This sub-section explains why we consider this to be the case, noting our views that:

4.153.1 retail entry requires investment in long-lived assets, with significant sunk costs of entry and exit;

4.153.2 pay-at-pump technology has facilitated retail expansion in recent years, helping lower barriers to entry;

4.153.3 recent entry has mainly been in secondary locations (for example because land costs are relatively high for prime metropolitan sites); and

4.153.4 environmental and planning regulations associated with opening new sites can be time consuming and costly.

Retail entry requires investment in long-lived assets with significant sunk costs

4.154 Our analysis indicates that retail sites are expensive to develop and can be very costly to remediate. The sunk costs associated with investment in retail sites make entry risky, because these costs are unlikely to be recovered upon exit.[417]

4.155 Barriers to retail entry appear to be high in some local areas, as significant investment is required, and the market is already supplied by incumbents. Assuming market demand is relatively constant, an entrant would need to take volumes from the existing suppliers to compete effectively. The volumes required for profitable entry are likely to vary by region and site type.

4.156 Entry on a larger scale with a national network requires multi-market entry and building a brand. It is also likely to require securing a wholesale supply agreement or obtaining access to a distribution network of storage facilities.[418] Challenges

[417] The ACCC has noted that "an investment in a new retail site is risky and involves an assessment of the likely performance of the site over an extended period". ACCC "Report on the Darwin petrol market" (November 2015) at 29.

[418] Multi-market entry could include entry into different local retail markets, entry into different levels of the supply chain (for example, retail and terminals), or entry into different markets (for example, supply of petrol/diesel, aviation fuel, marine fuel, and/or bitumen).

associated with securing wholesale agreements and access to storage facilities are discussed in Chapter 5 and Chapter 6.

4.157 The cost of opening a retail site appears to vary significantly based on the site type and location. A recent media report regarding Gull's South Island entry indicates that "each unmanned site costs approximately $1m" to build, while a "typical retail site costs in the vicinity of $2m".[419]

4.158 We have reviewed data on 62 business cases for new-to-industry (NTI) sites built by a range of retailers.[420] Data from these business cases indicates that the build cost per station (excluding any land purchases) typically ranges between:[421]

4.158.1 $2 million to $5 million for full service stations; and

4.158.2 $0.5 million to $1.5 million for unmanned sites.

4.159 The costs of exiting a retail site are also high. It can be very costly to decommission an existing retail site and remediate the land, increasing the risks of entering in the first place. Information provided by a major indicates that, where contamination issues are identified, potential costs associated with environmental liabilities at a retail site can range from approximately $20,000 to $400,000.[422]

Pay-at-pump technology has facilitated retail expansion in recent years

4.160 Improvements in electronic payment technology have helped reduce barriers to retail entry, facilitating the rise of unmanned pay-at-pump sites.[423]

4.161 The ability to operate unmanned sites reduces barriers to entry because less land is required, lower capex is needed due to the lack of buildings, and operating costs are also reduced given there are no staff on site. This has enabled relatively low cost entry and expansion in some retail markets.

4.162 In recent years, distributors have typically entered the retail market by leveraging off their existing bulk supply and commercial businesses. We have observed that distributors such as Allied, NPD and Waitomo have generally entered retail markets by:

4.162.1 initially focusing on the commercial and provincial supply of diesel;

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419 Aimee Shaw "Gull spending $5m to launch service stations in South Island" *The New Zealand Herald* (8 April 2019) available at <https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=12220200>. (Viewed on 14 August 2019).

420 [ ]

421 Commerce Commission analysis of data provided by a range of retailers.

422 [ ]

423 The AA made a similar point in its submission on our preliminary issues paper. See AA "Submission on Market Study into retail fuel sector – preliminary issues" (22 February 2019) at 3.

4.162.2 then building truck stops, again focusing on diesel;

4.162.3 then building unmanned sites to serve retail customers, including a petrol offering (depending on the site location); and

4.162.4 then potentially identifying sites which are well positioned for a full service station offering.

4.163 As discussed in Chapter 2, there are a growing number of retail sites not owned by the majors. In addition to Gull, resellers supplied by Mobil (particularly Waitomo and NPD) have been among the most active in terms of opening new sites.[424]

Recent entry has mainly been in secondary locations

4.164 While recent entry and expansion in the retail market is a positive development for consumers, there are difficulties in obtaining prime sites. This has limited the ability of smaller retailers to compete effectively in large metropolitan areas.

4.165 We understand that many of the new unmanned sites discussed in paragraphs 4.160 to 4.161 above are in secondary locations, for example on side roads.[425] In contrast, the major fuel companies typically offer full service stations in prime locations – for example on major roads and in large metropolitan areas.

4.166 The evidence we have gathered indicates that large, high volume, metropolitan areas are the most challenging for an entrant to acquire.[426] It can be particularly difficult for entrants to obtain prime metropolitan sites because:

4.166.1 land costs are relatively high, reflecting the value of alternative uses (for example, office buildings and fast food restaurants); and

4.166.2 most of the best sites have already been secured by the incumbent suppliers (and even if they vacate these sites, there can be restrictions on them being re-used as retail sites).[427]

4.167 Generating economies of scope by offering multiple products from a full service site may help make entry in prime metropolitan sites more feasible.[428]

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424 See paragraph 2.68 to 2.78 for further details.

425 [ ]

426 For example, one reseller noted that they "don't even really look" at sites in the central area of one of the cities in operates in, given "there's a lot of competition for those visible sites that have a lot of traffic count goes past it", including from other types of businesses. [ ]

427 See the discussion on restrictive covenants in paragraphs 6.117 to 6.122.

4.168 However, it appears to be more challenging for a company to enter with service stations at the premium end of the market, than through unmanned sites. Entering with service stations requires not only providing a reliable fuel supply, but also a convenience store and other services such as a car wash. A relatively large chain of convenience stores is likely to be required to cover the associated merchandising and head office costs.[429]

4.169 BP submitted that our analysis fails to reflect the full significance of recent entry and expansion by independent retailers, including on main roads. BP considers that:[430]

> …while some new entry is at "secondary sites", there is also substantial new entry in primary sites, including in very close proximity to the majors' sites… Further, the independents are as well placed as the majors to compete for high profile new sites. That they have massively outnumbered the incumbent majors in terms of new sites in both the North and South Islands over the past five years evidences this position.

4.170 We acknowledge the growth in retail sites from independent brands in recent years. However, as noted in paragraph 2.69, Z Energy has reported that although (on its estimate) about 60% of sites are operated under non-major brands, these only accounted for 20% of petrol demand as at August 2019.

4.171 Although some of the growth from non-major brands has occurred in main urban areas, our analysis suggests that distributors and dealers typically operate in more remote locations. This is discussed further in Chapter 2 and Chapter 6.[431]

Environmental and planning regulations can be time consuming and costly

4.172 There can be difficulty in obtaining resource consents when building retail sites.

4.173 Waitomo identified "the often-onerous planning and consenting processes" as having the potential to "severely restrict our expansion plans, and impact on our development times".[432] Other retailers also noted that the consent process can be slow and expensive, with approvals for some sites taking up to 12 months (and sometimes longer).[433]

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428 Economies of scope refers to when per unit costs fall when more than one product is produced. Commerce Commission "Mergers and acquisitions guidelines" (July 2019) at [3.109.2].

429 [ ]

430 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.21].

431 See paragraph 2.37 (including Figure 2.6 and Figure 2.7) and paragraphs 6.164 to 6.170.

432 Waitomo "Written comment on the Market Study into the retail fuel sector – Draft Report" (13 September 2019) at [2.10].

433 Transcript of meeting with NPD (14 May 2019) at 10 (lines 22-50), 11 (lines 1-50) and 12 (lines 1-6). In addition,

4.174 Gull and Waitomo also indicated that the lead time for establishing a new retail site is about 18 months to two years.[434] Waitomo also noted that "a lot of the legacy sites that are out there today they wouldn't be able to get consent in today's environment".[435]

4.175 All necessary resource consents under the Resource Management Act must be obtained, as well as any other necessary permits (such as building consents). A retail site often requires multiple consents, such as land-use consent, sediment consent and stormwater discharge consent. There are also associated factors such as traffic engineers, noise engineers, surveying, and geotechnical data requirements.

4.176 An industry participant summarised the requirements associated with resource consent as follows.[436]

4.176.1 Resource consent is required when doing something a district plan does not allow as of right.

4.176.2 Every application for a resource consent must include an assessment of environmental effects and an assessment of relevant policy and plan provisions. It must identify all environmental effects, both positive and negative, of a proposed activity, and ways in which any negative effects can be prevented or reduced.

4.176.3 If a resource consent is granted, the councils normally apply conditions or restrictions (for example, water discharged to stormwater must have total petroleum hydrocarbons below 15 parts per million).

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434 Transcript of retail fuel study consultation conference – Day 1 (24 September 2019) at 95 (lines 17-18) and 96 (lines 4-5).

435 Transcript of retail fuel study consultation conference – Day 1 (24 September 2019) at 95 (lines 17-18) and 96 (lines 5-8).

436 [ ]

Chapter 5 Infrastructure sharing arrangements

Summary of our findings

- The various infrastructure sharing arrangements between the majors provide several benefits to them by overcoming some of the structural challenges of fuel supply. These benefits include lowering the cost of supplying fuel to and around New Zealand, compared to a scenario of separate standalone supply chains. This could benefit consumers if cost savings result in lower retail prices.
- The arrangements, particularly the borrow and loan arrangements, have some pro-competitive effects in the retail fuel market as they enable the majors to compete cost-effectively in regions where they do not have terminal infrastructure. There are interrelationships between the arrangements and there would be reduced benefit in participating in, but not other, arrangements.
- These arrangements can also adversely impact competition in the retail fuel market. Without participation in the majors' infrastructure sharing arrangements, potential entrants face higher costs to compete in New Zealand by importing and distributing their own fuel.
- There are terms and criteria under which a competing firm may join any of the arrangements, but these are not published or readily available, and are untested. We consider a published process and criteria for participation would be expected in a workably competitive market.
- The barrier to entry created by the infrastructure sharing arrangements would be reduced if an entrant could readily obtain wholesale supply from existing terminals, such as through a Terminal Gate Price (TGP) regime. This would enable entrants to obtain fuel at locations where they do not have their own terminals. This in turn would reduce their distribution costs and better align these costs with those faced by the majors.
- A TGP regime may add to the existing commercial pressure to re-assess terminal access pricing within the borrow and loan arrangements. The borrow and loan arrangements currently also appear to be deterring investment in terminal infrastructure. Investment in terminal capacity has not kept pace with increases in demand. Port coordination events are also common. The low level of tank storage and tight supply may have a detrimental effect on wholesale competition with flow-on effects for retail competition. In particular, it may:
    - limit the majors' ability and incentive to quickly and reliably acquire large new customers such as distributors; and
    - reduce the ability and incentive of large customers, particularly distributors, to seek alternative suppliers.
- For these reasons, we consider that measures to improve the ready availability of wholesale supply, such as a TGP regime, should be considered jointly with measures to address underinvestment in terminals and tight supply.

Summary of our findings (continued)

- The current arrangements may also limit competition between the majors by:
  - limiting the ability to quickly increase supply through refining more fuel domestically; and
  - enhancing opportunities for accommodating behaviour by facilitating the exchange of information about past and future demand and rivals' supply strategies.

Introduction to this chapter

5.1 This chapter sets out our assessment of the various infrastructure sharing arrangements between the majors.

5.2 As discussed in Chapter 2, these arrangements include:

5.2.1 refinery arrangements;

5.2.2 access to the RAP;

5.2.3 COLL joint venture arrangements; and

5.2.4 borrow and loan arrangements.

5.3 These arrangements have the potential to affect both the conditions for entry and expansion by independent importers and rivalry between majors at the wholesale and retail levels.

5.4 We consider there are various efficiency benefits and pro-competitive aspects of these infrastructure sharing arrangements. These include:

5.4.1 the majors' ability to access efficient means of producing and distributing refined fuel products;

5.4.2 enabling the majors to avoid inefficient duplication of distribution assets; and

5.4.3 enabling the majors to compete in areas where they may not have terminal infrastructure.

5.5 These arrangements can also impact competition in the retail market adversely. Without participation in the majors' infrastructure sharing arrangements, entrants face higher costs to compete by importing and distributing their own fuel. In addition, the infrastructure sharing arrangements may be deterring efficient levels of investment.

Structure of this chapter

5.6 In this chapter we discuss:

5.6.1 the benefits and/or pro-competitive aspects that likely result from each of the infrastructure sharing arrangements in the industry;

5.6.2 how the infrastructure arrangements may be a barrier to entry, their terms of participation and how this barrier to entry may be reduced;

5.6.3 how the borrow and loan arrangements may be deterring investment in terminal infrastructure; and

5.6.4 particular features and/or provisions within each of the arrangements that may act to limit the majors' ability to quickly increase supply through refining more fuel domestically and enhance opportunities for accommodating behaviour between them.

There are benefits and pro-competitive aspects of existing arrangements

5.7 This section sets out benefits and/or pro-competitive aspects that we consider result from the:

5.7.1 refinery arrangements;

5.7.2 access to the RAP;

5.7.3 COLL joint venture arrangements; and

5.7.4 borrow and loan arrangements.

5.8 Some arrangements pre-date the deregulation of the petroleum industry in 1988.

The interrelationship between the infrastructure sharing arrangements provides the majors with benefits

5.9 Together, the infrastructure sharing arrangements provide a low cost way for the majors to supply fuel throughout New Zealand.

5.10 Their benefits arise through their interrelationship with one another throughout the supply chain. For instance, absent access to COLL shipping services, the benefit in having access to the refinery may be reduced, as other arrangements would have to be made to ship or truck New Zealand refined fuel to other parts of New Zealand. Doing so on a standalone basis is likely to be costlier than doing so jointly under COLL.

5.11 Similarly, absent participation in the borrow and loan arrangements, the benefit of having access to either the refinery or COLL would be diminished. Without the ability to utilise shared terminal storage, investment in terminals may be required, but this would be particularly risky in many locations. As discussed in Chapter 4, the party making the investment would need to obtain significant market share in some regions to make such investments feasible.

5.12 Our view that the benefits of the various arrangements have interrelationships has been recognised by majors.[437]

5.13 We consider below the benefits and/or pro-competitive aspects of each of the individual infrastructure sharing arrangements.

In some regions, the refinery arrangements give majors a cost advantage in the supply of refined fuel products

5.14 As noted in Chapter 2, supply using Refining NZ processing services and subsequent distribution via the RAP or COLL was more competitive (ie, cheaper) than the option of importing product to the same locations for all years between 1997 and 2016, except for the period 2012-2014.[438]

5.15 A major has also recognised diesel refined in New Zealand as being more cost effective relative to imports for all locations.[439]

5.16 Other advantages identified by the majors include the refinery's ability to manufacture seasonal New Zealand specification fuel[440] that may be out of step with some other refineries in the Asia-Pacific region and potential future strategic advantages.[441]

The RAP provides an efficient way to transport refined fuel to Auckland for the majors and avoids the cost of duplication

5.17 The fee for using the RAP is in the order of one cpl[442] and is set with reference to the cost of shipping refined fuel from Marsden Point to Auckland.[443] Information

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437 [ ] BP has also noted the links between the COLL joint venture arrangements and the efficient operation of the Refinery. BP notes that the refinery relies upon the prompt uplift of product to enable it to maintain its output at close to full capacity. BP says that coordinated uplift is more efficient than if uplift was done independently by each of the majors – see BP "Market study into the retail fuel sector – BP New Zealand comment on preliminary issues" (21 February 2019) at 7.

438 Hale and Twomey "Independent Review of the Refining NZ Processing Agreement" (April 2017) at 3-9.

439 [ ]

440 In New Zealand, both petrol and diesel have their specifications seasonally adjusted in relation to climate variations. With petrol there are three geographic areas: Northland and Auckland, the rest of North Island and South Island. For diesel, there are two "seasons" – summer and winter – see Vladimir Koutsaenko "Fuel Facts" (2019) AA <www.aa.co.nz/membership/aa-directions/driver/fuel-facts/>. (Viewed on 14 August 2019).

441 [ ]

442 [ ]

443 Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) at [7.21].

provided to us suggests that the RAP fee is considerably cheaper than the cost of transporting fuel from the next best alternative, Mount Maunganui, by road.[444]

5.18 We consider that, together with local road transport, the RAP provides an efficient way to transport fuel to Auckland for the majors. It is also often likely to be the lowest cost way to supply retail sites in Auckland, given the significant cost advantage the RAP provides when compared to the cost of transporting fuel from Mount Maunganui by road. We consider this will often be the case even after accounting for particular costs associated with refining fuel at Marsden Point, such as the working capital costs and risk associated with holding crude.[445]

5.19 Industry participants support our view. Some majors have noted that New Zealand refined product is likely to be the lowest cost means of servicing Auckland.[446] A past report by a major also supports this view.[447]

5.20 Refining NZ considers that the RAP is the most efficient and safest means of delivering fuel into Auckland to meet the transport needs of Auckland and the immediate region south of Auckland.[448] Refining NZ also considers that the coordinated use of the RAP optimises its use and ensures that Auckland's fuel needs are always met.[449]

5.21 Shared access to the RAP also avoids the cost of duplicating the pipeline. For example, Z Energy considers that a primary advantage of the RAP is that it allows

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444 See Chapter 4 at paragraphs 4.135 – 4.149.

445 See Transcript of Confidential Session – Refining NZ (26 September 2019) at 5 (lines 4-9), which noted that refinery production is cheaper than imports when the 30% GRM retained by the majors adequately covers the cost of distributing products from the refinery and working capital costs. See also Hale and Twomey "Independent Review of the Refining NZ Processing Agreement" (April 2017) at 3-9 which analysed the competitiveness of Refining NZ by assessing whether the 30% GRM retained by the majors continues to be appropriate having regard to their costs and risks and the need to be price competitive when compared to imported finished products.
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446 Z Energy "Market Study into the Retail Fuel Sector: Z Energy's response to invitation to comment on preliminary issues" at [91.1] and
[ ] See also Z Energy "Z Energy submission on the Commerce Commission's Market Study into the Retail Sector: Draft Report" (13 September 2019) at [151], although Z reiterates that it considers Gull is highly price competitive in Auckland despite not having access to the RAP.

447 [ ]

448 Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) at [7.19].

449 Ibid.

the majors and their distributor customers to benefit from, without needlessly replicating, the supply chain.[450]

COLL joint venture arrangements provide the majors with similar efficiency-based benefits

5.22 We consider that participation in the COLL joint venture arrangements provides a cost effective means of transporting refined fuel throughout the country and avoids the duplication of shipping assets and the associated scheduling services. This is because COLL coordinates the operations of the refinery and subsequent distribution of refined fuel from the refinery, which helps to minimise costs, including terminal capacity costs. COLL also schedules imports for the majors as part of its overarching role in managing the borrow and loan arrangement and ensuring product is delivered where it is required.

5.23 COLL's efficiencies have been acknowledged by the majors.

5.23.1 BP notes the operation of COLL (along with the borrow and loan arrangements) allows for the efficient distribution of fuel from the refinery throughout New Zealand. BP notes that absent these arrangements, the majors would require a much greater number of ship movements, which would increase the cost of distributing fuel throughout New Zealand.[451]

5.23.2 BP also considers that COLL facilitates the efficient delivery of imported products by the majors, since it also schedules delivery of imports by the majors.[452]

5.23.3 Z Energy considers that a primary advantage of the COLL arrangements is that they avoid needless replication of the supply chain.[453]

5.24 Refining NZ notes that, given New Zealand is geographically sizeable but has a low population density, it is costly to service small demand centres with fuel. Refining NZ considers that the demand at each coastal port is insufficient to warrant the investment in adequate tankage to allow an import tanker to discharge a full cargo into a single coastal port, requiring tankers to make multiple port calls, increasing distribution costs. Distribution costs such as these are minimised by the COLL arrangements, as investment, costs and risk of coastal shipping are shared between the majors.[454]

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450 Z Energy "Market Study into the Retail Fuel Sector: Z Energy's response to invitation to comment on preliminary issues" at [103].

451 BP "Market study into the retail fuel sector – BP New Zealand comment on preliminary issues" (21 February 2019) at 7.

452 Ibid.

453 Z Energy "Market Study into the Retail Fuel Sector: Z Energy's response to invitation to comment on preliminary issues" at [103].

454 Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) at

5.25 Analysis of COLL's revenue from delivering fuel to storage terminals throughout New Zealand supports our view that it is a cost effective means of distributing New Zealand refined fuel. As previously noted in Chapter 4, while considered generally competitive over shorter distances, the cost of trucking fuel becomes significant when travelling long distances, partly because tanker trucks hold significantly less than ships and partly as a consequence of logistical challenges associated with distances in excess of a single driver shift. COLL's cost of delivering refined fuel from Marsden Point to ports throughout New Zealand varies by port and fuel type. However, our analysis suggests that COLL's cost for coastal shipping from Marden Point to various ports is consistently cheaper than our estimate of what it would cost to truck to that same port.[455]

Borrow and loan arrangements provide majors with several benefits in a number of areas

5.26 We consider the borrow and loan arrangements provide several benefits to the majors. These include:

5.26.1 avoiding the duplication of terminal assets;

5.26.2 enabling majors to compete nationally; and

5.26.3 constraining the exercise of market power in some regions.

5.27 We discuss each below.

Avoided duplication and enhanced utilisation of terminal assets

5.28 We consider the borrow and loan arrangements provide the majors with efficiency benefits that are similar in nature to the ones provided by the RAP and COLL joint venture arrangements.

5.29 First, duplication of terminal assets is avoided. This view is also held by industry participants. For instance, Mobil considers that the borrow and loan arrangements enable the majors to enhance efficiencies across the supply chain by avoiding unnecessary duplication of terminal capacity in relatively low volume and geographically dispersed markets.[456] BP and Z Energy have expressed similar sentiments.[457] Second, the sharing of the existing terminal infrastructure likely

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[9.2] & [9.3].
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455 [
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456 Mobil "Submission to the Commerce Commission New Zealand in response to the Statement of Preliminary Issues for the Market Study into Retail Fuel Sector" (February 2019) at [7].

457 BP "Market study into the retail fuel sector – BP New Zealand comment on preliminary issues" (21 February 2019) at 7; BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September

allows existing terminal capacity to be used more efficiently. However, as we discuss further, it appears that terminal capacity is insufficient in some areas.

Enabling majors to cost-effectively compete nationally

5.30 Related to the point made above, a pro-competitive aspect of the borrow and loan arrangement is that it enables the majors to cost-effectively compete nationally, including in areas where a particular major does not own terminal infrastructure.[458] This is because the majors can supply cost-effectively into a region without owning a terminal there.

5.31 This can enhance competition in a region. An illustration of this is in the Nelson and Southland regions. Mobil currently does not own any terminal infrastructure in Nelson but it, and distributors it supplies, are able to compete in this area by accessing fuel from Z Energy and BP's terminals.[459] Similarly, no major apart from Mobil currently owns terminal infrastructure in Southland but all compete in this area by accessing Mobil's Bluff terminal.

5.32 In addition, to the extent that the borrow and loan arrangements allow each major to withdraw the amount of fuel they require (as long as they have contributed an equivalent amount somewhere in the system), this provides them with the ability to compete for additional customers. However, as we discuss in more detail below, this is frequently overridden by port coordination events.

5.33 We note that BP does not necessarily share our view that the borrow and loan arrangement enables the majors to cost-effectively compete nationally. BP considers that the borrow and loan arrangement is an outcome of the terminal network that evolved under regulation where there were restrictions on road transport.[460] BP considers that the network of small terminals at a large number of ports is unlikely to be the most efficient if the industry was to "start from scratch".[461] Rather, BP considers a supply chain involving importing product into a single terminal and then delivering it into an area within one truck driving shift of the terminal is a highly efficient and effective mechanism for delivering fuel to retail outlets.[462]

2019) at [5.1] and Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" at [148].

458 Mobil "Submission to the Commerce Commission New Zealand in response to the Statement of Preliminary Issues for the Market Study into Retail Fuel Sector" (February 2019) at [7], Z Energy "Market Study into the Retail Fuel Sector: Z Energy's response to invitation to comment on preliminary issues" at [104] & [106.1] and BP "Market study into the retail fuel sector – BP New Zealand comment on preliminary issues" (21 February 2019) at 7.

459 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [4.19].

460 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [5.18].

461 Ibid, at [5.19].

462 Ibid, at [5.11].

5.34 As noted in Chapter 4, we acknowledge that there are some efficiencies associated with delivering imported product at one rather than multiple ports. However, as noted previously, these are likely to be outweighed by an import entrant's need to truck longer distances to supply certain retail sites.[463] It also places natural geographic limits on the entrant's retail footprint, deterring national coverage.

5.35 When the majors' 30% share of the GRM covers working capital, COLL and/or RAP costs, we consider access to a network of terminals, with fuel supplied by COLL or the RAP, is likely to be more cost effective than importing at a single terminal and trucking longer distances.

Curtailing the exercise of market power in terminal pricing

5.36 The borrow and loan arrangements may also help to constrain a major's ability to increase throughput fees to raise its profits where there are no other terminals nearby.[464] This is because another major may respond by increasing throughput fees at a terminal it owns.

5.37 For example, Z Energy has previously said that it would be unable to unilaterally raise throughput fees to BP and Mobil because of BP and Mobil's ability to retaliate by increasing throughput fees in areas where Z Energy is dependent on them for product.[465] Internal documents of a major support this position.[466]

Arrangements give majors a cost advantage and, absent participation, are a barrier to entry

5.38 This section explains:

5.38.1 how the infrastructure sharing arrangements may be a barrier to entry;

5.38.2 the terms of participation in the infrastructure sharing arrangements; and

5.38.3 how the barrier to entry created by the infrastructure sharing arrangements could be reduced.

Arrangements may be a barrier to entry

5.39 We consider that the refinery, RAP, COLL and borrow and loan infrastructure sharing arrangements give the majors a cost advantage over independent fuel importers, making them a barrier to entry for those who do not participate in them. An entrant importer would have to invest significantly in terminal and distribution

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463 Some retail sites may well be more than one driving shift away, which would further increase trucking costs.

464 See, for example, *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10 at [89] to [91].

465 *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10 at [89].

466 [ ]

assets to compete with the established, coordinated, low cost supply chain enjoyed by the majors. Without such investment, entry would be on a limited scale, restricted to certain regions or would involve incurring substantial additional land transport costs. With volumes significantly less than the volumes of the majors, their unit costs would also likely be higher.

5.40 We note that an industry participant has expressed similar views in an internal document:[467]

> Participants competitive advantage is predicated on how the mechanisms are optimised and changes to the rules negotiated. To non-participants the mechanisms are a significant barrier to entry, requiring substantial investment. Unlike markets with excess terminal capacity and/or independent industry terminal providers, low-cost entries, such as terminal rental and spot market supply, are not available without strategic investments and robust supply capabilities.

The terms for participating in these arrangements are not readily available and are untested

5.41 Each of the infrastructure sharing arrangements (ie, the refinery, the COLL joint venture and borrow and loan arrangements) allows third party participation in some form. However, these terms are typically contained within confidential agreements between the parties. The terms upon which third parties, or entrants, may seek to participate are not published or readily available to any potential entrant.

5.42 The terms upon which participation may be granted by the majors in accordance with their contractual agreements with one another are untested, as is the way in which they may exercise their discretion in relation to any request to participate. We understand that other than Challenge in 1997, when it sought access to the refinery, no other party has sought to participate in any of the infrastructure sharing arrangements between the majors.[468]

5.43 We do note that some majors have granted third party access to individual terminals on the basis of bilateral agreements, separate from the infrastructure sharing arrangements established by the majors.[469] However, this has been on a limited terminal by terminal basis. No third party to date has negotiated to participate in the entire borrow and loan arrangement. In addition, evidence

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467 [ ]

468 BP notes that to its knowledge, no party has ever sought access to COLL or the borrow and loan arrangements or, at least in the last decade, to the refinery – see BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [1.11(f)] and [5.4(b)]. We also understand that no third party has applied to access excess COLL tanker capacity – see [ ] This seems understandable given our understanding that no party has been offered and ultimately taken excess capacity at the refinery.

469 [ ]

gathered to date suggests that bilateral negotiations are seen to be difficult, and do not always lead to a concluded access agreement. Some terms of access may also be commercially unattractive to access seekers.[470]

5.44 We recognise that the operations of COLL and the borrow and loan arrangement are intrinsically linked to the efficient operation of the refinery. Majors at the consultation conference emphasised that the primary purpose of COLL and the borrow and loan arrangement was to distribute product from the refinery.[471] BP also submitted that the reason no third party has ever sought to participate in the COLL or borrow and loan arrangements is because it is unattractive absent the need to move product from the refinery and unnecessary, as illustrated by the position of Gull and entry of TOSL.[472]

5.45 Nevertheless, as discussed above, we consider that participating in the infrastructure sharing arrangements provides the majors with a significant cost advantage in supplying fuel across a national footprint. The absence of readily available information about the process to participate and/or the criteria to be applied for granting participation in the infrastructure sharing arrangements may deter competitive entry and expansion. We consider that a published process and criteria for participation would be expected in a workably competitive market and would facilitate entry.

5.46 We note that our views on participating in the infrastructure sharing arrangements are consistent with the AFSD Inquiry's recommendations regarding access to the jet fuel infrastructure serving Auckland Airport. The AFSD Inquiry noted that Gull's experience in trying to access existing jet fuel infrastructure owned by the majors indicates that the requirements to obtain access are murky and cumbersome.[473] While accepting that open access does not guarantee additional resilience along the jet fuel supply chain, the AFSD Inquiry were persuaded that open access would have the effect of removing barriers to entry that make it difficult for new entrants to set up alternative jet fuel supply chains.[474]

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471 Transcript of Retail Fuel Study Consultation Conference (25 September 2019) at 17 (lines 17-26), 18 (lines 32-33) and 19 (lines 1-10).

472 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [1.11(f)] and [5.21].

473 Government Inquiry into the Auckland Fuel Supply Disruption (August 2019) at [17.46]. The AFSD Inquiry also noted that a similar experience appears to have been shared by new-entrant jet fuel suppliers in Australia.

474 Ibid.

The barrier to entry could be reduced and should be considered jointly with measures to address underinvestment in terminals

5.47 We consider that there are likely to be ways that the barrier to entry created by the COLL and borrow and loan infrastructure sharing arrangements could be reduced by facilitating competitive entry, without the entrant having to incur substantial investments in terminal infrastructure in multiple ports. One way to achieve this may be by facilitating competitive wholesale supply from existing terminals, such as through a TGP regime. We consider this could be particularly useful in areas served by smaller regional ports because an entrant could commence supply from those ports without investing in terminal capacity there while not interfering with the terminal investments made by the majors at those ports.

5.48 A TGP regime may prompt a change to a more commercial model for pricing terminal capacity within the borrow and loan arrangements, which would mitigate our concerns that terminal investment incentives are currently weak.

5.49 There is already pressure for such a change. As we discussed in Chapter 3, the evidence we have received suggests that there has been inadequate investment in terminal capacity over time and that this is partly because of the way terminal investment is treated in the borrow and loan arrangement.

5.50 For these reasons, we consider that measures to improve the availability and competitiveness of wholesale supply from existing terminals should be considered jointly with measures to address underinvestment in terminals.

Borrow and loan arrangements

5.51 This section discusses how the borrow and loan arrangements between the majors may be deterring necessary investment in terminals. In this section we explain:

5.51.1 our analysis of terminal capacity relative to demand within the borrow and loan arrangement and port coordination events;

5.51.2 why aspects of the borrow and loan arrangements may be deterring investment in terminals; and

5.51.3 how a lack of investment in terminals and tight supply might be affecting competition at the wholesale and retail levels.

5.52 Certain aspects of the borrow and loan arrangements are not providing efficient incentives to invest in terminals. Our analysis shows that investment in terminal capacity has not kept pace with increases in demand. Port coordination events are also frequent, which may suggest that supply is generally kept tight. This is notwithstanding the efficiency and pro-competitive aspects of the borrow and loan arrangements.

5.53 A lack of terminal investment and tight supply may have detrimental effects upon competition at the wholesale level. We consider that this, in turn, may result in less retail competition and higher than expected prices for consumers.

Possible changes to the borrow and loan arrangements

5.54 As with any commercial arrangement, we are aware that individual majors are continuously assessing whether participating in the various infrastructure sharing arrangements continues to be in their best interests.[475] There is always a possibility that the borrow and loan arrangements could change in the future. Accordingly, we consider it important to note that this could have implications for consideration of our recommendations by Government following this study.

Borrow and loan arrangements may be deterring necessary investment in terminals

5.55 As discussed previously in Chapter 3, we have observed diverging trends between storage capacity and overall fuel volumes, with storage capacity not appearing to keep pace with fuel volumes. It appears that the borrow and loan arrangements may be deterring necessary investment in terminal capacity and this in turn may be contributing to a weakening of competition at the wholesale level.

5.56 Inadequate terminal capacity and investment are not outcomes we would expect to see in a workably competitive market. Rather, we would expect to see timely investment (whether in terminal tankage or shipping capacity) to alleviate readily observable capacity constraints.[476]

5.57 Our view is not shared by some majors. BP considers that terminal capacity is sufficient to meet demand and that comparing changes in capacity and demand over time is not informative.[477]

5.58 Both BP and Z Energy further consider that for a number of reasons it is unlikely that there will be significant investment in new terminal infrastructure in the future regardless of the appropriateness of investment incentives.[478]

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476 See Chapter 3.

477 BP considers terminal capacity was excessive during the regulated era and only in recent times has fuel demand caught up and so it is not informative to compare changes in capacity and demand over time – see BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [5.5] and [5.27(a)]. However, we note other internal documents of a major provide a contrary view, suggesting that overall profitability when the industry was regulated was driven by economic efficiencies which encouraged minimisation of capital employed through minimal infrastructure investment – see [ ]

5.59 In any case, BP told us that it does not consider that the borrow and loan arrangements deter terminal investment. BP pointed to recent examples of investment in terminal capacity for jet fuel in Dunedin (the volumes BP was trucking to Queenstown airport from Christchurch justified terminal investment), the construction of the terminal at Seaview in Wellington, and investments in terminals in Nelson and New Plymouth as evidence of this.[479]

5.60 Mobil shared a similar view and cited investments in terminal infrastructure over the past few years as evidence of incentives to invest. Investment by Mobil includes additional capacity in Bluff in 2014 and its current construction of terminal infrastructure at Lyttelton.[480]

5.61 Mobil also pointed to the decreasing trends in coordination events in recent years, along with the fact that coordination events result in very few instances of actual stock-outs (we discuss this below). Mobil cited this as evidence that investment in the supply chain is sufficient to support a reliable supply of fuel to customers.[481] However, as discussed below, the decreasing trend in coordination events is due to factors other than terminal investment.

5.62 One major pointed to the fact that increased tankage within the borrow and loan arrangement means that it has increased ullage within the system which, in turn, brings about more options for sourcing imports. This major considers that the increased flexibility brought about from increased tankage incentivises such investment.[482]

5.63 We recognise that there has been investment in terminal capacity under the borrow and loan arrangements. Incentives underlying this investment may come from reducing trucking costs, the ability to charge throughput charges to

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478 Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" at [100] and BP "BP New Zealand– Submission on issues raised at the Commerce Commission's Fuel Study Conference of 24 – 26 September" (11 October 2019) at [5.2].

479 BP "Market study into the retail fuel sector – BP New Zealand comment on preliminary issues (21 February 2019) at 7 and BP "Preliminary response to 2019 Pre-meeting letter" (24 June 2019) at [2.21] and [2.23].
[
] and [ ] See also BP "BP New Zealand– submissions on the August 2019 Draft Report" at [5.5], [5.53] & [5.71]. BP considers that incentives to invest come from throughput charges to competitors for the use of terminal infrastructure, reduced trucking costs and improved efficiency in importing product.

480 See Mobil "Mobil to restore Lyttelton terminal storage capacity" (15 November 2015) <corporate.exonmobil.com> (Viewed on 22 November 2019) and Mobil "Mobil commissions additional diesel storage tanks at Bluff Terminal" (12 May 2015) <corporate.exonmobil.com> (Viewed on 22 November 2019).

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competitors for use of terminal infrastructure and improving efficiency in importing product.

5.64 We further recognise that incentives for significant new investment in terminal capacity into the future may be somewhat muted given long-term trends for fuel demand and the entry of TOSL in Timaru and speculation that it is entering Mount Maunganui.

5.65 Nevertheless, it appears that investment incentives overall have been insufficient. Views from industry participants suggest there has been a lack of investment in terminal capacity. In addition:

5.65.1 shared industry storage under the borrow and loan arrangements does not appear to have kept pace with rising demand for fuel products; and

5.65.2 the frequency of port coordination events over the past few years tends to suggest that industry storage is below optimal levels. We have been told by distributors that these create real challenges, traditionally occurring at peak demand periods of the year, and resulting in increased trucking costs.[483]

Terminal capacity has not kept pace with demand

5.66 Our view that the borrow and loan arrangements may be deterring adequate investment in terminal capacity stems in part from diverging trends between demand for fuel and terminal storage capacity within the borrow and loan arrangement.[484]

5.67 As noted in Chapter 3 at Figures 3.18 and 3.19, the trend of increasing fuel volumes and decreasing terminal storage have been known to at least some in the industry for several years. Our analysis at Figures 3.20 to 3.23 suggests that the diverging trend between fuel volumes and terminal storage identified by Z Energy in 2012 has continued.

5.68 Industry participants other than Z Energy have also expressed the view that terminal investment has been inadequate.

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484 While not directly related to this study, we note that AFSD Inquiry raised similar issues in relation to the resilience of the jet fuel infrastructure serving Auckland. It noted that the majors had failed to make timely investment decisions to build needed additional infrastructure and that the majors appear to be focussed on meeting the demand curve, such that their investments are made just in time – see Government Inquiry into the Auckland Fuel Supply Disruption (August 2019) at [18.5] and [18.14].

5.69 One participant considers there has been underinvestment in terminal infrastructure.[485] Similarly, a second participant notes that there has not been a lot of investment in terminal storage for a long time.[486] A third participant observed that the level of demand for fuel has continued to rise, but that it was not sure port storage facilities have kept pace or that the level of investment by the majors has kept pace with the level of demand.[487] A fourth participant has noted "relatively short storage capacities in the South Island and/or supply chain inefficiency" leading to "frequent interruptions of delivery at service stations".[488] A fifth participant noted that, transport fuel infrastructure is "skinny", ports do not have huge storage capacity and are limited in terms of the draft of the ships that can visit and that there is "chronic" underinvestment.[489]

5.70 A major has also noted a lack of terminal storage in the course of making a supply proposal to a distributor. The major noted that during 2008 to 2010 there were a number of product shortages throughout New Zealand due to a lack of industry terminal storage at ports. The major noted that it has since invested significantly.[490]

5.71 While not directly related to the study, we also note that low fuel stocks in New Zealand currently require the Government to purchase options on oil stored offshore in order to remain compliant with our obligations to the International Energy Agency (IEA).[491]

Port coordination events are frequent

5.72 Our view that the borrow and loan arrangements may be deterring adequate terminal investment also stems from the frequency of port coordination events over the past few years.

5.73 We note that in addition to, or in combination with, a potential lack of terminal investment, port coordination events may also reflect the "just in time" nature of fuel stock held within industry storage. As noted by Z Energy, the entire supply chain is incentivised to ensure port stocks are suitably low – sometimes to only a

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491 MBIE "New Zealand's participation in the International Energy Programme" MBIE, Building and energy, Energy and Natural Resources <www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/international-engagement-on-energy/new-zealands-participation-in-the-international-energy-programme/>. (Viewed on 15 August 2019).

day or two's cover – before coastal deliveries are made in order to ensure the lowest cost supply chain.[492]

5.74 Z Energy has noted that South Island ports are often coordinated as a result of inadequate diesel supply, citing that this was the case 90% of the time in Timaru and 54% of the time in Bluff in 2011. Z Energy also noted that fuel was regularly bridged from Canterbury into Bluff and Dunedin.[493] More recently, Z Energy has observed that one or more terminals in the South Island are under coordination up to approximately half the time. This comment was made to highlight how coordination events may create difficulties for the emergence of a liquid wholesale market.[494]

5.75 Our analysis shows that over the last 10 years, a typical day has seen on average almost five instances of a fuel type being under coordination at a terminal somewhere in New Zealand and coordination events last on average approximately 15 days.[495]

5.76 The instances of coordination vary by region. Over the last 10 years, the number of days that ports such as Nelson, Timaru, Bluff and Dunedin have been under coordination is relatively high compared to other ports. Figure 5.1 shows the percentage of coordination days across ports by fuel type (ie, 91 octane, 95 octane, or diesel) over the last 10 years.

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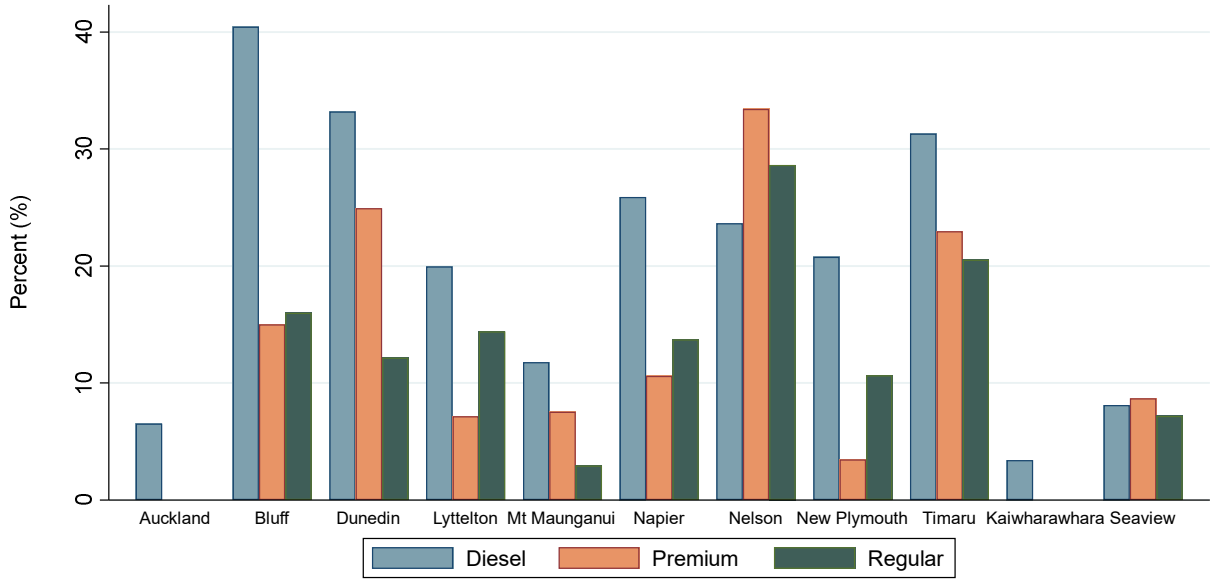
492 MBIE "Report back on the findings and recommendations of the Fuel Market Financial Performance Study" (23 November 2017) at Appendix 6 (Submission from Z Energy).

493 Z Energy "The downstream fuels industry: Strongly competitive or operating with uncertainty?" (8 March 2012) at 4. We note that Z Energy's presentation in fact states that fuel is regularly bridged "into" Canterbury "from" Bluff and Dunedin. However, in light of the observation that ports at Timaru and Bluff are under coordination 90% and 54% of the time respectively, we consider the statement was meant to say that fuel is regularly bridged from Canterbury into Bluff and Dunedin.

494 MBIE "Report back on the findings and recommendations of the Fuel Market Financial Performance Study" (23 November 2017) at Appendix 6 (Submission from Z Energy).

495 Commission analysis of COLL data.

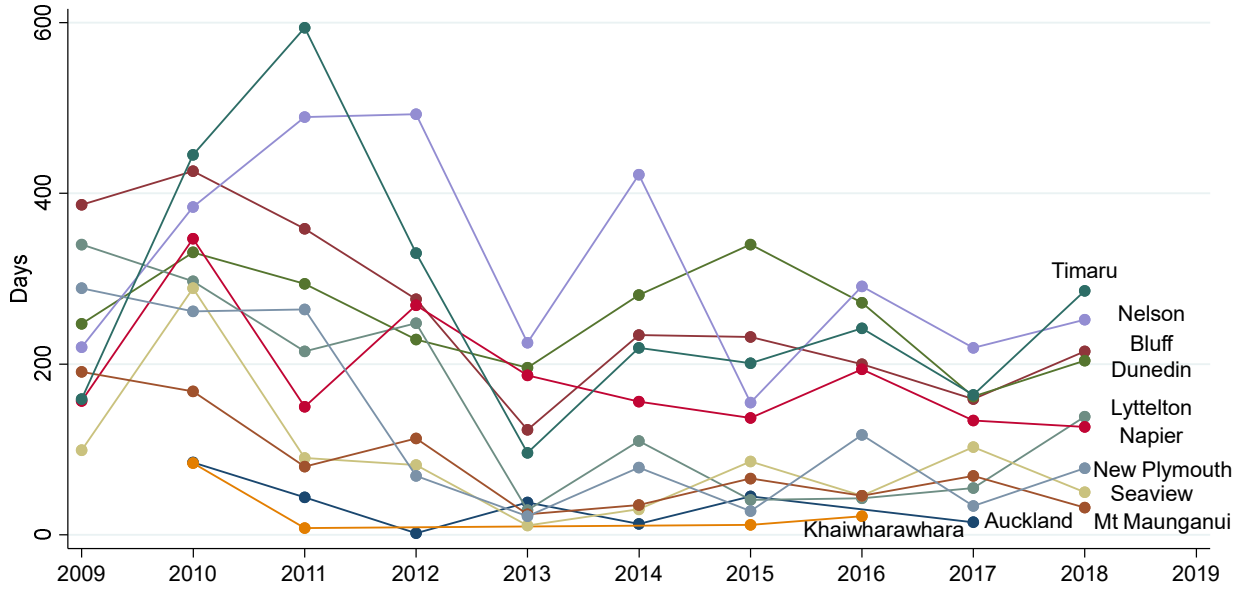
Figure 5.1 Percentage of days under coordination by port and fuel type (2009 – 2019)



Source: Commission analysis of COLL data

5.77 The average number of coordination events in a day has varied over the past ten years. From 2009 to 2012 there were on average 6.8 coordination events per day. The number has fallen in recent years, with an average of 3.6 events per day. The total instances of coordination events vary by port, as demonstrated by Figure 5.2 below:

Figure 5.2 Total number of days under coordination by port (2009-2018)[496]



Source: Commission analysis of COLL data

5.78 We understand the downward trend from 2013 onwards was the consequence of the majors holding a series of workshops to try and address the frequency of coordination events at the time. In their view this represented service levels which were too low. The workshop concluded that the poor outcomes were as a result of the individual majors holding too little stock, as holding stock is expensive. The majors agreed to change rules within the system to incentivise the majors to hold more stock.[497]

For majors, port coordination events may represent a trade-off between investment and trucking

5.79 We understand that the majors may view port coordination events as the result of a trade-off between investment in terminal infrastructure and the cost of trucking from alternative ports.[498]

5.80 Mobil does not consider coordination events as automatically triggering investments in terminal infrastructure. Mobil considers that it needs to balance costs associated with shipping operations, building tanks and meeting supply. Mobil told us that it would consider investing if port coordination events were escalating to the point at which it could not supply customers.[499]

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496 The 2019 figures are excluded as there is not a full year's observations yet to draw upon.

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498 See, for example, BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [5.6].

499 Transcript of meeting with Mobil (21 June 2019) at 9 (lines 2-21).

5.81 BP considers that port coordination events are a way of managing a shared storage system and provide little insight into the sufficiency or otherwise of terminal capacity in a supply system.[500] BP noted that all terminals in New Zealand are less than one truck driving shift away from at least one other terminal, and accordingly, there is little difference in cost to supply one terminal over another.[501] In addition, BP considers that the earlier a coordination event is triggered (ie, the more days that a terminal is on coordination ahead of a delivery), the more efficient BP's response can be since it has a longer time to arrange fuel delivery from another location.[502]

5.82 BP pointed to the frequency of coordination of premium fuel at Nelson as an example of this trade-off. BP noted that the demand for premium fuel in Nelson is very seasonal, and often peaks during summer due to holiday traffic in the region.[503] BP considers that the volumes of premium fuel in Nelson subject to coordination are very small and can readily be addressed through additional trucking. BP told us that it does not consider it could justify investing in extra terminal capacity in Nelson to reduce instances of coordination, given its expectations for demand in 2019. BP considers that relatively few truck movements are required to manage coordination events for premium 95 fuel from Nelson, even if BP takes no product from the Nelson terminal during coordination events. In addition, extra terminal capacity may only be used for a short period during each year.[504]

5.83 Related to this point, BP told us that the costs associated with adjusting truck schedules to transport fuel from a neighbouring port to an area affected by a coordination event at another port are not significant.[505] It considers these costs to be a part of its logistics arrangements rather than "incremental" costs resulting from exceptional events. BP told us it does not forgo volume supplied to resellers or its retail outlets in an effort to avoid such costs.[506] BP provided evidence to support its claim that its logistics network is highly effective at covering potential

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500 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [5.28].

501 BP "Preliminary response to June 2019 Pre-meeting letter" (24 June 2019) at [2.2].

502 Ibid, at [2.4]. See also BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [5.34].

503 BP "Preliminary response to June 2019 Pre-meeting letter" (24 June 2019) at fn 1.

504 Ibid, at fn 1 and Transcript of meeting with BP (25 June 2019) at 6 (lines 37-47).

505 [ ] - see BP "Preliminary response to June 2019 Pre-meeting letter" (24 June 2019) at [2.12] and BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [5.43]. BP also noted that, often, only one product is on coordination at a time, meaning that backhaul loads can be taken to even further reduce trucking costs – see BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [5.39].

506 BP "Preliminary response to 2019 Pre-meeting letter" (24 June 2019) at [2.12] and BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [5.42].

supply shortages at terminals[507] and cited this as evidence that terminal capacity is adequate.[508]

5.84 However, it is often distributors that bear the additional cost of trucking during coordination events, so that majors may get the benefits of reduced capital costs and not incur the costs of higher operational costs. At the very least, increased trucking to accommodate coordination events results in increased cost to both majors and/or their customers.

5.85 We recognise that port coordination events may reflect the trade-off for some majors between increased trucking costs and the costs associated with increasing terminal capacity, which requires significant incremental capacity and capital investment. This may be particularly so for smaller regional ports, where demand (whether seasonal or not), may not necessarily justify capacity expansion. More generally, port coordination events may reflect the majors' "just in time" approach to fuel supply management.

5.86 However, in an environment of overall tight supply there appear to be limits to these trade-offs because there is less likelihood of surplus fuel being available in one region to truck into another region where supply is constrained due to a port coordination event.

5.87 For example, while comparatively rare, we note there are instances when a port and its next closest ports are under coordination at the same time for the same fuel type. In such a scenario, to address shortfalls in required volumes, we expect majors and distributors will need to source fuel from ports further away (assuming these ports are not also under coordination at the time). This is likely to further increase costs associated with trucking fuel from alternative ports.

5.88 Figure 5.3 below shows the instances of when a port and its next closest port(s) were under coordination at the same time for a fuel type between 2009 and 2018. For instance, in 2018, there were six instances of when Nelson was under coordination for a fuel type and so was the next closest port (Lyttleton) for the same fuel type at the same time.

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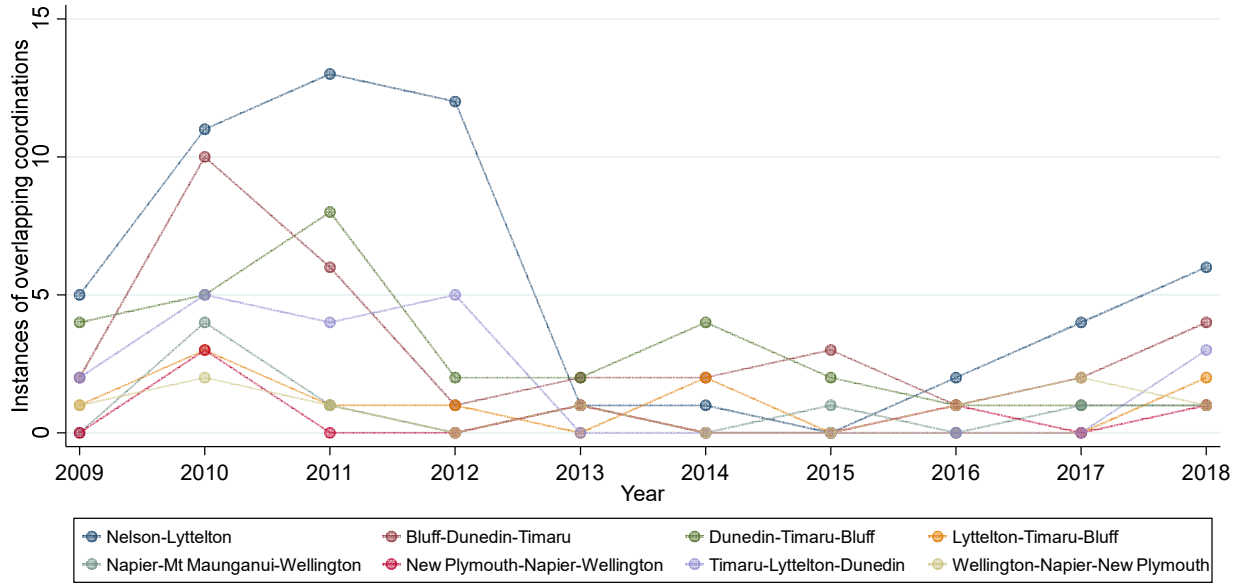
507 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [5.46].

508 Ibid, at [5.52(b)].

Figure 5.3 Instances of overlapping port coordination events (2009 – 2018)[509]



Source: Commission analysis of COLL data

5.89 Further, the trade-off an individual major undertakes between increased trucking and costs associated with increasing terminal capacity is likely to underestimate the total costs of coordination events because it does not necessarily take account of the costs of tight fuel supply on other majors and the majors' customers. We have been told these costs can be considerable. Additionally, majors appear to have some discretion around supply to distributors during port coordination events.[510]

5.90 We also note that while BP considers it is highly effective at covering potential supply shortages at terminals,[511] other evidence from market participants suggests it is likely to be costly to achieve 100% supply reliability during coordination events.[512]

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509 The 2019 figures are excluded as there is not a full year's observations yet to draw upon.

510 BP submitted that its pricing mechanism does not reflect coordination events – see BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [5.51]. However, we are aware that many fuel supply contracts between majors and distributors appear to give the majors some discretion around supply to distributors during port coordination events. We have also received evidence from some customers regarding the costs of tight fuel supply – see
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511 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [5.52(b)].

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5.91 Finally, the trade-offs do not take account of the effects on competition in wholesale and retail markets more generally. As discussed below and further in Chapter 6, impediments to competition at the wholesale level can be expected to affect the retail prices that consumers pay for fuel, as can the additional costs described above.

Main reasons why the borrow and loan arrangements may be deterring investment

5.92 It appears that there are four main reasons why the borrow and loan arrangements may be disincentivising investment in shared terminal capacity.

5.93 First, the benefits of investing in a new terminal may not be fully captured by the party undertaking the investment, with some of the benefits shared by others who can withdraw product from the terminal.

5.93.1 A major alluded to this effect in relation to COLL shipping costs to regional ports. The major noted that larger terminals can reduce costs associated with shipping fuel to various ports. The major noted that if one major invests in larger terminal infrastructure within shared industry storage, the benefits of reduced shipping costs will be realised by all COLL joint venture members (ie, the majors) because of their participation in the borrow and loan arrangements.[513]

5.93.2 One major's internal presentation talks about this effect in particular. The presentation notes that during the 1980s when the industry was regulated, the four oil companies' overall profitability was driven "by economic efficiencies which encouraged minimisation of capital employed through co-mingled primary distribution and joint storage with minimal infrastructure investment (many JVs set up)".[514] This had the effect of equalising the majors' cost base. Following deregulation, and subsequent changes in market shares, the four oil companies no longer had equal market shares but continued to operate on an equal cost base. This "created a disincentive for investment in infrastructure as any benefit will be shared with sub-scale competitors".[515]

5.94 Second, like the sharing of benefits of terminal investment, the costs of failing to maintain terminals may not be fully borne by the terminal owner. In particular, the costs arising when a terminal owner does not invest are incurred by all the majors in the form of increased shipping and/or trucking costs. This in turn may weaken the owner's incentive to invest in maintaining terminals.[516]

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516 Z Energy "Z Energy second submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" at [78.1].

5.95 Third, the current rules applying to the borrow and loan arrangements, particularly with respect to allocations during a port coordination event,[517] may discourage incremental investment in terminals.

5.95.1 We understand that when a port is placed under coordination, fuel stock is rationed proportionally in relation to each major's contribution to the overall national stock level (which in turn depends on each major's share of tank capacity in the system) and the port market share for the type of fuel being put under coordination.

5.95.2 Specifically, fuel is only allocated to a major during a port coordination event if it holds above a minimum amount of stock nationally. This minimum amount is determined by the volume of tankage the major has contributed to the overall system and is not related to market shares at the port that is under coordination.[518]

5.95.3 These rules mean that a major with a higher level of volume of tankage in the system needs to carry a higher level of stock, with higher associated working capital costs, in order to be assured of supply during port coordination events. This would discourage incremental investment in terminals, which would be lumpy in nature, before increases in market share.[519]

5.95.4 Similarly, majors whose minimum fuel stock obligation during port coordination events is lower, due to a lower amount of tankage in the system, may benefit from reduced working capital costs at the expense of a major who is required to hold more stock.[520] A major in such a scenario may not have an incentive to invest in further terminal storage, which would further increase their minimum fuel obligation and working capital commitment, if they wanted to be assured of an allocation of fuel during a port coordination.

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517 We understand a port coordination event is usually triggered if there is less than 3 days stock before the next shipment is scheduled to arrive – see Transcript of meeting with Mobil (21 June 2019) at 5 (lines 22-26).

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519 This appears to be in line with comments made by Z Energy. Z Energy observed that an inappropriate distribution of costs within the borrow and loan arrangements may result in underinvestment in terminal infrastructure due to insufficient reward. See Z Energy "Market Study into the Retail Fuel Sector: Z Energy's response to invitation to comment on preliminary issues" at [110] and [111].

520 [ ]
[ ] – [ ] See also Z Energy "Z Energy submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" (13 September 2019) at [106].

5.95.5 We were told that if the level of each major's investment in terminals within the borrow and loan arrangement is not in line with market shares, this may produce inefficiencies.[521]

5.96 Finally, the fuel rationing mechanism when a port is placed under coordination (described above) means that majors appear to be insulated from the risk of losing customers when a port is under coordination. This is because competing majors are similarly unable to supply fuel beyond their allocated amount, unless they carry out more costly bridging activity, such as moving product from neighbouring ports by truck. These insulating effects may disincentivise further investment that might otherwise be made to manage the risk of not being able to supply.

A lack of investment and tight supply is likely to have a detrimental effect on competition at the wholesale level

5.97 The lack of investment and "just in time" approach to fuel supply are likely to have detrimental effects on competition at the wholesale level. We consider these effects are likely to ultimately flow through to retail competition.

5.98 There are two main reasons for this:

5.98.1 it weakens distributors' ability and incentives to switch to another supplier; and

5.98.2 it limits the majors' ability and incentives to compete for new customers.

Lack of investment and tight supply weakens distributors' ability and incentives to switch supplier

5.99 A lack of incentive or ability to switch may reduce competition at the wholesale level, and in turn, at the retail level.[522]

5.100 We have been told that security of supply is an important factor when considering competing bids for supply. A lack of terminal capacity and frequent anticipated shortages of supply, whether actual or perceived, may reduce the incentive or

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522 We discuss the incentive and ability of distributors to switch suppliers at the wholesale level in more detail in Chapter 6.

ability of distributors to consider switching to alternative suppliers because it may be considered too risky to do so.[523]

5.101 One distributor noted that there are advantages to partnering with a major who supplies fewer distributors, as that provides a better guarantee of supply in periods of shortages.[524] We are aware of another distributor who has negotiated priority allocations from a major in the event of a port coordination.[525] We consider that this may increase its reluctance to switch suppliers should a priority allocation not be available with other majors.

Limits the majors' ability and incentive to compete for new customers

5.102 We also consider a lack of terminal capacity and frequent port coordination events are likely to limit majors' ability and incentive to compete for large new customers (such as fuel distributors) because it reduces their ability to cost-effectively increase supply. This is likely to weaken competition at the wholesale level, and in turn, at the retail level.

5.103 As discussed above, we consider port coordination events are a result of (and further reinforce) a disincentive to invest in terminal infrastructure that result from the borrow and loan arrangements.

5.104 In addition, the rationing of fuel based on a major's market share during port coordination events may reduce the majors' ability to cost-effectively increase supply over the short-term, especially in regions that are under coordination frequently.

5.105 Independent resellers are likely to be similarly restricted given the discretion the majors appear to have under their supply agreements to supply when there is coordination at a particular port.[526]

5.106 We note that the majors do not necessarily share our views. For instance, BP noted the coordination mechanism puts majors on notice that they will need to make alternative arrangements within their network to ensure that customer demand is met.[527] BP gave us evidence that it says demonstrates its logistics network is highly

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527 BP "Preliminary response to June 2019 Pre-meeting letter" (24 June 2019) at [2.13].

effective at covering potential supply shortages at terminals to ensure very high supply reliability to customers.[528]

5.107 Z Energy considers that suppliers can increase imports at reasonably short notice and that the majors are incentivised to maximise the volumes they supply from their high fixed cost supply chain. Z Energy also noted that aggregate demand for diesel and petrol is largely flat so new distributor volume generally means loss of volume somewhere else.[529]

5.108 However, other evidence provided by the majors supports our views.[530]

5.108.1 A major alluded to how port coordination events may restrict a major's ability to compete for new customers albeit in the context of a fuel type not within the scope of this study. The major referred to being able to offer security of supply through private storage to win a large commercial customer.[531]

5.108.2 One major noted that allocations during port coordination are based on three-month rolling averages. The major told us it may have to find fuel from somewhere else if it won a particularly large supply contract, and a port was under coordination. This would be a problem for the first three months when supply would have to be managed through other means. The major described this as part of the management of change associated with winning large customers.[532]

5.108.3 Another major alluded to holding a greater amount of stock in tanks at retail sites to provide it an additional buffer during a coordination event that may otherwise have an impact on its retail customers.[533]

5.109 We acknowledge that current incentives to increase terminal capacity may be muted given expected long-term trends in the demand for fuel, the entry of TOSL at Timaru and speculation that it is entering Mount Maunganui. However, in our view,

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528 Ibid. See also BP "BP New Zealand- Submissions on August 2019 Draft Report" (13 September 2019) at [5.46].

529 Z Energy "Z Energy submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" (13 September 2019) at [125].

530 Note that BP disagrees that the first two examples point to evidence that support a lack of capacity in the supply chain. BP considers that there are very different supply considerations between fuels within the scope of this study and those outside it. Further, it considers that making adjustments for three months is immaterial in the context of winning new customers – see BP "BP New Zealand- submissions on August 2019 Draft Report" (13 September 2019) at [5.76].

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further consideration should be given to options to address underinvestment in terminals and tight supply. We consider that these factors are likely restricting competition at the wholesale level. This may result in less retail competition and higher than expected prices for consumers.

5.110 As noted previously, we consider that these matters should be considered alongside methods of facilitating competitive import entry. For example, by improving the availability and competitiveness of wholesale supply of fuel from existing terminals through a TGP regime.

Particular provisions of the infrastructure sharing arrangements may limit or soften competition

5.111 As well as providing a deterrent to entry, we have identified several ways in which the infrastructure sharing arrangements may limit or soften competition between the majors.

5.112 In this section we discuss how the:

5.112.1 refinery allocation mechanisms may limit the majors' ability to cost-effectively increase supply of locally refined fuel; and

5.112.2 refinery and COLL joint venture arrangements may allow for accommodating behaviour between the majors.

Refinery's allocation mechanism limits the majors' ability to increase supply

5.113 The allocation of the refinery's capacity between the majors based on a three-year average of their retail market share by product may constrain their ability to cost-effectively increase supply in the short-term. This may in turn reduce their ability and incentive to compete for new business, therefore softening competition between them.

5.114 Our view contrasts with those of some industry participants. In particular, BP does not consider that the current capacity allocation arrangements (and other arrangements at the refinery) adversely impact competition. BP submitted that market dynamics are set by imports of refined product rather than the refinery's capacity and output, and competitors are able to quickly and easily increase or decrease their level of imports.[534]

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[534] BP "Preliminary response to 2019 Pre-meeting letter" (24 June 2019) at [3.5] & [3.6]. In particular, with respect to Auckland, BP understands that all of the majors' respective shares of Refining NZ refined fuel and RAP capacity are such that their supply positions substantially exceed their respective levels of demand in the Auckland region. BP therefore considers that majors can gain new customers in Auckland by reducing the amount of fuel trucked out of Auckland to other regions and increase the amount supplied into those regions through imports and/or coastal shipping. BP also noted that the Waikato region (particularly Hamilton and surrounds) is equidistant from WOSL and Mt Maunganui. As such, BP considers that the majors have the choice of gaining new customers through either Refining NZ processed

5.115 However, as noted previously, importing refined fuel may often be a less cost effective option when compared to supply of refined fuel by Refining NZ, particularly for regions such as Auckland that are predominantly supplied via the RAP. Increasing supply through refined fuel production would also require sustained increases in national market shares over a three-year period. The cost disadvantage associated with the need to import refined fuel during certain periods may reduce the ability and incentive for majors to grow their market share through price competition. Data on each of the majors' percentage of the total refined fuel production at the refinery of 91 octane, 95 octane, and diesel shows that the refinery allocation between the majors has been relatively stable over time.[535]

5.116 The RAP's capacity is allocated between the majors in a similar way to that of the refinery. A key difference is that allocation of capacity to the RAP is based on the relative market shares of the majors in the Auckland and Waikato regions over a shorter time period. In particular, it is allocated on the basis of a major's relative share of volumes of fuel for the most recent continuous 12-month period.[536]

5.117 The RAP's allocation mechanism also likely reduces the majors' ability to cost-effectively expand output in the Auckland region. This is because expanding volumes quickly in this region would likely require transporting imported fuel via truck from Mount Maunganui. Because this may be more expensive than supply through the RAP, it may be relatively more expensive to grow market shares in the Auckland region, and so to change allocation to the RAP.

5.118 Auckland is a significant share of total retail fuel volume in New Zealand.[537] An inability to cost-effectively grow market share in the short-term in Auckland may limit the ability to grow market shares nationally, and so expand supply through locally refined fuel over the short-term.

5.119 We are aware that Gull supplies the Auckland and Waikato regions by importing refined fuel into Mount Maunganui and trucking it to sites in those regions. It

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fuel or imports/coastal shipped from Mt Maunganui at effectively the same cost – see BP "BP New Zealand- submissions on August 2019 Draft Report" (13 September 2019) at [5.78].

535 [ ] [ ]

536 [ ] The allocation also accounts for a major's relative share of jet fuel deliveries through the RAP.

537 Diesel, Petrol and Jet port off-takes from Auckland amounted to 39.5% of all off-takes in New Zealand in 2017 – see MBIE "Energy in New Zealand" (October 2018) at 35. Note, however, that this estimate may overstate the volume of fuel relevant to Auckland as some fuel may be trucked from Auckland to supply the Waikato and Northland markets.

appears to have had success in growing market share in Auckland this way.[538] Z Energy and BP told us that this is reflective of the fact that Gull's model of supply is always lower cost or equivalent to that of the majors.[539] However, we do not share this view. Rather, we consider that Gull's ability to compete in Auckland is reflective of the fact that not all the cost savings associated with supplying fuel through the RAP are being passed onto consumers.[540]

An alternative allocation mechanism may be preferable

5.120 We consider an alternative capacity allocation mechanism that enables majors to commit to future supply contracts and increase refined fuel production over a shorter time period would be beneficial. We consider this would be beneficial for supply in some regions, particularly Auckland.

5.121 It appears that an alternative mechanism could likely be implemented without significant cost because information received from Refining NZ suggests the reasons for the capacity allocation mechanisms are largely historical and not closely linked to the better management of the refinery's operations. Capacity has been allocated on the basis of market shares of each of the majors (including market shares that the users achieve by sales of imported products) since the inception of the refinery.[541]

5.122 This principle was carried over into a Heads of Agreement between Refining NZ and the oil companies at the time following the deregulation of the sector in 1988, where the oil companies committed to taking the total available annual capacity of the refinery. While this agreement was never formalised, it provided that "entitlement to capacity will be based on the principle of market shares".[542] This principle was carried over into the current processing agreements. No current Refining NZ employee was involved in drafting these agreements and so Refining NZ was unable to further explain the history of the allocation mechanism.[543]

5.123 However, some industry participants have told us that current allocation mechanisms may allow for the majors to better plan the procurement of crude oil

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539 Z Energy "Z Energy submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" (13 September 2019) at [150.4] and BP "BP New Zealand– ssubmission on August 2019 Draft Report" (13 September 2019) at [5.14].

540 [ ]

541 Refining NZ response to the Commerce Commission information request (28 May 2019) at [3.5]

542 Ibid, at [1.5] and [3.6].

543 Ibid, at [3.6].

(an input into the refining process) and provide greater certainty when committing to future supply contracts:

5.123.1 Refining NZ noted that the three-year average reduces year-on-year volatility in refinery capacity allocations and enables the majors to have greater certainty of access to refinery capacity when committing to future supply contracts.[544]

5.123.2 Mobil considers that the three-year historical average supports supply reliability by assessing major's requirements over a longer period rather than being influenced by short-term market fluctuations.[545]

5.123.3 Z Energy similarly noted that procuring crude oil takes time and so there is some benefit of smoothing changes in refinery allocations through the three-year average. However, Z Energy also considered that a shorter time frame of two years would be reasonable.[546]

5.124 It appears that it could be possible to design and implement a refinery allocation mechanism that enables a major to increase supply of domestically refined fuel over a shorter time period while retaining the planning benefits. The majors and Refining NZ appear to be supportive of re-examining the refinery allocation mechanism, notwithstanding differing views on its effect on competition.[547]

5.125 We note that the shorter 12-month RAP allocation process was introduced in the mid-1990s, when the RAP neared maximum capacity. The change to the shorter allocation process was because the fuel demand in Auckland, particularly for jet fuel, had typically grown faster than national demand, with regular switching of jet fuel contracts between the majors. Using a shorter period for allocation to the RAP was considered more efficient and better aligned the demand profile of each major. Prior to this allocation mechanism, each major had a right to unlimited use of the RAP.[548]

5.126 We understand the RAP typically operates at full capacity. In our view, further consideration should be given to whether there are alternative ways of managing

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544 Refining NZ response to the Commerce Commission information request (28 May 2019) at [3.7].

545 Mobil "Information following meeting on 21 June 2019" (28 June 2019) at [14].

546 Transcript of meeting with Z Energy (24 June 2019) at 28 (lines 8-17).

547 BP "BP New Zealand– submissions on August 2019 Draft Report" (13 September 2019) at [5.80], Z Energy "Z Energy submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" (13 September 2019) at [162] and Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Retail Fuel Market Study Draft Report" (13 September 2019) at [4.3].

548 Refining NZ response to the Commerce Commission information request (16 July 2019) at [2.2].

the RAP's capacity that would better stimulate competition at the wholesale level.[549]

5.127 We consider that an allocation process for the refinery that is based on a shorter allocation period, such as the 12-month RAP allocation process, is preferable to the current refinery allocation process as it allows for quicker alignment of capacity allocations with changes in demand of any major. However, we are of the view that the RAP allocation process may also limit the ability of majors to cost-effectively increase supply in Auckland.

Refinery arrangements may allow for accommodating behaviour between the majors

5.128 It appears that aspects of the refinery arrangements could facilitate accommodating behaviour between the majors. In particular, it appears that the information exchange via the refinery's Technical Committee during the annual allocation procedure may provide a degree of transparency that could unnecessarily affect competition.

5.129 The Technical Committee includes a representative from each major and Refining NZ.[550] Its functions include allocating capacity and reviewing technical aspects of the refinery's operation.[551] It makes decisions by consensus,[552] which gives each member veto power.

5.130 As part of the annual allocation procedure,[553] the majors share information on monthly national volumes by various categories of retail fuel (including by customer type),[554] which form the basis of the ultimate allocation.[555] The allocation process is largely mechanical, with the information on national volumes acting as inputs. The majors check the data for accuracy.[556]

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549 Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Preliminary Issues Paper for the Retail Fuel Market Study" (21 February 2019) at [7.16].

550 The New Zealand Refining Company Limited Processing Agreement (12 December 1996) [ ]

551 Ibid, [ ]

552 Ibid, [ ]

553 [ ]

554 [ ]

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5.131 Visibility of each other's national volumes across various categories may assist in facilitating accommodating behaviour. The transparency of information provided through the capacity allocation procedure may therefore affect competition.

Information shared between the majors as part of the refinery allocation procedure could be limited

5.132 We acknowledge that the Technical Committee contributes to the efficient operation of the refinery.[557] Refining NZ told us that the Technical Committee is a forum where operational matters such as deviations in crude oil quality and timing of delivery, deviations in refinery performance and production and changes in offtakes can be discussed and coordinated between Refining NZ and the majors. This aids the efficient operation of the refinery.[558] Refining NZ also told us that all refinery users need to be involved in coordination discussions with Refining NZ because the refinery operates simultaneously for the benefit of all refinery users.[559]

5.133 However, we consider that it may be possible to achieve the same efficiencies through the exchange of less information and without the majors' representatives on the Technical Committee reviewing each other's volume data.

5.134 We consider that the risk of the exchange of information through the Technical Committee affecting competition could be eliminated by restricting each major to verifying their own data for the capacity allocation process. We note that Refining NZ agrees that some of its processes, and the Technical Committee's processes, could be modified to reduce the current level of information sharing so that each refinery user would only be able to review its own aggregated data.[560] We consider this to be an appropriate modification.

COLL arrangements may allow for accommodating behaviour between the majors

5.135 Information shared between the majors through the COLL arrangements, including competitors' volume and demand information, could facilitate accommodating behaviour between the majors and unnecessarily affect competition.

5.136 We consider that there may be low-cost ways to reduce the current level of data sharing without significantly impacting the services that COLL provides, while at the same time reducing the impact on competition.

] See also Refining NZ response to the Commerce Commission information request (28 May 2019) at [3.4(a)].

557 Both BP and Mobil made this point. See BP "Preliminary response to June 2019 Pre-meeting letter" (24 June 2019) at [3.1] and [3.2] and Mobil "Information following meeting on 21 June 2019" (28 June 2019) at [12].

558 Refining NZ response to the Commerce Commission information request (28 May 2019) at [3.1] to [3.3].

559 Ibid, at [3.3].

560 Refining NZ "NZCC Market Study into the Retail Fuel Sector: Response by Refining NZ to the New Zealand Commerce Commission's Retail Fuel Market Study Draft Report" (13 September 2019) at [4.2].

COLL provides majors with various forms of information

5.137 COLL creates and shares information as part of its various scheduling and stock management roles.

5.138 COLL requires data of each major's demand into the future by location to assist with ship scheduling.[561] This shipping schedule, "COSMIC", is provided to the majors on a weekly basis.[562] COSMIC provides the majors with information on projected refinery production, demand into the future of fuel types for each port, and planned discharges into ports by both COLL vessels and import vessels. Majors can therefore see aggregated estimates of demand into the future for fuel types at each port under industry storage.[563] An individual major's demand into the future is not shared with other majors, other than at Wiri.[564]

5.139 COLL also accounts for all contributions to and withdrawals from industry storage under the borrow and loan arrangements.[565] COLL reports national daily stock ownership figures for each fuel type for each major in a report known as "CONCORD".[566] CONCORD gives the majors a historical and forward-looking overview of deposits and offtakes from industry storage.[567]

5.140 Past and future offtakes and deposits are aggregated to a national level by fuel type under CONCORD. Majors can therefore see each other's past and future demand by fuel type at a national level. However, majors are unable to see each other's past or future demand by fuel type and port (apart from at the Wiri Terminal).

5.141 Separately to the demand data collected by COLL, the majors also use BDO New Zealand Limited (BDO) to provide aggregated monthly historic sales data for all products for each major, including sales outside of the borrow and loan arrangements. This data is used for the refinery capacity allocation process.

5.142 The sharing of this information between the majors may assist in facilitating accommodating behaviour and so may unnecessarily affect competition. We discuss this further below.

Previous studies have considered options to reduce the amount of information shared

5.143 Following the New Zealand Fuel Market Financial Market Performance Study, Hale & Twomey did an assessment of whether an independent registry should be

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561 Hale and Twomey "New Zealand Fuel Market Study – Supplementary Information on Shared Data" (October 2017) at 6.

562 Ibid, at 4.

563 Daily demand can be derived by determining the extent of the decreases in tank holding.

564 Hale and Twomey "New Zealand Fuel Market Study – Supplementary Information on Shared Data" (October 2017) at 6.

565 Ibid, at 7.

566 Ibid, at 7.

567 Ibid, at 6.

created to limit visibility of regional market share data. Following its assessment, Hale & Twomey concluded that COLL is already providing an independent way for data to be collected and aggregated, albeit that COLL is owned by the majors.[568] Hale & Twomey considered that the level of data shared with majors is generally appropriate, including for the Wiri Terminal.[569]

5.144 Nevertheless, Hale & Twomey noted that if there were concerns about the current level of data sharing, it would be possible to reduce this without significantly impacting on how the borrow and loan arrangements work. Options identified included:

5.144.1 aggregating demand into the future for the Wiri Terminal if the RAP becomes unconstrained, consistent with reporting at other locations;[570]

5.144.2 reducing the frequency of historic sales data provided by BDO;[571] and

5.144.3 limiting visibility of forward stock ownership (ie, national demand into the future) by fuel type and in total under CONCORD to only their own positions (currently majors are able to see each other's demand into the future).[572]

Information provided by COLL to the majors could be limited

5.145 As noted above, it appears that the information provided by COLL could facilitate accommodating behaviour between the majors and so may unnecessarily impact wholesale competition.

5.146 We recognise that much of the information shared between the majors through COLL may be necessary to ensure the efficient operation of the shipping schedules and shared industry storage. The aggregation of data limits the extent to which details of future demand at a particular port might facilitate accommodating behaviour.

5.147 We further note that the COLL joint venture arrangements contain several clauses that purport to limit the nature of information exchanged, including with reference to the Act.[573]

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568 Hale and Twomey "New Zealand Fuel Market Study – Supplementary Information on Shared Data" (October 2017) at i.

569 Ibid, at ii.

570 Ibid, at 1.

571 Ibid, at 16.

572 Ibid, at 16.

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5.148 However, the exchange of information that potentially facilitates accommodating behaviour would not necessarily be illegal under the Act and so may not be caught by the purported safeguards under the arrangements.

5.149 We consider there may be ways in which the risks for competition could be reduced without reducing COLL's effectiveness. This could be achieved if the information provided by COLL was limited along the lines of the options recommended by Hale & Twomey. In addition, we consider it would be appropriate to further restrict the data provided by BDO to limit the visibility majors have of each other's historic sales data.[574] While this information may be available through other means (eg, Local Authorities Fuel Tax data), it may nonetheless serve to limit the visibility of past market share data and so potentially limit the prospect of accommodating behaviour between majors. We note that while BP and Z Energy do not agree that the information provided by COLL unnecessarily affects competition, both have indicated a willingness to revise operating and informational protocols.[575]

] - see BP Oil New Zealand Ltd, Chevron New Zealand, Mobil Oil New Zealand Limited, Shell New Zealand Limited and Coastal Oil Logistics Limited Joint Venture Agreement (29 November 2007) at [ ] and [ ]

574 This would be in addition to Hale and Twomey's recommendation that the frequency of the BDO sales data be reduced.

575 BP "BP New Zealand– ssubmissions on August 2019 Draft Report" (13 September 2019) at [5.82] and Z Energy "Z Energy submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" (13 September 2019) at [162].

Chapter 6 Wholesale supply arrangements

Summary of our findings

- There is a significant degree of structural vertical integration in the fuel industry in New Zealand through the majors' participation in the supply chain as well as retail markets.
- In addition, many dealers and distributors have stable, long-term relationships with the majors, upon whom they rely for continued wholesale supply. This dependence has arisen from a range of explicit contractual and implicit non-contractual factors.
    - Explicitly, many wholesale supply agreements contain restrictive contractual provisions that lock dealers and distributors into relationships with their wholesale suppliers. This has a similar effect to structural vertical integration and reduces the scope for competition at the wholesale level.
    - Implicitly, but supported by the wholesale supply agreements, majors are able to influence the commercial decisions of many dealers and distributors in a variety of ways.
- The combination of vertical integration and restrictive wholesale supply arrangements that has emerged since deregulation has prevented the emergence of a workably competitive wholesale market. Vertical integration can generate significant efficiency benefits. However, it also reduces or eliminates competition at the wholesale level and limits competition to the retail level, which in this sector is likely to be less intense.
- The absence of a workably competitive wholesale market likely raises the retail price that New Zealand consumers pay for fuel because:
    - independent importers face barriers to entry because there are few wholesale customers actively looking for new supply opportunities;
    - competition between existing wholesale suppliers is reduced because many dealers and distributors face barriers to switching; and
    - the incentives to reduce costs and margins, and thus lower wholesale (and retail) prices, that would arise in a workably competitive wholesale market are lost.
- For these reasons, we consider that some changes should be made to wholesale supply agreements to support workably competitive wholesale and retail fuel markets, the benefits of which would flow through retail markets to consumers.

Introduction

6.1 This chapter sets out our view of how competition for the supply of retail fuel in New Zealand is affected by:

6.1.1 the extent of vertical integration in the industry; and

6.1.2 the wholesale supply agreements between the majors and the dealers and distributors.

6.2 Vertical integration in the fuel industry in New Zealand essentially arises in two different ways.

6.2.1 First, the majors are vertically integrated because they supply fuel at a wholesale level as well as owning and operating retail sites (referred to as structural vertical integration). Over half of all retail fuel volumes are sold via the majors' own retail sites.[576]

6.2.2 Second, the majors have entered into wholesale supply contracts with dealers and distributors to supply fuel (referred to as wholesale supply agreements or contracts).[577] Wholesale supply agreements can have similar effects to structural vertical integration.[578]

6.3 As outlined in Chapter 2, dealers typically own and/or operate retail sites and sell fuel using one of the majors' brands,[579] whereas distributors typically resell fuel using their own brand (eg, NPD, Waitomo, Allied, and GAS).[580]

6.4 We have focused on the effects that the vertical integration of the majors and the wholesale supply agreements entered into by them with dealers or distributors have on competition in wholesale and retail markets.

6.5 Vertical integration via either of the methods described above can produce efficiency benefits, facilitate greater competition, and ultimately benefit

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576 See Chapter 2 for further detail.

577 Gull is vertically integrated but does not typically supply fuel to distributors or non-Gull dealers.

578 We view vertical integration as including situations where economic control is maintained not just via ownership, but also contractually, as discussed by Sanford J. Grossman and Oliver D. Hart "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration" (1986) 94 Journal of Political Economy at 691 – 719.

579 An exception are dealers who own and/or operate retail fuel sites using the non-major brands, such as Gull or distributors such as Allied or GAS. See [ ] and [ ]

580 Although GAS was not previously a distributor before it entered in 1999 and has no commercial or haulage operations, we have categorised it as a distributor here because of the functions it provides to independent GAS-branded dealers. That is, GAS effectively sources fuel on a wholesale basis, and this fuel is sold via retail sites under its own brand. However, whether GAS is categorised as a large, multi-site dealer or distributor has no material impact on our analysis.

consumers. However, it also reduces or eliminates competition at the wholesale level and focuses competition at the retail level. Whether vertical integration is on balance positive or negative for consumers ultimately depends on the specific circumstances of the market under consideration.

6.6 We consider that in many cases wholesale supply relationships contribute to the lack of switching of suppliers in the wholesale market, particularly by distributors. This lack of contestable demand discourages both competition between the majors and entry by rival importers looking for customers in the wholesale market.

6.7 We also consider that many of these relationships have a negative influence on competition in retail markets. For example, the ability of many dealers and distributors to compete in the retail market is constrained by the terms of their wholesale supply agreements with majors, including how wholesale prices are set by the majors.

6.8 As outlined in more detail in Chapter 8, we do not recommend regulation prohibiting the structural vertical integration of fuel companies. However, we consider that less restrictive contractual arrangements would stimulate increased competition in both the wholesale and retail markets. We recommend options for reducing the impact on competition of restrictive contractual arrangements through an industry code. We consider that this would create benefits in the wholesale market which would flow through retail markets to consumers.

Structure of this chapter

6.9 The chapter addresses the following aspects of the wholesale supply chain:

6.9.1 the history of wholesale supply relationships in the sector;

6.9.2 the non-contractual factors that affect existing relationships between wholesale suppliers and retailers;

6.9.3 how specific contractual terms in wholesale supply agreements may be hindering competition; and

6.9.4 the outcomes and conduct observed in wholesale markets and the potential impact on competition in the retail market.

The evolution of wholesale supply relationships in the fuel industry

6.10 Understanding the origins and evolution of wholesale supply relationships in the industry provides important context for assessing the current impact of these relationships on the supply of fuel. In particular, the history of the market provides insights into how the bargaining positions of different participants in the market have evolved and what has led to the level of interdependency that we see in the market today.

6.11 One of the key developments in the industry in the last thirty years has been the replacement of the functional separation between the wholesale and retail markets

that existed before deregulation with a mixture of structural vertical integration and stable, long-term wholesale supply relationships.

6.12 This section provides more detail about how these relationships and the retail networks of the majors and the dealers and distributors have developed over time.

Vertical integration and wholesale supply agreements with dealers followed deregulation

6.13 Before deregulation in 1988, wholesalers were not allowed to own or control retail functions.[581] Retail sites were independently owned by parties that were supplied fuel by the majors at regulated wholesale prices.

6.14 The constraint on vertical integration into the retail sector was removed with deregulation. The majors subsequently acquired a large proportion of retail sites, particularly high volume retail sites, and entered into long-term supply contracts with other independent retailers.[582]

6.15 At this time, some existing retailers, particularly those in desirable, high volume locations, probably extracted significant value from the sale of their retail site.[583] This is because the majors may have actively competed to acquire the retail site. In other cases, majors would have competed to supply retail sites with fuel, using long-term supply contracts to support investment in retail site branding and other relationship-specific investments.

6.16 In recent years, the majors have moved to divest many retail sites, particularly smaller, lower volume retail sites. The majors have cited several reasons for these divestments, including increased operating costs, particularly in relation to health and safety requirements and branding.[584] Further, over recent decades, some international oil companies appear to have de-prioritised investment in New Zealand more generally and have divested a range of local assets.[585]

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581 Michael Pickford and Cameron Wheeler "The petrol industry: Deregulation, entry and competition" (2001) *NZ Trade Consortium Working Paper No. 12.*

582 Michael Pickford and Cameron Wheeler "The petrol industry: Deregulation, entry and competition" (2001) *NZ Trade Consortium Working Paper No. 12* at 15. It has also been suggested that the majors tried to place first right of refusal clauses into supply contracts with retailers before deregulation. Motor Trades Association, quoted in Clough et al. (1989, p. 38) as reported by Pickford and Wheeler (2001).

583 A potential example of this may have been the Top Group, a retailer owning 22 sites in the North Island. The Top Group was owned by Brierley Investments and Fay Richwhite before it was sold to BP in August 1988. Michael Pickford and Cameron Wheeler "The petrol industry: Deregulation, entry and competition" (2001) *NZ Trade Consortium Working Paper No. 12* speculate that The Top Group was not intended to be a long-term competitor but was a vehicle used to acquire prime sites prior to de-regulation and then to sell these to the highest bidder post de-regulation. See Pickford and Wheeler (2001) at 14.

584 [ ]

585 Examples include divestments of their entire fuel sector operations by Shell and Chevron, and divestments of interests in various retail or commercial operations by BP and Mobil.

6.17 The specific nature of these divestments varies from site-to-site. All assets were fully divested at some retail sites whereas at other retail sites the majors retained ownership of the land and/or some other assets such as storage tanks.[586]

6.18 As part of this divestment process, the majors typically entered into long-term exclusive wholesale supply agreements with dealers to retail fuel under the majors' brands, meaning the level of effective vertical integration in the supply chain was maintained.

6.19 There are a small number of agency agreements for dealer-owned retail sites that operate under a major's brand.[587] Under an agency arrangement a major retains ownership of the fuel and sets the retail price. The majors pay commissions to the dealers, typically on a cents per litre basis, for fuel sold by dealers on a major's behalf. Majors might also make lump sum payments to dealers if commissions, or margins, are less than dealers' costs.

6.20 The current wholesale supply agreements for Challenge branded retail sites have a different history. Challenge entered in 1998 and originally intended to be an independent vertically integrated participant, like Gull which also entered in 1998.[588] However, Challenge was subsequently acquired by Chevron in 2003 after it was unsuccessful in obtaining access to refined product from the Marsden Point refinery on terms that it was willing to accept. Although Challenge retail sites are typically owned by dealers, Z Energy owns the rights to the Challenge brand having acquired it from Chevron in 2015.[589]

Relationships with distributors expanded to include wholesale supply of fuel

6.21 In addition to the majors' relationships with dealers, majors have also had ongoing business relationships in some form with distributors for decades, even prior to deregulation. For instance, Mobil has had some form of relationship with both Waitomo and Allied for over 70 years.[590] At various times, some majors have had equity stakes in selected downstream distributors. This was previously the case with Mobil, and is still the case with BP, which currently holds a 49% stake in both RD Petroleum and McFall Fuel.[591]

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586 Around the time of these divestments the majors also closed down many sites that were no longer economically viable. Consequently, the total number of retail sites fell from approximately 1,800 in 1998 to approximately 1,000 by 2009. See Chapter 3 and Michael Pickford and Cameron Wheeler "The petrol industry: Deregulation, entry and competition" (2001) *NZ Trade Consortium Working Paper No. 12* at 26, and Z Energy "The downstream fuels industry: Strongly competitive or operating with uncertainty?" (8 March 2012) at 3.

587 [ ] and [ ]

588 See <https://www.challenge.net.nz/About-Challenge>. (Viewed on 17 August 2019).

589 Challenge-branded sites are supplied by distributor Farmlands, which is in turn supplied by Z Energy.

590 Transcript of meeting with Mobil (21 June 2019) at 23 (lines 12 to 19).

591 See <https://www.mcfallfuel.co.nz/our-history>. (Viewed on 17 August 2019).

6.22 The nature of these relationships has changed over time.[592] Distributors traditionally provided haulage or other logistics services to the majors. However, distributors took over the direct supply of fuel to smaller commercial customers when the majors divested these businesses, most commonly during the early 2000s. We have been told that the majors no longer wished to directly manage relationships with large numbers of small commercial customers.[593]

6.23 Similar to the supply relationships the majors entered into with dealers during the period of divestment described above, in many cases, the majors transferred elements of their commercial businesses, along with upfront capital payments and other assets to distributors in exchange for long-term minimum volume and/or exclusive supply agreements. We understand that these agreements enabled them to recoup the upfront support, investment and assets provided to distributors during this transition process.[594]

6.24 These supply agreements also allowed distributors to expand beyond supplying their commercial customers into retail markets to varying degrees, potentially in competition with their supplier. Distributors such as Allied, Waitomo, NPD, Southfuels, McKeown, McFall Fuel, and RD Petroleum each has its own retail brand and controls its own retail sites which were acquired from a major or developed as greenfields retail sites. As detailed in Chapter 2, the volumes retailed by these distributors are relatively small in terms of the overall size of the sector. However, the presence of these distributors has promoted some of the changes we have seen in retail markets in recent years such as unmanned retail sites. Further, the volumes they acquire could support entry by importers in the future, particularly as some distributors have told us that they are either actively seeking, or would like to explore, supply from alternative wholesale suppliers.[595]

6.25 In a small number of cases, a distributor may also operate retail sites under the brand of the major from which they obtain wholesale supply.[596] Additionally, Allied provides a wider range of haulage services to Mobil. RD Petroleum and McFall Fuel do likewise for BP.

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592 See [ ]

593 See [ ]; [ ]; and [ ]

594 See [ ]; [ ]; and [ ]

595 See Waitomo "Written comment on the Market Study into the retail fuel sector – Draft Report" (13 September 2019) at [2.8] & at [X78]; [ ] and [ ]

596 [ ]

Non-contractual aspects of wholesale supply relationships

Distributors' retail networks are often complementary to the majors' retail networks

6.26 Although distributors have been able to expand into retail markets, it appears that for at least some distributors, the expansion of their retail networks has been influenced by the existing network of the major that supplies them with fuel. This is not an unexpected outcome given it is often in each party's interest to avoid competing directly with the other. Nevertheless, this interdependency has implications for competition in the wholesale market as we explain further below.

6.27 Our analysis of the location of selected distributors' retail sites, using data obtained from industry participants, sheds light on this interdependence. It suggests that distributors' retail networks have often evolved to be largely complementary to, rather than competing directly with, the retail network of the major that supplies them.[597]

6.28 Figure 6.1 shows how close other retail sites are within a 5km radius of each of the 173 Mobil branded retail sites.[598] Each Mobil retail site is represented by a mark on the horizontal axis. The distance to all other retail sites within 5km of each Mobil retail site is shown by dots vertically above each mark on the horizontal axis. This chart shows that there are relatively few Waitomo, NPD, Allied or other Mobil retail sites (reflected as blue dots), within 2km of existing Mobil retail sites. However, there are typically a larger number of retail sites supplied by other majors and Gull within 2km of Mobil retail sites (reflected as grey dots).

6.29 Figure 6.2 shows a similar pattern with regards to the location of BP supplied GAS and RD Petroleum retail sites relative to 213 BP branded retail sites. That is, there are relatively few GAS, RD Petroleum or other BP retail sites within 2 km of existing BP retail sites, while there are more commonly a larger number of retail sites supplied by other majors or Gull within 2 km.

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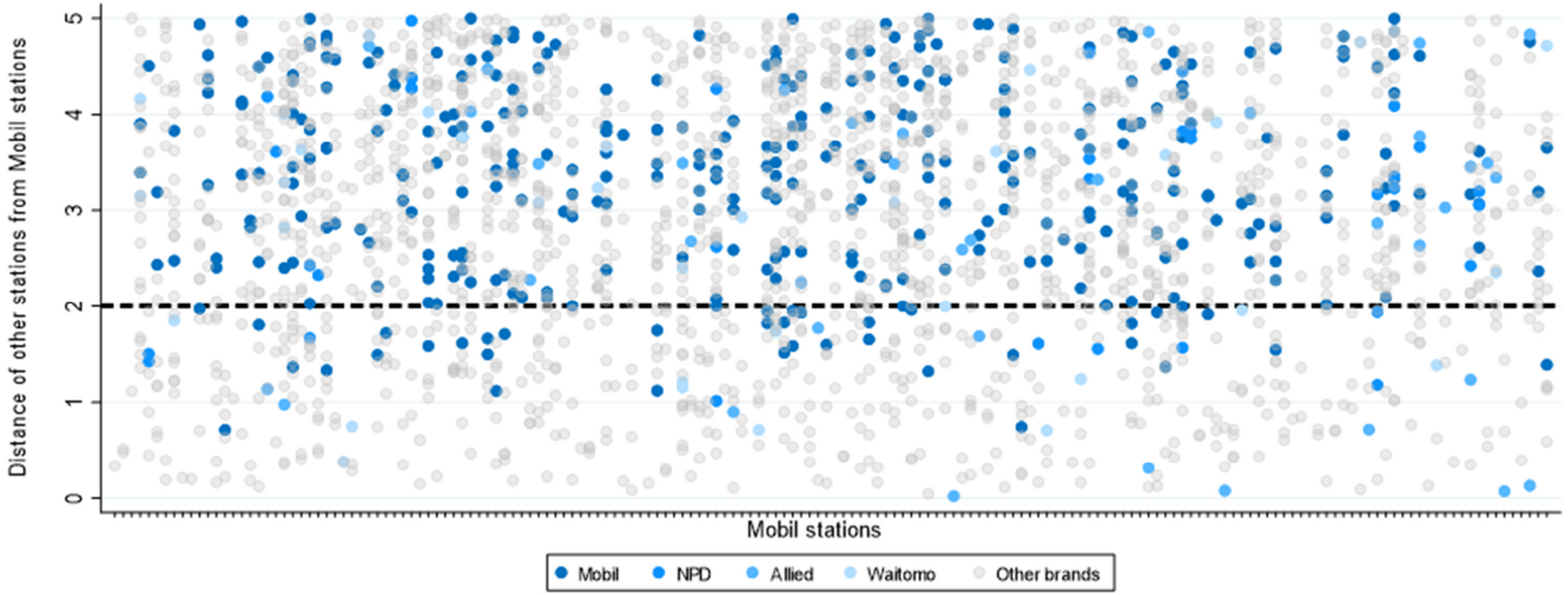
[597] See Attachment H.

[598] These 173 retail sites include all retail sites using the Mobil brand, including company-owned, company-controlled retail sites and retail sites owned by independent dealers.

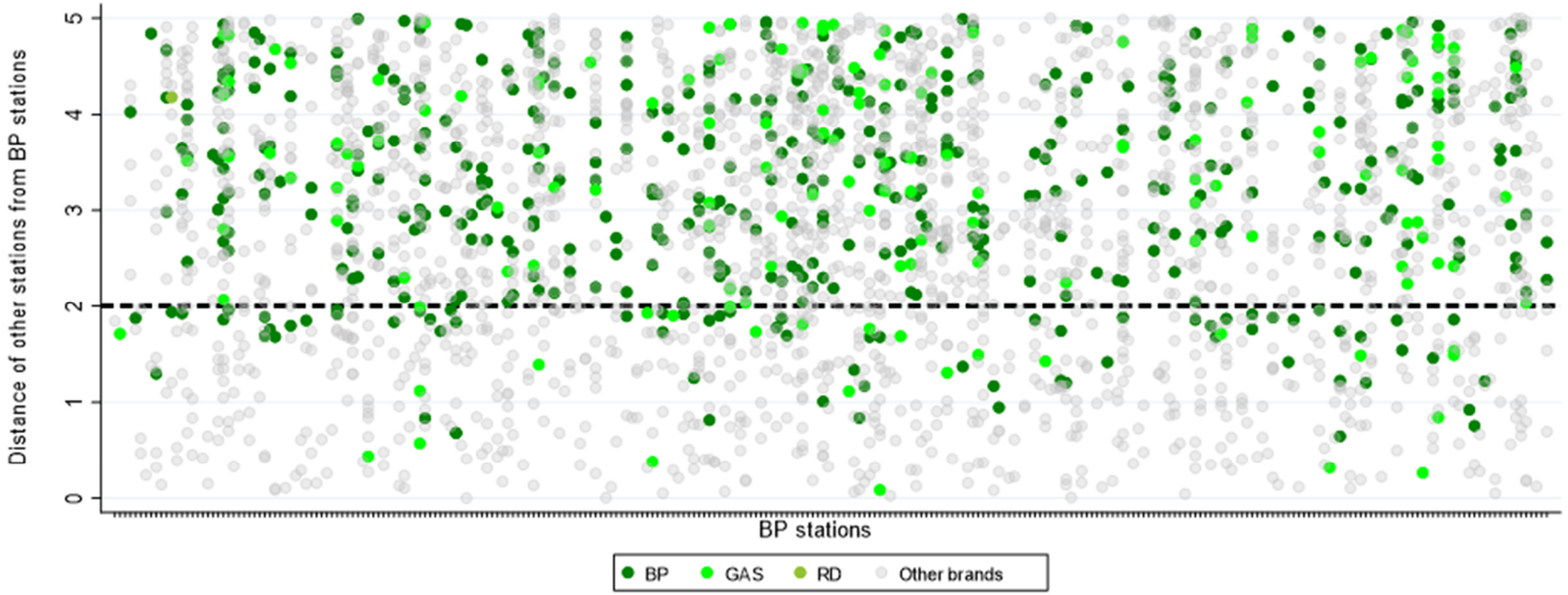
Figure 6.1 Distance from Mobil branded retail sites of other Mobil supplied retail sites and all other retail sites



Source: Commerce Commission analysis of data provided by industry participants.[599]

[599] Excludes McKeown sites opened since 2015.

Figure 6.2 Distance from BP branded retail sites of other BP supplied retail sites and all other retail sites



Source: Commerce Commission analysis of data provided by industry participants.[600]

[600] Excludes McKeown sites opened since 2015.

6.30 Our analysis is consistent with evidence from several distributors which told us that a factor in deciding where to build or buy retail sites is the extent to which these retail sites complement, rather than directly compete with, their major's retail networks. One distributor noted that it did not want to "give the people that supply us a punch in the nose."[601] Another distributor noted that it focused on older or smaller retail sites that the majors do not want to operate.[602] Z Energy also acknowledged that current and historic relationships between majors and distributors may contribute to the results of the retail site distance analysis outlined above.[603]

6.31 This is not the case for all distributors, however. Waitomo told us that the location of Mobil branded retail sites has no more bearing on where Waitomo establishes its retail sites than the retail sites of any other brands.[604] The majors also consider that distributors are free to establish retail sites where they see fit.[605]

6.32 While distributors expressed varied views about the extent to which their retail site location is influenced by their relationship with their supplier, we consider that for some, consideration of that relationship is a factor in their decision making. Consequently, these relationships between distributors and majors have often evolved to create a path-dependent pattern of retail development that reinforces the vertical arrangements between majors and distributors in the wholesale and retail markets.

6.33 We also consider that these network patterns can weaken the majors' incentives to compete strongly to supply a new distributor and could be contributing to the low level of switching of wholesale suppliers we have observed in the industry. Even if a distributor wished to switch supply to a different major, the location of the distributors' established retail sites may mean they are unlikely to get a better wholesale price from the same suppliers they would then be competing more

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601 See [ ]

602 See [ ]

603 Z Energy made this acknowledgement in relation to sites of distributors supplied by BP and Mobil, see Z Energy "Z Energy submission on the Commerce Commission's market study into the retail fuel sector: Draft report" (13 September 2019) at [114].

604 See Waitomo "Written comment on the Market Study into the retail fuel sector – Draft Report" (13 September 2019) at page 6; and [ ]

605 For example, see BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [6.4]. BP also stated that it has sought to supply other resellers regardless of the location of those resellers' sites, see BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [6.6]. Z pointed to McKeown expanding its retail network including in direct competition with Z Energy and Caltex sites, eg at Kaiapoi, Dunedin (Anderson's Bay), and Hornby, see Z Energy "Z Energy submission on the Commerce Commission's market study into the retail fuel sector: Draft report" (13 September 2019) at [113.2].

directly against.[606] This same reduced incentive on majors to compete aggressively for some new wholesale customers may also apply to individual dealers, depending on a dealer's specific location and the degree of existing competition in the relevant local retail market. This is discussed further below.

6.34 BP emphasised that even if competition between retailers with the same supplier is reduced as a consequence of the wholesale supply relationship, competition between majors' retail brands and between retail brands supplied by different majors is sufficiently strong.[607] For example, even if a distributor did not locate close to its supplier's retail sites, there is nothing stopping other suppliers and their distributors from locating their retail sites in direct competition.

6.35 However, as we outline below and further in Chapter 7, we do not consider that competition only at the retail level is a sufficient substitute for competition at both the wholesale and retail levels. There are features of retail markets which mean that competition can be expected to be less intense than in the wholesale market. An effective wholesale market is important to help strengthen retail competition. In particular, effective wholesale competition would involve wholesale suppliers actively competing to sell large volumes of fuel to distributors at competitive wholesale prices, regardless of where distributors' retail sites are located. This would better enable resellers to compete prices down in downstream retail markets.[608]

6.36 Additionally, we consider that effective competition between all retail brands, regardless of the original source of the fuel retailed under that brand, is likely to further benefit consumers on both price and non-price factors.[609] This is because even if competition remains between retailers with different sources of wholesale supply as BP proposed, a reduction in competition between retail brands with the

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606 MTA "MTA Submission Commerce Commission Market Study into the Retail Fuel Sector – Draft Report" (13 September 2019) at [7.1.2(a)].

607 BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [6.5].

608 Many experts consider that competition problems occur where retail fuel markets are dominated by a small number of large vertically integrated companies, see OECD Policy Roundtables: Competition in Road Fuel, 2013 at page 5.

609 BP also drew an analogy with fast food franchisees operating under competing brands, see BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [6.5]. We do not consider that this analogy is appropriate, however. In the fast food sector effective product and brand differentiation typically requires tightly controlled retail offerings and relationship-specific investments. This can provide efficiency justifications for restrictive vertical arrangements, such as franchise models. However, these justifications do not necessarily apply to the fuel sector. Within the fuel sector, distributors are able to successfully compete with their own retail brands and offerings, and to do so effectively they require little more than the wholesale supply of fuel from terminal gantries. The homogeneous nature of this wholesale product means that supply could be provided by any fuel importer.

same source of supply reduces the extent of retail competition overall when compared with what it might otherwise be. As discussed further below, we consider that enabling all different retail brand owners, including distributors supplied by majors, to compete more independently would improve competition for retail consumers.

Security of supply is important, particularly for distributors

6.37 Security of supply is a key issue for distributors in particular.[610] The supply risk associated with the relatively tight supply of fuel around much of the country and frequent port coordination events was detailed in Chapter 5. This may also influence some distributors' decisions about where to locate new retail sites.

6.38 Wholesale supply contracts often provide majors with discretion over how they allocate supply amongst their customers in times of actual or potential shortages of fuel. Majors may be more likely to prioritise supply to some distributors over others in the event of port coordination events or shortages. In particular, the majors may favour distributors with whom they have long-term supply relationships.[611] This is especially likely if a major's existing distributors have retail sites that are more complementary to, or a better fit with, the networks of retail sites supplied directly by that major.

6.39 Conversely, as outlined above, a distributor considering switching to another major for wholesale supply is likely to have retail sites that are in direct competition with their new wholesale supplier and/or with distributors already supplied by that major. If a distributor that switches is ultimately de-prioritised in times of actual or potential shortages, real costs may be imposed on them or their downstream customers. For example, fuel may need to be obtained from a terminal further away at greater cost, or if unavailable, distributors and their customers may go without.[612]

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610 [ ]. See also [ ]; [ ]; [ ]; [ ]; Transcript of Consultation Conference Public session on Day 2 (25 September 2019) at 30, lines 18 to 20 and Z Energy "Z Energy Second Submission on the Commerce commission's Market Study into the Retail Fuel Sector: Draft Report" (11 October 2019) at [100].

611 [ ]

612 For example, see [ ]

6.40 Our views are not shared by Z Energy and BP, who consider that security of supply concerns do not inhibit switching by dealers or distributors and that the location of dealers' and distributors' retail sites is not relevant to security of supply.[613] Z Energy explained that during times of tight supply it does not prioritise distributors based on historic relationships or network complementarity, but instead complies with contractual obligations for different levels of supply security that are explicitly negotiated in supply contracts.[614] BP told us that although port coordination events are relatively common, actual stock shortages are relatively uncommon, and there is an established mechanism to ensure that distributors are supplied.[615]

6.41 However, we consider that security of supply is a considerable business risk and that perceptions of insecurity if a distributor switches to another supplier are likely to factor into some distributors' wholesale supply decisions.

Ability to participate in fuel card schemes can influence distributors' wholesale supply decisions and distributors' retail site locations

6.42 As outlined in Chapters 2 and 7, participation in majors' fuel card schemes can be an important influence on a retail site's sales and profitability, as the ability to accept fuel cards gives a distributor and their dealers immediate access to commercial customers using that fuel card. Current participation in a particular fuel card scheme could therefore disincentivise distributors from switching wholesale suppliers.

6.43 If alternative wholesale suppliers are not willing or able to offer an attractive fuel card scheme to distributors, this will limit those suppliers' attractiveness as a source of supply for some distributors. This could occur if a wholesale supplier (importer) does not have nationwide coverage and/or their own fuel card scheme.[616] Consequently, a distributor that switches away from its major could risk losing sales through the loss of fuel card customers. Any reluctance among distributors to switch may further reinforce the difficulty a potential new supplier faces in entering the wholesale market.

6.44 In addition, an ability to participate in a fuel card scheme can influence a distributor's decisions about where new retail sites are located. We discuss each of these factors in turn.

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613 Z Energy "Z Energy submission on the Commerce Commission's market study into the retail fuel sector: Draft report" (13 September 2019) at [116, 117] and BP "BP New Zealand - submissions on the August 2019 - Draft Report" (13 September 2019) at [6.7] to [6.9].

614 Z prioritises customers in times of coordination based on customer category, ie, "gold, silver, and bronze"; see Z Energy "Submission to MBIE on the Fuel Market Performance Study" (13 October 2017).

615 [

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616 Potential examples could include Gull or TOSL.

6.45 Industry participants have varied views about the importance of the ability to participate in a fuel card scheme as a factor in distributors' decisions about their source of wholesale supply. Z Energy and BP consider that an ability to participate in a fuel card scheme does not act as a barrier to distributors switching.[617] Z Energy considers that distributors could negotiate access to schemes operated by other wholesale suppliers and that there are also independent providers such as Cardlink and NZ Fuel Cards.[618]

6.46 Waitomo, who have their own fuel card scheme, also told us that that an ability to participate in their supplier's (Mobil's) fuel card scheme is not an important consideration in relation to wholesale supply options.[619] However, other dealers and distributors consider that their ability to participate in a fuel card scheme is a significant factor for them when considering wholesale supply.[620]

6.47 Additionally, independent fuel card providers such as Cardlink and NZ Fuel Cards do not currently appear to provide a sufficient substitute for fuel card schemes offered by the majors.[621]

6.48 Industry participants also provided varied views about whether access to a wholesale supplier's fuel card scheme influences where a distributor may open new retail sites.

6.49 We have been told that, in some cases, majors allow their fuel cards to be accepted at distributors' retail sites only if the major does not already have a competing retail site nearby.[622] In some cases this has influenced distributors to open new retail sites in locations that fill gaps in a major's own retail network rather than compete directly with the major's existing retail sites.[623]

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617 See Z Energy "Z Energy submission on the Commerce Commission's market study into the retail fuel sector: Draft report" (13 September 2019) at [116], [118] to [120]; BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [6.10].

618 See <https://www.cardlink.co.nz/> and <https://nzfuelcards.co.nz/>. (Viewed on 17 August 2019).

619 Transcript of meeting with Waitomo (29 October 2019) at 24.

620 See MTA "MTA Submission Commerce Commission Market Study into the Retail Fuel Sector – Draft Report" (13 September 2019) at page 25 and [ ]

621 [ ], see [ ] and [ ]

622 See [ ]; [ ] and [ ]

623 [ ]

6.50 However, Waitomo, who have their own fuel card offer, told us that an ability to participate in Mobil's fuel card scheme plays no role in its decisions about where to locate new retail sites.[624] BP noted that there are instances where distributors have opened retail sites notwithstanding the fact that BP has not enabled those retail sites to accept BP fuel cards.[625] Z Energy told us that it does not grant access to its fuel card scheme based on a desire to influence distributors' decisions about retail site location. However, it acknowledges that when it contracts with individual retail sites to allow them to accept its fuel cards, it considers the degree to which they help Z Energy to complete a network of retail sites that accept its fuel cards.[626]

6.51 As a result, we consider that access to fuel card schemes may be important to some distributors and affect their decisions regarding wholesale supply and/or retail site location, whereas it may have little impact for other distributors. On balance, we consider that access to the majors' fuel card schemes is likely to be impacting wholesale competition to some degree, although this impact will likely vary by distributor.

The potential impact of specific terms in wholesale supply agreements

6.52 As well as considering the nature of the relationships that exist between the majors and the dealers and distributors, we have examined whether the terms of the wholesale supply agreements between the majors and their dealers or distributors are reinforcing the level of vertical integration that we have identified in the industry and reducing the scope for competition at the wholesale level.

6.53 A variety of contractual arrangements apply to a range of different wholesale supply relationships throughout the industry, and dealers and distributors expressed a range of views about some common contractual terms and conditions.

6.54 Almost all industry participants emphasised the potential value of freedom of contract and the ability to negotiate terms of supply that best meet their needs and balance the interests of each party.[627] However, some dealers, and most distributors, expressed concern about feeling unable to negotiate terms that provided greater price transparency and better enabled them to assess alternative supply options and switch suppliers if they chose to do so.

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624 See Waitomo "Written comment on the Market Study into the retail fuel sector – Draft Report" (13 September 2019) at [X105] and Transcript of meeting with Waitomo (29 October 2019) at 19. Waitomo has established its own fuel card.

625 BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [6.10].

626 Z Energy "Z Energy submission on the Commerce Commission's market study into the retail fuel sector: Draft report" (13 September 2019) at [117].

627 For example, see Mobil "Submission to the New Zealand Commerce Commission in response to the Market Study into the Retail Fuel Sector Draft Report" (13 September 2019) at page 3 and [ ]

6.55 Many wholesale supply agreements contain restrictive contractual provisions that create an imbalance of rights and obligations between the parties in favour of the majors. We consider below the extent to which these provisions may be affecting competition for the wholesale supply of fuel in New Zealand.

6.56 In doing so, we also acknowledge that when evaluating the potential impact of contractual terms and conditions in any given case, those terms and conditions are best considered in the context of the contract as a whole, rather than in isolation. In any given contract, the impact of one right or obligation can be entrenched or mitigated by other rights and obligations contained in the contract. For example, a right for a supplier to unilaterally vary a term of a contract may be balanced with a right for the purchaser to terminate the contract in the event that the variation is unacceptable to it.

6.57 In addition, a market may be workably competitive and still accommodate a range of contracting preferences and practices. It may be workably competitive despite the existence of some restrictive contracting practices or supply relationships in the presence of others that are less restrictive. However, if restrictive wholesale supply arrangements are similar and prevalent throughout the industry, despite each being restrictive to a greater or lesser extent, competition may be weakened in the market without any individual contract, contractual provision or practice breaching the provisions of the Commerce Act.

6.58 We have considered these contextual matters when reaching our view that less restrictive contractual arrangements would promote competition in both the wholesale and retail markets. They are also relevant to our recommended options for reducing the impact on competition of restrictive contractual arrangements through an industry code.

In many cases there are bargaining power imbalances

6.59 As was the case with discussion of many features of the supply relationship, industry participants vary in their views about the relative commercial bargaining strength of the parties to wholesale supply contracts.

6.60 Having examined these views in the broader context of our study, we consider that the majors often hold a position of relative bargaining strength over dealers and distributors. This may have originated at the time the majors divested retail and commercial businesses to dealers and distributors but has become entrenched through the development of relationships over time. For example, some distributors have become dependent on their suppliers as a consequence of them developing retail networks that complement those of their supplier, accepting their supplier's fuel card and relying on their relationship with their supplier for security of supply in times of shortage. We consider that this dependency reduces the ability of distributors and dealers to test the market for fuel supply when the opportunity arises, and makes them vulnerable to agreeing to restrictive wholesale

supply agreements that may otherwise limit their supply options. This in turn softens wholesale competition.

6.61 A number of dealers and distributors consider that their wholesale supplier holds a position of relative bargaining strength over them. Some consider they had little choice but to accept contracts containing provisions that restrict their business and/or leave them vulnerable to unilateral changes to key terms such as wholesale prices.[628] Others expressed regret at agreeing to their existing terms and conditions or having entered their contracts in good faith without seeking sufficient legal advice.[629]

6.62 The majors disagreed with this characterisation of their wholesale supply relationships. In support of the proposition that many dealers and distributors occupy a position of strength in their commercial negotiations, they cited examples of failed attempts to win new business and/or feeling bound to agree to terms and conditions which were prejudicial to them.[630] Not all distributors expressed concern with their contractual position either.[631]

6.63 These differing perspectives indicate that the nature of supply relationships vary across the industry, as do contract terms and conditions themselves. Some dealers and distributors in strong commercial positions, for example those with retail sites in desirable locations, are better able to negotiate favourable terms such as shorter contracts and more transparent, competitive pricing, and are more likely to have switched supplier at some point.[632] Majors' acceptance of terms that they consider to be suboptimal likely reflects some of these stronger positions among distributors and dealers. In other cases, a major's inability to win a supply contract may be attributed to it offering comparatively poor terms.

6.64 Nevertheless, we consider that wholesale competition is softened by a sufficiently large group of dealers and distributors who:

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628 See MTA "MTA Submission Commerce Commission Market Study into the Retail Fuel Sector – Draft Report" (13 September 2019) at [9.6.2]; MTA "Re: Fuel market study-possible further information from affected retailers" (29 October 2019); [ ]; [ ]; and [ ]

629 See [ ] and [ ]

630 Z Energy "Z Energy submission on the Commerce Commission's market study into the retail fuel sector: Draft report" (13 September 2019) at [121] to [125] and BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [6.12].

631 For example, [ ]

632 For example, [ ]; and [ ]

6.64.1 are currently committed to terms and conditions that create an imbalance in the rights and obligations of the parties and limit contestability in relation to their business; and/or

6.64.2 have developed a dependency on their supplier, as a consequence of their contractual position and/or non-contractual or relationship factors (discussed above), that prevent them from effectively searching for alternative supply or negotiating better terms and conditions of supply even when their existing contracts are due for renewal.

6.65 In relation to the latter, historically, as dealers and distributors acquired retail sites and commercial customer relationships when they entered into their supply contracts, some may have been in a poor position to negotiate particularly favourable contractual terms and conditions. Over time, the commercial positions and potential relative bargaining strength of many parties has changed. For example, some distributors have developed their own retail networks and/or expanded their businesses by acquiring their own commercial customers. Nevertheless, this has not necessarily improved their negotiating position.

6.65.1 Although distributors may have become increasingly important to suppliers as a key route to market for a major's fuel products, as highlighted above, distributors may in the meantime have developed their retail networks to complement those of their wholesale suppliers and become dependent upon access to majors' fuel card schemes.

6.65.2 Distributors are also likely to face significant switching costs and risks associated with switching to another major for wholesale supply at the end of long-term supply contracts.

6.66 These factors make distributors vulnerable to continuing to accept contracts with terms and conditions that limit wholesale competition over the longer term.

6.67 Even as the negotiating positions of some parties do change, contractual positions can take time to modify, particularly if contracts are of long duration and include exclusivity obligations despite evolving distributor businesses and/or growing distributor volumes. One distributor referred to successive contract negotiations as part of a 'journey' towards greater contractual freedom and less dependence on a single supplier.[633]

6.68 Additionally, some dealers or distributors may be willing to accept restrictive contractual agreements if the majors effectively share in excess returns being derived from weak competition. We noted above that some dealers and distributors did not express any dissatisfaction with their wholesale supply

633 [ ]

agreements.[634] Some distributors also appear to be making returns that are above the levels we would expect in a workably competitive market.[635] These returns may reflect these distributors negotiating more favourable wholesale prices, but not necessarily passing these margins on to consumers in the form of price competition in retail markets.

6.69 Our recommendations include measures to address the use of some contractual terms and conditions that we consider are adversely affecting the effective operation of the wholesale fuel market by limiting the scope for dealers and distributors to negotiate contracts that give them more flexible supply options.

Restrictive contractual provisions affect competition in wholesale supply markets

6.70 A range of factors influence the effect on competition of a restrictive contractual provision in a wholesale supply agreement that requires, for example, exclusivity or an extended notice period for termination. Those factors include the characteristics of an industry, the market power of the parties to the agreement and the extent to which similar restrictive contractual provisions are used across an industry.[636] These types of restrictive contractual provisions are not uncommon across a range of industries, and we have not assessed the lawfulness of individual provisions as this is outside the scope of this study.

6.71 We also acknowledged earlier that these types of restrictive contractual provisions can have a variety of benefits and lead to pro-competitive outcomes. Generally, these benefits relate to facilitating relationship-specific investments by avoiding hold-up problems,[637] reducing transaction costs, and/or aligning incentives regarding promotional or other activities related to the sale of differentiated products.

6.72 However, structural vertical integration and wholesale supply agreements with similar effects can reduce the scope for wholesale transactions and result in the loss of high-powered, market-based incentives to reduce costs and drive significant efficiencies. This is particularly the case in relation to the production of

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634 [ ]

635 See Chapter 3 for further details.

636 For a discussion on the pros and cons of vertical restraints see for example: Simon Bishop and Mike Walker *The Economics of EC Competition Law: Concepts, Application and Measurement (*3rd ed, Sweet & Maxwell, London, 2010) at [5-037] and Mossimo Motta *Competition Law: Theory and Practice* (Cambridge, Cambridge, 2004) at Chapter 6.

637 In the absence of vertical integration or contractual restriction between two parties, one of these parties may be reluctant to undertake otherwise efficient investment because to do so would expose them to a loss of bargaining power and subsequent hold-up risk. In this sector either wholesale suppliers or dealers and distributors could be exposed to such risks.

homogeneous goods for which relationship-specific investments and/or sales-specific activities or after sales service are less important.[638]

6.73 Additionally, vertical integration and restrictive wholesale agreements can weaken wholesale competition including by:[639]

6.73.1 raising barriers to entry for new entrants through either customer or input foreclosure;[640] and/or

6.73.2 softening competition or facilitating coordination between existing wholesale suppliers.

6.74 In this study we have differentiated between dealers which typically sell retail fuel under the brand of their wholesale supplier, and distributors which typically acquire wholesale fuel and resell it as retail fuel under their own retail brand.

6.75 We consider that the effects on wholesale competition of the restrictive contractual provisions identified in this chapter are likely to vary depending on whether the provisions are contained in contracts with dealers or distributors. In particular, we consider that dealer contracts that contain restrictive provisions are more likely to have pro-competitive effects if:

6.75.1 the dealer uses the wholesale supplier's branding, established systems and other intellectual property; or

6.75.2 the supplier makes relationship-specific investment in the dealer's business, such as new storage tanks or shop fitouts.

6.76 In those circumstances, restrictive contractual provisions such as exclusive wholesale supply arrangements for a reasonable and defined duration can address the risk of hold-up in relation to past investments and incentivise new relationship-specific investment by wholesale suppliers by ensuring that an adequate return on that investment is earned over the term of the supply arrangement.

6.77 In contrast, where distributors sell fuel under their own brand and obtain little more than the wholesale supply of a homogeneous product from their supplier, pro-competitive rationales for restrictive contractual provisions are less likely and the contracts are more likely to have an adverse effect on competition.

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638 Peter Klein and Howard Shelanski, "Transactions cost economics in practice: Applications and evidence" (1995) 11 Journal of Law, Economics, & Organization at 335-361.

639 Commerce Commission "Mergers and acquisitions guidelines" (July 2019) at 35 for further explanation of these impacts.

640 See also Steven Salop "Economic analysis of exclusionary vertical conduct: Where Chicago has overshot the mark", in R Pitofsky (ed) *How the Chicago School overshot the mark: The effect of conservative economic analysis on US antitrust* (2008) at 150.

6.78 Throughout the remainder of this chapter we discuss the potential pro-competitive benefits and detriments associated with different types of restrictive contractual provisions in relation to both dealers and distributors and differentiate between them where relevant.

Restrictive contractual provisions in wholesale supply agreements are affecting the retail fuel market

6.79 Having consulted with a variety of industry participants and observed a number of outcomes in the wholesale market, we consider that the restrictive provisions contained in many wholesale supply agreements between majors and dealers or distributors are having a detrimental impact on wholesale competition.

6.80 We are particularly concerned that the existence of these contractual provisions replicates the economic effects of vertical integration across an industry that is already characterised by having over half of all retail fuel volumes sold via vertically integrated supply chains. We consider that these contractual provisions are often not justified by efficiency rationales. They do, however, contribute to the evidence we have seen of dealers and distributors not actively seeking to switch suppliers, and thus the majors not vigorously competing to supply them, even when some long-term contracts come up for renewal.

6.81 As a result, we consider that:

6.81.1 many wholesale transactions effectively bypass what might otherwise be a competitive wholesale market;

6.81.2 some dealers and distributors are disincentivised and/or prevented from supporting a new importer to enter into the market; and

6.81.3 the level of competition in the wholesale market is impacting competition in the retail market. We discuss the implications for competition in the retail market further below and in Chapter 7.

6.82 As outlined in more detail below, given that fuel is a homogeneous product with a simple supply chain, we are sceptical about the likely benefits of many of the restrictive contractual provisions that are contained in wholesale supply agreements in the industry. We are aware that over time some wholesale supply agreements have become less restrictive as a result of negotiations between majors and distributors.[641] However, as outlined in more detail in Chapter 8, we

[641] [ ]; [ ]; [ ]; and [ ]

consider competition could be improved in the wholesale and retail markets through alternative, less restrictive contractual arrangements without compromising efficient relationship-investment between wholesale suppliers and resellers.

Contractual provisions that may be hindering competition

6.83 We have acknowledged that there are some differences in the agreements between the majors and distributors and the majors and dealers. Some contractual provisions also differ according to the degree of assistance provided by a major to a dealer. However, many of the provisions in these agreements are similar or have a similar effect on competition, so we do not differentiate between these contracts unless otherwise specified.

Long-term, minimum volume and/or exclusive supply agreements

6.84 It appears common for wholesale supply agreements to contain a combination of requirements that dealers or distributors take specified volumes and/or long-term exclusive supply commitments, often around 10 to 15 years, in many cases longer, and in rare cases into perpetuity.[642]

6.85 As described above, we understand that some of these restrictions arose following deregulation when the majors transferred ownership to dealers and distributors, often advancing vendor finance.[643] In some cases, dealers or distributors consider long-term contracts provide security.[644]

6.86 Even now, majors occasionally invest in upgrading or improving dealers' retail sites, for instance undertaking shop refurbishments or replacing old storage tanks. We were advised that rather than require dealers and distributors to provide upfront payments, or to undertake these investments themselves, the value of these assets

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We consider that the fact that some wholesale arrangements have become less restrictive over time is consistent with our contention that, in at least some cases, there was previously an imbalance of bargaining power in favour of the majors. Additionally, the fact that some wholesale arrangements have become less restrictive to some degree, does not imply that any bargaining power imbalance has been completely rectified. Rather, we consider that considerable imbalances remain.

642 Without an exclusivity requirement any duration requirements are effectively non-binding, and without long duration any exclusivity provision is of limited effect.

We note duration may be expressed either in terms of time, eg, X years, or in terms of total minimum volume purchased, eg, Y million litres, where the supply contract applies for either a set duration or until the minimum volume is purchased, whichever occurs last, see [ ] Also, volume commitments can create quasi-exclusivity in wholesale supply agreements due to the volume required to be sold to perform the agreement.

643 We note the distributors may also enter into long-term exclusive supply contracts with independent dealers who wish to use the distributor's brand, for example GAS. See Transcript of meeting with GAS (12 April 2019) at 3.

644 MTA "MTA Submission: Commerce Commission Market Study into the Retail Fuel Sector – Draft Report" (13 September 2019) at 28.

and cost of these investments may instead be recovered over the course of the supply contract.[645] Typically incentives between branded dealers and the majors which own those brands are broadly aligned, in terms of sales volumes and also in terms of maintaining the value of the brand. For this reason, it is not uncommon for majors to provide relationship-specific investments to dealers in exchange for wholesale supply secured for a particular period of time.[646]

6.87 However, it does not appear to us that the relatively long durations of exclusive wholesale supply agreements with dealers are always justified by the recovery of the costs of any upfront or ongoing assistance or capital investments. It appears that in many cases, these contracts could achieve the benefits claimed under terms of shorter duration.

6.88 We have also not identified many relationship-specific investments in the supply of fuel to distributors that justify long-term exclusive and/or minimum volume contracts. The majors typically provide distributors with fuel at the terminal. Distributors are largely responsible for their own haulage, storage and retail assets, including brands. Even in the isolated instance where a distributor relies on its wholesale supplier to arrange haulage services, we understand that there is likely little relationship-specific investment required by the major if haulage is arranged on this basis.

6.89 Consequently, we have been unable to determine that there is a significant need for the majors to undertake relationship-specific investment in the process of supplying distributors in particular, and in some cases dealers.[647] Given the relatively large volumes purchased by some distributors, there are efficiency gains to be achieved from majors having some certainty around likely future demand. However, in our view this does not justify the extent of the volume requirements and/or exclusivity imposed in many of these wholesale supply agreements for what is the supply of an undifferentiated, homogeneous commodity.

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645 Transcript of meeting with Mobil (21 June 2019) at 29 - 33. One major suggested that, to the extent that any up-front, lump-sum consideration is tied to a long-term exclusive contract that has a specific minimum volume requirement, this can be considered as akin to an up-front cents per litre discount, see [ ]

646 [ ] and [ ] We also note that in the absence of sufficient wholesale price transparency it can be difficult, if not impossible, for distributors or dealers to accurately distinguish between the recovery of these costs or wholesale margins more generally. Wholesale pricing is discussed further below.

647 We are aware of one instance of additional assistance provided to a distributor, however given that this appears to be in the nature of ongoing annual support, it is not clear that this necessitates a long-term contract period, see [ ]

6.90 It does not appear necessary for supply contracts with distributors to be exclusive to provide majors with sufficient certainty to optimise supply. Non-exclusive agreements that allow for supply to be split between wholesale suppliers, say in fixed proportions, could also provide the same or a similar level of certainty about future volumes. We expect that, for example, competition could be facilitated if distributors had the option of obtaining at least some supply from a potential new entrant, such as TOSL. As long as any splitting of supply was done in fixed proportions and/or forecast sufficiently in advance, we do not expect that it would necessarily either complicate or increase uncertainty in distributors' supply relationships with majors. In fact, distributors may be able to provide greater certainty regarding future demand to a primary wholesale supplier (say a major) by locking in a fixed volume contract, and then using their secondary wholesale supplier to supply the difference on a variable volume basis.

6.91 Similarly, we do not accept that contracts of 10 to 15 years duration are necessary for the majors' forward planning. Some of the largest supply contracts in the sector outside of those with distributors are typically for much shorter durations. We note that BP lost the contract to supply Foodstuffs to Mobil in 2012, and Mobil subsequently lost this contract in 2018.[648] We note that in its submission, Z Energy considered that a seven year maximum limit was likely all that was needed to strike a balance between efficiency-related and competition-related considerations.[649]

6.92 Nor do there appear to be complex coordination problems involved in wholesale supply to retail that require restrictive contractual terms. Unlike more complex products, end consumers of retail fuel do not typically require specialist retail or after sales assistance.

6.93 The effect of these long-term, minimum volume and/or exclusive supply contracts is to remove the potential for more frequent wholesale transactions or negotiations from the market.[650] As we discuss further below, even where there

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[648] See *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10 at [114.3] and <http://www.scoop.co.nz/stories/BU1805/S00130/z-energy-pushes-strategy-30-with-foodstuffs-tie-up.htm>. (Viewed on 17 August 2019).

[649] Z Energy "Z Energy submission on the Commerce Commission's market study into the retail fuel sector: Draft report" (13 September 2019) at [131].

[650] BP considered that, in relation to dealers, there are a material number of BP sites that come up for contract negotiation every year, and switching by dealers does occur, see BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at at [6.17]. However, we estimate that the majority of independently owned dealer sites will not be up for renegotiation before 2025. Once rights of renewal held by wholesale suppliers are accounted for, we estimate that a material number of sites are unlikely to have the opportunity to renegotiate before 2030, with many even later than this. The longest duration until a dealer site will necessarily have the ability to renegotiate a wholesale supply contract is 2061, see
[ ];
[ ] and
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are clauses that allow for termination during the period of the contract, other terms of the contracts such as rights of first refusal, information disclosure requirements, transfer of goodwill, and liquidated damages, may disincentivise dealers and distributors from terminating contracts.

6.94 We consider that long-term exclusive contracts reduce rivalry between existing wholesale suppliers and are likely to deter potential entrants. They potentially foreclose wholesale customers from potential entrants or importers at the wholesale level and are likely to deter entry for those potential entrants who become aware of the terms restraining their potential customers.

6.95 We expect that far shorter terms in wholesale supply agreements with distributors, say three to five years, would provide the majors with sufficient certainty regarding likely future wholesale purchases to optimise delivery services so as to minimise costs. We note that some majors indicated that they can adjust supply volumes relatively easily given sufficient warning, for instance to win new supply contracts.[651] This suggests that supply contracts need not be fixed for longer terms to avoid significant supply costs from adjusting volumes. Rather, all that may be needed to enable efficient re-optimisation of supply chains is a sufficient warning period of impending volume changes.

6.96 Some majors raised the need for exclusivity of supply to ensure product quality.[652] To the extent that additives added by majors to branded fuel products are sold by dealers or that there can occasionally be issues relating to contaminated product, this may provide a justification for ensuring exclusive supply to dealers. However, this does not justify exclusive contracts of more than three to five years.

6.97 It does not appear that a similar justification can be applied to distributors that operate and sell fuel under their own brands. We consider that such distributors should have options for diversifying their sources of supply. We note that obtaining supply from multiple suppliers is not unusual in other wholesale markets, for example, in Australia.[653]

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651 See Z Energy "Z Energy submission on the Commerce Commission's market study into the retail fuel sector: Draft report" (13 September 2019) at [125] and BP "Commerce Commission Retail Fuel Market Study: BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019)at [5.8].

652 [ ] and [ ]

653 [ ]; [ ]; and [ ]

Termination provisions and rights of renewal

6.98 Most commercial supply contracts contain termination provisions relating to the performance of a party to the contract or particular events such as change of ownership or force majeure.

6.99 However, some termination provisions give the majors a wide degree of discretion to terminate a contract, sometimes immediately, on the basis of performance issues, such as failure to meet minimum volume requirements.

6.100 Further, upon completion or termination of a supply contract some distributors are required to provide the major who supplies them with information relating to their business, for example customer information and contact details.[654]

6.101 The notice periods for rights of renewal and termination periods also vary significantly from one month to two years.[655] Some contracts include either automatic or unilateral rights of renewal that allow majors to renew existing wholesale supply agreements for one or more pre-determined periods, for example five or ten years.[656] Some agreements also give the major the sole discretion to terminate.

6.102 We consider that the more onerous of these provisions either disincentivise switching in the market, particularly by distributors, or prevent it altogether even at the end of the initial contract term. These terms therefore make it more difficult for new importers to enter the market and softens wholesale competition between the majors.

6.103 As outlined above, minimum volume requirements are common in the industry and can create a form of exclusivity even if the contract does not explicitly require exclusivity. The extended notice periods for renewal or termination also mean that there are lengthy lead-in times for any distributors seeking to switch. We are not persuaded that notice periods as long as two years serve any legitimate business purpose. Conversely, the ability of the majors to terminate immediately or within short periods of time in certain circumstances can make it difficult for dealers and distributors to find suitable alternatives and reduces the bargaining power they are likely to have in these situations.

Transfer of ownership/rights of first refusal over ownership transfer

6.104 Many wholesale supply contracts contain clauses that effectively allow the majors to veto any transfer of ownership by dealers and distributors, or provide majors

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with a first right of refusal regarding any potential transfer of ownership.[657] Some contracts may also provide a major with the option to unilaterally acquire resellers' businesses.[658]

6.105 These clauses can protect the majors from an unqualified individual or party taking control over an important function within the distribution channel. Examples of such parties may include those with a poor credit history and/or insufficient skills, experience, or acumen to operate a distributor or dealer business successfully.

6.106 However, these clauses may also limit the ability of the dealers or distributors to make independent decisions about the conduct of their businesses and give the majors a degree of control over dealers and distributors.

6.107 To the extent that an ownership veto protects a major's interest in ensuring dealers and distributors operate in a manner aligned with the interests and incentives of the major that is their supplier, such restrictions are likely to be justified in relation to the wholesale supply to dealers that are aligned to, and operate under, their major's retail brand. They may also be justified if the major owns some assets on the retail sites, for example land or storage tanks. In these cases, having tighter control over the ownership of branded dealer retail sites may be warranted to ensure the major is able to protect their investment in their brand or assets.[659]

6.108 However, in relation to distributors that typically own and operate their own brands, we do not consider that there is a pro-competitive justification for wider restrictions on the transfer of ownership outside of more general requirements to assess the suitability of a purchaser to acquire the distributor's contractual rights and obligations. Additionally, some transfer of ownership provisions in relation to dealers may also be excessively onerous.

Restraint of trade, liquidated damages, and first right of refusal over supply

6.109 Some wholesale supply contracts contain clauses that limit distributors' ability to compete in retail markets at the expiry of their existing contract or may limit the ability of distributors to test the market and negotiate new wholesale supply arrangements.

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659 Z Energy submitted that dealers are better considered as a devolution of their supplier's business model, and although they are independent businesses, they are components of parts of the supplier's brand and network, see Z Energy "Z Energy submission on the Commerce Commission's market study into the retail fuel sector: Draft report" (13 September 2019) at [139]. Z Energy added that it changes retail sites in and out of the dealer model or the company owned model over time, and that dealers should not be considered as part of the wholesale market in the same way as distributors, See Transcript of Consultation Conference Public session on Day 2 (25 September 2019) at page 32 (lines 9-18).

6.110 Some agreements prevent distributors from competing with their current major either directly or indirectly in retail markets for periods of between six months to two years after termination of supply and/or if distributors sell their businesses to the major that they were previously supplied by.[660]

6.111 Some provisions also require the payment of liquidated damages, for example if a wholesale customer sells fuel supplied by a rival wholesaler to its current supplier's customers after the expiry of the current supply contract, or if volume quotas are not met.[661] We understand that these clauses are likely to have been included when the current agreements between majors and distributors were first entered into and the majors transferred elements of their commercial businesses, along with upfront capital payments and other assets to distributors. However, we do not consider that these same justifications attach to current supply contracts.

6.112 The use of restraint of trade and liquidated damages clauses are not uncommon in a broad range of commercial contracts. As outlined above, we have not assessed the lawfulness of these provisions. However, we consider that these clauses are likely to be hindering competition in wholesale and retail fuel markets by either deterring or explicitly prohibiting distributors or dealers from competing with their wholesale suppliers at the expiration of their current supply agreements or from switching wholesalers. We consider that these clauses are unlikely to be reasonably necessary in a market which involves the supply of a relatively homogeneous product such as fuel.

6.113 We have also identified a form of restraint of trade relating to fuel card customers that precludes the soliciting of existing fuel card customers within a defined period.[662] In contrast to the restraint of trade clauses discussed above, we consider that non-solicitation restraints relating to fuel cards during a termination notification period are, on balance, more likely to be justifiable. In the absence of such a non-solicitation clause, there may be a disincentive for a major to allow its fuel cards to be accepted at retail sites owned and operated by downstream dealers and distributors. Without access to a major's fuel card scheme, such dealers and distributors could find it more difficult to compete in downstream retail markets, as we discussed above.

6.114 We have also considered provisions containing first rights of refusal which apply if a distributor wishes to source additional fuels from another supplier or negotiates fuel supply from another supplier at the end of their agreement. These provisions may also inhibit competition in the wholesale market by making it more difficult for

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distributors to source fuels from alternative suppliers.[663] A right of first refusal over alternative supply can discourage prospective wholesale suppliers from bidding for a distributor if they know that whatever they offer only has to be matched by the incumbent supplier. In such cases, putting in a competitive bid may mean that the alternative supplier is not likely to win the business and may instead face a downstream retail competitor with a lower input price than would be the case if they did not bid. These terms may also deter the incumbent from providing their best offer upfront in negotiations because they only need to match any rival wholesale offers.

Exclusive territories

6.115 There are at least two instances of a distributor not being permitted to operate outside of an assigned territory without prior approval of the major.[664] Such restrictions may have avoided hold-up problems for distributors when these commercial businesses were first divested by majors. They may have protected relationship-specific investments that distributors made at that time and encouraged expansion of distributors in particular territories.

6.116 Exclusive territories are widely used in a range of different commercial contexts, and often have a pro-competitive purpose and effect. Nevertheless, we have not identified compelling justifications for the use of exclusive territories in current distribution networks. We note that one major previously removed all geographic limitations on its distributors, to the benefit of competition.[665] We consider that existing territorial restrictions weaken wholesale competition and may no longer be justified on pro-competitive grounds.

Restrictive covenants

6.117 Each year a small number of retail sites are closed. This can be a result of changes in traffic patterns, for instance when new roads lead to existing retail sites being bypassed, or because of the development of new retail sites that result in existing retail sites no longer being viable.

6.118 Once closed, these retail sites are typically sold. Prior to sale, some retail sites have restrictive Non-Petroleum Use (NPU) covenants placed on the property title that

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prevent any future retail site owners from being able to use the properties as retail fuel sites.[666]

6.119 We understand that one rationale for NPU covenants is that they can prevent potential disputes over who is liable for any subsequent clean-up of site contamination.[667] We understand that this could potentially occur where a former retail site is closed, remediated, and sold, and the new owner re-establishes it as a retail fuel site. If the retail fuel site is subsequently found to be contaminated, this could lead to a dispute over which party is liable for any necessary remediation work.

6.120 NPU covenants can also be used for anticompetitive purposes, such as ensuring that if a retail site owner is investing in a new retail site nearby, the old site cannot be re-established as a retail site by a rival as this could adversely affect the retail site owner's ability to recover investment in the new retail site.

6.121 The use of NPU covenants prevents new retail entry in these sites. While this may assist the retailer (or the major supplying a dealer) from recovering any investment in a new retail site nearby,[668] it also denies the possibility of new retail entry in the existing site, a site that must have some good attributes for fuel retailing otherwise it would not have been selected as a retail site previously. BP claimed that it is not usually difficult for fuel firms to obtain suitable properties for new retail sites in any event.[669] However, this view was challenged by other market participants.[670]

6.122 We consider that NPU covenants create a barrier to retail competition. A key criterion for investment in retail sites is finding a property with suitable characteristics at as low a cost as possible. By placing restrictive covenants on sites that have already proven to have many of the characteristics necessary, retail entry is made costlier and more difficult. We consider that other less restrictive methods may be more appropriate for achieving any efficiencies that these covenants may be generating.

Comparisons with other jurisdictions

6.123 We note that various competition and regulatory agencies around the world have considered the state of competition in their fuel markets, and in particular have looked into how competition in upstream wholesale markets can affect

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669 BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [6.25].

670 See Transcript of meeting with Waitomo (29 October 2019) at 20, and Gull submission on preliminary issues paper (22 February 2019) at 1.

downstream retail markets. We note that many have identified similar market features and potential impacts on competition as we have.

6.124 The OECD held a Policy Roundtable on Competition Policy for Vertical Relations in Gasoline Retailing, in 2008,[671] and a Policy Roundtable regarding Competition in Road Fuel in 2013.[672] The former Roundtable outlined research which indicated that the efficiency gains from vertical integration can be outweighed by the associated weakening of competition at the wholesale level. Both Roundtables drew on the experiences of OECD member countries within that sector. In aggregate, their experiences were very similar to those reflected in our preliminary views.

6.125 In particular, it appears that many of the contractual provisions we have identified in New Zealand supply agreements are common in other jurisdictions. Like us, many countries considered the introduction of more competition at the wholesale level could lead to more competitive outcomes at the retail level. Removal of minimum quantity requirements and excessively long-term exclusive contracts were often recommended as ways to achieve this.

6.126 The Roundtable participants also debated the benefits and costs of vertical integration. There was evidence of the importance of unbranded independent retailers for competition in retail markets and it was observed that their independence is intrinsically linked to their contractual relationships with wholesalers.

Majors have significant control over wholesale pricing

6.127 In addition to the effects on the wholesale market that we consider may be arising from some of the terms contained in wholesale supply agreements, our review of these agreements also indicates that:

6.127.1 transparency and/or certainty of wholesale pricing for dealers and distributors is absent in many wholesale supply contracts;[673]

6.127.2 majors typically have the ability to unilaterally alter wholesale prices and this provides them with the scope to strongly influence, or in some cases effectively control, the downstream retail prices set by dealers and distributors. This is in addition to the fact that the majors directly control retail prices at their own retail sites; and

671 OECD Policy Roundtables: Competition Policy for Vertical Relations in Gasoline Retailing, 2008.

672 OECD Policy Roundtables: Competition in Road Fuel, 2013.

673 Commerce Commission review of distributor and dealer contracts.

6.127.3 many wholesale agreements require dealers or distributors to provide their suppliers with significant financial and performance related information on a regular basis or when requested.

6.128 We discuss each of these matters in more detail below.

6.129 The detail, transparency and certainty of the various wholesale pricing formulae set out in wholesale supply agreements varies substantially across the different agreements in the sector. Some agreements contain wholesale price formulae which may be useful as a basis for comparison if other majors quote prices using the same formula.[674] Some other wholesale supply contracts entered into by the majors use retail-minus wholesale pricing.[675]

6.130 However, many contracts provide little in the way of forward-looking price transparency.[676] Some dealers and distributors discover their wholesale price only after they have taken ownership of the product and are invoiced by their supplier.

6.131 One major informed us that the discretion to unilaterally alter wholesale prices enables the majors to accommodate price fluctuations caused by underlying oil prices. For instance, oil prices change constantly but majors may invoice their wholesale customers on a less frequent, periodic basis (eg, weekly).[677]

6.132 This ability for majors to alter wholesale prices may ensure that any future changes in the other costs of providing wholesale supply can also be reflected in wholesale prices, for example wages or logistics costs.[678] However, this leaves the dealers and distributors bearing the risks associated with any increase in costs. Dealers and distributors are also potentially exposed if, for example, the majors increase wholesale prices to pursue greater margins.[679]

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674 For example, see [ ] in particular [ ] BP states that it considers pricing terms within its wholesale supply contracts to be fair and transparent, see BP submission on Draft Report, 13 September 2019, at [6.26].

675 For example, [ ]

676 [ ]; [ ]; [ ] and [ ]

677 [ ]

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6.133 We consider that the majors are able to effectively create a price floor under which dealers and distributors cannot reduce retail prices. They can do this through the use of explicit retail-minus wholesale pricing formulae or simply via the unilateral ability to alter wholesale prices and margins during the term of supply contracts without any rights for dealers or distributors to negotiate the price. This may allow the majors to exert upwards pressure on the retail prices set by dealers and distributors. In this regard, retail-minus wholesale pricing terms, in particular, are not dissimilar to some of the agency arrangements that apply to some dealers.

6.134 Many of the wholesale supply agreements also include provisions that require dealers and distributors to provide financial information to majors on a regular periodic basis and/or when requested. This information may include monthly profit and loss accounts, statements of financial position, projected cash flows, and other similar information. We understand that the majors may not always request this information, but these provisions may be used by majors if dealers, in particular, are claiming that wholesale prices are rendering them uncompetitive in specific downstream retail markets.[680] In these cases, the provision of financial information gives majors a better understanding of the maximum wholesale prices they can charge before putting their volumes via dealers and distributors under threat.

6.135 It is our understanding that, historically, dealers or distributors were generally unconcerned with both pricing discretion and the lack of transparency regarding wholesale prices. [681] Rather, many dealers and distributors willingly entered into wholesale supply contracts that provided them with little, if any, explicit protection or security over wholesale pricing.

6.136 This was because dealers and distributors considered that their interests were sufficiently aligned with the majors, so that the majors would be incentivised to set wholesale prices at levels that would enable dealers and distributors to compete in downstream markets.

6.137 We understand that this perception was often backed up by the many years of experience that various distributors had dealing with specific majors and the fact that dealers and distributors were, and remain, an important route to market for

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] See also
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[ ]; and [ ]
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680 One major told us that such requirements are historical and acknowledged that they may not be necessary, see [ ]

681 [ ]

majors. Many dealers and distributors entered into these agreements in good faith that the majors would not set wholesale prices in a way that would adversely impact on dealers and distributors.[682]

6.138 However, the retail sector has evolved significantly since many of these wholesale supply agreements were first entered into. As outlined above, distributors that were focused primarily on commercial markets have since expanded into adjacent retail markets. Additionally, as described above dealers or distributors subject to long-term contracts can be exposed to changes in approaches to wholesale pricing if the incentives or commercial strategy of the major supplying them changes over time.[683]

6.139 We also note that even if the interests of the majors and dealers and distributors are aligned, it does not mean that the pricing methodologies used in the industry are for the long-term benefit of consumers. Retail-minus wholesale pricing, in particular, is likely to set a price floor that limits the ability of dealers and distributors to compete in the downstream retail market. Although they may appear to provide dealers and distributors more certainty, retail-minus wholesale pricing may also provide majors with discretion over prices based on how the retail price benchmark is defined.[684]

6.140 Even if some distributors are setting retail prices at unmanned retail sites that are typically priced below full service retail sites of the majors, this does not imply that the wholesale prices those distributors are facing are necessarily as low as they would be in a workably competitive wholesale market.

6.141 Further, even if a given wholesaler adopts a strategy of lower wholesale prices in an effort to boost volumes through its distributors at a given point in time, this strategy could easily be reversed without the constant competitive pressure that would arise within a workably competitive wholesale market.[685]

6.142 We understand that large commercial purchasers are typically provided with greater certainty and transparency regarding the mechanism or formula by which prices will be set for the duration of a supply contract than are distributors with

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682 [ ] We also understand that there are some agreements between a distributor and dealers under which the dealer uses the distributor's brand and the distributor attempts to provide the dealer with a targeted retail margin, even though the distributor has no certainty regarding the wholesale price it faces.

683 [ ]; [ ]; and [ ]

684 [ ]

685 This view is supported by Waitomo, see Waitomo submission on Draft Report, 13 September 2019, at [2.9] and page 6. An example of a change in approach occurred after the acquisition of Shell's assets by Greenstone (now Z Energy) in 2010, as outlined in Chapter 3.

larger volumes. We consider that more price transparency could facilitate greater competition in the wholesale fuel market by allowing dealers and distributors to better evaluate the benefits and costs of different supply options. If distributors were aware of the wholesale margins that were being made by the majors supplying them, they may also be more incentivised to seek better wholesale supply agreements and be less inclined to agree to current terms.

6.143 For example, one option we have recommended is requiring the use of transparent cost-based pricing methodologies. This could include a cost-plus formula based on a MOPS benchmark (ie, "MOPS plus") or Terminal Gate Prices (TGPs).[686] Such pricing approaches are commonly used in supply contracts with large commercial customers as well as in wholesale markets in other jurisdictions, such as Australia and the Pacific Islands.[687] The use of such explicit pricing formula may not provide the majors with the same degree of flexibility to smooth out price fluctuations. However, we consider that the wider use of verifiable, bottom-up pricing mechanisms is likely to provide more certainty for dealers and distributors than top-down, retail-minus approaches and this would also make it easier for buyers to compare rival supply offers on a like-for-like basis.

6.144 In this regard we note that Z Energy considers that the introduction of a TGP regime would "further enhance wholesale competition" by "providing pricing transparency" among other things.[688] We consider that any increased transparency that a TGP regime may provide is likely to be of value only if pricing terms in contracts are sufficiently certain and explicit, and are not subject to change at the discretion of one party.

Market outcomes appear to indicate competition is weak at the wholesale level

6.145 We consider that our concerns about how wholesale relationships are operating in the market are reinforced by some of the outcomes we have observed in the wholesale market during the study.

There appears to be a lack of switching suppliers by distributors

6.146 There is little switching of wholesale suppliers by distributors. We are aware of only two of the existing distributors having switched between majors for wholesale

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686 The underlying product price would consist of a MOPS-based benchmark, perhaps with defined adjustments for product quality, to which additional costs (eg, freight, haulage, terminal throughput fees, etc) are added, along with an explicit wholesale margin.

687 [ ] and [ ] As well as MOPS-based benchmarks, in Australia, in particular, some wholesale prices are instead based on a Terminal Gate Price (TGP) benchmark where TGPs are publicly posted.

688 Z Energy "Z Energy submission on the Commerce Commission's Market Study into the Retail fuel sector: Draft report" (13 September 2019) at [94],[96], and [98].

supply. These are McKeown, who switched from Mobil to Chevron around the early 2000s,[689] and GAS, who switched from Chevron to BP in 2003 when it had a substantially smaller network of retail sites.[690]

6.147 Majors told us that they consider wholesale markets to be competitive and that a lack of switching is not necessarily indicative of weak competition,[691] with one stating that distributors "…hold all of the ultimate power…".[692] We were told that the majors have a vested interest in dealers and distributors being able to compete effectively in downstream markets, so that the majors can increase their wholesale volumes.[693] However, increasing volumes is not necessarily a goal for all majors. Majors seek to maximise profits which may sometimes be achieved by focusing on maximising margins rather than volumes. It would be easier to increase margins if competition was weak at the wholesale level, which in turn reduces the ability for distributors to compete effectively at the retail level because of higher wholesale prices.

6.148 We consider that a lack of switching by distributors supports our observation of the absence of a workably competitive wholesale market. In addition to the restrictions on competition arising from the wholesale supply agreements discussed above, we consider that non-contractual issues such as security of supply, fuel cards and path dependency on the major's retail networks and haulage relationships also contribute to this issue. We have discussed these earlier in this chapter.

Competitive tendering or bidding for wholesale supply contracts is relatively rare

6.149 Consistent with the observations made above, distributors appear to engage in relatively little competitive tendering,[694] and we have been provided with limited examples of bidding for new distributors by majors.

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689 [ ]

690 See <https://www.gas.kiwi/our-story>. Additionally, Rural Fuel previously switched from obtaining supply from Shell to Chevron around 2000, see [ ]

691 [ ]; [ ], BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [6.1], [6.14] and Z Energy "Z Energy submission on the Commerce Commission's Market Study into the Retail fuel sector: Draft report" (13 September 2019) at [124].

692 [ ]

693 For example, [ ]

694 Although it is not uncommon for resellers requiring wholesale supply to actively test the market and seek rival supply offers, for example see [ ] and [ ], we understand that the use of competitive tender processes is relatively rare. We are aware of only one recent example of a competitive tender. This reseller previously ran a competitive tender process, but did not run one in their most recent round of supply negotiations, see [ ]

6.150 One major told us that, apart from the distributors it already supplied, it had only bid for the wholesale supply contract for one other distributor in at least the last five years, if not longer, although it had sought to supply a number of others.[695]

6.151 There may be reasons why prospective wholesale customers prefer negotiated contracts rather than competitive tender processes. However, we note that, in contrast, it is more common for large commercial customers to hold relatively frequent competitive tenders in order to obtain competitive prices.[696]

6.152 We also note that the majors do not compete strongly for some wholesale supply opportunities.[697] We are aware of at least one wholesale customer being refused supply by some suppliers and being offered terms that the prospective customer considered to be uncommercial. We would not expect such outcomes in a workably competitive wholesale market.

Distributors' wholesale supply agreements appear less favourable than those of similar sized commercial customers

6.153 We also understand that large commercial customers' contracts typically contain more transparent, forward-looking MOPS-based pricing terms. Similarly, it is not unusual for commercial supply contract durations to be entered into for terms significantly shorter than distributors' contracts, with around three to five years not uncommon.[698]

Majors often earn higher margins on sales to distributors than similar commercial customers

6.154 We have obtained evidence that margins on wholesale sales to distributors exceed those earned on sales to large commercial customers in a number of instances.[699] We note that in some cases margins to distributors are higher even though the volumes sold to individual distributors are significantly larger than those sold to large commercial customers.[700]

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695 [ ];
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696 *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10 at [342].

697 [ ]; [ ]; and
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6.155 We have also obtained evidence that wholesale margins to some distributors have increased significantly in recent years.

6.156 Additionally, some firms in the sector earn higher margins on the sales of regular and premium petrol than on diesel, particularly at the wholesale level.[701] This is consistent with the fact that a large proportion of diesel is sold in commercial markets, which appear to be more competitive and have lower margins than retail markets.[702] It is likely that the lower margins in the market for commercial customers constrains the margins on the supply of wholesale diesel to distributors to some degree.

Overall, the wholesale market appears materially different to that for large commercial customers

6.157 While the relationships, arrangements, and transactions within the markets for both wholesale and large commercial customers are many and varied, we consider that comparisons between the two are instructive.

6.158 Overall large commercial customers, who often purchase smaller volumes than wholesale customers, tend to more frequently use competitive selection processes such as tenders, have shorter term contracts with less restrictive or onerous terms, receive greater clarity and certainty over prices, and at least in some notable cases face lower prices than wholesale customers. In this regard, we consider that the market for large commercial customers provides a useful comparator for how the wholesale market could more effectively operate.

Despite this, some distributors appear to be relatively profitable

6.159 As discussed in Chapter 3, we have obtained evidence from some distributors that indicates that at least some of them are relatively profitable.[703] This contrasts with information we have obtained relating to the profitability of dealers which suggests a more mixed picture. In particular, we understand that dealers in various retail markets have faced increased pressure on margins and profits in recent years.

] Also see [ ];
[ ];
[ ]; and [ ].
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701 [ ]

702 *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10 at [342].

703 [ ]

6.160 This evidence, combined with that obtained regarding the profitability of the majors, suggests that one or more majors may be engaging in a profit-sharing strategy with selected distributors. This could explain why even if a distributor has a degree of bargaining power and could either switch or threaten to switch wholesale suppliers, these distributors nevertheless agree to enter restrictive wholesale supply agreements that may otherwise limit their supply options. This could also explain some of the ambivalence expressed by some distributors about the restrictive effects of some of the contractual provisions described above.

There are some differences in relation to dealers

6.161 Our observations in relation to dealers are generally similar to those relating to distributors, other than:

6.161.1 we have not seen evidence of high retail margins or high profits being earned by dealers but many dealers have faced downward pressure on margins over recent years;[704]

6.161.2 some wholesale supply agreements between majors and dealers have been altered prior to their expiry. We have been told of several reasons for this, including specific investments or assistance provided to specific dealers by a major. At various times parties to these agreements have also sought to alter standard contracts to reflect more general changes in the sector, such as rising costs. We are also aware of negotiations with dealers which have resulted in some improvements in terms for dealers, although incremental improvements in some contract terms do not necessarily reflect balance in bargaining positions as we discussed earlier;[705] and

6.161.3 there are occasional instances of dealers switching from one wholesale supplier to another, although we note that the degree to which majors compete to supply dealer retail sites varies.[706]

New Zealand's wholesale supply agreements are different to several other geographically proximate jurisdictions

6.162 There appear to be substantial differences between supply arrangements in the New Zealand wholesale markets and those common in Australia or elsewhere in

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704 [ ] and [ ]

705 [ ]; [ ]; and [ ]-[ ]

706 [ ]

the Pacific.[707] Wholesale contracts in these overseas markets typically have shorter durations (three to five years), are less likely to be exclusive, have greater price transparency, and are often based on a cost-plus basis.[708] Although care needs to be taken with comparisons across different jurisdictions, we consider these comparisons are nevertheless instructive.

6.163 We also understand that in Australia it is not uncommon for some distributors to source product from wholesale spot markets in some locations, typically with wholesale prices based on either MOPS or TGPs.[709] We are not aware of any instances of this in New Zealand.

Expansion of some distributors does not prove the wholesale market is competitive

6.164 Despite the observations outlined above which indicate a lack of workable competition in the wholesale market, some distributors have expanded their share of retail supply over recent years. Z Energy and BP have pointed to this as evidence that the wholesale market is workably competitive.[710]

6.165 However, the expansion of several distributors in the retail market does not in itself demonstrate that the wholesale market is workably competitive. Much of the expansion of retail outlets by distributors has occurred outside of the most densely populated urban areas.[711] Distributors' expansion has also typically been focused on low cost, unmanned retail sites and/or smaller retail sites.

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707 [ ]; [ ]; [ ] and [ ]

708 [ ] We note that BP submitted that it is aware of "numerous instances of longer term wholesale supply agreements", see BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [6.31(e)].

709 [ ], [ ]

710 Z Energy "Z Energy submission on the Commerce Commission's Market Study into the Retail fuel sector: Draft report" (13 September 2019) at [110] - [115]; BP "Commerce Commission Retail Fuel Market Study: BP New Zealand – submissions on the August 2019 Draft Report" (13 September 2019) at [6.1] and [6.29]; Transcript of Consultation Conference Public session on Day 2 (25 September 2019) at 33, lines 19 to 29. Z also pointed to Waitomo's statement that "Access to supply in Wellington and the South Island is not a barrier to entry for us" (Waitomo "Written comment on the Market Study into the retail fuel sector – Draft Report" ((13 September 2019) at [2.10]), Z Energy "Z Energy Second Submission on the Commerce commission's Market Study into the Retail Fuel Sector: Draft Report"(11 October 2019), at [61].

711 BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at Annex 1 provides some examples of distributors' sites located in urban areas or on main highways. However, data provided to the Commission regarding retail site locations indicates that the majority of retails sites in urban areas are importer-branded sites, see Attachment H and [ ]

6.166 This reflects the fact that, as outlined above, much of the divestment of retail sites by the majors since the early 2000s occurred in less populated areas, whereas the majors have typically retained larger retail sites in urban centres or along high-traffic routes such as major highways. Consequently, much of the more recent expansion by distributors has been "re-filling the gaps" created following the earlier reduction in retail sites.

6.167 In addition, our analysis of the impact of new retail sites indicates that entry by distributors in local retail markets does not necessarily result in lower prices.[712] Such outcomes are consistent with other observations that at least some distributors face wholesale prices that appear to be higher than we would expect in a workably competitive wholesale market.

6.168 Even where distributors have contributed to stronger retail price competition, we consider that retail price competition could be further strengthened if these distributors were able to source fuel at lower wholesale prices than currently available. In this regard, the evidence indicating that wholesale margins in some cases are relatively high, and have been rising, suggests that wholesale competition is not as effective as it could be.

6.169 The argument that the growth in distributors' retail sites shows that competition at the wholesale level is workable is also inconsistent with the evidence that profitability is higher than would be expected in a workably competitive market, outlined in Chapter 3.

6.170 Finally, as noted in Chapter 3, there is a clear risk that competition could weaken under current settings. This is because the new retail fuel sites that have opened are predominantly supplied with fuel by Mobil. They are therefore potentially exposed to a change in strategy from Mobil (or a buyer of Mobil's business) over wholesale pricing and access. Competition which depends on the individual strategy of one player may not endure over time.

New wholesale entry

6.171 BP has argued that likely new importer entry in the form of TOSL indicates that wholesale customers are not in fact foreclosed and that the wholesale market is workably competitive.[713] However, it is yet to be determined how successful TOSL's entry will be, or the scale that TOSL may be able to achieve. This is particularly the case given the contractual restrictions applying to its potential customers, including

712 See Attachment H for further discussion of this analysis.

713 BP "Commerce Commission Retail Fuel Market Study: BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [1.7] to [1.8], [6.18], [7.1], [7.11]. Waitomo expressed a more nuanced view that entry by the likes of TOSL would introduce more competition into the wholesale market, which Waitomo would welcome; see Waitomo "Written comment on the Market Study into the retail fuel sector - Draft Report" (13 September 2019) at 4 and 6.

the fact that some are tied into long-term, exclusive contracts with other suppliers.[714]

These wholesale relationships adversely affect competition in retail markets

6.172 We consider that the combination of the contractual and non-contractual factors outlined in this chapter has meant that competitive wholesale markets have not emerged post-deregulation. First, the majors became vertically integrated by acquisition, and have in a number of cases replicated this by entering into wholesale supply agreements with dealers and distributors that contain restrictive contractual provisions that seem to have similar effects as structural vertical integration.

6.173 The evidence suggests that many dealers and distributors are locked into stable, long-term relationships with a single major upon whom they have a high degree of dependency, both explicitly through contract and implicitly through a range of non-contractual factors.

6.174 In addition, the levels of returns that at least some distributors are deriving weakens the strong commercial incentive for these distributors to challenge these relationships. Therefore, the potential incentives of both the majors and at least some distributors to maintain stable, integrated relationships means there are limited contestable volumes of fuel in the market to facilitate new entry by independent importers. It also means there is diminished rivalry between current wholesale suppliers.

6.175 Many of the effects of these wholesale supply agreements appear to be broadly similar in nature to those of vertical integration. This includes both a lower level of competition between existing suppliers at the wholesale level and raising entry barriers for new import competition, through customer foreclosure, than if vertical integration was absent.

6.176 This leaves consumers to rely primarily on competition at the retail level to deliver workably competitive outcomes. However, as we discuss in Chapter 7, the scope for retail price competition for fuel is less than in the wholesale market. The retail market is differentiated by geography and service (softening the extent of price competition) and involves small value transactions at transparent prices (which can facilitate retail price coordination).

6.177 Although dealers and distributors may be incentivised to compete for volumes in retail markets, their ability to compete on price is constrained by a range of contractual and non-contractual factors, including wholesale pricing. We consider

[714] Although it involved entry via a vertically integrated model rather than just wholesale entry, we note that the entry of Fletcher Challenge into the fuel sector in 1998 under its Challenge brand was ultimately unsuccessful, with Fletcher Challenge exiting in 2003.

that the way wholesale prices are set limits the ability of distributors and dealers to compete on price in the retail market.

6.178 As outlined in Chapters 3 and 7, the outcomes in downstream retail markets are not consistent with those we would expect under workable competition.

6.179 For these reasons, we have considered steps that could be taken to stimulate competition in the wholesale market with the aim of increasing the ability and incentive for dealers and distributors to switch more frequently, increase rivalry between majors and other importers, and make entry easier at the wholesale level. We note that Z Energy expressed a view that "regular opportunities for distributors to test the market in relation to these contracts would provide a check on the competitiveness of their terms."[715] This view was supported by many dealers and distributors. We consider that reducing or eliminating the barriers to wholesale competition that we have identified in this chapter is likely to lead to lower wholesale prices, and consequently lower retail prices.

[715] Z Energy "Z Energy submission on the Commerce Commission's Market Study into the Retail fuel sector: Draft report" (13 September 2019) at [97].

Chapter 7 The retail price and product offer

Summary of our findings

- In previous chapters we identified features of the fuel industry that limit the potential for strong price competition at the wholesale level. That has been replaced by vertical integration and stable long-term relationships between the majors and distributors and dealers. There are high barriers to entry at the wholesale level and limited examples of independent entry. Competition is largely confined to the retail level between the majors and distributors and dealers, and Gull in some areas.
- In the absence of coordination, wholesale competition has the potential to be much more vigorous than retail competition even with a small number of market participants because it involves large volumes of commodity fuel being traded at a small number of locations between well-informed parties. These features are conducive to the use of competitive tenders that should promote price-based competition. An active wholesale market, where contracts are regularly contestable, would also give a greater opportunity for new importers to enter the market. Even without the threat of entry there would still be four importers competing for wholesale contracts and we would expect to see strong price competition.
- The evidence in previous chapters suggests that prices are above competitive levels and that the majors are persistently earning returns in excess of what we would expect in a workably competitive market. Gull has entered with an independent supply chain and prices in "Gull areas" appear to be cheaper than elsewhere. However, Gull is still making good returns suggesting it is sitting below the umbrella of the majors' pricing.
- As discussed in Chapter 6, other retailers including new and expanded entrants are dependent on the majors for their fuel supply. Distributors and dealers tend to locate their retail sites away from the retail sites of the major that supplies them. An analysis of the new retail sites of these rivals provides a mixed picture of the impact of these sites on the majors.
- The lack of competition at the wholesale level reduces the degree of competitive constraint that distributors and dealers can impose on the major fuel firms at the retail level. A lack of competition in the wholesale market means distributors and dealers have fewer wholesale options and pay higher wholesale prices. A more competitive wholesale market would, in turn, create scope for lower retail prices.

Summary of our findings (continued)

- We have also assessed whether the characteristics of the retail market are likely to produce strong competition that would compensate for limited wholesale competition. However, we consider this is unlikely, even between the same four importers. This is because:
    - in contrast to the wholesale market, there are features of retail markets which reduce the intensity of price competition. In particular, retail markets are characterised by small-scale purchases of products differentiated by geography and service levels and discount and loyalty programmes are prevalent; and
    - some features of the retail market encourage the fuel retailers to match price increases rather than undercut them. That is, the market is vulnerable to accommodating behaviour or tacit coordination in the form of leader-follower price setting behaviour.
- Absent an effective wholesale market, competition will be largely limited to the retail level, where it is likely to be softer for the reasons discussed above. Importer margins have been increasing over the last 10 years despite the increasing number of retail sites. The characteristics of the wholesale market described in previous chapters have remained fairly stable over this period, lending support to an explanation that the retail market has contributed significantly to the increase in margins.
- We consider that leader-follower pricing in the retail market has been, and may remain, at least a contributing factor to the margins that we observe. This appears particularly to have been the case during the period that Z Energy published its national price, also known as its main port price (MPP). We consider that measures to improve competition at wholesale and retail levels of the fuel supply chain will reduce their vulnerability to accommodating behaviour as well as the potential effect of any such behaviour that does occur.
- The high returns we have identified in the fuel industry can be expected to influence how suppliers compete at the retail level. Suppliers can be expected to rationally prefer to avoid competition on board prices which would see profits eroded and lower retail prices for all consumers. Instead, competition at the retail level is focused on competition between discount and loyalty programmes and product differentiation, rather than on board prices.
- Fuel firms seek to differentiate their retail offering to consumers through additional services. To the extent that product differentiation is a response to consumer preferences and there is competition across the price-product spectrum, product differentiation will benefit competition and consumers.

Summary of our findings (continued)

- The increase in the number and range of discount and loyalty programmes suggests strong competition on these features. However, these programmes can also soften board price competition and add costs to both consumers and suppliers. Only the more price sensitive consumers who sign up to the programmes receive the discounts and others pay higher board prices. At the same time as discounts have been increasing, so have margins on both the board price and the average price after discount.
- The proliferation of discount and loyalty offers obscures any competitive benchmark for consumers and makes it difficult for them to compare offers. Consumers may tend instead to focus on the level of the discount and not the price against which the discount is offered, or the price that they ultimately pay. This may be exacerbated by the growing practice of retailers displaying discounted fuel prices on price boards alongside non-discounted prices.
- Many consumers may prefer, and be better off with, an offer with fewer non-price benefits and a lower board price.
- The fuel firms earn higher margins on premium compared to regular fuel and this gap is rising. Consumers are not well-informed about the need to use premium fuel and the price of premium fuel is not listed on price boards. We consider this may help to explain the trends we observe on margins for premium fuel.

Introduction to this chapter

7.1 In previous chapters we have identified upstream features of the fuel industry that mean the wholesale market may not be working as well as it could be. In this chapter we explain how the absence of a competitive wholesale market affects retail competition. We find that there are fewer independent resellers, and these resellers pay a higher wholesale price, than would be expected if the wholesale market was workably competitive.

7.2 Our analysis of the retail market is not limited to the impact of weak wholesale competition on the retail market. We have also identified features of the retail market itself that weaken retail competition. These add to the adverse effects on retail competition originating from the wholesale market.

Structure of this chapter

7.3 In this chapter we:

7.3.1 provide context by summarising our earlier discussion about the way retail competition differs from what would be expected in a competitive wholesale market;

7.3.2 discuss how wholesale competition affects competition in retail fuel markets;

7.3.3 discuss the features of the retail market that are affecting retail competition, focusing on:

7.3.3.1 how fuel retailers compete;

7.3.3.2 structural changes to the retail fuel market; and

7.3.3.3 the information available to consumers about retail fuel offers and prices.

Wholesale competition could be much stronger than retail competition

7.4 As explained in Chapters 2 and 6, there has been a lack of active wholesale competition to supply fuel in New Zealand since deregulation three decades ago. Even prior to deregulation, fuel importers did not compete on price at the wholesale level, because the wholesale price was regulated.

7.5 In Chapter 3 we identified a range of market outcomes that we consider are inconsistent with those we would expect to see in workably competitive markets and in the chapters that followed we identified and discussed factors that help to explain those outcomes. Those factors include features of the fuel industry that currently limit the potential for strong price competition at the wholesale level. We consider that the lack of an active wholesale market is directly impacting price competition in retail markets.

7.6 As discussed in Chapter 6, many other countries have also identified the promotion of wholesale fuel market competition as desirable.

7.7 Oligopoly markets work best when well-informed traders participate on both sides of the market, large volumes are traded and the products are similar or identical. These features promote liquidity and create pressure for competitive pricing. These conditions can occur in wholesale fuel markets, but generally are not present in retail fuel markets. Wholesale market competition involves large volumes of commodity fuel being traded at a small number of locations between well-informed parties. Each transaction is for thousands of litres of fuel and each buyer is a repeat purchaser, buying at least several times in a year.

7.8 Each grade of fuel is effectively a homogeneous commodity, so the fuel sold by any importer is a perfect substitute for any other importer's fuel.[716] There is no branding. Nor are transport costs a factor since trade could occur at terminals and under the borrow and loan scheme each major can supply at every terminal.

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[716] The product that the fuel retailers sell can be slightly differentiated across brands due to specific additives and blends used. See for example: <https://www.mobil.co.nz/en-nz/synergy-fuels> (Viewed on 14 November 2019) and <https://caltex.co.nz/products-and-services/techron-fuels/caltex-with-techron-fuels/> (Viewed on 14 November 2019).

7.9 These features are conducive to the use of competitive tenders that should promote price-based competition. Each supplier risks losing large volumes, or potentially all their volumes, if they do not offer their best price. This is why we expect that wholesale market competition should be very intense and lead to highly efficient prices.

7.10 Retail fuel market competition can always be expected to be less intense than wholesale competition for several reasons. First, there is no single location for trade. Instead, retail sites are scattered in the vicinity of consumers. Market research by fuel firms suggests that location is one of the most important, if not the most important, factor in consumers' choice of fuel retailer[717] and retail sites tend to compete most closely with those nearby.

7.11 Second, retail sites are differentiated in their services and different forms of discount and loyalty programmes are common. These two effects can limit the ability of buyers to identify the best price. Moreover, buyers have weaker incentives to expend effort on obtaining the best price since they are buying a few tens of litres for personal use, rather than thousands of litres for resale.

7.12 Third, many of the conditions that make markets vulnerable to tacit coordination are present in both the wholesale and retail fuel markets. For example, the products are largely homogeneous, there are few independent market participants, many firms have similar cost structures and barriers to entry are high. However, there are also some significant differences which mean that retail fuel markets are more vulnerable to tacit coordination than wholesale fuel markets. In particular, wholesale markets are conducive to the use of competitive tenders where bids are not public. Leader-follower pricing and accommodating behaviour is a risky strategy in a market with these characteristics because prices are not transparent and suppliers risk missing out on large volume contracts. Absent an explicit agreement, they risk losing large volumes if rivals do not follow the leader's price rise.

7.13 By contrast, prices in retail markets are transparent, individual purchases are small and retailers can test their rivals' responses if they lead prices up while risking very little (particularly if they lead prices up at quiet times of the day or in low volume sites). A price leader can quickly reverse the upward move if other retailers do not follow the price increase. Our views that retail fuel markets are vulnerable to tacit coordination are consistent with the Background Paper prepared for an OECD policy roundtable in 2013 on *Competition in Road Fuel* where it was noted:[718]

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717 [ ]

718 OECD "Policy Roundtables: Competition in Road Fuel" (2013) at 21.

> The gasoline retail market is frequently given as a stylized example to illustrate that oligopolists may achieve high price-cost margins, by understanding their interdependent relationship, without the need for an explicit agreement or absent any communication between them.

7.14 For these reasons, if there was active competition at both wholesale and retail levels, we would expect most of the downward pressure on retail prices to arise from the wholesale market.

Retail competition is weakened by the absence of wholesale competition

7.15 The absence of an active wholesale market has spill-over effects that weaken retail competition for two main reasons:

7.15.1 there are fewer independent retailers; and

7.15.2 wholesale prices are higher than we would otherwise expect in a workably competitive market.

Fewer independent retailers

7.16 As discussed in Chapter 2 approximately 84% of the fuel sold at retail in New Zealand is sold through importer owned and operated retail sites or through importer-branded, dealer-owned retail sites (see paragraph 2.107). This leaves only around 16% of the fuel sold at retail that is contestable between the majors and potential wholesale entrants. This comprises the retail sites owned or supplied by distributors and their dealers and independently owned brands such as Foodstuffs.

7.17 The contractual and non-contractual aspects of business relationships between the majors and resellers were described in some detail alongside a description of the majors' structural vertical integration in Chapter 6. Among other things, these relationships appear to have led to a pattern of retail investment that limits direct competition between majors and their resellers.[719] The effect is that retail competition is primarily between three or four importers depending on whether Gull operates in the region. While there are 20 brands of retail sites, that figure significantly overstates the extent of retail competition, since each brand is closely tied to one of four importers.

7.18 We expect that if a competitive wholesale market was to develop, fewer resellers would have long-term supply from only one major. This is because distributors could be expected to be more active participants in the wholesale market, and their competitive strategies would be less heavily influenced by the majors than is currently the case. Majors would be competing with each other and with potential entrants to meet the needs of distributors.

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[719] BP has submitted that this is a misinterpretation of our analysis. See BP "Submission on Retail Fuel Draft Report" (September 2019) at [6.5] and [7.7]-[7.8]. We address this at paragraph 6.36 in Chapter 6.

Higher wholesale prices

7.19 We have explained above why we consider that wholesale market competition could be stronger and more price-focused than retail market competition if a workably competitive wholesale market was to develop. In Chapter 6 we found that the combination of structural vertical integration and restrictive wholesale supply arrangements that have emerged since deregulation have prevented the emergence of a workably competitive wholesale market.

7.20 Current wholesale pricing terms vary across majors and are therefore difficult to compare. Some wholesale prices are cost-based, though the cost calculation is often unclear, while others are based on a retail-minus approach, which is explicitly not cost-reflective. Resellers have weak incentives to shop around for a range of contractual and non-contractual reasons.

7.21 Further, an active wholesale market would reduce barriers to entry for rival importers, who could compete for existing reseller customers rather than having to invest in their own retail outlets. [720]

7.22 For these reasons, we consider that wholesale prices are higher now than they would be if an active wholesale market was operating. This in turn limits the scope of retail competition. Resellers cannot compete prices down below their input cost, so inflated wholesale prices inevitably influence retail prices. A more competitive wholesale market would, in turn, create scope for lower retail prices.

Features of retail fuel markets that affect competition

7.23 In this section we consider the following features of retail fuel markets that affect competition:

7.23.1 how fuel retailers compete;

7.23.2 structural changes to the retail fuel market; and

7.23.3 the information available to consumers about retail fuel offers and prices.

7.24 We discuss these features in more detail below.

How fuel retailers compete

7.25 In this section we assess how fuel retailers compete and how this affects consumer outcomes. We consider that:

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[720] For example Gull submitted that "one of the most significant barriers to entry which currently exist is access to product at a fair rate, which would allow for the entrance into new markets by both Gull and other brands". Gull “Submission on Retail Fuel Draft Report” (13 September 2019) at 1.

7.25.1 Retail price competition is increasingly focused on competition using discount and loyalty programmes. Discounts are not independent of board prices and have increased as margins have increased. We consider that the use of discount and loyalty programmes has the effect of avoiding direct price competition on board prices.

7.25.2 Non-price competition focuses on differentiation of the service offering. Differentiation can benefit consumers if it is in response to customer demand and there is competition across the price-product spectrum. However, it can also weaken price competition.

7.25.3 The retail market has features that make it vulnerable to accommodating behaviour or tacit coordination. For example, the products sold are largely homogeneous, there are a limited number of competitors, transactions are small and regular, and prices are transparent. When firms accommodate one another's price increases, prices can be higher than we would expect in a workably competitive market.

7.26 We consider that these features of retail fuel market competition reduce the scope for direct price competition between retailers.

Discount and loyalty programmes are a focus for competition

7.27 In the past there have been periods of strong competition on board prices. However, in more recent years fuel retailers have increasingly competed using discount and loyalty programmes. We described the kinds of discount and loyalty programmes operating in retail fuel markets in Chapter 2. In this section we consider how discount and loyalty programmes are affecting retail competition and consumer outcomes.

7.28 We consider that:

7.28.1 Discount and loyalty programmes have become increasingly common. If we take the board price as given, discounts off that price will generally benefit consumers. However, discounts do not appear independent of board prices. Discounts have increased alongside increases in the margins on board prices and the average margin across all sales. If board prices were cost-reflective, as we would expect in a workably competitive retail market, we consider that there would be less scope for discounting.

7.28.2 In retail fuel markets, discount and loyalty programmes may move the focus of consumers away from board prices and make it harder for consumers to compare prices. The programmes are costly for the fuel firms to provide and for consumers to take advantage of. There is no evidence they increase the total volume of fuel sold. Consumers might prefer, and be better off with, less discounting and lower board prices.

7.28.3 Discounting is a form of price discrimination that allows the firms to avoid direct price competition on the board price in retail markets. Discount and loyalty programmes (and product differentiation which are discussed in the next section) reduce the intensity of price competition and instead replace it with non-price competition and loyalty rewards.

Price competition is increasingly focused on discounting

7.29 As mentioned above fuel retailers are increasingly using discount and loyalty programmes as a focus for price competition. Some fuel retailers have submitted that the rise in discount and loyalty programmes is evidence of strong competition that benefits consumers. For example:

7.29.1 BP submitted:[721]

> The increase in the prevalence of loyalty programmes is also indicative of strong competition to retain customers and is of substantial benefit directly to customers.

7.29.2 Z Energy submitted that:[722]

> Competitors' strategies are continuing to evolve over time in a manner that suggests competitive retail markets and include:
>
> (a) Greater focus on "off price board" discounting strategies through loyalty programmes, such as AA Smartfuel and Mobil Smiles. The offers these loyalty programmes entail themselves also continue to evolve over time.

7.30 We do not agree that the rise of discount and loyalty programmes evidences strong retail competition. This is because we consider that discounting:

7.30.1 has grown in line with higher importer margins on fuel;

7.30.2 has the effect of sorting consumers into more and less price sensitive groups;

7.30.3 makes it harder for consumers to compare the actual price they will pay for fuel (the board price less discounts);

7.30.4 may increase customer loyalty to a retail brand making competition for those customers weaker; and

7.30.5 adds costs to the retail supply chain.

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721 BP "Market study into the retail fuel sector – BP New Zealand comment on preliminary issues" (21 February 2019) at 2.

722 Z Energy "Market study into the retail fuel sector: Z Energy's response to invitation to comment on preliminary issues" (21 February 2019) at [30.2]. See also Z Energy "Submission on the Retail Fuel Report" (13 September 2019) at [170].

7.31 We discuss each of these in more detail below.

Discounting has grown with importer margins on fuel

7.32 The evidence suggests that the rise in discounting has occurred at the same time as margins have been rising. This correlation between margins and discounting was noted in the 2017 Fuel Study and has emerged from three different sources in this study.[723]

7.32.1 First, there appears to be evidence of a historic correlation between margins and discounts. We have used MBIE data to compare board margins, the discounted price margin and the level of discounts over time (see Figure 7.1 below). The chart shows that over the past ten years discounts have increased at the same time as margins on board prices.[724]

Figure 7.1 Fuel board price margin and average discount

Source: Commission analysis using MBIE weekly fuel monitoring data.

Notes: (i) Board price margin is the difference between (a) MBIE's estimate for the MPP (the weekly average price of retail sites in Auckland, Hamilton, Wellington and Christchurch) less duties, taxes, levies and the New Zealand Emissions Trading Scheme (ETS) and (b) MBIE's estimate for importer costs (cost of importing fuel to New Zealand including the cost of the fuel, shipping, insurance, losses, and wharfage and handling). (ii) Average discount is an estimate that MBIE produces and is the difference between (a) MBIE estimate of the MPP and (b) a Stats New Zealand estimate of retail

723 NZIER, Grant Thornton, Cognitus Economic Insight "New Zealand fuel market financial performance study" (prepared for the Ministry of Business, Innovation and Employment, 29 May 2017) at fn 11.

724 BP submitted that board price competition remains strong and might have increased. However, our analysis shows that board prices have been increasing. Submission on the August 2019 Draft Report" (13 September 2019) at [7.12].

prices for fuel (which takes into account discounting). (iii) MBIE's estimate for the MPP and Stats New Zealand's estimate of retail prices are averages, based on a survey of retail sites in certain locations around New Zealand. (iv) Discounted price margin is the difference between (a) discounted price less duties, taxes, levies, the New Zealand Emissions Trading Scheme (ETS), and (b) importer cost (cost of importing the fuel to New Zealand, including the cost of purchasing the fuel in Singapore, shipping it to New Zealand, insurance and losses, and wharfage and handling).

7.32.2 Second, we found a short run interaction between discounts and board prices in our econometric analysis, as reported in Attachment F. We note BP's submission that it does not manipulate its retail board prices to offset expected discounting.[725] We do not suggest a direct, or one-for-one, causal connection between discounting and board price increases. Rather, this reflects the sorting of customers and price discrimination that is inherent in selective discounting. Our work, based on data provided by a range of industry participants, found the following statistically significant correlations:

7.32.2.1 A 10 cents increase in discount size per litre is associated with an estimated board price increase of around 1-3 cents per litre for 91 octane fuel and 2-5 cents per litre for diesel.

7.32.2.2 For diesel, the data suggested retailers change board prices 1-2 weeks prior to the discount. However, there was no clear pattern for other types of fuel.

7.32.3 Third, internal documents from some fuel firms indicate that the growth in margins has been used to fund discounting.[726] A major's internal document considered alternatives to its discount and loyalty programme. The options included "Do nothing and focus efforts on price board". However, this was rejected on the basis that it was "high risk with high likelihood of driving a deterioration in margins".[727] This suggests a profit rationale for preferring to compete on discounts than on board prices.

7.33 Charles River Associates (CRA) submitted that our findings of relationships between discounts and board prices seven and 14 days in advance of those discounts may be an artefact of misspecification of our econometric model.[728,729] However, in our

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725 BP "Submission on the August 2019 Draft Report" (13 September 2019) at [7.14].

726 [ ]; [ ]; and [ ]

727 [ ]

728 CRA "Comments on the NZCC's Retail Fuel Sector Draft Report: Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019), Attachment to BP New Zealand's submission on the draft report, at [3.2.2].

view the specification of the econometric model we have used is appropriate. The regression model we have used is not structural. Rather, it explores the relationship between discounts and board prices, including through the use of leads and lags to examine whether there is evidence that board prices change before discounts. As noted above, the model does not test for a causal relationship between board prices increasing when discounts increase, or increasing in advance of planned discounts. Nevertheless, there are statistically significant correlations as reported above. We consider that there is a relationship of some interest between discounts and board prices.[730]

Discounting sorts consumers into more and less price sensitive groups

7.34 Discount and loyalty programmes have the effect of offering different prices to different groups of consumers according to their levels of price sensitivity. They are a form of price discrimination which involves charging a different price for the same good or service, based on the buyer's willingness to pay.[731]

7.35 Price discrimination is common in many markets, including those that could be described as workably competitive. A firm may price discriminate to increase its profits because it can get more revenue from consumers who place a relatively high value on the firm's goods or service than if there was a single price for everyone.[732]

7.36 Price discrimination can also make some consumers better off compared to a uniform price. A firm might lower the price to consumers who place a low value on the firm's goods or service and thereby expand the market and benefit those particular consumers. However, as noted in paragraphs 2.21 to 2.24, total consumer demand for fuel is quite insensitive to price. That is, total retail sales volumes do not change much when prices rise or fall. This means that discounting is unlikely to cause a significant increase in total demand.[733]

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729 Such as the arbitrary lag structure and the potential for the relationship between board prices and discounts to be the opposite of our assumption that larger discounts might tend to be offered when board prices are higher.

730 Some consumer submissions raised concerns about increases in board prices immediately prior to increases in discounts. See [ ].

731 See for example Mark Armstrong "Price Discrimination" in Paolo Buccirossi (ed) *Handbook of Antitrust Economics* (MIT Press, 2008).

732 See for example Dennis Carlton & Jeffrey Perloff *Modern Industrial Organisation* (4th ed, Addison Wesley, 2005) at 293.

733 Higher profits from price discrimination may also provide incentives for firms to engage in rent-seeking activities or invest in ways to maintain or improve the ability to price discriminate, such as through improving ways to measure consumers' willingness to pay. See OECD "Price Discrimination: Background Note by the Secretariat" (13 October 2016) at 6-7.

7.37 Consumers are likely to be sensitive to price when choosing between retail sites. As such, discounting at a given retail site may stimulate extra demand at that retail site at the expense of another in the vicinity. The fuel firms are therefore likely to price discriminate to increase their share of volumes from those consumers that are prone to switching to other retail sites.

7.38 Discount and loyalty programmes enable the firms to price discriminate by allowing price sensitive consumers to identify themselves by using the discount or loyalty programme. The fuel firms can then use the discount and loyalty programmes to reduce prices only to price sensitive consumers who participate in the programme while those who do not participate pay a higher board price.

7.38.1 Price sensitive consumers who are more likely to take the time to search for a lower price and to travel to another retail site in response to that price are more likely to take the time to sign up for the discount and loyalty programme and then present their card to use the discounts on offer when buying fuel.

7.38.2 Consumers who are not as price sensitive are less likely to sign up to the discount and loyalty programme or to present their card to make use of the offers and are likely to pay an undiscounted price for fuel. Consumers do not automatically receive the discount, even if they belong to the discount and loyalty programme. They need to use their membership card every time they buy fuel.[734] It requires more commitment of effort for consumers to participate in a discount and loyalty programme than to utilise an across the board low price. As a result, those who are less price sensitive pay more than they might if there was no discount and loyalty programme and all consumers paid the same board price.

7.39 We expect that discounting is likely to become more targeted in future. Retailers are increasingly looking to use data and information obtained from discount and loyalty programme participants to make personalised offers to consumers based on behavioural insights rather than offering across the board discounts to programme participants.[735] We have viewed documents from a range of fuel firms identifying potential opportunities to build customer loyalty by using customer data to develop

[734] For example, Z Energy's Pumped programme offers a range of daily discounts. It is necessary to present the relevant card to obtain the discount. See <https://z.co.nz/motorists/rewards-and-promotions/pumped/> (Viewed on 20 November 2019), condition 6.1(a).

[735] The use of personal data is an issue that is of interest to the Commerce Commission. Concerns about the use of personal data have been raised by the ACCC. See for example ACCC "Customer Loyalty Schemes" Draft report (September 2019) at VI-VII.

more targeted offerings and to engage with consumers on a more individualised basis.[736]

7.40 As discounts become more personalised, the potential for the gap between those that pay a discounted price and those that do not, may grow. Personalised offers could make price discrimination strategies more effective.[737] Personalised pricing can also be perceived as unfair.[738]

Discount and loyalty programmes make it more difficult to compare prices

7.41 Markets work better when consumers can easily compare offers and choose the provider who best meets their needs. Consumers who shop around create incentives for suppliers to compete to meet these needs by introducing new products and services, or by reducing prices. Conversely, markets do not work well if consumers are not well-informed or it is difficult to compare offers. Retailers might accidentally or deliberately make complex offers that confuse consumers (this is sometimes referred to as a "confusopoly").[739] In those circumstances, consumers are less likely to switch in response to competing offers and retailers have weaker incentives to offer them.

7.42 We consider there are several ways in which discount and loyalty programmes make it difficult for consumers to compare prices.

7.43 First, the use of discount and loyalty programmes moves the focus away from board prices to the level of discount or benefit consumers can receive.[740] Consumers may think they are getting a good deal due to the size of the discount offered even though the board price is higher. For example:

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[736] See, for example [ ]; [ ]; and [ ]

[737] At the extreme, personalised pricing could result in every consumer getting their own price set at the maximum they are willing to pay.

[738] See for example, OECD *Personalised pricing in the digital era* DAF/COMP(2018)13 (28 November 2018). We received submissions from consumers raising concerns about fairness/equity issues arising from existing discount and loyalty programmes. See for example [ ].

[739] Alexander Chernev, Ulf Bockenholt and Joseph Goodman" Choice Overload: A conceptual review and meta-analysis"" (2015) 25(2) JCP 333.

[740] This may be an effect of "reference pricing" that alters consumers' perceptions of the value of an offer. Including a reference price in an offer can create an anchor that consumers use to estimate value. A reference price can be very effective at encouraging consumers to make a purchase they may not otherwise have made. Consumers are also more likely to purchase from the trader with the offer rather than comparing prices to verify the discount amount. See for example Office of Fair Trading *Advertising of Prices* (OFT1291, December 2010) at 37-39.

7.43.1 Consumer NZ has noted:[741]

> Usually the discounted price isn't the cheapest – it's an illusion of "getting a discount" rather than getting the best price … We think it'd be fairer for all consumers without fuel discounts and loyalty programmes. Pricing would be transparent and we could fill up as and when needed, at our choice of cheaper or convenient service station, without jumping through hoops to eke out a few more cents of savings.

7.43.2 The MTA submitted: [742]

> the growing significance of fuel/loyalty/discount cards, which can cloud actual prices, and which afford discounts to end-user customers but only at the expense of already modest retailer margins, shifting the focus away from wholesaler/supplier margins, and obfuscating actual prices (given that discounts around fuel may be traded for other discounts or offset against other product prices/products).

7.44 Second, the prevalence of discounts makes it harder to compare the actual price consumers will pay, that is, the board price less any discount. In Chapter 2 we discussed some of the differences between discount and loyalty programmes. The programmes differ according to:[743]

7.44.1 how much the discount is and the actual price paid, that is, the board price less discount;

7.44.2 when the discount is available and when it expires;

7.44.3 the criteria to earn and redeem rewards; and

7.44.4 whether it is a coalition, standalone or member benefit scheme.

7.45 The evidence shows that discount and loyalty programmes can confuse consumers.[744] For example:

7.45.1 Z Energy has said:[745]

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741 Paul Smith "Petrol loyalty schemes: are fuel discount schemes really benefitting consumers?" (15 March 2019) Consumer Magazine <www.consumer.org.nz>.

742 MTA "Market study into Retail Fuel" (22 February 2019) at 4-5.

743 Z has recently launched a new service called "Virtual fuel tank" that will allow consumers to buy fuel in advance. Customers can buy up to 1000 litres of fuel at a price that is the lowest undiscounted pump price within 30km. The new service may bring benefits to customers. The downside is that customers must pay upfront and do not get a discounted price. This service could also further entrench loyalty and reduce switching between brands. We have not had the opportunity to do an in-depth analysis of this new offering. See for example Aimee Shaw "Z Energy launches 'virtual fuel tank' – hopes to license to global companies" *NZ Herald* (online ed, 31 October 2019).

744 We received consumer submissions that stated they found loyalty programmes confusing but also some that did not. See [ ].

> There's an element of cost and complexity in the market that was not there eight years ago that causes confusion for customers, and leaves some customers feeling like they are in the have or have-nots.

7.45.2 Internal documents received from some majors state:

> loyalty programmes (fuel discounts specifically) is driving apathy in consumers. A few are experts on how to get the best deal; some do what they have always done; many can't be bothered to figure it out. [746]

> from a customer perspective, varying offers … can look confusing or unfairly biased[747]

7.45.3 A research report for one major also suggested that its loyalty offering is complex and identified it as potentially being difficult to understand even though it offered good value.[748]

7.46 The ACCC has highlighted similar concerns for consumers from loyalty schemes more broadly.[749] The ACCC noted:

> In some instances, loyalty schemes may reduce price transparency, making it difficult for consumers to compare the value of rewards with competing price-based offers. This may result in consumers engaging in less frequent price comparisons and making less-informed purchasing decisions.

7.47 Some fuel firms have been trying to reduce the complexity of their discount and loyalty programmes. For example, Z Energy says that it has tried to make its loyalty programme easy to understand with no minimum requirements.[750] BP has removed minimum fill requirements for consumers to be able to receive discounts.[751] It also says that it is improving price transparency for consumers by displaying post-discount prices on price boards.[752] We discuss the implications of the display of post-discount prices on price boards later in this chapter.

Discount and loyalty programmes may reduce switching

7.48 Fuel firms use discount and loyalty programmes to try to attract and retain customers and generate consumer loyalty to their brand. Studies carried out on behalf of market participants have found that fuel is a "grudge" purchase for many

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745 Rob Stock "The 'shrewd business' of petrol price discount programmes" *Stuff* (online ed, Auckland, 30 September 2018). See <https://www.stuff.co.nz/business/money/107320305/sst-delving-into-the-petrol-discount-market->. (Viewed on 16 August 2019).

746 [ ]

747 [ ]

748 [ ]

749 ACCC "Customer Loyalty Schemes" Draft report (September 2019) at 21.

750 Transcript of Consultation Conference Public session on Day 1 (24 September 2019) at 16, line 22-25.

751 Transcript of Consultation Conference Public session on Day 1 (24 September 2019) at 17, line 23-25.

752 Transcript of Consultation Conference Public session on Day 1 (24 September 2019) at 17, line 19-23.

consumers and some consumers are not motivated to seek out new suppliers.[753] Their choices are instead habitual, based on location and visibility.

7.49 Consumers receive both psychological and economic benefits from participating in a discount and loyalty programme. The reward or discount gives some consumers a sense of being important which deepens their loyalty to a firm.[754] The psychological benefits are one of the reasons that these programmes are popular with consumers. The ACCC has described a range of these kinds of factors that can influence consumer behaviour.[755]

7.50 Some documents indicate that fuel firms know that discount and loyalty programmes play to consumers' emotions by giving them a sense that they are "winning" and getting something additional to their fuel in return for their money. Some internal documents from a major state:

> Instant gratification through rewards or price on the spot is essential for many consumers. Rewards work to give a sense that you 'win' too and get something back for your money.[756]
>
> Behavioural economics tells us that roughly three quarters of purchase decisions are emotionally based…Key drivers for retail and SME are the same. Emotionally reward and recognise me.[757]

7.51 Some of the discount and loyalty programmes also provide greater benefits to participating consumers the more they are used. For example, consumers using AA Smartfuel get a bigger discount if they use the card more often.[758] This encourages consumers to keep using retail sites within the card programme. The type of scheme can also affect the degree and nature of a customer's loyalty. Standalone schemes are more likely to drive loyalty to a brand than coalition schemes. Consumers belonging to coalition schemes are likely to be more loyal to the scheme than to any particular brand that participates.

7.52 The efforts fuel firms go to, to make consumers more loyal to their brand can have different effects on competition. Discount and loyalty programmes (in place of

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753 [ ]; and
[ ]

754 Yuiping Lui "The long term impact of loyalty programmes on consumer purchase behaviour and loyalty" (2007) 71 JMKTAK 19.

755 ACCC "Customer loyalty schemes Draft report" at 18.

756 [ ]

757 [ ]

758 AA "How AA Smartfuel works" <https://www.aa.co.nz/aasmartfuel/how-aa-smartfuel-works/>. (Viewed on 17 August 2019).

simply reducing board prices for everyone) may reduce the sensitivity of consumers to board prices and, therefore, reduce the intensity of price competition in the retail fuel market.

7.52.1 If discount and loyalty programmes succeed in increasing loyalty to a particular retail brand this can harm competition in two main ways:

7.52.1.1 it may soften competition between current retailers by weakening the incentives to compete to win loyal consumers from rivals. This is because loyal customers are less likely to respond to these competitive offers; and

7.52.1.2 it may raise barriers to entry and expansion for retailers if the size of the contestable market[759] available to new entrants is not large enough for profitable entry.

7.52.2 On the other hand, consumers may benefit from the discount during the period in which the firms compete to win their loyalty. If the cost of participating in different discount and loyalty programmes is low, then there is less risk consumers will become loyal to a single provider.

7.53 Consistent with our observations, the ACCC has noted that loyalty schemes can be harmful to competition when they create strong customer lock-in effects and artificial switching costs resulting in persistent barriers to expansion for rival firms.[760]

7.54 There is mixed evidence on the extent to which discount and loyalty programmes drive consumer loyalty in the retail fuel market. Some evidence provided by market participants suggests that discount and loyalty programmes (each programme to a varying degree) are a major influence on where many consumers buy fuel.[761,762]

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759 The contestable market consists of consumers who are not loyal to a discount and loyalty programme and are willing to switch in response to an entrant's competitive offer.

760 ACCC "Customer loyalty schemes Draft report" (5 September 2019) at 69.

761 For example, a 2019 Z Energy investor presentation showed that rewards and price were the highest driver of consumer choice. Z Energy "Z Energy Investor Day 2019" (1 August 2019) at 8. See also [ ]; and [ ] MTA has submitted "A recent consumer survey commissioned by MTA found that 51% of respondents were loyal to a particular brand and that in 77% of those cases the loyalty was tied to a brand card or discount voucher." MTA "Submission on Retail Fuel Draft Report" (13 September 2019) at 29.

762 This is consistent with the balance of consumer submissions we received on what influences their purchasing decisions, although one consumer identified it was not the only factor. See [ ].

However, it also appears that many consumers participate in a variety of discount and loyalty programmes and will switch in response to the perceived best offer.[763]

7.55 Commercial fuel cards are considered to generate more loyalty than programmes aimed at domestic consumers and may also make fuel card holders less price sensitive during the period that they are with a given supplier. This is because:

7.55.1 most SME fuel card holders carry only one brand of fuel card and most SMEs have a stated policy to use it whenever possible when purchasing fuel;[764]

7.55.2 commercial fuel cards offer non-price benefits which may outweigh the immediate benefits of a lower price offered by a rival retail site; and

7.55.3 some fuel cards are linked to a benchmark price rather than board prices, which makes it harder for the user to compare effective prices even if they wish to do so.

7.56 Compared to domestic consumers, commercial customers may be more sophisticated in choosing their supplier. Commercial customers could switch once their current contract with their fuel supplier ends. For example, when a bulk fuel supply contract expires (if indeed there is a current contract, or just a long-standing informal relationship), the customer may look around for a new deal, and there is the potential to change suppliers both for the bulk fuel delivery and the business provided by the commercial customer issuing the supplier's fuel card to staff. However, the evidence suggests that commercial customers stay with their existing suppliers for a long period, often several years, and the rate of churn seems relatively low.[765] Interviews with distributors to date confirm that many commercial customers are loyal and long-standing and that reliable service is the key to winning and retaining bulk fuel deliveries in particular.

Discount and loyalty programmes add costs to the supply chain

7.57 Discount and loyalty programmes add several types of cost to the fuel supply chain. One is that operators of discount and loyalty programmes need to invest in setting up, promoting and operating the programmes. A distributor told us that it is costly to develop and maintain a discount and loyalty programme.[766] An internal

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763 [ ]; [ ]; and [ ]

764 [ ]

765 See Chapter 2.

766 [ ].

document from a major suggested that the operating costs to run its discount and loyalty programme can be well above several million dollars a year.[767]

7.58 Suppliers would rationally incur these costs in an attempt to capture the margins that are generated as a result of weak wholesale competition and so offering these discount and loyalty programmes might not reflect workably competitive outcomes. Consumers might instead be better off with less discounting activity and more competitive (and likely lower) board prices.

7.59 Although there are no direct monetary costs to participate, consumers incur opportunity costs to participate in discount and loyalty programmes. Consumers need to divert time and effort to sign up to the programmes and to keep track of their compliance with the screening criteria.[768] Consumers can also be required to "pay" for participating in discount and loyalty programmes in different ways depending on the programme. The contribution of their personal data to the programmes' operators is a form of non-monetary payment. The use of data collected in relation to discount and loyalty programmes is also discussed in the ACCC report.[769]

Summary on loyalty and discounting programmes

7.60 We recognise that it is difficult to distinguish between discounting that is good for consumers and competition, and that which is harmful. Discounting obviously does provide benefits to some consumers and within the scope of this study we have not been able to compare those benefits with the costs of managing and participating in the programmes. However, those who do not participate pay higher board prices and discounting has not been associated with reduced margins overall.

7.61 We note that the ACCC has identified a range of business practices associated with discount and loyalty programmes that have the potential to cause widespread consumer detriment. These include:[770]

7.61.1 terms, conditions and privacy policies that are unnecessarily difficult for consumers to understand;

7.61.2 unilateral changes to terms and conditions for participation that may be unfair to consumers; and

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[767] [ ]

[768] We received consumer submissions that identified the costs to participating in the scheme, while others did not think schemes were a problem. See [ ].

[769] ACCC "Customer loyalty schemes Draft report" (September 2019), Chapter 4.

[770] ACCC "Customer loyalty schemes Draft report" (5 September 2019) at iv.

7.61.3 collection, usage and disclosure of consumer data in ways that do not align with consumer preferences.

7.62 The issues identified by the ACCC apply more broadly than any individual discount and loyalty programme or type of discount and loyalty programme. They apply across a range of industry sectors and the ACCC did not look specifically at discount and loyalty programmes in the fuel sector in Australia. A detailed examination of these issues is also beyond the scope of this study. However, we encourage retailers to consider whether their discount and loyalty programmes share any of the features identified by the ACCC as potentially causing consumer detriment, and if they do, how they could be modified to address this. We agree with the ACCC that businesses should ensure that consumers have a genuine opportunity to review and understand the policy and operation of discount and loyalty programmes to avoid misleading and deceptive conduct.

7.63 In this study we do not make any specific recommendations in relation to the provision of discount and loyalty programmes. We instead have focused our recommendations on improving competition in the wholesale market and promoting competition on board prices at the retail level.

Fuel firms also compete through differentiating their service offer

7.64 The retail fuel market is also characterised by product differentiation, including additional services and a focus on the customer experience such as a speedy service and high quality convenience store. We discuss below how this differentiation can affect competition.

7.64.1 Differentiation can benefit consumers if their preferences are better met by the choices available. Where differentiation is in response to such customer preferences, then consumers should be better off.

7.64.2 Differentiation can also weaken retail price competition by limiting the degree of direct price competition. Unless there is strong price competition reflecting competitive wholesale prices at the unmanned "no-frills" end of each local retail market, this type of site will have a weaker constraint on service stations.[771]

[771] A consumer submission raised the concern that low prices at unmanned sites might not be available to those on lower incomes as it required $150 holds on payment cards, which some might not have. See [ ].

Differentiation can benefit consumers

7.65 Some industry participants have submitted that product differentiation is a sign of strong retail competition.[772] For example:

7.65.1 Z Energy submitted:[773]

> The diversity of service offering in the market has increased choice for consumers... the increase in service differentiation has driven ongoing innovation by those suppliers wishing to command a premium. Given the degree of choice available, including in the form of low cost unmanned offerings, consumers have no need to pay for any service they do not value.

7.65.2 BP submitted that competition for consumers through improving product offerings and service offerings at retail outlets is one of the current trends that are borne out of a competitive retail environment.[774]

7.65.3 The AA submitted:[775]

> The increase in service differentiation has increased competition and choice for consumers. In particular it has provided greater choice in the retail offer by enabling motorists who only wish to purchase fuel to go to service stations that only supply fuel, in turn providing greater price competition by offering a lower price than full service stations who have a higher margin to cover the cost of other services which the motorist does not wish to access...

7.66 We agree that increased product differentiation has led to greater choice for consumers. This is discussed in Chapter 3.

7.67 Survey evidence provided to us suggests that these extra services will appeal to some consumers.[776] For example, some consumers may value a forecourt attendant to help them fill up their tank. Some consumers may value the ability to pay at the pump because they save time by not having to go into the retail site

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772 One consumer submission identified that there was strong non-price competition between the parties. See [ ].

773 Z Energy "Market study into the retail fuel sector: Z Energy's response to invitation to comment on preliminary issues" (21 February 2019) at [164].

774 BP "Market study into the retail fuel sector – BP New Zealand comment on preliminary issues" (21 February 2019) at 2.

775 AA "Submission on Market Study into retail fuel sector – preliminary issues" (22 February 2019) at 5.

776 The surveys show some customers value other things aside from location. For example, some service aspects that feature highly in surveys include: the ease of getting into and out of a retail site, friendly service, and clean and well-maintained retail sites. See for example [ ], [ ], [ ].

shop.[777] Other consumers may value having a shop at the retail site so they can buy a snack or use the public toilet rather than having to make a second stop.[778]

7.68 There has been an increase in the number of retail sites especially unmanned sites that offer "no-frills" service (and typically lower prices relative to service stations that offer a full service).[779] This is likely to benefit many consumers whose preferences are better met by the choices available. Retailers have also invested in innovative technologies that benefit consumers. For example, innovation in payment technologies such as pay at the pump and fast lanes means buying fuel is a quicker experience. Nevertheless, we discuss below the ways in which it is possible that product differentiation and increased choice for consumers may also not be fully consistent with a workably competitive market when viewed in the context of other market outcomes that we have discussed.

Product differentiation may be a response to high profits

7.69 Product differentiation can benefit consumers where those changes respond to consumer preferences. In this case consumers may value these differences and so are prepared to pay for them.

7.70 Product differentiation may also be a response to high margins, seeking to retain these margins instead of competing them away through lower prices. We have noted earlier that retail markets are small and localised, limiting the scope for price competition. Local competition is weaker when the retail sites are of different types, since direct price competition is then limited to an even smaller number of sites. Unmanned retail sites generally have lower prices than service stations. However, unless there are a few unmanned sites in each local market, their prices are unlikely to be cost-reflective and any constraint they exert on service stations will be correspondingly weaker.[780] As we have discussed earlier, the absence of strong wholesale competition also limits the extent of retail competition.

7.71 One major told us that there are differences in the sensitivity of consumers to prices and some are looking for a "station experience".[781] The major suggested that if other retail sites do not have those propositions, they may not match

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777 [ ]

778 MTA notes that a customer's preferences might change day to day. MTA "Submission on Retail Fuel Draft Report" (13 September 2019) at 22.

779 See for example Waitomo "Submission on Retail Fuel Draft Report" (13 September 2019) at [2.7].

780 MTA notes customers may not be well-placed to understand the price differentials of the different types of station. MTA "Submission on the Retail Fuel Draft Report" (13 September 2019).

781 [ ]

competitors' pricing if they can offer a better service. This is consistent with an internal document from the major which states:[782]

> Where a competitor is unmanned and/or independent then a differential … may be added. … price gaps might be maintained against marker sites to reflect higher value to consumers.

7.72 We considered the extent to which the firms are differentiating their offers to gain and retain the marginal customer instead of competing on board prices. As part of this we considered the impact of NTI sites on existing competitors. Many of these new sites were unmanned and therefore we could test how these sites impacted on service stations. We set out the analysis in more detail in paragraphs 7.102 to 7.111 below. In summary we found that:

7.72.1 There has been an increase in the number of retail sites, many of which are unmanned. The increase in numbers will be to the benefit of some customers who find the new retail sites more convenient than existing ones.

7.72.2 The evidence was mixed as to whether the introduction of these unmanned retail sites had a strong effect on the retail sites of majors. We found few examples where the board price of majors clearly fell after the entry of an unmanned site, although there were more examples where the effective price (that is, taking into account discounts) fell. This suggests that the majors are more likely to react to unmanned sites with discounts rather than cutting board prices.

7.73 In conclusion, we consider that retail service differentiation may benefit some consumers but may also tend to soften competition and protect high margins. While some consumers may prefer differentiated service offerings, others may prefer fewer services and a lower board price, supported by lower wholesale prices, that might be available if profit margins in the fuel sector were lower.

Accommodating behaviour

7.74 The importer margin has been rising since around 2010. CRA submitted the past trends in the margin could be explained by the business cycle, with a decline in the number of retail sites over the period of 2005 and 2010 when margins were low subsequently followed by an increase in margins.[783] We assess this argument at paragraphs 7.92 to 7.97.

7.75 Another explanation is that the firms have engaged over time, and perhaps are still engaging to some extent, in price leadership-price following behaviour, also

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782 [ ]

783 Transcript of retail fuel study consultation conference – Day 1 (24 September 2019) at 65 (lines 10-21).

referred to as accommodating behaviour, or tacit coordination. Such conduct does not necessarily require an explicit agreement or express coordination between competing firms, which may breach cartel laws.[784] It can develop instead by firms repeatedly observing each other's actions and reactions so that they reach an implicit understanding that one firm's price rises, for example, will be matched by others rather than competed away through inter-firm rivalry. We variously use the terms accommodating behaviour, price leadership and tacit coordination to refer to this type of conduct.

7.76 A firm in a competitive market will find it hard to raise prices above marginal costs in order to raise profits. This is because of the risk that consumers would respond by switching to cheaper rivals.[785] Tacit coordination refers to a situation where firms recognise they can reach a more profitable outcome if they accommodate each other's price increases rather than undercut them.[786]

7.77 Firms in concentrated oligopoly markets are interdependent in the sense that each firm's actions affect the other firms, and each firm will consider its rivals likely reactions when deciding its own competitive strategy. Firms will therefore rationally take account of their rivals' likely actions and reactions when setting prices or making other decisions about their product and service offerings.[787] Where firms engage in accommodating behaviour this can result in higher than competitive prices being charged. When this occurs, prices above competitive levels can generate higher than normal industry profits, to the detriment of consumers and efficiency. [788]

7.78 Accommodating behaviour of this nature is not, however, an inevitable outcome of oligopoly. Two conditions must hold for it to occur.[789]

7.78.1 Firms must be able to reach similar views[790] on how they can increase industry profits. For example, firms may reach similar views that changes in the leader's price should be followed rather than competed away.[791]

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784 Commerce Act 1986, s 30.

785 Price increases that occur due to an increase in the marginal costs of all firms is consistent with competition.

786 Commerce Commission "Mergers and acquisitions guidelines" (July 2019) at [3.85].

787 Tacit coordination could potentially occur on the basis of any dimension of competition, such as service levels or by allocating customers or territories.

788 Commerce Commission "Mergers and acquisitions guidelines" (July 2019) at [3.85].

789 The fuel firms compete at different levels of the fuel supply chain, for different fuel types and locations. The vulnerability of the retail fuel market to tacit coordination may differ to some extent in each location throughout the country where the firms compete.

790 As outlined above, this may occur with or without an agreement between the firms.

7.78.2 Firms must be able to detect and punish cheating, so that the potential individual profit gains from a firm's cheating are outweighed by the costs of punishment.[792]

7.79 Even if these conditions are met, tacit coordination may not be sustainable if it can be disrupted by the entry of other firms or the countervailing actions of consumers.

7.80 Accommodating behaviour is more likely to occur when a market has features that make this easier, such as:[793]

7.80.1 homogeneous products;

7.80.2 a small number of competitors and an absence of a particularly vigorous competitor or strong competition from outside the coordinating firms;

7.80.3 repeated interactions between firms through, for example, contact in other markets, or at industry organisations or meetings;

7.80.4 firms of similar size and cost structures;

7.80.5 little innovation, stable demand and a lack of supply shocks/volatility;

7.80.6 firms that can readily observe each other's prices or volumes;

7.80.7 small frequent transactions; and

7.80.8 firms interrelated through association or cross-partial ownership.

7.81 Conversely, other features of a market can make it more difficult for accommodation to occur or make it less complete. Those features include:

7.81.1 a high degree of differentiation and innovation in market offerings;

7.81.2 firms operating in a number of locations, with different price setters in each of those locations;

7.81.3 a prevalence of discounts and non-price promotions; and

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791 Firms that follow a leader's price changes will increase their own prices in response to the leader's price rises and lower their prices, but not undercut the leader's, in response to the leaders price reductions.

792 Punishment may take the form of a period of aggressive market behaviour by a rival (or rivals) to retaliate against a firm deviating from the accommodating behaviour. For example, the rival could set prices low (or increase quantity) which would reduce the profits of the deviating firm. The threat of punishment deters firms from deviating from accommodating behaviour. See for example M Motta *Competition Policy: Theory and Practice* (Cambridge University Press, Cambridge, 2004) at 139.

793 Commerce Commission "Mergers and acquisitions guidelines" (July 2019) at [3.89].

7.81.4 the presence of one or more vigorous competitors who may disrupt tacit coordination or make tacit coordination less effective.

7.82 We consider that the retail fuel market has several features which make it vulnerable to accommodating behaviour.

7.83 During the Z Energy/Chevron merger investigation in 2015/2016 we had cause to assess whether the retail fuel market was vulnerable to tacit coordination at the retail level, and whether the proposed merger would have a material impact on that vulnerability.[794] We cleared the merger subject to divestments.[795] We found that the merger would not make a material difference to the potential for tacit coordination. We took no firm position on whether tacit coordination was occurring, but rather decided that Chevron was not playing an important role in constraining any tacit coordination if it was taking place.[796]

7.84 In our decision, we opined that a number of features of the retail fuel market made it vulnerable to tacit coordination. These included:

7.84.1 the products sold in the retail fuel market were largely homogeneous (albeit with some differences in services, and some attempts to differentiate fuel products through the use of additives);[797]

7.84.2 there were a limited number of competitors at the national level;[798]

7.84.3 firms competing at the national level likely had similar cost structures given the infrastructure sharing arrangements discussed in Chapter 5 of this report;[799]

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794 *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10 at 48-65 and 109-120.

795 The purpose of the divestments was to preserve competition in some retail markets.

796 Dr Jill Walker dissented from the Commission's decision in this regard. She considered that the evidence was consistent with a level of pre-existing tacit coordination and that the merger would likely entrench that tacit coordination and see it occurring more completely and more quickly.

797 *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10 at [169].

798 *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10 at [182] (noting that the major fuel firms each supply around a quarter of the market) and Dr Jill Walker dissenting version at [15.2].

799 *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10 at [183].

7.84.4 firms could readily observe each other's prices and volumes. Board pricing and most discounting was easy to observe.[800] At the time of the Z Energy/Chevron merger investigation, Z Energy also posted its MPP on its website, making it easy to see its price for most of its sites in Wellington and the South Island. At a national level, the retail and wholesale volumes of the majors were likely to be transparent given the operation of the borrow and loan arrangement discussed in Chapters 2 and 5 of this report; and

7.84.5 consumers made small, regular purchases of fuel.[801] Those regular interactions would make it easier for competitors to test the appetite for a price increase while risking only a small volume of sales if the price change did not hold through a response by competitors.

7.85 Many of the conditions that we identify as making the retail market vulnerable to tacit coordination also apply to the wholesale market. For example, the products are homogeneous, there are few market participants, costs are similar, and entry is difficult. However, there are also some significant differences which mean that retail markets are more vulnerable to accommodating behaviour or price leadership than wholesale markets. In particular, wholesale markets are bidding markets where bids are not public. The large volumes at stake make it a risky strategy for suppliers to try to lead prices up. Absent an explicit agreement, they risk losing large volumes to their rivals. By contrast, prices in retail markets are transparent, individual purchases are small and suppliers can test their rivals' responses to leading prices up while risking very little (particularly if they lead prices up at quiet times of the day or in low volume sites). They can quickly reverse the move if other retailers do not follow the price increase.

7.86 We have undertaken further analysis in this study which indicates that some of the main conditions that facilitate tacit coordination are present in the retail fuel market. We have found that:

7.86.1 the three major fuel firms control the supply chain;

7.86.2 the infrastructure sharing arrangements mean they have similar costs and can monitor each other's strategies;

7.86.3 barriers to entry for an independent supplier of fuel are high, making it harder for an entrant to disrupt coordinated behaviour; and

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800 *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10 at [175].

801 *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10 at [189].

7.86.4 there are some examples in various fuel firms' internal documents that show Z Energy and BP as the main price leaders in retail markets,[802] although there are examples of other market participants leading retail price changes at times.[803]

7.87 Since our decision relating to the Z Energy/Chevron merger the markets have changed. Some market features make the markets more vulnerable to tacit coordination and others less so.

7.88 First, there have been some changes in the structure of the retail market.

7.88.1 The Z Energy/Chevron transaction resulted in the number of fully integrated fuel firms going from four to three.[804] In certain locations where a Z Energy retail site competed with a Chevron retail site, the number of independent retail participants reduced.

7.88.2 The total number of retail sites has increased. There has been an increase in the number of retail sites that resellers operate and a fall in those that the majors operate. As discussed in Chapter 2, Waitomo and Gull have both announced plans to expand into retail markets in the South Island.

7.88.3 TOSL announced in November 2017 that it is planning a new terminal in Timaru, South Island.[805]

7.89 Second, there have also been changes in the transparency of prices.

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802 For example, a market participant's document from January 2019 indicated that it was a price follower: "The standard tactic is to match the lowest of majors or Gull." [ ]; a major's document from October 2017 states: "Four price increases during the month, two led by Z, one by BP and one mogas only led by BP." [ ]; a major's internal document dated December 2018 states "One price increase during the month, 4cpl across all grades led by Z. Five price decreases during the month; three led by Z and two led by BP". [ ]

803 For example, a major's internal document in 2018 notes that "Gull in particular seem less aggressive on price …and leading price increases in some trade areas". [ ] As noted earlier in the paper, there are examples of resellers entering the market and leading prices lower.

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805 See for example Ben Aulakh "Pacific fuel firm sets sights on $30m Timaru port development" *Stuff* (New Zealand, 28 November 2017).

7.89.1 Fuel firms have increased their use of discount and loyalty programmes and introduced more targeted discounting to consumers. This may make it harder for fuel firms to monitor each other's pricing and accommodate price rises.[806]

7.89.2 The Gaspy app has launched.[807] Gaspy lists prices of retail sites from all around New Zealand. The information comes from users of the app who can upload prices after they have visited a retail site. Gaspy had over 437,000 registered users as of 8 November 2019.[808] These users are using this app to find the best retail fuel offer by comparing prices at different retail sites. However, fuel firms can also use data gathered by Gaspy to monitor each other's prices which may make it easier to accommodate one another's pricing.[809] We discuss our views on the effects of real-time pricing data on competition in retail fuel markets in more detail later in this chapter.

7.90 A significant change that affected the transparency of prices is that in July 2017 (after the MBIE review), Z Energy stopped listing its MPP on its website.[810] The MPP is the price that is used at most of Z Energy's retail sites in the South Island and lower North Island. Z Energy previously listed this price on its website. During consideration of the Z Energy/Chevron merger we identified that this was one feature of the market that made fuel prices transparent.[811,812] The removal of the MPP from Z Energy's websites makes retail prices less transparent. The fact that Z Energy no longer publishes its MPP has removed this potential focal point and therefore reduced the vulnerability of retail fuel markets to coordination.

7.91 We tested how the publication of the MPP, and its subsequent removal from publication, has affected margins. Over the last decade we observed increasing national average margins (see Chapter 3). During that time, the lack of effective

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807 See < https://stats.gaspy.nz/> (Viewed on 26 November 2019).

808 See < https://stats.gaspy.nz/> (Viewed on 8 November 2019).

809 We are aware that some firms purchase data from Gaspy. However, other firms have told us that they do not have a relationship with Gaspy and do not utilise its data. For example Gull does not use Gaspy. Transcript of retail fuel study consultation conference – Day 1 (24 September 2019) at 43 line 7-8.

810 Z Energy removed the MPP from its website on 4 July 2017. Z Energy "Release of MBIE study into downstream fuel industry" (4 July 2017).

811 *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10 at [175]. Dr Jill Walker's dissent identified that "The MPP …provides a useful coordination device or point of reference for price movements". *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10, Dr Jill Walker dissent at [15.4].

812 BP also has a national price that firms could use as a focal point, although – as far as we are aware - BP does not list this publicly.

wholesale competition has been a constant feature of the fuel industry (see Chapters 4-6). Although the number of vertically integrated importers has reduced with the exit of Chevron, the features of the wholesale market imply that coordination is harder to achieve without extending to some form of explicit agreement. This suggests that at least part of the reason for the trend increase in margins might be found in the retail market.

7.92 CRA submitted the past trends in the margin could be explained by the business cycle, with a decline in the number of retail sites over the period of 2005 and 2010 when margins were low subsequently followed by an increase in margins.[813] Rising margins are likely to encourage new entry. The resulting increase in competition can be expected to reduce margins to competitive levels. If margins fall below sustainable levels, this will prompt retail sites to exit once again. However, the evidence does not support this hypothesis. In fact, margins have continued to rise even as the number of retail sites has grown (see Figure 7.2). An alternative explanation for the rise in margins over the past decade, despite the increasing number of retail sites, is that leader-follower pricing in the retail market may have helped to facilitate an increase in margins.

7.93 In the course of our consultation on our draft report, a market participant suggested to us that they used the MPP price as an indicator of a "market list price" when setting their retail prices.[814]

7.94 Figure 7.2 shows the average national board price margins of diesel and regular petrol respectively, and the number of retail sites, over the past decade. The time period during which Z Energy published the MPP is indicated by the black dashed vertical lines. Z Energy ceased publishing the daily MPP in July 2017 following MBIE's review of the fuel industry.[815]

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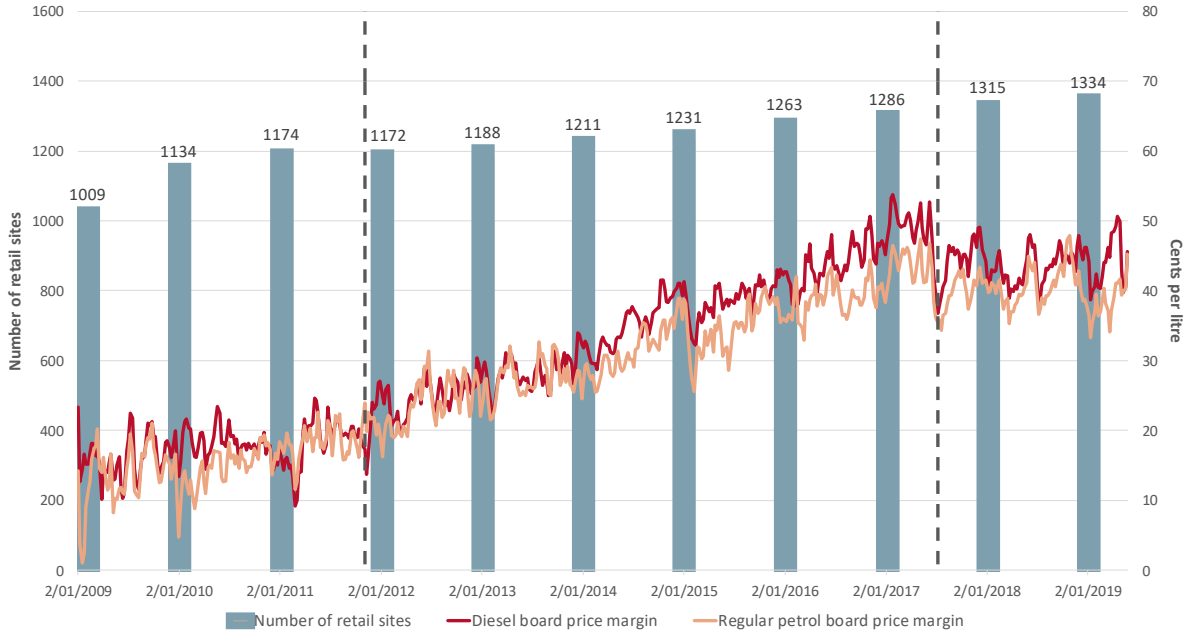
813 Transcript of retail fuel study consultation conference – Day 1 (24 September 2019) at 65 (lines 10-21).

814 [ ]

815 The 2017 Fuel Study identified this potentially serves as a retail pricing signal that can dampen competition. NZIER, Grant Thornton, Cognitus Economic Insight "New Zealand fuel market financial performance study" (prepared for the Ministry of Business, Innovation and Employment, 29 May 2017) at v. See <https://www.mbie.govt.nz/assets/dd96ac0bb4/fuel-market-financial-performance-study-report-back.pdf>. (Viewed on 17 November 2019).

Figure 7.2 Average weekly national board price margins and number of retail sites (Jan 2009 to May 2019)



Source: Commission analysis of MBIE data and information provided by industry participants.[816]

7.95 Despite an increase in the number of retail sites since 2012, it appears that average margins increased during the period when the daily MPP was published, and have levelled off or decreased since publication ceased. While there may be other explanations for this, it would be consistent with the market participant's suggestion that the MPP was used as an indicator of market list prices. With more retail sites moving to board prices at MPP, average margins would increase.

7.96 The evidence therefore appears to support our conclusion that the retail market is conducive to tacit coordination through price transparency and leader-follower pricing.

7.97 In summary, most of the market features that made retail markets vulnerable to tacit coordination when we considered the Z/Chevron merger in 2015/16 remain today although some market features have changed to make the markets more vulnerable to tacit coordination and others less so. We consider that retail fuel markets are vulnerable to some level of tacit coordination. We welcome Z Energy removing the MPP from its website. However, we consider that tacit coordination

816 MBIE monitors and publishes weekly importer margins for retail petrol and diesel. We used this data to calculate average weekly board price margins for diesel and regular petrol, inclusive of GST and other taxes. See <https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/weekly-fuel-price-monitoring/>. (Viewed on 7 November 2019). We calculated the total annual number of active retail sites in New Zealand using information provided to us by fuel retailers.

has been and may remain at least a contributing factor to the margins that we observe. We consider that measures to improve competition at wholesale and retail levels of the fuel supply chain, opening up those markets to new suppliers, will reduce their vulnerability to accommodating behaviour as well the potential effect of any such behaviour that does occur.

Structural changes to the retail fuel market

7.98 In this section we consider how the structural changes to retail fuel markets have affected competition.

7.98.1 First, we have analysed BP's submission that the long run trend in margins can be explained by the business cycle.

7.98.2 Second, we have analysed the impact of NTI sites on the existing retail sites of the majors.

Does the number of retail fuel sites change in response to changes in margins?

7.99 BP submitted that the substantial increase in the number of retail fuel sites over recent years is indicative of a competitive retail fuel market.[817] BP noted that "Allied, Waitomo and NPD in particular have been very active in developing new retail outlets", submitting that "the entry and expansion that has occurred across the country is entirely consistent with a workably competitive market".[818]

7.100 CRA discussed the entry and exit of retail sites in response to changes in margins when discussing business cycles at the consultation conference. CRA noted:[819]

> …we see the business cycle as a period where entry is occurring in response to higher margins and higher profits followed by a period where we see a decline in margins as a result of competition as a result of that new entry, we then see exit happening as a result of those depressed margins and profits, two separate things, and then we see kind of an upswing. So I see a business cycle as a cycle that involves investment, contraction, investment…

7.101 Information provided to us suggests that entry and exit of retail sites has not affected margins to any significant extent.[820] The information we have indicates that margins have risen significantly during the period of new retail entry from 2013. Despite the growth in the number of sites, we also note that firms' expected profit from opening new or rebuilt sites has not declined over the 2014-2019

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817 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [3.14].

818 BP "BP New Zealand– submissions on the August 2019 Draft Report" (13 September 2019) at [3.18]-[3.19].

819 Transcript of retail fuel study consultation conference – Day 1 (24 September 2019) at 64 (lines 11-13).

820 [ ]

period. It also appears that the additional competition from these new sites has not, to date, reduced firms' expectations on future profits from investment in new retail fuel sites (see Chapter 3 and Attachment C). This is not consistent with outcomes expected in a workably competitive market, where new entry would put downward pressure on margins.

Effect of new retail sites on competition in local retail fuel markets

7.102 We have conducted an empirical analysis to determine the potential benefits to consumers in those areas where new fuel retail sites (new-to-industry retailer sites (NTIs)) of resellers and distributors have opened. These new retail sites will benefit consumers in those areas where they opened by adding more retail site choice and in the case of unmanned sites a lower-priced option. New sites will also improve competition to at least some extent. The purpose of our analysis was to test how far these benefits extend.

7.103 We tested whether the following benefits of NTIs could be shown:

7.103.1 the new retail sites were being located close to those of the majors (and so they were competing more directly against retail sites that may be earning higher margins); and

7.103.2 the new retail sites had led to a fall in the price and volumes at nearby retail sites of majors.

7.104 Our analysis on the location of NTIs in proximity to those of the majors was based on a total of 515 currently active retail sites of Allied, Challenge, GAS, Gull, McFall, Mckeown, NPD, RD, Southfuels and Waitomo.

7.104.1 We find that Gull, Waitomo and Challenge are most likely to locate their new retail sites within close proximity (2km driving distance) to those of the majors.

7.104.2 Our analysis shows that resellers and distributors are generally not located within close driving distance of their respective wholesale fuel suppliers.

7.104.3 Finally, our analysis on the location of NTI sites shows that resellers and distributors are generally not building new sites in locations close to existing unmanned retail sites. One possible explanation for this observation is that service stations and unmanned retail sites do not compete closely with each other. As a result, retailers operating unmanned sites might be reluctant to choose locations where they would be in close competition with competing unmanned sites.

7.105 Our analysis to determine whether new retail sites have led to a fall in the price and volumes at nearby retail sites of majors was based on a total of 50 NTI sites of Gull (16), Waitomo (11), Allied (10), NPD (9) and GAS (4) that have opened during the period January 2014 to February 2019.

7.105.1 We looked at prices and volumes of the five closest majors within 2km, 5km and 10km respectively of new retail sites before and after each new site opened. While these new sites generally did not have a material effect on board prices, there were quite a few instances where the effective price (which is the price after discounts) fell following a new NPD retail site opening. This may indicate that the majors have reacted by offering more discounts and encouraging loyalty offers after new entry by NPD. Further, our results show that on the few occasions when the volumes of the majors dropped materially after a new site opened, these instances were observed most commonly after a new NPD site opened.

7.105.2 We note that in the majority of instances where we observe a material impact on effective prices of majors following the opening of a new NPD retail site, those new sites were service stations rather than unmanned sites. This shows that service stations likely impose a stronger competitive constraint on retail sites of the majors as opposed to unmanned retail sites.

7.105.3 There were also a few examples in our analysis where board prices, effective prices or volumes clearly fell after a Gull, Allied or GAS site opened. However, there were fewer instances where we observe this in comparison to new site openings of NPD. In the case of Allied this may be because its sites were located in remote areas and there were fewer majors nearby.

7.105.4 In the few instances where we do have evidence of the "Gull effect" there are no other Gull sites located within at least 20km driving distance from the new Gull site. One explanation for why we have not observed many examples of the "Gull effect" is that those are instances where a new Gull site opened within 10km of an existing Gull retail site. However, our analysis only applied to testing the extent of benefits to consumers of new retail sites that opened during the period 2014-2019. It is possible, therefore, that there was an earlier "Gull effect" where Gull entered a local market before 2014 that our analysis has not been able to detect.

7.105.5 Our analysis also shows a few examples where the effective prices of majors fell following a new Waitomo site opening. Those examples are mainly in areas where there were none or few competing unmanned sites of other resellers and distributors.

7.106 For comparison purposes we also analysed the effect on prices and volumes of majors in local markets after an existing site of a major was divested and rebranded. Our analysis confirms that rebranding an existing retail site do not benefit consumers to the same extent as new site entry.

7.107 In summary, our analysis shows that Gull, Waitomo and Challenge were most likely to locate new retail sites close to the majors. The results from our analysis on the impact of NTI retail fuel sites on prices and volumes of majors shows that the entry of new NPD sites appear to benefit consumers to a greater extent than new entry by other resellers and distributors.

7.108 Some fuel retailers provided additional information about the impact of unmanned sites.

7.109 A fuel retailer provided evidence that new manned and unmanned retail sites had on average led to a fall in the effective price that its own customers paid.[821] Another fuel retailer provided evidence to show that the opening of new manned and unmanned retail sites led to a fall in its own volumes and margins.[822] However, it was based on a small sample making it hard to reach any broader conclusions on the basis of the study.

7.110 Other evidence provides some examples of new unmanned sites providing some check on prices at nearby sites offering a higher level of service. For example:

7.110.1 A major's internal document from 2018 states:[823]

> [A Distributor] have opened their un-manned site [at a location near one of the major's sites]. This is having an impact on [the major's site's] diesel volumes with last week -20% on the same week last year. Mogas not as impacted only down -9%. …Risks or Issues: The number of [another distributor's] sites planned and the impact on volumes in [various locations]. …Continued growth of competitor un-manned networks eroding margin and volume.

7.110.2 Another fuel firm's internal documents state:[824]

> Very high margins available for [various distributors] who are rapidly developing unmanned outlets and gaining significant volume…The term "Waitomo effect" has been used in the industry recently as their pricing is very aggressive.

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822 [ ][ ]

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824 [ ]

7.110.3 Internal documents from some fuel firms show that new unmanned sites have gained significant volumes.[825] In the case of one fuel firm, the volumes of its sites were often much more than forecast. Our analysis of NTI sites opened by that firm between 2015 and 2018 shows that the actual fuel volume sold in 2018 for these sites was well over 50% more than the volume forecast in the business cases for these sites.[826] If demand did not increase significantly in these local markets, the NTIs volumes must have come from rivals (perhaps from non-majors given the results of the NTI analysis), which would imply an impact on competition.

7.111 In summary we consider that different service types compete with varying intensities in different local markets. The degree of competitive pressure exerted by one type on another also depends on other factors in those markets. Reflecting this, NTI retail sites appear to provide some benefits to consumers. However, the extent of this benefit varies across local markets.

Consumer information issues

7.112 When consumers have access to information about competing offers, they can make better decisions about their purchasing options and this drives greater competition. In this section we consider whether consumers can easily find and use the information about prices they need to make good decisions and, if not, whether there are ways in which more information could be provided to them.

7.113 In particular we considered whether increasing transparency of retail prices would benefit consumers and promote retail competition. Measures to improve price transparency could include:

7.113.1 making real-time pricing information available to consumers so that they can more easily find and compare prices for different retail sites;

7.113.2 advertising discounted fuel prices on price boards; and

7.113.3 advertising premium fuels on price boards.

7.114 We recognise that increasing price transparency for consumers also increases transparency for fuel firms. This increases the risk of tacit coordination although as we note above, retail board prices are already transparent to fuel firms. In contrast, we consider that retail prices are less transparent for consumers and that this has an adverse effect on retail competition. We consider that measures to increase

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price transparency that also address the imbalance in availability of price information to retailers and consumers are more likely to improve retail competition because consumers gain more new information compared to suppliers.[827] In light of this, we consider a number of issues.

7.114.1 Real-time pricing would enable consumers to easily compare the prices for different retail sites. However, it is unclear how many customers would make use of real-time pricing. Instead, real-time pricing may provide a greater benefit to retailers. On balance, we do not see a strong case to mandate real-time price disclosure and we do not make recommendations regarding the availability of real-time pricing.

7.114.2 Some firms are advertising discounted fuel prices on price boards. The effects on consumers are unclear at this stage but displaying this information may not necessarily benefit consumers. Instead, the advertised discounted prices might attract customers who are unable to get the discount or have to take the time and effort to sign up for the scheme to get it. This will be at the expense of a rival who advertises prices available to all. Discounted board prices might also place an even stronger focus on the size of the discount rather than the actual price paid by consumers and contribute further to the customer confusion and distraction from prices actually paid that we discussed previously. We do not make recommendations regarding the advertising of discounted fuel prices on price boards but note that recommendations have been made and implemented in some other jurisdictions as the effects of this practice on consumers have become clearer. This is an issue that may benefit from further review as the practice of displaying discounted prices on price boards evolves.

7.114.3 In our view, the same uncertainties do not apply in relation to the display of premium fuel prices on price boards and we discuss this further below.

Real-time price information

7.115 We have considered whether consumers might benefit from having access to real-time retail price information.

7.116 Gaspy and the Pricing Project support the publication of fuel prices on a website or a mobile app, and the AA considers there is merit in investigating fuel retailers

827 For example, an OECD report on competition in road fuel states: "Fostering price transparency to reduce consumers' search costs, while avoiding an imbalance of transparency towards suppliers, and reducing barriers to entry at different levels of the supply chain, could stimulate competition in these markets and can also be seen as a policy response to asymmetric pricing." OECD "Policy Roundtables: Competition in Road Fuel" (2013).

providing real-time price information to the public.[828] Gaspy told us that 97.8% of uploaded prices are confirmed to be correct.[829] It has a goal of 100% accuracy but that would require the fuel firms to upload details of price changes as they occurred. The Pricing Project considers that:[830]

7.116.1 it does not make sense for a consumer to drive around to search board prices or pump prices to find the best price;

7.116.2 crowd sourced apps have information that may be dated and feeding prices into them takes effort by consumers; and

7.116.3 the fuel firms could provide up-to-date and accurate pricing information.

7.117 Consumers also appear to support the provision of real-time price information. The AA told us that in a 2016 survey 63% of respondents said they would like to see real-time prices published.[831] The fast growth of Gaspy would further indicate consumer demand for this type of information and the AA recognises that the emergence of Gaspy has helped fill that information gap.[832] A requirement that fuel retailers provide real-time price data would improve the quality and availability of data for those that seek it.

7.118 Nevertheless, it is unclear how many consumers would make use of real-time price information if it was more readily available. As we noted earlier, the use of Gaspy is growing. However, registered users still only account for a small proportion of drivers in New Zealand. Gaspy had over 437,000 registered users as of 8 November 2019.[833,834] It is unclear what proportion of fuel sales are transacted by a consumer who has used Gaspy to find the best offer. The AA believes that only around 5% of motorists use real-time price comparison apps in Australia.[835] The ACCC in a recent report urged consumers to make more informed buying decisions by making use of fuel price websites and apps that provide information about fuel prices.[836] If real-

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828 AA "Written comment on Market Study into the retail fuel sector – Draft Report", (13 September 2019) at 2.

829 Transcript of Consultation Conference Public session on Day 1 (24 September 2019) at 39 (line 25) to 40 (line 2).

830 The Pricing Project "Submission on Market Study into the retail fuel sector – following consultation conference", (October 2019) at 1.

831 Transcript of meeting with AA (16 October 2019) at 3, line 8-16.

832 Transcript of meeting with AA (16 October 2019) at 6, line 21-25.

833 See < https://stats.gaspy.nz/> (Viewed on 8 November 2019).

834 According to NZTA, there were 3.4 million licence holders at 30 June 2015. See <https://www.nzta.govt.nz/resources/new-zealand-driver-licence-register-dlr-statistics/> (Viewed on 8 November 2019).

835 Transcript of meeting with AA (16 October 2019) at 7, line 7.

836 ACCC, "Petrol prices vary significantly: report on petrol prices by major retailer in 2018" October 2018 at 14.

time price information was made more readily available in New Zealand, it is possible only a small proportion of consumers may use it in which case the impact on competition would be correspondingly small. This might mean the cost of implementing real-time price information may outweigh the benefits.

7.119 This is because on the other hand, the publication of real-time price information could assist fuel retailers to better monitor competitor prices and increase their ability to coordinate prices with those competitors.[837] Retailers already have access to competitor price information through firms such as Datamine and Informed Sources (and their own monitoring). However, real-time price information would be more comprehensive, more accurate and up to date, and would accelerate the ability of retailers to respond to competitor price changes.[838]

7.120 An assessment of the cost of implementing real-time price information in New Zealand is beyond the scope of this study. However, we note that in order to establish a scheme, fuel retailers would need to set up their systems (or produce systems) to record prices and send them in real-time to a central database. To the extent that this involves a fixed cost, this cost will fall more heavily on smaller fuel retailers. This could impact fuel prices.

7.121 Mandatory fuel price reporting schemes have been introduced in other jurisdictions and this provides some insight into the effects they might have on consumers and competition if introduced in New Zealand.

7.122 Some Australian states operate mandatory fuel price reporting schemes through which fuel retailers report their current prices.[839] Western Australia was the first state to introduce such a scheme, known as "Fuelwatch" in 2001. New South Wales

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837 As an example of how too much information can adversely affect competition, the ACCC took court action in 2014 against Informed Sources and petrol retailers for sharing price information. Subscribers to Informed Sources provided frequent and granular pricing data and in return received data from other subscribers. The ACCC was concerned that the exchange of information had reduced competition by allowing firms to communicate over their prices. ACCC "ACCC takes action against Informed Sources and petrol retailers for price information sharing" (press release, 20 August 2014). The proceedings were resolved in 2015. Informed Sources agreed to only provide the service if it also made the information available to consumers. Chair Rod Sims stated "Making this pricing information available to consumers will allow consumers to make better informed purchasing decisions and therefore create greater competition in petrol pricing". See ACCC "Petrol price information sharing proceedings resolved" (press release, 23 December 2015).

838 If fuel firms were required to put premium prices on the board, this would likely further improve the data that Datamine and Informed Sources collects (since they can more easily observe prices). However, it would still not be as accurate and update-to-date as real-time prices that retail firms provide.

839 Queensland fuel price reporting trial, see <https://www.dnrme.qld.gov.au/energy/initiatives/fuel-price-reporting-trial/about> (Viewed on 7 November 2019). Fuelwatch (Western Australia), see <https://www.fuelwatch.wa.gov.au/fuelwatch/pages/home.jspx> (Viewed on 7 November 2019). FuelCheck (New South Wales), see<https://www.fuelcheck.nsw.gov.au/app> (Viewed on 7 November 2019). MyFuelNT (Northern Territory), see <https://myfuelnt.nt.gov.au/> (Viewed on 7 November 2019).

and the Northern Territory also operate mandatory price reporting schemes and Queensland is currently operating a two year fuel price reporting trial.

7.123 The ACT (Australia) Select Committee conducted an inquiry into fuel pricing this year due to concerns over high prices.[840] The inquiry heard that one of the reasons prices were high was because it was difficult to see and therefore compare prices.[841] To help address this, the inquiry recommended initiating a real-time, mandatory price monitoring scheme.[842]

7.124 The Western Australian scheme requires prices to be fixed for 24 hours and to be announced the previous day by retailers. It was introduced in order to provide certainty and transparency of retail fuel prices.[843] Its design features may make it harder for retailers to coordinate because a price increase that is not matched by competitors can have a large volume effect because the disadvantageous price differential has to be maintained for a full 24 hour period.

7.125 Studies of the impact of the Western Australian Fuelwatch scheme have yielded mixed results. An interim report from the Standing Committee on Economics on the National Fuelwatch Bill 2008 reviewed some of these studies. It reports that an ACCC econometric analysis found that the differential between retail prices and TGPs (or wholesale prices) dropped after the introduction of Fuelwatch.[844] However, there were criticisms of the data and methodology used by the analysis and the report found that there seemed to be no definitive conclusion from the various econometric studies.[845] In contrast, a study by Byrne and de Roos (2019) on the Western Australian Fuelwatch scheme found that over a three year period, the retail fuel firms used price leadership and experiments to create focal points that coordinated market prices, softened price competition and enhanced retail margins.[846] The study shows the emergence of pricing focal points in April 2009, and a subsequent permanent and substantial increase in firms' margins starting in March 2010.

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840 *Report on inquiry into ACT fuel pricing* (ACT Select Committee, September 2019).

841 *Report on inquiry into ACT fuel pricing* (ACT Select Committee, September 2019) at 11.

842 *Report on inquiry into ACT fuel pricing* (ACT Select Committee, September 2019) at 40.

843 See <https://www.fuelwatch.wa.gov.au/fuelwatch/pages/public/contentholder.jspx?key=works.html> (Viewed on 18 November 2019).

844 Standing Committee on Economics "Interim Report on the National Fuelwatch Bill 2008" at [4.20], see <https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Economics/Completed_inquiries/2008-10/fuelwatch_08/interim_report/c04> (Viewed on 7 November 2019).

845 Standing Committee on Economics "Interim Report on the National Fuelwatch Bill 2008" at [4.34], <https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Economics/Completed_inquiries/2008-10/fuelwatch_08/interim_report/c04> (Viewed on 7 November 2019).

846 David P. Byrne and Nicolas de Roos, "Learning to Coordinate: A Study in Retail Gasoline" , American Economic Review 2019, 109(2): 591–619.

7.126 The Parliament of Victoria conducted an inquiry into fuel prices in regional Victoria.[847] Among its considerations was whether imposing mandatory fuel price reporting would help consumers. Some parties submitted that having mandatory fuel price reporting schemes would soften price competition because no retailer could establish a long-term price advantage through undercutting, since they would be immediately matched.[848] Some parties also warned that the costs of mandatory fuel reporting could be substantial and lead to higher prices at the pump.[849] The inquiry found that "There is no evidence that mandatory fuel price reporting has reduced fuel prices in the jurisdictions where it operates".[850]

7.127 A number of other studies have been conducted overseas.

7.127.1 In 2013, the German competition authority (Bundeskartellamt) started operating a fuel price transparency scheme. A study by Dewenter *et al* (2016) used a difference-in-difference approach to analyse the effects of the scheme and found that both gasoline and diesel prices increased after it was introduced. They attributed this to the ability of retail sites to easily compare prices.[851]

7.127.2 Luco (2019) studied the sequential implementation of an online price disclosure policy in the Chilean retail gasoline industry.[852] The results show that disclosure increased margins by nine percent on average, though the effects varied across the country depending on the intensity of local consumer search behaviour. Where search intensity was higher, retail competition was more intense.

7.128 Given the mixed results of mandatory price reporting schemes, and in the context of our other recommendations, we do not see a strong case to mandate real-time price disclosure. Another means to provide information to consumers about premium prices is to require fuel retailers to display premium prices on price boards. We consider there are stronger arguments to recommend this and we discuss these in paragraphs 7.137 to 7.149 below.

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847 *Inquiry into fuel prices in regional Victoria* (Parliament of Victoria, February 2018).

848 *Inquiry into fuel prices in regional Victoria* (Parliament of Victoria, February 2018) at 34.

849 *Inquiry into fuel prices in regional Victoria* (Parliament of Victoria, February 2018) at 38.

850 *Inquiry into fuel prices in regional Victoria* (Parliament of Victoria, February 2018) at xi.

851 Dewenter et al "The impact of the market transparency unit for fuels on gasoline prices in Germany", Applied economic Letters, Volume 24, 2017 -Issue 5 (2016).

852 Luco, Fernando. "Who benefits from information disclosure? The case of retail gasoline." American Economic Journal: Microeconomics, 2019, vol. 11, issue 2, 277-305.

Display of discounted prices on price boards

7.129 Some fuel retailers such as Z Energy and BP have introduced new price boards that display post-discount prices.[853] These initiatives could make it easier for consumers to compare post-discount prices from competing retailers.

7.130 However, Waitomo and Gull submitted that advertising post-discount prices is akin to 'bait advertising' because the displayed discounted prices are not available to everyone.[854] Also only those who are a member of the qualifying scheme and/or hold the relevant loyalty card or supermarket docket qualify for the discounted price. Customers could choose a retailer in reliance upon the discounted price display, only to find out that they do not qualify for the discount once at the pump or at the point of sale. This might mislead some consumers and harm rival retail sites that the customer might otherwise have visited.

7.131 BP told us that it had removed the minimum purchase requirement on its loyalty programme and allows customers to sign up in-store and receive the discount.[855] BP also told has that it has been careful to make sure the board price is clear.[856] Z Energy has also told us that its signs are simple and easy to understand.[857] However, some consumers attracted by low board prices, and competition itself, might be harmed compared to a situation where discounted prices are not advertised on price boards.[858]

7.131.1 Customers who are not already participants in the scheme must incur the time and effort to sign up. These customers must also incur the cost of giving up their data.

7.131.2 Those customers who have forgotten their cards may have to sign up a second time. For schemes that generate points for each purchase, customers will have to incur the time and effort to combine those points (if the scheme allows it).

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853 BP "Submission on Retail Fuel Draft Report" (October 2019) at [7.3] and Z "Submission on Retail Fuel Draft Report" (October 2019) at [115].

854 Waitomo "Submission to Retail Fuel Draft Report" (13 September 2019) at paragraph 2.11. Gull "Submission on Retail Fuel Draft Report" (October 2019) at 2.

855 Transcript of Consultation Conference Public session on Day 1 (24 September 2019) at 17 (lines 23-26).

856 BP "Submission on Retail Fuel Draft Report" (October 2019) at [7.4].

857 Z Energy "Submission on Retail Fuel Draft Report" (October 2019) at [115].

858 The fuel firms might also introduce new schemes that make it harder to sign up on the spot or they might change the current scheme requirements. If discounted prices were advertised at unmanned sites, then it might be difficult for customers to sign up on the spot.

7.131.3 A customer who does not have time to sign up (or is somehow ineligible) might not complain once they are at the pump and may end up paying more than they expected. They have already chosen the retail site at the expense of a rival that only advertises undiscounted prices.

7.132 We also consider that competition would be most effective if customers focused on the actual price they pay for petrol. Displaying discounted prices on the price board could result in consumers focusing on the size of the discount rather than the actual price paid.

7.133 Consistent with these concerns, in Australia some states have recently mandated against the display of discounted prices on retail sites' price boards, and the price displayed on the board must be the same as the price at the fuel pump.[859] The ACT Government has commented that:[860]

> "These changes will ensure Canberrans aren't lured into service stations by discounted prices that require a shopper docket, in-store purchase or membership of a loyalty rewards program."

7.134 We consider that displaying discounted prices on price boards potentially has an adverse effect on consumers' ability to make well-informed decisions about where to buy fuel. However, it is too early to tell the extent to which fuel retailers will adopt the practice and the magnitude of the effect that will actually occur. For these reasons, we do not make recommendations about displaying discounted prices on retailers' price boards. However, this is an issue that may benefit from further review as the practice of displaying discounted prices on price boards evolves.

Premium fuel

7.135 Premium fuel accounts for around a quarter of petrol consumption (see paragraph 2.12.2). As we describe below, the retailers appear to use a different strategy to sell premium fuel compared to other fuels. We have considered how this affects competition for premium fuel.

7.136 We have identified three specific issues regarding premium fuels.

7.136.1 Most retail sites do not have premium fuel prices on their price boards. We make a recommendation regarding the advertising of premium fuel prices on price boards. This is discussed in Chapter 8.

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859 See for example: Tasmanian Government "Code of Practice for Fuel Price Boards" (29 March 2018) <www.cbos.tas.gov.au>; Queensland Government "Fuel price board rules" (7 August 2017); NSW Government "Petrol price signs" <www.fairtrading.nsw.gov.au>.

860 ACT Government "Misleading fuel price boards banned" (Press Release, 26 August 2019).

7.136.2 Information about the grade of fuel that is best for a consumer's vehicle is not readily available. We make a recommendation regarding the availability of information about the need to use premium fuels. This is discussed in Chapter 8.

7.136.3 Premium fuel is sold at a higher margin than regular fuel and that margin has been increasing over time. The evidence shows that poor consumer information, including the lack of board pricing for premium fuel, is likely contributing to the trends we observe in margins on premium fuel.

Retail sites often do not display prices for premium fuel on price boards

7.137 We have considered whether the absence of premium prices on price boards may be adversely affecting competition for premium fuel and therefore affecting the prices and margins for premium fuel. The absence of premium prices on price boards makes it difficult for customers to shop around for the best price.

7.138 Price boards provide an important source of price information for consumers. Some fuel retailers wish to have the choice of what they display on their price boards.[861] At present, they often choose not to display the price of premium fuel. For example:

7.138.1 in Consumer NZ's review of 11 retail sites from five brands on 27 January 2017, only Caltex displayed its premium price on a roadside board;[862] and

7.138.2 AA submitted that:[863]

> …consumers of premium grade petrol are unable to access the same level of pump price discounting that is available for 91 octane. This is entirely attributable to the absence of the premium price on the roadside price boards, which is the industry norm (they generally only advertise the price of 91 octane price, and diesel). This reduces price competition on premium petrol as consumers are effectively unable to shop around on price by monitoring the price boards (instead they must drive up to the pump to determine the price or monitor the Gaspy app).

7.139 The absence of display of premium fuel prices on price boards pricing makes it difficult for consumers to easily compare prices between retail sites.

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861 For example at the conference Gull stated that it wished to retain the choice about what to display on its price boards and BP stated that it believed individual competitors should be able to decide their strategies depending on how they're differentiating their offer. Transcript of retail fuel study consultation conference – Day 1 (24 September 2019) at 34 line 1-3 and at 37 line 11-13.

862 Consumer NZ "Premium petrol – should you buy it?" (17 February 2017). Available at <https://www.consumer.org.nz/articles/premium-petrol-should-you-buy-it>. (Viewed on 16 August 2019).

863 AA "Submission on Market Study into retail fuel sector – preliminary issues" (22 February 2019) at 5.

7.139.1 Consumers may use the board price of regular fuel as a reference point for premium fuel.[864] However, this will not always give a good indication of its price. The premium price is not necessarily at a fixed margin above regular fuel.[865]

7.139.2 Gaspy provides access to crowdsourced price information for most retail sites in New Zealand. However, as discussed above, it is unclear how often consumers use Gaspy before purchasing fuel and what proportion of sales can be linked to its use. Further, prices on the Gaspy app may not be immediately up to date. Prices will likely be updated more swiftly in areas with many Gaspy users and in more remote areas they may not be available at all.[866]

7.139.3 In most cases, consumers can only learn the price of premium fuel by driving into the retail site. Once at the retail site consumers may not be prepared to check another retail site due to the inconvenience. They may not pay any attention to the price at all once their vehicle is parked and ready to fill. It is also difficult for customers to compare prices at retail sites between fills (for example, by filling up at one retail site and then next time filling up at a different retail site) because prices may have changed at both stations between fills. In the face of these difficulties in easily comparing prices, consumers are less likely to shop around. This is likely to reduce the intensity of price competition for premium fuel.

7.140 There is also demand from consumers for more information about premium prices.[867] For example:

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[864] [ ]

[865] For example, one fuel retailer provided an example where one retail site pegged its premium price to the regular price whereas a nearby retail site did not.
[ ]

[866] For example, Gaspy identified that there are "black holes" on the West Coast of the South Island and Great Barrier and that accuracy is higher where there are many members using a site such as in Auckland and Wellington. Transcript of Consultation Conference Public session on Day 1 (24 September 2019) at 40, lines 9-16.

[867] We received consumer submissions that expressed concerns about price transparency. One submission did not think price transparency was an issue the Commission needed to worry about. See
[
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7.140.1 The AA conducted a survey in 2016 which suggested strong interest in seeing premium fuel prices displayed on boards.[868] According to the survey, 76.6% of its members indicated that they monitored roadside price boards, and 81.3% said that retail sites should display the premium price on the roadside boards.

7.140.2 Gaspy has told us that premium fuel price queries are disproportionately large on the Gaspy app compared to the volumes of premium fuel sold in New Zealand.[869]

7.141 During the consultation conference Gull noted that people notice and comment on "significant" price differentials between Gull's pricing and its competitors' pricing for higher octane fuel.[870] Gull also noted it had been trialling advertising the price of premium fuel on its price board at a particular site, so as to educate customers as to the relationship between the prices of lower and higher octane fuels.[871]

7.142 We considered whether requiring premium prices to be displayed on price boards could improve competition. Some submissions identified costs to such a requirement and possible limits to its effectiveness. As noted above, some retailers have also expressed a desire to have the choice about what to display on their price boards.

7.143 Gull provided an estimate that the cost to display the discounted price or the premium fuel price on price boards was about $7,500 per site.[872] New resource consents might also need to be obtained, which would add further costs.[873] We have not been able to determine how significant these costs would be for each retailer. If the cost is fixed, it will impose a greater burden on small sites that generate low revenues compared to larger sites. If the cost is significant it could affect business decisions pertaining to entry and exit, especially for smaller sites. There is the possibility that some of the costs would be passed through to consumers. We have not fully investigated the likelihood and potential magnitude of these costs alongside the likely benefits of greater price transparency for consumers of premium fuel and recommend that further work is done to do so if

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868 AA "Submission on Market Study into retail fuel sector – preliminary issues" (22 February 2019) at 5.

869 Gaspy interview, 21 October 2019, page 4.

870 Transcript of conference day 1 (24 September 2019) at 33 line 28-32.

871 Transcript of conference day 1 (24 September 2019) at 33 line 18 – 34, line 3, Gull submission on draft report at 3,
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872 Market Study Conference Day 1 Transcript (24 September 2019) page 32, Lines 31-32.
[ ].

873 BP "Submission on issues raised at Fuel Study Conference" (11 October 2019) at 8.12

our recommendations relating to the display of premium fuel prices on price boards is pursued.

7.144 We have also been told that premium price displays would need to replace other items that are currently being advertised.[874] We have not been able to say conclusively how each site would be affected in this regard. However, as discussed above some retailers have begun displaying discounted prices on price boards. This suggests to us that there is often room for additional information, such as premium fuel prices, to be displayed on price boards. However, some are currently prioritising the display of discounted regular fuel prices instead. More generally, some retailers want to retain the choice over what gets displayed on price boards depending on what products are important for their business, including non-fuel products sold in-store at retail sites.[875]

7.145 Gull told us that the positive competition effects of displaying premium prices on price boards will be limited because customers can review pricing prior to driving to a site and will use their chosen site regardless of the price on the price board.[876] However, even if factors such as retail site location drive many consumers' retail site choice, the evidence suggests that there are still many consumers that want to see premium prices on the board. All consumers of premium fuel (regardless of what drove a consumer to use a site) will benefit if premium prices displayed on price boards lead to increased competition and a fall in prices.

7.146 A requirement for retailers to display premium fuel prices on price boards risks increasing the vulnerability of retail fuel markets to tacit coordination because it will make prices more transparent. However, the fuel firms can already obtain premium fuel prices of other retailers through data services and so prices are already transparent to many of them, and much more so than for consumers. Requiring premium prices to be displayed on price boards would reduce this information asymmetry and give consumers better access to information about premium fuel prices.

7.147 BP submitted that premium fuels (particularly 98 octane) tend to be differentiated products due to the additives used or ethanol blending.[877] This means that displaying prices of these fuel grades will not provide a like-for-like comparison of offers. This could, by implication, confuse consumers of premium fuel and exacerbate the effects of a lack of price transparency on consumer decision making. However, we consider that notwithstanding the additives and blends that

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874 Market Study Conference Day 1 Transcript (24 September 2019) page 37 Lines 13-16.

875 See for example Gull "Gull New Zealand Limited submission to the Commerce Commission New Zealand on the Draft market study into the retail fuel sector" (16 September 2019) at 3. [check ref]

876 Gull "Gull New Zealand Limited submission to the Commerce Commission New Zealand on the Draft market study into the retail fuel sector" (16 September 2019) at 3.

877 BP "Submission on issues raised at Fuel Study Conference" (11 October 2019) at 8.9

are contained in premium fuel, the octane level of this fuel is the core quality characteristic that matters to consumers and this is consistent and comparable across brands. To the extent there are some differences between the premium products, customers – having compared the prices – can choose which premium product they prefer.

7.148 Finally, we have been told that there may be regulatory impediments to displaying premium fuel prices on some price boards. BP told us that the New Zealand Transport Agency (NZTA) regulations do not allow retail sites to use price boards on motorways. This is a restriction that would apply equally to regular and premium fuel pricing.[878]

7.149 Having considered the evidence and submissions on this topic we recommend the display of premium fuel prices on price boards. This recommendation is discussed in Chapter 8. In our view, consideration of that recommendation should include further assessment of the matters considered in this study as well as whether retailers should display the price for all types of premium fuel they sell, or only 95 octane fuel.

Consumers are not well-informed about the need to use premium fuel

7.150 Premium fuel is more expensive than regular fuel. It is not clear that consumers have a good understanding of whether they need to use premium fuel or the benefits it provides. We consider that if consumers had a better understanding of the need for premium fuel, they would be more sensitive to the price that fuel firms charge for it. If consumers are not well-informed, they might:

7.150.1 unintentionally buy premium fuel when they only need regular fuel, in which case they are spending more than they need to; or

7.150.2 buy regular fuel when their vehicle needs premium, in which case they risk damaging their car.

7.151 Some vehicles are required to use premium fuel, such as some European cars. However, it is unclear that there are benefits for cars that do not require premium fuel. Some fuel companies make claims over the benefits of their premium fuel. For example:

7.151.1 BP states its Premium 95 "is designed to help remove dirt and help keep your engine working as the manufacturer intended";[879]

878 BP "Submission on issues raised at Fuel Study Conference" (11 October 2019) at 8.13.

879 See <https://www.bp.com/en_nz/new-zealand/home/products-and-services/bp-fuels.html#premium95>. (Viewed on 16 August 2019).

7.151.2 Mobil states its Supreme Premium 95 helps improve engine performance and responsiveness and reduce emissions;[880]

7.151.3 Z Energy states its ZX Premium Unleaded "helps improve your engine efficiency and overall performance";[881] and

7.151.4 Gull states its 98 Octane Force 10 "emits up to 8% less carbon dioxide than other high performance fuels and has been endorsed by the Energy Efficiency and Conservation Authority (EECA) as an environmentally friendly fuel".[882]

7.152 However, some industry stakeholders think that the benefits of premium fuel are overstated. For example:

7.152.1 Consumer NZ says using premium 95 or 98 provides only marginal benefits compared with regular 91 for most motorists. Using higher octane fuel in a car that is not designed for it is unlikely to result in improved performance or fuel efficiency.[883]

7.152.2 According to Canstar:[884]

> Fuel retailers love to talk up the purported benefits of their premium fuels. They don't lie on this, but they do sometimes overstate the benefits. Most modern engines will adapt up (very slightly) if you run them on a higher octane fuel than the minimum recommended – you will get either better economy or more performance (depending on how you drive). But in practise, the improvement is tiny, and the price premium of the higher octane fuel always eclipses the economy benefit from running it – in other words, it's not an economically rational choice to run 98 in an engine designed for 91, even though it might run slightly better.

7.152.3 The MTA says the following on its website about communicating the need for and the benefits of using premium fuel:[885]

> Despite what some people claim, there is nothing to be gained from running your vehicle on a higher octane petrol than that specified by the manufacturer. Unless your engine is knocking (more about that later), buying higher octane petrol is a waste of money.

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880 See <https://www.mobil.co.nz/en/synergy-fuels>. (Viewed on 16 August 2019).

881 See <https://z.co.nz/motorists/fuels/zx-premium-unleaded/>. (Viewed on 16 August 2019).

882 See <https://gull.nz/fuel/force-10/>. (Viewed on 27 November 2019).

883 See <https://www.consumer.org.nz/articles/premium-petrol-should-you-buy-it>. (Viewed on 16 August 2019).

884 See <https://www.canstar.co.nz/transaction-accounts/which-petrol-should-you-use/>. (Viewed on 16 August 2019).

885 See <https://www.mta.org.nz/radiatorgo/motoring-tips/91-or-95-or-98-octane-petrol-which-to-use/> (Viewed on 7 November 2019).

7.153 Some consumers are confused about the need to use premium fuel.

7.153.1 A research study done for a fuel firm states:[886]

> Even those using premium fuel don't know a lot about them. Most know it's something to do with more octane and that it's meant to be slightly better for your car. However, the benefits of premium fuel are shrouded in mystery and not very tangible. Even less is known about ethanol and additives. Additives are viewed as an add on rather than as essential…
>
> There are no perceived differences between one fuel's brand 95 and the next brand's 95. And all brands are perceived to have the same type of fuel. It's perceived to be literally all the same – due to the belief that all fuel comes out of the same pipe.

7.153.2 AA told us that it receives queries from members asking about the correct octane for their vehicle.[887] AA responds to these queries using a database called the Red Book which contains this information for newer models of cars. However, for older models or imports of second-hand cars, this information can be hard to find. AA's practice is to recommend that owners of these categories of cars ask their vehicle's manufacturer for this information. The MTA has also provided examples of complaints they have received as a result of people using the wrong type of fuel in their car.[888]

7.153.3 Documents provided by industry participants indicate that consumers often rely on the recommendations of mechanics or car manufacturers when deciding whether to buy premium fuel for their car.[889]

7.154 We have considered whether consumers would benefit from access to more information about the type of fuel they should use. We have considered whether the information on correct fuel type is available, who would be best placed to obtain the information if it is not and the most effective means to communicate this information to consumers.

7.155 First, the information appears to be available for most vehicles and could be readily obtained.[890] However, the ease of obtaining the information differs depending on the type of vehicle.

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886 [ ]

887 Transcript of meeting with AA (16 October 2019) at 14 (lines 29-32).

888 Transcript of meeting with MTA (21 May 2019) at 7, line 6-10.

889 [ ]; and
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890 For example MTA estimates that information should be available for around 90% of vehicles in New Zealand. Transcript of meeting with MTA (21 May 2019) at 5, line 28.

7.155.1 Information about the correct fuel is most readily available for new imports in the vehicle's manual or through databases such as Red Book. Used imports may not have their manual and there is currently no requirement to provide the information with the vehicle. The information ought to be available from manufacturers, or importers may be able to obtain the information at the time of purchase.

7.155.2 It will be more difficult to obtain the information for the large stock of older vehicles in New Zealand. That said, it may be possible to assume the fuel type based on broad categories. For example, newer cars from Europe normally need premium fuel (as that is regular fuel in Europe) whereas regular fuel is suitable for most cars from Japan and Korea.[891] Further, if there was a requirement to provide this information for (say) all newly imported cars, then over time the proportion of vehicles in respect of which information was available would grow as older cars go out of service and are replaced with newer cars.

7.156 Second, we considered who would be best placed to obtain the information and then to provide the information to consumers. We considered whether this could be done by vehicle manufacturers. However, we consider that importers of new and used vehicles are likely to be the best placed to obtain the information and provide the information to consumers. At present importers are required to obtain a range of information on vehicles such as the make, model, colour and weight to include in the Motor Vehicle Register.[892] Importers are not required to identify the correct octane rating.[893] If the information was available then the cost to the importer to obtain that additional piece of information is likely to be low.

7.157 We also considered whether the information could be provided as part of the warrant of fitness process, in order to capture existing vehicles. However, it is clear that the information will not be available for some vehicles and it is unclear how difficult it would be for whether warrant of fitness providers to obtain access to the necessary information for the remaining vehicles.

7.158 Having obtained the necessary information about proper fuel type, it then needs to be conveyed to consumers. We understand that Europe has introduced new labelling requirements that require the correct fuel grade to be communicated to buyers.[894] But this may not be the case for imports from other markets. Another way to convey the information could be to include the information within the

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891 Transcript of meeting with MTA (21 May 2019) at 11, lines 15-20 and 22-28.

892 See < https://www.nzta.govt.nz/vehicles/how-the-motor-vehicle-register-affects-you/> (Viewed on 5 November 2019).

893 The importer is required to identify for Motor Vehicle Register whether the car requires petrol or diesel.

894 See EU "Fuel labelling for road vehicles: information for consumers".

consumer information notice (CIN).[895] A motor vehicle trader must display a CIN in the window of a car for sale. The CIN includes information such as year of registration, make, model, odometer reading, dealer information and price. The dealer and buyer must sign the document to complete the sale. The CIN could include the correct octane fuel for that vehicle. A benefit of this is that both parties would commit to acknowledging they understand the correct type of fuel to be used in the vehicle.

7.159 As noted above the AA and MTA have provided examples of customer complaints, but we acknowledge that it is unclear what proportion of consumers misunderstand the fuel requirements for their vehicle. Even if information is available, customers may still choose to ignore the information and buy the "wrong" type of fuel.

7.160 Nevertheless, we consider that a fuel cap or fuel flap label for each vehicle identifying the type of fuel that should be used in that vehicle would be a low-cost method of ensuring the information is readily available at the point that consumers intend to fill their vehicle with fuel. Even if it is introduced over time in relation to vehicles for which information is readily available, this would be of real benefit to consumers who are uncertain about the fuel requirements of their vehicle and would purchase regular fuel if they knew it was an option. This recommendation is discussed in Chapter 8.

7.161 A related issue that AA raised is the risk that people buy 98 octane fuel when expecting to buy 95 octane fuel.[896] AA submitted that a customer may visit a retail site expecting to buy 95 octane fuel but instead the retail site only supplies 98 octane fuel. 98 octane fuel is more expensive than 95 octane and so the customer pays more than they expected. At this point we cannot say how widespread this problem is. However, again, we note that displaying premium prices on the price board would likely reduce the risk of this. Consumers would be able to see the price before entering the retail site, which would likely alert them to what the retail site is supplying (either because it will be identified as 98 or because the price will be relatively high). The customer can then choose whether they want to pay for 98.

Premium fuel is sold at a higher margin than other fuels and the difference is increasing

7.162 The retail price of premium fuel is higher than regular fuel. This will be in part due to the higher costs for the fuel firms to supply premium fuel. However, it has been

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895 See <http://www.motortraders.govt.nz/cms/consumer-information/traders-responsibilities-to-buyers> (Visited on 5 November 2019).

896 Transcript of Consultation Conference Public session on Day 1 (24 September 2019) at 31, line 1-6.

suggested to us that margins on premium fuel are high and that the difference in margin between premium and regular fuel prices has been increasing over time.[897]

7.162.1 In a review of 11 retail sites from five brands carried out by Consumer NZ in Wellington on 27 January 2017, premium 95 (sold at nine locations) was 7 to 11 cents per litre more than regular 91. Premium 98 fuel was 17 cents per litre more than regular 91 at the one retail site offering it.[898]

7.162.2 AA submitted:[899]

> [the] undiscounted retail price for 95 octane is typically 9 cents per litre (cpl) higher than 91 octane (with 98 octane priced 8cpl higher again). Yet 10 years ago the differential between 91 and 95 was just 5cpl. Further, data from Hale & Twomey on landed fuel costs shows 95 octane generally costs about 4cpl more.

7.162.3 A fuel firm told us that the difference in price of importing regular fuel and premium 95 is a few cents per litre.[900]

7.163 We have done our own analysis of the price of premium and regular fuel over time. We have compared the average retail price of premium and regular fuel against the cost of importing those fuels. The chart below shows our results. The chart shows that the gap between the margin that fuel firms achieve on premium and regular fuel has steadily risen over time and is now around 8 to 10 cents.

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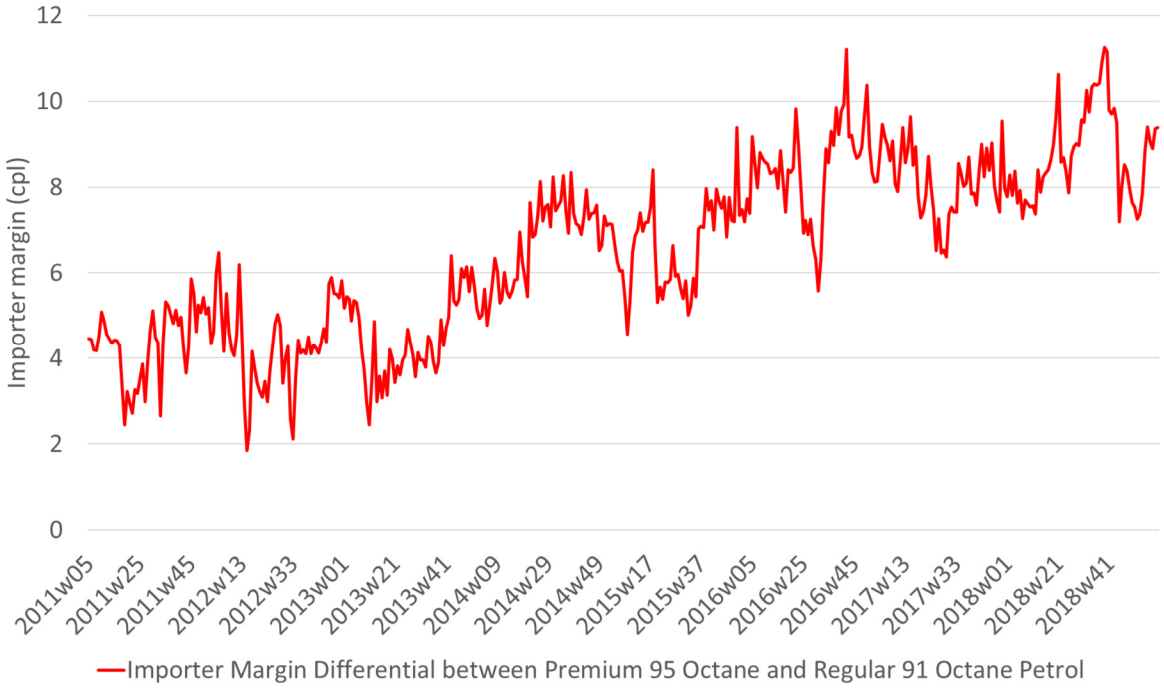
897 We received consumer submissions raising concerns about the difference in price between regular and premium fuel. See [ ].

898 See <https://www.consumer.org.nz/articles/premium-petrol-should-you-buy-it>. (Viewed on 16 August 2019).

899 AA "Submission on Market Study into retail fuel sector – preliminary issues" (22 February 2019) at 2.

900 [ ]

Figure 7.3 Difference between importer margin of regular and premium fuel



Source: Commerce Commission analysis based on data provided by industry participants.
Notes: Importer margins represents the gross margin available to fuel importers after covering importer costs, which are the cost of importing fuel to New Zealand —including the cost of purchasing the fuel in Singapore, and shipping it to New Zealand and any cost adjustments for meeting New Zealand's fuel specifications. Some adjustments have been made to the Singapore benchmark cost index to account for quality premia costs of both 91 and 95 octane petrol to meet New Zealand's fuel specifications.
[ ]

7.164 The change in the gap over time between margins suggests that different costs do not explain the differences in price between premium and regular fuels. We consider that the lack of understanding over the need for premium fuel and absence of premium fuel prices on price boards may be contributing to these trends by limiting the ability of consumers to compare premium fuel prices, reducing competition for these fuels and contributing to higher premium petrol prices than might be expected in a workably competitive market.

Chapter 8 Recommendations

Summary of our recommendations

Recommendations to improve wholesale competition

- Recommendation 1: Institute a Terminal Gate Pricing regime
- Recommendation 2: Change wholesale supply agreements
- Recommendation 3: Improve information on infrastructure sharing arrangements
- Recommendation 4: Review infrastructure sharing arrangements
- Recommendation 5: Adopt an enforceable industry code of conduct

Recommendations to facilitate consumer choice

- Recommendation 6: Improve transparency of premium fuel prices
- Recommendation 7: Improve information on when premium fuel should be used
- Recommendation 8: Monitor the display of discount pricing on price boards

Other recommendations

- Recommendation 9: Improve information and record keeping
- Recommendation 10: Change the COLL Joint Venture to reduce the potential for coordination
- Recommendation 11: Change refinery capacity allocation

Our approach

8.1 In this chapter we outline our recommendations. These are based on our findings on the factors affecting competition for the supply of retail petrol and diesel used for land transport in New Zealand.

8.2 The Act provides us with a broad power to make recommendations as part of the final report. However, we are not required to make any recommendations. We have made recommendations where the evidence before us suggests that there are ways to improve competition for the long-term benefit of New Zealand retail fuel consumers.

8.3 We sought comment on the options for possible recommendations in our draft report. We also invited suggestions of other options for recommendations we may make that could improve competition. In reaching our final recommendations we have considered the comments and suggestions we heard in the consultation process.

8.4 Our final recommendations are also made with regard to what is likely to be feasible, and the potential costs of the recommendations in relation to the likely benefits to competition and consumers. However full cost-benefit analysis falls outside the scope of this study. It may be undertaken as part of the decision making process about which recommendations the Government chooses to take forward and in what form.

8.5 Our final recommendations rely on our analysis of the factors affecting competition at all levels of the supply chain. They are necessarily interdependent, and we acknowledge that changes in one part of the supply chain can have implications for another part of the supply chain. Our final recommendations should be considered with reference to their interrelationship, their potential aggregate impact on the functioning of the whole supply chain, and their ultimate impact on competition for the supply of retail petrol and diesel.

8.6 In our draft report we noted that some of our options for recommendations might be best implemented by industry participants. We received feedback in the consultation process that industry agreement would be difficult to obtain, and industry participants would have concerns that some forms of industry agreement could potentially be seen as contravening the Commerce Act. Feedback from industry participants will, however, be able to be considered by Government in its response to our recommendations.

Overview of recommendations

8.7 Our view is that the recommendations most likely to improve competition will be those directed towards the creation of an effective wholesale market, in which independent fuel importers compete with the majors to supply wholesale customers. In the long-term, this is likely to be the greatest driver of enhanced competition in retail markets.

Wholesale market recommendations

8.8 Our recommendations are primarily directed at stimulating wholesale market competition. We consider that measures to facilitate a workably competitive wholesale market should lower both wholesale and retail fuel prices. Our recommendations are likely to improve wholesale competition, and to lower retail prices, in two ways.

8.8.1 Increased wholesale competition will lower wholesale prices, creating the potential for lower retail prices. Increases in wholesale competition will be driven by:

8.8.1.1 greater price transparency, and improved contractual freedom, that will make it easier for distributors and dealers to receive and compare competitive offerings from a range of suppliers;

8.8.1.2 conditions that improve the potential for entry by importers, as distributors and dealers will be more willing and able to switch suppliers; and

8.8.1.3 greater independence for distributors and dealers, and conditions that make entry and expansion easier, will encourage greater retail competition, which will result in lower retail prices.

8.9 We recommend that regulation provides for a Terminal Gate Price (TGP) regime.

8.10 We consider this is likely to be an effective intervention to promote wholesale competition. We consider an industry code would be an effective way to provide for a TGP regime, and have recommended that an enforceable industry code be adopted. This type of regulatory intervention is likely to be lower cost, and with a reduced risk of unintended adverse consequences, compared to regulated participation in infrastructure sharing arrangements or price control.

8.11 We note that it is not guaranteed that competition between suppliers will result in competitive TGPs. We identify a number of potential matters that we recommend should be taken into account in the design of the TGP regime to enhance the likelihood of competitive TGPs.

8.12 We consider that a TGP regime provided for in an enforceable industry code could be supported by a backstop regulatory regime that can be brought into force if competition between suppliers does not deliver competitive TGPs within a reasonable period of time.

8.13 We also recommend that regulation limits the use of certain terms in wholesale supply contracts.

8.14 We consider that the potential for increased wholesale competition is impeded by contractual provisions that restrict the freedom of distributors and dealers to obtain wholesale supply on competitive terms. In particular, we recommend that:

8.14.1 all wholesale contracts should be written in clear and concise language, and should include a transparent cost-based pricing clause;

8.14.2 all wholesale contracts should permit a distributor to take a prescribed minimum percentage of their supply from other suppliers. For example, distributors could be permitted to take at least 20% of supply from another supplier; and

8.14.3 distributors should not be committed to wholesale contracts exceeding a prescribed maximum period without a right to terminate on notice, unless a longer term is directly connected to relationship-specific investment, and is reasonably necessary for that investment to occur.

8.15 We do not recommend regulating for wider participation in the infrastructure sharing arrangements. Regulation of these complex multiparty arrangements, and ensuring appropriate investment incentives, would be costly and time consuming, and it appears that there would be little demand from other firms to participate in the short to medium term.

8.16 We do, however, recommend that the parties to the COLL joint venture and borrow and loan arrangements publish the existing process and criteria for third party participation in the infrastructure sharing arrangements. We also recommend the parties review aspects of the borrow and loan arrangements that may be acting to disincentivise investment in shared storage.

8.17 We also recommend that there is a regulatory requirement for improved, standardised, information to be collected and kept. If higher quality information is collected, this will likely improve the timeliness, cost and accuracy of any future study or regulatory intervention in this industry.

Retail market recommendations

8.18 While most of our recommendations are focused on improving competition in the wholesale market, there is also some scope for changes to more directly improve competition in retail markets, primarily by improving the ability of consumers to make informed purchasing decisions, thereby driving increased competition at this level of the market.

8.19 Our retail market recommendations relate to the sale of premium petrol and are designed to benefit competition and consumers with a low risk of unintended adverse consequences. We also recommend monitoring the use of discounted prices on price boards.

8.20 Other potential interventions that could be considered in retail markets are not being recommended at this time. This is because many of them carry the risk of unintended adverse consequences that could outweigh their benefits. For example, we consider that care is required before pursuing options that could facilitate coordination, such as the promotion of price comparison tools.

8.21 In addition, no recommendations are made in relation to the use of discount and loyalty programmes. However in Chapter 7 we encouraged retailers to consider whether their discount and loyalty programmes share any of the features identified by the ACCC as potentially causing consumer detriment, and if they do, how they could be modified to address this. Businesses should ensure that consumers have a genuine opportunity to review and understand the policy and operation of discount and loyalty programmes to avoid misleading and deceptive conduct.

Other recommendations

8.22 Finally, we consider that some characteristics of the industry make it prone to coordination, and that some current industry practices may both enhance the

potential for coordination and soften competition. We have made a number of recommendations directed towards reducing information sharing between the majors and enhancing their incentives to compete in the wholesale and retail markets through changes at the refinery and distribution level.

Recommendations to improve wholesale competition

8.23 As discussed above (Chapters 2 and 6), a competitive wholesale market failed to materialise post-deregulation, resulting in limited wholesale market competition between importers. Each importer now has control over a vertically integrated supply chain and this control is exercised through a mix of ownership and restrictive contractual arrangements.

8.24 Wholesale market competition has the potential to be much more vigorous than retail competition even with a small number of market participants because it involves large volumes of commodity fuel being traded at a small number of locations between well-informed parties. These features are conducive to the use of competitive tenders that should promote price-based competition. Leader-follower pricing and accommodating behaviour is a risky strategy in a market with these characteristics because prices are not transparent and suppliers risk missing out on large volume contracts. A more competitive wholesale market would, in turn, create scope for lower retail prices.

8.25 However, our study has not revealed vigorous wholesale competition. Instead, current industry structures and practices have a number of adverse impacts on competition at both the wholesale and retail levels as follows:

8.25.1 it is difficult for new importers to compete against the existing market participants because there are limited switching opportunities for buyers in the wholesale market;

8.25.2 it is difficult for new or expanding distributors to compare pricing and consider switching between alternative suppliers because of long-term exclusive contracts and poor price transparency; and

8.25.3 retail competition may be restricted to a higher price range because wholesale prices are higher due to the limited competitive pressure between importers.

8.26 Even without the burden of elevated wholesale prices, competition at the retail level has characteristics which inevitably lead to softer competition. Unlike wholesale markets, retail markets are characterised by geographic and product differentiation, which reduce substitution, and small volume purchases. The posting of prices on boards, while helpful for consumers, also makes it easier to experiment with price increases to see if other retailers follow. Increases can be quickly retracted with little loss of volume if they are not.

8.27 A more competitive wholesale market will both reduce the cost base from which retailers compete and promote the entry and expansion of additional retail competitors that are independent of the majors. Both factors will tend to reduce retail prices for consumers. This is why our recommendations are aimed at promoting wholesale competition.

8.28 There are two interrelated factors that limit wholesale competition:

8.28.1 the majors' joint infrastructure network gives them an advantage over current and potential rival resellers, who are unable to acquire fuel from terminals throughout the country other than under contract with a major; and

8.28.2 wholesale supply relationships, including restrictive contract terms, between the majors and their resellers reduce competition and limit resellers' ability to switch supplier.

8.29 These factors reduce the ability of importers to compete for customers of the majors and for distributors and dealers to obtain competitive terms for their wholesale supply. Both may have the effect of hindering or deterring new entry or expansion by importers and independent distributors.

8.30 There is no guarantee that a competitive wholesale market will develop rapidly if these barriers are removed. Some downstream distributors and dealers have a happy co-existence with their supplier and no desire to change. However, there appear to be significant economic incentives for some distributors to switch, at least for some of their volumes, and this could be expected to lead to more competition over time, both through new importer entry and increased competition between the majors. For the reasons set out above, increased competition would in turn benefit New Zealand's retail fuel consumers in the form of lower retail prices.

Recommendation 1: Institute a Terminal Gate Pricing regime

8.31 We recommend the implementation of a TGP regime as outlined below.

8.32 We also:

8.32.1 identify some potential risks to the successful implementation of a TGP regime; and

8.32.2 outline some potential mitigations to those risks.

8.33 This recommendation should be considered together with our recommendations relating to changes in wholesale contracts and the creation of an enforceable industry code. A TGP regime may not be effective if it is not enforceable (see Recommendation 5) and supported by changes to current wholesale contracts (see Recommendation 2).

8.34 In our draft report we proposed that transparency of pricing at the wholesale level could be improved by instituting a regime akin to the TGP regime found in Australia.[901]

8.35 Industry participants supported introducing a TGP regime in New Zealand, including Z Energy, Mobil and Gull.[902] BP did not accept that intervention was required to promote wholesale competition, but did not oppose a TGP regime during discussion at the consultation conference.

What we mean by a Terminal Gate Price

8.36 A TGP is a price at which wholesale suppliers will sell fuel to wholesale customers at storage terminals on a spot basis. The TGP is quoted for fuel only and includes no added services, such as delivery. A TGP regime has been implemented in Australia, through the Australian Oil Code.[903] Submissions supported any TGP regime being based on the Australian model, with amendments to meet local conditions.[904]

8.37 The Australian Oil Code requires that each wholesale supplier posts a daily TGP for each regulated fuel it supplies at each facility.[905] The TGPs must:

8.37.1 be expressed in cents per temperature corrected litre;

8.37.2 be posted on a website or available through a phone service;

8.37.3 be posted each day; and

8.37.4 not include any amount for an additional service.

8.38 The Australian Oil Code requires that wholesale suppliers must not unreasonably refuse to supply any customer who requests supply at the TGP. Supply is not required where:

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901 Commerce Commission "Market study into the retail fuel sector: Draft report" (20 August 2019) at [8.28].

902 Z Energy "Z Energy submission on the Commerce Commission's market study into the retail fuel sector: Draft report" at [94]; Mobil "Submission to the New Zealand Commerce Commission in response to the Market Study into the Retail Fuel Sector Draft Report" (13 September 2019) at 3; and Gull "Gull New Zealand Limited submission to the Commerce Commission New Zealand on the Draft market study into the retail fuel sector" at 2. See also Transcript of Commission Conference, Day 2 (25 September 2019) at 22 – 28.

903 Australian Federal Register of Legislation "Competition and Consumer (Industry Codes—Oil) Regulations 2017" <https://www.legislation.gov.au/Details/F2017L00223>. (Viewed on 4 November 2011).

904 BP "Submission on the August 2019 Draft Report" (13 September 2019) at [8.21] – [8.23] and Gull "Gull New Zealand Limited submission to the Commerce Commission New Zealand on the Draft market study into the retail fuel sector" at 1.

905 Clause 8, Competition and Consumer (Industry Codes – Oil) Regulations 2017 (Aus).

8.38.1 there are reasonable grounds to believe the customer is unable to pay, or will not comply with relevant health and safety requirements; or

8.38.2 the supplier does not have sufficient supplies to reasonably meet the customer's requirements.

8.39 The Australian Oil Code requires that if a wholesale supplier or customer seeks a term contract, the wholesale supplier must provide the option of purchasing at the TGP, or a formula including TGP, a discount, and/or charges for additional services.[906]

8.40 As most wholesale transactions in Australia are governed by a contract, or similar negotiated agreement, few transactions actually occur at the published TGP. Despite this, TGPs are an informative point of reference for distributors,[907] and enable interested parties to analyse trends in average wholesale prices. A TGP can facilitate and inform discussions between suppliers and distributors about contract prices, and any justification for changes in those prices.[908]

8.41 We agree with submissions that the Australian TGP regime is a useful starting point for the implementation of a TGP regime in New Zealand. We also agree that a TGP regime for New Zealand should:

8.41.1 set standard terms and conditions for TGP sales, including credit and safety conditions, what taxes or costs can be included in a TGP, and how TGPs are published;[909] and

8.41.2 apply to all wholesale suppliers who have a right to draw product from terminals or equivalent facilities.[910]

How a Terminal Gate Price may improve competition

8.42 We consider that a TGP regime is likely to help improve competition at the wholesale level of the New Zealand fuel market. A TGP regime will:

8.42.1 create the potential for a liquid wholesale spot market to develop;

8.42.2 lower barriers to entry and expansion for both importers and distributors;

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906 Clause 7, Competition and Consumer (Industry Codes – Oil) Regulations 2017 (Aus).

907 Transcript of retail fuel study consultation conference - Day 2 (25 September 2019) at 27.

908 ACCC "Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia" (December 2014) at 44.

909 Gull "Submission to the Commerce Commission New Zealand on the Draft market study into the retail fuel sector" at 2.

910 Ibid. See also Z Energy "Second Submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" at [80].

8.42.3 provide greater pricing transparency for distributors; and

8.42.4 provide competitive benchmark information for industry and government.

8.43 A TGP regime could lead to the development of a liquid wholesale spot market, which would assist market participants looking to enter or expand, or distributors looking to switch suppliers. We acknowledge however, that this may not occur in the short to medium term.

8.44 A TGP regime could help reduce barriers to entry and expansion for vertically integrated import entrants and distributors, by providing a transparent and readily available way for firms to obtain supply from the existing network of terminals.

8.45 Absent the ability to draw fuel from a network of terminals, vertically integrated import entrants and distributors potentially face higher transport costs when compared to majors.

8.46 The alternative of investing in terminal infrastructure also may not be economic in many locations, given the level of demand in those locations.

8.47 The guaranteed ability to obtain spot supply will give distributors and vertically integrated import entrants greater confidence to expand their network and/or enter a new region without the need for contractual negotiations with rivals who may attempt to delay or hinder successful entry.

8.48 Publication of TGPs will increase price transparency for wholesale customers, and this benefit will occur whether or not distributors and dealers choose to purchase fuel under the TGP regime.

8.48.1 Pricing mechanisms in many wholesale contracts are unclear, meaning distributors and dealers may lack visibility over how their contract prices are set. Wholesale price information is not published, meaning distributors and dealers do not have any benchmark to compare their prices against.

8.48.2 Publication of TGPs will provide greater information to distributors and dealers. They will be able to compare changes in the price they pay against changes in TGPs. Distributors and dealers will also be able to compare TGPs between wholesale suppliers.

8.49 This will increase the likelihood of switching, provided that restrictive contract terms such as long-term exclusivity are also addressed, as discussed further below. It should also improve distributors' bargaining positions in both contract negotiations and in discussions with suppliers over price changes. These changes should increase competition at the wholesale level.

8.50 Publication of TGPs will also provide additional information to any agency responsible for the monitoring of wholesale prices.

8.51 In particular, a TGP regime may enable market participants and Government to compare TGPs between regions where terminal competition is stronger (eg, Tauranga and Timaru) or weaker (eg, Nelson). Having a competitive benchmark to measure against will assist market participants and Government to identify whether increases in a TGP posted at a particular location is easily explained, or represents the exercise of market power to raise profits or some other market failure. This increased transparency will increase the likelihood either of investment by rivals or government regulation in response to any exercise of market power. These threats may, in turn, curb the incentive on majors to use their market power in a region where competition is weak to increase prices and profits.

8.52 This is important given the current borrow and loan arrangements are not mandated by regulation, and while a TGP regime is not inconsistent with the borrow and loan arrangements,[911] it should not be assumed that the 'borrow and loan' arrangements necessarily will endure. As discussed in Chapter 5, we consider that the borrow and loan arrangements may constrain the ability of majors to increase throughput fees at ports to raise profits, as doing so may result in a retaliatory response by majors at other ports. Absent such a system, majors may have an increased ability to increase prices to raise profits at particular ports where they have terminal capacity.[912] A TGP regime would help to constrain that ability.

8.53 If the borrow and loan arrangements were to break down, a TGP regime on its own may be insufficient to constrain increases in price to raise profits at ports. The risk is particularly high at relatively isolated terminals, which cannot easily be supplied by truck from another location.

8.54 Finally, we note that in Australia the ACCC has used published TGPs and retail price information to calculate and publish an indicative gross retail margin. This is said to have assisted consumers and motoring organisations to compare relative retail margins on fuel in their area, and question prices if margins are relatively high.[913]

Risks to successfully implementing a Terminal Gate Price regime

8.55 We have identified several risks that could prevent the implementation of a successful TGP regime in New Zealand. These will need to be addressed should our recommendation to introduce a TGP regime be pursued. These are:

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911 Mobil "Commerce Commission Market Study into Retail Fuel Consultation Conference – Submission following confidential session, Friday 26 September 2019" (11 October 2019) at [21] – [22], Z Energy "Z Energy second submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" (11 October 2019) at [81] – [82].

912 Note that Z Energy considers that competitive tension would operate to constrain prices under a TGP regime, whether or not the 'borrow and loan' arrangements remain in place – Z Energy "Second submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" at [84].

913 ACCC "2015 Review of the Oilcode – ACCC submission" (13 October 2015) at 6.

8.55.1 the risk to supply during a port coordination event under the 'borrow and loan' arrangements;

8.55.2 the risk that majors do not offer competitive TGPs; and

8.55.3 the risk that the TGP regime is used as a vehicle for coordination.

8.56 New Zealand's tight fuel supply chain, and the prevalence of port coordination events, may result in suppliers refusing, or constructively refusing, to offer TGP supply. The risk of this occurring may limit the scope for a TGP regime to improve price transparency and the willingness of retailers to rely on TGP supply.

8.57 Under a port coordination event, majors may be reluctant to supply spot volumes. This may mean that TGPs are not posted (if they are not mandatory), or that if they are, majors either refuse to supply at the TGP (in which case the TGP has no information value) or post a price intended to discourage any retailer from taking supply.

8.58 These risks during port coordination events may mean that those currently contracted to certain majors will be less inclined to switch suppliers. This may occur despite the price transparency a TGP regime brings.

8.59 Retailers seeking to establish themselves initially based on spot purchases may encounter significant difficulties in doing so if majors are not obligated to supply at TGP during port coordination events. This may in turn prevent a TGP regime from providing an effective remedy for high barriers to entry at the importer level of the supply chain.

8.60 Port coordination events, and the cause of them, are not transparent to distributors unless their supplier chooses to provide them with that information. This compounds the uncertainty that retailers face, as their ability to plan for or predict coordination events, or take steps to effectively mitigate against them, is dependent on their supplier.

8.61 Any TGP regime will need to provide clarity over when it would be reasonable to refuse to supply spot sales because of a lack of fuel stocks in the future. These may need to differ from the equivalent requirements in the Australian regime, as we understand that Australian suppliers do not face the same degree of supply constraint experienced in New Zealand. Australia has a better developed wholesale market, with a greater number of refineries and importers, and some independent terminal owners. There is no equivalent of the borrow and loan arrangements in Australia, so port coordination events do not arise.

8.62 A second risk is that the majors, irrespective of the supply situation, post TGPs that incorporate a return on market power. The risk of this occurring will be higher, the fewer the number of suppliers at a port. Again, this is a potential difference between the New Zealand and Australian markets, where wholesale competition is

more well established and there is a greater level of terminal competition in most ports.

8.63 Lastly, a TGP regime, on its own, may provide a low cost focal point on which to coordinate prices. The greater risk of price coordination arises from the increased price transparency a TGP regime would bring. We note that the ACCC considers this risk arises in Australia, but on balance supports the continuation of the TGP regime because of the benefits from increased transparency of wholesale prices.[914] We consider the same balance in favour of a TGP regime is likely to apply here. However we also consider that the monitoring regime and regulatory backstops we recommend below should help to guard against this risk.

How to address barriers to a successful Terminal Gate Price regime

8.64 While it will be for the Government to determine the appropriate regulatory framework if it chooses to adopt a TGP regime, we have identified options to address the risks identified above and to help ensure the success of a TGP regime in New Zealand. These are:

8.64.1 a 'must supply' obligation for a certain volume of sales at the TGP spot price;

8.64.2 a monitoring regime, where wholesale suppliers are required to regularly disclose certain information to a monitoring agency; and

8.64.3 the credible threat of further regulatory intervention, if competition does not deliver competitive TGPs within a reasonable period of time.

Must supply obligation

8.65 We recommend that as part of any TGP regime a requirement is imposed on suppliers to make a certain amount of fuel available for spot sales (a "must supply obligation").

8.66 This would address the risk of refusal to supply at the spot TGP due to limited availability of fuel (for example, during port coordination events) and the risk of posted TGPs being unrealistic.

8.67 Under the Australian Oil Code a wholesale supplier "is not required to supply the declared petroleum product to a customer if the wholesale supplier":[915]

> …does not have sufficient supplies of the declared petroleum product that the wholesale supplier can reasonably provide to meet the customer's requirements

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914 See ACCC Submission on 2015 review of the Oil Code, 13 October 2015, p6.

915 Clause 11(2)(a), Competition and Consumer (Industry Codes – Oil) Regulations 2017 (Aus).

8.68 Given the frequency of port coordination events in New Zealand, particularly in the South Island, there is a risk that refusal to supply at TGP could be a common occurrence and this could undermine the benefits intended by implementing a TGP regime.

8.69 To address this risk, suppliers could be required to make available a minimum volume of fuel for spot sales at each terminal – for example, 30,000 to 35,000 litres (ie, a tanker load) per week or month. A wholesale supplier would not be able to refuse spot supply of this amount of fuel.

8.70 Any must supply obligation would need to be crafted to protect the integrity of sales at TGP and avoid manipulation of spot supply to advantage wholesale suppliers. For instance, given a must supply obligation, there might be a risk that wholesale suppliers prioritise their own needs above distributors' contracted volumes in times when supply is constrained. To make up for the shortfall in volumes, distributors may be forced to purchase at TGP spot prices, which may be costlier than their contracted volumes.

8.71 To mitigate against this risk, regulation could clarify that both spot sales at TGP, and sales under term contracts, receive higher priority than fuel for a wholesale supplier's own retail sites. Such an approach would have additional advantages as follows.

8.71.1 Firms seeking entry based on spot supply would have a means of doing so, even under periods of port coordination.

8.71.2 This may further incentivise distributors to switch wholesale suppliers, as it would mitigate the risk of an unfavourable allocation during port coordination, irrespective of who the wholesale supplier is.

8.71.3 Risks of tight supply would effectively be borne by wholesale suppliers, since it would be their volumes that would need to be sourced from elsewhere. In particular, more of the costs associated with supply from elsewhere would be borne by wholesale suppliers. Wholesale suppliers are the parties best able to manage this risk, and transferring the risk to them may strengthen incentives to address underlying reasons for the tight supply, such as by increasing stockholding, investment and/or shipping frequency.

8.72 In recommending a must supply obligation we recognise its ultimate effect on terminal investment incentives should be monitored. If necessary, the industry code revision process could be used to adjust regulation.

8.73 We note that an obligation to supply a certain volume of spot sales may result in additional costs if there is no demand for spot purchases, which could lead to higher retail prices if wholesale competition does not increase. For example, there could be increased costs associated with stock holding, investment, increased

shipping frequency, or the risk a wholesale supplier faces associated with potentially being short on supply.

8.74 However, with the planned entry of a secondary supply chain through TOSL, less demand might be met through existing terminals. We also note terminal investments in Lyttelton by Mobil.[916] Therefore, the current wholesale suppliers may not necessarily have to increase stock holding or invest to comply with an obligation to supply a certain volume of spot sales.

8.75 Irrespective of the above, as noted in Chapter 5, we consider the current tight fuel supply chain, exemplified by the frequency of port coordination events, imposes costs on consumers by impeding competition at the wholesale level. As such, we consider there would be benefits to competition from a must supply obligation under a TGP regime.

8.76 We note that the Government Inquiry into the Auckland Fuel Supply Disruption has similarly found that the level of resilience for diesel into Auckland is decreasing, recommending close monitoring to ensure that decisions regarding required investment in additional storage are made in a timely way.[917] Any increased stockholding or investment because of a must supply obligation may have the benefit of increasing resilience.

TGP Monitoring regime

8.77 We recommend that as part of any TGP regime, information relating to TGP sales, TGP non-supply, and contracted sales should be required to be supplied by wholesale suppliers.

8.78 If the publication of TGPs is mandatory, it would not be onerous to require wholesale suppliers to provide daily data, including those published prices, to a monitoring agency on a regular basis.

8.79 Information could be collected on:

8.79.1 daily TGPs for each grade of fuel at each terminal from each supplier who can supply fuel from that terminal;

8.79.2 daily volumes of each grade of fuel sold, separated out by spot sales and contract sales;

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916 Mobil "Mobil to restore Lyttelton terminal storage capacity" (15 November 2017). Available at <https://corporate.exxonmobil.com/en/Locations/New-Zealand/News-releases/20171115_Mobil-to-restore-Lyttelton-terminal-storage-capacity>. (Viewed on 4 November 2019).

917 Government Inquiry into the Auckland Fuel Supply Disruption (August 2019) at [13.27] – [13.28].

8.79.3 for those contract sales, the wholesale prices charged for each grade of fuel at each terminal (by customer); and

8.79.4 all instances of requested TGP supply that was not supplied, including the date on which this occurred, the name of the company seeking fuel and the reason for non-supply.

8.80 A monitoring agency could periodically publish analysis of the information collected. This could include analysis of whether the TGP regime is effectively supporting competition in the wholesale market. Care would need to be taken not to disclose any commercially sensitive information, or to provide information that facilitates coordination between market participants.

8.81 The periodic publishing of information and analysis would provide some visibility on any potential competition issues, such as any increases in prices by parties with port-specific market power and/or coordination. Such visibility may itself guard against competition concerns. It may also assist existing market participants and potential entrants in their decision making. For example, areas of high profitability may become more readily apparent, promoting earlier entry where this is feasible and greater competition.

8.82 This is particularly relevant if the borrow and loan arrangements were to break down and provide the majors with an increased ability to increase prices at certain ports.

Credible threat of further regulatory action

8.83 We recommend preparing a backstop regulatory regime to the TGP regime that can be brought into force should competition not deliver competitive TGPs within a reasonable period of time.

8.84 We consider that a credible threat of further regulation if a TGP regime does not facilitate competitive wholesale prices would incentivise the majors to offer competitive TGPs.

8.85 We have identified two potential further regulatory intervention options that would not involve the full cost of a regime to regulate participation in shared infrastructure:

8.85.1 a binding arbitration system that could provide for price or terms of supply to be set for a supplier who has unreasonably failed to comply with the TGP regime. For example, this could apply if there were repeated instances of non-supply at a TGP or if prices were consistently set well above cost at a terminal; and

8.85.2 a default regulatory regime could be made available to price regulate a specific terminal or terminals where a major has market power, or competitive outcomes are not being observed. Options may include determining prices based on:

8.85.2.1 MOPS plus a regulated margin; or

8.85.2.2 a benchmark price, based on a demonstrably competitive price observed at another port (for example, Mount Maunganui or Timaru), adjusted to reflect any difference in cost associated with transporting fuel to the regulated terminal.

Transition period to implement the TGP regime and contractual terms

8.86 We recommend a transition period be built into any TGP regime and any regulatory regime that provides additional rights or prohibits particular contractual provisions, as discussed in Recommendation 2 below.

8.87 Given the long-term – or indefinite - nature of wholesale supply contracts, waiting until the expiry of the contracts to implement change could substantially delay improvements to wholesale competition.

8.88 When the Australian Oil Code was first implemented in Australia, distributors were given the opportunity to elect to move to a price expressed on the basis of TGP, notwithstanding any existing agreement. We consider a similar opportunity could be provided here.

8.89 This transition period would also create an opportunity for contracts to be renegotiated to address terms we see as impeding competition (such as long exclusive contracts) and include terms that would invigorate competition (such as split supply and price transparency).

8.90 If our recommendations are adopted, Government would likely need to set an appropriate time period for transition. This could take into account the interests of the parties affected, and the time required for negotiation to occur, while avoiding delay to improvements in wholesale competition.

Interdependence with other recommendations

8.91 We consider, as outlined in the next section, that immediate contractual reform is also required. We see this as an essential complement to a TGP regime. Without it there is a much-reduced scope for an improvement in wholesale competition.

8.92 Our TGP recommendation is also relevant to our recommendation that a range of information be collected from wholesale suppliers. A TGP regime with the monitoring we suggest will already gather some of the information necessary to implement that recommendation.

Recommendation 2: Change wholesale supply agreements

8.93 In this section we refer to two types of market participants who purchase fuel under wholesale supply agreements.

8.93.1 Distributors: these are market participants who purchase fuel at wholesale, and then either supply it to others, or retail that fuel under their own brand. Examples include Allied, NPD and Waitomo.

8.93.2 Dealers: market participants who retail fuel under someone else's brand. These are sometimes referred to as "dealer owned/dealer operated" sites, in distinction to "company owned/company operated" sites.

8.94 During this study some concerns were raised with us that involve dealers and suppliers but do not affect competition for retail fuel.[918] We acknowledge those concerns, but the issues raised fall outside of the scope of the study, and we do not address them further.

8.95 In Chapter 6 we described how many contracts contain restrictive provisions that create and reflect an imbalance of rights and obligations between the parties in favour of the majors. We acknowledged that the terms of such contracts must be considered in the context of the whole contract, and that the terms can in some circumstances have benefits and lead to pro-competitive outcomes. We ultimately concluded that less restrictive contractual arrangements are necessary to stimulate increased competition in both the wholesale and retail markets.

8.96 We identify three areas where contractual provisions in wholesale supply agreements may adversely affect competition.

8.96.1 A lack of price transparency in wholesale supply agreements between suppliers and distributors and dealers, which makes it difficult to compare and negotiate wholesale prices, coupled with pricing terms that may provide suppliers with the ability to exert upwards pressure on retail prices.

8.96.2 Long-term exclusive contracts, which reduce contestability and limit the scope for entry into the wholesale market.

8.96.3 Other disincentives to switch suppliers, including restrictive covenants and restraints of trade, requirements to pay liquidated damages upon switching suppliers, rights of first refusal and renewal clauses at the supplier's option.

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[918] MTA "MTA Submission – Commerce Commission Market Study into the Retail Fuel Sector – Draft Report" (13 September 2019) at [9.9.4(c)].

Transparency of pricing in wholesale contracts

8.97 We recommend that fuel supply contracts with distributors and with dealers be required to be written in clear and concise language, and include a transparent pricing provision.

8.98 If our recommendation for an enforceable industry code is accepted, these requirements could be implemented in the industry code.

8.99 In recommending that fuel supply contracts with distributors and with dealers be required to be written in clear and concise language, and include a transparent pricing provision, we suggest that any regulatory framework could:

8.99.1 require that prices in wholesale contracts are set using a clear and transparent cost-based methodology;

8.99.2 provide that wholesale contracts set with reference to a TGP or MOPS benchmark are deemed to be using a transparent cost-based methodology; and

8.99.3 prohibit the unilateral variation of the pricing methodology, unless accompanied by sufficient notice and a right for the other party to terminate the contract in the event that the variation is unacceptable to it.

8.100 While wholesale supply agreements vary substantially across the sector, many contracts provide little in the way of forward-looking price transparency, and in most cases majors have the ability to unilaterally alter wholesale prices. In many cases prices are only revealed to distributors after delivery has occurred.

8.101 The lack of price transparency makes it difficult for distributors and dealers to compare the price they receive with offers from other suppliers (or, under a TGP regime, posted TGPs). It also reduces the ability of distributors and dealers to explore or challenge the justification for any price increase that their supplier imposes.

8.102 The unilateral ability to change prices leaves dealers and distributors bearing the risks associated with any increase in wholesale margin. Further, as noted in Chapter 6, both the unilateral ability to alter prices and the use of retail-minus pricing methodologies provides suppliers with the ability to exert upwards pressure on the retail prices set by dealers and distributors.

8.103 We consider that improvements to the transparency of pricing in wholesale contracts, and limits on the suppliers' ability to unilaterally change price, will improve the ability of distributors and dealers to both obtain better prices at the wholesale level, and compete with the majors at the retail level.

8.104 We considered whether it should be mandatory for fuel companies to set prices in supply contracts with reference to TGP or MOPS, or a similar benchmark, rather

than our recommended approach of deeming a price set with reference to TGP or MOPS benchmark to be using a transparent pricing methodology.

8.105 In practice, it is possible that a large number of distributors may exercise the recommended option to move to a price expressed on the basis of TGP (if included in any regulation). The presumption that TGP and MOPS benchmarks provide a transparent pricing methodology may also mean they become very popular, or default, pricing benchmarks. There is some risk that the use of TGP could facilitate coordination on price and/or disincentivise a reduction in TGP by providing that it would immediately pass through to all customers in the same way.

8.106 However, we consider it strikes the right balance to retain some contractual freedom for the parties to determine their own pricing methodology, while at the same time providing some guidance through regulation about the kind of pricing benchmark that is expected. Like other aspects of the TGP regime that we recommend, the effectiveness of this approach to pricing methodologies would be the subject of periodic review of the industry code, with the ability to amend this part if does not facilitate expected levels of price transparency and competition.

Long-term, minimum volumes and/or exclusivity in wholesale contracts

8.107 We recommend that any distributor be permitted to obtain a proportion of their requirements from another supplier despite any existing exclusivity provision in a wholesale fuel supply contract.

8.108 In addition, we recommend that to the extent that a wholesale fuel supply contract with a distributor extends beyond a prescribed period, for example five years, including through rights of renewal, the distributor may terminate the contract on reasonable notice unless certain conditions apply.

8.109 If our recommendation for an enforceable industry code is accepted, these requirements could be implemented in the industry code.

8.110 As noted in Chapter 6, it is common for wholesale supply agreements to contain a combination of requirements that dealers or distributors take specified volumes and/or long-term exclusive supply commitments.

8.111 A number of submitters throughout the supply chain supported maintenance of their ability to determine their own contractual duration and exclusivity commitments. Many distributors, however, also wanted some freedom to credibly test the market. We believe this would benefit competition and consumers.

8.112 In relation to distributors, we have concluded that many of the existing arrangements do not appear to be justified either by relationship-specific investments or to provide majors with sufficient certainty to optimise supply or the ability to undertake forward planning. As outlined further below, we recommend

limits on the term length, minimum volumes and/or exclusivity in wholesale supply contracts with distributors.

8.113 We do not, however, recommend similar limitations in relation to wholesale supply contracts with dealers. We consider these are more easily justified by relationship-specific investments and the close supplier-dealer relationship. These issues may be more appropriately dealt with through the changes we suggest at 8.124 below.

8.114 The first change that we recommend to distributor contracts is that, any exclusivity provision in a wholesale fuel supply contract be limited so that distributors are permitted to obtain a minimum proportion of their requirements from another supplier. We consider this would need to be a significant part, for example 20%.

8.115 We envisage that if distributors had the option to obtain a significant part of their annual requirements from other sources, this would:

8.115.1 enable distributors to test the market, including by confirming security of supply from a new supplier, improving their position in any negotiations;

8.115.2 enable distributors to take advantage of favourable TGPs or offers from new entrants;

8.115.3 promote competition between the majors, who would be incentivised to offer competitive prices to retain existing customers, and to attract new volumes from distributors they do not currently supply; and

8.115.4 improve the conditions for entry by any new importer, who will no longer have to deal with complete foreclosure of their potential customers.

8.116 We accept that this increased flexibility would reduce the certainty obtained by fuel suppliers. To the extent this certainty is necessary, we note that this could partially be addressed by reasonable forecasting requirements. Alternatively, distributors could be required to give sufficient notice of their intention to take supply from another supplier.

8.117 While reducing the exclusivity of contracts would be likely to go some way to improving wholesale competition, we also consider that competition would be further enhanced by the removal of unjustifiably long terms in wholesale supply agreements with distributors.

8.118 We therefore further recommend that to the extent that a wholesale fuel supply contract with a distributor extends beyond a prescribed period, for example five years, including through rights of renewal, the distributor may terminate the contract on reasonable notice unless:

8.118.1 the contract duration, or any renewal, beyond the prescribed period is reasonably necessary to enable specific investment for the benefit of the distributor; or

8.118.2 the contract is non-exclusive and contains no minimum purchase requirements.

Other terms in wholesale contracts

8.119 We recommend that the terms in wholesale fuel supply contracts should be regulated to prevent unjustifiable limitations on the ability of distributors to compete.

8.120 We consider that a number of other provisions in wholesale fuel supply contracts have the potential to hinder competition, either at present or as it develops if our other recommendations are implemented. In particular:

8.120.1 termination periods and rights of renewal;

8.120.2 transfer of ownership/Right of first refusal clauses;

8.120.3 restraint of Trade/Liquidated damages clauses; and

8.120.4 exclusive territories.

8.121 Some of the provisions may have been justified at the time the contracts were entered into, but they have long since ceased to have any justification that offsets their potential restraint on competition. Consistent with that, some majors submitted to us that, although their contracts may have these clauses, they invoke them rarely or do not use them.[919] The clauses may be rarely used because the relationships between majors and the distributors and dealers they supply have changed, particularly as distributors have grown. But in any case, it suggests that the clauses are no longer necessary or lack justification.

8.122 We considered whether an outright prohibition of these types of clauses was appropriate. We recognise however that this would be a significant restriction of contractual freedom, and that there may be some occasions where such terms are justified.

8.123 If these terms are not restricted, however, then the likelihood is that they will continue to exist for the foreseeable future. Reliance on these clauses by the majors may increase, as distributors seek to take advantage of increased wholesale competition. Although the majors assert that there is no imbalance of bargaining

[919] One firm told us that did not rely on restrictive clauses, but later admitted that they had used one as recently as September 2019.

power between suppliers and their customers, we consider that the majors often hold a position of relative bargaining strength over dealers and distributors.

8.124 We recommend that the terms in wholesale fuel supply contracts should be regulated, to prevent unjustifiable limitations on the ability of distributors and dealers to compete. We consider the balancing approach contained in the Unfair Contract Terms provisions of the Fair Trading Act 1986 may provide a useful although indirect analogy.

8.124.1 While the formulation of any regulation will be a matter for Government, one approach would be to prohibit the inclusion or enforcement of terms that:

8.124.1.1 are, when taken together with the other terms of the contract, likely to limit the distributor's or dealer's ability to compete with the supplier or any other person; and

8.124.1.2 are not reasonably necessary in order to protect the commercial interests of the supplier, or meet a requirement of the law.

8.124.2 This approach could be further supplemented by a "grey list" of terms that are likely to limit the ability of the distributor or dealer to compete. This will promote greater certainty between suppliers and distributors or dealers, and ensure that such terms are only included in wholesale supply contracts where they are necessary, a status that could be challenged by either party or the code administrator.

8.125 If our recommendation for an industry code is accepted, these requirements could be implemented in the industry code, and be subject to periodic review. This would ensure that contractual terms that are proving problematic, or are unlikely to be problematic, can be added or removed from the grey list.

Restrictive covenants

8.126 We recommend that Government further explores the potential to prohibit Non-Petroleum Use (NPU) covenants.

8.127 We consider that NPU covenants create a barrier to retail competition. Placing restrictive covenants on sites that are appropriate for retail fuel sales makes entry costlier and more difficult.

8.128 We do not consider the avoidance of potential remediation liability provides sufficient justification for the barrier to competition that NPU covenants create. To the extent NPU covenants generate benefits or efficiencies, we consider that it is likely that other less restrictive methods should be used to achieve them. We are conscious however that there may be additional complexity associated with extinguishing existing land rights such as covenants.

Transition period to amend contracts

8.129 We recommend a transition period built into any regulatory regime that provides additional rights or prohibits particular contractual provisions.

8.130 As noted in more detail at paragraphs 8.86 to 8.90 above, given the long-term – or indefinite - nature of wholesale supply contracts, waiting until the expiry of the contracts to implement change could substantially delay improvements to wholesale competition. Accordingly, if our recommendations relating to contract reform are adopted, Government would likely need to set an appropriate time period for transition, taking into account the interests of the parties affected.

Recommendation 3: Improve information on infrastructure sharing arrangements

8.131 We recommend that the parties to the COLL joint venture and borrow and loan arrangements improve industry understanding of them, including by publishing their existing process and criteria for considering applications to participate in the infrastructure sharing arrangements.

8.132 In our draft report we noted the potential to recommend measures to improve participation in the infrastructure sharing arrangements, specifically the COLL joint venture and borrow and loan arrangements.

8.133 The submissions that we received and the discussion at our consultation conference were not supportive of this form of regulation. Industry participants indicated that:

8.133.1 the complexity of the COLL joint venture and borrow and loan arrangements mean any regulation would come with a high risk of unintended adverse consequences;

8.133.2 there was a low level of understanding among distributors of what the COLL joint venture and borrow and loan arrangements currently entail; and

8.133.3 distributors would be unlikely to seek to participate in the COLL joint venture and borrow and loan arrangements in the short to medium term.

8.134 The low level of understanding of the COLL joint venture and borrow and loan arrangements is not surprising, given the details are currently confidential to the parties. While the COLL joint venture and borrow and loan arrangements contemplate participation by third parties to some extent, this is unlikely to occur unless the terms upon which third parties, or entrants, may seek to join are published or made readily available to any potential entrant.

8.135 We consider that a published process and criteria for participating in infrastructure sharing arrangements would be expected in a workably competitive market. To effectively promote competition, the terms would need to be non-discriminatory.

8.136 Given our recommendations in relation to the TGP, and the complexity of the COLL joint venture and borrow and loan arrangements, we do not recommend any regulatory intervention to enable participation in infrastructure sharing arrangements at this time.

Recommendation 4: Review infrastructure sharing arrangements

8.137 We recommend reviewing features or rules that may be acting to disincentivise investment in shared storage, to ensure timely investment occurs if and when it is required.

8.138 We consider that the borrow and loan arrangements currently appear to be deterring investment in terminal infrastructure and causing some tension between industry participants. We identified several features and/or rules that appear to disincentivise investment in shared terminal capacity in Chapter 5 at paragraphs 5.92 to 5.96.

8.139 In our draft report, we were of the view that consideration should be given to address underinvestment in terminals and tight supply, jointly with measures to improve the ability to obtain wholesale supply from existing terminals.

8.140 We acknowledge submissions that with the entry of TOSL in Timaru and speculation that it is entering Mount Maunganui, Mobil's current construction of terminals at Lyttelton and long-term trends for fuel demand, incentives for significant new investment in terminal capacity into the future may be somewhat muted.[920]

8.141 However, this does not preclude consideration of whether current rules or features of the borrow and loan arrangements may disincentivise investment in shared terminal capacity. We consider there would be benefit in reviewing features or rules that may be acting to disincentivise investment in shared storage, to ensure timely investment occurs if and when it is required. These features and rules could include:

8.141.1 the fact that not all benefits of investing in new terminals are captured by the party undertaking the investment;

8.141.2 that costs associated with failing to maintain terminals, such as increased shipping and/or trucking costs, are not fully borne by the terminal owner;

[920] Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" at [100] and BP "Submission on issues raised at the Commerce Commission's Fuel Study Conference of 24 -26 September (11 October 2019) at [5.2].

8.141.3 rules which require majors to maintain stock in line with relative contributions of tankage rather than market shares, which may deter incremental investment in terminal infrastructure; and

8.141.4 rules which dictate that fuel is allocated according to port market shares during port coordination events, meaning majors may be insulated from the risk of losing customers during such events.

Industry code of conduct for fuel

8.142 Industry participants indicated that although they supported some of the options in our draft report, they considered that regulatory intervention would be required to implement them. There were several reasons given for this.

8.142.1 First, some considered that industry agreement on how to implement the options was not realistic, based on past industry experience and differing forward-looking incentives between market participants.

8.142.2 Second, some were concerned that if they made changes to implement the Commission's recommendations, they would suffer a competitive disadvantage if their competitors did not.

8.142.3 Third, some were concerned that the joint negotiation of arrangements would expose parties to potential liability under the Commerce Act.

8.143 The Australian Oil Code has been adopted in Australia under Part IVB of the Competition and Consumer Act 2010 (Cth) (CCA). Part IVB provides a regime for the adoption and enforcement of voluntary and mandatory industry codes. The most recent review of Australia's competition framework noted that industry codes play an important role under the CCA by providing a flexible regulatory framework to set norms of behaviour that generally apply to relationships between businesses within a particular industry.[921]

8.144 There are no equivalent provisions in the Commerce Act. If Government considers that an industry code is the appropriate regulatory intervention, we recommend the enactment of a generic regulatory regime in the Commerce Act for the adoption and enforcement of voluntary and mandatory industry codes. These could then be used to adopt industry codes in relation to other industries, for example, following future market studies. We consider this may produce more consistent and predictable outcomes over time than the development of one-off regulatory regimes.

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921 Professor Ian Harper, Peter Anderson, Su McCluskey and Michael O' Brian QC "Competition Policy Review: Final Report" (March 2015) at 358.

Recommendation 5: Adopt an enforceable industry code of conduct

8.145 We recommend that a mandatory industry code with monitoring and enforcement powers should be used by Government as the mechanism for implementing our recommendations.

8.146 We consider an industry code is likely to be an effective regulatory tool in New Zealand. There was general support for an industry code from submitters.

8.147 For the reasons identified above, a voluntary industry code is unlikely to address the underlying competition problems we have identified in the industry.

8.148 We are of the view that any mandatory code should not be purely self-enforcing. Unless the implementation and ongoing compliance is monitored by Government, a code will not be likely to achieve the objective of improving competition in the retail fuel market in the long-term.

What should be included in any code?

8.149 In the course of this study we have reviewed a number of industry codes, including the Australian Oil Code, and considered the submissions we have received.

8.150 While it will be for Government to determine the detail of any code should it wish to proceed with this recommendation, we have identified a range of features that are likely to be needed for a code to be effective.

8.150.1 The code should apply to all relevant participants, and clearly identify who those participants are.

8.150.2 The code should include a dispute resolution scheme that is accessible, of appropriate scope, affordable, independent of industry participants and effective. Under Australian codes, the dispute resolution scheme is often operated by a specialist provider of dispute resolution services.

8.150.3 Monitoring of compliance with the code will be essential. This would include:

8.150.3.1 identifying an agency responsible for investigating potential breaches of the code and taking enforcement action where necessary;

8.150.3.2 the imposition of sufficiently broad record keeping obligations on industry participants to enable investigation of compliance with the code; and

8.150.3.3 ensuring that agency is adequately resourced and has appropriate information gathering powers (eg, the power to obtain information kept under record keeping obligations).

8.150.4 There should be penalties for breaching the code to incentivise compliance. These could include infringement notices or civil pecuniary penalties.

8.150.5 Participants will need to be confident they can use the code without fear of retaliation.

8.150.6 There should be a transition period built into the code. In the case of our recommended code, the transition period should allow for contracts to be renegotiated to address terms we see as impeding competition and allow terms that would invigorate competition in a timely manner.

8.150.7 There should be periodic reviews of the effectiveness of the code, with the ability to amend parts of the code that are not working well or introduce new regulation if required.

Recommendations to facilitate consumer choice

8.151 As noted in Chapter 7, premium petrol is more expensive than regular petrol, is sold at a higher margin than regular fuels, and that margin has been increasing over time. The volume of premium fuel sold - around a quarter of all petrol consumption – is significantly higher than the proportion of vehicles estimated to require premium fuel.

Recommendation 6: Improve transparency of premium fuel prices

8.152 We recommend that the Government regulates to require the display of premium fuel prices on price boards.

8.153 Price boards provide an important source of price information for consumers. The absence of premium fuel prices on these boards makes it harder for customers to shop around for the best price, which may adversely affect competition, prices and margins for premium fuel.

8.154 Displaying premium prices on price boards is likely to promote competition. Shopping around by comparing prices between different sites is an important part of price competition for consumers. If prices are not displayed on price boards, most consumers will only learn the price of premium petrol by driving into the retail site and checking the pump price. Consumers are unlikely to compare prices at multiple sites in this way when they need to fill up, and are even less likely to do so between fills.

8.155 Consumers value the pricing information displayed on price boards. Consistent with this, there is strong consumer support for displaying premium prices on price boards. AA survey results from 2016 indicate 81% would like to see premium prices displayed.

8.156 Industry had mixed views on a requirement that premium fuel prices be displayed on price boards. Some supported this as a measure to improve transparency that could be rolled out within a year.[922] Others considered it would be an unjustified cost.[923]

8.157 We acknowledge that putting prices of premium fuel on price boards will impose costs. Based on the estimates we have received, we anticipate the cost of putting the premium price on boards would be in the order of up to $7,500 per site.[924] It is possible that resource consents might need to be sought for some sites, which would add further costs.

8.158 Any regulation of this type will impose a greater burden on small sites that sell lower volumes than larger sites. If this was found to be the case, this concern could potentially be addressed by exempting existing sites below a defined annual sales volume.

8.159 We have also been told that premium price displays would need to replace other items that are currently being advertised.[925] We accept that may be so in some cases, but consider these concerns may be overstated. For example, we note that some retailers have included both pre and post-discount prices on their boards, which suggests there may be room for the display of premium petrol prices and the cost is not prohibitive.

8.160 We consider that displaying premium prices on boards is likely to promote competition, and recommend that the Government regulate to require this. If our recommendation for an industry code is accepted, this should be included in the industry code.

Recommendation 7: Improve information on when premium fuel should be used

8.161 We recommend the introduction of regulation to require a fuel cap or fuel flap sticker specifying the minimum octane level required for a vehicle.

8.162 As noted in Chapter 7, premium petrol accounts for around a quarter of fuel consumption. It is not clear that consumers have a good understanding of whether

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922 Z Energy "Z Energy submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" (13 September 2019) at [174] – [175] and [177] and Mobil "Submission to the New Zealand Commerce Commission in response to the Market Study into the Retail Fuel Sector Draft Report" (13 September 2019) at 3.

923 Gull "Gull New Zealand Limited submission to the Commerce Commission New Zealand on the Draft market study into the retail fuel sector" (11 October 2019) at 3 – 4; BP "Submissions on Issues Raised at the Commerce Commission's Fuel Study Conference of 24-26 September" (11 October 2019) at [7.2] and [8.3] – [8.17].

924 Transcript of retail fuel study consultation conference - Day 1 (24 September 2019) at 32 (lines 31-32).

925 Transcript of retail fuel study consultation conference - Day 1 (24 September 2019) at 37 (lines 13-16).

they need to use premium petrol or the benefits it provides. If consumers are not well-informed, they might:

8.162.1 unintentionally buy premium petrol when they only need regular, in which case they are spending more than they need to; or

8.162.2 buy regular petrol when their vehicle needs premium, in which case they risk damaging their car.

8.163 We have considered whether the information on correct fuel type is available, who would be best placed to obtain the information and the most effective means to communicate this information to consumers.

8.164 We consider the information could be readily obtained for most vehicles.[926] However, the ease of obtaining the information depends on the type of vehicle.

8.164.1 Information about the correct fuel is most readily available for new imports in the manual or through databases such as "Red Book".[927] We understand that Europe has introduced new labelling requirements that require the correct petrol grade to be communicated to buyers.[928]

8.164.2 Used imports may not have their manual and whether the information is available will likely vary depending on the manufacturer and the age of the vehicle. However, importers are already required to provide information when bringing vehicles into New Zealand, and are better placed than consumers to obtain the information from manufacturers or other sources.

8.164.3 It will be more difficult to obtain the information for the large stock of aged vehicles already in New Zealand. The AA receives many requests from its members for information on the appropriate fuel type for their vehicles and notes that information cannot be obtained for all vehicles.[929] That said, if there was a requirement to provide this information for (say) all newly imported cars, then over time the proportion of vehicles that were covered would grow as older cars go out of service and are replaced with newer cars.

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926 For example, MTA estimates that information should be available for around 90% of vehicles in New Zealand – see Transcript of meeting with MTA (22 October 2019) at 5.

927 https://www.redbook.co.nz (Viewed on 25 November 2019).

928 https://www.fuel-identifiers.eu/docs/QA-consumers-EN.pdf (Viewed on 25 November 2019).

929 Transcript of retail fuel study consultation conference - Day 1 (24 September 2019) at 48 (lines 31-34) to 49 (lines 1-12).

8.165 We consider importers of new and used vehicles are best placed to obtain the information and then to provide the information to customers. At present importers are required to obtain a range of information on vehicles such as the make, model, colour and weight to include in the Motor Vehicle Register.[930] Importers are not required to identify the correct octane rating.[931] If the information was available then the cost to the importer to obtain that additional piece of information is likely to be low.

8.166 We also considered whether the information could be provided as part of the warrant of fitness process, in order to capture existing vehicles. It is clear that the information will not be available for some vehicles, and it is unclear how difficult it would be for warrant of fitness providers to obtain access to the necessary information for the remaining vehicles. Acknowledging these practical difficulties, the information should only be required for existing vehicles where it is readily available.

8.167 We consider that a fuel cap or fuel flap label is the best way to convey this information to the customer. This will ensure that the information is readily available at the point that consumers intend to fill their vehicle with fuel. We considered recommending that the information be conveyed at the point of sale via documentation such as a CIN.[932] However including the information on the fuel cap will ensure that all users of the car, including subsequent private purchasers, have easy access to the information. We also note that some vehicles already have fuel cap or fuel flap labels indicating the appropriate fuel type.

8.168 Finally, we note that some industry stakeholders argue consumers misunderstand the benefits of premium petrol, or that the benefits of premium petrol are overstated by retailers.

8.169 The Fair Trading Act prohibits misleading or unsubstantiated claims about the benefits of a good, including retail fuel. All claims about the benefits of premium fuel must be able to be substantiated by the firms that are making them. The Commission will continue to monitor claims made about the benefit of premium fuels and consider enforcement action under the Fair Trading Act 1986 where appropriate.

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930 See <https://www.nzta.govt.nz/vehicles/how-the-motor-vehicle-register-affects-you/> (Viewed on 5 November 2019).

931 It does include whether it is petrol or diesel.

932 A motor vehicle trader must display the CIN in the window of a car for sale. The CIN includes information such as year of registration, make, model, odometer reading, dealer information and price. The dealer and buyer must sign the document to complete the sale. See <http://www.motortraders.govt.nz/cms/consumer-information/traders-responsibilities-to-buyers> and <http://www.consumerprotection.govt.nz/assets/uploads/documents/consumer-information-notice-vehicle-trader.pdf > (Viewed on 25 November 2019).

Recommendation 8: Monitor the display of discount pricing on price boards

8.170 We recommend monitoring of the display of discounted pricing on price boards at this time rather than regulation.

8.171 The display of prices on prices boards that consumers can pay if they participate in a retailer's discount and loyalty programme (discounted pricing) has evolved over the course of our study. Some fuel retailers, including Z Energy and BP, have begun introducing new price boards that display discounted prices along with minimum and maximum purchase terms. It was submitted that these initiatives could make it easier for consumers to compare discounted prices from competing retailers. However, it is unclear that this is a practice that benefits consumers. Some industry participants, including Gull and Waitomo, have suggested that it might limit competition.

8.172 We consider that displaying discounted prices on price boards means an even greater focus may go on what discount the customer will receive rather than the actual price to be paid. As we identified in Chapter 7, we consider that competition would be most effective when focused on prices rather than discounts. If displaying discounted prices becomes common place, it may move competition even further away from competing on price.

8.173 A focus on discounting, and the desire of consumers to obtain a perceived 'bargain', can distort consumer purchasing decisions. It can impact on competitors who do not engage in this behaviour. This may cause other firms to increase undiscounted prices and institute their own discount programmes. Smaller or low-cost firms who do not operate a loyalty programme may be disadvantaged if consumers perceive them to have no discount offering, even if their board prices tend to be the same or lower than discounted prices elsewhere.

8.174 Some submitters suggested that to the extent that discounted prices are not available to everyone (because of the requirements to hold the relevant loyalty card or supermarket docket) emphasis on the discounted price may confuse customers in a manner akin to 'bait advertising'.[933] Customers may be drawn in by the discounted price display, but may not obtain it, particularly given it can be difficult to display all the relevant terms and conditions on a roadside board.

8.175 Z Energy and BP have explained that the discounted prices are available to consumers who do not possess the necessary loyalty card as they can sign up to receive one at the in-store point of sale. That would, however, involve additional costs for consumers including the time taken to sign up and the provision of their

933 Waitomo "Written comment on the Market Study into the retail fuel sector – Draft Report" (13 September 2019) at [2.11].

data. It does not assist customers who do not ask to, or want to, sign up, including those who thought the discount was available to all.

8.176 Moreover, the advertising of a 'discount' price that is in fact an everyday price available to all customers, is itself potentially misleading to customers.

8.177 Consistent with these concerns, in Australia some states have recently mandated against the display of discounted prices on price boards, and the price displayed on the board must be the same as the price at the pump.[934]

8.178 We do not, however, recommend regulation at this time. The practice of advertising discounted prices on price boards in New Zealand is relatively recent, its effects are unclear, and may in any event cease if our recommendation regarding premium fuel advertising is accepted. However, given our concerns, we will monitor complaints we receive, and consider whether enforcement action is required under consumer law in the future.

8.179 We recommend that officials also monitor the development of this practice, and whether it is impeding competition. If our recommendation for an industry code is accepted, the issue of advertising discounted prices could be considered in the first recommended review of the industry code.

Other recommendations

8.180 We make several further recommendations that support our primary recommendations. The first relates to improved information collection. The balance relate to current industry practices that may enhance the potential for coordination and soften competition.

Recommendation 9: Improve information and record keeping

8.181 We recommend regulation requiring certain information to be collected and retained in New Zealand for a period of time to assist meaningful market analysis.

8.182 In the course of the study, we have encountered some constraints in obtaining the information we have sought. We are aware that other studies of this sector have also had difficulties obtaining information.

8.183 There was some industry support for improved regulatory information collection in a standardised format.[935] Concerns were raised about the burden any information requirements might impose on smaller market participants.[936]

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[934] See for example: Australian Consumer Law (Tasmania) (Code of Practice for Fuel Price Boards) Regulations 2017 (Tas); Fair Trading (Fuel Price Board) Regulation 2017 (Qld); Fair Trading Regulation 2019 (NSW)).

8.184 We are of the view that there could be long-term benefits derived from regulations that require certain information to be collected and retained in New Zealand for a period of time to assist meaningful market analysis.

8.185 The fuel sector is likely to continue to be of significance to the New Zealand economy for the foreseeable future. There will also likely be a continuing public interest in the effectiveness of competition in the sector. If higher quality information is held by the industry or government, this will likely improve the timeliness, cost and accuracy of any future study or regulatory intervention.

8.186 We also consider this information collection will be necessary to support our other recommendations. We consider it is necessary to ensure that there is a credible threat of timely regulatory intervention, should a TGP regime be adopted and fail to deliver competitive wholesale prices in a reasonable timeframe. We also consider it desirable to ensure that the performance of any industry code is appropriately monitored, and that any developing issues are able to be dealt with in a timely fashion.

8.187 The type of information that could be collected and retained would include:

8.187.1 TGP and industry code related information discussed above at 8.78;

8.187.2 daily retail volumes and revenues on a per fuel type, per site basis;

8.187.3 additional wholesale supply information including:

8.187.3.1 monthly volumes and revenues, per fuel type, on a per customer basis; and

8.187.3.2 annually, a list of contracted customers, including any details of the contract start and finish date, and any exclusivity requirement;

8.187.4 standalone accounts for the New Zealand business, prepared in accordance with generally accepted accounting practices; and

8.187.5 cost information.

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935 Z Energy "Z Energy submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" (13 September 2019) at [87] and [87] – [91] and Mobil "Submission to the New Zealand Commerce Commission in response to the Market Study into the Retail Fuel Sector Draft Report" (13 September 2019) at 4.

936 Waitomo "Written comment on the Market Study into the retail fuel sector – Draft Report" (13 September 2019) at 6-7.

8.188 The MBIE currently has a long-term monitoring role in this sector. It may be an appropriate agency to receive the information.

8.189 In making this recommendation, we do not envisage the information will necessarily be published. Much of it would be confidential unless published in an aggregated format. It may be useful for the agency receiving the information to periodically publish analysis, which could include analysis of whether any recommendations adopted appear to be effectively supporting competition. As noted above in relation to TGP, care would need to be taken not to disclose any commercially sensitive information, or to provide information that improves the conditions for coordination between market participants.

Recommendation 10: Change COLL Joint Venture to reduce the potential for coordination

8.190 We recommend monitoring whether industry makes changes to the COLL joint venture to reduce the potential for coordination.

8.191 The COLL joint venture agreement provides the majors with efficient distribution arrangements that lower the cost of distributing fuel. However, the arrangements do potentially facilitate a softening of competition by providing the majors with significant insight into the operations of the other majors.

8.192 Any unnecessary sharing of information through COLL is likely to reduce downstream competition between the majors.

8.193 In our draft report we recommended that the changes proposed by Hale and Twomey following the 2017 Fuel Study should be adopted. Hale & Twomey noted that if there were concerns about the current level of data sharing, it would be possible to reduce this without significantly impacting on how the 'borrow and loan' arrangements work. Options identified included:

8.193.1 aggregating forward demand estimates for the Wiri Terminal if the RAP becomes unconstrained, consistent with reporting at other locations; and

8.193.2 limiting visibility of forward stock ownership (ie, forward national demand) by product and in total under "CONCORD"[937] to only their own positions (currently majors are able to see each other's forward position).

8.194 We consider that the changes suggested by Hale and Twomey would be likely to promote competition. The options suggested by Hale and Twomey would reduce the current level of data sharing without significantly impacting COLL's effectiveness.

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[937] CONCORD provides the majors a historical and forward-looking overview of deposits and offtakes from shared industry storage. Historic and forward-looking demand is aggregated to a national level by fuel type under CONCORD.

8.195 BP indicated a willingness to revise operating and information protocols to ensure information shared through COLL is treated appropriately.[938] Z Energy indicated that although it did not agree with our concerns, it was willing to take steps to ensure information exchanged is the minimum reasonably necessary for the commercial relationships.[939] Mobil did not address the topic directly, but indicated it supported information sharing that enhances competition.[940]

8.196 But for industry willingness to make these changes, we would recommend that the changes proposed by Hale and Twomey should be incorporated into any industry code.

8.197 We are mindful however that agreement may not be as easy to reach in practice. We recommend that the Government monitor whether the changes have been made within an appropriate period after the publication of this report, and if not consider whether regulatory intervention is required.

Recommendation 11: Change refinery capacity allocation

8.198 We recommend monitoring whether industry makes changes to the refinery capacity allocation process.

8.199 The majors are currently allocated processing capacity at the refinery based on their average market share over the past three years. A representative of each major sits on the refinery's Technical Committee, which is responsible for allocating capacity.

8.200 As part of the annual allocation procedure, the majors share information on monthly national volumes of fuel product by various categories of retail fuel (including by customer type), which form the basis of the ultimate allocation. The allocation process is largely mechanical, with the information on national volumes acting as inputs. The majors check the data for accuracy. This information exchange during the annual allocation procedure does, however, provide a degree of transparency that could unnecessarily affect competition.

8.201 While we acknowledge that the Technical Committee is likely to contribute to the efficient operation of the refinery, the sharing of information via the Technical Committee during the annual allocation procedure may provide a degree of transparency that could affect competition between the majors. In particular, the visibility of each other's national volumes across various categories of fuel may assist in facilitating or strengthening accommodating behaviour.

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938 BP "Submission on the August 2019 Draft Report" (13 September 2019) at [5.81] – [5.82].

939 Z Energy "Z Energy submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" (13 September 2019) at [162] and Appendix 1.

940 Mobil "Submission to the New Zealand Commerce Commission in response to the Market Study into the Retail Fuel Sector Draft Report" (13 September 2019) at 5.

8.202 The allocation of processing capacity at the refinery based on average market share over the past three years may also affect competition. A major with growing market share is likely to face a significant delay before it obtains increased refinery processing capacity to supply that market share.

8.203 A major with growing market share must therefore initially import more refined fuel to meet increased demand. This is likely to lead to a cost disadvantage in the short-term, particularly in areas which receive fuel via relatively low-cost primary distribution through the RAP and COLL. This cost disadvantage may reduce the ability and incentive for majors to grow their market share through price competition.

8.204 In our draft report we recommended that changes be made to the allocation procedure. We proposed that:

8.204.1 each refinery customer representative review only that customer's own data;

8.204.2 the historic sales data for retail fuel products collected by BDO should not be made available to majors, other than their own data; and

8.204.3 the parties consider an alternative capacity allocation mechanism which enables majors to increase their refinery allocation over a shorter time period.

8.205 Refining NZ supports using a shorter timeframe for allocation of refinery capacity and agreed that some of its Technical Committee processes could be modified to reduce the current level of information sharing.[941] Z Energy and BP also indicated that they are open to reconsidering the refinery allocation mechanism and information shared as part of this process.[942] There appears to be industry agreement that changes to the refinery capacity allocation should occur.

8.206 We are mindful however that agreement may not be as easy to reach in practice. We recommend that the Government monitor whether an agreement has been reached within an appropriate period after the publication of this report, and if not consider whether regulatory intervention is required.

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941 Refining NZ "Response by Refining NZ to the New Zealand Commerce Commission's Retail Fuel Market Study Draft Report" (13 September 2019) at [4.2] – [4.3].

942 Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" at [162] and Attachment 1, and BP "Submission on the August 2019 Draft Report" at [5.80] and [5.82].

Attachment A Our approach to assessing profitability

Introduction to this attachment

A1 This attachment:

A1.1 discusses why we assess the profitability of firms supplying fuel to the retail markets; and

A1.2 outlines what conclusions we might draw from this assessment and the potential limitations on these conclusions.

A2 A document related to this attachment was originally issued as a working paper on 18 April 2019.[943] This attachment updates that working paper to reflect:

A2.1 submissions on that paper and our response to those submissions; and

A2.2 changes to our approach since that working paper was issued.

A3 This attachment should be read in conjunction with the following attachments.

A3.1 Attachment B which sets out our view of a normal rate of return, which we define as the weighted average cost of capital.

A3.2 Attachment C which discusses the analysis of profitability and our conclusions on the level of profitability being earned in the fuel sector.

A3.3 Attachment D which explains why we consider the excess profitability in the fuel sector to be persistent rather than temporary.

What is profitability

A4 Profitability means the size of firms' profits relative to the size of their businesses. For example, the amount of profit relative to the amount of fuel sold, or to the amount of investment that has been made in the business.

A5 In this study we are concerned with long-term profits. By long-term, we mean over many years. Profits in the short-term can increase for many reasons which are not indicative of competition concerns. For example, short-term profits may signal the need to attract more resources to a market, superior performance by a firm, measurement error, and/or windfall gains. By contrast, longer term profits if they are persistently greater than a normal level of return, generally indicate a competition problem as competition is not eroding them.

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943 Commerce Commission "Market Study into the Retail Fuel Sector Working paper on assessing profitability" (18 April 2019).

A6 In this report the terms profits and returns are used interchangeably. No difference in meaning is intended by the choice between these terms.

Profitability assessment in subsequent market studies

A7 This report focuses on profitability in the New Zealand retail fuel market.

A8 Differences between markets may mean that alternative approaches are required to assess profitability in other markets we may study under Part 3A of the Act. For example, some techniques discussed in this attachment may not be appropriate for industries with low levels of fixed assets, such as some service-based industries.

A9 Further, the terms of reference may differ for subsequent market studies. While assessing profitability is a key part of this market study, the focus on (and extent of) any profitability assessment in subsequent studies may differ significantly.

Profitability analysis under other parts of the Act

A10 Profitability is relevant to other parts of the Commission's work, such as the sector-specific regulation we apply under Part 4 of the Act. However, the context for that work differs from our retail fuel study.

A11 For example, under Part 4 of the Act we can:

A11.1 use sector-specific regulation to, among other things, limit the ability of monopoly providers of services to extract excessive profits; and

A11.2 undertake inquiries to see whether regulation should be extended to cover additional services for which there is little or no competition, and little or no likelihood of a substantial increase in competition.

A12 In Part 4 inquiries we are required to assess whether there is scope to exercise substantial market power in relation to the goods or services, and whether the benefits of regulating the goods or services under Part 4 would materially exceed the costs of regulation.[944] The potential benefits of regulation include limiting suppliers' ability to extract excessive profits. Therefore, we may seek to quantify the extent of excessive profits as part of a cost-benefit analysis required in a Part 4 inquiry.

A13 In contrast, there is competition between multiple suppliers in retail fuel markets. Our study is focused on assessing whether there are factors which are affecting or hindering that competition. We are not required to undertake cost-benefit analysis, and we are not required to comprehensively quantify the level of excessive profits being earned in the retail fuel sector (if any).

[944] Section 52G and section 52H of the Act.

Why we assess profitability in the retail fuel sector

A14 We consider the profitability of market participants involved in the retail fuel markets as:

A14.1 the terms of reference allow us to look at features of the retail and diesel markets that are not in the long-term interest of consumers, and to consider whether the prices for retail fuel are consistent with those expected in workably competitive markets. We consider that those are matters that we should consider in this study;

A14.2 levels of profitability that are persistently above competitive levels may be an indicator that competition is ineffective in delivering competitively priced petrol and diesel to consumers; and

A14.3 assessing profitability may help identify the factors affecting competition and inform any recommendations we make.

A15 We discuss each of these reasons in turn below.

The long-term interest of consumers and prices in workably competitive markets

A16 The terms of reference for our study were issued by the Minister of Commerce and Consumer Affairs and are set out in Chapter 1. Among other things, the terms of reference allow us to consider whether:

A16.1 there are features of retail petrol and diesel markets that are not in the long-term interests of consumers; and

A16.2 the wholesale and retail prices of petrol and diesel are consistent with those expected in workably competitive markets.

A17 Excessive prices are not in the long-term interest of consumers as fuel for land transport is an essential purchase for many New Zealanders. It is also a significant cost in household budgets.[945]

A18 In a workably competitive market the prices for goods and services will tend towards efficient costs. In a workably competitive market no firm has significant market power and consequently prices are not too much or for too long significantly above costs.[946]

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945 As discussed in Chapter 2.

946 *Wellington International Airport Ltd and others v Commerce Commission* [2013] NZHC 3289 at [15]. The judgment notes "[w]hether workably competitive conditions exist is a judgement to be made in the light of all the information available, rather than something that can be ascertained by testing whether certain precise conditions are satisfied."

Persistent excess levels of profitability are an indicator that competition is ineffective

A19 In a competitive market, in the long run an efficient firm would expect to achieve profits that, after covering its costs, are sufficient to compensate the providers of debt and equity capital (ie, the cost of capital).

A20 When firms' profits are persistently in excess of a normal return, this may indicate that competition is not working effectively for the long-term benefit of consumers. When businesses face effective competition, suppliers have strong incentives to deliver goods and services which reflect consumers' demands at efficient costs. If firms can maintain high prices and persistently earn excess returns, this may indicate that competition is not effective.

A21 However, as we discuss more fully below, excess levels of profitability do not by themselves demonstrate that competition is not working effectively. This was reflected in the High Court's discussion of the nature of workable competition in the Wellington International Airport decision.[947]

> In our view, what matters is that workably competitive markets have a tendency towards generating certain outcomes. These outcomes include the earning by firms of normal rates of return, and the existence of prices that reflect such normal rates of return, after covering the firms' efficient costs.
>
> Of course, firms may earn higher than normal rates of return for extended periods. On the other hand, firms may earn rates of return less than they expected and less than commensurate with the risks faced by their owners when they made their investments. They may even make losses for extended periods. Prices in workably competitive markets may never exactly reflect efficient costs, including a normal rate of return.
>
> But the tendencies in workably competitive markets are towards such returns and prices.

Potential conclusions from, and limitations of, profitability analysis

A22 This section outlines:

A22.1 what conclusions we might draw from our profitability analysis; and

A22.2 limitations on our profitability analysis for the retail fuel markets.

What conclusions can be drawn from profitability analysis

A23 This section discusses the possible conclusions that could be drawn from our profitability assessment, noting:

A23.1 the approaches taken by other competition agencies;

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947 *Wellington International Airport & Others v Commerce Commission* [2013] NZHC 3289 at [18]-[20].

A23.2 the possible reasons why profitability may be higher than normal; and

A23.3 that profitability analysis is only one indicator of the level of competition in a market.

Approaches taken by other competition agencies

A24 Competition agencies can look at profitability to draw insights about the level of competition in a market. For example, the OECD's Roundtable on Market Studies Methodologies for Competition Agencies notes that profitability and cost pass-through analyses can be helpful tools to address consumer concerns by investigating:[948]

A24.1 potential tacit collusion or coordination (when conducted at the industry level);

A24.2 barriers to entry or exclusionary conduct (when conducted at the firm level); and

A24.3 fairness concerns associated with cross-subsidisation among consumers (when conducted at the product level).

A25 The UK Competition Commission's guidelines for market investigations state that:[949]

> Firms in a competitive market would generally earn no more than a 'normal' rate of profit—the minimum level of profits required to keep the factors of production in their current use in the long run, i.e. the rate of return on capital employed for a particular business activity would be equal to the opportunity cost of capital for that activity.

A26 In a recent market investigation, the UK Competition and Markets Authority considered that:[950]

> The purpose of conducting profitability analysis, therefore, is to understand whether the levels of profitability (and therefore prices) achieved by the firms in the reference markets are consistent with levels we might expect in a competitive market. If excess profits have been sustained over a relatively long time period, this could indicate limitations in the competitive process.

A27 The OECD Roundtable notes that excess profitability is not in and of itself proof of a competition problem.[951]

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948 OECD "Executive Summary of the Roundtable on Methodologies for Conducting Market Studies" (2017) Working Party No. 3 on Co-operation and Enforcement at 4. Dr Helen Jenkins, makes the same point – see Jenkins "Analytical techniques for market studies" (20 June 2017) at 3.

949 Competition Commission "CC3: Guidelines for market investigations: their role, procedures, assessment and remedies" (April 2013) at [116], adopted by the UK Competition and Markets Authority.

950 Competition and Markets Authority "Energy Market Investigation, Approach to Financial and profitability analysis" (8 December 2014) at [8].

Possible reasons why profitability may be higher than a normal level

A28 Higher than normal competitive levels of profit do not necessarily indicate there is a competition problem. Even where competition is effective, a supplier (or several suppliers) may earn profits above normal levels.

A28.1 The potential for excess returns is an incentive for firms to lower costs and to innovate.

A28.2 The potential for excess returns is necessary to incentivise firms to undertake risky investments.

A28.3 Excess levels of profitability are also a signal for new entry or expansion.

A29 Markets with excess returns will attract entry or expansion, which will increase output and would be expected to lead to a subsequent fall in prices and profitability. If competition is working well, and/or if new market participants can enter the market, then excess profitability is likely to be temporary.

A30 However, where the excess levels of profitability are persistent, this suggests that current levels of competition and the threat of entry by others are not effective in maintaining sufficient rivalry between incumbent firms to push prices close to efficient costs. We would expect this to occur in workably competitive markets.

A31 Superior profits can also come from early mover advantages such as securing key retail sites, and the ownership and preferential access to key infrastructure. This may provide cost advantages and superior profits.

A31.1 We would not normally expect profits that are due to the natural scarcity of an input to be shared with consumers even in a competitive market.

A31.2 However, where cost advantages derive from exclusive access to infrastructure, which may generate efficiencies for incumbent firms, then unless potential rivals can also access the infrastructure, the cost advantage may generate market power and allow the incumbents who have exclusive access to earn excess returns.

A32 A firm may earn above competitive levels of returns but analysis of profitability by itself may not distinguish whether this is due to efficiencies, the exercise of market power, or a mix of both. As such, analysis focusing on the effectiveness of competition is also required.

A33 Therefore, in assessing profitability of the fuel industry we seek to:

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[951] OECD's Market Studies Methodologies for Competition Agencies "Executive Summary of the Roundtable on Methodologies for Conducting Market Studies" (Working Party No. 3 on Co-operation and Enforcement June 2017 Roundtable) at [4].

A33.1 consider the broader context, including the factors which may be affecting competition in the market;

A33.2 not place too much weight on estimates of profitability over short time periods (as noted above, short-term profits can be above or below normal levels even when there is workable competition);

A33.3 consider forward-looking profitability. While backward-looking profitability may reflect sunk costs and historic cost advantages, forward-looking profitability should reflect the expected impact of current and expected competition; and

A33.4 consider the profitability of a range of firms. The profitability of one or two firms can be affected by factors which may be unique to them, so the focus is on profitability of a range of firms including the marginal supplier.

A34 Economics New Zealand submitted that we should focus on the marginal producer.[952]

> … as a very good text book says, when you have upward sloping supply curves, as in my view you often will, "the market price in equilibrium will normally be determined by the level of cost of the higher-cost producers - the 'marginal producers' - who will make only a 'normal' profit (the market price only just covers their costs) ... At the market price, the lower-cost suppliers will make a healthy margin above cost.

A35 To meet all of New Zealand's fuel requirements, already-refined fuel also needs to be imported. This generally has a higher cost than domestically refined fuel, for both the majors and Gull.[953] By sharing key supply chain infrastructure, the majors are likely to have cost advantages in buying and distributing fuel, particularly in respect of fuel that is obtained from the Marsden Point refinery and distributed via the RAP and COLL, but also in respect of imported fuel that enters the Borrow & Loan system.[954] Gull does not have access to the refinery and other shared infrastructure and the associated cost efficiencies and relies wholly on importing refined fuel to a single port.

A36 We agree it is important to examine the position of the marginal supplier. Gull seems likely to be the marginal supplier of fuel to the retail market and we therefore

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952 Economics New Zealand Ltd "Feedback on 'Working paper on assessing profitability'" (7 May 2019) at 1. The text book referenced in the quote is: Gunnar Niels Helen Jenkins and James Kavanagh *"Economics for Competition Lawyers"* (2nd edition, Oxford University Press, 2016) at 10.

953 Hale and Twomey, "Independent Review of the Refining NZ Processing Agreement" (April 2017) at 3-9; and Hale and Twomey, "Independent Review of the Refining NZ Processing Agreement" (5 September 2014) at 15-23.

954 As discussed in Chapter 5.

look closely at Gull's profitability. However, it is also important to distinguish the causes of higher marginal costs.

Profitability analysis is only one indicator of the level of competition

A37 Profitability analysis is simply one indicator to assist us in determining whether there are factors affecting competition to the long-term detriment of consumers. That is, an assessment of profits needs to be done in combination with an analysis of the conditions for competition, and the specific factors which may be affecting competition.

A38 Similarly, evidence that the level of profitability is around normal or competitive levels does not necessarily mean that there are no factors adversely affecting competition in the market. For example:

A38.1 weak or ineffective competition could still cause adverse outcomes to consumers including cost inefficiency, or a lack of innovation; and

A38.2 firms may be expending resources to build or retain market power, to the detriment of short-term profit.

A39 The following quote from Schmalensee summarises the considerations in using profitability analysis to assess the effectiveness of competition.[955]

> There are, however, three serious problems with using profitability to gauge market power. First, it is very difficult in practice to measure actual profitability, and it may be even more difficult to measure excess profits. There are no simple, generally valid techniques for obtaining accurate estimates of these quantities, though advances have been made in this area recently and continued progress is likely. Second, the absence of significant excess profit does not establish the absence of significant market power. The costs of obtaining or keeping such power, as well as waste caused by managers not subject to competitive pressures, reduce observed profits, but represent real social costs of market power. Finally, substantial excess profits can arise in the short run even in perfectly competitive markets. Such profits provide essential signals to guide the flow of investment funds in market economies.
>
> Even if all measurement problems are solved, therefore, profitability is an unreliable measure of short run market power. Nevertheless, *persistent* excess profits provide a good indication of long run power; they show clearly that there is some impediment to effective imitation of the firm in question.

A40 In summary, we consider that our assessment of the profitability of participants in New Zealand retail fuel markets is likely to be more suggestive that competition is not working effectively if one or more of the following conditions is observed. The conclusions from our analysis are likely to be stronger as more of these conditions are observed.

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955 R Schmalensee "Another Look at Market Power" [1982] 98 HLR 1789 at 1805-1806.

A40.1 The profitability being achieved or anticipated is materially above normal rates of return (estimates of the cost of capital).

A40.2 The returns expected or earned on additional investment, by a new entrant or an existing player expanding, clearly exceed the cost of capital.

A40.3 The evidence points to a sustained pattern or trend, and a persistence of results. For example, across products or markets, across firms, over time.

A40.4 The conclusions are consistent across different analytical approaches and techniques (that is, the results are not a function of one particular analytical approach or the use of one dataset).

A40.5 Analysis of the conditions for competition, and of the factors which may be affecting competition, identifies impediments to effective competition.

What are the limitations on the profitability analysis in the retail fuel sector

A41 Several considerations are likely to impact on the reliability of any assessment of profitability in the New Zealand retail fuel sector. These include:

A41.1 techniques for assessing profitability are imperfect;

A41.2 some companies are subsidiaries of international conglomerates; and

A41.3 data held by companies does not match specific requirements of the terms of reference, or the data may not exist.

Techniques for assessing profitability are imperfect

A42 The techniques for assessing profitability have various strengths and weaknesses.

A43 Our approach is to use a variety of techniques. If the results are consistent across a variety of approaches or techniques, this gives us confidence that the results are not due to vagaries of an individual technique.

Some companies are subsidiaries of international conglomerates

A44 Several New Zealand fuel firms are subsidiaries of larger international energy groups.

A45 This may limit the operational autonomy of these businesses, and their financial results may not reflect the financial performance of the New Zealand business on a standalone basis. For example, key decisions may be made to maximise returns globally, regardless of how they affect the returns achieved and reported in New Zealand.

A46 Gull, BP and Mobil are all subsidiaries of international companies.
[

][956]

Data held by companies does not always separate retail fuel from other activities

A47 Many fuel companies undertake a range of activities, in various markets, that are broader than the scope of our study, the New Zealand retail fuel sector. For example, these activities may include:

A47.1 selling jet fuel, fuel oil, bitumen and other products derived from refining crude;

A47.2 selling petrol and diesel to commercial customers; and

A47.3 selling non-fuel products through service stations.

A48 Fuel companies' information and reporting systems are focused on this broader range of activities and markets. Therefore, these systems may be incapable of generating all the information needed to support a robust analysis focused solely on retail fuel markets.

A49 In particular, while information on revenues and gross margins from the various activities are often available for the various activities, many businesses do not fully break down all the information relating to the performance of each activity. For example, the amount of capital required to fund the retail activity is frequently not reported separately from the capital required to, for example, operate the convenience store or the carwash.

A50 Further, fuel retailing shares many common costs and assets with other activities, which gives rise to cost and asset allocation issues.

A50.1 Z Energy submitted that many of its costs are at head office and are not necessarily attributed to retail, and that analysis which excludes, or attempts to allocate these costs, will be complex and likely inaccurate.[957]

A50.2 BP submitted that the accounting treatments of shared costs may not reflect economic principles and we should be cautious in relying on the existing accounting treatments.[958]

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956 [ ]

957 Z Energy "Comments on 18 April Working Papers" (7 May 2019) at footnote 3.

958 BP "Feedback on Working Paper – Assessing Profitability" (14 May 2019) at [6.9].

A50.3 Many sites, predominantly serving commercial customers can serve retail customers too. Some parties commented on how attracting a small proportion of retail consumer volumes to a new fuel stop could improve the profitability of new sites.[959]

A51 We considered applying an approach like that adopted in respect of services regulated under Part 4 of the Act to this study. This approach involves:

A51.1 defining the services which are included in the analysis;

A51.2 specifying detailed methodologies to ensure appropriate and standardised valuation of assets, and prescribed methodologies for allocating shared and common costs and assets; and

A51.3 specifying detailed rules for reporting performance information including revenues, capex and expenses (and breakdowns of these items, as they relate to the scope of the defined services).

A52 This Part 4-style approach would be attractive if it could produce relevant and valuable information, precisely targeting the retail fuel markets, which is comparable across suppliers. However, in the context of this study and the available timeframes, and to avoid imposing substantial costs on stakeholders in responding to requests for information that a Part 4-style approach would necessitate, we have instead adopted a pragmatic approach, analysing the information that is more readily available and tailoring our analysis accordingly. This approach also recognises that there are quality, innovation and product differences in the market, and that there are cost implications arising from this.[960]

A53 Developing and implementing detailed rules to reliably and consistently allocate shared costs as between retail fuel and other activities is complex and demanding, and beyond the scope of this study.

Why a broader focus on profitability is appropriate

A54 We do not consider the fact that some of our analysis uses information that relates to a broader range of activities than just retailing fuel is a significant limitation on this analysis. There are several reasons.

A54.1 We use a range of approaches to assess profitability, some of which focus narrowly on the retail fuel market.

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959 [ ]; and
[ ]

960 Z Energy "Comments on 18 April Working Papers" (7 May 2019) at [24]-[26].

A54.2 The profitability analysis is not definitive of whether or not competition is working effectively, and we undertake a separate analysis of the factors specifically affecting the retail fuel market elsewhere in this report.

A54.3 The fuel margin is a significant part of the profits for many participants and proportionally greater than other activities. For example, the gross margin on fuel sales represents around 80% of Z Energy's total gross margin.[961] We acknowledge this includes margins on sales of fuel to commercial accounts as well as retail sales. Our analysis of profitability focuses on those companies with a large retail fuel business. We are not directly concerned with the profitability of the refinery or COLL.

A54.4 The terms of reference allow us to consider "the extent of competition at the refinery, wholesale and retail levels, including the role of imports" and the buyers of fuel eventually sell that to a mix of buyers both commercial and retail. The MTA submitted that we need to look into profitability at the wholesale level, and not just the retail level, given the vertical integration of some firms.[962] Vertically integrated firms may have different cost structures or be able to account for profits at different levels of the supply chain.

A54.5 Understanding profitability relative to the cost a new entrant would incur is a key focus of our assessment of profitability and the conditions for entry are explicitly identified in the terms of reference as a matter we may consider.[963] A new entrant could offer other services beyond just selling fuel to retail customers (indeed they are likely to). So, looking at the profitability of the broader range of activities may more closely match the profile of a new entrant than a narrow focus on just the retailing of fuel. This is true also for the attractiveness of expansion by an existing firm.

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961 Z Energy's fuels margin was 81% of total margin in 2013 – see Z Energy "Investment Statement and Prospectus: Initial Public Offer of Ordinary Shares in Z Energy Limited" (25 July 2013) at 133. It was 83% in 2019 see Z Energy "2019 Results Presentation For the year ended 31 March 2019" (2 May 2019) at 25.

962 MTA "Comments on Working Papers" (7 May 2019) at 2.

963 One of the matters we may consider is: "the conditions for entry by potential competitors, including independent suppliers, and/or the conditions for expansion." The full terms of reference for this study is set out in Chapter 1.

A54.6 The Minister's terms of reference focus on the retail fuel market but allow us to consider any factors that may affect competition in the retail fuel market. If the inclusion of measures of retail profitability which capture a broader range of activities, show levels of profitability consistent with ineffective competition on that broader range of activities, this may suggest the retail competition issues are more wide-ranging than just concerning fuel. Since non-fuel products sold at petrol stations face more competition than fuel (for example, there are many vendors of snacks and coffee) then the use of measures of profitability which include these other activities, seems more likely to understate the profitability of the retail fuel activity than to overstate it.

A54.7 Similarly, the use of profitability measures which also capture profits made selling fuel to commercial customers seem more likely to understate retail profitability than overstate it, since commercial buyers of fuel have greater bargaining power than retail buyers and are better placed to negotiate the prices they pay for fuel.[964]

A55 If parties consider there is evidence that firm-wide profitability measures are materially overstating the profitability of retailing fuel, we would welcome comments supported by evidence of that.

There are three key steps in our assessment of profitability

A56 We have broken our work on assessing profitability into three areas.

A56.1 We estimate a normal level of return.

A56.2 We assess the profitability of firms in the New Zealand retail fuel sector.

A56.3 If profits appear to exceed a normal level, we consider whether they have done so persistently.

A57 Each of these areas is discussed in turn below and in separate attachments to this report.

We use an estimate of the cost of capital to indicate a normal level of return

A58 A normal level of return allows a firm to cover all its costs, including the cost of capital, over time. We define a normal level of return to be the cost of capital. The cost of capital reflects the returns investors require given the other investment options available to them.

[964] See Chapter 6.

A59 Our approach to estimating the cost of capital in this study is set out in Attachment B.

How we assess profitability

We use a variety of approaches to estimate profitability

A60 We have used a variety of approaches to estimate the profitability of New Zealand fuel companies. We do so:

A60.1 to ensure the results are not attributable to any idiosyncrasies of one particular analytical approach;

A60.2 to best use the information that is available to us; and

A60.3 to try and build a view of profitability over time.

The approaches we have used to assess profitability

A61 The approaches we have used to assess profitability are summarised in Table A1 below. This table distinguishes between backward and forward-looking approaches to assessing profitability. Detailed information on each of the approaches is set out in Attachment C.

Table A1 Our approaches to assessing profitability

Forward-looking approaches
• Firm's own commentary on the level of industry profitability and the implications from this (for example, the likelihood of entry by new firms) • The returns firms expect from new investment in retail fuel (including hurdle rates for new investment) • Tobin's q (the ratio of the implied market value of the fuel business to the current cost of replacing its assets)

Backward-looking approaches
• Gross margins including importer margins and the fuel margins reported by Z Energy • Return on capital employed (ROCE) achieved by fuel firms • A range of other measures we considered (including net profit per litre and the lifetime IRR for Gull and Z Energy)

Backward and forward-looking assessments of profitability

A62 Some of the approaches we use are backward-looking, others are forward-looking.

A62.1 Backward-looking assessments look at actual profits previously achieved, for example the returns on capital employed firms have earned over a number of years. Backward-looking approaches are important when looking at industries with high sunk cost infrastructure (which may reduce the prospect of entry).

A62.2 Forward-looking assessments focus on expectations of future profits.

A63 Forward-looking information including the expected returns on new investment provides insights into the likelihood of entry and expansion.

A63.1 Excess levels of profitability are a signal for market participants to enter the market or to expand their output.

A63.2 Forward-looking assessments reflect parties' expectations of profitability levels after the impact of any actual or expected entry, or other changes in the factors affecting competition.

A64 Actual results can also be affected by one-off events unrelated to underlying competition (for example, material one-off costs or gains). So, trends in backward-looking indicators over a number of years can be more insightful than the level of profit in a single period (for example, one year).

The use of historic and replacement cost information

A65 Many profitability measures of return on capital rely on accounting information. Accounting information is frequently based on the historic cost of a firm's fixed assets. However, new entrants face current costs for the assets they need to buy. In this section we analyse the relevance for competition studies of historic cost assessments of profitability and replacement cost measures. Our view is that neither method should be excluded, and that careful analysis and interpretation are required.

A66 In using profitability analysis in this study to inform an assessment of competition of the retail fuel market, we are particularly interested in the returns on capital that might be earned on new investment, either by a new entrant or by an existing player expanding. Such entry or expansion would be expected to increase output and result in prices and profits tending towards normal levels, if competition is working effectively.

A67 Measures of profitability which use the current (replacement) cost of buying the assets needed to compete have the advantage of focusing directly on the economics of new entry. If a firm or firms can earn above competitive levels of profitability having regard to the current costs of assets, that can suggest that competition is not working as effectively as it could because, in a competitive market, new entrants would have an incentive to enter the market and increase output, which would lower prices. This is why we look at barriers to entry in Chapter 4.

A68 Measures of profitability which use historic cost information (for example, on the cost of assets) can provide information about past profitability. These measures compare the profit the firm has made on the amount of capital originally invested in the firm by equity and debt holders. They therefore provide a useful view on the actual profitability of firms over periods of time.

Return on capital employed can use historic or replacement costs

A69 Return on capital employed (ROCE) is a commonly used profitability measure. It is typically defined as operating earnings divided by capital employed.

A70 Estimates of ROCE typically use historic cost information to determine the value of capital employed. As such, ROCE can be used to track a firm's actual profitability over time on the amount of capital employed in the firm. A number of fuel firms use ROCE in this way.

A71 Alternatively, estimates of replacement cost can be used to determine the value of capital employed. ROCE can then be used to provide some insight on the sort of returns that might be made given the current cost of buying assets. This may provide some insight on the economics of investment for a new entrant although we recognise that there are a variety of ways a new entrant could choose to enter, including by buying used assets (where possible).

A72 In the fuel sector, the key assets include:

A72.1 inventory (that is, petroleum products); and

A72.2 fixed assets (including terminals, pipelines, stations, tanks, pumps, and signs).

A73 In the case of inventory, the choice of historic or replacement cost estimates gives rise to timing adjustments (inventory gains or loses value according to post-purchase changes in commodity prices). Such gains and losses can reverse and can be expected to balance out over time.

A74 Appropriately valuing fixed assets is a more significant issue for assessing profitability in the fuel sector. In this context, the use of historic cost valuations for long-lived fixed assets could lead to several challenges, as set out below.

A74.1 Use of historic valuations may understate the economic value to the owner of these assets given the benefit the owner will receive from using those assets.

A74.2 Historic cost valuations are likely to understate the investment required by a player seeking to expand or enter the fuel market.

A74.3 Differences between replacement cost and historic valuations for fixed assets are not timing adjustments which could be expected to net out over time.

A75 BP submitted that we should only use estimates of ROCE based on replacement cost.[965]

> … when replacement cost increases over time, as it can be expected to, estimates of ROCE using historic cost will overstate ROCE using replacement cost, and the overstatement could be significant. Given this, BPNZ submits that there is no merit in the Commission basing a ROCE analysis on historic cost measures of capital employed with adjustments for replacement cost only as an extension: the base measures of ROCE that would be generated would be of little information value given the potential variance of those measures from ROCE measures based on replacement cost. If the Commission is to pursue a ROCE analysis it should do so with an ambition of basing it comprehensively on replacement cost.

Valuation gains are part of the return from holding an asset

A76 In support of its point that estimates of ROCE using historic cost will overstate ROCE using replacement cost, BP offers a stylised example in Table 1 of its submission.[966] We reproduce that Table as Panel 1 of Table A2 below. BP's example assumes regular increases in the replacement cost of the firm's assets. However, the example does not treat revaluation gains as part of the returns made by the firm. That is, the gain the firm has made from holding assets during a period when the value of the assets has increased. By holding the asset during a period when replacement costs were rising:

A76.1 the firm has avoided having to make a larger investment to buy the asset at the end of the period; and

A76.2 alternatively, the firm can sell the asset at the end of the period for a higher value than the assets were acquired at the start.

A77 In Panel 2 of Table A2 below, we amend BP's stylised example to treat as income both the cash returns, and the increments in replacement costs, assumed by BP. The average ROCE on replacement costs shows an average return of 14.3%, which is higher than the ROCE on historic cost. This is intuitive, given the firm has enjoyed a significant capital gain over the period and this was not included in BP's original analysis.

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965 BP "Feedback on Working paper – Assessing profitability" (14 May 2019) at [4.3].

966 BP "Feedback on Working paper – Assessing profitability" (14 May 2019) at 5.

Table A2 Stylised comparison of ROCE using historic vs replacement cost measures of capital employed

		Year 1	2	3	4	5	6	7	8	9	10	Average
Panel 1: Stylised comparison of ROCE using historic vs replacement cost measures of capital employed (BP submission)												
Cash Flows ($000's)		$2	$4	$6	$8	$10	$13	$15	$20	$25	$25	
Historic Cost (HC, $000's)		$100	$100	$100	$100	$100	$100	$100	$100	$100	$100	
ROCE (HC)		2%	4%	6%	8%	10%	13.0%	15.0%	20.0%	25.0%	25.0%	12.8%
Replacement Cost (RC, $000's)		$110	$120	$130	$140	$150	$160	$170	$180	$190	$200	
ROCE (RC)		2%	3%	5%	6%	7%	8%	9%	11%	13%	13%	7.6%
Panel 2: Amended to reflect total returns including valuation gains												
Cash return ($000's)		$2	$4	$6	$8	$10	$13	$15	$20	$25	$25	
Historic cost (opening)		$100										
Replacement Cost ($000's)		$110	$120	$130	$140	$150	$160	$170	$180	$190	$200	
Valuation gain ($000's)		$10	$10	$10	$10	$10	$10	$10	$10	$10	$10	
Total return ($000's)		$12	$14	$16	$18	$20	$23	$25	$30	$35	$35	
ROCE (RC)		10.9%	11.7%	12.3%	12.9%	13.3%	14.4%	14.7%	16.7%	18.4%	17.5%	14.3%
Panel 3: Comparison to Internal Rate of Return												
Cash flows and opening and closing values	-100	$2	$4	$6	$8	$10	$13	$15	$20	$25	$225	
Internal rate of return												14.8%

Source: Commerce Commission Analysis of BP stylised example

A78 Finally, in Panel 3 we calculate the IRR using the cash flows from BP's example and including the historic cost as the cash outlay to acquire the asset, and the closing value (established using replacement cost). The IRR is 14.8%, which is close to the ROCE on replacement cost (including revaluation gains).

A79 When asset values are rising (whether measured by replacement cost, market value, or some other methodology), asset owners benefit from capital gains as well as the cash flows produced by the assets. Any assessment of a company's profitability should include the operating results as well as capital gains.[967] Asset values can fall over time too, and this should also be reflected in the analysis of returns.

Other practical issues

A80 In this section we comment on a range of issues identified by firms on our proposed use of profitability analysis in this study. This includes:

A80.1 measurement issues; and

A80.2 differences in business models.

Measurement issues

A81 BP submitted that analysis of ROCE "will not be capable of supporting meaningful conclusions in relation to reasonableness of prices or margins". BP argued that this is due to measurement issues, including valuing intangible assets, estimating

[967] For further discussion, see Commerce Commission "Input Methodologies (Airport Services) Reasons Paper" (22 December 2010) at [2.8.13] - [2.8.17].

replacement costs, allocating shared costs, and the distortions from accounting conventions and practices, and the need to assess all or most suppliers in a market.[968]

A82 Contrary to BP, we consider that ROCE analysis can provide useful information although it needs careful interpretation as part of a wider set of profitability indicators. We note the following specific points.

A82.1 The term intangible asset covers a range of assets and care needs to be taken to ensure these are treated appropriately in any analysis. We discuss this further in Attachment C in respect of the various approaches we use to assess profitability.

A82.2 As discussed above at paragraph A71, estimates of replacement costs provide insight on the economics of new entry, and in Attachment C we discuss the existing estimates of replacement cost that are available to us, and how we use this information.

A82.3 As noted above at paragraphs A47-A53, we do not seek to allocate shared and common costs where firms have not previously done so consistently. Instead we propose to rely on existing information, including how those costs were treated, and look at a wide range of measures of profitability.

A82.4 There may be distortions in the accounting treatments, but this will be offset in part by using a range of different techniques and approaches.

A82.5 We also examine the profitability of a range of firms involved in the retail fuel market.

Differences in business models

A83 Mobil submitted that comparison of ROCE across companies is challenging given different business structures which are competing at different levels of the market.[969]

A84 On this point, we note that the primary purpose of assessing profitability in this context is to assist in drawing conclusions about the effectiveness of competition in the market, not to examine differences in profitability between different business

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968 BP "Market Study in the retail fuel sector – BP New Zealand Comment on Preliminary Issues" (21 February 2019) at 4-5.

969 Mobil "Submission to the Commerce Commission New Zealand in response to the Statement of Preliminary Issues for the Market Study into the Retail Fuel Sector" (21 February 2019) at 6. Similarly, Z Energy highlighted the difficulty in comparing businesses of fundamentally different scale and/or structure - see Z Energy "Market Study into the Retail Fuel Sector: Z Energy's Response to Invitation to Comment on Preliminary Issues" (21 February 2019) at [49].

models. We are interested in returns on investment over time across a range of market participants and business models.

Should we include analysis of returns prior to 2010?

A85 In its submission on the working paper on profitability BP submitted that our profitability assessment needs to consider the period of low returns before 2010.[970]

> It is important to recognise the 20-year period over which this cycle has played out and the low margins that were experienced in the 2000s, which any retail fuel business must factor into its investment decisions. In light of this, BPNZ submits that any assessment of the profitability of retail fuel businesses in NZ would be incomplete and unsuitable as a basis for conclusions regarding the effectiveness of competition in the industry if it failed to take into account the full cycle including the period of low returns. In short, to do so would be to overstate the profitability of NZ fuel retailers. …
>
> BPNZ recognises that data limitations may preclude analysis of returns prior to 2010 and that the Commission may elect to proceed with the available data and estimate returns from 2010 onwards. BPNZ submits that the interpretation of those returns should not include any conclusions regarding excess profitability or 'persistent' high or above normal returns, precisely because this period captures just one part of the cycle and investment lives are much longer. The Commission should always bear in mind the length and depth of below-normal returns that retailers sustained in the 2000's.

A86 We agree that we should have some regard to the returns in the periods before 2010 when assessing profitability and whether the levels of profits currently being earned are consistent with workably competitive markets and/or for the long-term benefit of consumers.

A86.1 We are of course interested in the modern history of the industry including in the pre-deregulation period when the Government played an active role in supporting development of the retail fuels industry.

A86.2 We acknowledge too that sometimes when a company invests in infrastructure, it must do so in large discrete "lumps". In the early days the infrastructure may have significant excess capacity, and the returns earned (depending on how they are measured) may seem low. In later years as demand grows, the profits (again depending on how they are measured) may seem relatively high. Over the life of the asset, returns may be normal. Measuring the profits only in the later years could give a misleading impression of excessive profitability.[971]

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970 BP "Feedback on Working paper – Assessing profitability" (14 May 2019) at [2.7] and [2.9].

971 A recent example of the difficulties this investment cycle creates is Christchurch Airport's investment in its new terminal. We took care to ensuring that we measured profitability appropriately given the initial low utilisation of the terminal. Commerce Commission "Report to the Ministers of Commerce and Transport on how effectively information disclosure regulation is promoting the purpose of Part 4 for Christchurch Airport" (13 February 2014) at X5-X6 and Attachment E.

A86.3 However, we do not understand that the lower profits across the fuel industry before 2010 were the result of low initial utilisation of a lumpy investment. Instead, parties submit that investment during this decade was low and there was underinvestment and exit.[972]

A86.4 We note too that the lower returns in the 2000s followed periods before and immediately after deregulation when returns in the industry appear to have been higher.[973]

A86.5 Within the constraints of the data available to us in this study, we look at a variety of approaches to assessing profitability some of which include analysis of the returns during the 2000s (for example, the analysis of returns on capital employed, see Attachment C from paragraph C172) while other approaches look at expected future returns. Further, we look at the level of profitability across a number of firms. The results of this analysis are reported in Attachment C.

A86.6 Ultimately, we are tasked with assessing the factors currently affecting competition in the retail fuel market and the level of profits in previous decades does not directly inform that assessment.

A87 We understand that BP's particular concern was around ROCE, which we agree is not a good indicator of profitability over short time periods. We rely on a broad range of indicators of the level of profitability. Further discussion of ROCE, and these other measures is set out in Attachment C.

When are excess returns persistent?

A88 If we find that returns are above normal competitive levels, the third and final step in our assessment of profitability is to consider whether they have persisted over time.

A89 In considering whether the excess returns are persistent we propose to look at factors such as:

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[972] BP "Market study into the retail fuel sector – BP New Zealand comment on preliminary issues" (21 February 2019) at 1-2; Z Energy "Market Study into the Retail Fuel Sector: Z Energy's Response to Invitation to Comment on Preliminary Issues" (21 February 2019) at [20]. Z Energy "The downstream fuels industry: Strongly competitive or operating with uncertainty?" (8 March 2012) at 2.

[973] Michael Pickford and Cameron Wheeler "The petrol industry: Deregulation, entry and competition" (2001) *NZ Trade Consortium Working Paper No. 12* at 60-65. Max Bradford, Minister of Energy and Commerce "Opening of Gull (Terminals NZ Ltd) Petroleum Tank Farm" (20 April 1999). Available at <https://www.beehive.govt.nz/speech/opening-gull-terminals-nz-ltd-petroleum-tank-farm>. (Viewed on 16 August 2019).

A89.1 the extent to which the returns exceed a normal return (that is, the significance of the excess returns);

A89.2 the period of time over which excess returns are earned; and

A89.3 any reliable forward-looking information which indicates that high returns can, or cannot, be expected to continue.

A90 We discuss the persistence of returns in more detail in Attachment D. Our analysis of the factors affecting competition in Chapters 4, 5, 6 and 7 is also relevant to the persistence of excess returns. Absent these factors, we expect that excess returns would reduce over time.

Over what period should we assess the persistence of excess profitability?

A91 In its submission on the working paper on profitability BP submitted that the persistence of profitability needs to be assessed over a timeframe that reflects business cycles and the lives of investments.[974]

> When business cycles and investment lives are long, annual returns above normal levels that continue for five or even ten years may not be 'persistent' in the sense of implying excess profitability or ineffective competition.

A92 For the same reasons as outlined above, we do not agree that our assessment of the persistence of excess profitability needs to be assessed over a timeframe that reflects the business cycle and the lives of investments.

A93 There can be value in looking at profitability over much shorter time horizons as part of a broader and well-balanced competition study.

A93.1 As discussed in Attachment C, many fuel companies expect, and are achieving, rapid paybacks on their investment in new and/or redeveloped sites. These payback periods are materially shorter than the physical lives of the investments and we expect they are also shorter than whatever specific definition of business cycles BP may propose.

A93.2 In a competitive market, investments offering greater than normal rates of return and rapid paybacks would attract new entry, regardless of what point had been reached in the business cycle.

A94 In relation to BP's submission that a time period of five or even ten years may be too short to reliably assess the persistence of profitability, we have considered a variety of approaches, and which pertain to a long period of time, in assessing profitability.

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974 BP "Feedback on Working paper – Assessing profitability" Tuesday, 14 May 2019 at [1.3]. Z Energy made a similar point in its February submission – see Z Energy "Market Study into the Retail Fuel Sector: Z Energy's Response to Invitation to Comment on Preliminary Issues" (21 February 2019) at [49].

We use both backward and forward-looking approaches. Collectively, these approaches cover a period greater than 10 years. These approaches and their findings are summarised in Attachment D.

Attachment B Estimating the level of normal returns in the fuel sector

Introduction to this attachment

B1 This attachment explains how we have estimated a normal rate of return for firms in the New Zealand retail fuel sector. We use our estimate of a normal return as a benchmark to compare against the actual and the expected level of returns being made by New Zealand fuel firms. We define a normal level of return to equal the WACC.

B2 This attachment should be read in conjunction with the following attachments.

B2.1 Attachment A which explains our approach to assessing profitability and discusses the sort of conclusions from, and limitation of, profitability assessments generally.

B2.2 Attachment C which discusses the analysis of profitability and our draft conclusions on the level of profitability being earned in the fuel industry.

B2.3 Attachment D which summarises our analysis of profitability to date and considers whether levels of excess profitability are persistent or temporary.

The cost of capital is an estimate of a normal rate of return

B3 A normal level of profitability allows a firm to cover all its costs, including the cost of capital, over time. The cost of capital is the rate of return investors require to invest. It reflects the returns and risks available from the activity at issue and other investments.

B4 If expected levels of profitability are greater than the cost of capital, investment will be attracted to the industry as the returns are greater than the returns which are available elsewhere to the investor. Conversely, if prospective returns are less than the cost of capital then firms may reduce their activities or exit so they can invest in other opportunities. This is how competitive markets allocate resources to their highest value use.

B5 In competitive markets, the expected rate of return will over time tend towards a normal level of profitability, that is towards the cost of capital. However, it will not necessarily equal the cost of capital. At some points, the rate of return may be above the cost of capital, and other times below it, but it will tend towards the cost of capital over time. If rates of return in a market are persistently above the cost of capital this would suggest that competition is not working as it should.

What is the cost of capital

B6 Firms raise the capital they need from two main sources: debt and equity. Both have a cost. For debt, it is the future interest payments. For equity, it is the expectation of dividend payments by the firm, and where profits are retained and reinvested, the expectation of larger dividend payments by the firm at some time in the future. The WACC reflects the cost of debt and the cost of equity, and the respective portion of each that is used to fund the investment.

B7 The cost of capital cannot be observed, and accordingly it needs to be estimated. For this study we have:

B7.1 estimated the cost of debt by reference to the yield on Z Energy's publicly traded bonds;

B7.2 estimated the cost of equity for a participant in the retail fuel sector using our standard methodology for estimating the cost of equity;

B7.3 combined the cost of debt and equity to give an estimate of the WACC; and

B7.4 compared this estimate of WACC against other available estimates of the cost of capital for this sector to test for reasonableness and long-term estimates of average market return.

B8 Our approach to estimating the cost of capital has been developed since 2001 and has been formalised through our cost of capital input methodologies. The cost of capital input methodologies have been consulted on heavily, with many parties over many years. They have been reviewed and accepted by the High Court.[975] Our methodology for estimating the cost of capital has been applied to many sectors, including electricity lines businesses, gas pipelines, specified airport services and certain telecommunication services.[976] We consider that our standard methodology for estimating the cost of capital is appropriate for the current study.

B9 Z Energy submitted that the different businesses in the fuel sector (ranging from multi-nationals to regional private firms to family-owned single site participants)

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975 *Wellington International Airport & Others v Commerce Commission* [2013] NZHC 3289 [11 December 2013], Part 6.

976 See, for example, Commerce Commission "Electricity Distribution Services Input Methodologies Determination 2012". Available at <https://comcom.govt.nz/__data/assets/pdf_file/0017/60542/Electricity-distribution-services-input-methodologies-determination-2012-consolidated-January-2019-31-January-2019.pdf>. The cost of capital input methodology was last reviewed during 2015-2016. For further details see: <https://comcom.govt.nz/regulated-industries/input-methodologies/projects/201516-im-review>.

have significantly different risk profiles and cannot be easily compared against one WACC range.[977] While there are a range of participants:

B9.1 we are focused on the risk faced, and returns expected, by diversified investors in fuel businesses;

B9.2 for such investors it is systematic risk which is relevant (the risk which affects all investments – rather than stock specific factors including those due to some firms' small size);[978] and

B9.3 consumers buying from a competitive market would not pay higher prices because a firm selling the products has high financing costs due to its inefficient financing.[979]

B10 Our methodology reflects this – it does not provide additional returns to cover the risks faced by undiversified investors since diversification is costless to most investors. We agree we should test our estimates of WACC against other evidence.[980]

There are seven key parameters required to estimate WACC

B11 The values for seven parameters are required to estimate the cost of capital. These are the risk-free rate, the debt premium, asset beta, tax-adjusted market risk premium, investor and corporate tax rates, and leverage. Each parameter is covered in turn. Combining these produces an estimate of WACC, which we compare against estimates from other sources, such as those from research analysts, to ensure it is commercially realistic.

Risk-free rate

B12 A risk-free rate is the rate of return expected when there is no risk of default. Debt issued by the New Zealand Government and denominated in New Zealand dollars is considered to be free of default risk. The return on New Zealand Government issued debt can generally be readily observed from the trading on the debt market.

B13 Generally, the rate of return varies with the term of the investment. In regulatory contexts we choose a term of the risk-free rate that matches the length of the regulatory period. In the context of a market study there is no regulatory term, so we choose a term of 10 years, consistent with common commercial practice.

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977 Z Energy "Comments on 18 April Working Papers" (7 May 2019) at [16].

978 See paragraph B26 below.

979 Commerce Commission "Input Methodologies (Electricity distribution and gas pipeline services) Reasons Paper" (December 2010) at [6.2.5].

980 Z Energy "Comments on 18 April Working Papers" (7 May 2019) at [14.2].

B14 The risk-free rate is volatile and has declined materially in recent years.

B15 In this market study we are using our estimate of WACC in various contexts, including assessing the returns on new investment and assessing firm profitability over longer time frames.

B15.1 Spot risk-free rates are useful when evaluating new investments, since spot rates reflect the cost of funds at the time the investment is being made.

B15.2 Spot rates are less useful when assessing the profitability of a firm over longer time periods since the spot rate at one point in time is unlikely to be reflective of the risk-free rate throughout the period (and investments will have been made throughout the period).

B15.3 When assessing the profitability of an unregulated firm over time, an average risk-free rate is appropriate.

B16 Given these considerations, we propose using a range of estimates of the risk-free rate reflecting:

B16.1 the average New Zealand 10-year risk-free rate estimated during the years from 2014-2019, which is the period during which much of our profitability assessment is focused. This averaged 3.1% pa; and

B16.2 an estimate of a New Zealand 10-year term risk-free rate over a longer period of time. We assume a rate of 4.5% (which is the average value of the risk-free rate assumed by the equity research analysts who cover Z Energy – see Table B1 below). The analysts' reports do not define the period to which this estimate relates.

Debt premium

B17 Companies fund part of their activities with money borrowed from others. When companies raise debt, they pay a higher rate of interest than the Government (ie, the risk-free rate), to reflect the corporate's relatively greater risk of default. This higher rate of return on corporate debt is called the debt premium.

B18 Using our standard methodology, we estimate the debt premium by looking at the yield to maturity on publicly traded bonds in New Zealand relative to the yield to maturity on government bonds. While corporates can raise money using a wide range of debt instruments, we use publicly traded bonds to estimate the debt premium, as information on the cost of these is publicly available. The current debt premium on other debt facilities is generally not publicly known.

B19 Z Energy has a number of publicly traded bonds and we used the estimated yields on those bonds to estimate the debt premium to include in our estimate of WACC.

B20 The debt premium can also vary between companies depending on their credit standing. Some participants in the New Zealand fuel sector may have a lower debt premium than Z Energy (because, for example, they are wholly owned subsidiaries of a parent with a higher credit rating than Z Energy), others may have a higher debt premium (due to their lower credit standing). We consider the debt premium on Z Energy bonds is a good benchmark for the debt premium for an efficient participant in the New Zealand retail fuel market since Z Energy:

B20.1 is a significant player in the New Zealand fuel sector; and

B20.2 has concentrated its activities in the fuel sector.

B21 Smaller companies, and companies with weaker credit standings, may incur a higher debt premium than Z Energy.

B21.1 However, as discussed in the input methodologies reasons paper, our focus would be on what returns investors would seek from an efficient firm.[981]

B21.2 The observed debt premium on Z Energy's bonds is higher than the observed debt premium on bonds with a Standard and Poor's long-term credit rating of BBB+ (implying Z Energy has a credit rating of less than BBB+).

B21.3 The long-term credit ratings of two large, listed Australian fuel companies are BBB- and BBB+.[982] Z Energy's observed debt premium appears to be a reasonable proxy for the debt premium for fuel firms.

B22 We estimated the average daily debt premium on Z Energy's publicly traded bonds above the risk-free rate with the same remaining term to maturity[983] for the 6-monthly periods between 2014-19. That is, for a Z Energy bond with a remaining term of, say, six years, we:

B22.1 estimate its yield to maturity;

B22.2 estimate the risk-free rate on a Government Bond with an interpolated remaining term of six years;

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981 Commerce Commission "Input Methodologies (Electricity distribution and gas pipeline services) Reasons Paper" (December 2010) at [6.2.2] - [6.2.7].

982 Caltex Australia has a Standard and Poor's long-term credit rating of BBB+, while Viva Energy has a Standard and Poor's long-term credit rating of BBB-, as at 24 July 2019. Available at <www.standardandpoors.com>.

983 Estimated by linear interpolation.

B22.3 take the difference between those estimates as an estimate of the debt premium on Z Energy's bonds; and

B22.4 repeat those calculations across the years 2014-2019.

B23 The resulting estimate of the debt premium on Z Energy's bond with the longest remaining term to maturity ranged between 165-217 basis points (ie, 1.65-2.17% pa, with a remaining term of close to five years) over this period. The average debt premium was 191 basis points. This is summarised in Table B1.

Table B1 Estimated debt premium on Z Energy bonds

	Remaining term to maturity on Z's longest maturity bond (years)	Debt premium on Z publicly traded bonds vs interpolated risk-free rate with same remaining term (basis points p.a.)	5yr BBB+ debt premium (EDBs) (basis points p.a.)
Average	**5.2**	**191**	**163**
Proposed range for debt premium			200-225 basis points

Source: Commerce Commission analysis of Bloomberg data

B24 We also compared our estimate of the average debt premium on Z Energy's bond to our estimate for a BBB+ rated five-year corporate bond which we estimate from time to time in respect of regulation under Part 4. Z Energy's debt premium averaged 28 basis points higher than the average of our estimates of the premium on BBB+ rated five-year corporate bonds across this period.[984]

B25 Firms issue debt periodically to spread refinancing risk. Using an estimate of the debt premium which is averaged over time reflects this practice. For the purposes of this study, we assume a debt premium of 200-225 basis points over 10-year government bonds.

B25.1 At the low end of the range this reflects the approximate average premium estimated on Z Energy's traded bonds over the period 2014-2019.

B25.2 At the high end of the range it reflects an increment to reflect a likely greater debt premium on longer term debt.[985]

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984 Commerce Commission "Cost of capital determination for disclosure year 2020 for information disclosure regulation" [2019] NZCC 7 at Table 4.

985 We have estimated the debt premium based on the remaining term to maturity of Z Energy bonds, but the original tenor of these bonds at the time of issue is longer, and the increment reflects the greater debt premium for longer tenor.

Asset beta

B26 Asset beta measures the difference in systematic risk between investments. Systematic risk is the risk that equity investors cannot diversify away. It is the risk that affects all risky investments when held as part of a diversified portfolio.

B27 We estimate asset beta empirically. Specifically, we identify publicly listed firms that undertake activities that are broadly comparable to those undertaken by firms in the New Zealand retail fuel market. We then estimate the relationship between share prices of those publicly listed firms and the market index for the country in which they are listed.

B28 We identified comparable firms from Bloomberg using the following criteria.

B28.1 Listed in an OECD country, with a market capitalisation of at least US$100m.

B28.2 In either the Bloomberg category of "Integrated Oils" or "Refining & Marketing" sectors with at least 75% of revenues from "refining and marketing" activities.

B29 Of the resulting sample of 59 companies we excluded companies:

B29.1 which are classified primarily as refineries (this removed 21 companies);

B29.2 which are primarily focused on LPG/natural gas (this removed four companies); and

B29.3 which did not refer to retail fuel in the company description (this removed seven companies).

B30 This produced a sample of 27 companies, which are listed in Table B2.

Table B2 Listed comparator companies

Name	Country
SK Innovation Co Ltd	South Korea
S-Oil Corp	South Korea
JXTG Holdings Inc	Japan
Idemitsu Kosan Co Ltd	Japan
Exxon Mobil Corp	United States
Chevron Corp	United States
Daesung Industrial Co Ltd	South Korea
Royal Dutch Shell Plc-A Shares	Netherlands
BP Plc	Britain
Phillips 66	United States
BP Castrol KK	Japan
INA Industrija Nafte DD	Croatia
Neste Oyj	Finland
Repsol SA	Spain
Caltex Australia Ltd	Australia
Parkland Fuel Corp	Canada
Paz Oil Co Ltd	Israel
Viva Energy Group Ltd	Australia
Murphy USA Inc	United States
Sunoco LP	United States
Z Energy Ltd	New Zealand
Vivo Energy Plc	Britain
Dor Alon Energy in Israel	Israel
Applegreen Plc	Ireland
CrossAmerica Partners LP	United States
Sprague Resources LP	United States
Esso Ste Ste Anonyme Francaise	France

Source: Commerce Commission analysis of Bloomberg data

B31 Consistent with our methodology for estimating the cost of capital under Part 4 and the Telecommunications Act, we estimated asset beta for the comparator companies:

B31.1 for up to 20 years (subject to the availability of data) by splitting the period into four consecutive 5-year periods; and

B31.2 using daily, weekly, and four-weekly data. To limit the risk of estimation error based on the choice of reference day, the weekly and four-weekly estimates are averaged over each day of each period, rather than being sourced directly from Bloomberg estimates.[986]

[986] Commerce Commission "Input methodologies review decisions Topic paper 4: Cost of capital issues" (20 December 2016) at [291].

B32 The resulting sample averages for each period are shown in Table B3 below.[987]

Table B3 Average comparator company asset beta and leverage

	1999-03	2004-08	2009-13	2014-18
Number of companies in sample	6	11	18	25
Leverage	24%	12%	33%	27%
Daily asset beta	0.40	0.73	0.59	0.59
Weekly asset beta	0.39	0.73	0.61	0.62
Four-weekly asset beta	0.40	0.77	0.62	0.68
Average weekly and four-weekly asset beta for 2009-13 and 2014-18 periods				0.63
Average leverage for the 2009-13 and 2014-18 periods				30%

Source: Commerce Commission analysis of Bloomberg data

B33 We prefer to give greatest weight to weekly and four-weekly estimates from the two most recent 5-year periods.[988] The average of the weekly and four-weekly results over the two most recent 5-year periods was 0.63.[989]

B34 For the purposes of this market study we propose to use a range for asset beta of 0.6-0.7. This reflects:

B34.1 the estimation of beta is subject to estimation error;

B34.2 there are differences in the type of activities undertaken by the companies in the New Zealand retail fuel sector which may give rise to differences in systematic risk between these companies;

B34.3 using a range of values for asset beta is likely to better reflect those differences than the selection of a single estimate; and

987 Two of the 27 companies were listed for too short a period to be included in this analysis.

988 Daily asset beta estimates can be distorted by low liquidity stocks and older estimates may have smaller sample sizes (and changes over time may mean older estimates are less relevant to the risks faced today). For further discussion, see Commerce Commission "Input methodologies review decisions Topic paper 4: Cost of capital issues" (20 December 2016) at [297]-[307].

989 The estimates for Z Energy in the 2014-2018 period were 0.59 using daily estimates of beta, 0.67 using weekly estimates, and 0.84 using four-weekly estimates. Z Energy was listed for too short a period (from August 2013) to record a reliable estimate of beta for the 2009-2013 period. While an estimate of Z Energy's own beta is relevant evidence we prefer not to rely on estimates of beta for a single company. See, for example, Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews Final decision" (15 December 2015) at [141]-[144].

B34.4 for the purpose of this market study we do not need a single point estimate of asset beta, unlike in respect of Part 4 regulation (for example, where we require a single point estimate of beta, and WACC, to set a price-quality path).[990]

Tax-adjusted market risk premium

B35 The tax-adjusted market risk premium (TAMRP) reflects the additional expected return over and above the risk-free rate required to compensate investors for holding the market portfolio. We use a TAMRP of 7%. This is consistent with:

B35.1 previous advice from Dr Lally, an expert adviser to the Commission;[991] and

B35.2 our previous decisions on the level of TAMRP under Part 4 of the Act and the Telecommunications Act.[992]

B36 In the context of developing a draft input methodology for regulating fibre broadband networks, we have recently proposed adopting a higher TAMRP of 7.5% in our draft input methodologies for the cost of capital.[993] That new regulatory regime will apply from the beginning of 2022. Since the focus of assessing profitability in this study focuses on current and backward-looking analysis, a 7% TAMRP is an appropriate estimate of TAMRP for this retail fuel sector.

Investor and corporate tax rates

B37 We assume a corporate and investor tax rate of 28%, consistent with the New Zealand company tax rate and the prescribed investor tax rate for a portfolio investment entity, respectively. Fuller reasons are set out in the Input Methodologies (IM) Reasons paper 2010.[994]

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990 In the regulatory context we recognise and treat estimation risk differently. Specifically, we consider whether to apply an uplift to our mid-point estimate of WACC. See Commerce Commission "Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services" (30 October 2014) at Section 5.

991 Dr Martin Lally "Review of submissions on the risk-free rate and the TAMRP for UCLL and UBA services" (13 October 2015).

992 Commerce Commission "Input Methodologies (Electricity distribution and gas pipeline services) Reasons Paper" (December 2010) at Attachment H7; Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews Final decision" (15 December 2015) at [172] - [192].

993 Commerce Commission "New regulatory regime for fibre broadband networks taking shape" (19 Nov 2019), available at https://comcom.govt.nz/news-and-media/media-releases/2019/new-regulatory-regime-for-fibre-broadband-networks-taking-shape

994 Commerce Commission "Input Methodologies (Electricity distribution and gas pipeline services) Reasons Paper" (December 2010) at [H10.5]-[H10.17].

Leverage

B38 Leverage reflects the proportion of a company's total funding that is borrowed. We assume leverage of 30% (ie, 30% of the firm's total funding is financed by debt, and 70% by equity). This is the same as the average leverage of the comparable companies identified in the beta section. Again, the reasons for this are set out in the IM Reasons paper 2010.[995]

We estimate a WACC of between 6.9-8.6% for the retail fuel sector

B39 Combining these parameter values produces an estimate of WACC ranging from 6.9-8.6%. This is shown in Table B4.

Table B4 Our parameter estimates and our estimate of WACC

	Low	High
Risk-free rate	3.1%	4.5%
Debt premium	2.0%	2.25%
Asset beta	0.6	0.7
Leverage	30%	30%
Investor tax rate	28%	28%
Corporate tax rate	28%	28%
Equity beta	0.86	1.00
(Tax adjusted) Market risk premium	7.0%	7.0%
WACC	6.9%	8.6%

Source: Commerce Commission analysis

Our estimate of WACC is supported by other information

B40 To test the reasonableness of our estimate of WACC we compared our WACC range to the estimates of WACC published from time to time by the research analysts of major investment banks in their research notes on Z Energy.

B41 Broker estimates of Z Energy's WACC are set out in Table B5 alongside our estimated WACC range.[996]

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995 Commerce Commission "Input Methodologies (Electricity distribution and gas pipeline services) Reasons Paper" (December 2010) at Attachment H3.

996 FNZC "Cooling our jet (and petrol) volumes" (20 Jul 2018) at 6. UBS "Fuelling the EV and regulatory debate – Upgrade to Buy" (15 May 2018) at 27; Deutsche Bank "Tough day at the pump" (1 Nov 2018) at 11; Forsyth Barr "Z Energy Broad Preliminary Issues Paper Casts a Wide Net" (31 Jan 2019) at 2 and Macquarie "Z Energy Solid Start to FY20" (17 Jul 2019) at 1.

Table B5 Comparison with our estimates of WACC

	FNZC	UBS	Deutsche Bank	Forsyth Barr	Macquarie	ComCom	
	(20 Jul 2018)	(15 May 2018)	(1 Nov 2018)	(31 Jan 2019)	(17 July 2019)	Low	High
Risk-free rate	4.60%	3.0% (10y) - 5.5% (LT)	4.5%	3.50%	4.30%	3.1%	4.5%
Debt premium	2.5%	2.0%	2.2%			2.0%	2.25%
Asset beta	0.75	0.7	0.7			0.6	0.7
Leverage	28%	20%	25.4%			30%	30%
Equity beta		0.88	0.88	0.84	0.9	0.86	1.00
Market risk premium	7.4%	7.0%	6.5%		7.0%	7.0%	7.0%
WACC	9.37%	7.3% (10y) - 9.1% (LT)	8.70%	7.60%	8.10%	6.9%	8.6%

Source: Commerce Commission analysis, various broker reports

B42 Our estimates are similar to the analysts' estimates. The key difference between the low end of our range and the average analyst estimate is due to the choice of risk-free rate. Most analysts use a long-term risk-free rate which is well above the prevailing risk-free rate. This is consistent with their objective of estimating the long-term value of Z Energy's shares and whether investors should buy or sell those shares.

B43 On the other hand, use of the prevailing rate (that is, the actual yield estimated on spot rate government stock during the 2014-2019) better reflects the cost of capital firms were exposed to at the time when they were deciding whether or not to proceed with new investment.

B44 The estimate of WACC using the long-term estimate of the risk-free rate may better reflect the return expected by investors over the long-term (it assumes the risk-free rate reverts to a level more in line with its longer term levels).

B45 Other available information also supports the reasonableness of our WACC estimate.

B45.1 Our WACC range is close to, but below, the post-tax discount rate of 9% which Z Energy uses to value the cash flows from Chevron when testing for impairment of goodwill.[997]

B45.2 It is around the long-term historical return and the forecast return on New Zealand investments of average risk (7.21%-7.39%).[998]

The risks of mis-estimating WACC

B46 As WACC cannot be observed, there is a risk of mis-estimating WACC. In some contexts, we make an allowance for the risk of estimation error. This is especially so

997 Z Energy "Annual Report" (2019) at 81.

998 Commerce Commission "Input methodologies review decisions Topic paper 4: Cost of capital issues" (20 December 2016) at [707.1].

when we use a point estimate of WACC and there are asymmetric consequences from getting that estimate wrong.[999]

B47 In this study we have estimated a range of WACC which we have compared profitability against. The use of a range increases the likelihood that our estimates capture the true but unobservable level of WACC.

B48 We have not made an additional adjustment to our WACC estimate to reflect any potential risks of estimation error in this study. This is because the consequences of mis-estimating WACC in this report are unlikely to have any asymmetric impact on consumers.

B49 Use of an estimate of WACC above our mid-point estimate may be appropriate for any subsequent cost-benefit analysis of whether to impose regulation.[1000]

[999] In particular, we make an allowance for estimation error setting the maximum prices a monopoly supplier of services can charge its consumers. This is to protect consumers from the potentially severe consequences of under-investment if our WACC is too low and this results in under-investment - see Commerce Commission "Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services" (30 October 2014) at section 5.

[1000] Lally "The Weighted Average Cost of Capital for Gas Pipeline Businesses" (28 October 2008) at 94.

Attachment C Measures of the profitability of firms in the New Zealand retail fuel sector

Introduction to this attachment

C1 This attachment sets out our analysis of the profitability of firms in the New Zealand retail fuel sector. In particular, we seek to understand whether the profitability of the fuel sector is in excess of a normal or competitive level.

C2 It identifies the approaches we have used and how we have used them, including the information we have used, possible limitations on each approach, and our interpretation of what the results imply.

C3 This attachment should be read in conjunction with the following attachments.

- C3.1 Attachment A which explains our approach to assessing profitability and discusses the sort of conclusions from, and limitation of, profitability assessments generally.
- C3.2 Attachment B which sets out our view of a normal rate of return, which we define as the WACC.
- C3.3 Attachment D which explains why, on the basis of our analysis so far, we consider the excess levels of profitability in the fuel sector appear to be persistent rather than temporary.

Forward-looking approaches

C4 As explained in Attachment A we have looked at a variety of forward-looking approaches to assessing profitability. Each is discussed in turn.

- C4.1 Firms' views on the level of industry profitability and the likelihood of entry.
- C4.2 The returns firms expect from new investment in retail fuel (including hurdle rates).
- C4.3 Tobin's q (the ratio of the implied market value of the fuel business to the current cost of replacing its assets).

C5 With one exception, submissions on our draft report did not identify any new forward-looking approaches to assess profitability of firms in the fuel sector. Ireland, Wallace & Associates suggested we could use analysis of economic value added, in combination with information on the market value of a firm, as such a measure. Such an approach is generally only possible for firms which are share market listed. We discuss this from paragraph C266 below.

C6 BP submitted that the most instructive information is how market participants are reacting to market conditions and highlighted new entry and expansion at both the wholesale and retail levels.[1001] We note that the draft report already included consideration of new entry of various types into the fuel sector as does this final report.

Incumbent firms have expected high profits to attract new entry since 2012

C7 The first forward-looking indicator of profitability we looked at was the firm's own comments on the level of profitability being achieved, and the implications of this for their own business. In particular, we looked at comments from planning and strategy documents for a range of retailers.

C8 Statements in these documents indicate that, since around 2012-2014, some New Zealand fuel firms were concerned that the high levels of profitability being enjoyed in the fuel sector may attract a new entrant to the market, or discounting by existing market participants.

C8.1 Analysis prepared by one fuel retailer for a strategy session in June 2012 noted that:[1002]

> "there may be a risk to [us] should a new fuel retailer enter the New Zealand market attracted by current high margins…
>
> [we] could be more aggressive with respect to rentals paid in order to secure additional sites. [This] would also be seen as an active deterrent to any new entrant."

C8.2 Another fuel retailer's strategy document from 2013 states that "Fuel margins currently at an all-time high. While NZ is a stable market, such high margins will attract new entrants or sustained discounting of margins".[1003]

C8.3 The same report notes that the "strong margin environment" poses the threat of new entry and identifies three potential new entrants to the retail fuel market.[1004]

C8.4 The same retailer's strategy document, from May 2014, again notes the strength of margins but discounts the prospect of new entry due to the high costs of entry.[1005]

1001 BP "Submissions on Issues Raised at the Commerce Commission's Fuel Study Conference of 24-26 September" (11 October 2019) at [3.3].

1002 [ ]

1003 [ ]

1004 Ibid, at 9.

1005 [ ]

> Fuel margins currently at an all-time high. Whilst NZ is a stable market such high margins could potentially lead to sustained discounting of margins. High costs to entry mean that new market entrants are unlikely.

C8.5 The next slide in that report states in respect of market dynamics:[1006]

> Strong marketing margin environment - threat of new entrant – Puma? 7 Eleven? Caltex Australia? High Costs of entry – terminal infrastructure, geography, market size.

C8.6 Another company in early 2015 noted:[1007]

> During late 2014 market margins reached levels not seen since new entrants (Gull Challenge) in 1999
>
> Current three-year averages still at levels below that seen through most of the 1990's prior to new entrants
>
> In real terms, FY15 margins have returned to levels seen in the mid-1990s.

The returns firms expect from new investment

C9 The second forward-looking indicator of profitability we have looked at is firms' own expectations of the profits they expect on new investment. We looked at:

C9.1 the returns firms expect to earn on their new investment in retail fuel sites, as forecast in their business cases for new investment, and how these returns compare to a normal return (WACC);

C9.2 firms' hurdle rates for new investment, and how these compare to WACC; and

C9.3 public comments by Z Energy on its minimum financial return from new investment.

C10 In each of these areas we find firms expect levels of profitability that are comfortably in excess of a normal level of return (WACC).

We looked at the returns firms expect from investing in fuel retailing sites

C11 We highlighted in Chapter 3 the growth in the number of fuel retailing sites in recent years. There is a significant investment required to establish each new site, and in knocking down and redeveloping existing sites. Firms only make this investment when they are confident of being able to earn at least their cost of capital.

C12 Before they invest, firms analyse the costs and returns expected from each site and summarise their analysis in a business case. These business cases provide us with a

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1006 [ ]

1007 [ ]

reliable and informed basis to assess the future profitability expected by firms from fuel retailing in New Zealand.

C13 Our approach to considering these business cases was as follows.

C13.1 We asked fuel retailers to provide us with documents which included analysis of returns on capital.

C13.2 We received over 90 business cases from a range of firms including majors and resellers (including Allied, BP, Gull, Mobil, NPD, Waitomo, and Z Energy) for new investment in NTI sites and "knock-down and rebuilds" of existing sites.

C13.3 We reviewed the approach to assessing profitability in the business cases.

C13.4 We summarised the returns forecast by the firms in their business cases.

C13.5 We compared the firms' expected level of profitability with our estimated normal level of returns (that is, our WACC range).

We looked at the returns from investing in fuel retailing sites

C14 We focused on investments in fuel retailing sites. This captures the investments, and expected returns, of a wide range of fuel firms.

C15 There are differences in firms' approaches to building and redeveloping retail fuel sites. The business cases we reviewed covered a range of station locations, sizes and types, including large full service stations, and unmanned sites in urban and rural locations. As such, we consider they are broadly reflective of the additional investment in fuel retailing in New Zealand in recent years.

C16 Firms used a variety of metrics to estimate the profitability of new investment. Estimates of net present value, payback periods, returns on net assets, and ROCE were all used. The metric which firms most frequently used to assess profitability appeared to be the IRR. Given its popularity we focus on this measure as it provides a view of a broad range of firms' expected profitability on new retail investment.

Our analysis looked at firms' estimates of Internal Rates of Return

C17 The IRR is the discount rate that makes the net present value of a set of cash flows equal to zero. It is called the IRR because it excludes external factors such as interest rates, inflation, etc.[1008]

C18 There were differences in firms' approach to estimating IRR. Some firms adopted a 10-year forecast period, others used longer periods. Some firms also used the

[1008] Those factors are instead reflected in the cost of capital, which we compare against the estimated IRR.

modified IRR which we discuss further below. We have sought to understand the levels of expected returns as firms see them.

C19 Our analysis focused on the projects to build NTI or knock-down and rebuild existing service stations. We summarised firms' own expectations of the IRRs for projects proposed between 2014 and 2019. One firm did not calculate the IRR on its projects and we did not include its business cases in this analysis.[1009] We consider the remaining sample of business cases is reflective of a broad cross-section of new investment by New Zealand fuel retailers.

C20 The other key steps in our approach were as follows.

C20.1 We categorised the business cases by the year in which each was prepared.[1010]

C20.2 The analysis includes 81 business cases, of which 32 were for manned sites and 49 were for unmanned sites for the years 2014-2019. Our analysis does not show the IRRs expected on projects before 2014 as the number of cases relating to each of those years was small. For completeness, we note the expected IRRs on business cases prepared in those years were also materially above our estimated WACC range.

C20.3 For the projects in each year between 2014 and 2019, we weighted the IRRs by the amount of capital proposed to be invested in each project as a proportion of total proposed capital expenditure in that year (using each firm's estimate of that capital cost) to ensure our summary was not distorted by a large number of relatively smaller projects. That is, the average IRR we report for each year is reflective of the average returns weighted by the amount of investment in each project.

C20.4 We compared the weighted average IRRs with our estimated WACC range.

The average expected rate of return is more than double our estimate of the cost of capital

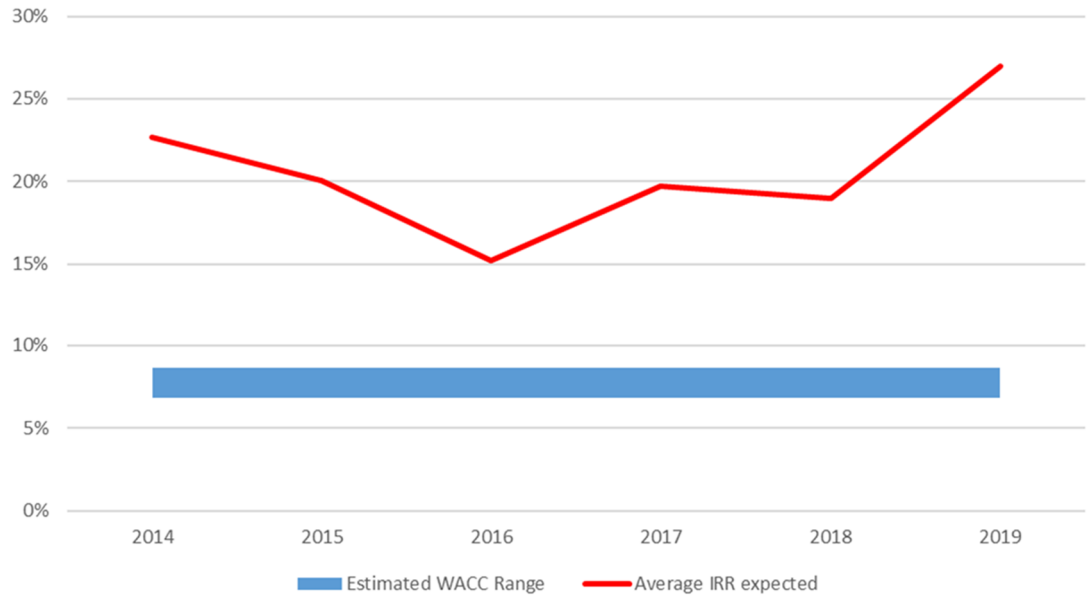
C21 Figure C1 shows that the weighted average IRRs expected from these projects materially exceeds our estimated WACC range for all years in the period from 2014-2019.[1011]

[1009] There was insufficient information in the business case to calculate the IRR for that company. Instead the firm's business case estimated the profits expected in the first year of operation only and compared this with the expected cost of opening the site in deciding whether to invest. That approach, in and of itself, implies the project was strongly profitable.

[1010] The number of business cases included in each year was as follows: 11 in 2014, 16 in 2015, 14 in 2016, 12 in 2017, 21 in 2018 and 6 in 2019. The relatively smaller number of business cases in 2019 is due to the timing of our receipt of business cases from firms. The average for 2019, which was for a marked increase in IRR in that year relative to the business cases in prior years, may not be representative of all of the business cases to be prepared in 2019.

C22 The weighted average expected IRR across the period is 20% p.a., which is over double our estimate of the WACC for a New Zealand fuel company. That is, the weighted average returns are more than twice the level of a normal return. The weighted average expected IRR on the manned sites was [ ] p.a. across the period, while the weighted average on the unmanned sites was [ ] p.a.[1012]

Figure C1 Internal Rate of Return expected by fuel firms on new investment in fuel retailing sites compared to WACC



Source: Commerce Commission analysis of information provided by various fuel firms

The forecasts are unlikely to be over optimistic

C23 BP submitted that we should exercise caution when relying on business forecasts as those forecasts may be over optimistic and not achieved in practice, due to various biases held by the preparer.[1013] We acknowledge that forecasts can be over optimistic.

C24 However, based on the information available to us there are few indications that the high average IRRs reported in Figure C1 are largely due to over optimistic forecasts which are unlikely to be realised in practice.

1011 Note, as discussed above in Attachment B, that the bottom end of the WACC range is the most appropriate estimate of WACC to assess the attractiveness of proceeding with the investment, since that reflects the cost of raising incremental capital needed to fund the investment at the time of investment.

1012 Those percentages are treated as confidential as their disclosure, coupled with the firm's knowledge of their own project's forecasts IRR, could enable firms to calculate the IRRs expected on specific competitors' new sites. Manned sites have larger investment requirements.

1013 BP "Feedback on Working paper – Assessing profitability" (14 May 2019) at [5.3].

C24.1 The continued strong rate of new and proposed site openings suggests that companies are satisfied with the actual performance of their new sites which have recently opened.[1014] Internal management commentary from a range of fuel firms supports that view.[1015]

C24.2 Available information on the actual performance of some new sites indicates that many have exceeded their pre-opening projections, a number significantly so. One company provided us with a document comparing the business case volume and earnings before interest, tax, depreciation and amortisation (EBITDA) margins projected in the business case for its new sites, and the EBITDA margins and volumes actually achieved in the 2018 financial year.[1016] That review showed actual performance across a programme of site openings was [ ] ahead of the volume forecasts and [ ] ahead of the EBITDA forecasts. Indeed, results were [ ] ahead of forecast on almost all sites, [ ].

C24.3 During an interview, one firm told us of some new sites where its investment was paid back within [ ].[1017]

C24.4 IRRs were typically estimated over forecast periods of 10 or 15 years, even if the firm owned the site or had a lease with rights of renewal for an additional period. This seems conservative since the site may be used to retail fuel for longer than forecast and generate cash flows for longer than is assumed in the business case. (And if the firm earns positive cash flows in the years covered by the lease renewal, its actual IRR will increase).

C24.5 A number of business cases make no allowance for terminal value at the end of the period for which forecasts have been prepared (that is, the actual IRR will be higher).

C24.6 Some business cases identified reasons why the forecasts were considered to be conservatively estimated.

1014 See Chapter 3.

1015 [ ]; [ ]; [ ]; and [ ]

1016 [ ]

1017 [ ]

C24.6.1 The assumptions made relating to expected volumes at new sites were generally lower than the actual performance of existing sites. For example, the forecast may have assumed lower turn-in rates and/or lower average volumes of fuel per purchase at new sites compared to an existing site.[1018]

C24.6.2 The assumptions relating to expected margins on new sites were sometimes lower than the current performance of existing sites. For example, some business cases used medium term historic average margins in their business for a new site even though current margins on similar sites were now higher.

C24.7 Some business cases explicitly allowed for possible cannibalisation of sales at the firm's existing nearby sites.

C25 On the other hand, we are aware of some sites opened by one firm in 2015 and 2016 where volumes were lower than expected.[1019]

High margins are the key explanation for the high expected returns from new sites

C26 Z Energy has publicly highlighted that the number of retail sites may be growing faster than the volume of fuel sold. For example, in a May 2019 presentation Z Energy noted that "35 NTI sites had been built, growing capacity by 2% in a market where petrol sales declined by 1.5%".[1020] Z Energy's submission to us on the preliminary issues paper similarly referred to disparity between site and volume growth using a longer time series of data (from 2016 to the present).[1021]

C27 By implication, the average volume of fuel sold at each site is flat or declining slightly. A number of parties have highlighted declining volumes at some sites over time. Notwithstanding the lack of volume growth per site, firms on average expect profits on new investment which significantly exceed the cost of capital (as Figure C1 illustrates). The interpretation would seem to be that the excess returns expected are attributable to high margins, and not new investment growing volumes.[1022]

1018 [ ]

1019 [ ]

1020 Z Energy "2019 Results Presentation For the year ended 31 March 2019" (2 May 2019) at 6.

1021 Z Energy "Market Study into the Retail Fuel Sector: Z Energy's Response to Invitation to Comment on Preliminary Issues" at [12].

1022 The number of new openings is considerably greater than closures.

C28 Some manned sites are continuing to grow their non-fuel income, but the rate of growth appears to be slowing.[1023] Non-fuel income is much smaller than fuel income at most service stations.[1024]

Expectations of the returns from new investment has not declined materially over time

C29 The average expectation of the profitability of opening new or rebuilt sites has not declined materially over the 2014-2019 period despite the growth in the number of sites. Nor is there any apparent slowdown in the rate of new builds.[1025]

C30 This is perhaps surprising since:

C30.1 firms would be expected to proceed with the most attractive projects first;

C30.2 there has been a large number of new sites built in recent years despite minimal industry volume growth as noted in Chapter 3; and

C30.3 given this, the level of expected returns might have been expected to fall over time.

C31 It seems that the additional competition from these new sites has not, to date, reduced firms' expectations of future profits from investment in new retail fuel sites.

The reinvestment rate implicit in the IRR

C32 Implicit in a standard IRR calculation is an assumption that cash flows can be reinvested at the internal rate of return. If the firm cannot reinvest the cash flows at the same rate as the IRR, then the IRR calculation will overstate the returns to the firm from that project. For a single project like a new retail fuel site that has minimal ongoing investment requirements – as the site typically does not increase in size over time – an assumption that cash produced by the new site can be reinvested at the same rate as the IRR may not seem justified (prima facie).

C33 However, most fuel companies are not building a single new site. Rather, a new site is followed by an additional new site (in a different location), and the nature of each

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[1023] Z Energy's disclosed like-for-like sales growth at tier 1 and tier 2 stores has declined from a compound annual growth rate of 9-10% p.a. from FY13-FY16 to around 4% p.a. from FY16 to FY19 - see Z Energy "Annual results presentations" for the financial years 2013 to 2019.

[1024] For example, at Z Energy's 95 tier 1 sites average weekly shop sales are still less than $50,000 per week. The equivalent weekly sales result for tier 2 and 3 sites is $30,000 and $18,000 per week – see Z Energy "Annual results presentations for the year ended 31 March 2019" (2 May 2019) at 10. A mid-sized station selling, say, 4 million litres of fuel per annum would, at current prices, have fuel revenues of around $150,000 per week. Z Energy estimates that: 61% of its Z branded sites sell more than 4 million litres p.a., 53% of Caltex sites do, 63% of BP's and 40% of Mobil's do - see Z Energy "Investor Day 2019" (1 August 2019) at 43.

[1025] Waitomo and Gull have announced their intention to enter the South Island market. Other players also continue to open new sites.

subsequent project is broadly similar. Significantly, the IRR for individual projects are not materially changing over the period 2014-2019. If one views the project for each site as part of a portfolio of projects, then the assumption that cash flows from the first site can be reinvested at the same IRR seems appropriate. That is, cash produced by one site can be reinvested into a subsequent site where it is expected to earn similar returns to that on the first project. Viewed as an ongoing programme of investment, the use of the standard IRR approach seems consistent with the assumption that the cash flows can be reinvested at the same rate as the IRR.

Other measures of profitability also point to excess levels of expected profitability

C34 In any event, other measures of profitability contained within the business cases also point to excess levels of profitability.

C34.1 Paybacks are rapid. Many sites are expected to payback their initial investment within four to seven years. Payback periods of four to seven years imply firms are expecting rates of return which are materially above WACC.[1026]

C34.2 In contrast to the expected payback periods, most firms lease sites for a minimum 10-year period and typically have several, multi-year rights of renewal (for example, four five-year renewal periods). Renewing the lease, and continuing to retail fuel from the site, will further increase the amount of excess profit earned. Further, some sites are owned outright by the fuel retailer.

C35 In conclusion, firms' own expectations of the future profitability of new investment points to expected returns that are, on average, more than double our estimate of the cost of capital required to fund those new investments. This has consistently been the case for new investment proposals over 2014-2019 period for a wide range of firms building new retail fuel sites. These expectations of high profits appear to have generally turned out to be too low.

C36 Some submissions challenged our interpretation of the results of this analysis of business cases for new sites, including the following points.

[1026] For example, a project with a discounted payback of five years (and a flat nominal profile or a positive growth trend) has a 10-year IRR of more than 20% (ie, an IRR over double the estimated WACC).

C36.1 The downside risk of the business getting its forecast wrong (actual results being lower than anticipated in the business case).[1027] For example, Z Energy submitted that it "has not consistently achieved the volumes expected in its business cases".[1028]

C36.2 That firms set hurdle rates above WACC.[1029]

C36.3 That we should not draw inferences on profitability of the overall business from individual projects because the returns from specific new sites may not be representative of the broader portfolio or they may have peculiar risk profiles.[1030]

C36.4 Business cases for incremental investments ignore sunk costs from firms' supply chains and other sunk overheads such as branding and marketing.[1031]

C37 We have carefully considered these issues and discussed each in our draft report.

C37.1 The risk of over-optimism bias was discussed in our draft report[1032] and we explicitly acknowledged that volumes at some new sites were lower than expected in the business case.[1033]

C37.2 We discussed hurdle rates in the draft report and expand on that discussion in the next section (refer paragraphs C46-C50).

1027 Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector Draft Report" at [58] – [60].

1028 Ibid, at [58].

1029 CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at Section 2.2 from 6-8.

1030 Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector Draft Report" at [60] – [61].

1031 Ibid, at [62].

1032 Commerce Commission "Market study into the retail fuel sector: Draft Report" (20 August 2019) at [D21] – [D22].

1033 Ibid, at [D23].

C37.3 On the inferences to be drawn on overall profitability from new sites, we acknowledge that there are differences between sites which might affect their profitability and risk. In the draft report, we explained why we considered the risks appeared small[1034] and this explanation has not been challenged. Further, we note that the returns from these new sites requires a significant new investment (for example, in a site, tanks, pumps, and marketing and promotional spend) which an existing site has already incurred. We might therefore expect an existing site to produce higher net cash flows than a new site as it has already incurred the costs of establishing it.

C37.4 On the incremental nature of a business case, our survey of new site business cases included a large number of new sites from small but growing businesses (such as Allied, Gull, NPD and Waitomo). The incremental costs for their new builds would inevitably include additional investment in supply chains and branding, but those smaller retailers did not have lower IRRs (or lower business-wide ROACE) so the inclusion of these costs was not enough to change the conclusions from the analysis.

C38 In summary:

C38.1 we consider that the expected and actual profitability of new sites does provide useful insights into the profitability of the NZ retail fuel industry; and

C38.2 we balance this analysis by also looking at a range of measures which focus on returns from the portfolio in total.

The firms' hurdle rates for new investment exceed WACC

C39 A hurdle rate is the minimum rate of return that a firm requires to earn from an investment before undertaking it.

C40 Through interviews and review of internal documents we learnt of the hurdle rates for a range of fuel firms for new retail sites. While one firm used a hurdle rate of [ ]%, higher rates around [ ]% were more common, and some had hurdle rates more than double the estimate of WACC.[1035] All those hurdle rates are well above the estimated WACC range of 6.9% to 8.6%. We observed an example of a business

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[1034] Commerce Commission "Market study into the retail fuel sector: Draft Report" (20 August 2019) at [D39].

[1035] [ ]; [ ]; [ ]; [ ]; [ ]; and [ ]

case with a forecast IRR of more than 20% where the firm's spreadsheet template indicated the project should not proceed as the returns did not meet the required hurdle rate.[1036]

C41 A public example of the high hurdle rates in the fuel sector was provided by Z Energy in its most recent annual report.[1037]

> Z Energy is committed to creating value for investors by focusing on a safe and profitable core fuels business….
>
> Z aims to be an attractive long-term investment by providing high-quality, reliable returns to our investors …
>
> Invest in the core business with rigour; only invest when discounted paybacks are less than five years

C42 A discounted payback of five years implies an IRR over a 10-year period of more than 20% (ie, over double the estimated WACC).[1038]

Why are hurdle rates set at a large premium to WACC?

C43 As noted above, we acknowledge that firms in various industries can set hurdle rates above their WACC to offset the risk of over optimistic forecasts. As a result, a hurdle rate set at a level above WACC is not necessarily conclusive of the level of profitability genuinely expected.[1039] Similarly, when some of the capital to be invested will be sunk, and future returns are uncertain, firms will rationally delay investment until expected returns are above the cost of capital.[1040]

C44 Nonetheless, the size of the gap between WACC and the hurdle rates is strongly suggestive of excess levels of profitability in the retail fuel industry – rather than solely being necessary to address the risk of over optimistic forecasts. For example, we have not yet seen evidence to justify why hurdle rates need to be at a large premium to WACC.

C44.1 The cost of opening a new site is small relative to the portfolio of existing retail sites.

1036 [ ]

1037 Z Energy "Annual Report" (2019) at 24.

1038 Using the estimated WACC and under reasonable assumptions about outyear cashflows (for example, flat nominal or a positive growth trend).

1039 This point was made in submissions too. See, for example, Economics New Zealand Limited "Feedback on 'Working Paper on Assessing Profitability'" (7 May 2019) at 1.

1040 This effect is discussed in the real options literature.

C44.2 Participants are rolling out additional sites of established, proven formats for which the risks and rewards are well known by firms which typically have deep industry knowledge. The build of new sites is a core activity - it is not a novel venture subject to a wide range of uncertain outcomes.

C44.3 The key product to be sold – petrol and diesel – is essential, and industry level demand is stable (although an individual site can lose volume if its prices are uncompetitive).

C44.4 Management can easily compare the forecasts for new projects with the current performance levels of existing sites, to identify over optimistic forecasts.

C44.5 As discussed above, the actual performance of new sites appears to frequently exceed expectations, sometimes significantly so.[1041]

C45 On balance, the hurdle rates being used by firms when considering whether or not to invest in new sites also seem to indicate that firms are seeking to maintain (or increase) levels of profitability which are already well in excess of the returns in a competitive market.

Discussion of hurdle rates in submissions on our draft report

C46 CRA (for BP) submitted that it is common for firms in competitive industries to set hurdle rates for new investment of 15% or more and well in excess of their WACC and for payback periods to be as short as three years. In support of this submission, CRA refers to a US study (Jagannathan et al), and a study by the Reserve Bank of Australia (RBA). CRA also references BPNZ's experience of investment proposals having to fight for free cash flow with other investments and that new proposed investment needs to have an IRR of [ ] or higher.[1042]

C47 We acknowledged in the draft report that a firm would rationally set a hurdle rate in excess of its estimate of WACC to offset optimism bias and when making sunk investment.[1043] Our draft also discussed the specific features of the NZ retail fuel industry and why in that context we considered the gap between WACC and the hurdle rates is strongly suggestive of excess levels of profitability in the retail fuel industry – rather than being necessary for other reasons. CRA's submission does not engage with those other reasons.

C48 In relation to the two studies highlighted by CRA in its submission we note that:

[1041] At paragraph C24.

[1042] CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at Section 2.2 from 6-8.

[1043] Commerce Commission "Market study into the retail fuel sector: Draft Report" (20 August 2019) at [D38].

C48.1 The Jagannathan study had a very low response rate of 86 usable responses from a sample of 4,600 chief financial officers and had a heavy weighting towards manufacturing firms.[1044] It is not evident that that study is representative of the NZ fuel firms.

C48.2 The RBA study also referenced with apparent approval a study by Deloitte of Australian CFOs which indicated that the hurdle rate is often set above the cost of capital to account for uncertainty about cash flow projections.[1045] Again, this risk seems much less significant in the NZ retail fuel sector than in other industries (as set out above at paragraph C24).

C49 Z Energy submitted on our analysis of its publicised five-year discounted payback on new investment. It made two key points:[1046]

C49.1 Z Energy's target "represents capital rationing, not a confident expectation about returns".

C49.2 Z Energy's strategy is to invest in capability which requires assets with shorter service lives, and presumably therefore requires a faster payback.

C50 We acknowledge that Z Energy has sought to limit capital investment in physical infrastructure for its core fuels business but note that Z Energy is using a return metric to limit that investment. This implies confidence about its ability to realise returns equating to less than a five-year payback. That is, by relying on forecast returns Z is showing that it believes those forecasts are fit-for-purpose.

Estimating Tobin's q

C51 Tobin's q can be used as a measure of profitability and of market power. Put simply, Tobin's q is the ratio between an asset's market value and the cost of replacing it.

C52 In this study we are particularly interested in the ratio of a firm's market value to the replacement cost of its assets.

C53 The market value of a firm reflects the present value of the stream of profits the firm is expected to make into the future. The replacement cost of the firm's assets is an estimate of the current cost of acquiring the assets which are expected to produce that stream of profits.

1044 Ravi Jagannathan, David A Matsa, Iwan Meier and Vefa Tarhan "Why do Firms use High Discount Rates" (2016) 120 Journal of Financial Economics 445 at 447, 460. Over 60% of the firms were manufacturers.

1045 Tom Rosewall and Kevin Lane "Firm's Investment Decisions and Interest Rates" (2015) RBA Bulletin 1 at 3.

1046 Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector Draft Report" at [65].

In a workably competitive market, q should be near one

C54 For a firm in a workably competitive market, the value of q would tend towards one. When a firm's q is greater than one, the market value of the firm is greater than its replacement cost. In that case, the market value of an additional unit of capital likely exceeds its replacement cost and the firm can increase its value by investing in additional assets. If there is free entry, other firms could also enter the industry by purchasing the same capital stock as the existing firm and they would earn a similar stream of future profits. That is, the discounted value of those profits would exceed the cost of investment. Thus, in the absence of barriers to entry, new firms will enter and/or existing firms will expand, and over time q will be driven towards one.[1047]

C55 Conversely, if a firm has a q of less than one, the firm has a value which is less than the cost of replacing its assets. The firm would be unwilling to replace all of its assets given the earnings expected to be produced from the assets, is less than the cost of those assets. Replacing its assets at current costs would be value-destroying.

C56 Where a firm has market power and entry or expansion by competitors is restricted, that firm will earn excess returns. Investors in the market will capitalise these expected excess returns and the market value of the firm will exceed the replacement cost of its capital stock. The value of q will be above one. Provided the entry or expansion of competitors continues to be restricted, q will persist at values above one.[1048]

C57 Lindenberg and Ross were the first researchers to use Tobin's q to estimate the size of monopoly rents.[1049] They estimated Tobin's q for a range of US firms and found a median value of 1.24 for Tobin's q for the 246 firms in their study.[1050] More than a quarter of the companies had average values of q less than one. The estimate of q for the companies in the petroleum refining sector averaged 1.39.[1051]

C58 Lindenberg and Ross concluded that sectors of the economy that have q ratios at the high end of the spectrum are often those with relatively unique products, unique factors of production, and so forth, all of which contribute to monopoly and/or quasi-rents. At the low end, we find either relatively competitive, tightly regulated, or dying industries.[1052]

1047 Eric B Lindenberg and Stephen A Ross "Tobin's q Ratio and Industrial Organization" (1981) 54 Journal of Business 1 at 2.

1048 Ibid, at 2.

1049 Ibid, at 1.

1050 Ibid, at Table 2 which shows average q for each firm over the period 1960-1977.

1051 Ibid, at Table 4.

1052 Ibid, at 29.

C59 A number of subsequent studies have estimated Tobin's q. A May 2010 report from our expert advisers for the input methodologies on asset valuation (the 2010 expert advisers' report) summarised the results from several studies of Tobin's q including:[1053]

C59.1 Land & Stulz who report an average q of 1.1 for 1,149 US firms in 1984;

C59.2 McGahan who reports q for almost 5,000 US firms trended up from less than 1 in 1981 to 1.3 in 1994; and

C59.3 Chua et al who report average q for a range of countries, including a q value of 1.3 in New Zealand from 1999 to 2004.

C60 The 2010 expert advisers' report concluded that "in general, the more competitive the market, the lower the value of q, … At the aggregate level, it appears that q has a tendency to return to one or slightly less than one in the long run, although significant deviations below one can persist for decades".[1054]

C61 Ofcom is a competition and regulatory authority which has used estimates of Tobin's q in a profitability assessment.[1055] Oxera proposed it for the UK Office of Fair Trading.[1056] We and other economics regulators have looked at transaction and valuation multiples for firms that are subject to price regulation.[1057]

How we have estimated Tobin's q

C62 Estimates of Tobin's q require reliable information on both the market value of a firm, and the replacement cost of its assets. To estimate q we used:

C62.1 recent evidence of the market value of fuel firms to estimate the implied market value of their fuel activities; and

C62.2 estimates held by fuel firms of the replacement or current cost of their assets, including fixed assets, working capital and intangible assets.

1053 George Yarrow, Martin Cave, Michael Pollitt and John Small "Asset Valuation in Workably Competitive Markets: A Report to the New Zealand Commerce Commission" (May 2010) at Annex 1.

1054 Ibid, at 51.

1055 OFCOM "Assessment of Sky's profitability and cost of capital" (31 March 2010) at Annex 3, Table 3.3.

1056 Oxera "Assessing profitability in competition policy analysis" (July 2003) Economic Discussion Paper 6 at [4.56] - [4.62].

1057 See, for example, Commerce Commission "Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services" (30 October 2014) at Attachment C.

C63 The key challenge in estimating Tobin's q is to estimate replacement costs reliably. This limits the frequency with which Tobin's q is used.[1058]

There are reliable estimates of market value for Z Energy, Chevron and Gull

C64 We focus our analysis using Tobin's q on the three New Zealand retail fuel firms for which we have recent, reliable estimates of market value.

C64.1 Z Energy which is publicly listed.

C64.2 Chevron New Zealand which was acquired by Z Energy.

C64.3 Gull New Zealand which was acquired by Caltex Australia.

C65 We then sought to estimate the implied market value for the fuel business of each of Z Energy, Chevron and Gull on an enterprise value basis. By enterprise value we mean the entire value of the fuel business, without regard to how it is financed. For businesses like Z Energy and Chevron this captures a broader range of activities, than just retail fuel. As we explained in Attachment A we consider this still provides useful insights for this study. Gull has a much narrower range of activities which are centred around fuel retailing.

C66 We define the market value of the fuel business as:

C66.1 the market value of the firm's equity;

C66.2 plus the value of debt, the net derivative financial instruments, the value of capitalised leases and deferred tax liabilities;

C66.3 less the value of investments held which are not required for the fuel business.

C67 The market value of the firm's equity was determined as follows.

C67.1 In the case of Z Energy, by multiplying its share price by the number of shares outstanding as at the date of its last annual report (31 March 2019). Our draft report used an incorrect estimate of 429 million shares, we have used the lower total of 400 million shares in this final report.[1059]

[1058] Eric B Lindenberg and Stephen A Ross "Tobin's q Ratio and Industrial Organization" (1981) 54 Journal of Business 1 at 12. Lawrence J White "Market Power: How Does It Arise? How Is It Measured?" in Christopher R Thomas and William F Shughart II (ed) *The Oxford Handbook in Managerial Economics* (Oxford University Press, Oxford, 2013) at 22. Available at <http://web-docs.stern.nyu.edu/old_web/economics/docs/workingpapers/2012/White_MarketPowerRiseandMeasure.pdf>.

[1059] Incenta "Market Study into Retail Fuel – Use of Tobin's q to Assess Market Power" (September 2019) at 4.

C67.2 In the case of Gull, from the purchase price paid by Caltex Australia Ltd (transaction completed 3 July 2017), as reported in published annual reports.[1060]

C67.3 In the case of Chevron, from the purchase price paid by Z Energy as reported in Z Energy's annual report (acquisition completed 1 June 2016).[1061]

Synergies and the winner's curse appear unlikely to have materially affected the acquisition prices

C68 We use the prices paid by Z Energy and Caltex Australia to acquire Chevron and Gull as the market value of equity for those businesses. BP submitted that acquisition prices may sometimes overstate market value due to, in particular:[1062]

C68.1 the 'winner's curse' or

C68.2 merger synergies.

C69 The winner's curse refers to the tendency for the highest bidder for an asset to offer a price which exceeds the intrinsic value or true worth of that asset. This is typically due to the buyer having incomplete information or subjective biases (for example, emotional reasons clouding their purchase decision).

C70 When two firms merge there may be synergies which would not have been available to the standalone business and the acquisition price may incorporate some of the value of those synergies.

C71 We do not consider that either of these considerations is likely to have materially affected the prices paid for Chevron or Gull by Z Energy and Caltex Australia, respectively.

C72 In respect of the winner's curse, we note there is little evidence that either Z Energy, or Caltex Australia, has paid too much for Chevron, or Gull.

C72.1 Z Energy and Caltex Australia have long experience and intimate knowledge of the fuel industry, are large and well resourced, and we expect they would have undertaken detailed due diligence to minimise the risk of overpaying due to incomplete information or to subjective biases.

1060 CAL Group Holdings NZ "Annual Report" (2017) at note F2.

1061 Z Energy "Annual Report" (2017) at note 4.

1062 BP "Feedback on Working Paper – Assessing Profitability" (14 May 2019) at [5.4].

C72.2 Z Energy's share price climbed 21%, and its market capitalisation increased over $400 million when the share market learnt of Z Energy's proposal to acquire Chevron. This implies investors viewed the price paid by Z Energy as a bargain, rather than a case of Z Energy paying too much.[1063]

C72.3 Both companies are required to test for impairment and write down the value of those assets if the value cannot be justified by the expected future returns from those assets. Z Energy and Caltex Australia test for impairment annually but, to date, neither has written down the value of its investment.

C72.4 Caltex Australia continues to comment positively on the performance of, and outlook for, Gull. In particular, Caltex Australia was "delighted with the performance" of Gull which "performed strongly" and is an "attractive growth platform".[1064] More recently, Caltex Australia noted that "Gull volumes and earnings in New Zealand remain strong and are growing ahead of the investment case."[1065]

C73 In respect of the synergies achieved from Z Energy's merger with Chevron:

C73.1 the extent of the increase in Z Energy's market value (noted above) when it acquired Chevron suggests the expected synergy gains were mostly enjoyed by Z Energy's shareholders, rather than being reflected in the acquisition price paid to Chevron's shareholders.[1066]

Submissions regarding the volatility of Z Energy's share price

C74 CRA (for BP) submitted on our use of Z Energy's share price as at 31 March 2019 in our analysis of Tobin's q. Figure 2 of CRA's submission highlighted Z Energy's share price had shown volatility over the period January 2018 to September 2019. CRA submitted that the estimate of Tobin's q was, as a result of this volatility, not stable over time. Incenta (for Z Energy) made similar points.[1067]

C75 We agree that changes in share price will directly affect estimates of Tobin's q, and that variation in capital market values should be factored into inference from

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1063 New Zealand Herald "Z Energy shares soar after Caltex buy" (2 June 2015) <https://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11458052>.

1064 Caltex Australia "Annual Report" (2018) at 13 and 18-19.

1065 Caltex Australia "Caltex Releases Unaudited Profit Guidance for half-year ended 30 June 2019" (20 June 2019) at 2.

1066 At the time of acquisition, Z Energy identified potential synergies of $15-25 million per annum from 2017 from the Chevron acquisition. This excluded transition operating expenses and capex - see *Z Energy Limited and Chevron New Zealand* [2016] NZCC 10 at 12.

1067 Incenta "Market Study into Retail Fuel – Use of Tobin's q to Assess Market Power" (September 2019) from 12.

analysis of this measure. On this point, our use of the share price as at March 2019 to match the end of Z Energy's financial year (when all the other information was available) seems reasonable. Indeed, CRA's own analysis using Z Energy's share price as at 31 March 2018, 5 November 2018, and 31 March 2019 showed estimates of Tobin's q ranging from 1.80 to 2.34.[1068]

C76 Further, there is evidence Z Energy's share price may have been impacted by investor uncertainty over the market study, and by the potential for regulatory intervention by government, which would reduce the observed estimate of Tobin's q. Z Energy's CFO estimated the impact at [ ].[1069] Absent the impact of this uncertainty on share values, the value of Tobin's q for Z Energy would have been higher by [ ] at the mid-point.

We include the capitalised value of leases in our estimates of firm's net debt

C77 The value of debt owed by Z Energy, Chevron and Gull was taken from the applicable financial statements as at the date of acquisition (for Chevron and Gull) and as at 31 March 2019 (for Z Energy, being its most recent financial reporting date). We made no allowance for Z Energy's cash on hand as we understand this to form part of Z Energy's working capital.[1070]

C78 Operating leases are a multi-year financial commitment for many firms. So, we have included the value of the capitalised lease obligation as part of the market value of the fuel business (enterprise basis).[1071] This is matched by the value of the right to use the leased asset, by an equivalent amount.

C78.1 We have taken Z Energy's disclosed forecast of the impact of NZ IFRS 16 as at March 2020 as indicative of the level of asset and liability as at March 2019.[1072]

C78.2 We have taken Chevron's disclosed minimum lease payments in relation to non-cancellable operating leases as at December 2015 as the capitalised value of its lease obligations.[1073]

1068 CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 14. On a depreciated replacement cost basis and excluding contracts acquired.

1069 Transcript of meeting with Z Energy (10 September 2019) at 9 (lines 29-32).

1070 Z Energy "Z Response to Commerce Commission Questions" (24 July 2019) at 1.

1071 Such leases also create the right to use an asset. We have included the right to use an asset as one of the assets of each firm. This is consistent with the treatment under New Zealand Equivalent to International Financial Reporting Standard 16 *Leases* (NZ IFRS16).

1072 Z Energy quantified the impact on debt and assets as $290 million as at FY20 in its recent results – see Z Energy "2019 Results Presentation For the year ended 31 March 2019" (2 May 2019) at 30.

C78.3 We estimated a range for the capitalised value of Gull's lease commitment based on Gull's schedule of lease commitments.[1074] The estimate is close to the operating lease commitments in publicly released accounts.[1075]

C79 We also include the value of deferred tax as this is an obligation which will need to be met by the acquirer of a company's shares (and Z Energy in respect of its business). It is stated as a nominal amount in the relevant financial statements and we include only half of the nominal amount of the obligation, as a proxy of its present value, as it may not be paid for some time.

C80 In its submission on our draft report, Incenta (for Z Energy) states that it finds no support in the literature for adjusting for deferred tax liability.[1076] However, no literature that contradicts our approach is cited. Our view remains that by acquiring Chevron's shares (rather than its assets) Z Energy has effectively acquired a material tax obligation. In assessing the enterprise value of Z, this is like any other obligations (such as debt and lease commitments) for which Z Energy is responsible.

C81 Incenta also suggests that including deferred tax may affect comparability to other benchmarks.[1077] Incenta's argument is not fully articulated and does not consider how the value would be affected if Z Energy had acquired the assets of Chevron rather than the shares – in which case the responsibility for the deferred tax obligation would not be assumed by Z Energy. Incenta's submission may also have been informed by comments to Incenta from Z Energy, which Z Energy has subsequently retracted.[1078]

C82 Incenta submitted that we were wrong to include an allowance for deferred tax in the enterprise value for Z Energy given we excluded the contracts acquired from the denominator.[1079] In Incenta's view this is inconsistent since "most (about 75 percent) of the deferred tax balance reported in Z Energy's 2019 financial report relates to contracts acquired". Z Energy does not itself make this point or confirm that the deferred tax liability does indeed relate to contracts acquired.

1073 See Chevron New Zealand "Group Financial Statements for the year ended 31 December 2015" at note 27b. This should be estimated on a present value basis, but there is an offsetting right to use the asset, and the amounts are immaterial.

1074 Gull "Caltex Australia Lease Register".

1075 CAL Group Holdings NZ Limited "Annual Report" (2017) at note G1.2.

1076 Incenta "Market Study into Retail Fuel – Use of Tobin's q to Assess Market Power" (September 2019) at 4.

1077 Incenta "Market Study into Retail Fuel – Use of Tobin's q to Assess Market Power" (September 2019) at 4 and footnote 11.

1078 Z Energy "Second Submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft report" (October 2019) at footnote 9.

1079 Incenta "Market Study into Retail Fuel – Use of Tobin's q to Assess Market Power" (September 2019) at 21.

C83 Z Energy's 2017 annual report discloses that it did acquire around $130m of deferred tax liabilities on intangible assets in that year.[1080] This does seem to support Incenta's submission. We have considered the impact of excluding deferred tax liability from our analysis and found this had an immaterial impact on the results of our analysis (see Table C8 and paragraph C131).

We adjusted the market value of these firms to exclude investments in other ventures

C84 We are focused on the fuel (distribution and retail) business so we exclude any other investments which are not required for the fuel business.

C84.1 We subtracted the value of Z Energy's investments in New Zealand Refining and Flick from the market value of Z Energy, using the market value of Z Energy's stake in New Zealand Refining and the price Z Energy paid for Flick (both as reported by reported by Z Energy as at 31 March 2019).[1081] Neither of these investments is necessary for Z Energy to operate in the retail fuel market as Z Energy has secured access to the refinery through a processing agreement, separate from its equity stake.

Our estimate of the market value for the fuel business of Z Energy, Chevron and Gull

C85 We can then estimate the implied market value of the fuel businesses of Z Energy, Chevron and Gull. See Table C1, Table C2 and Table C3.

Table C1 Estimate of the market value of Chevron's fuel business

The implied market value of the fuel business of Chevron (as at 1 June 2016)			
		$m	**Explanation and Source**
Price paid by Z for all of Chevron's share capital		147	Z Energy "Annual Report 2017" note 4.
Plus	Net debt	710	Z Energy "Annual Report 2017" note 4.
	Chevron's lease commitments	28	Source: Chevron New Zealand "Group Financial Statements for the year ended 31 December 2015" note 27b. Included on an undiscounted basis.
	Deferred tax liabilities assumed by Z	74	$148m is recognised in Z's accounts. We include half, as a proxy for its present value. Source: Z Energy "Annual Report 2017" note 4.
Implied market value of Chevron fuel business		**959**	

[1080] Z Energy "Annual Report 2017" at note 17. The report does not break down the deferred tax liability between intangible assets although contracts acquired are the largest component of the value of intangible assets.

[1081] The book value of the stake in New Zealand Refining is determined by its market value basis in Z's accounts as at 31 March 2019 – see Z Energy "Annual Report" (2019) at 83.

Table C2 Estimate of the market value of Z Energy's fuel business

Component		$m	Explanation and Source
Market capitalisation of Z as at 31 March 2019		2,504	400m shares as at 31 March 2019, when share price was 6.26. NB share price closed at 6.37 on the day Z's 2019 results were announced.
Plus	Debt (no allowance for cash on hand)	951	Long term borrowing + Short term borrowing + recognised derivatives, Source: Z Energy "Annual report 2019" p.67
	Z's capitalised lease commitments	290	Source: Z Energy "2019 Results Presentation for the year ended 31 March 2019" page 30.
	Deferred tax liabilities	71	$143m is recognised in Z's accounts, we include half, as a proxy for present value, to reflect payment over time. Source: Z Energy "Annual report 2019" p.67
Less	Investments in other ventures	148	Market value of Refining NZ stake and acquisition price of Flick (2018). Source: Z Energy "Annual report 2019" note 5, 14.
Implied market value of Z Energy's fuel business ($m)		**3,668**	

Table C3 Estimate of the market value of Gull's fuel business

Component		NZ$m	Explanation and Source
Price paid by Caltex Aust. for all of Gull's shares		346	CAL Group Holdings NZ "Annual report 2017" Note F2.
Plus	Gull's lease commitments	50	ComCom analysis of present value of Gull lease commitments. Source: CAL Group Holdings NZ "Annual report 2017" Note G1.2.
	Deferred tax liabilities	2	$4.9m is recognised in CAL Group's accounts, we include half, as a proxy for present value, to reflect payment over time. Source: CAL Group Holdings NZ "Annual report 2017" Note F2.
Implied market value of Gull fuel business		**398**	

How we estimated the replacement cost of the assets owned by Z Energy, Chevron, and Gull

C86 The assets for the fuel businesses of each of Z Energy, Chevron and Gull comprise fuel terminals, service stations, associated plant and equipment, working capital, and various intangible assets. In this section we explain how we obtained (and, in a limited number of cases, how we estimated) an indicative replacement cost of these assets.

C87 Through this study we have received a considerable amount of recent, relevant and reliable evidence on the current or replacement costs of fuel assets.

C87.1 Where possible, we use information previously prepared by the New Zealand fuel firms themselves. In particular, we use information prepared as part of a firm's financial reporting processes.

C87.2 This information includes:

C87.2.1 estimates of the current market value for some assets; and

C87.2.2 estimates of the replacement value for some specialised assets.

C88 The information on replacement value includes:

C88.1 estimates of the current cost of replacing assets; and

C88.2 estimates of the depreciated replacement cost of some assets.

C89 Both are useful to us.

C90 Specialised assets like terminals are rarely bought and sold so a new entrant might have to construct new assets to enter the market. As a result, estimates of the replacement cost of specialised assets may be the best estimate of the costs of entering or expanding.

C91 However, if a new entrant can purchase used assets (for example, from an existing player or by acquiring an existing player) its cost of entry would likely be lower. We note, for example, Gull acquired second-hand tanks when it established its Mount Maunganui terminal.[1082] In this scenario, estimates of the depreciated replacement cost may more appropriately estimate the cost of entry than an estimate of replacement cost.

C92 Strictly speaking, Tobin's q should be calculated using depreciated replacement costs[1083] but, where possible, we use estimates of both replacement cost, and depreciated replacement cost, to inform our analysis of Tobin's q for Z Energy and Chevron in this report.

C92.1 The use of replacement cost estimates sets the likely upper limit on the cost of replicating an incumbent's asset base.

C92.2 While depreciated replacement cost informs the likely lower limit.

C93 Where we do not have a reliable relevant estimate of the current cost of an asset, we substitute other estimates to try and approximate replacement costs. Those

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1082 Max Bradford, Minister of Energy and Commerce, "Opening of Gull (Terminals NZ Ltd) Petroleum Tank Farm" (20 April 1999) <https://www.beehive.govt.nz/speech/opening-gull-terminals-nz-ltd-petroleum-tank-farm>. (Viewed on 15 August 2019).

1083 CRA challenges this statement which it states is "conceptually flawed" - CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019).at 10. CRA's argument seems to be that the sole rationale is to assess whether de novo entry and investment is likely. However, our statement on the estimation of Tobin's q was not about the general rationale for looking at profitability, but about how Tobin's q is estimated. CRA produce no evidence or examples that Tobin's q should be estimated using the costs of a de novo entry (and is not consistent with how it is generally estimated).

estimates are based on a range of information we have received during this study and is a mixture of public and confidential information. This is described in more detail below.

C94 Where we have made an estimate:

C94.1 we have used a range of information to make that estimate; and

C94.2 we have estimated a range, rather than a single point estimate.

C95 We have also used ranges of estimates to protect confidential information.

How we obtained estimates of the replacement cost of Z Energy and Chevron's fuel assets

C96 Under its accounting policies for financial reporting, Z Energy adopts a fair value basis for recognising the value of its property, plant and equipment. Independent revaluations of all land and buildings (including terminal plant) are undertaken by an independent valuer every five years. In the years between independent valuations, the carrying value of land is adjusted annually by a land inflation index provided by an independent valuer based on recent sales. Z Energy considers underlying land values are the significant determinant of fair value changes for itself.[1084]

C97 Some assets like terminals and some plant and equipment are specialised in nature (for example, due to their narrow range of uses, size, location, configuration) and are rarely sold on the open market. The fair value of these assets is normally estimated by reference to replacement costs.

C98 For other types of land and buildings there are a range of market transactions (sales and lease renewals) from which a valuer can estimate their market value.

C99 Z Energy has used Jones Lang LaSalle (JLL) to independently assess the fair value of its land and buildings. JLL's advice:[1085]

C99.1 was prepared as part of Z Energy's financial reporting;

C99.2 complies with relevant professional standards; and

[1084] Z Energy "Annual Report" (2019) at note 11.

[1085] Jones Lang LaSalle "Z Energy Valuation Report Terminal Plant & Equipment Assets" Effective 31 March 2017; KPMG "Independent Auditor's Report" in Z Energy "Annual Report" (2017) and Z Energy "Annual Report" (2019).

C99.3 was reviewed by KPMG in its capacity as Z Energy's external auditors. Indeed, the valuation of land and buildings, including those acquired as part of the Chevron acquisition, was identified by the auditors as a key audit matter which was subject to specific audit procedures.[1086]

C100 For the specialised assets like terminals, JLL used a depreciated replacement cost approach, which required it to first estimate the replacement cost of terminal assets. JLL defines replacement cost broadly to include "all the costs to purchase, deliver and install it" and "all design, supervision, commissioning, project insurance and other non-tangible costs".[1087]

C101 For other land and buildings, JLL use the direct capitalisation method which reflects, among other things, JLL's estimates of the rate of return or yield derived from its analysis of sales of comparable assets.[1088] Z Energy's policy is to record the value of assets in their highest and best alternative use – even if this is greater than their value to Z Energy as retail fuel outlets.

C102 The values reported in Z Energy's accounts (and based on JLL's advice) appear to be a good basis for estimating the current cost of replacing the assets required by Chevron and Z Energy's fuel business. Our reasons are as follows.

C102.1 Z Energy's policy of adopting the highest and best alternative use for land and buildings – even if that value exceeds the profits that can be generated in use as a service station – correctly reflects the costs an entrant would incur in trying to replicate Z Energy's asset base of land and buildings.

C102.2 For Chevron and Z Energy's specialised assets we have sought information from Z Energy on JLL's estimate of replacement cost as well as the estimate of depreciated replacement cost which is disclosed in Z Energy's accounts.

C102.3 As discussed above, we use JLL's estimates of replacement cost to establish the upper limit on the cost of replicating an incumbent's asset base, while JLL's estimate of the depreciated replacement cost informs the lower limit.

1086 KPMG "Independent Auditor's Report" in Z Energy "Annual Report" (2017).

1087 Jones Lang LaSalle "Z Energy Valuation Report Terminal Plant & Equipment Assets" (31 March 2017) at 4.

1088 One of the factors JLL's valuation approach includes is the throughput margin on fuel sales which is then capitalised. UBS notes this approach to valuation appears circular. UBS ""Fuelling the EV and regulatory debate – Upgrade to Buy" (15 May 2018) at 9.

How we obtained estimates of the working capital requirements for Z Energy and Chevron

C103 The working capital requirements for Z Energy and Chevron were taken from the published financial statements for Z Energy.

C103.1 Z Energy disclosed the working capital position of Chevron on the date the acquisition was completed in its 2017 Annual Report.[1089] This is the same date on which we are estimating the value of q for Chevron.

C103.2 Z Energy disclosed its own working capital position in its own published financial accounts dated 31 March 2019.[1090] Again, that date matches the date for our estimate of q for Z Energy.

How we obtained estimates of the cost of intangible assets

C104 Firms have also invested in intangible assets to retail fuel. Examples of such intangible assets held by the fuel firms include software, acquired brands, rights, licences, easements and emission units. Firms capitalise the cost of these items on their balance sheet and amortise the cost over time.

C105 We use the un-depreciated cost of these assets as disclosed in the applicable financial accounts as an estimate of the cost of replacing these assets.

C106 The cost of internally-generated brands is not included in the financial statements – although purchased ones are. A known brand should attract additional customers to the retail sites, regardless of whether it is developed internally or acquired. We therefore include the cost of Z Energy's 2011 rebrand as one of its intangible assets – although we note this likely includes tangible assets (for example, signage and branded canopies) which may therefore be double-counted.[1091] This will tend to inflate the denominator in Tobin's q, so our final estimate will be too low.

The exclusion of goodwill and contracts acquired

C107 In our draft report we did not include values for acquired goodwill, or contracts acquired, as these costs would not be incurred by a new entrant, or by an incumbent expanding. Further, these assets are valued by reference to their future cash flows (and thus may reflect aspects of market power) and their inclusion would render the analysis circular.[1092]

1089 Z Energy "Annual Report" (2017) at note 4.

1090 Z Energy "Annual Report" (2019) at 67.

1091 Z Energy press release: "Z Energy commits to $60 million national brand rollout" (3 November 2011). <https://z.co.nz/about-z/news/general-news/z-energy-commits-to-60-million-national-brand-rollout/>. (Viewed on 15 August 2019).

1092 Commerce Commission "Market study into the retail fuel sector: Draft Report" (20 August 2019) at [D90] and [D154]-[D156]. The issue of circularity is discussed, for example, in Aswath Damodaran "Return on

C108 A number of submissions disagreed in particular with the exclusion of the value of contracts acquired.[1093]

C108.1 CRA submitted that had these contracts not formed part of the deal, the price that Z Energy would have been willing to pay would have been far lower.

C108.2 CRA also submitted that the market value of Z Energy included the contribution from the contracts, but our approach excluded the value of the acquired contracts.

C108.3 Incenta submitted that Chevron created physical assets and then struck contracts to recover their cost.[1094] In Incenta's view, legal title was transferred to the counterparty but the economic substance is that Chevron (and subsequently Z Energy) remained the asset owner.

C108.4 Z Energy submitted that Chevron entered into these long-term supply agreements as part of its asset divestment programme, selling sites to dealers – often at a discount to market value – and in exchange dealers agreed to enter into the supply agreements."[1095] However, Z Energy subsequently advised that

> "the value of the assets and the amount paid for them was not consistent with Z's understanding. Z's understanding is now different to its statement at paragraph 32 of its submission on the draft report, and Z no longer believes that a significant value transfer is relevant to the Commission's consideration of the Chevron contracts acquired."[1096]

Capital (ROC), Return on Invested Capital (ROIC), and Return on Equity: Measurement and Implications" (2007) Stern School of Business at 9.

1093 CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 10-12.

1094 Incenta "Market Study into Retail Fuel – Use of Tobin's q to Assess Market Power" (September 2019) at 22.

1095 Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" at [32].

1096 Email from Chapman Tripp on behalf of Z Energy to Keston Ruxton of 14 October 2019 titled "Outline of Z's submission material". This seems to apply also to the submission at [34] of Z Energy's submission. Z Energy notes that Z Energy's previous understanding was conveyed to Incenta and used by Incenta in parts of its 3 September report - see Z Energy "Second Submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft report" (October 2019) at footnote 9.

C108.5 Z Energy also submitted that it paid a substantial amount of capital for contracts and goodwill, and this cost should be considered against the level of earnings being generated.[1097]

C108.6 Z Energy submitted that a new entrant would need to ensure it had a reliable channel to market and would incur costs to put this in place.[1098]

C109 In response to these submissions we note that no submitter addressed our key objection to the inclusion of reported values for acquired contracts, namely that they may be affected by the supplying major's market power.

C110 In terms of the key points made in submissions as summarised above:

C110.1 We agree with CRA that without the contracts Z Energy may have paid less for Chevron. Indeed, that is quite consistent with our view that the contracts reflect the net present value of the excess level of returns created by the possible exercise of market power by Chevron (and which Z Energy will benefit from having acquired Chevron).

C110.2 We acknowledge CRA's point too that our approach appears inconsistent.[1099] However, it is difficult for anyone other than Z Energy/Chevron to identify what part of the value of the contracts acquired is due to the possible exercise of market power by Chevron. Incenta's approach of including all of these values does not address the key issue, namely whether and to what extent the contracts reflect the possible exercise of market power. Acknowledging this difficulty, in Table C8 we show scenarios for Z Energy's Tobin's q reflecting different approaches to including contracts acquired.

C110.3 Incenta's submission that the economic substance of the transaction remains with Chevron does not seem to accurately describe the relationship between Chevron and the Caltex dealers.[1100]

1097 Z Energy "Second Submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft report" (October 2019) at [18].

1098 Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" (September 2019) at [34].

1099 CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 11.

1100 Z Energy "Notice seeking clearance to acquire Chevron New Zealand Limited (Public version)" 30 June 2015 at [253] and [255].

C110.4 On Z Energy's submission that it made a substantial capital investment, we agree, but one of our reasons for excluding these values from the analysis is that some of the price paid reflects capitalised excess returns expected (which are likely attributable to market power). Z Energy's submission does not engage with that point.

C110.5 We obtained Z Energy's spreadsheet model for calculating the value of retail contracts acquired as part of the Chevron acquisition.[1101] Z Energy estimated the net profit after tax it expected to earn each year in respect of each of 137 Caltex stations station for 30 years. It then subtracted a "capital recovery charge" (on various assets owned by Z Energy including inventory, terminal, signage, and other assets[1102]) in each year for each station to produce an annual estimate of expected "[ ]" earnings. The discounted net present value of those "[ ]" earnings for all Caltex stations was an estimate of the value of retail contracts acquired (namely [ ]). We note that in respect of only [ ] of the 137 stations was "[ ]" earnings a negative number.[1103] The [ ] pattern of "[ ]" earnings being a positive number is consistent with the view that the value of contracts acquired reflects the exercise of market power.

C110.6 We agree with Z Energy's submission that a new entrant would incur costs to develop a channel to market, but:

C110.6.1 there is no evidence that the cost of doing so is best proxied by Z Energy's book value of contracts acquired as part of the Chevron acquisition; and

C110.6.2 we do not understand that companies like Allied or Gull have incurred proportionately similar costs to develop their own channels (as that implied by Z Energy's valuation of acquired contracts).[1104]

Have we under-allowed for brand and organisational capital?

C111 In a submission on our draft report Incenta (for Z Energy) submitted that despite allowing for $261 million for "software, brands and other intangibles" we have

[1101] Z Energy "Z's purchase price allocation model".

[1102] Z Energy's analysis did not include any capital recovery charge in respect of acquired goodwill.

[1103] That is, where Z Energy was not expected to produce enough cash flows to cover all of its costs including the opportunity cost of capital tied up in assets supplying the Caltex sites.

[1104] Gull and Allied, like other players, have a mix of company-owned and independently-owned fuel sites.

under-allowed for brand and organisational capital.[1105] Incenta submitted that we have underestimated such assets by $154 million.

C112 Incenta's submission is based entirely on references to academic research for various industries which Incenta interprets as suggesting that 30% of selling, general and administrative expense represents an appropriate estimate of spending on such intangibles. Incenta then asserts that this would be an appropriate estimate of such costs for a New Zealand fuel firm too. There is no evidence of any other party using Incenta's metric in its analysis.

C113 Further, there is no other evidence identified by either Incenta or Z Energy in support of this assertion, including by reference to Z Energy or Chevron's own spending over time.[1106] We would have thought that Z Energy could provide much more direct evidence on this point.

C114 Nor are we persuaded that such costs are essentially variable in nature (Incenta's benchmark implies they grow proportionately with increases in selling, general, and administration expenses). Indeed, Z Energy's own submission contradicts this idea, noting that costs like overheads, branding and marketing costs are largely fixed and sunk in nature.[1107]

C115 In the absence of relevant evidence specific to firms in the fuel industry, we do not consider Incenta's point further.

C116 Similarly, Z Energy submitted that the brand valuation is likely to be underestimated, and references the academic literature identified by Incenta.[1108] Z Energy's submission does not explain how we have underestimated the valuation of its brands. We included the entire reported cost of Z Energy's rebrand from Shell to Z Energy as part of the replacement cost of its assets.[1109]

1105 Incenta "Market Study into Retail Fuel – Use of Tobin's q to Assess Market Power" (September 2019) at 5.

1106 We note that Z Energy states it has spent on average $5m per annum on direct branding expenses since 2014 - see Z Energy "Submission on the Commerce Commission's Market Study Into the Retail Fuel Sector Draft Report" at [46.1]. At a discount rate of say, 8.6% that implies a capitalised value of around $60m, which is less than the $97 million we allowed in our analysis of brands in the draft report - Commerce Commission "Market study into the retail fuel sector: Draft Report" (20 August 2019) at [D89] and Table D5). As such, capitalising Z Energy's estimate of annual costs seems to support our analysis more than it does Incenta's analysis (which claims we have underestimated intangibles by $154 million).

1107 Z Energy "Submission on the Commerce Commission's Market Study Into the Retail Fuel Sector Draft Report" at [62].

1108 Ibid, at [56.5].

1109 Above, at [C106].

How we obtained estimates of the replacement cost of Gull's fuel assets

C117 We adopted a different approach to obtaining estimates of the replacement costs of Gull's assets. Unlike Z Energy, Caltex Australia values its assets at cost less depreciation. The asset values disclosed by Caltex Australia are therefore unlikely to reflect the cost of replacing those assets and we did not use the asset values reported in Caltex Australia's accounts.[1110]

C118 Instead, we estimated the replacement costs of Gull's assets by reference to the other information on the replacement costs of fuel-related assets in New Zealand that was already available to us through this study.

Sources of information on the cost of replacing Gull's physical assets

C119 To estimate the cost of replacing Gull's terminal assets and service stations we used existing information that was available to us. The information we used and how we used it is set out below.

C119.1 The estimates of the cost of replacing Z Energy's fuel terminals prepared by JLL and discussed above.[1111] For the reasons discussed above, we consider these are relevant and reliable estimates. We used JLL's estimate of replacement costs for each terminal and regressed it on the capacity of those terminals to produce an estimate of replacement cost as a function of capacity. We used this equation to estimate the replacement cost of a terminal with 90 million litre capacity (the size of Gull's Mount Maunganui terminal). This produced an estimate of [ ].[1112] This approach assumes there are no significant site-specific costs in building a terminal in Tauranga, versus those assumed by JLL in other locations.

C119.2 The expected costs of constructing a new fuel terminal at Timaru, informed by costs incurred to date and tendered contracts, being [ ] for the full terminal (44 million litres).[1113] We consider this is the best guide to the current cost of building or replacing terminal assets in New Zealand.

1110 Caltex Australia recognised property, plant and equipment with a value of A$63.3m on the acquisition of Gull NZ. Caltex Australia "Annual Report" (2017) at note F2.

1111 Jones Lang LaSalle "Z Energy Valuation Report Terminal Plant & Equipment Assets" (31 March 2017).

1112 If we exclude the Bluff and New Plymouth terminals from the analysis the estimates of replacement cost for the Gull Terminal is [ ]. JLL comment on the valuation those terminals in their report - see Jones Lang LaSalle "Z Energy Valuation Report Terminal Plant & Equipment Assets" (31 March 2017) at 8.

1113 "Transcript of meeting with TOSL" (21 June 2019) at 28-29. We note too an announcement from LogiCamms Limited which advised that the estimated value of the design and construction programme for the new modern 44 million litre terminal at Timaru was NZ$30 million – see LogiCamms Limited "LogiCamms wins Timaru bulk fuel terminal engineering design contract" (an announcement to the ASX) (10 October 2017). This announcement dates from 2017 and appears to be a preliminary estimate.

C119.2.1 The Timaru terminal will be the most modern terminal in New Zealand and subject to the most rigorous regulatory and operational specifications (and is the only terminal subject to those requirements).[1114]

C119.2.2 Its developer – TOSL – has no existing infrastructure in place, so the estimate reflects the standalone cost of building a new terminal.

C119.2.3 It is the most recent available estimate and it is the most robust estimate since it is for a terminal that is actually being built.

C119.2.4 We were advised by TOSL that the project is on budget and on track to be commissioned next year.[1115]

C119.3 We scaled up, on a proportionate basis, the Timaru cost estimate to reflect the larger capacity of Gull's Mount Maunganui terminal. This produced an estimate of [ ] to replace the Gull terminal. This approach assumes there are no scale economies from building a larger terminal. If there were such economies, they would reduce the estimate of replacement costs we have used and increase the estimate of q.

C119.4 According to a newspaper report – which includes quotes from Z Energy's Chief Executive Officer – Z Energy considers the total cost of the TOSL Timaru terminal is between $50 million and $60 million.[1116] We have not seen supporting detail for this estimate, and we consider it is a less reliable estimate than either the TOSL or JLL estimates. Nonetheless, accepting the estimate at face value, and adjusting for the larger size of the Tauranga terminal, implies a replacement value of $100 million to $120 million for the Gull terminal (again assuming no scale economies).

C119.5 Based on the above estimates, and to preserve the confidentiality of the TOSL and JLL estimates, we adopt an indicative range of $80 million to $120 million for the cost of replacing Gull's Mount Maunganui terminal.

C119.6 Business cases provided by a range of parties, including Z Energy and Gull, which identify the expected costs of constructing manned service stations, unmanned stations and truck stops, in New Zealand over the past five years.

1114 Transcript of meeting with TOSL (21 June 2019) at 27 (lines 12-36) at 32 (lines 6-26).

1115 Ibid, at 3 (lines 46-50).

1116 Stuff "Pacific fuel firm sets sights on $30m Timaru port Development" (28 November 2017) <www.stuff.co.nz/timaru-herald/news/99289483/pacific-fuel-firm-sets-sights-on-30m-timaru-port-development>. (Viewed on 15 August 2019).

C119.7 A spreadsheet detailing the actual cost of constructing BP service stations over the last decade.[1117]

C120 Further details on how we used that information to produce our estimate of the replacement cost of Gull's physical assets is provided in Table C6 below.

Sources of information on Gull's working capital requirements and intangible assets

C121 The working capital requirements for Gull were taken from published financial accounts as at 3 July 2017 (when the acquisition was completed).[1118]

C122 Similarly, we also adopted the value of intangibles recognised in those accounts as at that date.[1119]

C123 For the same reasons discussed above in relation to Chevron and Z Energy, we do not include the value of acquired goodwill for Gull either.

We considered a report from Worley Parsons commissioned by New Zealand Oil Services Limited

C124 BP provided us with a report which purported to estimate the cost of replacing terminals operated by New Zealand Oil Services Limited (NZOSL) on behalf of BP.[1120] We considered but did not place any weight on this report.

C124.1 The report was prepared by Worley Parsons for NZOSL.

C124.2 Worley Parsons and BP are the sole shareholders in NZOSL.

C124.3 The report was requested in March 2019 shortly after we commenced our study and after we had advised parties that we were looking to assess returns on capital as part of our analysis.[1121]

C124.4 NZOSL facilitated the commissioning of the report at the request of BP, paid for the report, and provided information to enable Worley Parsons to prepare the report.[1122]

1117 [ ]

1118 Caltex Australia "Annual Report" (2017) at note F2 and CAL Group Holdings NZ "Annual report" (2017) at note F2.

1119 Being $40 million – see CAL Group Holdings NZ "Annual Report" (2017) at note C3 and F2. These intangible assets were reported principally as rights and licences held by Gull.

1120 Worley Parsons "NZOSL Terminal Valuation Study Basis of Cost Estimate Report" (April 2019).

1121 Commerce Commission "Market Study into the Retail Fuel Sector - Invitation to Comment on Preliminary Issues" (31 January 2019) at [15]-[16] and Transcript of meeting with BP (11 March 2019) at 30 (lines 1-13, 39-50).

1122 New Zealand Oil Services Limited "Response to Voluntary Information request in relation to the market study into retail fuel" (1 July 2019) at 2.

C124.5 However, NZOSL did not review the report, did not have an intention to use or rely on the report, and did not make or anticipate any decisions to be informed by the report. NZOSL does not hold any previous reports or documents related to the estimated replacement cost of terminals.[1123]

C124.6 The Worley Parsons report does not reference, and was not stated to comply with, relevant professional standards.

C124.7 There are no indications that the report was independently reviewed before being finalised.

C124.8 The estimates of replacement cost included in that report are materially above the whole range of other estimates of terminal replacement costs referenced above (having regard to differences in the capacity of the various terminals).

C125 As an illustration of the high and seemingly implausible estimates in the Worley Parsons report we contrast its estimates for replacing the Dunedin (and Napier) terminals with the estimated cost of the new Timaru terminal.

C125.1 The Worley Parsons report provides P10, P50 and P90 estimates of the cost of replacing, on a like-for-like basis, various terminals and states that the P90 estimates "should be used for any financial modelling or forecasting". The P90 estimates of the cost for replacing, on a like-for-like basis, the Napier and Dunedin terminals are stated as [ ] million each.[1124] Each of those terminals has a capacity of less than 20 million litres.[1125]

C125.2 TOSL's estimate of the cost of completing the new modern 44 million litre terminal at Timaru is ([ ] million).

C126 Based on the information available to us, and the considerations outlined above, we rely on the TOSL and JLL estimates of cost but not the Worley Parsons estimates. No challenge was received in submission on this point and we note BP's comment at our conference that it understands TOSL will invest around $100m in two port terminal locations.[1126] BP's comment tends to support our estimate of the costs of building terminal, rather than Worley Parsons.

1123 New Zealand Oil Services Limited "Response to Voluntary Information request in relation to the market study into retail fuel" (1 July 2019) at 2.

1124 Worley Parsons "NZOSL Terminal Valuation Study – Basis of Cost Estimate Report" (April 2019) at 1 and Appendices 4 and 8.

1125 BP "BP tank listing by port".

1126 Transcript of retail fuel study consultation conference - Day 1 (24 September 2019) at 10 (lines 23-25).

Our estimates of the replacement cost of the assets for Z Energy, Chevron, and Gull

C127 We summarise the information discussed above to produce estimates of the replacement costs for each of Z Energy, Chevron, and Gull. These are summarised in Table C4, Table C5 and Table C6 below.

Table C4 Estimate of the depreciated replacement cost of Chevron's fuel business

Asset	NZ$m	Source and explanation
Storage terminals	85	Z Energy "Annual Report 2017" note 12.
Land and improvements	114	ibid, note 12.
Buildings	14	ibid, note 12.
Plant and Machinery	32	ibid, note 12.
Construction in progress	1	ibid, note 12.
Other non-current assets	5	ibid, note 4.
Right to use leased assets	28	Source: Chevron New Zealand "Group Financial Statements for the year ended 31 December 2015" note 27b. Included on an undiscounted basis.
Working capital	112	Z Energy "Annual Report 2017" note 4.
Brands	37	ibid, note 13.
Emission units and other intangibles	14	ibid, note 13.
Value of assets on depreciated replacement cost basis	**442**	

Table C5 Estimate of the depreciated replacement cost of Z Energy's fuel business

Component	NZ$m	Source
Storage terminals	172	Z Energy "Annual Report 2019" (Z AR 2019) note 11.
Land and improvements	301	ibid. note 11.
Buildings	100	ibid. note 11.
Plant and Machinery	232	ibid. note 11.
Construction in progress	25	ibid. note 11.
Other non-current assets	3	ibid. page 67.
Right to use leased assets	290	Z Energy "2019 Results Presentation for the year ended 31 March 2019" page 30.
Software in progress	37	Z Energy "Annual Report 2019" note 12.
Working capital	496	Z Energy "Annual Report 2019" p.67, incl cash.
Brands	97	Z Energy "Annual Report 2019" note 12, plus cost of 2011 rebrand to Z.
Emission units and other intangibles	8	Z Energy "Annual Report 2019" note 12.
Other intangibles	119	ibid. note 12.
Value of assets on depreciated replacement cost basis ($m)	**1,880**	

Table C6 Estimate of the full replacement cost of Gull's fuel business

Component	NZ$m	Source and Explanation
Replacement cost of terminal	80 - 120	Various sources described in the text.
Freehold land	13	Source: CAL Group Holdings NZ "Annual report 2017" Note C4 and F2.
Fuel Stops	54 - 70	Assume build costs of $1m-$1.3m on 54 sites.
Right to use leased assets	50	As per calculated lease commitments.
Working capital and other assets (net of liabilities)	6	Source: CAL Group Holdings NZ "Annual report 2017" Note F2.
Intangibles (Brand, rights and licences, software)	40	Source: CAL Group Holdings NZ "Annual report 2017" Note F2.
Value of assets on full replacement cost basis ($m)	**243 - 299**	

Our estimates of Tobin's q for the fuel businesses of Z Energy, Chevron, and Gull

C128 Having estimated the implied market value of the fuel business for each of Z Energy, Chevron and Gull, and the replacement cost of the assets required by each of those businesses, we can now calculate an estimate of Tobin's q.

C129 Our estimate of the Tobin's q for the fuel business of each of Z Energy, Gull and Chevron is shown in Table C7 below, along with explanatory comments.

Table C7 Summary of the estimates of the Tobin's q for Chevron, Z Energy and Gull's fuel business

Estimate of q	Using estimates of depreciated replacement costs for specialised assets	Using estimates of full replacement costs for specialised assets
Chevron	2.2	1.8 - 1.9
Z Energy	2.0	1.5 - 1.6
Gull	No reliable data	1.3 - 1.6

Source: Commerce Commission analysis of public and confidential data explained above

C130 In Table C8 we show scenario estimates of the Tobin's q for the fuel business of Z Energy varying the proportion of the book value of Z Energy's contracts acquired balance included in the analysis. The value of Tobin's q remains well above one under all scenarios.

Table C8 Scenarios including some proportion of Z Energy's contracts acquired.

Estimate of q		
	Using estimates of depreciated replacement costs for specialised assets	**Using estimates of full replacement costs for specialised assets**
Proportion of value of contracts acquired included		
0%	1.6	2.0
25%	1.5	1.9
50%	1.5	1.8
100%	1.4	1.6

Source: Commerce Commission analysis of public and confidential data explained above

C131 We also looked at the impact of excluding deferred tax liability from our analysis (as discussed above in paragraph C83). The impact is immaterial. More specifically, If the value of deferred tax included in our analysis is amended to reflect the same percentage inclusion as for contracts acquired, this:

C131.1 reduces the value of Tobin's q by 0.03 under the 0% of contracts acquired are included scenario. (That is, the analysis includes no allowance for either contracts acquired or deferred tax liability); and

C131.2 has no impact on the estimate of q under the 100% inclusion of contracts acquired scenario. (That is, contracts acquired and deferred tax are both included in the analysis).

The implied market values of each fuel business materially exceed estimated replacement cost

C132 Each estimate of Tobin's q materially exceeds unity.[1127]

C132.1 Our estimate of Tobin's q for Chevron is between 1.8 and 2.2 as at 1 June 2016.

C132.2 Our estimate of Tobin's q for Z Energy is between 1.5 and 2.0 as at 31 March 2019.

C132.3 Our estimate of Tobin's q for Gull – using only estimates of full replacement cost – is between 1.3 and 1.6 as at July 2017.

[1127] We note they also exceed the estimate of Tobin's q for New Zealand noted by the 2010 expert advisers' report and reported above at paragraphs C59.3.

There are plausible explanations for estimates of Tobin's q above unity

C133 Consistent with Lindenberg and Ross we note that there are two plausible explanations (other than estimation error) for estimating values of Tobin's q materially above unity.[1128]

C133.1 The firm may possess factors of production on which it earns ordinary Ricardian rents (for example, excess returns from operating from the best site), and these may not be captured in its replacement cost figures. The most frequent example of such a factor is an early entrant to an industry securing the best site(s) for its operations.

C133.2 Competition in the fuel sector is not as effective as it could be, and this is enabling each of Chevron, Z Energy, and Gull (and potentially other firms) to earn excess profits. Investors expect these excess profits to continue and capitalise that into the market value of the firm, such that the firm is valued at a premium to replacement cost.

C134 In respect of the first plausible explanation, a number of factors render it unlikely that Ricardian rents from possessing specific factors of production can adequately explain the extent of the q above unity.

C134.1 The greater cost of securing the best sites (for example, retail sites) would be captured in estimates of replacement cost (or market value) for those sites.

C134.2 We have the data necessary to estimate Tobin's q for only three firms, and the three companies have very different business models, yet each has a value of Tobin's q which materially exceeds unity. The high frequency of observing values of q above unity makes it unlikely that it can be explained by each possessing a special advantage.

C134.3 Gull is a relatively recent entrant to this market, had to build its own supply chain without the scale and scope advantages enjoyed by the majors, and incurred substantial costs establishing its own network of retail fuel sites. Further, it competes primarily on price to attract consumers. There are no apparent special factors which might enable Gull to earn excess profits.

[1128] Eric B Lindenberg and Stephen A Ross "Tobin's q Ratio and Industrial Organization" (1981) 54 Journal of Business 1 at 2.

C134.4 The IRRs they (and other New Zealand fuel companies) expect to earn on new fuel sites (discussed in a prior section), indicates that the Tobin's q on new investment also materially exceeds unity.[1129] A Tobin's q above unity on new investment cannot be attributable to historical factors such as an early entrant securing the best sites.

C134.5 The estimates of Tobin's q cover all fuel activity and we explained in Attachment A that we assume the other activities (like commercial sales and non-fuel income) are more competitive. That is, the inclusion of those activities would therefore seem more likely to reduce the estimate of Tobin's q, than to increase it.

C135 However, looking at our analysis of factors affecting competition in this draft report, we find that majors like Z Energy (and Chevron) appear to enjoy a suite of advantages over a player like Gull. For example, the majors enjoy lower distribution costs, greater regional reach, and a cost advantage in respect of fuel refined in NZ, without loss of vertical control. These advantages may help explain the value of Tobin's q estimated for Chevron and Z Energy, and the difference in Tobin's q between those companies and the estimate of Tobin's q for Gull. Gull's lower Tobin's q may also be due to it pricing below the level established by the majors.

C136 We acknowledge that:

C136.1 over time, Tobin's q would be expected to trend lower (towards one) if competition is working effectively; and

C136.2 our analysis presents a one-off snapshot view of Tobin's q for each of these companies and we have not undertaken an analysis of Tobin's q over time.

C137 That said, estimates of Tobin's q which are around two for Chevron and Z Energy, using estimates of depreciated replacement cost, and around 1.5 for Gull, when assets are valued at full replacement cost, does suggest these firms are expected to earn profits materially above competitive levels.

Values of Tobin's q above unity seem to be primarily explained by competition not working effectively

C138 The second plausible explanation for values of Tobin's q above unity identified by Lindenberg and Ross was ineffective competition. In respect of that explanation, values of Tobin's q which are well above unity are consistent with other analysis in this draft report of ineffective competition, and a range of barriers to entry deterring most new entry. In light of that analysis and our analysis of the persistence of excess

[1129] That is, marginal Tobin's q.

profits (set out in Attachment D), we consider ineffective competition is the most plausible explanation for the estimated values of Tobin's q above unity.

Investors are not currently valuing the fuel sector as a sunset industry

C139 Z Energy has submitted that the fuel sector was a sunset industry.[1130]

C140 A firm that is dying, or operating in a dying industry, would be expected to have a value of Tobin's q of less than one.[1131] So would a firm whose capital stock has been rendered obsolete by technological progress.

C141 The significant premium to replacement cost which investors have placed on the market value of Z Energy, indicates investors in Z Energy do not currently value Z Energy as though it is operating in a sunset industry (although they do expect a sunset eventually). This interpretation is supported by the estimates of q for Chevron and Gull (albeit these were estimated as at dates in 2016 and 2017, respectively), and by the analysis of the business cases for new investment. The estimate of Tobin's q well above unity for Gull is especially notable as Gull primarily supplies the retail fuel market and is a price challenger.

Incenta's submissions on the interpretation of Tobin's q

C142 Incenta, on behalf of Z Energy, commented on our interpretation of Tobin's q.

C143 Incenta submitted that it was "unsustainable and unreasonable" to suggest Tobin's q should be 1.[1132] In support, Incenta referenced data from an article from Peters and Taylor to show the average Tobin's q for the firms in the S&P500 had varied considerably from 1964 to 2017.[1133]

C144 In light of the challenges we outlined and sought to overcome to estimate the replacement cost of the assets for Z Energy, Chevron, and Gull, we were surprised that Peters and Taylor were able to estimate reliably the Tobin's q for all the firms in the S&P500 over a 50-year period. At the conference, we queried the asset valuations in that study, which use accounting book values as proxies for the replacement cost of physical assets.[1134]

1130 Z Energy "Comments on 18 April Working Papers" (7 May 2019) at [10.3] and [28]-[30].

1131 Eric B Lindenberg and Stephen A Ross "Tobin's q Ratio and Industrial Organization" (1981) 54 Journal of Business 1 at 2.

1132 Incenta "Market study into retail fuel – use of Tobin's q to assess market power" (September 2019) at 2.

1133 Incenta "Market study into retail fuel – use of Tobin's q to assess market power" (September 2019) at 3 citing Ryan H Peters and Lucian A Taylor "Intangible capital and the investment-q relation" (2017) 123 Journal of Financial Economics 251.

1134 Ryan H Peters and Lucian A Taylor "Intangible capital and the investment-q relation" (2017) 123 Journal of Financial Economics 251 at 256.

C145 In a report after the conference Incenta acknowledged that Peters and Taylor had used accounting book values but stated that Incenta did "not think that this is likely to cause a material (upward) bias in the estimated Tobin's q values for firms in the US market over the period since around the mid-1990s. This is because the rate of inflation in the price for capital goods has been very low since the start of the 1990s".[1135] Through its Figure 1 Incenta asserts that the difference between replacement cost and book values is small. While Incenta submits inflation was low from the 1990s we note it was much higher in the earlier part of the time period analysed by Peters and Taylor. Incenta develops its own approach for incorporating changes in capital goods inflation.[1136] However, this appears not to have been used or tested elsewhere and lacks an explanation of how the adjustments were made, or reference to what seem strong implicit assumptions about the alignment between book and replacement values at the start of the adjustment process.

C146 Even if, reliably estimated, the average Tobin's q has trended higher there is another possible interpretation for such a trend. A number of commentators have discussed whether there has been a general lessening of competitive intensity generally, and evidence such as that in Peters & Taylor is cited in support of that proposition.[1137]

C147 We agree with Incenta that Tobin's q will vary over time. Nonetheless, we note that all estimates of Tobin's q for firms in the NZ fuel sector have comfortably exceeded one.

Conclusion on forward-looking measures of profitability

C148 We have looked at several forward-looking indicators to assess sector profitability. The evidence we have considered so far consistently shows that firms expect profitability to remain well above normal competitive levels in the retail fuel industry.

C148.1 Commentary in internal documents indicates that firms have been aware that margins were above a competitive level and therefore could attract new entry, since around 2012 or 2013.

C148.2 Companies' own business case projections show internal rates of return, and discounted paybacks, for new or rebuilt retail fuel sites which imply average expected levels of profitability that are more than double the estimated WACC over the period 2014-2019.

[1135] Incenta "Retail fuel inquiry: cross submission" (October 2019) at [4].

[1136] Incenta "Retail fuel inquiry: cross submission" (October 2019) at 8-10.

[1137] Economist Magazine "Competition is withering on both sides of the Atlantic" (20 November 2018). Economist Magazine "Dynamism has declined across Western economies" (15 November 2018).

C148.3 Hurdle rates for new retail fuel investment are set at levels materially above WACC – and this does not seem necessary to address over optimistic forecasts in the context of the retail fuel sector.

C148.4 Z Energy, the largest participant in the retail fuel market, has recently publicly stated it seeks five-year discounted paybacks from new investment in its core fuel business.

C148.5 Tobin's q estimates, albeit for only a few firms and for a broader range of activities than just retail fuel for two of the companies, indicate that current and recent investors expect ongoing high profits. This implies those investors:

C148.5.1 do not expect a significant increase in competitive intensity from current competitors; and

C148.5.2 do not expect new entry, or if entry does occur they expect it will be sufficiently small-scale or localised, such that it would not drive price to the competitive level and so excess returns are expected to remain significant.

Backward-looking approaches

C149 Backward-looking approaches look at the actual level of profitability firms have achieved over time. We have considered a range of backward-looking indicators of profitability. Each is discussed in turn.

C149.1 Importer margins reported by MBIE.

C149.2 The fuel margins reported by Z Energy.

C149.3 Return on capital employed (ROCE).

C149.4 A range of other measures, including Economic Value Added (EVA), the lifetime IRR for Z Energy and Gull, and a comparison of the net profit per litre of fuel sold between fuel firms listed on the New Zealand and Australian stock exchanges.

Margins

C150 Profit margins measure profit relative to revenue. Profits can be stated in terms of gross profits, net profits, operating earnings, or other measures of profit.

C151 Margins are a commonly used measure of financial performance in the fuel sector. The retail fuel industry generally uses gross margins expressed either as a percent of sales, or as cents per litre of fuel sold.

C152 Gross margins are generally easy to calculate. However, they are an incomplete measure of performance in that they do not reflect the following factors.[1138]

C152.1 All operating costs – gross margins are net of the cost of goods sold only and not other operating costs (such as property-related costs, staff costs, and marketing costs).

C152.2 Differences in volume sold at each location – retail fuel is sold from a variety of locations into many geographic markets. The volumes achieved per site vary enormously, ranging from the large multi-pump sites typically servicing large metropolitan areas, to small unmanned sites in rural locations. Ideally, an analysis of retail profitability would include consideration of the volumes of fuel sold, as well as margins (and capital and risk, as discussed next).

C152.3 Capital – gross margins do not reflect the amount of capital required to generate the margins. The more capital investment that is required, the greater the revenue and margin that is required to offset all the costs of supply.

C152.4 Risk – the more risk the capital investment is exposed to, the higher the return an investor and the firm would expect, and the higher the margins would need to be.

C153 Many submissions commented that we should not rely on gross margins as a measure of profitability.[1139] In addition to the weaknesses above, BP noted that there is no good benchmark to compare gross margins against in order to assess whether returns are above normal.[1140]

C154 Given the weaknesses we outlined above, gross margins are not a direct measure of, or proxy for, profitability. However, gross margins are a widely used and important metric in the fuel industry.

C155 Margins are a key influence on overall profitability, given the large volumes of fuel sold and the fixed costs involved in the fuel supply chain. In short, margins are a key indicator of profitability as the level of margins, and trends in margins, directly and significantly affects profitability. When used in conjunction with other measures, we can draw inferences about changes in profitability from changes in margins.

1138 Commerce Commission "Market Study into the Retail Fuel Sector Working paper on assessing profitability" (18 April 2019) at [68].

1139 Economics New Zealand Ltd "Feedback on Working paper on Profitability" (7 May 2019) at 2; Z Energy "Submission on Working Papers" (7 May 2019) at [11]; and MTA "Comments on Working Papers" (7 May 2019) at 2.

1140 BP "Feedback on Working Paper – Assessing Profitability" (14 May 2019) at [3.6].

Importer margins

C156 MBIE publicly reports its estimate of the importer margin for petrol and diesel. The importer margin estimates the gross margin available to fuel retailers to cover domestic transportation, distribution and retailing costs in New Zealand, as well as profit margins.

C157 Importer margins are a measure of gross margins across the whole supply chain. They are therefore not a direct measure of profitability as they do not measure all costs, or the amount of capital required to earn that amount of profit. However, this series still provides valuable insight into trends in industry profitability.

C157.1 As noted in Chapter 3 petrol volumes are essentially static, and diesel volumes are growing at mid-single digit rates. Much of the fuel sector infrastructure has been in place for some time, and recent new investment is concentrated in the retail sector.

C157.2 Increasing margins is therefore a key opportunity for firms to increase their returns on the capital that has been invested.

C157.3 The importer margin published by MBIE has been reported for decades and is the longest data series available on the financial performance of the New Zealand retail fuel sector.

C157.4 The trends in importer margins, when used in combination with other measures, provides an indication of trends in profitability over extended periods of time.

C158 As we noted in Chapter 3 the importer margins reported by MBIE for petrol and diesel show sustained strong growth since 2010 and continue to remain at levels above recent historic averages.

C159 Fuel margins have also varied materially over time as firms have entered, expanded, contracted or left the industry. This is evidenced by comparisons of New Zealand fuel margins with those in other countries.

C159.1 New Zealand's retail fuel margins were high relative to those in other OECD countries prior to the arrival of Challenge and Gull from 1998.[1141]

C159.2 Margins declined in the 2000s to a point where several market participants felt they were not sufficient to attract investment (leading to some divestment).[1142]

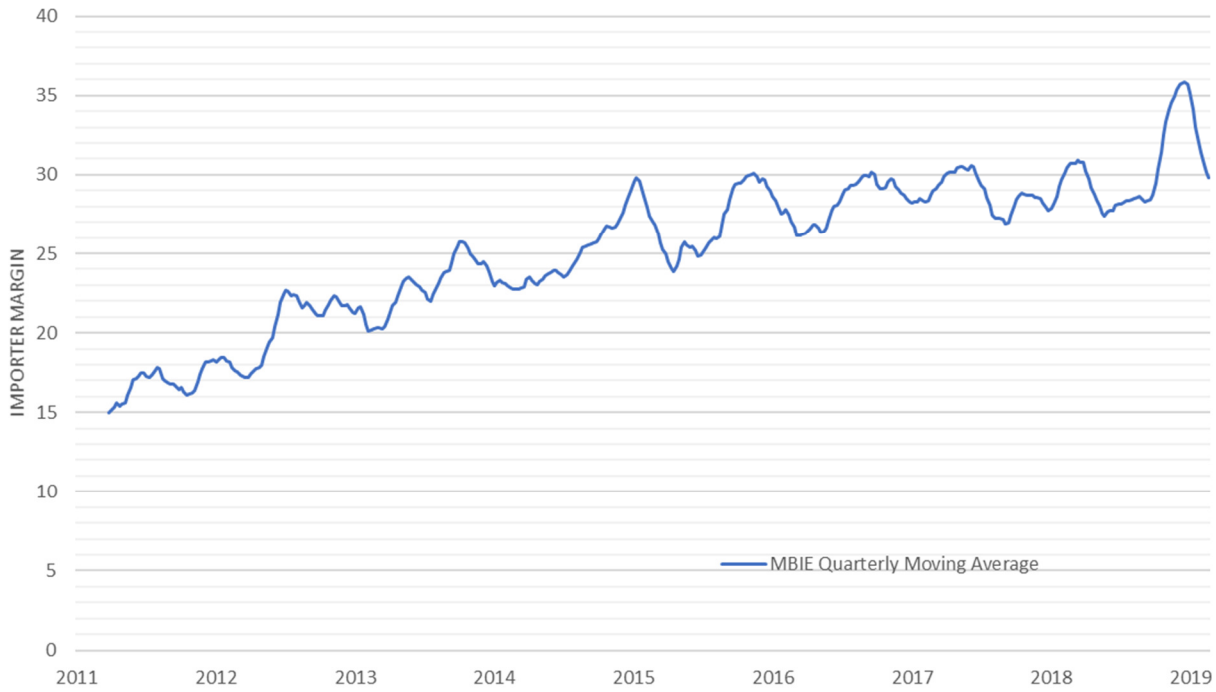
[1141] Max Bradford, Minister of Energy and Commerce, "Opening of Gull (Terminals NZ Ltd) Petroleum Tank Farm" (20 April 1999) <https://www.beehive.govt.nz/speech/opening-gull-terminals-nz-ltd-petroleum-tank-farm>.

C159.3 After that point, margins rose to a point where New Zealand retail fuel prices, expressed prior to government levies, duties and taxes, were among the highest in the OECD (and higher than in some Pacific Island countries).[1143]

C160 Some parties, including Z Energy, have commented that MBIE's analysis of importer margins may not be correctly reflecting the level of discounts in the short-term.[1144] However, we understand that Z Energy consider the series is appropriately reflecting the underlying trend in the longer term. Our interest is in medium and longer term trends, rather than quarter to quarter variations.

C161 Figure C2 shows MBIE's petrol importer margins have been volatile but show a flattening upward trend in recent years, having grown markedly in the early part of this decade.

Figure C2 MBIE's importer petrol margins in cents per litre (2011-2019)



[1142] BP "Market study into the retail fuel sector – BP New Zealand comment on preliminary issues" (21 February 2019) at 1. Z Energy "Market Study into the Retail Fuel Sector: Z Energy's Response to Invitation to Comment on Preliminary Issues" (21 February 2019) at [20] and [34].

[1143] MBIE, "Report back on the findings and recommendations of the Fuel Market Financial Performance Study" (23 November 2017) at 11.

[1144] Z Energy "Submission to MBIE on Fuel Market Performance Study" (13 October 2017) at Section 4 from 13 - 18.

Source: MBIE importer margin

C162 Diesel importer margins are shown in Figure C3. Like the petrol series, MBIE's series of diesel margins showed strong growth in margin for the first part of this decade, and then a flattening and more volatile trend in the second half of the decade.

Figure C3 MBIE's importer diesel margins in cents per litre (2011-2019)

Source: MBIE importer margin

C163 Over the longer term the importer margins series show that margins remain at levels which are well above the levels earlier this decade, for example the period until 2014.

C164 While margins are not a measure of profitability, they are a key value driver. Given the high level of fixed costs in the retail fuel industry and the moderate level of volume growth, margins are likely to be the key driver of industry returns. The strong sustained increase in margins is likely to have materially lifted industry returns.

The fuel margins reported by Z Energy

C165 Z Energy regularly reports its fuel margin as part of its disclosures to investors. This margin reflects refined product sales to retail, commercial and supply customers less the cost (on a replacement cost basis) of purchasing that product and the cost of delivering it to terminal around New Zealand and Z Energy's refining margin.[1145]

[1145] Z Energy "Investment Statement and Prospectus" (25 July 2013) at 76.

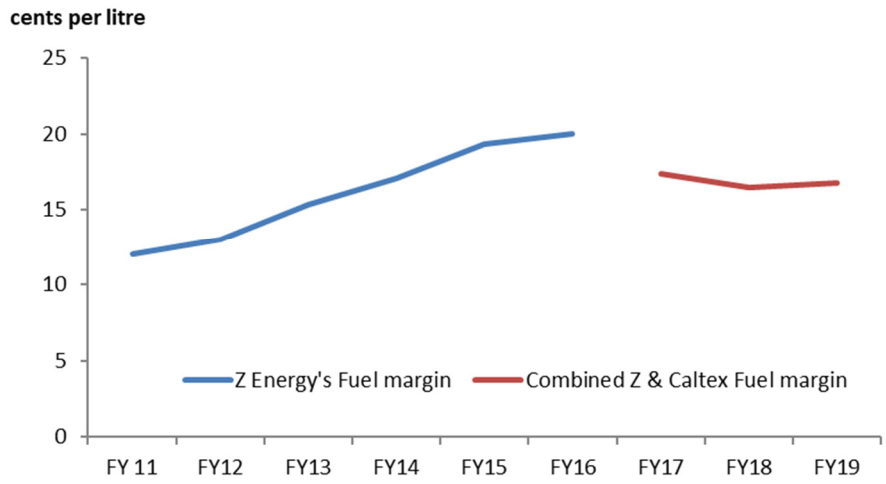
C166 Therefore, Z Energy's reported fuel margin and MBIE's importer margin are not directly comparable.

C166.1 MBIE's measure focuses on the retail prices paid at service stations while Z Energy's measure includes sales to commercial and supply customers, who would pay lower prices than the retail consumers (and Z Energy earns lower margins on these sales).

C166.2 Z Energy's measure includes some additional costs.

C167 The history of Z Energy's fuel margin is shown in Figure C4. Like MBIE's importer margin, Z Energy's fuel margin shows a strong and consistent uptrend from 2011 to 2016.

Figure C4 Z Energy's Reported Fuel Margin (in cents per litre, 2011-2019)



Source: Z Energy Full Year Results Presentations for various years

C168 In 2016, Z Energy acquired Chevron. Chevron's business is different to Z Energy's in several respects.

C168.1 On sales through Z branded stations Z Energy earns a wholesale margin and the retail margin.

C168.2 Caltex branded service stations are dealer-owned so the dealer earns the retail margins, not Z Energy. Z Energy only earns the wholesale margin on those transactions.

C168.3 Similarly, Chevron (and now Z Energy) only earns a wholesale margin on sales made via Challenge stations (supplied via Farmlands).

C169 Accordingly, the combined Z Energy and Chevron margin reported by Z Energy after the merger is lower than Z Energy's pre-merger margin. Z Energy attributed most of

the lower margin in FY17 to the lower margins on Chevron stating that the fuels cents per litre margin from the Z branded network "fell slightly".[1146]

C170 The value for FY16 shown in Figure C4 is for Z Energy without Chevron, while FY17 shows a full year's contribution from Chevron.

C171 The average fuel margin for Z Energy for the last three years has been largely unchanged and remains above the average levels reported by Z Energy in the early part of this decade (even with the inclusion of the lower margin Chevron business from FY17).

Return on capital employed

C172 ROCE is a widely used measure of financial performance in the fuel industry, both domestically and internationally. Examples of fuel companies using ROCE include:

C172.1 BP Plc, ExxonMobil Corp, and Shell Plc;[1147] and

C172.2 some New Zealand fuel companies also use ROCE from time to time, for example to assess returns on individual projects or to express a corporate or business unit financial target.[1148]

C173 ExxonMobil states that ROCE is:[1149]

> … the best measure of historical capital productivity in our capital-intensive, long-term industry, both to evaluate management's performance and to demonstrate to shareholders that capital has been used wisely over the long-term.

How we define ROCE

C174 ROCE is typically defined as operating earnings as a percentage of capital employed, although the definitions of those items can vary between analysts.

C175 For the purposes of our analysis we define:

C175.1 operating earnings as net income plus net interest expense net of tax; and

C175.2 capital employed as total assets less:

C175.2.1 acquired goodwill;

1146 Z Energy "Management Discussion and Analysis – Financial performance for the year ended 31 March 2017" (11 May 2017) at 3.

1147 BP Plc "Annual Report and Form 20-F" (2017) at 103; ExxonMobil Corp, "Financial & Operating Review" 2017 at 105 and Shell Plc "Investor's Handbook Financial Statements Information" (2013-2017) at 71.

1148 For example, [ ]

1149 ExxonMobil Corp "Financial & Operating Review" 2017 at 105.

C175.2.2 acquired contracts;

C175.2.3 surplus cash; and

C175.2.4 non-interest-bearing current liabilities.

C176 Our definition of operating earnings is similar to that used by BP Plc, Shell and ExxonMobil.[1150]

C177 The estimation of capital employed can use values of either:

C177.1 opening or closing capital employed; or

C177.2 averages of opening and closing capital (return on average capital employed, ROACE).

C178 We use average values of capital in this paper. That is, we report ROACE.

C179 Unlike margins, ROACE reflects all operating costs, volumes, and the amount of capital which the firm has invested. It can be compared against estimates of WACC which incorporate allowance for the risk investors are exposed to. ROACE is therefore a better measure of financial performance than margins.

C180 However, ROACE like most other backward-looking measures relies on accounting information. Accounting information has developed according to accounting rules and is not designed to inform economic decision making. For example:

C180.1 asset values may not reflect current estimates of cost; and

C180.2 accounting depreciation may not match economic depreciation.

C181 These are inherent limitations on the use of accounting information in this context. Nonetheless, as noted above, the measure is widely used by fuel firms.

The basis for valuing fixed assets differs between companies

C182 The valuation of fixed assts in the capital employed can use either estimates of current value (for example, replacement costs for specialised assets) or historic cost. Most firms use estimates of historic cost to value fixed assets.[1151]

[1150] BP Plc "Annual Report and Form 20-F" (2017) at 295 and ExxonMobil Corp, "Financial & Operating Review" (2017) at 105. One difference is that BP includes holdings gains on inventory, whereas we (and ExxonMobil and Shell) use GAAP numbers only. We considered it impractical to include holding gains for all companies in our analysis, including as some do not calculate or disclose this item.

[1151] Many fuel firms use estimates of replacement cost of valuing inventory as commodity prices (including oil) are volatile and these price changes can materially affect short term financial performance measures.

C183 Z Energy's results are on a different basis to the other fuel companies. Z Energy adopts a fair value basis for valuing its fixed assets, and includes holding gains in its statement of comprehensive income. The other companies do not include holding gains in their accounts. We bear this distinction in mind when interpreting the results of the analysis of ROACE.

How we treated Z Energy's revaluation gains

C184 Z changed its approach to valuing long-term assets from historic cost less depreciation to fair value on 1 April 2013. As a result, it booked material revaluation gains of $174 million in 2014 and $115 million in 2016, and smaller gains in other years.[1152] This has the result of increasing its total assets and reported capital levels.

C185 There are two approaches to dealing with revaluations gains:

C185.1 adjusting capital employed to remove the impact of the revaluation gain; or

C185.2 treating the valuation gain as parts of the return (numerator) and including the revalued asset as part of capital employed (the denominator).

C186 When assessing the profitability of specified airport, electricity lines, and gas pipeline services under Part 4 of the Act we adopt the latter approach of including revaluation gains in both earnings and capital.[1153] We adopt the same approach with respect to Z Energy's revaluation gains.

We don't have reliable information on holding gains made by other firms

C187 Due to the absence of reliable information on the holding gains (revaluations) made by other firms, the analysis of ROACE in this report includes only the revaluation gains reported by Z Energy. This may understate ROACE for other firms.

C187.1 If the size and timing of the increase in the fair value of Z Energy's assets is reflective of the gains in value for the assets held by other New Zealand fuel companies, then the average ROACE reported in this report will have underestimated the returns made by the other fuel companies.

In a competition study we are more concerned with long term profitability levels and volatility in inventory valuation is a less significant factor.

[1152] Various Z Energy "Annual reports" from 2014 to 2019.

[1153] For a stylised example in the airports context - see Commerce Commission "Input methodologies review decisions Topic Paper 5: Airports profitability assessment" (20 December 2016) at Attachment B, Figure B1.

C187.2 Statistics New Zealand has produced the capital goods price index over many years.[1154] This index appears a reasonable proxy for some of the types of assets held by fuel companies including plant and equipment and terminal assets. Over the last 20 years this shows a compound annual growth rate of 2.3%.[1155]

C187.3 Prima facie, changes in this index might be a reasonable proxy for the holding gains made by fuel companies over this period. This implies that New Zealand fuel companies, other than Z Energy (which already records holding gains), might have achieved holding gains of around 2% per annum, and an estimate of ROACE including holding gains would be around 2% per annum higher than those reported below for those companies.

We exclude acquired goodwill and acquired contracts from capital employed

C188 Like BP Plc we exclude goodwill from our calculation of capital employed.[1156]

C189 Our definition also excludes the value of contracts acquired which Z Energy recognised when it acquired Chevron. Z Energy recognised these contracts at a value of $433 million.[1157] The value recognised by Z Energy on the acquired contracts could be attributable to a range of factors, including the exercise of market power by Chevron, or a change in conditions after its execution rendering the contracts more advantageous to one party (Chevron). It is difficult for us to identify which factor or factors accounts for the value.

C190 We exclude the values of those contracts for the following reasons.

C190.1 Including contracts acquired as part of capital employed makes the estimate of ROACE less informative of the returns on capital the firm might achieve in future (or a new entrant might achieve) since the value of the contract acquired is not a cost a firm would incur when expanding (or entering a market).

C190.2 If Z Energy had won the contracts organically, rather than acquiring them, no value for the asset would have been recognised. It is not obvious why the somewhat random event of an acquisition by another firm should materially affect the estimate of capital employed (or ROACE).

[1154] See, for example, Statistics New Zealand "Business price indexes: March 2019 quarter" (17 May 2019) available at <https://www.stats.govt.nz/information-releases/business-price-indexes-march-2019-quarter>.

[1155] Various sub-indices, including those relating to "non-residential buildings", "structural metal products", and "tanks, reservoirs, etc" average 3.0% for the same period.

[1156] BP Plc "Annual Report and Form 20-F" (2017) at 295.

[1157] Z Energy "Annual Report" (2017) at note 13.

C190.3 If goodwill – which relates in part at least to the stickiness of many consumers – is excluded, it is not evident why goodwill attributable to the buying of a single customers (or a small number of customers) should be included. While that customer is subject to a contract, the firm might have many more contracts with smaller customers which are treated as part of goodwill (and thus excluded).

C190.4 We are using ROACE to inform an assessment of market power, but the value of those contracts may be due in part to the exercise of market power. Including the expected future value of a contract into the asset base, and its actuals profits in the numerator, is essentially circular.

We exclude surplus cash from capital employed

C191 Some New Zealand companies, including in particular some closely-held companies and wholly owned subsidiaries of offshore parents, have significant cash holdings in some years. We estimated the surplus cash and excluded this from capital employed for closely-held companies and subsidiaries of offshore companies.

C192 We estimated surplus cash by:

C192.1 estimating a benchmark working capital ratio (using the sample of international companies identified in Attachment B);[1158]

C192.2 identifying where an unlisted New Zealand fuel firm had working capital that was above that benchmark; and

C192.3 excluding from the estimate of capital employed for that firm the extent of any cash balance that resulted in working capital being above that benchmark level in any year.

The financial information we use to estimate ROACE captures a broader range of activities than just retail fuel for some companies

C193 ROACE was also the measure of profitability proposed by MBIE in the 2017 Fuel Study.[1159] The terms of reference for that study sought estimates of ROACE split between fuel and non-fuel activities, and product and market segments. NZIER et al were unable to do this due to a lack of consistent and comparable information from the companies.[1160]

[1158] The working capital ratio is the ratio of current assets to current liabilities.

[1159] NZIER, Grant Thornton and Cognitus Economic Insight "Fuel Market Financial Performance Study" (29 May 2017) at 115.

[1160] Ibid, at 35, 41-42, 44.

C194 For the reasons discussed in Attachment A we have not sought to do so either.[1161] Rather, we look at ROACE across all activities of each business as part of a range of approaches to look at profitability. For the reasons discussed in Attachment A we consider this nonetheless provides insights into profitability that assist this study.[1162]

C195 For some smaller firms, which are more focused on retail fuel activities, analysis of ROACE should more closely reflect the profitability of their retail fuel activities.

The return on average capital employed by New Zealand fuel firms

C196 We calculated the ROACE for the New Zealand fuel firms with a significant retail presence, or which principally supply fuel to retail outlets. The firms are as follows.

C196.1 BP

C196.2 Chevron (until 2015)

C196.3 GAS

C196.4 Gull

C196.5 Mobil

C196.6 NPD

C196.7 Shell (until 2010)

C196.8 Waitomo

C196.9 Z Energy (from 2010).

Since 2010 New Zealand fuel firms earn higher ROACE than their international peers

C197 In Figure C5 we compare:

C197.1 the estimated average ROACE for the New Zealand fuel firms identified above; with

C197.2 the estimated average ROACE for the international fuel companies that were identified in Attachment B as being suitable comparator companies.

C198 We have updated Figure C5 from that shown in the draft report to weight each international fuel firm equally. The version in the draft report weighted each firm by its capital employed, which CRA submitted, placed a disproportionate weight on two

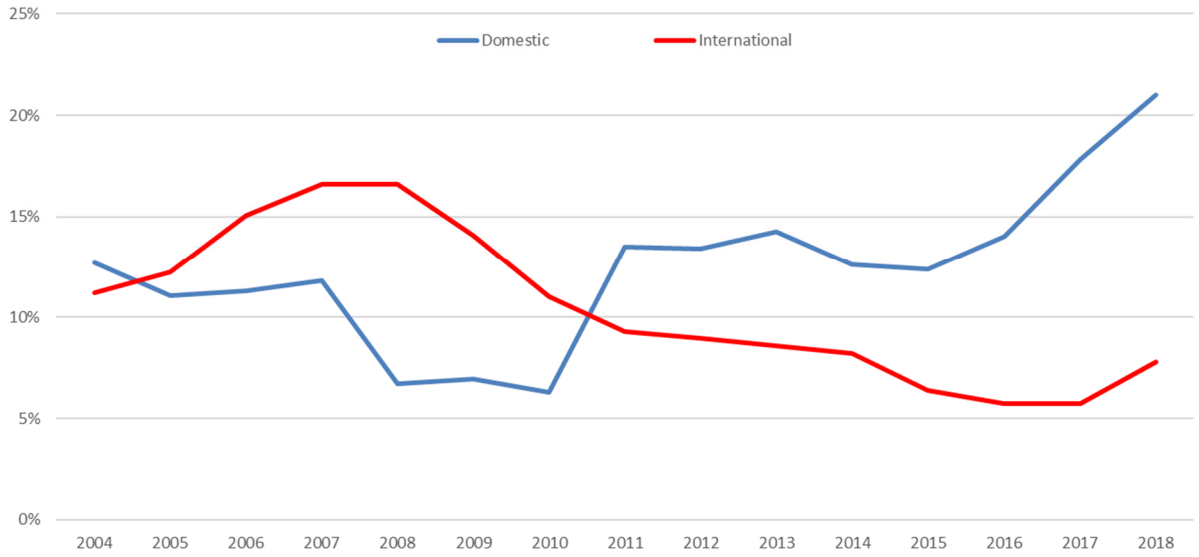
[1161] See Attachment A.

[1162] See Attachment A.

Korean firms.[1163] CRA submitted, and we agree, that a simple average of ROACE provides a better basis for comparison of the estimated ROACE of the New Zealand firms.[1164]

C199 We are primarily interested in broad trends in returns so we show three-year rolling averages for the New Zealand and international comparators, rather than annual estimates. All the three-year averages reported in this attachment are geometric averages.

Figure C5 New Zealand fuel firms make higher ROACE than their international peers (three-year rolling average ROACE) (2014-2018)



Source: Commerce Commission analysis of data reported by Bloomberg and various New Zealand fuel companies

C200 Average New Zealand fuel sector ROACE has increased markedly over the period from 2004. It began to exceed the average returns made by the international peers in 2011 and has increased further since then. We estimate the average ROACE for the New Zealand fuel firms is around 15% per annum higher than the average of ROACE for the international firms in the three years to 2018.

C201 We note that:

C201.1 this increase has occurred despite interest rates, and therefore the cost of capital, falling over that period;[1165]

1163 Charles Rivers Associates "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 21.

1164 Charles Rivers Associates "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 22.

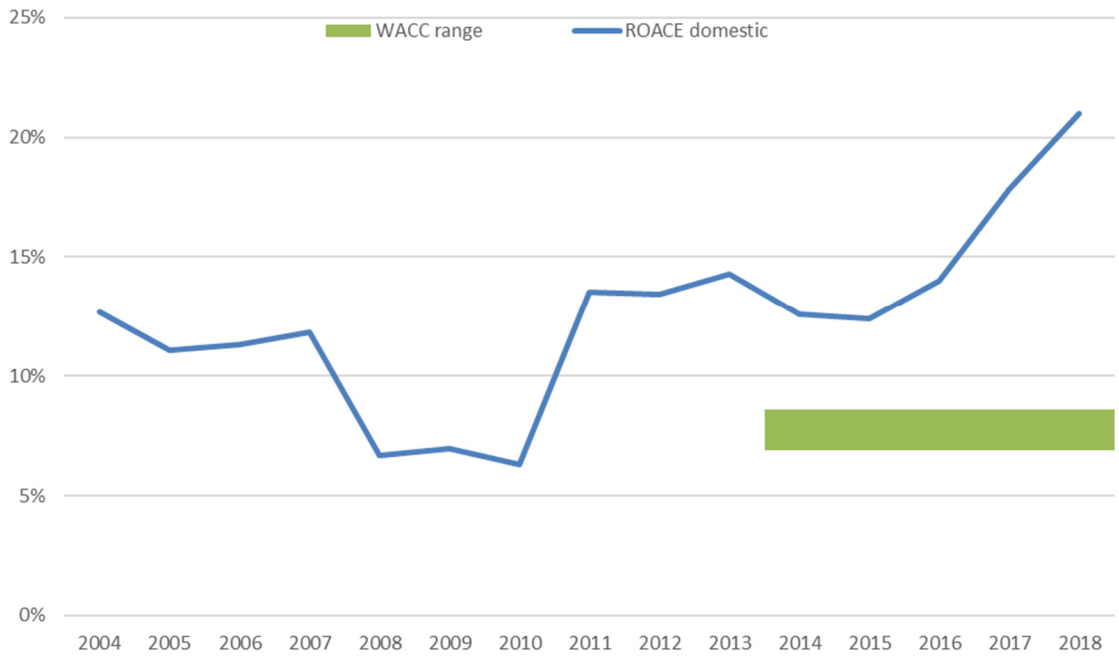
C201.2 the New Zealand fuel firms' ROACE shows a somewhat similar profile to the trend in gross margins reported above; and

C201.3 the number of firms in the sample is smaller in the early years of the period.[1166]

New Zealand fuel firms' ROACE is well above WACC

C202 In Figure C6 we compare the three-year rolling average ROACE for the New Zealand fuel firms with the benchmark normal return, that is our estimated WACC range. As described in Attachment B, our explicit estimates of WACC go back only to 2014.

Figure C6 New Zealand fuel firms' three-year rolling average ROACE has been consistently above the normal return range this decade



Source: Commerce Commission analysis of financial statement data reported by various New Zealand fuel companies

C203 Figure C6 suggests average returns, as measured by ROACE, have consistently exceeded the top end of the range of our estimate of a normal return since the departure of Shell in 2010. That is, the estimates of ROACE for these firms implies firms have been earning excess returns over this period.

1165 As discussed in Attachment B.

1166 There were only 11 firms in the sample of international fuel firms in 2004 versus 27 in 2018. See Attachment B.

C204 Our estimated WACC range assumes constant interest rates over time. However, interest rates, and thus WACC is likely to have been falling over time.

New Zealand fuel firms' ROACE is well above that for companies in the NZX50

C205 We also compare the return on capital for the New Zealand fuel firms with the returns on capital made by the diverse range of firms which make up the NZX50. The NZX50 is the main stock market index in New Zealand and comprises the 50 biggest stocks by free-float market capitalisation trading on the New Zealand Stock Exchange.

C206 Our approach for estimating the ROACE for the firms in the NZX50 was as follows.

C206.1 We took the firms in the NZX50 as at July 2019 (and did not revise our sample for changes in composition of the NZX50 over time).

C206.2 We acknowledge there are limitations in using ROACE across industries and, in particular, ROACE is an inappropriate measure for banks (due to their high leverage). So, we excluded three banks from our analysis (and as discussed below, we weighted each firm's results by its capital employed in estimating the average ROACE for the remaining NZX50 firms).

C206.3 We obtained information on the financial performance and financial position of each firm since 2010 from Bloomberg.

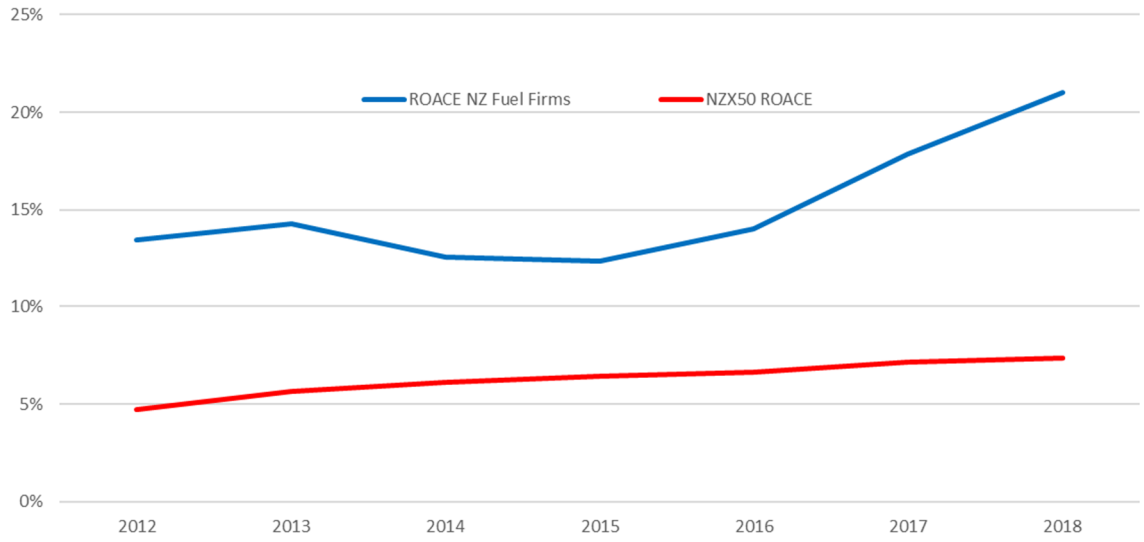
C206.4 Using the same definition of ROACE as we used for the fuel firms, we estimated the ROACE for the remaining 47 firms for each year since 2010.

C206.5 We estimated a weighted average ROACE for the overall NZX50 index for each year, weighted by each firm's share of capital employed (as we did for the fuel firms).

C206.6 In Figure C7 we compare the three-year rolling average ROACE for the NZX50 firms against the three-year rolling average ROACE for the fuel firms since 2012 (being the first year for which we have three years of return on capital estimates).

C207 Figure C7 shows the fuel firms average ROACE has been well ahead of the average ROACE for the NZX50 firms this decade and the gap appears to be growing steadily.

Figure C7 New Zealand fuel firms' three-year rolling average ROACE has been consistently above the ROACE for firms in the NZX50 this decade (2012-2018)

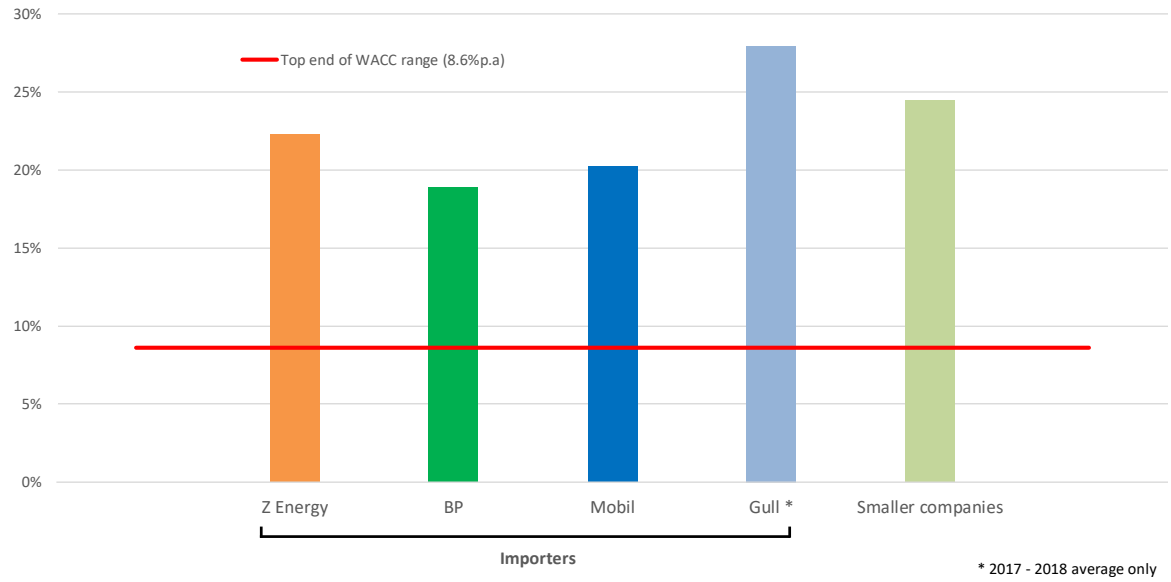


Source: Commerce Commission analysis of financial statement data reported by various New Zealand fuel companies and Bloomberg data

Many New Zealand retail fuel firms are achieving high levels of ROACE

C208 In Figure C8 we show the average ROACE for each of the New Zealand fuel firms with a significant ongoing involvement in the retail fuel market over the last three financial periods for which we have data. All companies achieved a three-year average ROACE which easily exceeded the top end of our estimate of a normal return (8.6%). Figure C8 also highlights the difference in ROACE for the three majors versus the ROACE for Gull, which imports its own fuel, and the three smaller firms but does not identify individual companies. Gull's ROACE is shown as a two-year average as prior profitability information was not publicly available. With the exception of Z Energy, the ROACE estimates for all other firms exclude holding gains (and so underestimates their returns relative to WACC).

Figure C8 High ROACE is being enjoyed by a range of New Zealand fuel firms but Gull and the smaller firms earn higher ROACE (average 2016-2018)



Source: Commerce Commission analysis of data reported by various New Zealand fuel companies

C209 Gull and the three smaller companies in our sample are heavily focused on the retail fuel market while the three majors have a more diverse business mix. The results could be interpreted as indicating that retail fuel activities generate greater returns on capital than the more diverse mix of activities which the majors undertake.

C210 As we explained in Attachment A it is not uncommon or unexpected for a firm in a workably competitive market to be earning excess returns. For example, the firm may have a clear cost advantage over its competitors or have successfully innovated. However, in a workably competitive market, we would not expect:

C210.1 all firms to be consistently earning excess returns;

C210.2 excess returns to continue for long; or

C210.3 the marginal seller to earn material excess returns.

C211 However, that appears to be the case here.

C211.1 All seven firms in this analysis are consistently earning excess returns.

C211.2 Returns are above WACC throughout this decade. (The persistence of excess returns is discussed further in Attachment D.)

C212 In relation to the point on the profitability of the marginal supplier, we explained in Attachment A that as Gull wholly relies on importing refined fuel – and does not benefit from any of the cost advantages of sharing infrastructure – it seems to be

the marginal supplier of fuel to the retail market. It is notable, that Gull – and the other small firms in our analysis:

C212.1 have collectively grown their market share significantly in recent years;

C212.2 have done so by investing considerable sums of money (for them) in new sites, new tanks, new pumps and payment facilities; yet

C212.3 have the highest ROACE of the firms in Figure C8 with a collective average ROACE of approximately 30% per annum over the last two-three years.

C213 Further, Gull and those smaller firms' activities are increasingly focused on supplying the retail fuel market (whereas the majors have a much more diversified mix of business activities including jet fuel, fuel oil, bitumen, etc). As a result, the high ROACE being enjoyed by them is unlikely to be attributable to excess returns from supplying markets other than the retail fuel market.

C214 The high ROACE for Gull and the smaller firms with growing market shares tends to suggest competition in the retail fuel market is not working as effectively as it could, as fuel market volumes are growing only slowly and there is little suggestion that New Zealand has an insufficient number or range of service stations.

But the excess returns in dollar terms are mostly earned by the majors

C215 In Figure C6, Figure C7 and Figure C8 above we illustrated that, based on our analysis to date, a range of New Zealand retail fuel firms are currently achieving ROACE which exceed normal, competitive levels. However, due to differences in the scale of the businesses, Figure C6, Figure C7 and Figure C8 above do not show which firms appear (based on the ROACE metric) to be earning the bulk of the excess returns.

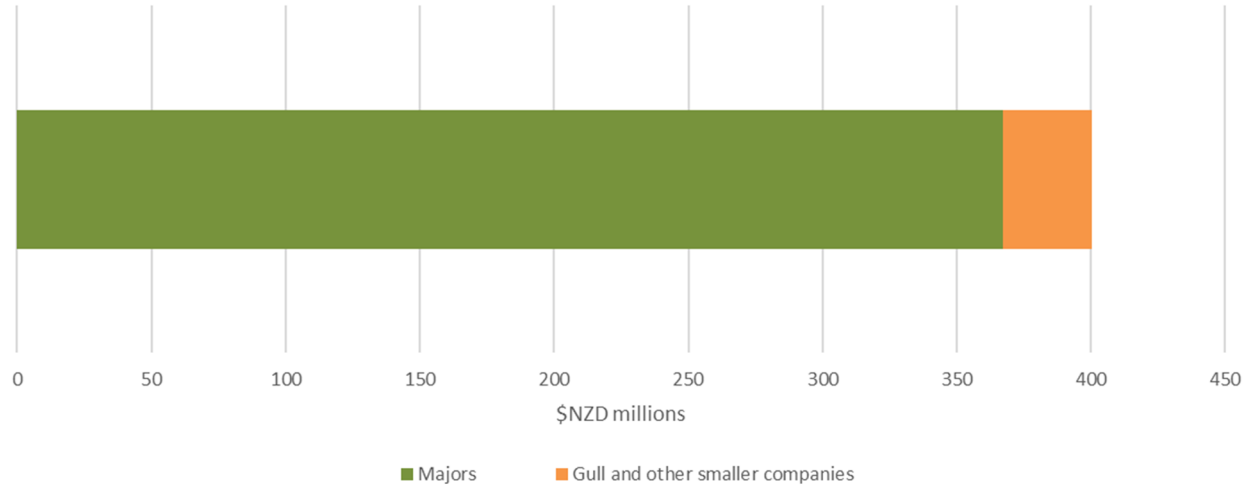
C216 In Figure C9 we show the estimated excess returns in dollar terms using the ROACE metric. That is, we:

C216.1 calculate the amount by which the estimate of ROACE exceeds the top of the range of normal returns; and

C216.2 multiply this by the amount of capital employed for each firm in the analysis in Figure C8 above.

C217 As Figure C9 shows, the bulk of the excess returns implied by the ROACE measure are accruing to the three majors, not the smaller firms. Although the smaller firms seem to be earning excess returns on capital, because they are relatively small firms, the dollar amount of those excess returns is small. The majors, while apparently earning lower returns on capital, appear to be earning most of the excess return in dollar terms.

Figure C9 Share of annual average excess returns over the period 2016-2018 implied by ROACE metric



Source: Commerce Commission analysis of companies' financial statements

Some words of caution

C218 As discussed earlier in this attachment and in Attachment A, ROACE is not an accurate measure of excess returns. We do not mean the above analysis to imply that the ROACE measure can accurately estimate the level of excess returns, or attribute this accurately to any firm or group of firms. The ROACE metric is also capturing the profitability of non-retail fuel activities which might have different returns.

C219 The analysis above is intended to be indicative only.

Estimates of ROCE based on estimates of replacement cost

C220 As described in Attachment A, measures of profitability using replacement costs are a useful measure to assess the attractiveness of entry because they incorporate estimates of the current cost of entry or expansion.

C221 We stated in our working paper on profitability that we would seek to incorporate replacement cost values into our analysis where it is available and where possible.[1167] We have done so in respect of Tobin's q and our analysis of firm's business cases for new investment.

[1167] Commerce Commission "Market Study into the Retail Fuel Sector Working paper on assessing profitability" (18 April 2019) at [90].

Why we have not used estimates of replacement cost in the calculation of ROCE

C222 However, we have not incorporated estimates of replacement cost into our analysis of ROCE as there is only limited reliable and tested information available (ie, from Z Energy).

C222.1 Estimating ROCE using estimates of replacement cost in practice requires estimates over a long timeframe (to match the period of time when ROCE is being assessed).

C222.2 Of the firms in the New Zealand fuel industry, only Z Energy uses estimates of replacement cost in its financial reporting, and then it has only done so since 1 April 2013. It has only updated those valuations in 2016, in respect of land and buildings only, and then in 2017 in respect of terminal plant only.

C222.3 BP supplied a one-off report from Worley Parsons on replacement costs for terminal assets. We have reservations about this report as explained above and do not consider we can place any weight on it.[1168]

Submissions on ROCE

C223 We received a large number of submissions on ROCE which were critical of aspects of our analysis of ROCE. It was notable however, that these submissions concentrated largely on our estimate of ROCE for Z Energy and there were very few submissions on our estimates of ROCE for the other retailers, including the smaller retailers such as Gull which we estimated ROCE for. In our view, high levels of profitability of so many retail firms, including the smaller retailers which have grown most quickly in the retail fuel market in recent years and who had the highest ROCE, are relevant to our overall conclusions on profitability. Our draft report also noted that Gull, which reports a high ROCE, may be the marginal supplier of fuel.

C224 CRA (for BP) did submit on the estimate of ROCE for Gull.[1169] CRA submitted that it was far from clear that Gull was the marginal supplier, submitting that as it imported fuel like the majors its marginal cost of fuel was similar, and that because Gull developed low-cost retail sites it may have the lowest retail cost. We disagree for two reasons.

C224.1 Unlike the majors which share infrastructure (including the refinery, COLL, nationwide terminal storage and inventory) to maximise efficiencies, Gull does not participate in that sharing infrastructure but has to recover all of its infrastructure costs from its own sales volumes.

[1168] See paragraphs C124 to C126 in this Attachment C.

[1169] CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at Section 2.5.5 at 25.

C224.2 The other fuel retailers have the same opportunity to build low-cost retail sites as Gull.

C225 CRA also submitted that the fact that pure retailers have higher ROACE than the majors, may suggest that wholesale margins are lower than retail margins (with the lower margins at wholesale lowering the overall average ROACE for the major), and this was at odds with our concern over competition in the wholesale market.[1170]

C226 In response we note:

C226.1 CRA's submission overlooks our analysis of the total industry ROACE (reported as Figure C9 above) which shows that notwithstanding the higher ROACE for the smaller market participants the bulk of the industry's excess returns were earned by the majors.

C226.2 Further, CRA's conjecture about the relative levels of wholesale and retail margins does not explain why Gull, which earns margins at both the wholesale and retail level, has the highest estimated ROACE.

C226.3 All market participants including the majors are averaging ROACE above WACC.

C226.4 We have outlined above in Chapters 4 to 6 why we consider there are factors affecting competition in the wholesale market.

CRA's submissions on methodology

C227 CRA also submitted a range of points on "methodological issues" with our ROACE analysis, including the following.

C227.1 CRA submitted that our analysis of ROACE could not support a conclusion that firms were making excess returns due to the including of activities unrelated to the supply of motor fuel such as aviation, bitumen and lubricant products, as well as sales to commercial customers. CRA submitted that "their inclusion may understate a retail-specific ROACE".[1171]

[1170] CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 24.

[1171] CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 17.

C227.2 We agree with CRA that the inclusion of this wider range of activities in the analysis may understate a retail-specific ROACE. However, for the reasons set out in our draft report, and agreed by some submitters, it is not possible to estimate retail-specific ROACE reliably for integrated fuel companies.[1172]

C227.3 CRA submitted that since most firms' report historic cost asset valuations, resulting estimates of ROACE are less informative than measures using replacement cost.[1173]

C227.4 We acknowledged this point in our draft report and explained our reasons why we consider the historic cost-based ROACE measures are still informative. CRA does not engage with those reasons.

C227.5 CRA also submitted that our "assertion that estimates of ROACE based on historic cost will tend to underestimate firm's returns … is also unfounded".[1174] CRA offers no reasons for its view.

CRA's submissions on comparison of ROACE

C228 CRA submitted on our comparison of ROACE estimates for NZ fuel retailers with WACC and other firms.

C228.1 CRA submitted that our rolling three-year average is not insightful because there is volatility from one year to the next and between retailers.[1175] CRA submitted that the volatility suggests great caution is needed in interpreting the three-year averages.

C228.2 We agree there is volatility from one year to the next – as we explained in the draft report this (in part at least) reflects the accounting requirements in inventory on hand, which create short-term volatility, but can be expected to net out over time.[1176]

C228.3 CRA disagrees with the exclusion of contracts acquired, a matter we have addressed above from paragraph C107-C110.

1172 Discussed above at paragraphs A54 - A55.

1173 CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 17.

1174 CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 17.

1175 CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 18.

1176 Commerce Commission "Market study into the retail fuel sector: Draft Report" (20 August 2019) at [B74.3].

C228.4 CRA presents various re-interpretations of our ROACE results. While we do not agree with all the changes CRA make (eg, excluding Z Energy) we note that most of the individual firm ROACEs since 2010 shown in CRA's various graphs exceed the upper end of the our WACC range.[1177] We note too that CRA's analysis excludes the smaller firms whose activities are more closely focused on fuel retailing. We consider these firms to be the best indicator, when using the ROACE metric, that New Zealand retail fuel firms are earning excess returns.[1178] These smaller firms also have a higher ROACE than the majors.

C228.5 We acknowledge CRA's observation that the ROACE result for Z Energy differs when Z Energy was analysed as part of the international sample from when it was individual assessed.[1179] Z Energy makes the same point.[1180] In the graphs in this final report we have standardised our approach for Z Energy (to be consistent with the individualised assessment approach).

Z Energy's submission on ROACE

C229 Z Energy made a number of submissions on ROACE. Its submissions concentrated almost entirely on the estimated ROACE for Z Energy itself, and little of its submissions discussed the ROACE for other companies.

C229.1 Z Energy submitted that ROACE is not a reliable methodology for assessing profitability.

C229.2 Z Energy also proposed its own methodology for ROACE, and submitted that using that methodology generated quite different estimates of ROACE to our estimates.

C230 Z Energy submitted that ROACE is not a reliable methodology for assessing profitability due to a number of limitations.[1181] Z Energy submitted that we had acknowledged some of these limitations of analysis of ROACE. For example, Z Energy

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1177 Specifically, we refer to Figures 3, 4 and 5 of CRA's submission - Charles Rivers Associates "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019).

1178 Information on the profitability of these smaller companies is confidential, and we did not disclose the results for individual firms or individual years to CRA.

1179 Charles Rivers Associates "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 26 (in CRA's notes to its Figure 10).

1180 Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector Draft Report" at [49].

1181 Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector Draft Report" at [23].

submitted that because our estimate included the whole of Z Energy, and not just retail fuel fuels, this undermines the ROACE findings.

C231 For the reasons we set out in our draft report (and repeat above) we consider that looking at the whole of Z Energy is an appropriate approach, and we disagree that doing so undermines the analysis.[1182] More generally, as discussed above, the use of ROACE by a large number of fuel firms implies that fuel firms do consider ROACE to be a useful measure of profitability. (See paragraphs C172-C173 above).

C232 Z Energy also proposed its own standard methodology for ROACE, which it considered necessary to address errors and limitations in our analysis.[1183] In particular, Z Energy proposes a number of adjustments to the calculation of capital employed which have the effect of increasing the estimate, on Z Energy's view of its capital employed, from $1.3 billion to $2.1 billion.[1184]

C233 While Z Energy refers to its approach as a standard methodology it offers no source for its methodology, which appears to be bespoke to Z Energy and unpublished. By contrast our methodology was based on the publicised methodology of BP Plc.[1185]

C234 The key differences in Z Energy's methodology are as follows along with our response.

C234.1 Z Energy disagreed with excluding the value of goodwill arising when Z Energy acquired Chevron. We note that excluding goodwill is a standard feature of BP Plc's methodology upon which we based our own analysis.[1186] Our reasons for excluding goodwill were outlined in the draft report and are included above from paragraph C188 in this paper.

C234.2 Z Energy disagreed with excluding the value of Chevron supply contracts. We explained our reasons for excluding contracts acquired in the draft and have set out our response to submissions earlier in this paper (in the discussion around Tobin's q from paragraph C107 in this paper).

[1182] Indeed, we note Z Energy submitted that any attempt to separate out the retail activities would be complex and likely inaccurate - Z Energy "Comments on 18 April Working Papers" (7 May 2019) at footnote 3.

[1183] Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector Draft Report" at [27].

[1184] Ibid.

[1185] BP Plc "Annual Report and Form 20-F" (2017) at 295.

[1186] BP Plc "Annual Report and Form 20-F" (2017) at 295.

C234.3 Z Energy submitted that we should have earnings calculated on a replacement cost basis for cost of fuel, rather than an historic cost basis.[1187] We explained in the draft report that we preferred to use the historic cost estimates, as these are consistent with generally accepted accounting practice, and such data was available for all firms (where replacement costs estimates were not). We acknowledge BP Plc uses earnings on a replacement cost basis in its calculations.[1188]

C234.4 Z Energy submitted that we should not have included revaluation gains on fixed assets as part of earnings in our ROACE analysis. This approach would be inconsistent with the revaluation gains on fixed assets being included in our estimate of capital employed, and with the fact that Z Energy effectively included that revaluation in its own estimate of capital employed (since the adjustments made by Z Energy did not back out the revaluation gain). A consistent approach should be taken to the numerator and denominator in a ROACE estimate, and we explained in our reasons why we think information on such gains should be included where information allows (as we do too under our work in respect of Part 4 of the Act).

C234.5 Z Energy and Incenta submitted that we should include leased assets within capital employed at their full replacement cost.[1189] Neither submission quantifies the value of the leased assets on a replacement cost basis although Z Energy acknowledges that using the present value of the lease payments is "a reasonable alternative". We disagree that the calculation should use replacement costs as the present value of the lease commitments does fully capture the cost to the fuel firm of obtaining the use of those assets for the time required, reflecting any expected alternative use for the assets at the duration of the lease.

1187 Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector Draft Report" at [39] – [41].

1188 BP Plc "Annual Report and Form 20-F" (2017) at 295.

1189 Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector Draft Report" at [40]-[42]. Incenta "Market Study into Retail Fuel – Use of Tobin's q to Assess Market Power" (September 2019) at 23.

C234.6 We agree there is an arguable case for including the present value of the lease payments within capital employed although it does not seem to be an adjustment which BP Plc or the other fuel firms typically make. Information on the capitalised value of such leases is now required to be shown in the balance sheet of firms under NZ IFRS 16 for general-purpose financial reporting. Such information will become more generally available. Using information supplied by Z Energy on the value of its leased assets, this adjustment would increase its average capital employed by around $226-282 million[1190] and reduce its ROACE from an average 23.4% to 21.0%.[1191]

C234.7 Z Energy also submitted that an allowance for decommissioning and restoration costs should be included as part of capital employed. Z Energy's rationale is that not doing so would understate the replacement cost to a new entrant. In our view, there is an inconsistency in Z Energy's approach which advocates including an allowance for decommissioning and restoration costs when closing a site but excluding any increase in the market value of the site which would be realised on closure.[1192]

C234.8 Z Energy submitted that its ROACE has been declining since 2015, but this is obscured by our use of three-year averages. We explained our reasons for the three-year average above at paragraph C228 when discussing CRA's submission. We acknowledge Z Energy's ROACE shows a downward trend but note this reflects a number of other factors – including the impact of the Chevron acquisition (which capitalises much of Chevron's excess returns into the purchase price), and we understand that Z Energy's published profit results in recent years have been impacted by heightened public concern over high fuel prices, and that this appears to have impacted Z Energy's overall profits during those times. Such public concerns, and the impact on Z Energy's profitability, may or may not continue in future.

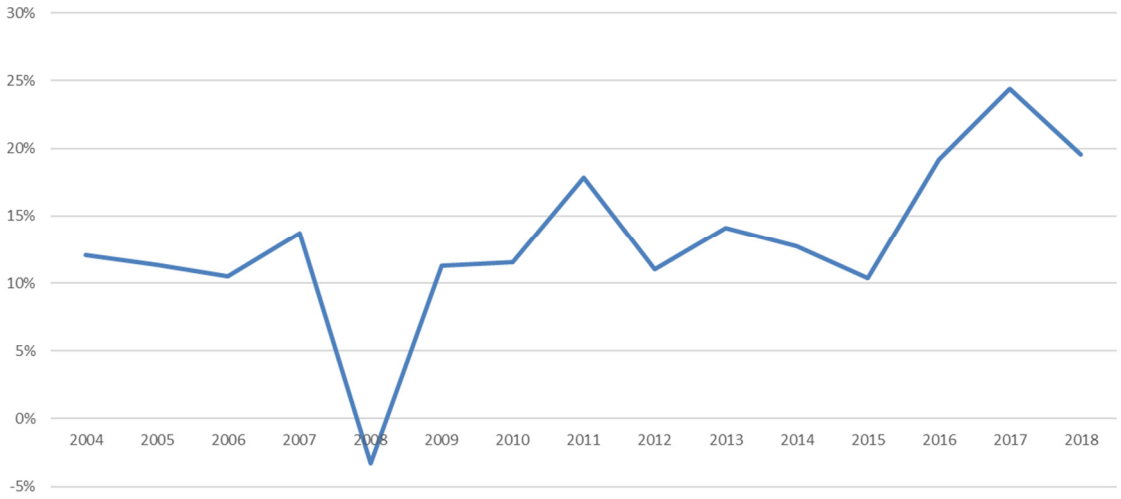
C234.9 We acknowledge that the three-year averages do not show changes in ROACE between years. Figure C10 is a new figure which shows average ROACE each year for the fuel firms in our analysis. It is weighted by capital employed for each firm. Whether the estimates of ROACE are shown as annual estimates, or three-year averages, does not change the relativity to WACC.

1190 Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector Draft Report" at Appendix 2.

1191 For 2018 using average capital employed.

1192 Additionally, Z Energy's approach requires assumptions around when sites would close, and the appropriate discount rate, and there is considerable uncertainty over this. But Z Energy's approach ignores market value gains which can be estimated with reliability now.

Figure C10 Weighted average domestic fuel firm ROACE for each year 2004-2018



C235 In respect of the returns expected from Z Energy, we note that Z Energy annually tests its valuation of goodwill and other intangibles to see if they have been impaired. That is, it assesses the expected future cash flows from those businesses against their book value. In its most recent annual report Z Energy notes that, in respect of the Chevron acquisition goodwill, that no impairment was necessary and "management considers that no reasonably possible change in assumptions would cause the carrying amount to exceed the recoverable amount".[1193]

C236 Finally, we note too that a number of the points raised by Z Energy in its submission are specific to it, and do not impact the estimate of ROACE for other businesses.

Other measures of profitability we considered

C237 In this section, we discuss other measures of profitability which we have considered.

C238 We currently place little weight on these measures and we report them here for completeness. We note where we have applied some of these approaches, that the results of each seems consistent with the analysis described above. As such this tends to support our view that the New Zealand fuel firms are currently making significant excess returns.

C239 The other measures of profitability which we considered are as follows.

C239.1 Net profit per litre of fuel sold.

C239.2 An estimate of the IRR for Gull over the 20-year period after it entered the market.

[1193] Z Energy "Annual Report" (2019) at 81.

C239.3 An estimate of the IRR to investors in Z Energy from when it acquired Shell New Zealand to 2 August 2019.

C239.4 EVA.

C239.5 The New Empirical Industrial Organisation approach.

C240 We briefly discuss each in turn below.

Z Energy makes around twice the profit per litre of fuel than the listed Australian firms do

C241 The amount of net profit made per litre of fuel sold is a metric used by some competition authorities to assess profitability. For example, it was commonly used in Australia by the ACCC.[1194]

C242 We have compared the average net profit per litre of fuel sold for the three Australasian publicly listed fuel companies over each companies' last three reported financial years. The three companies are as follows.

C242.1 Z Energy – NZ's largest fuel firm with annual sales of around 4 billion litres.

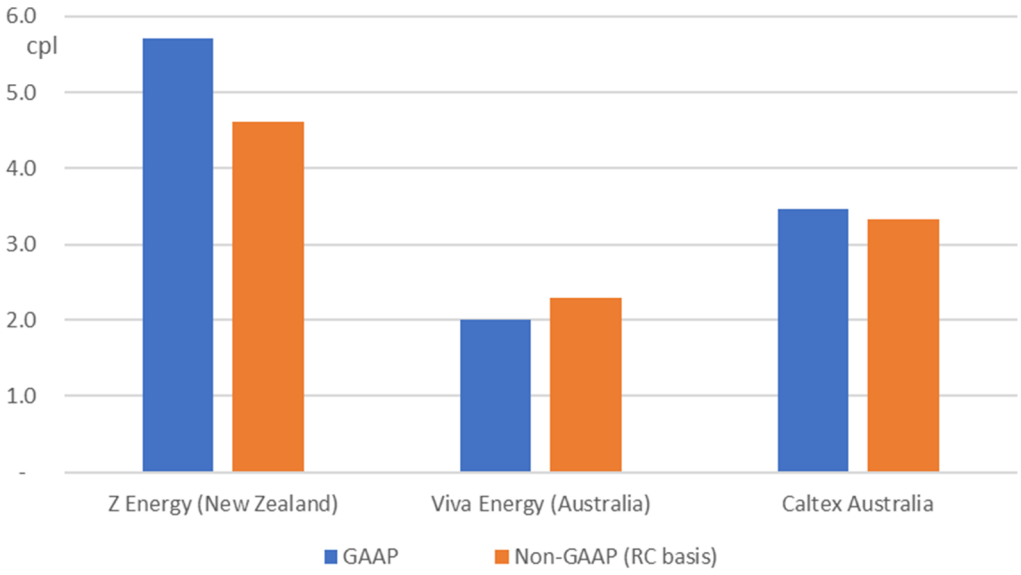
C242.2 Caltex Australia – with annual sales of around 20 billion litres of fuel.

C242.3 Viva Energy (ex-Shell Australia) – with annual sales of around 14 billion litres.

C243 All three companies report their profits on both a Generally Accepted Accounting Principles (GAAP) basis, and an alternative non-GAAP basis (which values inventory on a replacement cost basis, rather than a historic cost basis). In Figure C11 we show the profit reported by the three companies on a cents per litre basis using both measures of net profit.

[1194] See, for example, Australian Competition and Consumer Commission "Monitoring of the Australian petroleum industry" (December 2014), especially Chapter 12 Financial performance by sector at 127-156.

Figure C11 Three-year average of reported net profit per litre for three Australasian listed fuel firms (all in New Zealand currency, last three financial years)



Source: Commerce Commission analysis of Z Energy, Viva Energy, and Caltex Australia public documents.[1195]

C244 Figure C11 suggests Z Energy has made on average approximately twice as much profit per litre of fuel sold than the two Australian fuel companies (Caltex Australia and Viva) have made over the last three financial years.

C245 In our draft report we noted that subject to comments from submitters on the appropriateness of this measure, we could extend this analysis in our final report to other New Zealand fuel firms for which we have the necessary information.

C246 Z Energy submitted that this analysis of profits per litre was not directly comparable, and that the firms have different operating models.[1196] It considered that this analysis should not be used to support preliminary conclusions. We acknowledge there may be differences in the operating models of the business and note that Z Energy reported a lower profit per litre in its most recent interim result.[1197]

1195 See Z Energy "Annual Report" (2019) at 11; Z Energy "Annual Report" (2017) at 10; Viva Energy "Annual Report" (2018) at 3 and 11; Viva Energy "Analyst Management Presentation" (22 Nov 2018) at 9 and 13; Caltex Australia Limited "Annual Report" (2018) at 10-11 and 41 and Caltex Australia Limited "Annual Report" (2017) at 4 and 41.

1196 Z Energy "Submission on the Commerce Commission's Market Study into the Retail Fuel Sector Draft Report" at 18.

1197 Z Energy "2020 Interim Results Presentation for the six months ended 30 September 2019" (31 October 2019) at 16.

C247 Consistent with our comment in the draft report, we continue to place little weight on this analysis since it reflects only one New Zealand firm, and only three firms in total. We do not consider that Z Energy's submission is a reason to exclude the analysis entirely from this report, but neither do we extend this analysis to more firms.

C248 The higher level of average profit per litre reported by Z Energy is consistent with other information in this report tending to indicate strong profitability in the New Zealand fuel sector.

An estimate of IRR for Gull since its entry in 1998?

C249 We considered seeking to estimate an IRR for Gull over its business life from entry in 1998 until it was acquired by Caltex in 2017. This had appeal for several reasons.

C249.1 Gull was a new entrant in 1998 and had to incur considerable start-up costs to establish its business.

C249.2 Gull's business predominantly serves the retail fuel market, so its focus is consistent with our terms of reference, and it has maintained that focus through an extended period of time encompassing a range of trading conditions.

C249.3 As a new entrant in 1998, Gull's costs of entry could potentially be reliably determined, and its closing value (in 2017) was clearly established by Caltex Australia's acquisition.

C249.4 As a result, an IRR analysis could potentially rely entirely on cash flow information, without the complications inherent when incorporating estimates of asset values into the analysis (a truncated IRR).

C249.5 In short, this approach appears largely free of the methodological issues which affect the other backward-looking measures we report in this study.

C250 At the time of the draft report, we had some but not all the information required to complete such an analysis.

C251 In the draft report we invited comments from submitters on whether we should try to undertake such an analysis for our final report (and whether other sources of information may be available).

C252 We received no submissions on this potential analysis and we have not gathered all the information required to complete this analysis or to infer its value from other available information.

An estimate of IRR for investors in Z Energy since 2010

C253 We estimated an IRR for the business acquired from Shell (and now known as Z Energy) over its life from entry in 2010 until 2 August 2019. We estimated:

C253.1 the return to equity holders (from the original equity investment[1198] which has generated a stream of dividends to shareholders[1199] and an increase in the equity market value of Z Energy as indicated by its share price at 2 August 2019); and

C253.2 a blended return to debt and equity holders (comprising both the returns to equity holders and the payments to providers of debt capital).[1200]

C254 The estimated IRR for equity investors since 2010 was almost 34% p.a., while the blended return to debt and equity holders since 2010 was around 23% p.a.[1201] Infratil and the Guardians of the New Zealand Superannuation Fund acquired the business at a discount to the fair value of the assets[1202] – but even if they had paid a price equivalent to the fair value of the assets, the returns would have been 29% p.a. and 21% p.a., respectively.[1203]

C255 By our calculations, total dividends paid from the ex-Shell business since it was acquired by Infratil and the Guardians of the New Zealand Superannuation Fund from Shell in 2010 total around $950 million (on a nominal basis) and:

C255.1 exceed the acquisition price of the Shell New Zealand business in 2010 of $891 million (on an enterprise value basis);[1204] and

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1198 The original equity investment of $420 million was made by Infratil and the Guardians of the Superannuation Fund into Aotea Energy Limited. Aotea Energy acquired Shell New Zealand Holding Company Limited (which it renamed Greenstone Energy Holdings Limited) which owned the Shell New Zealand business- see Aotea Energy Limited "Annual Report" (2011) at note 4. After corporate restructuring, Infratil and the Guardians of the Superannuation Fund ultimately had 40% of the shares in shares in Z Energy in the August 2013 initial public offering. The other 60% of Z Energy shares were bought by investors who participated in the initial public offering – see Z Energy "Prospectus & Investment Statement" (25 Jul 2013) at 9.

1199 Initially dividends were paid by Z Energy via Aotea Energy and now directly by Z Energy to its wide base of shareholders.

1200 Again, initially from Aotea Energy and then from Z Energy.

1201 Significant intercompany balances owed to and owed by Z Energy were settled around the time of the initial public offer – see Z Energy "Investment Statement and Prospectus" (25 July 2013) at 9. Full details of those arrangements are not in the public domain and, depending on the precise details of those arrangements, our estimate of the returns to Z Energy's investors may be understated.

1202 Aotea Energy Limited "Annual Report" (2011) at note 4.

1203 And assuming additional equity was contributed to fund the greater price.

1204 Aotea Energy Limited "Annual Report" (2011) at note 4.

C255.2 are over double the equity investment of $420 million made to acquire the Shell New Zealand business in 2010.[1205]

C256 Z Energy submitted that it "does not consider that it is appropriate to consider IRR over the period [from 2010] given the change between public and private ownership" and "in a private company, the quantum of leverage is typically larger than in a listed context".[1206]

C257 This submission appears to overlook that, in our draft report, we estimated a blended return of 23% p.a. since 2010 which captured both debt and equity returns.[1207] The level of return for investors in Z Energy over the period is over twice our estimate of WACC.

C258 These estimates are consistent with our findings of excess returns in the New Zealand fuel sector.

Economic Value Added (EVA)

C259 Ireland, Wallace and Associates (IWA) submitted that an EVA approach should be used instead of ROCE, as this would explicitly account for the cost of capital. The Major Electricity Users Group (MEUG) made the same point.[1208]

C260 An EVA approach has some advantages.

C260.1 It explicitly incorporates the cost of capital into the analysis and quantifies the profits made in excess of that cost of capital. (In our analysis of ROACE for New Zealand retail fuel firms, we looked at the extent to which the returns made by seven New Zealand fuel firms exceeded a normal level. Our approach therefore is conceptually the same as that proposed by IWA.)

C260.2 The excess profits can be summed to measure the excess returns over time. This is consistent with a focus on assessing profitability over the long-term.

[1205] The balance of the $891 million purchase price of the business was debt funded – see Aotea Energy Limited "Annual Report" (2011) at note 4.

[1206] Z Energy "Submission on the Commerce Commission's Market Study Into the retail Fuel Sector Draft Report" at [74].

[1207] Z Energy's estimates of the blended return are 20% (at [76]), which is similar but lower than our estimate (23%).

[1208] IWA "Market study into the retail fuel sector: Invitation to comment on preliminary issues Commerce Commission New Zealand – A submission on Question 9: Trends in profits" (21 February 2019) at 5 and 8 and Major Electricity Users' Group "Submission on Market Study into the Retail Fuel Market" (21 February 2019).

C261 On the other hand, EVA looks at historic profits (ie, it is backward-looking), is based on historic costs, and is subject to the same limitations as our ROACE analysis in terms of separating retail fuel activities from other activities.

C262 Our terms of reference require us to look at whether there are factors affecting competition and we have used profitability analysis to provide some insights into that question. The EVA approach, which equates invested capital to the cash outlaid, has limitations (unless adjustments are made) since, for example, it includes all contracts acquired at market value without considering whether some of these are the capitalisation of expected excess returns due to market power. (As discussed above from paragraphs C107).

C263 IWA's approach to EVA is similar to the approach we take in Part 4 profit assessments, albeit in that context we do not simply adopt the values reported in regulated firms' accounts. There are extensive rules around the valuation of assets set out in input methodologies.

C264 IWA included an example of EVA analysis using publicly available data for BP, Mobil, and Z Energy.[1209] That analysis found a material level of excess profits (of $469 million in the latest year (2017)) and the tables showed an increasing trend in excess returns being earned by the three companies. IWA did not make adjustments to the value of acquired contracts.

C265 IWA's analysis points to similar conclusions as the analysis reported in this study, namely of excess returns being made in the New Zealand fuel industry in recent years.

Submitters' views on EVA

C266 In a submission on our draft report, IWA submitted that an EVA approach, coupled with information on a company's market valuations firm, could be used to infer whether a firm's EVA was likely to grow or decline in future. In particular, IWA submitted that the market value of a firm could be allocated between capital, the present value of current EVA (assuming it continues in future at current levels) and a balance which represents the markets' expectation of a future change in excess profits ("future growth value"). In its submission on the draft report IWA included an analysis of this for Z Energy between 2013 and 2019. That showed Z Energy had positive future growth values from 2014 to 2016, but it had turned very sharply negative in 2017 and remained negative in 2018 and 2019.[1210] Market value added – the returns in excess of the value of capital used – remains elevated at an estimated $1.7 billion in 2019 (down from $2.7 billion in 2016).

[1209] IWA "Market study into the retail fuel sector: Invitation to comment on preliminary issues Commerce Commission New Zealand – A submission on Question 9: Trends in profits" (21 February 2019) at 7-8.

[1210] IWA "Market study into the retail fuel sector: Draft Report" (20 August 2019) at 34-42 and Table B.

C267 At the consultation conference we encouraged parties to comment on IWA's EVA analysis. MEUG and Z Energy commented on EVA in post-conference submissions.

C268 MEUG supported the use of EVA which it considers is conceptually robust and transparent. In MEUG's view, without EVA analysis the market study results will depend on a range of measures of profitability that have similar shortcomings and therefore the results will be unclear or even misleading.[1211]

C269 In contrast, Z Energy considered there was little difference between EVA and a proper assessment of ROACE and submitted there was little value in replicating ROACE analysis in a different arrangement for EVA.[1212] Z Energy considered that EVA analysis would be affected by similar issues around the choice of inputs, quality of data and comparability of data as for ROACE.[1213] Z Energy did not comment in detail on specific aspects of the IWA analysis.

Our conclusion on EVA

C270 We remain of the view that, despite not being a measure of performance that is generally used by fuel firms, EVA is a potentially useful measure of profitability. The analysis undertaken by Ireland, Wallace & Associates supports our conclusion that the NZ fuel sector has been achieving excess returns for a number of years. For this market study we have not sought to re-perform IWA's analysis, nor to make adjustments discussed above, nor sought to extend it to a wider range of firms. In particular, we have not sought to extend it to the other fuel retailers for which we have estimated ROACE, including in particular the smaller firms as we do not consider EVA would change the conclusions we reached on these firms' profitability using the other measures (including ROACE).

C271 IWA's analysis of future growth value is a useful analytical approach to testing the persistence of excess returns. We note:

C271.1 While future growth value is negative in 2017-2019, expected returns remain positive. That is, market value added for Z Energy remains positive in all years of IWA's analysis, exceeding $1 billion (in capitalised terms) in each year.[1214]

1211 MEUG "Retail fuel market study – post conference submission on draft report" (11 October 2019) at 3.

1212 Z Energy "Second Submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft report" (October 2019) at [57].

1213 Ibid, at [58].

1214 See IWA "Market study into the retail fuel sector: Draft Report" (20 August 2019) at Table B.

C271.2 Changes in the value of Z Energy's equity directly affect the estimate of future growth value. There is evidence that uncertainty over potential regulation of the sector is negatively affecting the value of Z Energy and this may be material. For example, Z Energy's CFO estimated the impact at [ ].[1215] Absent the impact of this uncertainty on share values, Z's future growth value would be [ ] in IWA's analysis for 2019.
[ ]

We did not use the New Empirical Industrial Organisation approach identified by NZIER

C272 The 2017 Fuel Study, commissioned by MBIE and undertaken by NZIER and others, proposed adopting the New Empirical Industrial Organisation (NEIO) approach to assess the level of competition in the market.[1216]

C273 In our working paper we commented that we were not proposing to adopt the NEIO approach in this study but welcomed comments on this point.[1217] In a submission to us, Z Energy agreed we should not use this approach in this study.[1218] We have not used this approach in this report for the reasons set out in the working paper.

Contrary evidence – the profitability of dealer-owned sites?

C274 The analysis of profitability in this report has focused on the larger market participants, namely the majors and retail focused resellers.

C275 However, we acknowledge that not all market participants in the retail fuel industry are as profitable as this analysis of the profitability of the majors and the resellers seems to indicate. In particular, we refer to the large number of dealer-owned and operated service stations active in the retail market.

C276 We have not sought detailed information from a large cross-section of dealers on the profitability of their sites, or used other means to assess their profitability, as we considered this was impractical.

C276.1 There are hundreds of dealer-owned stations.

C276.2 We were conscious of costs imposed on small businesses from requesting detailed financial information from them across many years.

1215 Transcript of meeting with Z Energy on (10 September 2019) at 9 (lines 29-32).

1216 NZIER, Grant Thornton and Cognitus Economic Insight "Fuel Market Financial Performance Study" (29 May 2017) at Section 6.3.

1217 Commerce Commission "Market Study into the Retail Fuel Sector - Working paper on assessing profitability" (18 April 2019) at [95] - [96].

1218 Z Energy "Comments on 18 April Working Papers (7 May 2019) at [18.3].

C276.3 We were conscious too of the time and effort it would have taken us to obtain and analyse information from a large number of dealers.

C276.4 MTA noted in its submission, a number of owner-operated businesses are lowly capitalised and owner-operator labour may be a significant part of the investment.[1219] This raises additional measurement issues.

C277 Instead, we have spoken to a number of service station owner-operators, including a number who had been in the industry for decades and who owned multiple sites. The sites they owned were supplied fuel by a variety of firms.

C278 These were valuable conversations which, in relation to profitability, provided us with anecdotal examples of:

C278.1 their perspective of how the industry has changed over time;

C278.2 the drivers and sources of profit for their retail sites;

C278.3 increases in their cost base, including in minimum wages, rent, and other operational challenges, including drive-offs;

C278.4 reductions in volumes over times; and

C278.5 consequential reductions in profits.

C279 The MTA has also shared results of its survey of service station owners with us. Among other things, the responses to that survey suggest sales volumes achieved by dealer-owned sites are under pressure or declining.[1220]

C280 It is our initial view that the low and inconsistent profitability of many dealer sites seems attributable to two factors:

C280.1 the wholesale price dealers pay their suppliers for fuel; and

C280.2 the impact of new competing sites particularly if they are unmanned and undercut prices. New Gull, NPD and Waitomo sites were specifically identified by interviewees in this regard.

C281 It was evident from these sources that stations can be, and some were, significantly impacted by the opening of new unmanned sites.[1221]

[1219] MTA "Comments on Working Papers" (7 May 2019) at 3.

[1220] This includes the volumes reported by respondents (which may be affected by differences in response rates between surveys) and reductions in the number of respondents experiencing volume increases and an increase in the number experiencing decreases – see MTA "Survey Results Service Station" (September 2018) at 13-14.

C281.1 Some dealer-owned stations were, at times, losing money on their fuel sales and reliant on shop income for profitability.

C281.2 We heard of situations where a dealer's price for buying fuel from their supplier was higher than the retail price a competitor was offering for fuel (the competitor was typically an unmanned site).

C282 While it is clear that many dealers are operating under difficult financial conditions, this evidence does not change our conclusion that the industry as a whole is enjoying excess levels of profitability.

C283 It is our view that the difficulties being faced by some dealers in respect of some sites seem, in large part, a function of how the total margin was split between the wholesale and retail level. Dealers had unequal bargaining power when negotiating their wholesale price for buying fuel and the high margins in the industry are largely being captured by majors and distributors.[1222]

C284 We note some majors and distributors do offer support to their dealer-owned stations when dealer's profitability is depressed, including:

C284.1 placing the site on agency;[1223]

C284.2 increasing the level of commission or other payments made by the major for services performed by the dealer, for example, higher pumping fees when a site is on agency;[1224]

C284.3 reducing the wholesale price at which fuel is sold to dealers; and

C284.4 including in supply contracts the supplier's intention to adjust the wholesale price to attempt to assure the retailer of an agreed target margin (which was included in appendices to the contract).[1225]

1221 [ ]; [ ]; [ ]; and [ ]

1222 [ ]; [ ]; and [ ]

1223 When a dealer-owned site goes into agency the major keeps ownership of the fuel until sold to the motorist and sets the pump prices. The site owner is paid a fee in cents per litre for providing services, including forecourt services – see [ ]

1224 [ ]

1225 [ ]

C285 The fact that some dealers are being supported in this way indicates that sufficient margin is being made at the wholesale level (by the dealer's fuel supplier) to support some dealers, and that the fuel supplier may prefer to assist the dealer rather than risk losing the site and the dealer's business, and therefore the wholesale margin the fuel supplier is making.

C286 Measures to temporarily reallocate some of the wholesale margin to support a dealer to cope with the lower retail margin and/or volumes being experienced, are consistent with our view that the overall industry is earning excess returns.

Submitters' views on dealer profitability

C287 Very few submitters commented on our analysis of the profitability of dealers. One that did was MTA, in both its submission on the draft and in its post-conference submission. MTA supported our findings.

C288 In its submission on the draft report MTA noted the difficulty in assessing the profitability of independent retailers due to, among other things, firms' reluctance to disclose detail on profitability, the inclusion of other activities, and the other factors identified previously by the MTA noted above.[1226]

C289 MTA's post-conference submission noted that it had carried out its own limited analysis of profitability at the independent retailer level, and concluded that, in conjunction with anecdotal accounts, that "these businesses are not achieving anything like the profits attributed to the fuel firms and in many cases [are] finding it difficult to make ends meet".[1227]

Summary of conclusions on backward-looking assessment of profitability

C290 Based on our analysis to date, the various backward-looking measures suggest the New Zealand fuel industry has enjoyed excess returns since the early years of this decade.

C290.1 The estimated importer margins which were low in the decade prior to 2010 have grown strongly since, as have the margins reported publicly by Z Energy. Reported margins have been largely flat since 2016 but remain at levels well above those seen early this decade and in the prior decade.

[1226] MTA "Market Study into the Retail Fuel Sector – Draft Report" (13 September 2019) at [7.2.5-7.2.6].

[1227] MTA "Further comment to Commerce Commission on market Study into the Retail Fuel Sector" (11 October 2019) at [8.2.1].

C290.2 We have estimated ROACE for the New Zealand fuel firms who have a significant retail focused fuel business. However, some of these businesses, especially the majors have a broader range of activities than just retail fuel. Our current view (as explained in Attachment A) is that these other activities are likely subject to more effective competition than the retail fuel market, so we consider they are unlikely to explain the level of excess returns in the New Zealand fuel sector.

C290.3 Our estimate of the ROACE for the New Zealand fuel firms we have studied is consistently above our estimate of a normal return, is above that of the international peer companies, and is increasing.

C290.4 High levels of ROACE appear to be being enjoyed by a number of companies in the industry – not just the majors.

C290.5 Indeed, a number of smaller firms which actively participate in the retail fuel market, and for whom the retail fuel market is a proportionally larger part of their total business than it is of the majors' business, appear to be earning substantially higher returns on capital employed than the majors.

C290.6 Most significantly, these smaller firms which have significantly expanded their market share in recent years, by incurring significant capital costs to construct new retail sites with new pumps and tanks, have been achieving average returns on capital exceeding 30% p.a. while doing so. Gull, which appears to be the marginal supplier, is achieving particularly high returns on capital employed.

C290.7 Our current view is that evidence of excess returns by the suppliers who in recent years have been the main source of increased supply of fuel to the retail market, indicates that the retail fuel market is not functioning competitively. Demand is growing slowly, and we have seen little evidence that suggests New Zealand requires more fuel sites.

C290.8 Notwithstanding the excess returns on capital being achieved by these smaller market participants in recent years, the bulk of the excess returns (expressed in terms of dollars and as implied by the ROACE metric) appears to be accruing to the majors. This reflects the considerably larger size of their businesses, even if their reported returns on capital are lower than those for the smaller firms.

C290.9 Our view is that the majors and these smaller firms are all benefitting from above competitive levels of retail fuel prices. The cost of this is borne by consumers.

C290.10 Our analysis of returns on capital is based on the asset values reported by companies, which are often based on historic costs. With the exception of Z Energy, there is insufficient information to reliably adjust our estimates for changes in asset values over time and our estimates therefore exclude holding gains and losses. As a result, our estimates of ROACE generally underestimate firms' returns.

C290.11 Z Energy's net profit per litre of fuel sold across its total business seems to be around double that of the two large Australian publicly listed fuel firms.

C290.12 Over the period to 2019, the original equity investment in 2010 in what is now Z Energy has earned an IRR of around 34% per annum.

C290.13 On the other hand, we note that some dealer-owned sites are under financial pressure. In our view, this seems to reflect the high wholesale price they pay for fuel and, for some, the impact of a nearby unmanned site which has low costs to serve and often can offer more competitive retail prices for petrol and diesel.

Attachment D Profitability Summary - The persistence of excess returns

Introduction to this attachment

D1 This attachment seeks to answer the question are the level of excess returns persistent or temporary?

The potential for excess returns is an essential aspect of a well-functioning market

D2 Excess returns do not necessarily indicate there is a competition problem. Indeed, the potential for excess returns is desirable for several reasons.

D2.1 The potential for excess returns is an incentive for firms to lower costs and to innovate.

D2.2 Excess returns are the reward to firms which can do this efficiently.

D2.3 The potential for excess returns is necessary to incentivise firms to undertake risky investments which have considerable potential, but which ultimately may prove unsuccessful with the firm losing most or all of its investment. The riskiness of such investments increases when there is, for example:

D2.3.1 significant demand risk;

D2.3.2 irreversible and non-scalable investment; and

D2.3.3 a long period of below normal returns (for example, start-up losses) before any positive returns can be generated.

D2.4 Excess levels of profitability are also a signal for new entry or expansion. Entry or expansion will increase supply and, when competition is effective, should lead to a subsequent fall in prices and profitability. If competition is working well, and/or if new players can enter the market, then excess returns are likely to be temporary.

D3 However, where the excess levels of profitability are persistent this suggests there is an impediment to effective competition.

Are there features of the fuel market that explain excess returns?

D4 We noted above some of the reasons why firms may earn excess levels of return. It is our current view that none of those features are present in the New Zealand fuel market to the extent that they can satisfactorily explain the excess returns described in Attachment C.

D4.1 The excess returns may not be an effective signal for resource allocation. Retail demand for fuel is relatively static (and many participants expect a future decline in petrol at least, and an eventual sunset), yet excess returns are leading to significant growth in new retail sites.

D4.2 Excess returns appear to be the norm for multiple market participants in the fuel market, rather than acting as a reward for an individual company's (or a small number of companies) outperformance in terms of cost or innovation.

D4.3 While there is innovation in the sector (for example, pay-at-pump offers, phone apps, improved food and coffee offers, and the rollout of unmanned fuel sites), most of these are quickly imitated by other market participants and none of these factors seem to be substantial enough to explain the level of excess returns that continue to be earned.

D4.4 Except for TOSL's entry and large terminal investment, it does not appear that any of the existing firms are undertaking large-scale, risky investment, or investing in projects with highly uncertain demand.

D4.5 Rather most investment is small, scalable and achieves rapid payback. For example, the investment in new retail sites. It is not apparent why such investment requires returns above a normal level or would earn such excess returns in a workably competitive market.

D5 Further, our view is that it is difficult to attribute the excess returns to lower costs to serve, or customers being willing to pay more, given:

D5.1 the maturity of, and low growth in, the New Zealand fuel market;

D5.2 the homogeneity of the product offered;

D5.3 consumers see fuel as largely an essential purchase (and express concerns over high fuel prices); and

D5.4 the excess returns are being enjoyed across most of the market participants in the retail fuel industry (with the exception of some dealers).

There are several factors relevant to identifying persistence of excess returns

D6 There is no bright line threshold for concluding whether excess returns are persistent. Rather, it is a matter of judgement, having regard to the available evidence.

D7 We see the following factors as relevant to assessing whether excess returns are persistent:

D7.1 the extent to which returns exceed normal levels (that is, how significant are the excess returns);

D7.2 the length of time over which returns have exceeded normal levels; and

D7.3 any reliable forward-looking information which indicate that excess returns are or are not likely to continue.

D8 We consider each of these factors in turn.

The extent to which returns exceeds a normal competitive level

D9 Excess returns are a signal for new investment into a sector and the greater the returns, then the stronger is the signal for new investment. An industry is more likely to attract new investment (entry and expansion) when returns are significantly above a normal level than when returns are only slightly above it.

Our view is that returns in the fuel sector appear to be significantly above competitive levels

D10 The assessments of profitability discussed in Attachment C indicated that returns in the fuel sector materially exceed a normal level of return.

D10.1 The expected returns on new investment, as measured by the IRR forecast in new business cases for a range of firms, were approximately double the estimate of WACC for the 2014-2019 period.

D10.2 Expected payback periods are remarkably short relative to the service life of the assets.

D10.3 Firms' hurdle rates for new investment are set at levels well above WACC, for no apparent reason.

D10.4 For the three New Zealand fuel firms where we have recent, reliable evidence of their market value, the implied market value of their fuel business appears to be 1.5-2 times the estimated current cost of replacing each firm's assets. In a competitive market, we would expect this ratio to be much closer to a value of 1, and tending towards one.

D10.5 Our estimate of the average ROACE for the fuel firms most involved in the retail sector is:

D10.5.1 above the top of our estimated WACC range; and

D10.5.2 above the levels being achieved by comparable fuel firms internationally.

D10.6 Further, the smaller firms which have led recent growth in the retail fuel market, through a heavy investment programme, show the greatest returns on capital.

D10.7 Z Energy's profit per litre sold is around double that of the Australian listed fuel firms and it has achieved a composite return for its debt and equity holders of 23% p.a. since 2010.

Many participants appear to be earning higher than competitive levels of return

D11 It was notable across the variety of approaches we used that excess returns appear to be being made by many firms, and by the industry as a whole.

D11.1 New retail site openings were expected to earn well above WACC-level returns for many participants, including for manned and unmanned sites.

D11.2 Industry-wide ROCE had risen and is at levels above the returns being made by international peers, and above our estimate of normal returns. In particular, the smaller firms which have led recent growth in retail fuel investment, were achieving the highest levels of excess returns.

D11.3 Tobin's q estimates, albeit for only a few firms, indicate that investors expect ongoing returns well in excess of the levels that should attract either new entrants or expansion given the current cost to enter or expand.

The length of time over which excess returns are being earned

D12 The length of time over which excess returns are being earned is a key indicator of the persistence of excess returns. Typically, there will be a lag before new investment occurs in response to the signal from excess returns because, for example, the firm may need time to prepare plans, raise capital, and build assets. As a result, returns to the incumbents may remain above normal levels for a period, until sufficient new investment occurs and supply increases.

Returns have been elevated to levels which were potentially attractive to new entrants since 2012

D13 Internal commentary from some firms indicates that they were concerned between 2012 - 2014 that margins were already at levels which were sufficient to attract potential new entrants. Since that time, margins and returns on capital have increased further.

The lead times for new investment typically range from one to three years

D14 The length of time margins and returns have been elevated ought to have been sufficient for new entry to have occurred since lead times for new investment in the retail fuel sector are considerably shorter than this.

D15 The lead times for new investment typically range from one to three years.

D15.1 TOSL expects to commission its new terminal in 2020, several years after detailed planning commenced.[1228]

D15.2 Resource consents for new stations can take six months to two years, depending on the site and which council is granting consent.[1229]

To date, entry has been concentrated in new retail sites and the impact from that entry on industry margins appears to have been limited

D16 To date only TOSL has entered at the importer level and the success of this entry has not yet been tested.

D17 There has been additional entry at the retail level, through a number of new sites and Costco has announced plans to open a first site which will include petrol pumps. We would expect the opening of additional sites to take volume from existing sites, and we discuss below (from paragraph D33) that margins appear to have peaked. But we also note:

D17.1 as discussed in this attachment and in Chapter 7, the new retail sites have yet to result in industry-wide returns tending downwards towards the sort of returns that would be expected in a workably competitive market;

D17.2 we consider the competition issues are more attributable to the absence of an effective wholesale market than the downstream retail market (see Chapters 4 to 7); and

D17.3 entry and competition at the wholesale level is more important to delivering long-term benefits to consumers.

Expectations around future margins and returns remain high

D18 Our current view is that there is a range of forward-looking information which indicates that the fuel industry is expected to continue to earn similar levels of profit in the near future as it has in the recent past. This information comes from a range of parties, including the companies themselves, and research analysts who follow Z Energy.

Company's own forecasts of future returns and future margins

D19 A number of companies in the fuel sector have stated their view that the sector is competitive and/or that competition is intensifying.

[1228] Transcript of phone call meeting with TOSL (2 April 2019) at 4 (lines 31-40) and Transcript of meeting with TOSL (21 June 2019) at 3 (lines 46-50).

[1229] See, for example, Transcript of meeting with NPD (14 May 2019) at 10-11.

D19.1 Writing in the annual report Z Energy's chair comments that "… [Z's] operating environment continues to be increasingly competitive … Z believes the retail fuel industry in New Zealand is more competitive than ever"[1230]

D19.2 Several companies submitted on the intensity of competition in their submissions. For example, Mobil submitted that "In Mobil's experience, New Zealand continues to be a very tough, competitive, dynamic petroleum market".[1231]

D19.3 BP highlights the investment by market participants (for example, "both integrated suppliers and new entrants investing in terminal capacity and a range of providers investing in new retail sites") and "substantial innovation and provision of services reflecting consumer demands (such as new apps and "fast lane" services, continued development of loyalty reward offers and improved convenience offers for customers)".[1232]

D20 We acknowledge:

D20.1 that many firms consider the retail fuel market is competitive; and

D20.2 that there has been a considerable investment in the retail market, including significant investment in new sites and in technology to bring additional offers to consumers.

D21 Notwithstanding this investment and the views expressed above around competitive intensity, documents supplied to us during our study suggest that firms do not expect a decline in profitability in the near term. On the contrary, we observed commentary from some firms in internal company documents that:

D21.1 the total level of industry margin will be maintained;

D21.2 margins are expected to remain at current levels in the years ahead;

D21.3 firms expect to grow their profits;

D21.4 firms continue to expect to make returns well above WACC on new investment; but

D21.5 we note that there are references to competitors' actions having an impact on retail fuel margins.

1230 Z Energy "Annual Report" (2019) at 14.

1231 Mobil "Submission to the Commerce Commission New Zealand in response to the Market Study into the Retail Fuel Sector Working Paper – Focus Areas" (7 May 2019) at [2] and [22].

1232 BP "Feedback on Working paper – Focus Areas" (14 May 2019) at [1.6].

D22 One firm expects the total level of industry margins to remain around current levels and to continue to be earned mainly from retail markets.[1233]

> The New Zealand margin pool will overall remain flattish. Demand for Diesel compensates the decrease in motor spirits,
>
> The majority of the margin pool is in B2C

D23 Some firms expect retail margins to remain at around current levels for the next few years.

D23.1 One firm expects that "retail fuel margins will remain strong" with retail fuel margins forecast at [ ] cents per litre (cpl) in 2023 versus [ ] cpl in 2018 (and [ ] cpl in 2015).[1234] In a later document, the same firm notes "B2C Retail unit margins will come off historic highs but remain steady, and B2B margins will remain at unchanged levels".[1235]

D23.2 Another firm considers margins are likely to be sustainable.[1236]

D23.3 [
].[1237]

D24 Some firms expect to grow their profits.

D24.1 One large New Zealand firm expects underlying earnings growth in FY2019 and FY2020.[1238]

D24.2 In a June 2019 profit guidance announcement Caltex Australia stated that "Gull volumes and earnings in New Zealand remain strong and are growing ahead of the investment case."[1239]

D25 Some firms continue to expect returns well above normal levels on new investment.

D25.1 The IRRs forecast from new site openings remain well above WACC for business cases prepared in 2018 (and so far in 2019).

1233 [ ]

1234 [ ]

1235 [ ]

1236 [ ]

1237 [ ]

1238 [ ]

1239 Caltex Australia "Caltex Releases Unaudited Profit Guidance for half-year ended 30 June 2019" (20 June 2019) at 2.

D25.2 Payback periods remain short.

D25.3 In its most recent annual report Z Energy stated that it is targeting a five-year discounted payback on new investment in its core fuel business (although some of this investment relates to shorter-lived information technology projects).

D26 On the other hand, we acknowledge too that fuel firms consider that competitor actions, especially from new site openings, are having an impact on retail fuel unit margins.

D26.1 [ ][1240]

D26.2 Z Energy reports a higher proportion (over 90%) of its sales volumes are now priced at levels below Z Energy's desired MPP.[1241] It attributes this to increased competition from existing or NTI sites.

D27 On balance, these statements and expectations indicate that market participants expect retail margins to be somewhat lower in the near term than in recent years but are not expecting a material downturn in profitability. This implies they do not expect profitability to tend clearly downwards towards the normal level of returns consistent with effective competition.

Research analyst projections of Z Energy's future earnings

D28 Z Energy is listed on the share market and a number of research analysts employed by investment banks make forecasts of its expected financial performance including revenues, EBITDA, operating earnings and net income. We reported the profit margins implied by those analysts' consensus forecasts, relative to the historic margins reported by Z Energy, in Figure D1 of our draft report.

D29 Figure D1 in our draft report showed that, historically, Z Energy's margins are somewhat volatile reflecting the impact of changes in global commodity prices, the acquisition of the lower margin earning Caltex business (which primarily sells fuel to resellers rather than retailing fuel itself), and production outages affecting the refining margin.

D30 We have updated that Figure for subsequent changes in analyst forecasts. The updated Figure D1 also shows that the research analysts are not forecasting any

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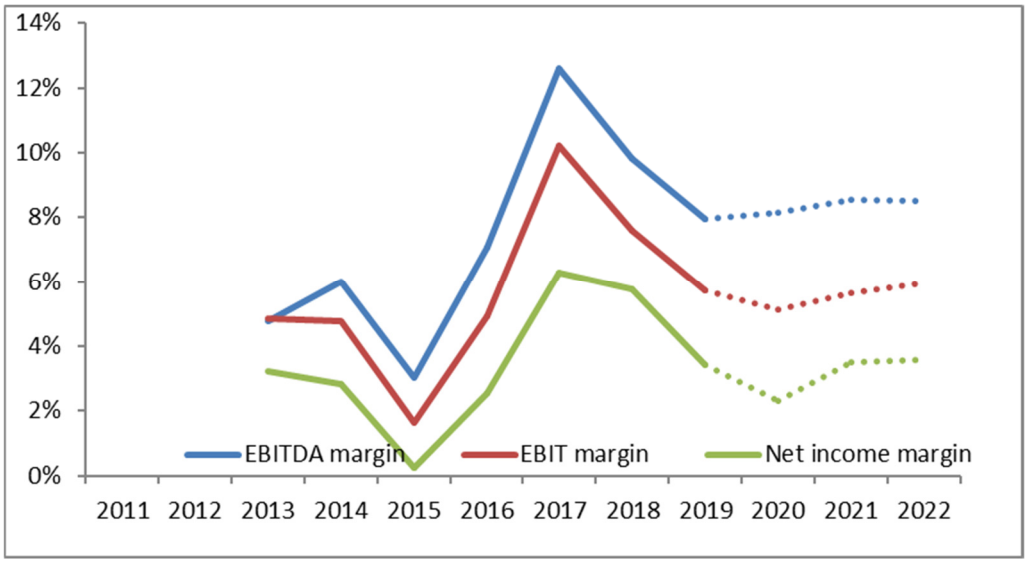
1240 [ ]

1241 Z Energy "2020 Interim Results Presentation for the six months ended 30 September 2019" (31 October 2019) at 8.

reduction in Z Energy's profit margins over the period to 2022.[1242] The solid line shows actual results while forecasts are indicated by dotted lines.

Figure D1 Profit margins for Z Energy implied in analyst forecasts



Source: Commerce Commission analysis of data reported by Z Energy and marketscreener.com as at 4 November 2019.

D31 We acknowledge that these margins include non-fuel and refining margins but note that the fuel margin comprises around 80% of Z Energy's total gross margins.

D32 Recent research from Macquarie Bank separately forecasts the fuel margin for Z Energy. That forecast does now show a decline in fuel margins. This is a change from the time of the draft where we observed no material decline in forecast fuel margin.[1243]

D32.1 Macquarie Bank forecast a fuel margin for Z Energy's 2021 financial year of $650 million (down from $692 million at the time of the draft).

D32.2 This represents a 5% decline over the fuel margin in FY2018, and a 7% decline from FY2019.

1242 See MarketScreener "Z Energy Ltd (ZEL)" <https://www.marketscreener.com/Z-ENERGY-LTD-14473098/financials/>. (Viewed on 4 November 2019).

1243 Macquarie Bank "Z Energy Increased dividend certainty" (31 October 2019) at 14. The report notes that "[t]he financial outcomes (risk to retail fuel margins) are uncertain and it will be some time before they become any clearer, made more uncertain by the fact that it will be the Government's (MBIE) response to the final ComCom report in December that will ultimately determine outcomes" (at 1).

Growth in margins and profits appear to have levelled off and may have peaked

D33 A range of metrics appear to show that growth in margins and profits has levelled off and may have peaked.

D33.1 Net importer fuel margin (see Figure C2 and Figure C3) shows a levelling off of growth.

D33.2 Annual estimates of weighted average ROACE graph (see Figure C10) show a lower level of average ROACE in 2018 than in 2017 and Z Energy submitted that its 2019 ROACE will be lower still.[1244]

D33.3 Figure D1 shows the margins forecast to be earned by Z Energy in future are lower than those experienced Energy's FY2016 and FY2017 (but are above the level in 2013-2015).

D34 In its recent interim results to September 2019 Z Energy also highlighted lower margins in its fuel business, and across the fuel industry generally.[1245] Z Energy highlighted that 90% of the deterioration in its forecast profit guidance was attributable to its performance in retail.

D35 The key question for investors is what will happen to margins and returns in future. It is difficult to forecast future margins and we have not sought to do so in this study. In its presentation on its interim results to 30 September 2019, Z Energy noted that it was "very difficult to accurately assess the margin outlook for Retail" when discussing its outlook for the second half of FY2019.[1246] In a response to a question from a research analyst, Z Energy's CEO declined to comment publicly on where he considered margins to be in the cycle.[1247]

D36 Equity research analysts have a range of views on whether the lower margins reflect a more competitive market.

D36.1 Deutsche Bank suggests industry margins are tracking toward mid-cycle margins due to heightening competition.[1248]

1244 Z Energy "2020 Interim Results Presentation For the six months ended 30 September 2019" (31 October 2019) at 16.

1245 Z Energy "2020 Interim Results Presentation For the six months ended 30 September 2019" (31 October 2019) <https://investors.z.co.nz/announcements/webcasts-presentations> at 17. On the webcast 5 cpl lower margin was identified as indicative of the decline in retail margins.

1246 Z Energy "2020 Interim Results Presentation For the six months ended 30 September 2019" (31 October 2019) at 17.

1247 Z Energy "2020 Interim Results Presentation For the six months ended 30 September 2019" (31 October 2019) <https://investors.z.co.nz/announcements/webcasts-presentations>.

1248 Deutsche Bank "Retail Rebalancing" (18 September 2019) at 1.

D36.2 On the other hand, Forsyth Barr asks "the key question for investors (and ZEL) is to what extent are lower retail margins the new normal (i.e. structural) vs. a short-term market aberration?".[1249] Forsyth Barr's answer is to "assume a mixture of both".

D36.3 Credit Suisse states that "Quantifying mid-cycle margins remains elusive – but current market conditions suggest that many participants regard current retail pricing as still attractive. Our valuation assumes a flat margin outlook after FY20, and a modest rate of decline in retail volumes. … At present, all we can observe is that current retail margins appear to be sufficiently high to attract further investment and volume growth by ZEL's competitors."[1250]

D36.4 UBS New Zealand asks "… why an 'unprecedented level of discounting' is happening now? We believe it may have to do with Caltex's switch in loyalty program which has resulted in a land grab for loyalty. If this is the case, the competitive threat may abate after consumers re-set their loyalty preferences…".[1251]

D37 In summary, although the growth in margins appears have levelled off and may have peaked, and Z Energy reported lower net profit, that information has not persuaded us that the industry's period of excess returns has now come to an end.

Is this evidence of the business cycle?

D38 Some submitters submitted that the NZ retail fuel sector is subject to a long business cycle and this is evidence of a competitive market. For example, BP submitted that:[1252]

> the retail fuel market is cyclical and can experience long periods of low margins. Z's profit downgrades referred to at 3.2 above is clear evidence of this. When the industry makes higher margins, this spurs entry and expansion. This is precisely what is being experienced currently. Gull and Waitomo's entry in to Wellington and announced entry into the South Island, the swift expansion by independent retailers and TOSL''s new terminal in Timaru are all entirely consistent with a well-functioning market where entry and expansion reduces margins to normal long-term levels.

D39 This submission was supported by, for example:

D39.1 Claims about the rate of site closures before 2010[1253]

1249 Forsyth Barr "Z Energy Pump Failure" (13 September 2019) at 1.

1250 Credit Suisse "Hot competition causes retail margins to wilt" (12 September 2019) at 3.

1251 UBS New Zealand "Downgrade déjà vu" (12 September 2019) at 1.

1252 BP "Submissions on the August 2019 Draft Report" (13 September 2019) at [3.5] – [3.6].

1253 Transcript of retail fuel study consultation conference - Day 1 (24 September 2019) at 65 (lines 16-19).

D39.2 Recent new retail site openings by independent operators.[1254]

D40 BP's business cycle hypothesis has been considered in Chapter 7 and rejected. We acknowledge that the margin charts indicate a cycle in fuel sector profitability. Since structural factors (e.g. retail entry/exit) cannot explain this cycle, firm conduct is the more likely explanation, and is consistent with the growth in average margins during the period Z was publishing its MPP.

D41 For these reasons, we are not convinced that an ill-defined business cycle will ensure that profit margins are returning to normal levels without intervention. On this point we note that while Z Energy has downgraded its forecasts in July 2019, Z Energy has also previously upgraded its forecasts. A profit downgrade is not evidence of a "long period of low returns" (in contrast to the quote from BP above).

D42 Finally, we note that under current settings there is a clear risk that competition could weaken. This is because the new retail sites which have opened are predominantly supplied with fuel by Mobil[1255] and are therefore potentially exposed to a change in strategy from Mobil (or a buyer of Mobil's NZ business) over wholesale pricing and access. Competition which depends on the individual strategy of one player may not endure over time.

Conclusions on the persistence of excess returns

D43 Based on our analysis in this study, we consider there is a wide range of evidence which consistently indicates excess returns in the fuel sector will persist over a lengthy period under current policy settings.

D43.1 The excess levels of return are being earned by many market participants in the industry, and they seem to have been above normal levels since at least 2012, when at least one firm considered they were already at a level that might attract new entry.

D43.2 Margins and returns have risen further since then.

D43.3 Firms' expected returns on new investment to support fuel retailing significantly exceed normal levels, despite the low industry demand growth.

D43.4 Returns on capital exceed our estimate of WACC for the industry and have been consistently above the returns on capital being achieved by international comparator firms since 2011.

[1254] BP "Submissions on the August 2019 Draft Report" (13 September 2019) at [3.18] – [3.19].

[1255] This is very evident in the graphs on new openings in the South and North Islands from 2014 to 2019 in BP's own submission – see BP "Submissions on the August 2019 Draft Report" (13 September 2019) at [3.5] – [3.6]. NPD, Waitomo, Allied and Gull (until January 2019) were all supplied with fuel by Mobil.

D43.5 Smaller fuel reseller-retailers, which have rapidly increased their share in recent years by investing heavily in new retail sites, appear to be earning the highest returns on capital (although their share of the industry profit pool remains small).

D44 We acknowledge there are indications that the growth in margins and profits has levelled off and may have peaked. However, comments on the outlook for profits in the retail fuel market from several sources, including the firms' own views, indicate that margins and returns are expected to remain at elevated levels for some time.

D45 We conclude that the New Zealand retail fuel sector industry seems to have earned significant excess returns over many years and, even if returns have peaked, significant excess returns may continue to be earned for many years under current policy settings. Persistent excess returns suggest there are impediments to effective competition.

Attachment E Cost pass-through rate

Introduction

E1 This attachment provides technical detail on the empirical analysis we undertook to assess the pass-through rate of replacement costs of fuel into retail fuel prices.

E2 The attachment begins with a summary of the results of our analysis. It then discusses:

E2.1 data used for econometric modelling and its cleaning and consolidation; and

E2.2 econometric analysis of cost pass-through into board prices.[1256]

Summary of results

E3 We have analysed the extent to which changes in the costs of refined fuel are associated with changes in retail fuel prices, using daily site-level board prices for the period January 2011 to February 2019. The cost of refined fuel is a key marginal cost component for all market participants. As such, we would expect to see the cost of refined fuel reflected in board prices.

E4 We refer to the relationship between these industry-wide input costs and board prices as the "pass-through rate". "Pass-through" describes how board prices change following a change in the cost of fuel. We use the daily Singapore spot market price (NZD) as our indicator of input cost and examine the extent to which changes in that variable show up in board prices, after controlling for other factors such as the location of the retail site (which affects the cost of its fuel through land transport costs).[1257]

E5 In a competitive fuel market we would not expect to observe any pass-through rates greater than 100% except in circumstances that do not apply in the case of retail fuel.

E6 We allowed for pass-through rates to differ across years and for cost changes to show up in prices immediately and with time lags of up to four weeks. Our analysis has found the following main results.

[1256] In Attachment E we refer to board prices as the retail fuel price displayed on large price boards outside retail fuel sites (NZD per litre).

[1257] This is a reasonable indicator of the cost of refined fuel imported into New Zealand since world fuel prices are closely connected and New Zealand importers do purchase fuel from Singapore.

E6.1 We find that pass-through rates are either statistically indistinguishable from, or below 100% for most years and across all fuel types. This is not inconsistent with a workably competitive fuel market. However, we note that pass-through rates significantly greater than 100% (such as those we observe in 2015 to 2017 for some fuel types) are not consistent with our expectations of pass-through rates in a workably competitive fuel market.

E6.2 The speed of pass-through varied considerably, but around 18% to 20% of cost changes showed up in retail prices on the same day, a further 43% to 48% showed up in retail prices after a week, and a further 25% after two weeks. Smaller additional pass-through was also detected after 3 and 4 weeks.

E6.3 The Auckland regional fuel tax is estimated to have been passed through fully into retail prices (ie, one-to-one).

E6.4 We examined whether pass-through was asymmetric, for example whether cost increases show up more fully or quickly in retail prices than cost decreases. We found no evidence of this asymmetric pass-through.

E7 While the results of our econometric modelling have helped reveal information about cost pass-through, we note that this is only one indication of whether markets are competitive and if competition has changed over time. The econometric model we use for our analysis does not of itself tell us how effective competition is. This analysis should therefore not be regarded as conclusive on any aspects related to the effectiveness of competition in the New Zealand retail fuel market.

Data cleaning and consolidation

E8 This section describes the relevant underlying data that we received from industry participants, the cleaning steps undertaken and how the data sets were consolidated.

Relevant underlying data received from industry participants

E9 The relevant underlying data we received from industry participants and other stakeholders can be categorised as follows:

E9.1 retail site data;

E9.2 daily retail sales data (prices and volumes by fuel type);

E9.3 daily retail data on cost of goods sold (fuel);

E9.4 daily Singapore benchmark cost index data adjusted by the daily average USD/NZD exchange rate[1258]; and

E9.5 data for control variables, the Auckland regional fuel tax, and other time-variant taxes and levies.

Retail site data

E10 We received relevant retail site data for each of Allied, BP, Challenge[1259], McKeown, McFall, Mobil, NPD, GAS, Gull, Southfuels, Waitomo and Z Energy. These data include details such as the name and location of retail sites for each of the aforementioned parties. Some of these parties' retail site data also include details on the features and operating status of each retail fuel site.[1260]

Retail sales data

E11 The relevant retail sales data provided by industry participants include daily site-level retail sales data broken down by different fuel types, for each of Allied, BP, Mobil, NPD, GAS, Gull, Waitomo and Z Energy. We note that our initial data request covered the period January 2009 to February 2019. However, some of the industry participants were unable to provide data for the full period of the request.

E12 Table E1 provides a summary of the contents of each party's daily site-level retail sales data and the time period for which it was provided to us.

[1258] The Singapore benchmark cost index provides a consistent cost measure of the replacement cost of fuel sold by each retail supplier on a given day. It is available for all days on which we have board price data available. We note that this data does not include any product quality adjustments. However, this is unlikely to have any material effect on our results as it would only increase our estimate of the costs of refined fuel by a small amount.

[1259] Data for Challenge branded retail sites were provided by Farmlands.

[1260] The retail site data was requested for all retail sites that are currently in operation or have closed within the time period January 2009 to February 2019.

Table E1 Contents of each party's daily site-level retail sales data

Party	Time period	Board price	Total revenue and volume	Discounted revenue and volume	Loyalty card revenue and volume
Allied	January 2014 to February 2019	✓	✓		✓
BP	January 2012 to February 2019	✓	✓	✓	
Mobil	January 2009 to February 2019	✓			
NPD	January 2014 to February 2019		**		✓
GAS	January 2009 to February 2019	*	✓		✓
Gull	January 2009 to April 2019	✓	✓		
Waitomo	January 2012 to February 2019	✓	✓		
Z Energy	January 2009 to February 2019	✓	✓	✓	✓

* GAS' board price data only cover its company owned and company operated (COCO) retail sites.
** NPD's revenue information on its own retail sites are not broken down into different fuel types and are therefore unusable.

E13 As shown in Table E1, we received daily retail site-level board prices broken down by different fuel types for all the parties, with the exception of NPD. We note that while most parties' data contained daily retail site-level revenue and volume information for each fuel type, only those of BP and Z Energy were broken down further by sales at board prices and sales at a discount to the board prices (eg, using discount and loyalty programmes or supermarket dockets). We used this smaller set of data for our econometric analyses of discounting and loyalty programmes (see Attachment F). For other retailers we inferred the size of daily discounts from board prices, revenue and volume data.

E14 Further, the retail sales data provided by Allied, NPD, GAS and Z Energy include breakdowns of sales via different types of loyalty cards, which we used for the purposes of doing econometric analyses on discounting and loyalty programmes (see Attachment F).

Retail data on cost of goods sold

E15 The relevant fuel retail cost data provided by industry participants include the daily site-level retail cost of goods sold broken down by different fuel types, for each of BP, Waitomo and Z Energy. We were also provided with Singapore cost benchmark data by Gull to assist us with estimating the cost of different types of refined fuels.

Singapore benchmark cost index data

E16 The Singapore benchmark data provided to us by Gull sets out the daily Singapore benchmark cost index. This benchmark cost index relies on the daily MOPS price.[1261] It provides an estimate of the per litre landed cost in NZD for each type of refined fuel retailed in New Zealand.[1262]

Data for control variables, the Auckland regional fuel tax and other time-variant taxes and levies

E17 We have obtained publicly available data relevant for our analyses.

E17.1 The Auckland regional fuel tax data, which set out the list of retail sites that were affected by the 11.5 cents per litre Auckland regional fuel tax after its introduction on 1 July 2018.[1263]

E17.2 Average weekly data for taxes and levies other than GST for different fuel types retailed in New Zealand (ie, the national land transport management fund, petroleum or engine fuels monitoring levy, local authority fuel tax, ACC levy and the ETS).[1264]

E17.3 Quarterly data on vehicles kilometres travelled (VKT), which was used as a control variable for one of our sensitivity analyses on cost pass-through.[1265] The other control variable we included in this sensitivity analysis is the consumer price index (CPI).[1266]

Cleaning steps and data consolidation

E18 In this section we describe the relevant data cleaning steps and consolidation process, including key assumptions made, on the five categories of data described above.

[1261] Mean of Platts Singapore (MOPS) is the average price for a Singapore-based oil product, reported by the price assessment agency Platts.

[1262] The daily average USD/NZD exchange rate is used to adjust the daily MOPS price to estimate the daily per litre landed cost in NZD for each type of refined fuel retailed in New Zealand.

[1263] List of retail sites that were affected by the introduction of the Auckland regional fuel tax (New Zealand Transport Agency).

[1264] Weekly fuel price monitoring statistics (MBIE).

[1265] The VKT figures are based on quarterly VKT data obtained from the Ministry of Transport. They represent the total vehicle kilometres travelled using heavy and light vehicles, motorcycles and other types of vehicles within New Zealand between the current and the previous quarter.

[1266] The CPI figures are based on the quarterly CPI data published by the Reserve Bank of New Zealand. The Reserve Bank measures an index of a fixed basket of goods and services each quarter. We use a general CPI rather than a CPI for petrol, as a petrol CPI would imply explaining board prices in terms of another retail fuel price variable.

E19 First, we cleaned and appended each party's retail site data into a master site dataset. The cleaning procedures included for example removing duplicated sites within retailers, as well as removing duplicated sites across different retailers where rebranding or a change of ownership took place. We also checked and where necessary corrected sites' latitude, longitude and the region in New Zealand where it is located. We have also, to the extent possible, included retail sites that have been closed or divested, together with an identifier on whether a site is currently active or closed. Overall, the master site dataset contains details such as the name of the retail site and retailer and latitude and longitude information for a total of 1,640 unique retail sites.

E20 Second, we cleaned the Auckland regional fuel tax data and consolidated these with the master site dataset. This enabled us to identify the retail sites in the master site dataset that were subject to the fuel tax. The cleaning procedures involved for this dataset included removing duplicated retail sites within retailers, as well as renaming the names and addresses for certain sites so that they can be matched against those in the master site dataset. We note that we were able to successfully match 316 out of the 322 unique retail sites for Allied, BP, Mobil, NPD, GAS, Gull, Waitomo and Z Energy against the master site dataset. The remaining six retail sites that we were unable to match and that were removed from the master site dataset are:

E20.1 Waitomo: Awhitu Service Station, Paerata Fuel Stop and Pukekohe Fuel Stop;

E20.2 Allied: Half Moon Bay Marine Stop; and

E20.3 Z Energy: Caltex Wellsford and Caltex Station Road.

E21 Third, we cleaned the retail cost of goods sold data provided by BP, Waitomo and Z Energy, and consolidated them with other parties' retail sales data. The cleaning procedures included, for example, reshaping the data to have the date variable in long format, correcting retail site names and removing duplicated retail sites within and across the cost and sales dataset.

E22 Fourth, we cleaned and appended each parties' retail sales data into a master sales dataset. The cleaning procedures included for example reshaping the data to have the date variable in long format, removing duplicated retail sites within and across retailers, and aggregating information on revenue, volume and price where applicable.

E23 In total we removed 161 duplicate retail sites from the dataset. The master sales dataset contains relevant price, volume and/or revenue information from Allied, BP, Mobil, NPD, GAS, Gull, Waitomo and Z Energy, as well as cost of goods sold information from BP, Waitomo and Z Energy.

E24 We further cleaned the master sales dataset by removing outlier observations on prices, revenues and volumes that could potentially distort our econometric analyses.

E24.1 We excluded a total of 3,515 sales entries that appeared to be erroneous from the dataset. The lower and upper bound threshold we used to determine erroneous sales entries for board prices are $0.50 and $3.00 NZD per litre respectively, while the upper bound threshold we used to determine erroneous entries for total daily volume and revenue sold for a given fuel type on a given day are 100,000 litres and $300,000 NZD, respectively. Effective prices that are greater than board prices were also replaced as missing.

E24.2 A total of 79,754 entries with negative sales and effective prices lower than $0.50 or higher than $3.00 NZD per litre were excluded from the dataset, rather than replaced as missing. We note that the majority of board prices with negative entries were wholesale invoice prices associated with Z Energy's sales to its independent dealers.

E24.3 In order to properly test the dynamics of cost pass-through, we amended the missing board price entries from above and from existing gaps within the dataset by assuming them to be the same as the most recent day on which the board price is valid. To provide a hypothetical example, consider that Site A's retail price per litre (in NZD) for 91 octane petrol is $1.00 on 1 January 2019, $1.20 per litre on 6 January 2019 but missing between 2 and 5 January 2019. In such instances we assumed the board price to be $1.00 per litre for each of 2, 3, 4 and 5 January 2019.

E24.4 The above approach would however lead to unreliable regression results if the gaps in board price were large. We therefore excluded any board price data with gaps larger than one week. To provide a hypothetical example, consider that Site A's 91 octane petrol shows patchy board prices for the period 2010-2014, but not for the period after 2014. Assuming that the last period for which its board price was continuously missing for over a week was between 1 November 2014 to 10 November 2014, we would then only include board price data for Site A's 91 octane petrol for the period after 10 November 2014.

E24.5 Further, we have excluded a fuel type of a particular retail site if its board price did not change for over one year.

E24.6 Finally, we looked into instances of unrealistic daily price changes that appeared to be overwhelmingly high or low. An assumption we made here to address this is to amend these unusual prices to be the same as the price on the previous day for instances where price changed by over 25% for a single day.

E25 CRA (on behalf of BP) submitted that when observations are missing or implausible it would generally be preferable to treat them as missing, rather than amending missing observations and gaps using the assumptions we described in paragraphs E24.1 to E24.6 above.[1267]

E26 We consider that the appropriate treatment depends on a range of modelling issues. In this case, we took the steps discussed above to complete missing observations as being equal to the most recent available price, for the reasons discussed below.

E26.1 First, it was important to not treat the observations as missing as this would have led to a large loss of information. In particular, our use of 7, 14, 21 and 28 day lags meant that even a small number of missing observations would substantially reduce the overall number of observations for the regression analysis as a price on a day could then only be used if all of the prices 7 days prior, 14 days prior, 21 days prior and 28 days prior were also available.

E26.2 Second, we took steps to reduce the number of missing observations that were replaced with the most recent price. We did not replace the missing observation with the most recent price if the most recent price is more than one week prior to the missing price. Instead, we excluded these observations from our analysis.

E27 Fifth, we cleaned the Singapore benchmark data provided by Gull for the time period between 24 January 2011 and 15 February 2019. The cleaning procedures included for example appending the underlying data for different period, reshaping the underlying data and correcting for a typo where the date should be 7 June 2011 instead of 7 July 2011. We considered the per litre landed cost for Automotive Gas Oil (AGO) to be the benchmark cost for diesel and the per litre landed cost for Unleaded Petrol (ULP) to be the benchmark cost for 91 octane petrol. We further assigned the per litre landed cost for Premium Unleaded Petrol (PULP) to be the benchmark cost for both 95 octane and 98 octane petrol, based on clarification provided by Gull.

E28 Sixth, we cleaned the weekly data for other taxes and levies, as well as the quarterly data for our control variables, CPI and VKT. We have converted these to daily data by assuming that they do not change within each week / quarter. For example, if the CPI value is 150 for the first quarter of 2019, we would assign this value to all dates between 1 January 2019 and 31 March 2019.

E29 Finally, we created a master dataset by consolidating the master sales dataset with the cleaned Singapore benchmark dataset to include the daily Singapore benchmark

[1267] CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 30.

cost index for each type of refined fuel, the cleaned dataset for taxes, levies and control variables, as well as the master retail site dataset to include location details for retail sites for which we have reliable board price information and the 316 retail sites affected by the Auckland regional fuel tax.[1268] During the consolidation process, we were able to match 790 out of the 852 retail sites for which we have reliable daily board price data broken down by fuel types and consolidated their location details into the master dataset for the purpose of the GIS heat maps analysis. We note that it is likely that the remaining 62 unmatched retail sites – namely, sites that are in the master sales data but not in the master retail site dataset – are no longer in operation. In particular, these 62 retail sites include:

E29.1 45 BP Foodstuffs retail sites (ie, sites with the prefixes "New World" and "Pak N' Save") that were closed as of 16 December 2012 based on information in BP's retail sales data;

E29.2 six Mobil "New World" retail sites that were rebranded as Z Energy sites;

E29.3 four Z Energy retail sites that were either closed or divested, based on information in its site data; and

E29.4 six Allied retail sites and one GAS retail site that were closed.

E30 Our final master dataset contains 3,198,300 observations across 79 different variables.

Cost pass-through analysis

E31 This section describes the findings and possible limitations of our econometric analysis of cost pass-through. We use fixed effects models[1269] applied to daily retail fuel site-level data to estimate the industry-wide rate of cost pass-through. Fixed effects models allow for board prices to vary by fixed amounts between retail fuel sites in New Zealand, all else being held equal.[1270]

1268 Given the small sample size we also removed fuel type 100-octane petrol from our analysis. It also does not have a corresponding retail cost based on the Singapore benchmark cost index.

1269 See JC Driscoll and AC Kraay "Consistent Covariance Matrix Estimation with Spatially Dependent Panel Data" (1998) 80 Review of Econometrics and Statistics at 549. Driscoll and Kraay (1998) standard errors account for serial correlation and does not assume independence across retail fuel sites. The standard error structure is assumed to be heteroscedastic, autocorrelated and possibly correlated between the retail sites (panels). We do this using the "xtscc" command in Stata.

1270 We ran the Hausman test for all our econometric models, which tests the validity of the random effects (**RE**) estimator by comparing it against the fixed effects (***FE***) estimator. When the model passes the test, that is often interpreted as meaning that the RE estimator should be preferable because it is efficient. However, the efficiency of the RE estimator depends on strong assumptions on the properties of its error term, which are unlikely to be valid in most applications. Moreover, the FE estimator is more robust than the RE estimator. Therefore, the fact that the null hypothesis of the Hausman test is not rejected does

E32 In what follows, we discuss:

E32.1 the purpose of our analysis;

E32.2 theoretical background;

E32.3 model specification and results, including:

E32.3.1 the base econometric model;

E32.3.2 the model including lags and control variables;

E32.3.3 further extensions to the base model; and

E32.3.4 model examining asymmetry in cost pass-through; and

E32.4 limitations of the analysis.

Purpose of the analysis

E33 The purpose of our analysis is to examine the rate of pass-through of replacement costs to retail fuel prices using a fixed effects panel model that examines price and cost changes at retail fuel sites across New Zealand and over time.

E34 Cost pass-through arises when a business changes the prices of the products or services it supplies following a change in its costs. In this case, we are interested in the price effect of cost changes that affect all firms in the retail fuel market. We interpret this as a measure of how responsive prices are to cost changes. The rate of cost pass-through in the context of the study could therefore be described as the elasticity of retail fuel prices with respect to input cost changes (when expressed in percentage terms).

E35 A number of different measures of cost pass-through are adopted in the literature. Throughout our analysis we refer in particular to the absolute rate of cost pass-through. The absolute pass-through is defined as the degree to which a given absolute change in cost causes a given absolute change in retail price.

E36 For example, suppose that a $1.00 cost increase causes a corresponding $1.00 retail price increase. In this case, the absolute pass-through equals 1 (or 100%). However,

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not imply that the RE estimator is preferable – it merely indicates that the RE estimator cannot be rejected. For our models, the results of the RE and FE estimators (and the estimated standard errors) are virtually identical in most cases, which is not surprising as most of our regressors only vary over time. This suggests that we could proceed with either model but, we would favor the FE model for its added robustness, which is particularly important in the few cases where the null hypothesis of the Hausman test is rejected.

if a $1.00 cost increase causes a $0.50 retail price increase instead, the absolute cost pass-through is one half (or 50%). If a $1.00 cost shock causes a $2.00 retail price increase, the absolute pass-through equals 2 (or 200%).

E37 We note that the main focus of our analysis is on assessing the pass-through rate due to industry-wide cost changes, ie, those that affect all firms in the retail fuel market. Our observations of what the analysis shows are based on an industry-wide assessment of cost pass-through rates in New Zealand and are therefore not necessarily reflective of firm-specific pass-through rates.

Theoretical background

E38 In this section we provide a brief summary of the economic theory on the relationship between cost pass-through and competition, in particular how it is affected by the structure of markets and by the nature of competition between firms. We note that most of the theoretical literature on cost pass-through focuses on pass-through of unit changes in tax.[1271]

E39 The degree of cost pass-through in a competitive market depends on the slope and shape of the demand and marginal cost (supply) curves. In the case of the retail fuel industry, over the relevant range, demand is very inelastic (as noted in Chapter 2) and marginal costs are essentially constant. This means that the market supply curve can be modelled as perfectly elastic (flat). As import costs rise and fall, the supply curve therefore would also move up and down. Under these conditions, we would expect approximately full (100%) cost pass-through under strong (perfect) competition.

E40 At the other extreme, in a monopoly, there is imperfect pass-through in both the short and long run. If the demand curve is linear in the relevant range, monopolists will pass-through 50% of a change in marginal cost (higher rates, including rates of more than one, are possible under non-linear demand). More generally, unless demand is very convex, a monopolist will pass-through less than 100% of the cost change. Pass-through greater than 100% is possible if the demand curve is very convex or if the marginal cost curve is declining. Neither of these conditions apply to fuel retailing.

E41 In oligopolies the determination of pass-through rates also depends on the intensity of competition, but the outcomes are more difficult to predict, given the number of interactions between firms in a market. However, it is generally accepted that higher rates of pass-through (up to one) are indicative of stronger competition and vice

[1271] For example, see EG Weyl and M Fabinger "Pass-through as an Economic Tool: Principles of Incidence under Imperfect Competition" 121(3) Journal of Political Economy at 528-583; and SP Anderson, Á de Palma and B Kreider (2001) 81 "Tax incidence in differentiated product oligopoly" Journal of Public Economics 173-192.

versa. Pass-through rates greater than 100% are also possible under the demand and supply conditions described above for monopoly (which do not apply here).

E42 CRA submitted that our understanding of the theory of cost pass-through is at odds with its own understanding of the economic theory of pass-through rates. Below we summarise the main points from CRA's submission:[1272]

E42.1 CRA agrees with us that perfectly inelastic demand and constant marginal cost would give an industry pass-through rate of one.

E42.2 However, the industry demand curve for fuel is not perfectly inelastic and its curvature might be such as to result in pass-through rates above one in an effectively competitive market.

E42.3 In general, industry pass-through will be greater, the more that demand becomes less sensitive to price when the price of a product rises (ie, the more that the demand curve becomes steeper as the price increases, or equivalently, the more convex is the demand curve).

E42.4 In a differentiated products Bertrand price competition setting where differentiation is limited, convex demand can result in industry pass-through rates greater than one. Since the curvature of the demand curve may differ at different price levels, industry pass-through rates may also vary locally around different price levels.

E42.5 CRA agrees with us that in general greater competition tends to be associated with higher pass-through rates. According to CRA, pass-through rates close to one or above one are therefore consistent with a competitive market. A hypothesis of a lack of effective competition would only be supported if pass-through rates were found to be significantly less than one and closer to 0.5.

E42.6 However, CRA does not support our view that higher rates of pass-through (up to one) are indicative of stronger competition and vice versa. They are of the view that even if pass-through rates were above one for some or all years that this is not inconsistent with a competitive market.

E43 We disagree with several of CRA's submissions. In a market characterised by a constant marginal cost curve (ie, a retail fuel market) pass-through rates will always be 100% under perfect competition, regardless of the shape of the demand curve. The only case where pass-through rates over 100% could be achieved under perfect

[1272] CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 26-27.

competition is when the marginal cost curve is downward sloping. However, this is not a relevant consideration in the New Zealand retail fuel market.

E44 With very convex demand, pass-through rates generally decrease in more competitive markets, because they exceed one in markets that are less competitive. This will be the case as long as the marginal cost curve does not slope downward.

E45 When comparing the extremes of perfect competition and monopoly (with constant marginal costs) the claim that competition leads to a greater degree of pass-through is correct, provided that demand is not too convex. We note that this result (with constant but not necessarily symmetric marginal costs) also applies more generally.[1273] CRA rely on an assumption of strongly convex demand in a differentiated Bertrand price competition setting to predict pass-through rates greater than 100%, but do not recognise that less than perfect competition is also required in order to achieve pass-through rates of more than 100% except in the circumstances of declining marginal costs that do not reply to retail fuel markets.

E46 We consider it unlikely that retail demand for fuel is strongly convex. While we agree that fuel has some characteristics of a necessity and that market demand is relatively inelastic, we have seen no evidence or reasoning to suggest that consumers become less price sensitive as the retail price of fuel increases (ie, that demand is convex), much less that this effect is large enough to characterise demand as strongly convex. According to RBB Economics some authors suggest sufficiently convex demand curves to produce pass-through rates over 100% are extremely unlikely in practice.[1274]

E47 We also have no evidence that marginal cost curves slope downwards in retail fuel markets as would be required for pass-through to exceed 100% in a perfectly competitive market.

E48 For these reasons, we consider that pass-through rates in excess of one in retail fuel markets are unlikely to be explained by the characteristics of demand and supply. They are therefore inconsistent with what we would expect to observe in workably competitive retail fuel markets.

[1273] RBB Economics "Cost pass-through: theory, measurement, and potential policy implications: A Report prepared for the Office of Fair Trading" (February 2014) at 18. Available at <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/320912/Cost_Pass-Through_Report.pdf.> (Viewed on 19 November 2019).

[1274] RBB Economics "Cost pass-through: theory, measurement, and potential policy implications: A Report prepared for the Office of Fair Trading" (February 2014) at 36. Available at <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/320912/Cost_Pass-Through_Report.pdf.> (Viewed on 19 November 2019).

Model specification

E49 In this section we first describe the base model specification we used for purposes of assessing cost pass-through. Following this we discuss the specification and results of the extension to the econometric model we used for purposes of assessing industry-wide cost pass-through in the New Zealand retail fuel market.

E50 We also provide the results of further regression models used to test for asymmetry in cost behaviour. Lastly, we discuss the additional modelling used for purposes of doing sensitivity checks on the results of our analysis.

CRA's comments on a GST adjustment

E51 CRA submitted that there may be a misspecification in our main regression model, because we have regressed retail board prices including GST of 15% on spot market costs that do not include GST.[1275] Since a one-for-one increase in the retail price excluding GST in response to a $1 increase in cost will attract additional GST of $0.15, we should instead interpret a pass-through rate of 1.15 as being equivalent to 100% pass-through in our model.

E52 We agree with CRA's observation that our initial cost pass-through regressions incorrectly regressed retail prices that include GST on spot market costs that do not include GST. This implies that fuel retailers would need to pass-through 115% of spot market costs (excluding GST) in order to maintain the same absolute margins over time.

E53 Rather than re-specify the main model by excluding GST from retail prices, we have re-focused our statistical significance testing to determine whether pass-through of the Singapore benchmark cost index (excluding GST) is statistically significantly different to 1.15. Because GST is constant over the period for which we have data, either of these approaches gives the same result (ie, converting retail prices to exclude GST and then testing whether pass-through is above one is equivalent to testing whether pass-through to retail prices that include GST is above 1.15). The results from this analysis are discussed further below.

E54 For statistical tests that involve testing whether a coefficient is equal to zero or not, we note that the statistical significance tests are unaffected by GST. This is because adjusting for GST would involve changing the coefficient and the standard error by 1.15 and this leads to the t-statistic used to determine statistical significance being unchanged.

[1275] CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 26.

Base model

E55 In this section we provide a brief description of the base econometric model specification we used for purposes of assessing cost pass-through. The base model is used as a starting point for our analysis. However, as we discuss in greater detail in the following section, we are of the view that an extension to the base model that includes both lags and additional control variables is more robust and should be used for purposes of interpreting our findings on industry-wide cost pass-through.

E56 The base econometric model we used is a fixed effects model that explains the board prices for 91 octane petrol, 95 octane petrol, 98 octane petrol and diesel in terms of the daily Singapore benchmark cost index, while allowing the estimated pass-through to be different for each of the years from 2011 to 2019.

E57 This model provides estimates of annual pass-through from the Singapore benchmark cost index for each of these years, as well as how and whether they vary compared to the base year (ie, 2011). The estimated coefficients for the Singapore benchmark cost index for each year between 2012 and 2019 can be interpreted as the difference between the magnitude of pass-through in each of these years and that in the base year; the results in Table A2 also show whether these differences are statistically significant.

E58 Further, the model estimates the magnitude of pass-through from the 11.5 cents per litre Auckland regional fuel tax after its introduction on 1 July 2018, and other time-variant taxes and levies, including the ETS cost. Finally, the model also contains year and month dummy variables, which capture changes in board prices across years, and seasonality changes across months. However, we have only included the regression results of key variables in this attachment for simplification purposes. Table E2 therefore excludes the regression results of the year and month dummy variables we used in our base econometric model.

E59 Regression results for key variables (excluding year and month dummy variables) in our base econometric model are presented in Table E2 below:

Table E2 Base econometric model for cost pass-through

Variables	91 octane petrol	95 octane petrol	98 octane petrol	Diesel
Singapore benchmark cost index	0.844***	0.796***	0.827***	0.977***
Singapore benchmark cost index (2012)	0.069	0.041	0.004	-0.036
Singapore benchmark cost index (2013)	0.001	0.075	0.015	-0.135
Singapore benchmark cost index (2014)	0.038	0.063	0.059	0.024
Singapore benchmark cost index (2015)	0.274**	0.261**	0.335***	0.262**
Singapore benchmark cost index (2016)	-0.122	0.009	0.114	-0.099
Singapore benchmark cost index (2017)	0.113	0.173	-0.001	-0.261**
Singapore benchmark cost index (2018)	-0.122	0.027	-0.032	-0.397***
Singapore benchmark cost index (2019)	-0.441***	-0.433**	-0.313**	-0.602***
Auckland regional fuel tax dummy	0.114***	0.110***	0.129***	0.105***
Other non-GST taxes, levies and ETS	1.394***	1.399***	1.198***	1.775***
Number of observations	1,079,064	606,960	359,198	1,113,703
R-squared	0.866	0.865	0.870	0.904
Within R-squared	0.866	0.865	0.870	0.904
Adjusted R-squared	0.866	0.865	0.870	0.903
Hausman test p-value	0.423	0.689	0.405	0.537

Source: Analysis of data provided by industry participants.

Notes: ***, **, * indicate statistical significance at the 1%, 5% and 10% levels respectively.
The models include year and month dummy variables, which are not reported in the tables. The fixed effects model also includes dummy variables for each retail fuel site, which are also not shown in the table. The within R-squared is the variation within groups (ie, retail sites) explained by the fixed effects model. The Hausman test is a test for the validity of the random effects estimator compared to the fixed effects estimator.

E60 As shown in Table E2 above, the coefficients on the Singapore benchmark cost index for the base year (ie, 2011) are 0.844, 0.796, 0.827 and 0.977 for 91 octane petrol, 95 octane petrol, 98 octane petrol and diesel, respectively. These coefficients are all statistically significant to the 1% statistical significance level. This implies that pass-through rates in 2011 are significantly less than 100%.

E61 The findings from our base model suggest that there is a statistically significant increase in pass-through in 2015 compared to the base year (2011), especially for 98 octane petrol where its coefficient is significant at the 1% significance level. We also find that pass-through of the Auckland regional fuel tax to board prices is estimated to be approximately 100%.

E62 Although we are of the view that the results from our base model are robust, we have extended the more constrained base model by including additional control variables and lags of the Singapore benchmark cost index to enrich our model specification. We discuss the results of our extended model below.

Main econometric model: Model including lags and control variables

E63 In this section we describe the results of our main econometric model, the summary results of which are shown in Table E3. The model is an extension to the fixed effects base model discussed in the previous section. We enriched the base model by adding two control variables – CPI and VKT - to the base model specification.[1276] We also include the Singapore benchmark cost index with 7, 14, 21 and 28 day lags to explore the timing of pass-through.

E64 Our view is that this model provides the most robust regression results of the models we used for the purposes of estimating the industry cost pass-through rate. This view is consistent with the goodness of fit test results for this model compared to more constrained model specifications. By including additional control variables and lags we also reduce the potential for omitted variable bias.

E65 CRA submitted that our approach to dynamically model daily retail prices with a limited set of specified weekly lags of costs (7 day, 14 day, 21 day and 28 day) and without any lags of prices is unusual and raises a number of issues and odd findings. In particular, CRA raised the following concerns with our chosen lag lengths:[1277]

E65.1 The weekly lag structure gives a peculiar predicted effect of cost on retail prices: there is an effect on day t; there is then no effect on days t+1 to t+6, but then another effect on day t+7; and this pattern continues until day t+28 when suddenly the long run effect is reached.

E65.2 The estimated impact of 28-day lagged costs is consistently greater than the estimated impact of 21-day lagged costs, for many years in the regression model, and that it is not clear why this would be so.

[1276] The control variables we have included in the models vary within each fixed effect group to avoid potential collinearity between the variables in the model. It improves the robustness of the base model by introducing additional demand-side explanatory variables to the model that have an impact on retail fuel board prices.

[1277] CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 30.

E66 We disagree with these concerns. Our use of 7, 14, 21 and 28 day lags only, rather than all lags up to 28 days (and possibly, more days), was a deliberate and appropriate modelling choice. In particular, these lags were used to broadly capture the dynamic adjustment in board prices to changes in the Singapore benchmark cost index while at the same time not introducing too much collinearity (which can mean that coefficients are estimated with little precision because all variables move closely together).[1278]

E67 In addition, the more parsimonious specification we adopted leads to results that are much easier to interpret. Further, we also note that the coefficient on lag 28 may be larger than the one on lag 21 because it may be picking up some dynamic adjustment to changes in the Singapore benchmark cost index that occurs over a period of more than 28 days.

Industry-wide cost pass-through is generally less than 100% or statistically indistinguishable from 100%

E68 A key result of our analysis is that overall industry-wide pass-through from the Singapore benchmark cost index to board prices is estimated to be either statistically indistinguishable from, or below 100%, for all years except 2015 (all fuel types except 95 octane petrol); 2016 (98 octane petrol); and 2017 (95 octane petrol) where pass-through is significantly greater than 100%.

E69 Table E3 below provides a summary of the estimated magnitude and statistical significance of overall cost pass-through for our main econometric model including lags and control variables, after adjusting for GST. It shows the results for testing whether pass-through equals 1.15 for our main regression model including lags and control variables (note that 100% pass-through would result in a parameter estimate of 1.15).

[1278] An alternative approach is to impose some structure on the lagged effects, such as the method suggested by Almon or the Koyck method. See Andrew Harvey *The Econometric Analysis of Time Series* (2nd ed, LSE Handbook in Economics, 1990) at 226. CRA do not suggest such approaches. We preferred to allow the lag structures to emerge from the data rather than impose them.

Table E3 Estimated overall pass-through for years 2011 to 2018 for the model with lags and control variables

Years	91 octane petrol	95 octane petrol	98 octane petrol	Diesel
2011	1.034*	0.946***	1.023*	1.090
2012	1.125	1.041***	1.077*	1.112
2013	1.093	1.086*	1.091	1.012***
2014	1.087**	1.082***	1.157	1.149
2015	1.260***	1.191	1.313***	1.441***
2016	1.070**	1.132	1.273***	1.167
2017	1.198	1.247**	1.230	1.186
2018	0.920***	1.063**	0.961***	0.876***

Source: Analysis of data provided by industry participants.

Notes: ***, **, * indicate statistical significance at the 1%, 5% and 10% levels respectively for the null hypothesis that pass-through equals 1.15.

E70 We find that pass-through rates are less than or statistically indistinguishable from 100% for most years and across all fuel types. This is consistent with our expectation of pass-through rates in a competitive market. However, we note that pass-through rates significantly greater than 100% (such as those we observe in 2015 to 2017 for some fuel types) are inconsistent with our expectations of pass-through rates in a workably competitive fuel market.

Detailed regression results for our main regression model

E71 We present the detailed regression results of key variables in our main regression model (excluding year and month dummy variables) in Table E4 below.

Table E4 Detailed regression outputs for model including lags and control variables

Variables	91 octane petrol	95 octane petrol	98 octane petrol	Diesel
Singapore benchmark cost index	0.216***	0.191***	0.218***	0.186***
Singapore benchmark cost index (2012)	0.052	0.058	0.034	0.051
Singapore benchmark cost index (2013)	-0.005	0.082	0.020	-0.040
Singapore benchmark cost index (2014)	-0.008	0.069	0.076	0.080
Singapore benchmark cost index (2015)	0.232***	0.239***	0.305***	0.376***
Singapore benchmark cost index (2016)	0.025	0.138*	0.202***	0.136**

Singapore benchmark cost index (2017)	0.126*	0.206***	0.108	0.126
Singapore benchmark cost index (2018)	-0.154**	0.023	-0.159*	-0.205***
Singapore benchmark cost index - 7-day lag	0.450***	0.427***	0.442***	0.482***
Singapore benchmark cost index (2012) - 7-day lag	0.008	0.013**	0.003	-0.011
Singapore benchmark cost index (2013) - 7-day lag	0.006	0.015*	0.004	-0.009
Singapore benchmark cost index (2014) - 7-day lag	-0.008	0.001	-0.005	-0.027**
Singapore benchmark cost index (2015) - 7-day lag	-0.076***	-0.062***	-0.071***	-0.079***
Singapore benchmark cost index (2016) - 7-day lag	-0.085***	-0.062***	-0.072***	-0.115***
Singapore benchmark cost index (2017) - 7-day lag	-0.090***	-0.062***	-0.071***	-0.116***
Singapore benchmark cost index (2018) - 7-day lag	-0.092***	-0.065***	-0.076***	-0.122***
Singapore benchmark cost index - 14-day lag	0.266***	0.250***	0.269***	0.268***
Singapore benchmark cost index (2012) - 14-day lag	0.009	0.008	0.013*	0.000
Singapore benchmark cost index (2013) - 14-day lag	0.006	0.009	0.012	-0.009
Singapore benchmark cost index (2014) - 14-day lag	0.006	0.010	0.012	-0.012
Singapore benchmark cost index (2015) - 14-day lag	-0.065***	-0.066***	-0.048**	-0.046***
Singapore benchmark cost index (2016) - 14-day lag	-0.081***	-0.073***	-0.061**	-0.093***
Singapore benchmark cost index (2017) - 14-day lag	-0.065**	-0.049*	-0.036	-0.067**
Singapore benchmark cost index (2018) - 14-day lag	-0.054**	-0.039	-0.023	-0.055**
Singapore benchmark cost index - 21-day lag	0.077***	0.072**	0.065**	0.088**
Singapore benchmark cost index (2012) - 21-day lag	0.009**	0.013**	0.017**	-0.005
Singapore benchmark cost index (2013) - 21-day lag	-0.002	0.001	0.008	-0.019**
Singapore benchmark cost index (2014) - 21-day lag	-0.000	0.006	0.006	-0.014
Singapore benchmark cost index (2015) - 21-day lag	0.017	0.022	0.007	0.006

Singapore benchmark cost index (2016) - 21-day lag	0.014	0.018	0.012	0.004
Singapore benchmark cost index (2017) - 21-day lag	0.024	0.037	0.031	0.015
Singapore benchmark cost index (2018) - 21-day lag	0.019	0.036	0.020	0.007
Singapore benchmark cost index - 28-day lag	0.025	0.006	0.029	0.067*
Singapore benchmark cost index (2012) - 28-day lag	0.013*	0.003	-0.013*	-0.014*
Singapore benchmark cost index (2013) - 28-day lag	0.054***	0.033**	0.025*	-0.000
Singapore benchmark cost index (2014) - 28-day lag	0.063***	0.050***	0.046**	0.032*
Singapore benchmark cost index (2015) - 28-day lag	0.118***	0.112***	0.097***	0.094***
Singapore benchmark cost index (2016) - 28-day lag	0.162***	0.165***	0.169***	0.144***
Singapore benchmark cost index (2017) - 28-day lag	0.168***	0.169***	0.175***	0.137***
Singapore benchmark cost index (2018) - 28-day lag	0.167***	0.161***	0.176***	0.160***
Auckland regional fuel tax dummy	0.107***	0.118***	0.108***	0.099***
Other non-GST taxes, levies and ETS	1.269***	1.591***	1.491***	0.918*
CPI	-0.001**	-0.002***	-0.002***	-0.002***
VKT	-0.027***	-0.038***	-0.062***	-0.053***
Observations	916,045	499,120	294,711	938,929
R-squared	0.897	0.895	0.896	0.920
Within R-squared	0.897	0.895	0.896	0.920
Adjusted R-squared	0.897	0.895	0.896	0.920
Hausman test p-value	0.299	0.560	0.146	0.459

Source: Analysis of data provided by industry participants.

Notes: ***, **, * indicate statistical significance at the 1%, 5% and 10% levels respectively.
The models include year and month dummy variables, which are not reported in the tables. The fixed effects model also includes dummy variables for each retail fuel site, which are also not shown in the table. The within R-squared is the variation within groups (ie, retail sites) explained by the fixed effects model. The Hausman test is a test for the validity of the random effects estimator compared to the fixed effects estimator.

Costs are passed through contemporaneously and up to 14 days after

E72 Our analysis also examined the timing of cost pass-through. The results in Table E4 shows that a large portion of costs would be passed through to board prices on the same day, and 7 and 14 days after. This implies that changes in board prices are predicted both by changes in costs on the same day (as measured by the Singapore benchmark cost index), as well as by changes in costs that took place up to 14 days prior.

E73 This is detailed in the regression results above in Table E4 (from which we have excluded estimates for the year and month dummy variables). The first row of Table E4 shows highly significant pass-through rates of 19-22%. These are the same day pass-through rates for the base year, which is 2011. The estimates in the next seven rows (2012-2018) show the extra effect on same day pass-through in each of those years: these are the estimated difference between that year and 2011 along with asterisks (***) to show whether these differences are statistically significant.

E74 For example, in row 8 (2018), there are three negative entries with asterisks. A statistically significant coefficient of -0.154 for the cost index in 2018 would suggest that the cost pass-through in 2018, on average, is expected to be 0.154 lower than that in 2011 in the context of 91 octane petrol. However, a statistically insignificant coefficient of 0.023 for 95 octane petrol in 2018 means that we cannot reject the hypothesis that the pass-through in 2018 is expected to be the same as that in 2011.

E75 The key regression results are summarised below.

E75.1 A $1.00 change in the Singapore benchmark cost index for most years, is associated with an estimated contemporaneous retail price change in the same direction, depending on the fuel type looked at. These contemporaneous estimates are higher in the year 2015, with an increase of $0.232 for 91 octane petrol, $0.239 for 95 octane petrol, $0.305 for 98 octane petrol and $0.376 for diesel.

E75.2 Using 91 octane petrol as an example, a $1.00 change in the Singapore benchmark cost index in 2018 is associated with an estimated change in board price of -$0.154 on the same day, -$0.092 7 days later, -$-0.054 14 days later, $0.019 21 days later and $0.167 28 days later, with the total estimated pass-through being $0.920 (the sum of these values).

E75.3 The effect of price changes that took place 7 and 14 days later are estimated to be between $0.427 to $0.482, and $0.250 to $0.269 respectively for the period 2011 to 2014, depending on the fuel type looked at. These estimates are slightly lower for the period 2015 to 2018. The effect of price changes that took place 21 and 28 days later, while still material, are estimated to be reasonably smaller.

E75.4 It is not clear why these models show a significant price effect on the same day as a change in the Singapore benchmark, since it takes some time for a tanker to physically bring fuel to New Zealand. One possibility is that this could be related to executive reward systems inside one or more import firms. We understand that some industry executives are rewarded for profitability assessed against the replacement cost of fuel, rather than the cash cost of fuel sold.[1279]

E76 We note submissions from CRA and Economics New Zealand that suggest potential alternative explanations for our observation that contemporaneous cost pass-through appear to be significant.

E77 CRA submitted that contemporaneous pass-through should not be surprising, given that as soon as the spot market cost changes, the value of the entire stock of fuel held by a retailer should change. Once the spot market price changes, the price paid for that stock (an historical spot market price) should no longer be relevant. If the price paid was higher, the difference is a sunk cost that cannot be recovered unless the price recovers; if the price paid was lower, the difference is a windfall gain, since the stock that is now held can be sold at the current higher spot market price.[1280]

E78 An alternative suggestion put forward by Economics New Zealand is that the Singapore spot price is serially autocorrelated and that the correct relationship is between the New Zealand retail fuel board price and the Singapore benchmark price some days earlier (for example, four days earlier). According to Economics New Zealand the Singapore benchmark price at t = 0 is likely to be very similar to the Singapore price at t = t + 4, so the price at t =0 will show up in the regression model almost as well the t = t + 4 price, even if there is no real relationship.[1281]

Pass-through of the Auckland regional fuel tax to board prices is estimated to be approximately equal to one

E79 The implementation of the 11.5 cents per litre Auckland regional fuel tax is associated with estimated price increases of approximately 10.7 cents for 91 octane petrol, 11.8 cents for 95 octane petrol, 10.8 cents for 98 octane petrol and 9.9 cents for diesel.

1279 See Z Energy "Half-Year Report FY2020" (2019) at 4. Available at <https://investors.z.co.nz/static-files/38641eda-27f7-48e6-8413-22863918f228.> (Viewed on 26 November 2019).

1280 CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 28-29.

1281 Economics New Zealand "Submission from Economics New Zealand on the draft petrol market report" (13 September 2019) at 4.

Seasonality effects

E80 As noted previously we have only reported the regression results of key variables in this attachment. Table E4 therefore does not report the regression results of the year and month dummy variables, though these were used in the model.

E81 Our complete regression results show that board prices are estimated to be generally statistically significantly higher in the months of June, November and December across our sample of data. The relatively higher prices in June could reflect supplier responses to higher demand, for example an increase of vehicle sales during the "end of financial year" period, while the relatively higher prices in December could also be caused by supplier response to an increase in vehicle usage during the Christmas period.

Submissions from CRA on our model specification

E82 We note that the results from our model have changed after making the GST adjustment proposed by CRA (see paragraphs E51 to E54). Therefore, we only respond to the remaining comments from CRA that are unaffected by the GST adjustment as described above.

E83 In CRA's submission it made the following observations on the results from our modelling of cost pass-through.[1282]

E83.1 Our model produces inconsistent estimates across fuel types and years.

E83.2 The coefficients on the variable "other non-GST taxes, levies and ETS" are well above 1.15 for all fuel types except diesel, where the coefficient is less than one. It is not clear why these taxes are passed through in relation to some fuel types much more than others.

E83.3 Coefficients on the demand variable (VKT) and CPI are both negative and significant and we have not provided an explanation for why an increase in demand would result in lower prices. CRA submitted that it is plausible that lower prices would result in greater demand. Further, CRA also submitted that we do not explain why higher consumer price inflation would result in lower fuel prices.

E84 With regards to CRA's submissions we make two observations.

[1282] CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 29.

E84.1 First, the pass-through analysis is intended to reveal relationships in the data that could merit further inquiry. We have no reason to expect that pass-through practices would be constant through this time period, especially since margins were growing. There may be other explanations, but the most obvious inference from the estimated variation in pass-through is that retailers have varied the extent to which they have passed through changes in the Singapore cost benchmark over time.

E84.2 Second, the control variables have been included as a robustness check, to reduce possible omitted variable bias in estimating pass-through, and to reduce the variance of the error term. Because our model is a reduced form rather than structural model, we would not necessarily expect the coefficients on these variables to be of the expected sign, as these regressors may be picking up the effect of other variables. We also note that the results from our base model are not materially changed by the inclusion of the additional control variables in our main model.

E85 CRA also recommended charting the dependent and independent variables of interest and reviewing summary statistics to help understand the data better and identify patterns and anomalies.[1283]

E86 Given that the central results of the pass-through analysis relate to how the Singapore cost benchmark is passed through to retail prices, we consider that it is informative to provide more descriptive statistics of how the Singapore benchmark cost index has changed over time.

E87 Table E5 shows the average cost, based on the single day landed Singapore benchmark cost index in NZD per litre and the percentage change on the previous year.

[1283] CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 30.

Table E5 Average single day landed costs (NZD per litre, 2011 to 2018)

	91 octane petrol	Year-on-year change	95 and 98 octane petrol	Year-on-year change	Diesel	Year-on-year change
2011	$1.02		$1.04		$1.09	
2012	$1.00	-1%	$1.03	-1%	$1.05	-3%
2013	$0.96	-5%	$0.97	-5%	$1.01	-5%
2014	$0.88	-8%	$0.88	-9%	$0.90	-10%
2015	$0.68	-22%	$0.70	-21%	$0.66	-27%
2016	$0.56	-17%	$0.58	-18%	$0.54	-19%
2017	$0.67	19%	$0.68	18%	$0.66	22%
2018	$0.81	21%	$0.82	21%	$0.87	32%

Source: Analysis of data provided by industry participants.

Notes: The same premium unleaded petrol cost benchmark is used for 95 and 98 octane petrol. The landed cost data series made available to us starts in January 2011.The daily Singapore benchmark cost index data was adjusted by the average daily USD/NZD exchange rate.

E88 As shown in Table E5, the single day landed Singapore cost benchmark decreased until 2016, and then increased in 2017 and 2018. This suggests that pass-through above 1.15 would be consistent with decreasing absolute margins prior to 2016 and consistent with increasing absolute margins for 2017 and 2018. As discussed previously, for a majority of years and fuel types pass-through is not statistically significant different to 1.15 or is below 1.15, and only for some years and fuel types (notably around 2015-2017) is pass-through above 1.15.

Model with interactions to test for asymmetry in cost pass-through

E89 We include additional interaction variables into our base model to test for any asymmetry in the cost pass-through. This enables us to measure the effect of cost increases on board prices separately from the effect of cost decreases on board prices.

E90 Specifically, the coefficients on dummy variables for positive cost changes can be interpreted as the estimated difference between the magnitude of annual pass-through for cost decreases and that for cost increases. For example, a statistically significant coefficient of -0.1 for the positive cost change dummy in 2011 would suggest that pass-through from cost increases in this year is estimated to be 0.1 lower than that from cost decreases, which, in the context of 91 octane petrol,

would be approximately 0.749. A coefficient of -0.1 for this dummy that is statistically insignificant means that we cannot reject the hypothesis that pass-through in 2011 is expected to be the same between cost increases and decreases.

E91 Our analysis shows that the estimated magnitudes of cost pass-through are not statistically different for instances where costs decreased compared to those where costs increased. The regression results are presented in Table E6 below.

E91.1 A $1.00 decrease in the Singapore benchmark cost index for the base year is associated with estimated retail price decreases of $0.849, $0.818, $0.845 and $1.061 for 91, 95, 98 octane petrol and diesel, respectively. The corresponding estimated pass-through for cost increases are expected to be the same as those for cost decreases.

E91.2 Pass-through for both cost decreases and increases in 2015 are higher than those in other years, which is consistent with our findings from the base cost pass-through model.

Table E6 Detailed regression outputs for model that tests asymmetry in pass-through

Variables	91 octane petrol	95 octane petrol	98 octane petrol	Diesel
Singapore benchmark cost index	0.849***	0.818***	0.845***	1.061***
Singapore benchmark cost index (2012)	0.033	0.004	-0.029	-0.145
Singapore benchmark cost index (2013)	-0.018	0.037	-0.006	-0.230*
Singapore benchmark cost index (2014)	0.025	0.038	0.044	-0.064
Singapore benchmark cost index (2015)	0.257***	0.227**	0.307***	0.181**
Singapore benchmark cost index (2016)	-0.168	-0.053	0.049	-0.182*
Singapore benchmark cost index (2017)	0.136	0.167	0.005	-0.348***
Singapore benchmark cost index (2018)	-0.115	0.025	-0.023	-0.469***
Singapore benchmark cost index (2019)	-0.452***	-0.406*	-0.356**	-0.603**
Dummy for positive cost changes	-0.019	0.011	0.007	0.115*
Dummy for positive cost changes (2012)	-0.051	-0.054	-0.048	-0.167**
Dummy for positive cost changes (2013)	-0.025	-0.059	-0.039	-0.181**
Dummy for positive cost changes (2014)	-0.012	-0.039	-0.023	-0.130*

Dummy for positive cost changes (2015)	-0.022	-0.053	-0.045	-0.135*
Dummy for positive cost changes (2016)	-0.040	-0.070	-0.075	-0.134*
Dummy for positive cost changes (2017)	0.024	-0.014	-0.001	-0.136*
Dummy for positive cost changes (2018)	0.021	-0.003	0.015	-0.109
Dummy for positive cost changes (2019)	-0.004	0.003	-0.049	-0.033
Intercept shifting dummy for positive cost change	0.004	-0.022	-0.018	-0.122*
Intercept shifting dummy for positive cost change (2012)	0.046	0.048	0.042	0.164**
Intercept shifting dummy for positive cost change (2013)	0.024	0.055	0.032	0.172*
Intercept shifting dummy for positive cost change (2014)	0.018	0.039	0.023	0.131*
Intercept shifting dummy for positive cost change (2015)	0.021	0.050	0.041	0.132*
Intercept shifting dummy for positive cost change (2016)	0.076	0.099	0.109	0.136*
Intercept shifting dummy for positive cost change (2017)	-0.029	0.009	-0.009	0.138*
Intercept shifting dummy for positive cost change (2018)	-0.017	-0.000	-0.018	0.105
Intercept shifting dummy for positive cost change (2019)	0.020	-0.008	0.068	0.015
Auckland regional fuel tax dummy	0.114***	0.110***	0.129***	0.105***
Other non-GST taxes, levies and ETS	1.395***	1.391***	1.192***	1.755***
Number of observations	1,078,239	606,379	358,929	1,112,830
R-squared	0.868	0.868	0.872	0.904
Within R-squared	0.868	0.868	0.872	0.904
Adjusted R-squared	0.868	0.868	0.872	0.904
Hausman test p-value	0.401	0.683	0.341	0.527

Source: Analysis of data provided by industry participants to the Commission.

*Notes: ***, **, * indicate statistical significance at the 1%, 5% and 10% levels respectively.*
The models include year and month dummy variables, which are not reported in the tables. The fixed effects model also includes dummy variables for each retail fuel site, which are also not shown in the

table. The within R-squared is the variation within groups (ie, retail sites) explained by the fixed effects model. The Hausman test is a test for the validity of the random effects estimator compared to the fixed effects estimator.

Robustness checks and sensitivity analysis

Model using effective price as the price variable

E92 As a sensitivity analysis we performed regressions where we replaced the daily board price data used for the base model with daily effective retail price (ie, the average daily retail price after discount) data that some retailers were able to provide.

E93 CRA submitted that we should also test our main model (see Table E3 and Table E4) using effective price (ie, the average price after discounts) as the dependent variable, rather than only doing sensitivity checks using effective price as the dependent variable in our base model.[1284]

E94 As our main model is an extension to our base model, we consider this unnecessary. Using board prices as our independent variable was our primary interest in this modelling and also enabled a larger set of data to be considered. Further, none of our conclusions were based on the model where we used effective retail prices as the independent variable. The primary purpose of our sensitivity analysis was to test whether our underlying base model is robust. We therefore limit the analysis of effective prices to a sensitivity test of the base model.

E95 The results of our sensitivity analysis are similar to what we obtained in our base econometric model. The results are presented in Table E7 below.

[1284] CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 30.

Table E7 Detailed regression outputs for model using effective retail price as the price variable

Variables	91 octane petrol	95 octane petrol	98 octane petrol	Diesel
Singapore benchmark cost index	0.832***	0.809***	0.842***	0.981***
Singapore benchmark cost index (2012)	0.065	0.038	-0.105	-0.046
Singapore benchmark cost index (2013)	0.004	0.030	0.000	-0.135
Singapore benchmark cost index (2014)	0.038	0.028	0.035	0.019
Singapore benchmark cost index (2015)	0.247**	0.243**	0.202*	0.173
Singapore benchmark cost index (2016)	-0.047	0.035	0.257*	-0.027
Singapore benchmark cost index (2017)	0.172	0.170	0.286*	-0.182
Singapore benchmark cost index (2018)	0.012	0.121	0.355***	-0.269***
Singapore benchmark cost index (2019)	-0.473**	-0.320	0.004	-0.624***
Auckland regional fuel tax dummy	0.115***	0.112***	0.104***	0.105***
Other non-GST taxes, levies and ETS	1.245***	1.172***	1.215***	1.276***
Number of observations	456,540	349,488	110,377	491,838
R-squared	0.869	0.866	0.891	0.912
Within R-squared	0.869	0.866	0.891	0.912
Adjusted R-squared	0.869	0.866	0.891	0.912
Hausman test p-value	0.787	0.813	0.587	0.959

Source: Analysis of data provided to the Commission by industry participants.

Notes: ***, **, * indicate statistical significance at the 1%, 5% and 10% levels respectively.
The models include year and month dummy variables, which are not reported in the tables. The fixed effects model also includes dummy variables for each retail fuel site, which are also not shown in the table. The within R-squared is the variation within groups (ie, retail sites) explained by the fixed effects model. The Hausman test is a test for the validity of the random effects estimator compared to the fixed effects estimator.

E96 Specifically, a $1.00 change in the cost index in the base year is associated with an estimated change in effective retail price in the same direction of $0.832, $0.809,

$0.842 and $0.981 for 91 octane, 95 octane, 98 octane petrol and diesel, respectively.

E97 The estimated pass-through of the Auckland regional fuel tax to board prices is similar compared to that in the base model and is equal to or slightly less than one-to-one. In this model the implementation of this 11.5 cents per litre tax is associated with a price increase of approximately 11.5 cents for 91 octane petrol, 11.2 cents for 95 octane petrol, 10.4 cents for 98 octane petrol and 10.5 cents for diesel.

Model using cost of goods sold as the cost variable

E98 We ran another sensitivity test by replacing the unlagged Singapore benchmark cost index variable under the base model with the cost of goods sold (COGS) data that some retailers were able to provide (ie, BP, Z Energy and Waitomo). We generally have not identified a statistically significant relationship between COGS and the board prices for these retailers using the base model without lags. For the few instances where we did, the estimated coefficients were very low and therefore appear unreliable. We provide the regression results in Table E8 below.

Table E8 Model using cost of goods sold as the cost variable

Variables	91 octane petrol	95 octane petrol	98 octane petrol	Diesel
Total COGS	-0.000	0.000	0.036**	0.003
Total COGS (2012)	0.002*	0.001	0.000	-0.001
Total COGS (2013)	-0.000	0.002	-0.034**	0.002
Total COGS (2014)	0.000	0.001	-0.020	0.006
Total COGS (2015)	0.019	0.000	-0.035**	-0.003
Total COGS (2016)	0.014***	0.018***	-0.036**	0.016**
Total COGS (2017)	0.013	0.001	-0.029*	0.012*
Total COGS (2018)	0.048***	0.006	-0.031**	0.016*
Total COGS (2019)	-0.015***	0.003	0.000	-0.018***
Auckland regional fuel tax dummy	0.146***	0.148***	0.151***	0.095***
Other non-GST taxes, levies and ETS	0.855**	0.848*	0.435	3.765***
Number of observations	445,132	340,103	111,000	477,110
R-squared	0.716	0.695	0.697	0.823
Within R-squared	0.716	0.695	0.697	0.823
Adjusted R-squared	0.715	0.695	0.696	0.823
Hausman test p-value	0.322	0.498	0.0455	0.878

Source: Analysis of data provided to the Commission by industry participants.

Notes: ***, **, * indicate statistical significance at the 1%, 5% and 10% levels respectively.
The models include year and month dummy variables, which are not reported in the tables. The fixed effects model also includes dummy variables for each retail fuel site, which are also not shown in the table. The within R-squared is the variation within groups (ie, retail sites) explained by the fixed effects model. The Hausman test is a test for the validity of the random effects estimator compared to the fixed effects estimator.

Limitations of the cost pass-through analysis

E99 We consider that the limitations of the econometric analysis are mainly linked to the data available, and the interpretation of the results. We discuss each of these in turn.

E100 We obtained consistent and relatively complete data for all retailers over time for board prices, the Singapore benchmark cost index and the Auckland regional fuel

tax.[1285] However, as noted elsewhere in this report, we do not have good information on the wholesale prices that retailers pay for fuel, and we know that at least some of these (eg, retail-minus prices) are not cost-based. Using the Singapore benchmark to measure costs could mean that the econometric analysis is less able to capture the relationship between retail fuel suppliers' actual costs and the prices they charge.

E101 Further, while we have to the extent possible addressed any unusual observations in the data to mitigate any distortion in our analyses, the assumptions we made in addressing these could have affected our econometric analysis and potentially made them less robust compared to a scenario where we do not have these unusual observations in the first place.

E102 The modelling approach relies on examining price changes at particular retail fuel sites over time, but our main cost indicator does not vary by site. Variation between sites is captured by a single time-invariant "fixed effect" that shows whether board prices are generally higher or lower at particular sites. With the exception of the Auckland regional fuel tax dummy, our model is not able to account for the effect of factors that vary both by retail fuel sites and time, and this limits our ability to precisely estimate the pass-through. For example, the "fixed effect" captures the cost of delivering fuel to a retail site, but only on average across our sample: if delivery costs have increased over time, our model will not pick this up.

E103 In addition, we also acknowledge that the industry-wide rate of cost pass-through are affected not only by changes in the landed cost of fuel in New Zealand, but also by other costs along the fuel supply chain that impacts the wholesale (and ultimately the retail) price of fuel. If these costs vary over time, only their average effect over the sample period will show up in our model, where it will contribute to the fixed effect for each retail site.

E104 Finally, while the econometric model can help reveal cost pass-through, as well as potentially, whether cost increases are passed through more than cost decreases, or whether pass-through has changed over time, we acknowledge that this is only one indication of whether competition has changed over time and does not of itself tell us how effective competition is. This analysis should therefore not be regarded as conclusive on any aspects related to the effectiveness of competition in the New Zealand retail fuel market.

[1285] We have not been able to obtain complete data for average daily transaction prices for all retailers. Further, we have only obtained COGS for some retailers and it appears that different retailers measure COGS in different ways.

Attachment F The correlation between short-term discounts and board prices

Introduction

F1 This attachment provides technical detail on the empirical analysis we undertook to assess the correlation between short-term discounts and retail board prices.

Summary of results

F2 We examined whether short run changes in board prices can be explained by changes in discount size (measured in cents per litre)[1286] and whether the magnitude of these changes varies across years. Our analysis has found the following main results.

F2.1 Board prices appear to increase slightly when discounts increase and decrease slightly when discounts decrease for the years between 2016 and 2019.

F2.2 A 10 cents increase in discount size per litre is associated with an estimated board price increase of 1.0 to 2.7 cents per litre for regular petrol and 2.4 to 4.9 cents per litre for diesel within the period 2016 to 2019.

F3 We also examined the timing of interaction between board prices and discounts more closely by analysing which came first, the discount or the board price change.

F3.1 Our analysis suggests that board prices anticipated a change in discounting for 91 octane, 98 octane and diesel fuel.

F3.2 We estimate that a 10 cents change in the discount size was preceded 14 days earlier by a board price change in the same direction of 0.4 to 1.1 cents per litre, depending on the fuel type.

F3.3 For some of the years between 2016 and 2019 diesel board prices changed up to two weeks before a change in discounts took place. It therefore appears that retailers anticipate changes in discounting of diesel in advance of a change in discounts.

[1286] Discount size is calculated by subtracting the effective discounted price (ie, revenue from discounted sales divided by volume from discounted sales) from the board price. For example, suppose the board price, revenue and volume from discounted sales for site A's 91 octane petrol on a given day are $2.10, $100,00 and 50,000 litres, respectively. The discount size would therefore be $2.10 - $100,000 / 50,000 = $0.10.

F3.4 Additional board price changes occurred on the same day as discount changes for all fuels. For 98 octane petrol our analysis shows that board prices also changed 7 to 14 days after discount changes.

Econometric analysis on discount and loyalty programmes

F4 This section describes the results and limitations of our econometric analysis on discount and loyalty programmes. Similar to our econometric analyses on cost pass-through rates (see Attachment E), the models we used here are also fixed effects models applied to daily retail site level data. Fixed effects models allow for board prices to vary by fixed amounts between retail fuel sites in New Zealand, all else being held equal.

F5 In this section we discuss:

F5.1 the purpose of our analysis;

F5.2 model specification and results, including:

F5.2.1 the base econometric model;

F5.2.2 an extension to the base model that covers the inclusion of leads and lags of the discount size variable; and

F5.2.3 further extensions to the base model using the proportion of discounted volume and revenue, as well as the proportion of loyalty card revenue as opposed to discount size as the measure for discount and loyalty programmes; and

F5.3 limitations of the analysis.

Purpose of the analysis

F6 The purpose of the analysis is to examine the impact of discount and loyalty programmes used at retail fuel sites in New Zealand on retail fuel prices. Our analysis tests whether changes in board prices can be explained by changes in discount size, and whether the magnitude of these changes vary across years. In addition, we also test whether there is a short-term relationship between the retail margin and the level of discount.

F7 We note that this analysis is complementary to the long-term trend analysis that shows discounting rising over the last decade more or less in line with importer margins (see Chapter 7). In our econometric analysis we are interested in testing short run interactions between discounting and board prices.

Model specification

F8 In this section we discuss the specification and results of the base econometric model we used for the purposes of assessing the impact of discount and loyalty

programmes on retail fuel prices. We also describe the model specification and results of extensions to the base model.

Base model

F9 The base econometric model we use relies on the specification of the base regression model used to assess cost pass-through (see Attachment E), to which we then also add variables that measure discount size on a cents per litre basis for each year between 2011 and 2019.[1287] Discount size was calculated by subtracting the discounted price (ie, revenue from discounted sales divided by volume from discounted sales) from the board price.[1288] Note that this discount variable is observed daily, for each fuel type at each retail site.

F10 We set 2011 as the base year for 91, 95 octane petrol and diesel, and 2014 as the base year for 98 octane petrol.[1289] We then use this model to examine whether changes in board prices can be explained by changes in discount size, and whether the magnitude of these changes vary across years.

Table F1 Base econometric model on discount and loyalty programmes analysis

Variables	91 octane petrol	95 octane petrol	98 octane petrol	Diesel
Singapore benchmark cost index[1290]	0.825***	0.787***	0.863***	0.999***
Singapore benchmark cost index (2012)	0.053	0.028		-0.088
Singapore benchmark cost index (2013)	0.020	0.091		-0.152
Singapore benchmark cost index (2014)	0.029	0.040		-0.029
Singapore benchmark cost index (2015)	0.253**	0.272***	0.212***	0.186*
Singapore benchmark cost index (2016)	-0.028	0.069	0.337***	-0.026
Singapore benchmark cost index (2017)	0.179	0.202*	0.267**	-0.235**

[1287] We note that loyalty card data were not included in the base model used to analyse discount and loyalty programmes. The loyalty card data was used in the extension to the model (see Table F7).

[1288] For example, the board price, revenue and volume from discounted sales for site A's 91 octane petrol on a given day are $2.10, $100,000 and 50,000 litres, respectively. The discount size would therefore be $2.10 – $100,000 / 50.000 = $0.10

[1289] This is because data on discounted sales for 98 octane petrol were not available for the period prior to 2014.

[1290] We note that the Singapore benchmark cost index data does not include any product quality adjustments. However, this is unlikely to have any material effect on our results as it would only increase our estimate of the costs of refined fuel by a small amount.

Singapore benchmark cost index (2018)	-0.008	0.128	0.375***	-0.355***
Singapore benchmark cost index (2019)	-0.448**	-0.226	0.122	-0.625***
Discount size per litre	0.051	0.019	-0.087**	0.057
Discount size per litre (2012)	0.041	0.088		-0.103
Discount size per litre (2013)	0.004	-0.007		-0.051
Discount size per litre (2014)	-0.010	-0.005		-0.054
Discount size per litre (2015)	-0.037	-0.043	0.195***	-0.008
Discount size per litre (2016)	0.088	0.063	0.069*	0.186***
Discount size per litre (2017)	0.222***	0.214***	0.063	0.432***
Discount size per litre (2018)	0.045	-0.010	0.083**	0.294***
Discount size per litre (2019)	0.111	-0.007	0.172***	0.209***
Auckland regional fuel tax dummy	0.114***	0.109***	0.108***	0.102***
Other non-GST taxes, levies and ETS	1.317***	1.260***	1.213***	1.579***
Number of observations	405,431	307,994	89,437	408,337
R-squared	0.889	0.890	0.959	0.915
Within R-squared	0.889	0.890	0.959	0.915
Adjusted R-squared	0.888	0.890	0.959	0.915
Hausman test p-value	0.603	0.783	0.773	0.886

Source: Analysis of data provided to the Commission by industry participants.

Notes: ***, **, * indicate statistical significance at the 1%, 5% and 10% levels respectively.
The models include year and month dummy variables, which are not reported in the tables. The fixed effects model also includes dummy variables for each retail fuel site, which are also not shown in the table. The within R-squared is the variation within groups (ie, retail sites) explained by the fixed effects model. The Hausman test is a test for the validity of the random effects estimator compared to the fixed effects estimator.

F11 As shown in Table F1 above, most estimated coefficients on discount size in the years 2011 to 2014 are not statistically significant, while those in the years 2015 to

2019 generally are. It therefore appears as if there is a positive correlation between board prices and discounts over the last four years.

F12 Specifically, at the 1% significance level, the coefficients are significant for 91 and 95 octane petrol in 2017 (0.222 and 0.214, respectively), 98 octane petrol in 2015 (0.195) and 2019 (0.172), and diesel in all years between 2016 and 2019 (0.186, 0.432, 0.294 and 0.209).

F13 Statistical significance of these coefficients means that the effect of the discount is statistically different from the effect in the base year (ie, 2011). We then estimate whether the sum of these coefficients with those of the base year (ie, the estimated magnitude of the impact of discount size on board prices) is statistically significant. This is detailed in Table F2 below.

Table F2 Magnitude of estimated effect of discount size on board prices for years 2011 to 2019 under the base model

Years	91 octane petrol	95 octane petrol	98 octane petrol	Diesel
2011	0.051	0.019	-0.087**	0.057
2012	0.092*	0.106**	-	-0.046
2013	0.055	0.012	-	0.005
2014	0.041	0.013	-	0.002
2015	0.014	-0.024	0.108**	0.048**
2016	0.139***	0.082***	-0.018	0.243***
2017	0.273***	0.232***	-0.024	0.489***
2018	0.096***	0.008	-0.004	0.350***
2019	0.162***	0.011	0.085***	0.266***

Source: Analysis of data provided to the Commission by industry participants.

Notes: ***, **, * indicate statistical significance at the 1%, 5% and 10% levels respectively for the null hypothesis that pass-through equals to zero.

F14 Table F2 above shows the estimated magnitude of the impact of discount size on board prices for each year from 2011 to 2019 and an indication of whether the null hypothesis that the impact is equal to zero can be accepted.

F15 These results suggest that changes in discount size per litre are related to changes in board price in the same direction for years 2016 to 2019, especially for 91 octane petrol and diesel. The changes in board prices, however, are significantly smaller than those in discount size. In particular, at the 1% statistical significance level we identified the following.

F15.1 A 10 cents increase in discount size per litre is associated with an estimated price increase of 0.96 cents to 2.73 cents (10% to 27% of the discount) for 91 octane petrol, and 2.43 cents to 4.89 cents (24% to 49% of the discount) for diesel, depending on the year looked at within 2016 to 2019.

F15.2 The estimated price increase is 0.82 cents (8% of the discount) in 2016 and 2.32 cents (23% of the discount) in 2017 for 95 octane petrol and 0.85 cents (9% of the discount) for 98 octane petrol in 2019.

F16 We note that the estimated magnitude in 2017 for 91 octane, 95 octane petrol and diesel are slightly higher than those in other years. This, as well as the statistically insignificant results for the years before 2015, could be due to the fact that the samples available for the discount size analysis are much smaller, and also potentially less reliable, than those used for the cost pass-through analysis.

Model including leads and lags of the size of discounts

F17 In this section, we provide an extension to the base model described above by including lags and leads of the size of discounts variables of 7 and 14 days. This is to examine the extent to which fuel retailers change board prices pre-emptively in anticipation of change in the size of discounts, contemporaneously and/or continuously after when the change in the size of discounts took place.

F18 Our analysis shows that retailers would change board prices slightly in the same direction contemporaneously, and 7 and 14 days before the change in discount size takes place for diesel in years where we observed a statistically significant relationship between the two variables in the base model (ie, years 2016 to 2019).

F19 We have not identified any clear pattern on whether fuel retailers change board prices before or after changes in discount size take place for other fuel types (ie, 91, 95 and 98 octane petrol) under this model. This is potentially due to the combination of data limitations as discussed previously and the complexity of this model.

F20 We were, however, able to obtain more meaningful results using a simplified model, which excludes the year interaction and dummy variables and therefore assumes that pass-through and effect of discounts remain constant across all years. In particular, under this model, we have identified the following at the 1% statistical significance level.

F20.1 The majority of price change would take place on the same day and 14 days before for 91 octane petrol and diesel. Specifically, a 10 cents change in the discount size is associated with an estimated price change in the same direction of 0.84 cents (8%) and 1.08 cents (11%) 14 days before, and 1.60 cents (16%) and 1.44 cents (14%) contemporaneously, for these two fuel types, respectively.

F20.2 Retailers appear to change price before, after, as well as on the same day for 98 octane petrol and diesel. Specifically, a 10 cents change in the discount size for 98 octane petrol is associated with an estimated price change in the same direction of 0.42 cents (4%) and 0.56 cents (6%) 14 and 7 days before, 0.54 cents (5%) contemporaneously, as well as 0.64 cents (6%) and 0.47 cents (5%), 7 and 14 days later. The equivalent results for diesel are 1.08 cents (11%) 14 days before, 0.82 cents (8%) 7 days before, 1.44 cents (14%) on the same day, 0.60 cents (6%) 7 days later and 0.53 cents (5%) 14 days later.

F21 In Table F3 below we show the results obtained from the simplified version of the extension to the base model.

Table F3 Detailed regression outputs for the simple model with leads and lags of 7 and 14 days for the discount variable

Variables	91 octane petrol	95 octane petrol	98 octane petrol	Diesel
Singapore benchmark cost index	0.970***	0.939***	1.098***	0.910***
Discount size per litre ($)	0.160***	0.076***	0.054***	0.144***
Discount size per litre – 7 days lead	0.040*	0.022	0.056***	0.082***
Discount size per litre – 14 days lead	0.084***	0.039**	0.042***	0.108***
Discount size per litre – 7 days lag	0.046*	0.028	0.064***	0.060***
Discount size per litre – 14 days lag	0.034	0.014	0.047***	0.053***
Auckland regional fuel tax dummy	0.092***	0.082***	0.106***	0.107***
Other non-GST taxes, levies and ETS	1.559***	1.643***	0.860***	1.277***
Number of observations	389,778	286,986	86,139	364,737
R-squared	0.855	0.847	0.939	0.885
Within R-squared	0.855	0.847	0.939	0.885
Adjusted R-squared	0.854	0.847	0.939	0.884
Hausman test p-value	0.662	0.965	0.957	0.926

Source: Analysis of data provided to the Commission by industry participants.

Notes: ***, **, * indicate statistical significance at the 1%, 5% and 10% levels respectively.
The models include month dummy variables, which are not reported in the tables. The fixed effects model also includes dummy variables for each retail fuel site, which are also not shown in the table. The within R-squared is the variation within groups (ie, retail sites) explained by the fixed effects model. The Hausman test is a test for the validity of the random effects estimator compared to the fixed effects estimator.

Model using proportion of discounted sales

F22 We provide an extension to the base model, by using the proportion of volume sold at a discount (as opposed to discount size) as the measure for discount and loyalty programmes. The results are shown in the tables below. Specifically, Table F4 below provides the results using proportion of volume sold via discounts, and Table F5 below provides the results using proportion of revenue sold via discounts.

F23 The results show that changes in proportion of volume sold at a discount, in most cases, are associated with slight changes in board prices in the opposite direction. Using 91 octane petrol as an example, an increase in the proportion of volume sold at a discount from 0 to 100% (ie, from no discounted sales to all volume sold at a discount) is associated with an estimated price decrease of 2.0 to 9.2 cents (namely 2014, for which the effect for 91 octane petrol is 2.0 cents plus 7.2 cents, ie, 9.2 cents in total). We obtain similar results when we use the proportion of revenue sold at a discount, as opposed to the proportion of volumes sold at a discount. We note that the negative correlation between the proportion of revenue sold at a discount and board prices from our results could be an indication that an increase in discounts in recent years might have resulted in a net reduction of revenue earned by retailers.

F24 We note that changes in volume sold at a discount and in discount size impact prices in opposite directions. This reflects a negative correlation in the data between discount size and proportion of discounted sales. This correlation is interesting in itself because it suggests two further things. First, that the divide between consumers using and not using discounts is wide enough that increases in discounts do not attract new consumers. Second, that within the group of consumers using discounts, the timing of discount changes is such that consumers systematically miss the timing of relatively high discounts. These are matters that would benefit from further analysis.

Table F4 Detailed regression outputs for model using proportion of discounted volume

Variables	91 octane petrol	95 octane petrol	98 octane petrol	Diesel
Singapore benchmark cost index	0.819***	0.783***	0.873***	0.992***
Singapore benchmark cost index (2012)	0.048	0.018		-0.069
Singapore benchmark cost index (2013)	0.036	0.098		-0.141
Singapore benchmark cost index (2014)	0.034	0.044		0.010
Singapore benchmark cost index (2015)	0.260**	0.274***	0.201**	0.217**
Singapore benchmark cost index (2016)	-0.028	0.070	0.320***	-0.047
Singapore benchmark cost index (2017)	0.199*	0.219*	0.251*	-0.228**
Singapore benchmark cost index (2018)	-0.003	0.133	0.364***	-0.367***
Singapore benchmark cost index (2019)	-0.426**	-0.232	0.124	-0.664***
Proportion of discounted volume	-0.020***	0.016***	-0.004	-0.053***

Proportion of discounted volume (2012)	-0.027***	-0.032***		-0.023*
Proportion of discounted volume (2013)	-0.047***	-0.069***		-0.016
Proportion of discounted volume (2014)	-0.072***	-0.108***		0.082***
Proportion of discounted volume (2015)	-0.052***	-0.103***	-0.026***	0.051***
Proportion of discounted volume (2016)	-0.011	-0.033***	-0.003	0.038***
Proportion of discounted volume (2017)	-0.028**	-0.033***	0.002	0.052***
Proportion of discounted volume (2018)	-0.015*	-0.042***	0.012	0.061***
Proportion of discounted volume (2019)	-0.023**	-0.054***	0.041***	0.064***
Auckland regional fuel tax dummy	0.114***	0.108***	0.106***	0.100***
Other non-GST taxes, levies and ETS	1.338***	1.275***	1.212***	1.762***
Observations	405,450	308,139	90,053	408,423
R-squared	0.889	0.890	0.954	0.911
Within R-squared	0.889	0.890	0.954	0.911
Adjusted R-squared	0.889	0.890	0.954	0.911
Hausman test p-value	0.615	0.800	0.783	0.870

Source: Analysis of data provided to the Commission by industry participants.

Notes: ***, **, * indicate statistical significance at the 1%, 5% and 10% levels respectively.
The models include year and month dummy variables, which are not reported in the tables. The fixed effects model also includes dummy variables for each retail fuel site, which are also not shown in the table. The within R-squared is the variation within groups (ie, retail sites) explained by the fixed effects model. The Hausman test is a test for the validity of the random effects estimator compared to the fixed effects estimator.

Table F5 Detailed regression outputs for model using proportion of discounted revenue

Variables	91 octane petrol	95 octane petrol	98 octane petrol	Diesel
Singapore benchmark cost index	0.820***	0.783***	0.873***	0.992***
Singapore benchmark cost index (2012)	0.048	0.019		-0.069
Singapore benchmark cost index (2013)	0.035	0.098		-0.142
Singapore benchmark cost index (2014)	0.034	0.044		0.010
Singapore benchmark cost index (2015)	0.260**	0.274***	0.201**	0.218**
Singapore benchmark cost index (2016)	-0.029	0.070	0.321***	-0.047
Singapore benchmark cost index (2017)	0.199*	0.219*	0.252*	-0.228**
Singapore benchmark cost index (2018)	-0.004	0.132	0.364***	-0.367***
Singapore benchmark cost index (2019)	-0.427**	-0.233	0.127	-0.665***
Proportion of discounted revenue	-0.020***	0.016***	-0.003	-0.054***
Proportion of discounted revenue (2012)	-0.028***	-0.032***		-0.022*
Proportion of discounted revenue (2013)	-0.047***	-0.069***		-0.017
Proportion of discounted revenue (2014)	-0.072***	-0.108***		0.079***
Proportion of discounted revenue (2015)	-0.052***	-0.103***	-0.029***	0.047***
Proportion of discounted revenue (2016)	-0.011	-0.033***	-0.004	0.032***
Proportion of discounted revenue (2017)	-0.030**	-0.037***	0.001	0.046***
Proportion of discounted revenue (2018)	-0.013*	-0.039***	0.011	0.055***
Proportion of discounted revenue (2019)	-0.023**	-0.052***	0.033***	0.059***
Auckland regional fuel tax dummy	0.114***	0.108***	0.106***	0.100***
Other non-GST taxes, levies and ETS	1.337***	1.273***	1.213***	1.763***
Observations	405,450	308,139	90,053	408,423

R-squared	0.889	0.890	0.954	0.911
Within R-squared	0.889	0.890	0.954	0.911
Adjusted R-squared	0.889	0.890	0.954	0.911
Hausman test p-value	0.613	0.800	0.783	0.869

Source: Analysis of data provided to the Commission by industry participants.

Notes: ***, **, * indicate statistical significance at the 1%, 5% and 10% levels respectively.
The models include year and month dummy variables, which are not reported in the tables. The fixed effects model also includes dummy variables for each retail fuel site, which are also not shown in the table. The within R-squared is the variation within groups (ie, retail sites) explained by the fixed effects model. The Hausman test is a test for the validity of the random effects estimator compared to the fixed effects estimator.

Model using proportion of discounted sales

F25 We also examine the extent to which board prices are affected by the discount and loyalty programmes offered by fuel retailers, by using the proportion of discounted sales as the relevant measure. Table F6 below provides the results using proportion of discounted volume sold via discount and loyalty cards, and Table F7 provides the results using proportion of revenue sold at a discount.[1291]

F26 Overall, the results show that changes in the proportion of discounted sales are associated with small changes in board prices in the same direction for both 91 and 95 octane petrol. Specifically, an increase in the proportion of discounted volume from 0 to 100% is associated with an increase in board prices of 4.3 cents in 2018 for 91 octane petrol, 1.5 cents for 95 octane petrol, and 2.4 cents for diesel. The results are similar when we use the proportion of revenue sold at a discount, as opposed to volume.

[1291] These analyses do not cover 98 octane petrol, as none of the fuel retailers were able to provide data to us on discount and loyalty card sales of 98 octane petrol.

Table F6 Detailed regression outputs for model using proportion of discounted volume

Variables	91 octane petrol	95 octane petrol	Diesel
Singapore benchmark cost index	0.805***	0.784***	0.988***
Singapore benchmark cost index (2012)	0.057	0.026	-0.081
Singapore benchmark cost index (2013)	0.048	0.092	-0.111
Singapore benchmark cost index (2014)	0.046	0.042	-0.018
Singapore benchmark cost index (2015)	0.252**	0.261**	0.165
Singapore benchmark cost index (2016)	-0.043	-0.001	-0.062
Singapore benchmark cost index (2017)	0.193*	0.174	-0.213*
Singapore benchmark cost index (2018)	0.002	0.060	-0.332***
Singapore benchmark cost index (2019)	-0.487**	-0.460**	-0.707***
Proportion of loyalty card volume	0.043***	-0.022***	0.021**
Proportion of loyalty card volume (2012)	0.044**	0.039***	0.017**
Proportion of loyalty card volume (2013)	0.050***	0.055***	0.023**
Proportion of loyalty card volume (2014)	-0.000	0.032***	-0.029***
Proportion of loyalty card volume (2015)	0.005	0.031***	-0.011
Proportion of loyalty card volume (2016)	0.017	0.057***	0.015*
Proportion of loyalty card volume (2017)	0.027**	0.066***	0.004
Proportion of loyalty card volume (2018)	-0.000	0.037***	0.003
Proportion of loyalty card volume (2019)	-0.046***	0.002	-0.015
Auckland regional fuel tax dummy	0.118***	0.112***	0.098***
Other non-GST taxes, levies and ETS	1.432***	1.366***	1.784***
Observations	403,717	306,192	405,370

R-squared	0.878	0.877	0.899
Within R-squared	0.878	0.877	0.899
Adjusted R-squared	0.878	0.877	0.898
Hausman test p-value	0.610	0.734	0.901

Source: Analysis of data provided to the Commission by industry participants.

Notes: ***, **, * indicate statistical significance at the 1%, 5% and 10% levels respectively. The models include year and month dummy variables, which are not reported in the tables. The fixed effects model also includes dummy variables for each retail fuel site, which are also not shown in the table. The within R-squared is the variation within groups (ie, retail sites) explained by the fixed effects model. The Hausman test is a test for the validity of the random effects estimator compared to the fixed effects estimator.

Table F7 Detailed regression outputs for model using proportion of loyalty card revenue

Variables	91 octane petrol	95 octane petrol	Diesel
Singapore benchmark cost index	0.806***	0.784***	0.988***
Singapore benchmark cost index (2012)	0.056	0.026	-0.081
Singapore benchmark cost index (2013)	0.048	0.092	-0.111
Singapore benchmark cost index (2014)	0.046	0.042	-0.018
Singapore benchmark cost index (2015)	0.252**	0.261**	0.165
Singapore benchmark cost index (2016)	-0.043	-0.001	-0.063
Singapore benchmark cost index (2017)	0.193*	0.174	-0.214*
Singapore benchmark cost index (2018)	0.002	0.060	-0.332***
Singapore benchmark cost index (2019)	-0.487**	-0.460**	-0.704***
Proportion of loyalty card revenue	0.043***	-0.023***	0.020**
Proportion of loyalty card revenue (2012)	0.042**	0.039***	0.017**
Proportion of loyalty card revenue (2013)	0.049***	0.054***	0.023**
Proportion of loyalty card revenue (2014)	-0.003	0.030***	-0.031***

Proportion of loyalty card revenue (2015)	0.004	0.031***	-0.012
Proportion of loyalty card revenue (2016)	0.017	0.056***	0.014
Proportion of loyalty card revenue (2017)	0.026**	0.066***	0.002
Proportion of loyalty card revenue (2018)	-0.001	0.036***	0.001
Proportion of loyalty card revenue (2019)	-0.048***	0.001	-0.017*
Auckland regional fuel tax dummy	0.118***	0.112***	0.098***
Other non-GST taxes, levies and ETS	1.431***	1.366***	1.783***
Observations	403,714	306,187	405,360
R-squared	0.878	0.877	0.899
Within R-squared	0.878	0.877	0.899
Adjusted R-squared	0.878	0.877	0.898
Hausman test p-value	0.611	0.734	0.904

Source: Analysis of data provided to the Commission by industry participants.

Notes: ***, **, * indicate statistical significance at the 1%, 5% and 10% levels respectively.
The models include year and month dummy variables, which are not reported in the tables. The fixed effects model also includes dummy variables for each retail fuel site, which are also not shown in the table. The within R-squared is the variation within groups (ie, retail sites) explained by the fixed effects model. The Hausman test is a test for the validity of the random effects estimator compared to the fixed effects estimator.

Submission from CRA on the discount and loyalty programme analysis

F27 CRA submitted that the analysis presented above (which is unchanged) shows that "the benefit to each consumer that takes advantage of the discounts exceeds the harm experienced by each consumer that does not."[1292] We disagree with this characterisation, which is based solely on our econometric modelling of the short run dynamic relationship between discounts and board prices (see above).

F28 As noted in Chapter 7, there is a clear long-run association between increases in margins and increases in discounts. That long-run relationship is additional to and

[1292] CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 32.

distinct from the short run dynamics reported in this attachment. Any inference about the overall consumer welfare effects of discounting would require a careful assessment of both of these effects, which has not been attempted by CRA.

F29 In addition to submitting that this econometric modelling supports strong conclusions about consumer welfare, CRA also submit that the modelling is incorrect and/or insufficient because it omits relevant variables and because discounts are endogenous regressors.[1293]

F30 We acknowledge that, as with any empirical project, more analysis could be undertaken. For example, as noted above, there is a puzzling correlation in the data between discount levels and the proportion of fuel sold at a discount. This is one of several further lines of enquiry that could usefully be pursued at another time, but which was not essential for us to formulate the recommendations we have made.

F31 Similarly, we accept CRA's suggestion that it would be interesting to include lags of importer costs to further explore the short run dynamics between discounts and board prices. Again, this has not been pursued in the current study since it was not essential to the recommendations that we have made.

F32 We do not accept CRA's endogeneity submissions however, for the following reasons.

F32.1 First, in the words of Judge *et al* (1985) *"for statistical purposes the relevant distinction is between jointly determined variables and predetermined variables."*[1294] This is why lagged dependent variables are not considered endogenous and more generally any separation in time between two endogenous variables is generally sufficient to address the issue. For this reason, the endogeneity issue to which CRA refers does not arise in respect of the lag and lead discount variables in our models.

F32.2 Second, the loyalty rebate analysis is not a structural model. The model explores the relationship between discounts and board prices, but we make no claim that significant correlations imply the existence of a causal relationship between board prices increasing when discounts increase or increasing in advance of planned discounts.

F32.3 Third, there are no suitable instruments available for the size of discount, so an instrumental variables approach is not feasible. We note that CRA make no suggestions about instrument choice.

[1293] CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 33.

[1294] George G. Judge, William E. Griffiths, R. Carter Hill, Helmut Lütkepohl and Tsoung-Chao Lee *The Theory and Practice of Econometrics* (2nd ed, John Wiley and Sons, 1985) at 565.

Limitations of the discount and loyalty programme analysis

F33 The limitations on the econometric analysis of discount and loyalty programmes mainly relate to data and sample size limitations.

F34 The sample sizes we have for these analyses are much smaller compared to those associated with the cost pass-through analysis (see Attachment E). We note that a large proportion of the daily discount size data upon which we rely for this analysis, especially before 2015, were provided to us by one of the majors. These data may not be appropriate to be interpreted at the daily level due to the way in which some discounts are recorded at only a monthly or more aggregated level.

F35 Further, with the exception of the Auckland regional fuel tax dummy, we are not able to account for factors that may affect the costs and vary both across sites and over time.

F36 Finally, we note that an econometric analysis of the effects of discount and loyalty programmes on board prices provides only partial information about their competitive effects.

Attachment G Regional variations in retail fuel prices and margins

Introduction

G1 This attachment provides technical detail on the empirical analysis we undertook to assess the regional variations in retail fuel prices and margins over time.

Summary of results

G2 Overall, our analysis shows that board prices and margins in the South Island and Wellington are higher than those in the North Island.

South Island

G3 Within the South Island, board prices and margins for 2019 in Westland District and Queenstown-Lake District are higher compared to those in other territories.[1295]

G4 In particular, the board prices of 95 octane petrol in Westland District and Queenstown-Lake District are higher than those of 98 octane petrol in other territories within New Zealand.

North Island

G5 Despite having higher board prices, margins in Auckland are similar to those in other regions and territories of the North Island in 2019. We examined the impact of the 11.5 cents per litre Auckland regional fuel tax implemented in July 2018 and found this tax to have been passed on approximately one-to-one into fuel prices.

G6 Our analysis shows that board prices in Wellington City are similar to those in the South Island and are therefore higher than those in other regions and territories within the North Island.

G7 Those retail fuel sites located in the Wellington region, while still higher than those in other regions and territories within the North Island, are pricing slightly lower than sites located in the South Island.[1296]

[1295] "Territories" refer to "territorial authorities". A territorial authority is defined under the Local Government Act 2002 as a city council or district council. There are 67 territorial authorities consisting of 12 city councils, 53 districts, Auckland Council, and Chatham Islands Council. Available at <http://archive.stats.govt.nz/methods/classifications-and-standards/classification-related-stats-standards/territorial-authority/definition.aspx>. (Viewed on 25 July 2019).

[1296] This is because average prices and margins in Wellington City are slightly higher than those averaged across the Wellington Region.

High population density regions

G8 When comparing across territories within high population density regions, our analysis shows that:

G8.1 prices and margins in the Masterton District are lower than those in other territories within the Wellington region; and

G8.2 prices and margins in the Waimate District are higher than those in other territories within the Canterbury region before 2014, but lower compared to those territories after 2017.

Regional variation in retail fuel prices and margins over time

G9 This section contains details on the regional maps, site maps and key line charts we produced to show how board prices[1297] and importer margins[1298] of refined fuel vary over time and across different areas in New Zealand.

Regional maps

G10 The regional maps compare the board prices and importer margins of 91 octane, 95 octane, 98 octane petrol and diesel across different regions in New Zealand for the year 2019. These maps colour each territory based on its average board prices and importer margins in 2019, using four different colours.

G11 These colours graduate from yellow to red and represent the four different bands of prices and margins based on the range of regional averages across different regions in New Zealand. We note that the lack of colour for some territories are reflective of instances where we do not have any pricing and/or margin data available for some of the premium petrol types.

G11.1 Territories with board prices / importer margins between the minimum and the first quartile are coloured in yellow.

G11.2 Territories with board prices / importer margins between the first quartile and the median are coloured in light orange.

G11.3 Territories with board prices / importer margins between the median and the third quartile are coloured in dark orange.

[1297] We note that we have used the terms “board prices” and “pump prices” interchangeably in Figures 1 to 19 in this attachment. Both board prices and pump prices are defined as the fuel price displayed on large price boards outside fuel retail sites.

[1298] This is defined as board price retail fuel data submitted by market participants, minus duties, taxes, levies, the ETS cost and the importer cost based on the Singapore benchmark cost index. We note that the Singapore benchmark cost data used for our analysis does not include any product quality adjustments.

G11.4 Territories with board prices / importer margins between the third quartile and the maximum are coloured in red.

G12 These maps are detailed in the figures below.

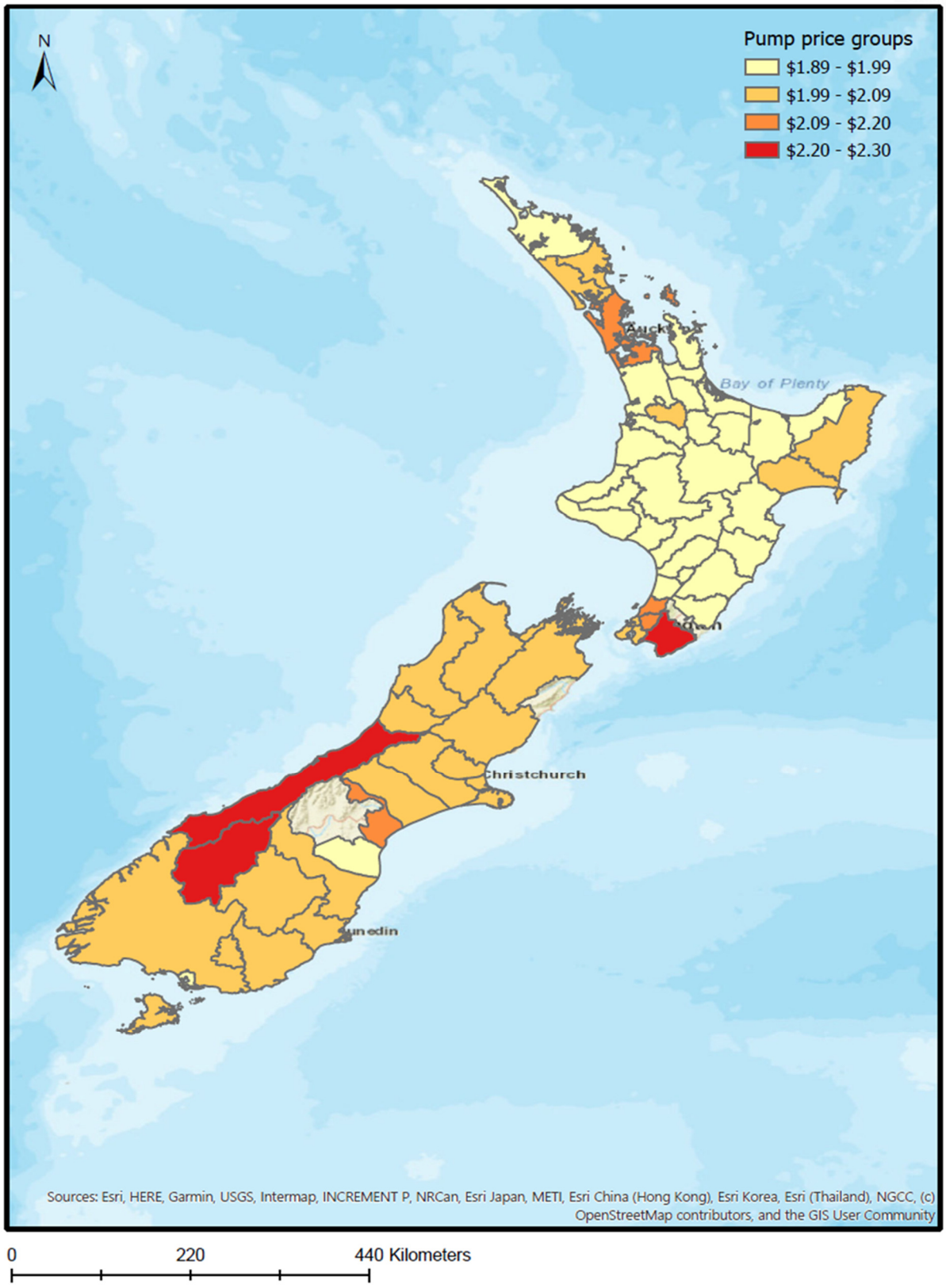
G12.1 Figure G1 and Figure G2 below show the average 91 octane petrol board prices and importer margins in 2019 across territories within New Zealand, with average board prices ranging from $1.89 to $2.30 NZD per litre, and average importer margins ranging from 7.99% to 22.68%. Prices and margins in South Wairarapa District, Queenstown-Lakes District and Westland District are the highest, with board prices between $2.20 and $2.30 NZD per litre and importer margins between 19.00% and 22.68%.

G12.2 Figure G3 and Figure G4 below show the average 95 octane petrol board prices and importer margins in 2019 across territories within New Zealand, with average board prices ranging from $1.98 to $2.44 NZD per litre, and average importer margins ranging from 11.68% to 25.78%. Prices and margins in Westland District are the highest, with a board price of $2.44 NZD per litre and an importer margin of 25.78%.

G12.3 Figure G5 and Figure G6 show the average 98 octane petrol board prices and importer margins in 2019 across territories within New Zealand, with average board prices ranging from $2.03 to $2.27 NZD per litre, and average importer margins ranging from 11.75% to 20.55%. For most regions in the South Island retailers do not retail this type of premium petrol, and those who do would have a higher board price ($2.21 to $2.27 NZD per litre) and importer margins (18.35% to 20.55%) than most territories in the North Island.

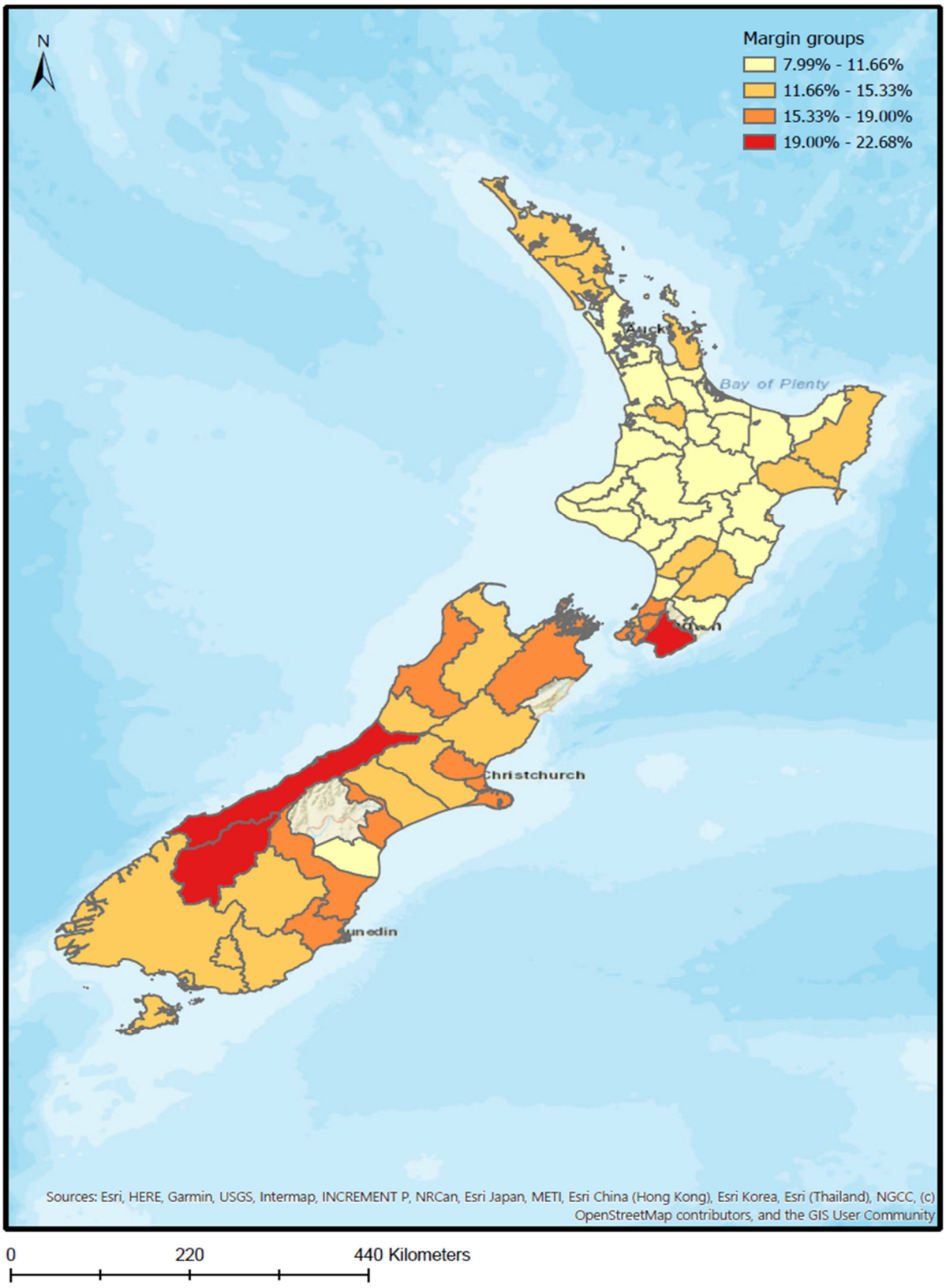
G12.4 Figure G7 and Figure G8 show the average diesel board prices and importer margins across territories in 2019 within New Zealand, with average board prices ranging from $1.23 to $1.79 NZD per litre, and average importer margins ranging from 11.16% to 35.60%. Prices and margins in the Westland District are the highest, with a board price of $1.79 NZD per litre and importer margins of 35.60%.

Figure G1 91 octane petrol board prices across territories in New Zealand (2019, NZD per litre)



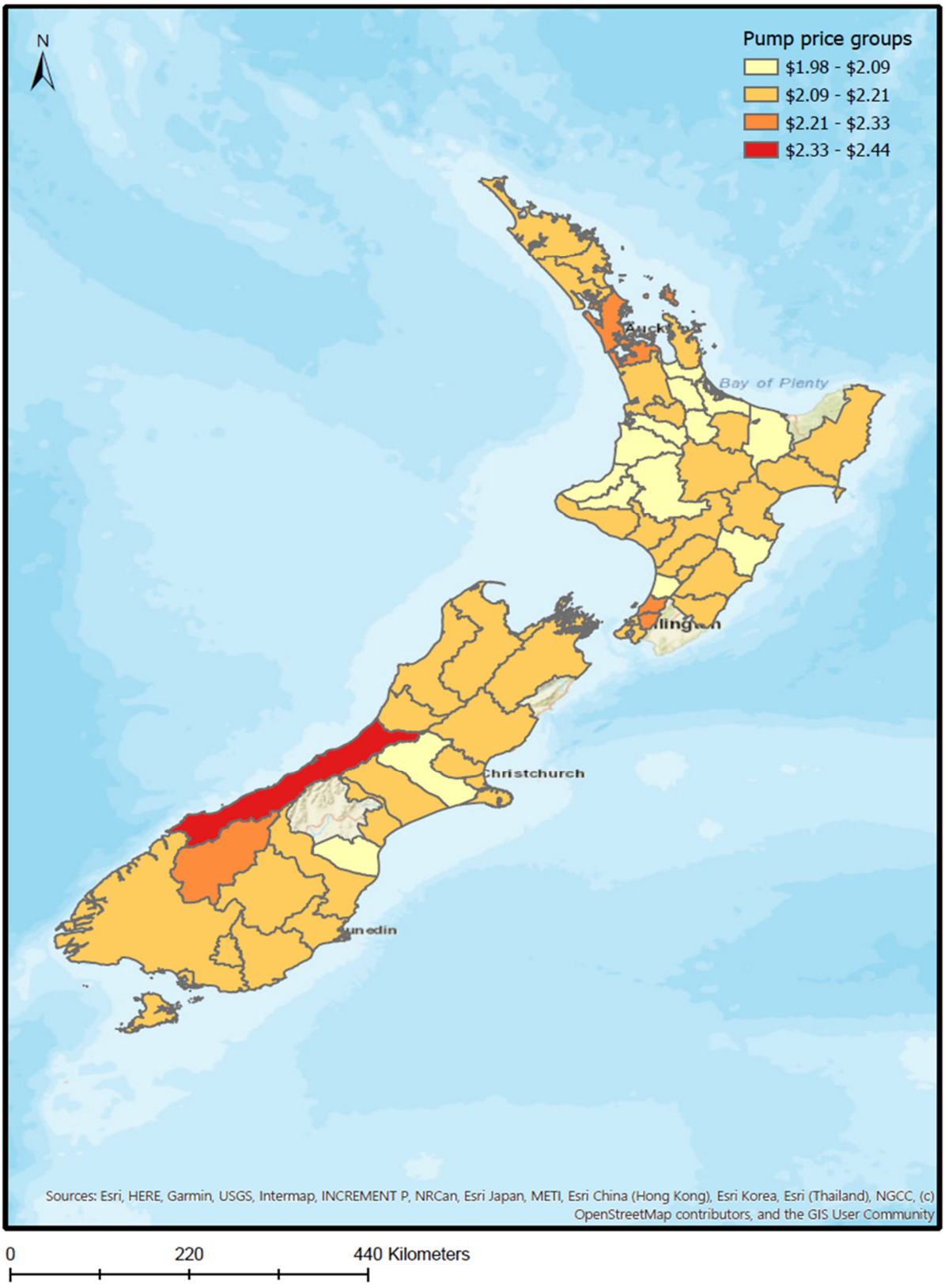
Source: Analysis of data provided by industry participants.

Figure G2 91 octane petrol importer margins across territories in New Zealand (2019)



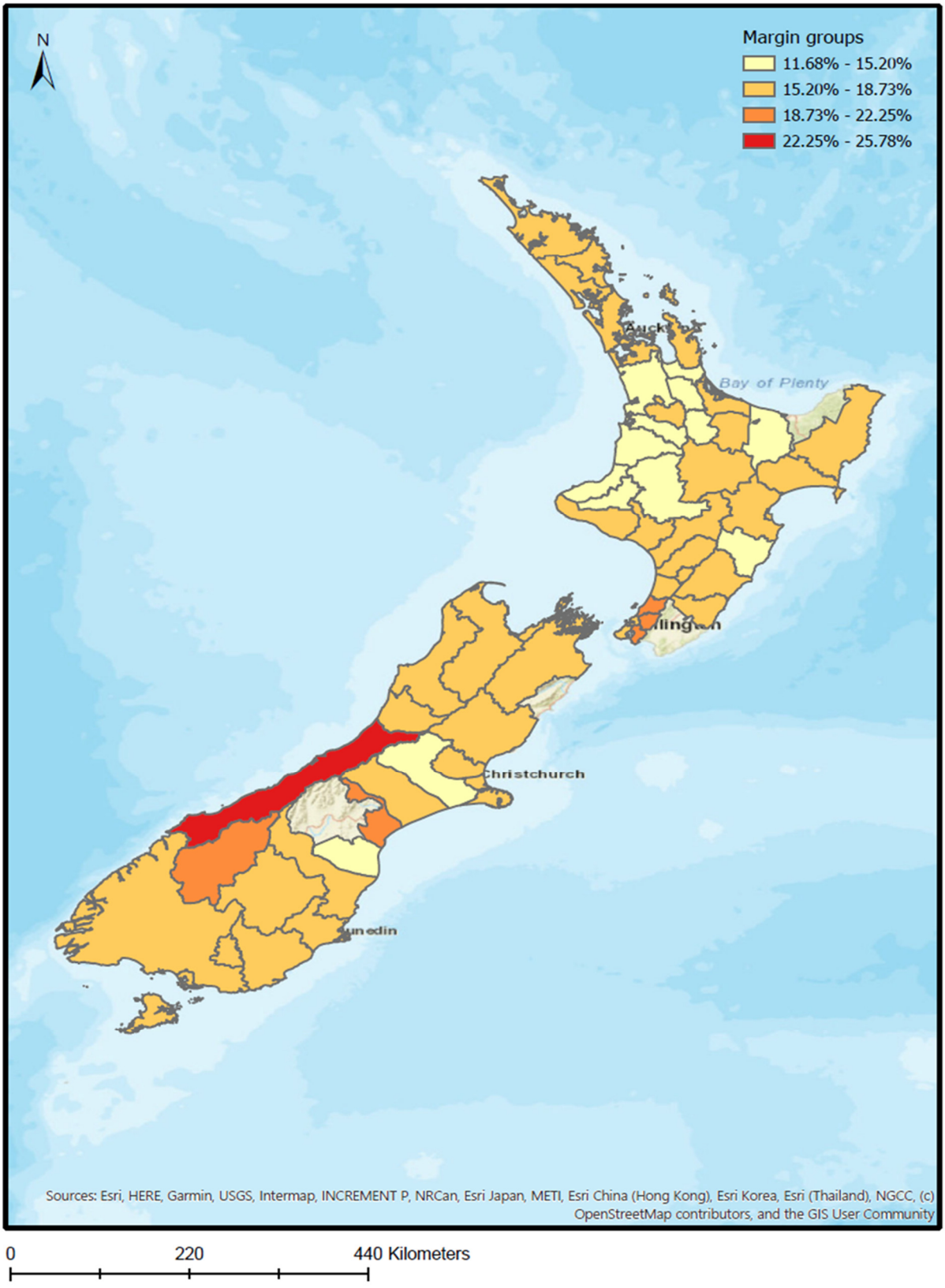
Source: Analysis of data provided by industry participants.

Figure G3 95 octane petrol board prices across territories in New Zealand (2019, NZD per litre)



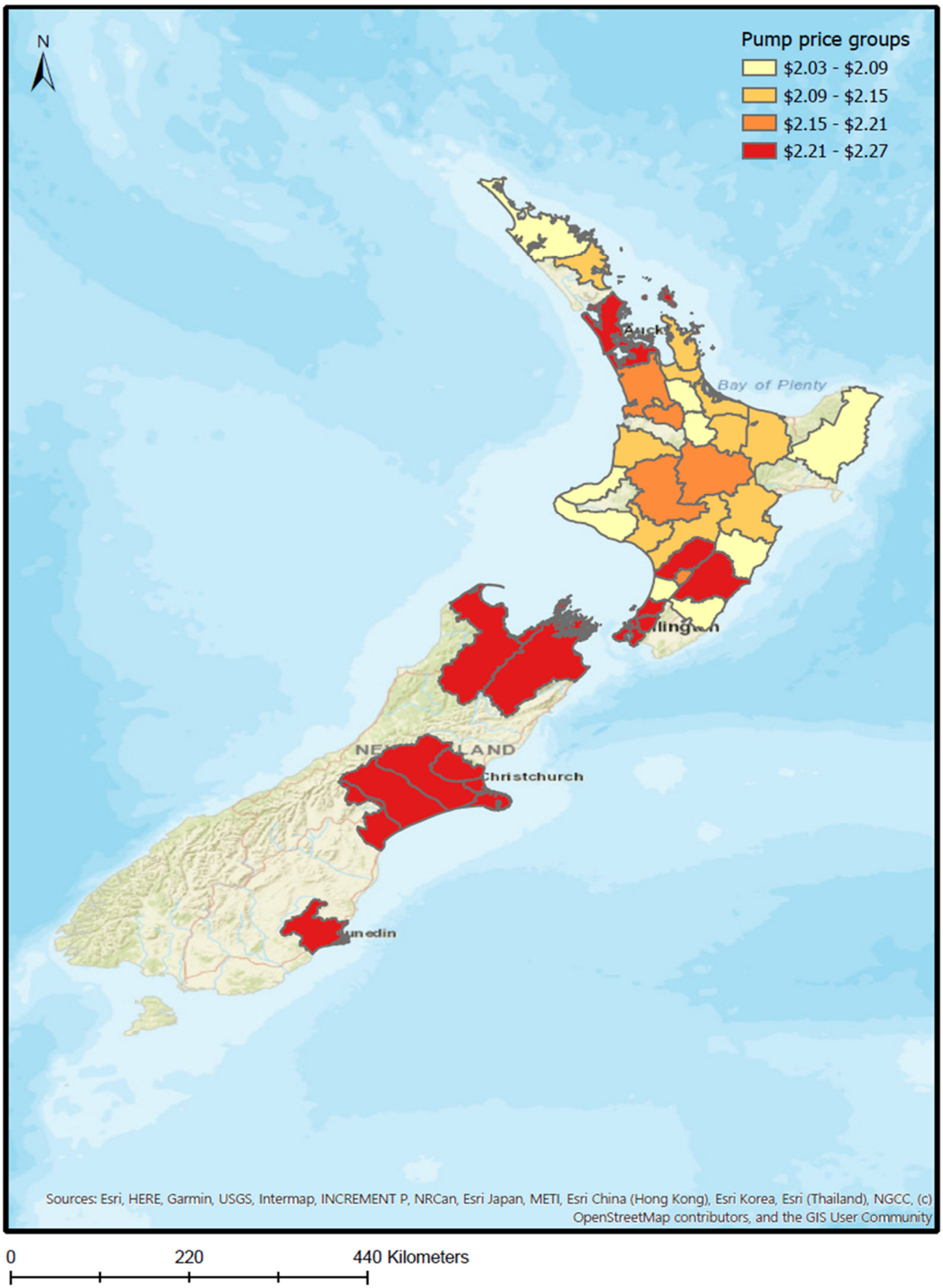
Source: Analysis of data provided by industry participants.

Figure G4 95 octane petrol importer margins across territories in New Zealand (2019)



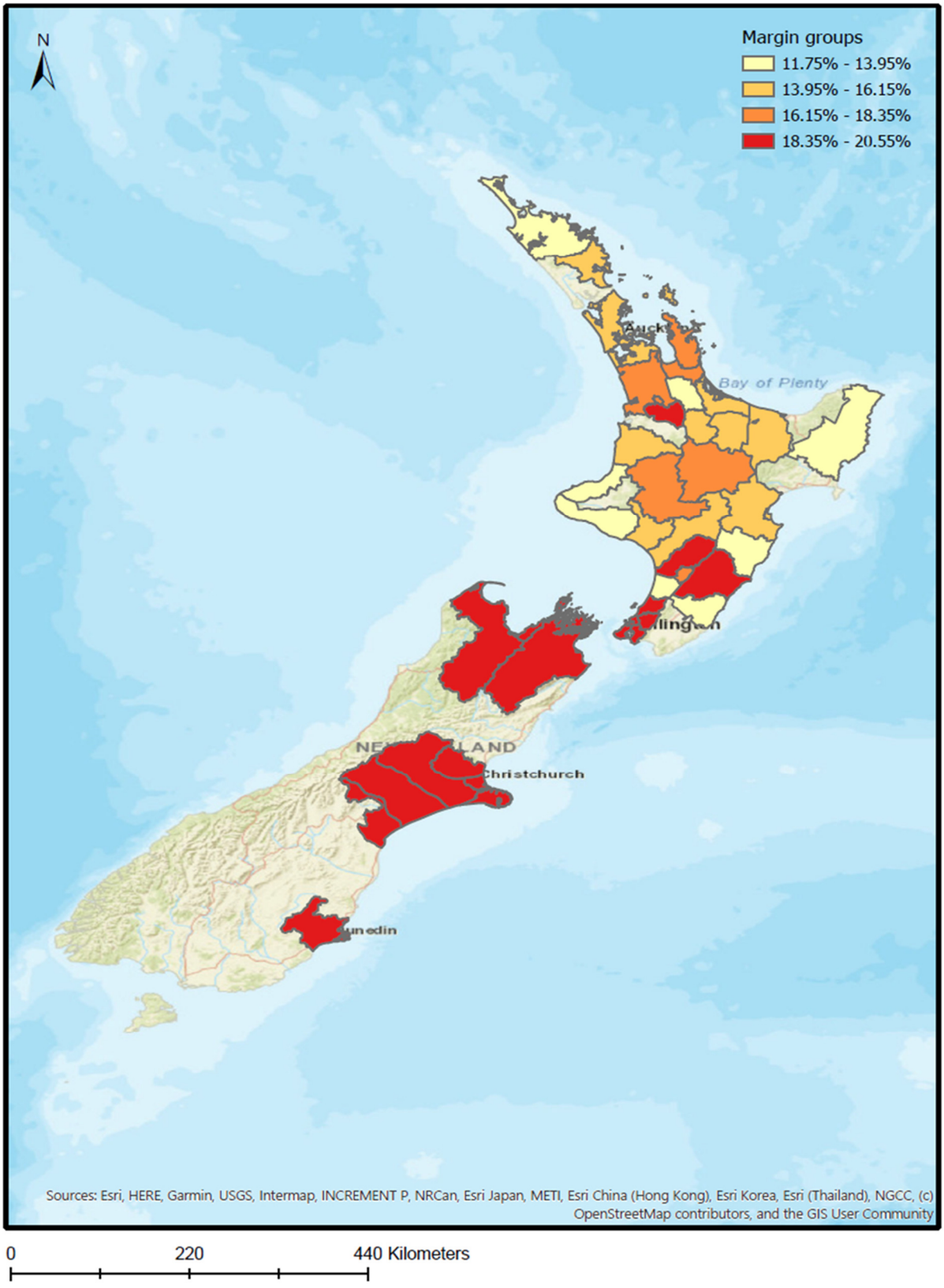
Source: Analysis of data provided by industry participants.

Figure G5 98 octane petrol board prices across territories in New Zealand (2019, NZD per litre)



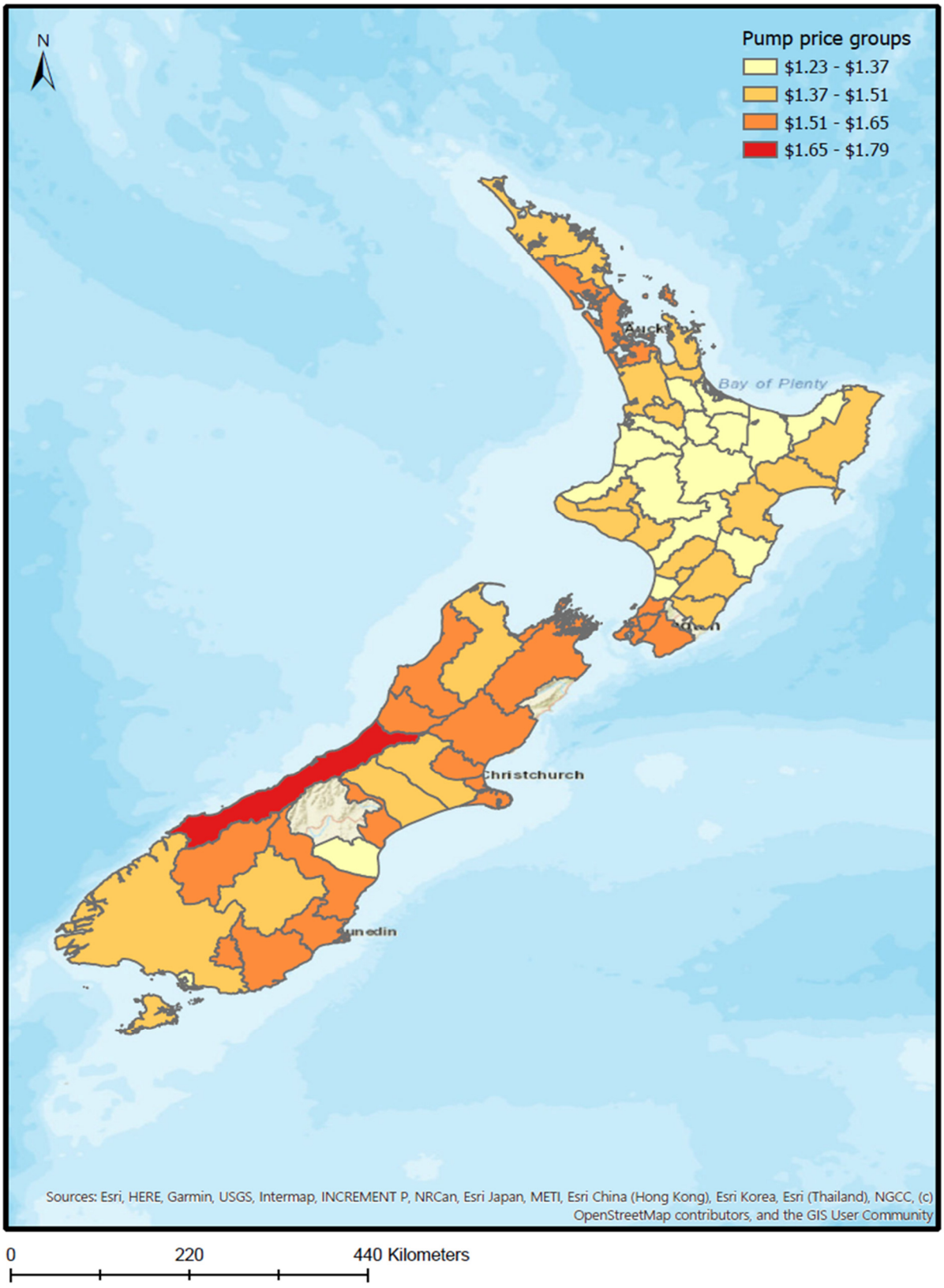
Source: Analysis of data provided by industry participants.

Figure G6 98 octane petrol importer margins across territories in New Zealand (2019)



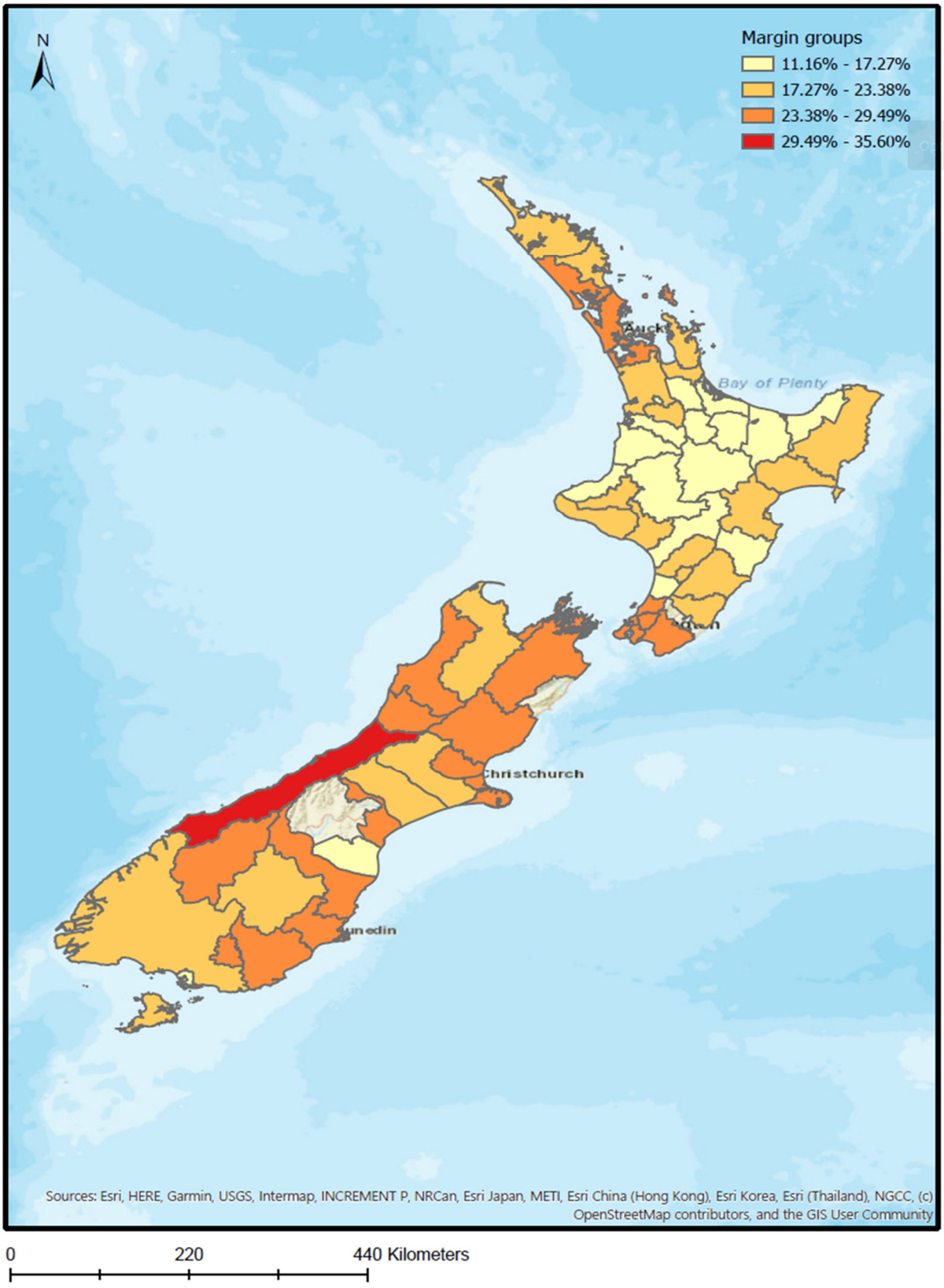
Source: Analysis of data provided by industry participants.

Figure G7 Diesel board prices across territories in New Zealand (2019, NZD per litre)



Source: Analysis of data provided by industry participants.

Figure G8 Diesel importer margins across territories in New Zealand (2019)



Source: Analysis of data provided by industry participants.

Site maps

G13 The site maps compare board prices and importer margins of 91 octane across sites (for which we have reliable board price data) in areas with high population density, for the year 2019. These areas are the Auckland region, the Waikato Region, the Wellington Region and Christchurch City.

G14 These maps colour each site based on its average board prices and importer margins in 2019, using four different colours. These colours graduate from yellow to red and represent the four different bands of prices and margins based on the range of site averages of each of the above four areas. Specifically, for each of the Auckland region, the Waikato Region, the Wellington Region and Christchurch City:

G14.1 sites with board prices / importer margins between the minimum and the first quartile are coloured in yellow;

G14.2 sites with board prices / importer margins between the first quartile and the median are coloured in light orange;

G14.3 sites with board prices / importer margins between the median and the third quartile are coloured in dark orange; and

G14.4 sites with board prices / importer margins between the third quartile and the maximum are coloured in red.

G15 These site maps are detailed in the figures below.

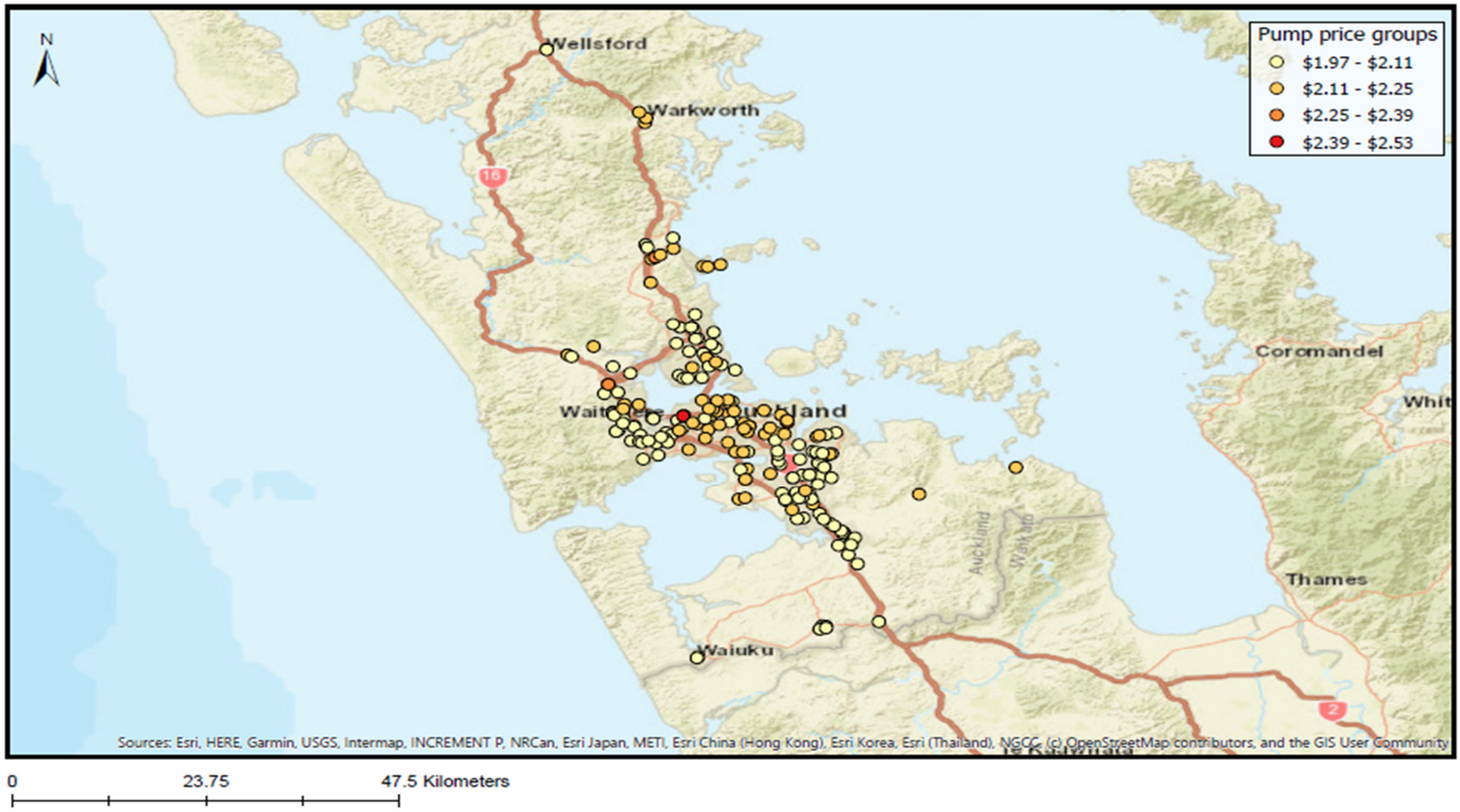
G15.1 Figure G9 and Figure G10 below show the average 91 octane petrol board prices and importer margins in 2019 for sites within the Auckland region, with average board prices ranging from $1.97 to $2.53 NZD per litre, and average importer margins ranging from 5.30% to 24.64%.

G15.2 Figure G11 and Figure G12 below show the average 91 octane petrol board prices and importer margins in 2019 for sites within Christchurch City, with average board prices ranging from $1.97 to $2.33 NZD per litre, and average importer margins ranging from 10.26% to 23.68%.

G15.3 Figure G13 and Figure G14 below show the average 91 octane petrol board prices and importer margins in 2019 for sites within the Waikato Region, with average board prices ranging from $1.79 to $2.17 NZD per litre, and average importer margins ranging from 2.30% to 19.01%.

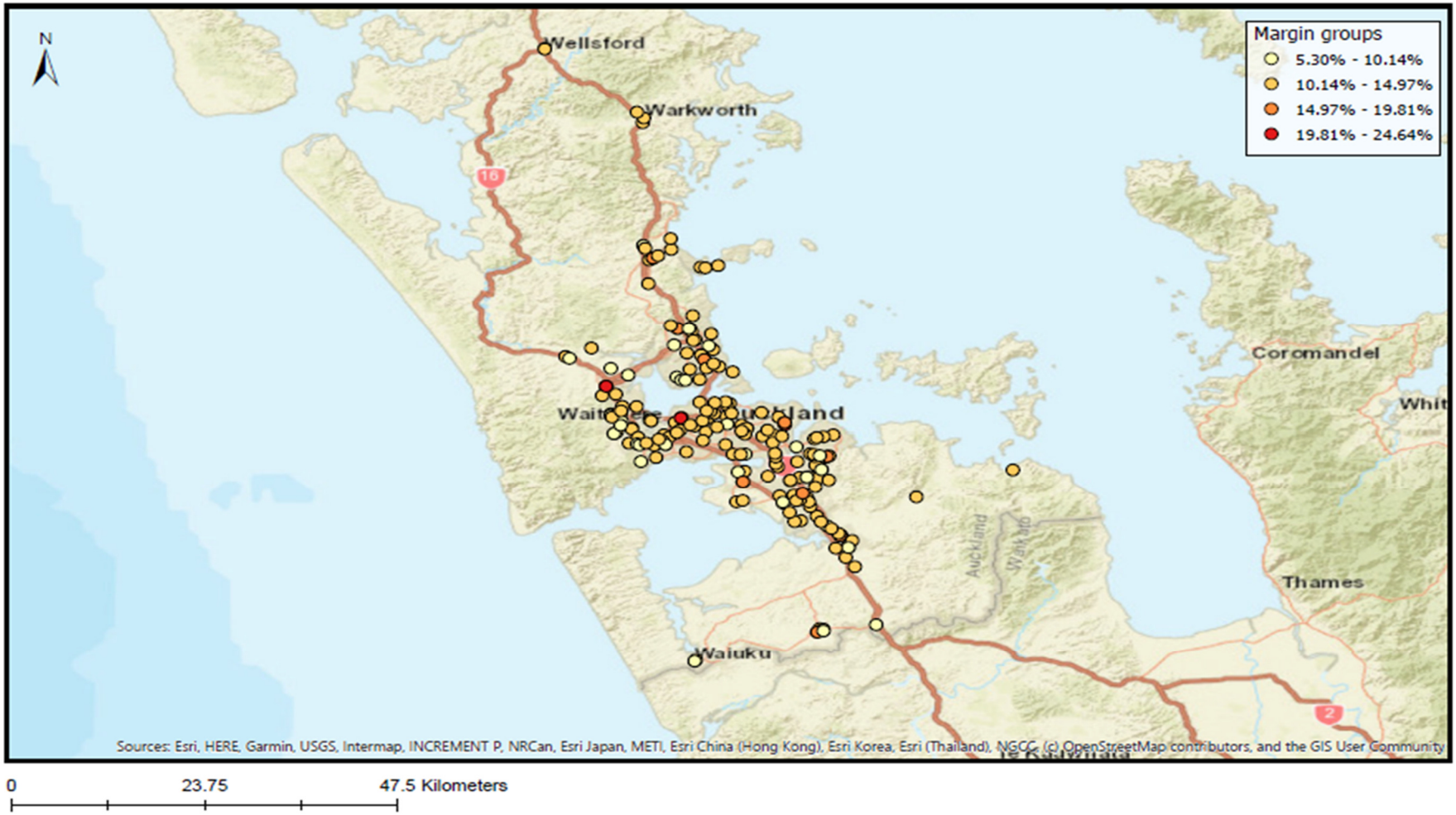
G15.4 Figure G15 and Figure G16 below show the average 91 octane petrol board prices and importer margins in 2019 for sites within the Wellington region, with average board prices ranging from $1.91 to $2.33 NZD per litre, and average importer margins ranging from 7.66% to 23.68%.

Figure G9 91 octane petrol board prices across sites in the Auckland region (2019, NZD per litre)



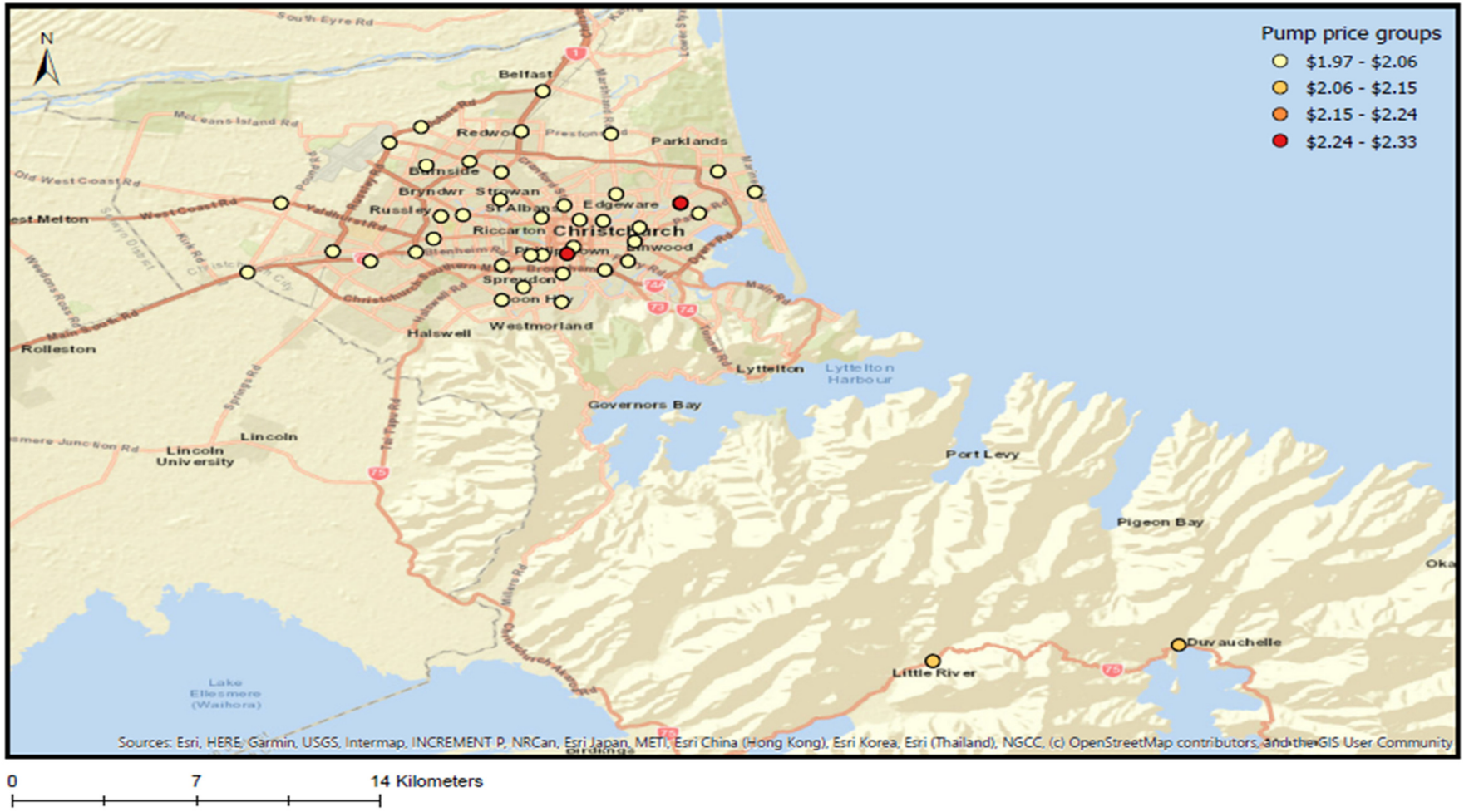
Source: Analysis of data provided by industry participants.

Figure G10 91 octane petrol importer margins across sites in the Auckland region (2019)



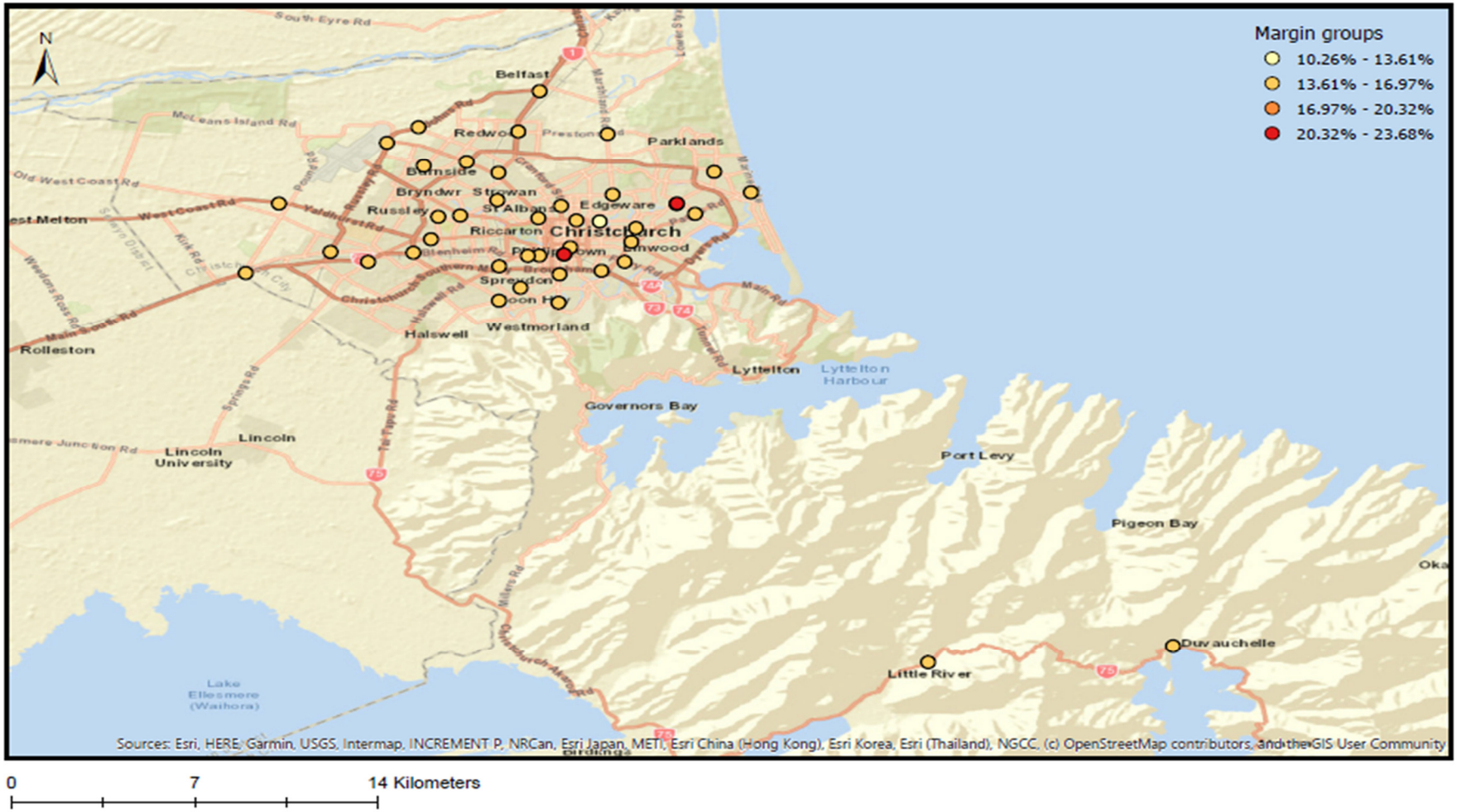
Source: Analysis of data provided by industry participants.

Figure G11 91 octane petrol board prices across sites in Christchurch City (2019, NZD per litre)



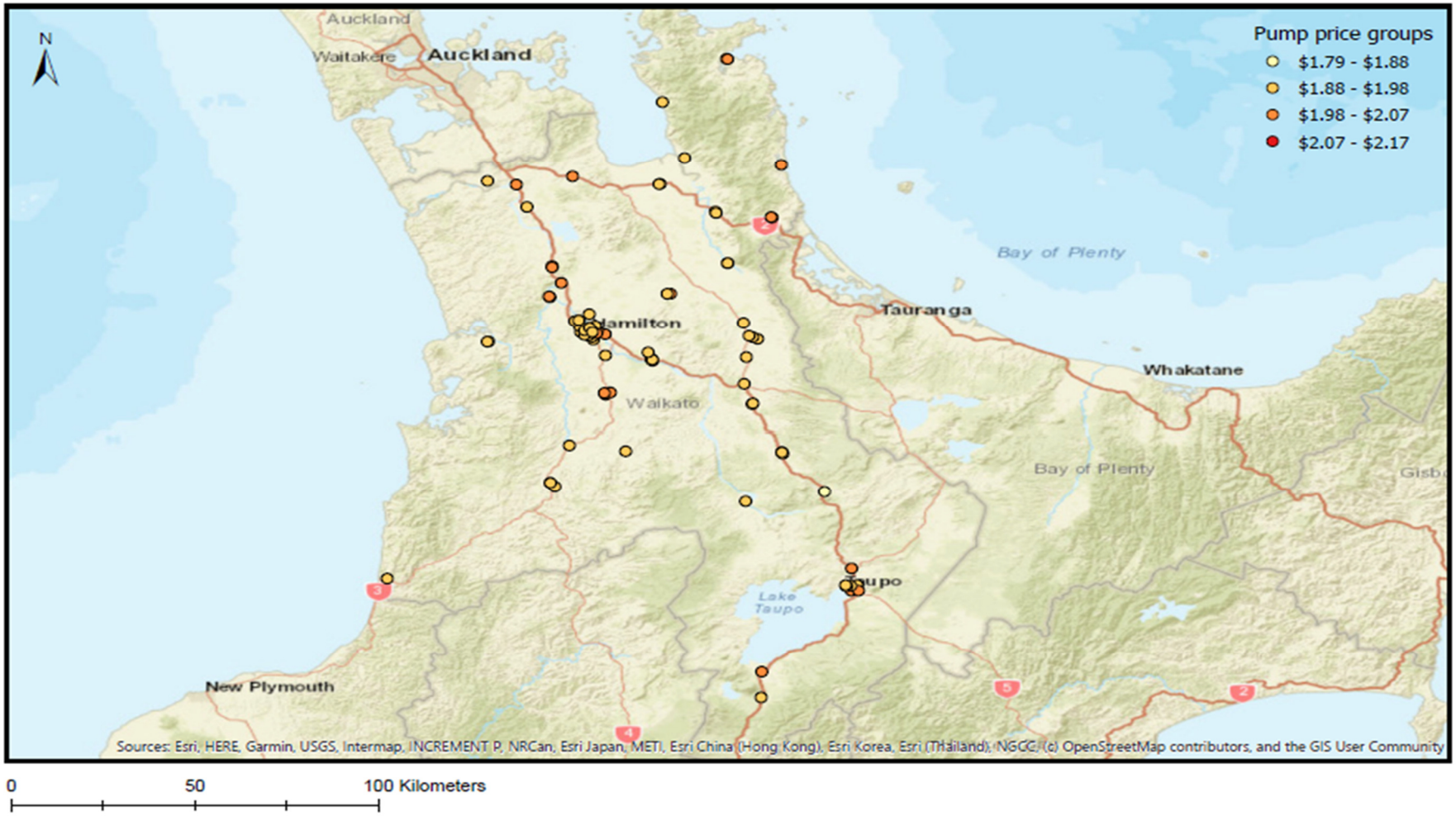
Source: Analysis of data provided by industry participants.

Figure G12 91 octane petrol importer margins across sites in Christchurch City (2019)



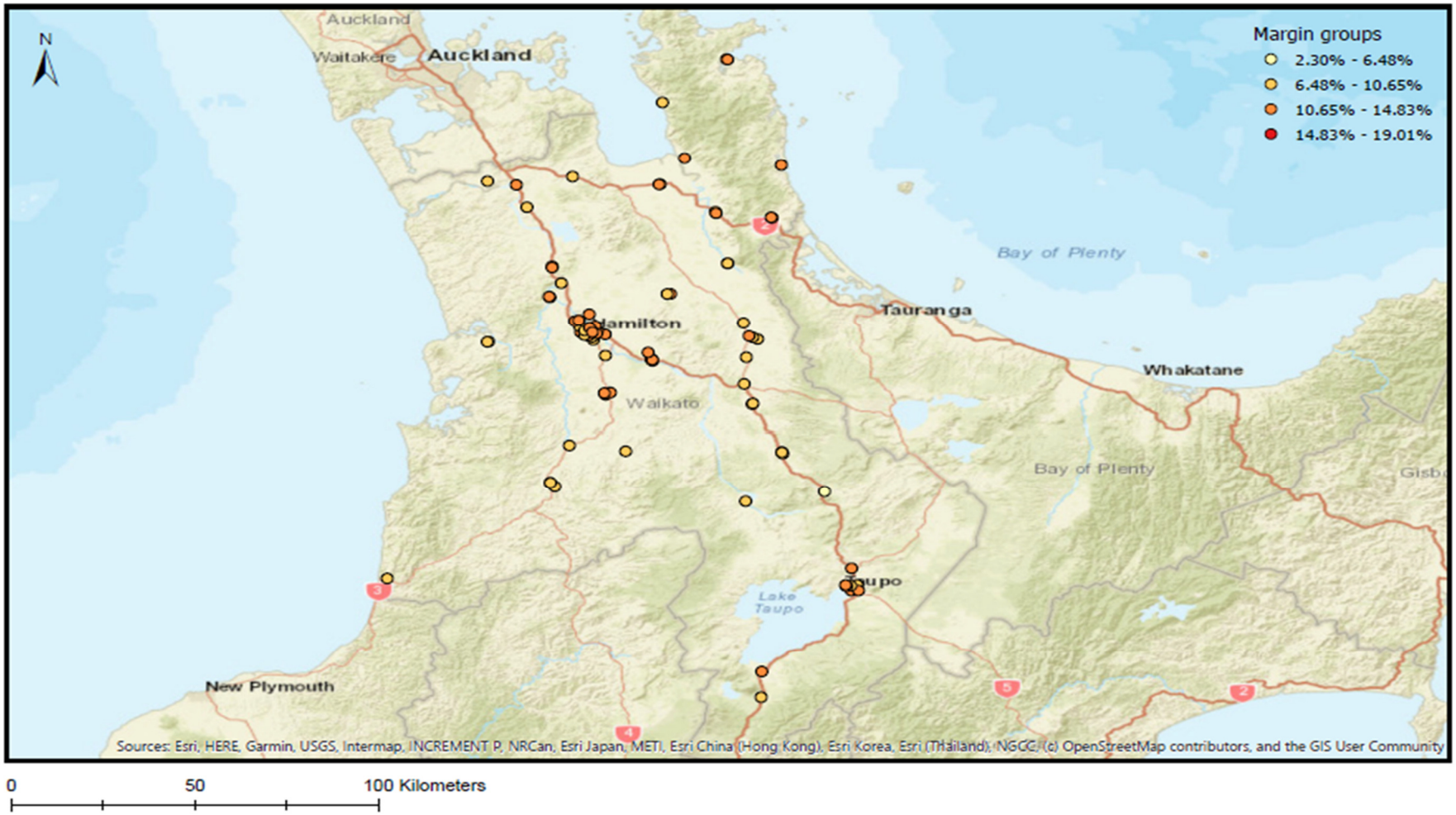
Source: Analysis of data provided by industry participants.

Figure G13 91 octane petrol board prices across sites in the Waikato Region (2019, NZD per litre)



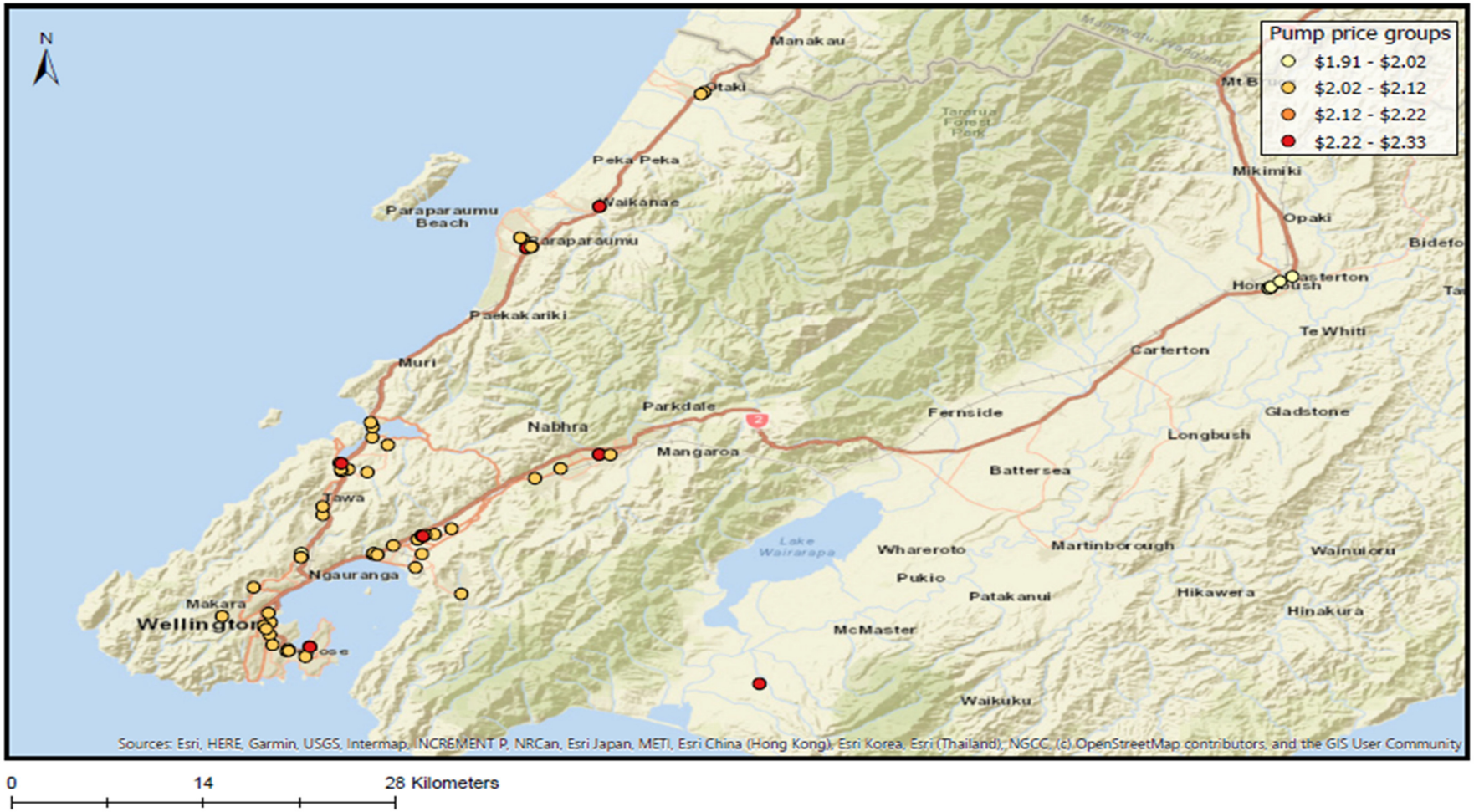
Source: Analysis of data provided by industry participants.

Figure G14 91 octane petrol importer margins across sites in the Waikato Region (2019)



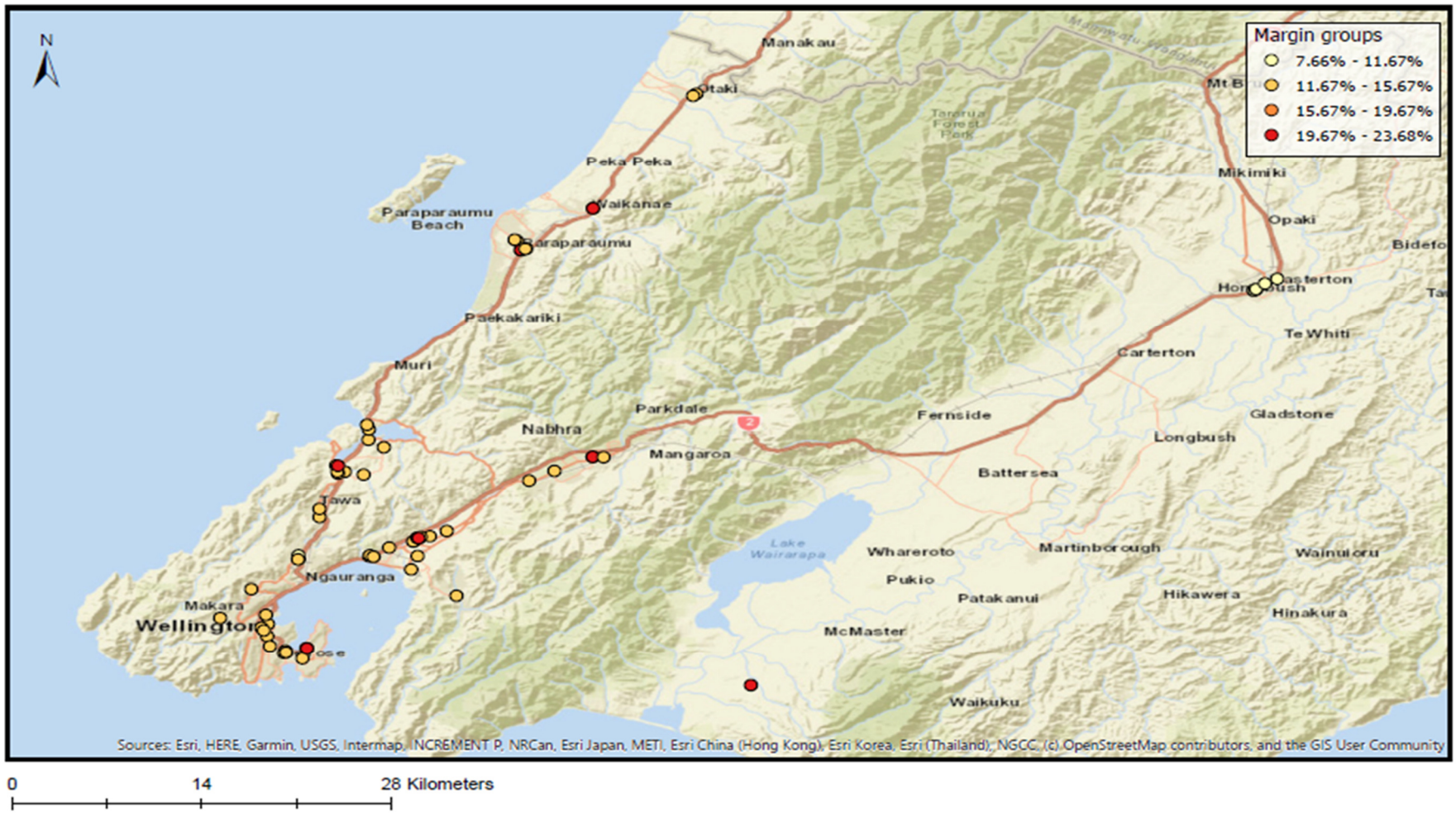
Source: Analysis of data provided by industry participants.

Figure G15 91 octane petrol board prices across sites in the Wellington region (2019, NZD per litre)



Source: Analysis of data provided by industry participants.

Figure G16 91 octane petrol importer margins across sites in the Wellington region (2019)



Source: Analysis of data provided by industry participants.

Line charts

G16 The key line charts we have produced compare variation in weekly average board prices (for 91 octane petrol) over time across:

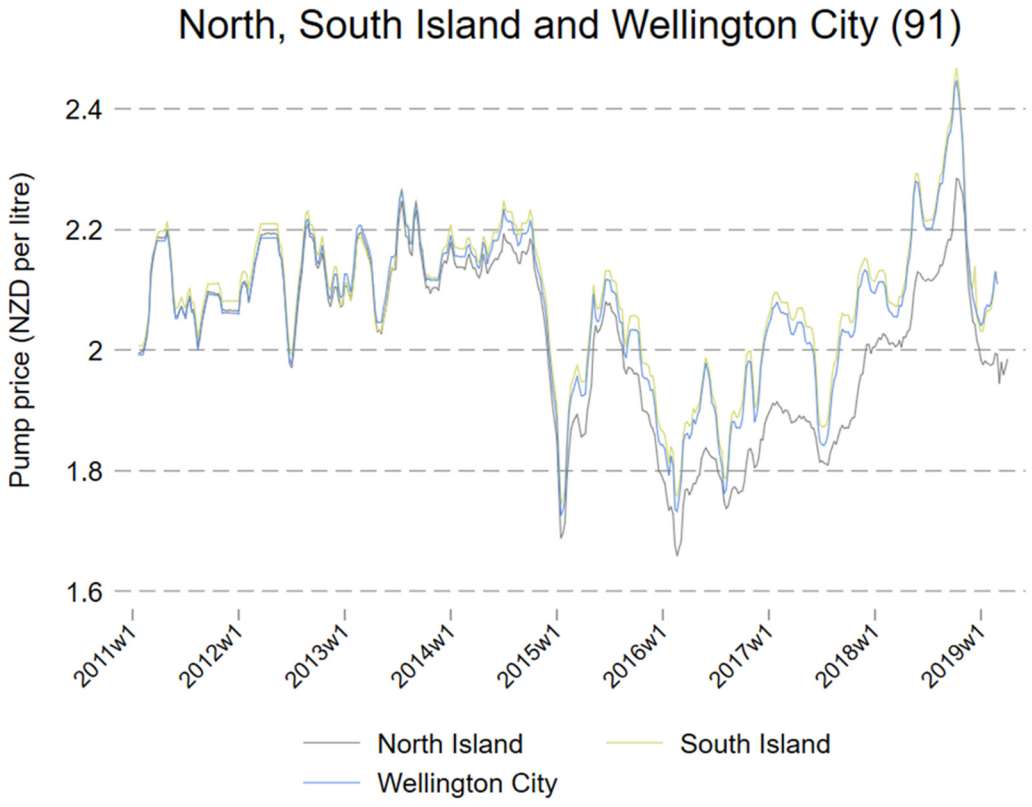
G16.1 North, South Island and Wellington City;

G16.2 North, South Island and Wellington region; and

G16.3 each district within the Wellington region.

G17 Figure G17 shows that the weekly average board prices for 91 octane petrol in the South Island are higher than those in the North Island, especially for the years after 2015. They also show that board prices in Wellington City are similar to those in the South Island and are therefore higher than those in the rest of the North Island.

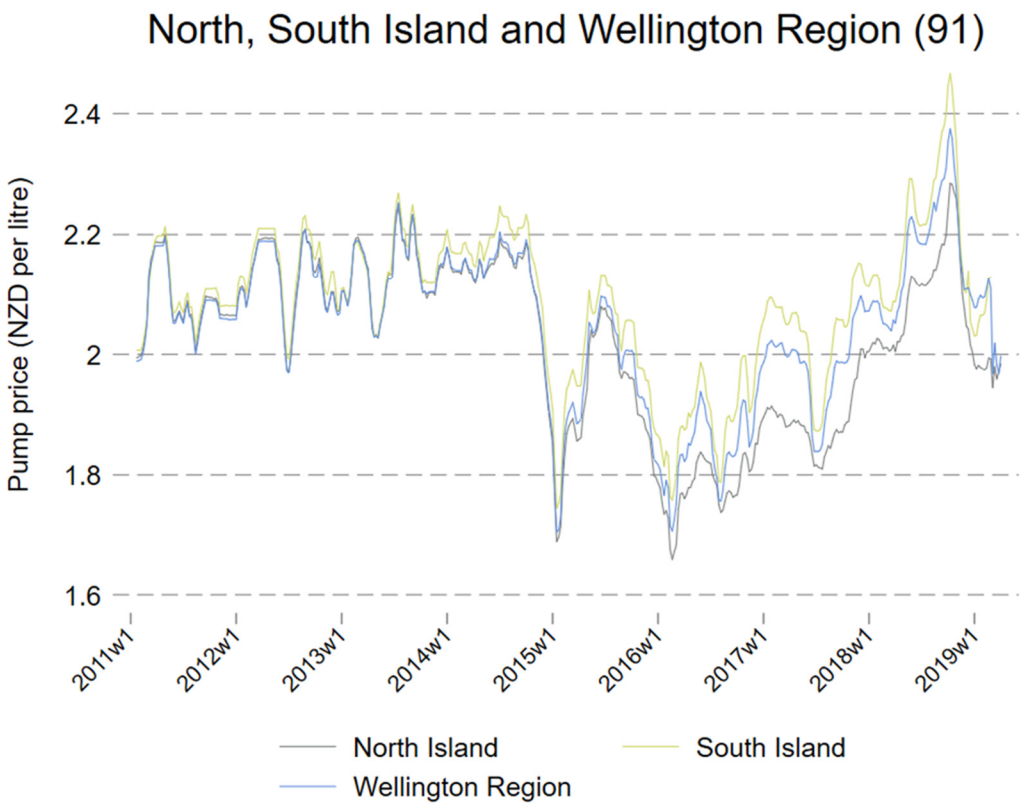
Figure G17 91 octane petrol board prices over time in South and North Island and Wellington City



Source: Analysis of data provided by industry participants.

G18 Figure G18 shows that the weekly average board prices for 91 octane petrol in Wellington region, while still higher than those in the North Island, are slightly lower than those in the South Island. This is because board prices in Wellington City are similar to those in the South Island and are generally higher than those in other districts within the Wellington region.

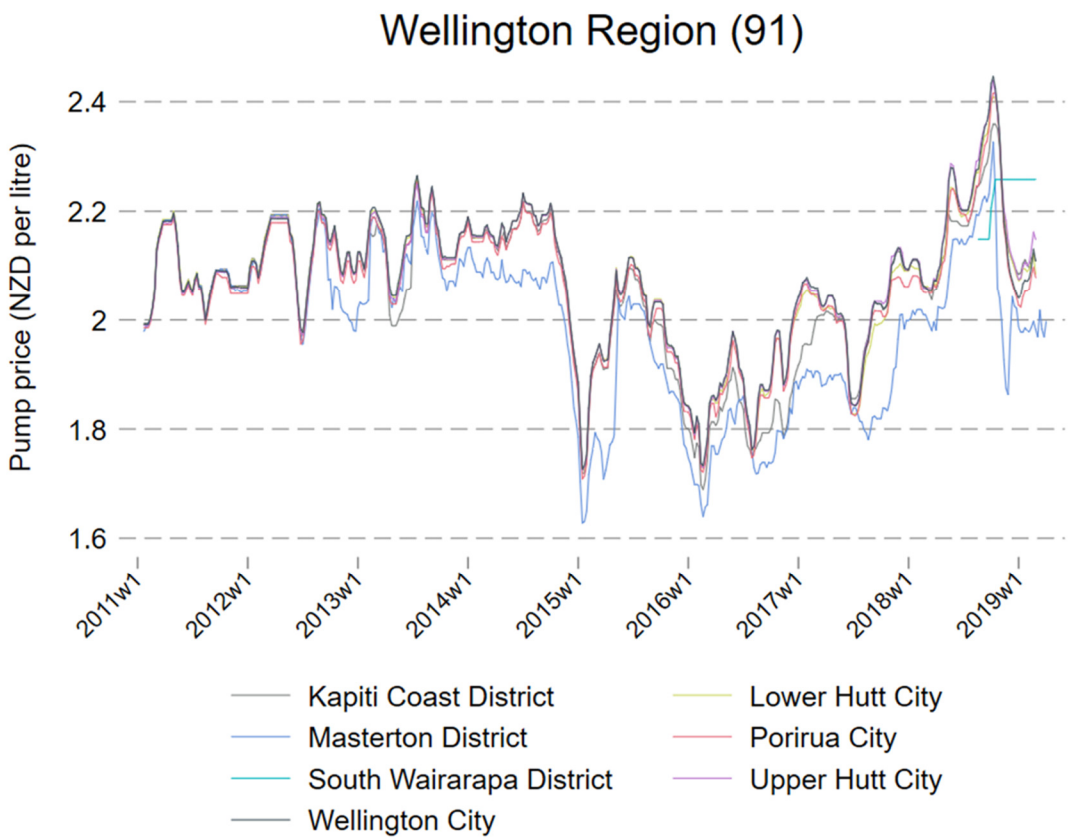
Figure G18 91 octane petrol board prices over time in South and North Island and Wellington region



Source: Analysis of data provided by industry participants.

G19 Figure G19 shows that weekly average board prices for 91 octane petrol in Wellington City are slightly higher than those averaged across the Wellington region. This is because prices in Wellington City are generally higher than those in other districts within the Wellington region (e.g., Masterton District).

Figure G19 91 octane petrol board prices over time across territories within Wellington region



Source: Analysis of data provided by industry participants.

Attachment H The impact of new entry by fuel retailers

Introduction

H1 This attachment provides technical detail on the empirical analysis we undertook to assess the location of new retail sites and the impact of new entry by fuel retailers on prices and volumes of existing retail fuel sites in local markets.

Summary of results

H2 We have conducted an empirical analysis to determine the potential benefits to consumers in those areas where new fuel retail sites (new-to-industry retailer sites (NTIs)) of Gull and resellers and distributors have opened. These new retail sites will benefit consumers in those areas where they opened by adding more retail site choice, and in the case of unmanned sites, a lower-priced option. New sites will also improve competition to at least some extent. The purpose of our analysis was to test how far these benefits extend.

H3 We tested whether the following benefits of NTIs could be shown:

H3.1 the new retail sites were being located close to those of the majors (and so they were competing more directly against retail sites that may be earning higher margins); and

H3.2 the new retail sites had led to a fall in the price and volumes at nearby retail sites of majors.

H4 Our analysis on the location of NTIs in proximity to those of the majors was based on a total of 515 currently active retail sites of Allied, Challenge, GAS, Gull, McFall, McKeown, NPD, RD, Southfuels and Waitomo.

H4.1 We find that Gull, Waitomo and Challenge are most likely to locate their new retail sites within close proximity (2km driving distance) to those of the majors.

H4.2 Our analysis shows that resellers and distributors are generally not located within close driving distance of their respective wholesale fuel suppliers.

H4.3 Finally, our analysis on the location of NTI sites shows that resellers and distributors are generally not building new retail sites in locations close to existing unmanned retail sites. One possible explanation for this observation is that service stations and unmanned retail sites do not compete closely with each other. As a result, retailers operating unmanned sites might be reluctant to choose locations where they would be in close competition with competing unmanned sites.

H5 Our analysis to determine whether new retail sites have led to a fall in the price and volumes at nearby retail sites of majors was based on a total of 50 NTI sites of Gull

(16), Waitomo (11), Allied (10), NPD (9) and GAS (4) that have opened during the period January 2014 to February 2019.

H5.1 We looked at retail prices and volumes of the five closest retail sites operated by a major within 2km, 5km and 10km respectively of new retail sites before and after each new site opened. While these new retail sites generally did not have a material effect on board prices of the five closest retail sites operated by a major, there were quite a few instances where the effective retail price (which is the price after discounts) fell following a new NPD retail site opening. This may indicate that the majors have reacted by offering more discounts and encouraging loyalty offers after new entry by NPD. Further, our results show that on the few occasions when the volumes of the majors' retail sites dropped materially after a new site opened, these instances were observed most commonly after a new NPD site opened.

H5.2 We note that in the majority of instances where we observe a material impact on effective retail prices of majors following the opening of a new NPD retail site, those new sites were service stations rather than unmanned sites. This shows that service stations likely impose a stronger competitive constraint on retail sites of the majors as opposed to unmanned retail sites.

H5.3 There were also a few examples in our analysis where board prices, effective retail prices or volumes clearly fell after a Gull, Allied or GAS site opened. However, there were fewer instances where we observe this in comparison to new site openings of NPD. In the case of Allied this may be because its sites were located in remote areas and there were fewer majors nearby.

H5.4 In the few instances where we do have evidence of the "Gull effect" there are no other Gull sites located within at least 20km driving distance from the new Gull site. One explanation for why we have not observed many examples of the "Gull effect" is that those are instances where a new Gull site opened within 10km of an existing Gull retail site. However, our analysis only applied to testing the extent of benefits to consumers of new retail sites that opened during the period 2014-2019. It is possible, therefore, that there was an earlier "Gull effect" where Gull entered a local market before 2014 that our analysis has not been able to detect.

H5.5 Our analysis also shows a few examples where the effective retail prices of majors fell following a new Waitomo site opening. Those examples are mainly in areas where there were none or few competing unmanned sites of other resellers and distributors.

H6 For comparison purposes we also analysed the effect on retail prices and volumes of majors in local markets after an existing site of a major was divested and rebranded.

Our analysis confirms that rebranding an existing retail site does not benefit consumers to the same extent as new site entry.

H7 In summary, our analysis shows that Gull, Waitomo and Challenge were most likely to locate new retail sites close to the majors. The results from our analysis on the impact of NTI retail fuel sites on retail prices and volumes of majors shows that the entry of new NPD sites appears to benefit consumers to a greater extent than new entry by other resellers and distributors.

New site event analysis – the impact of new retail sites on competition

H8 This section describes our analysis regarding the impact of new retail sites on competition in the New Zealand retail fuel market. Specifically, we discuss:

H8.1 the purpose of our analysis;

H8.2 data used for our analysis;

H8.3 the results of our analysis; and

H8.4 limitations of our analysis

Purpose of our analysis

H9 Over the past few years fuel retailers have increased their network of retail sites across New Zealand. Many of these sites are new retail sites (new-to-industry or NTI sites), while others have been rebranded from existing retail sites. Industry parties have submitted that the growth of NTIs show that competition is working in the market.[1299] However, we cannot assume that these retail sites have materially affected competition. For example, the resellers buy fuel from the majors, which may limit the options of where they can locate NTIs and how much they can discount.

H10 The purpose of our analysis was to test how far the potential benefits to consumers extend in those areas where new retail sites have opened since 2009. These new retail sites may benefit consumers in those areas where they opened because they might, for instance, be in a more convenient location or offer a lower-priced unmanned alternative to service stations operated by the majors.

H11 CRA (on behalf of BP) submitted that we should also consider the impact of new retail sites of majors and whether this is substantial.[1300] However, the purpose of our

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[1299] See for example Mobil "Submission to the Commerce Commission New Zealand in response to the Statement of Preliminary Issues for the Market Study into the Retail Fuel Sector" (February 2019) at [17]; and BP "Market study into the retail fuel sector – BP New Zealand comment on preliminary issues" (21 February 2019) at [2].

[1300] CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 34.

analysis was to test and respond to the various submissions from industry participants that the growth of NTIs shows that competition is working. Although we recognise that new entry by majors could also have positive benefits for consumers, for the purposes of our analysis we are interested in testing how far the benefits to consumers extend as a result of new entry by retailers other than the majors. Further, as we describe in more detail below, due to data limitations we were unable to expand our analysis to consider the impact of new retail sites of majors.

H12 There are currently more than 1,300 active retail sites in New Zealand (see Chapter 2). The number of retail sites has been increasing since 2012 and it is mainly driven by growth from retailers such as Allied, Waitomo, NPD, RD, McKeown and Foodstuffs. However, the majors have reduced the number of retail sites they operate over the same time period. We note that the majority of these new retail sites are unmanned.

H13 The main focus of our analysis was on NTI retail sites as they are more likely to affect competition (since they increase the number of competitors in their local markets) than rebranded retail sites. However, we have also analysed and compared the impact of rebranded retail sites on prices and volumes, as we acknowledge that a rebrand might also affect competition. We report our findings separately for NTIs and rebranded retail sites.

H14 In a competitive market, it is expected that when margins rise above competitive levels it would attract new entry. This entry then competes the margins down towards competitive levels again. The purpose of this analysis is therefore to test how new retail sites and rebranded retail sites have affected competition in local markets with the majors respectively.

H15 Despite the growth of retail sites of non-majors in recent years, we note that there are features of the retail fuel market that could limit the benefits these retail sites may have for consumers.

H15.1 Non-vertically integrated retailers purchase fuel from the majors. They may be prevented from or reluctant to locate new retail sites close to one of their supplier's retail sites.

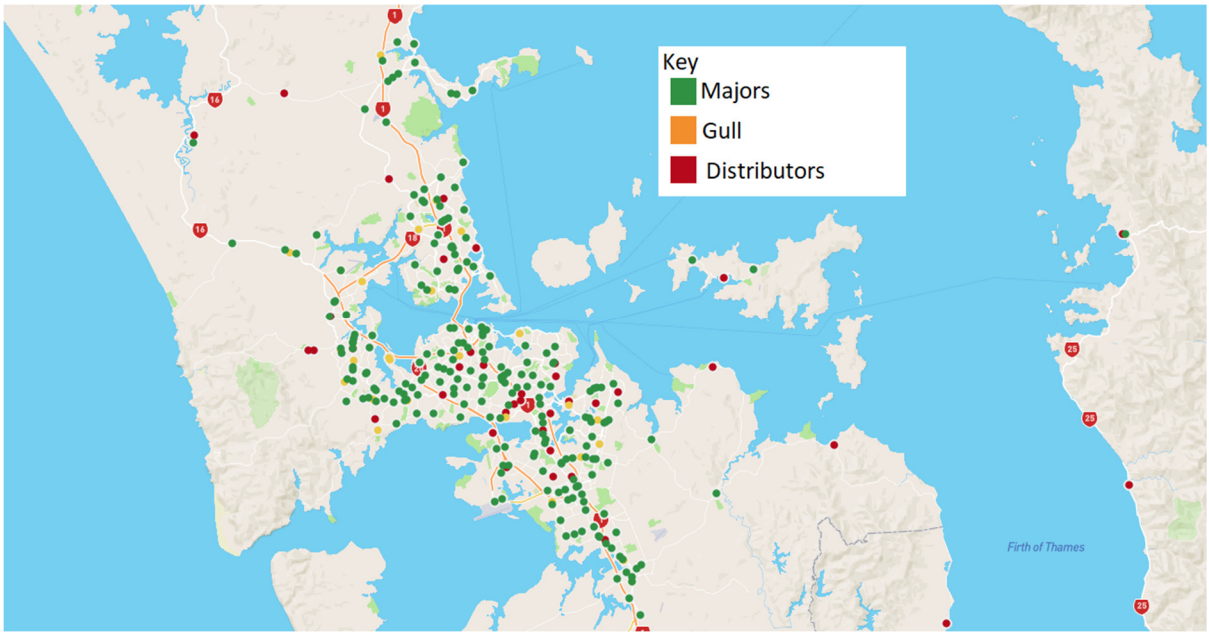
H15.2 The majority of new retail sites that have opened in recent years are unmanned. These retail sites may therefore not be close competitors to the service stations of the majors.

H16 We also understand that some firms such as Waitomo, NPD and Allied have in the past focused on supplying rural or less densely populated areas. If these firms have built new retail sites within their existing networks, they may be in rural areas. Although this may benefit those local customers, they may not have impacted competition in more densely populated regions where the majors mainly operate.

H17 Figure H1 to Figure H5 below show the location of the majors' retail sites (green), Gull retail sites (yellow) and non-major retail sites (red) in five regions of New

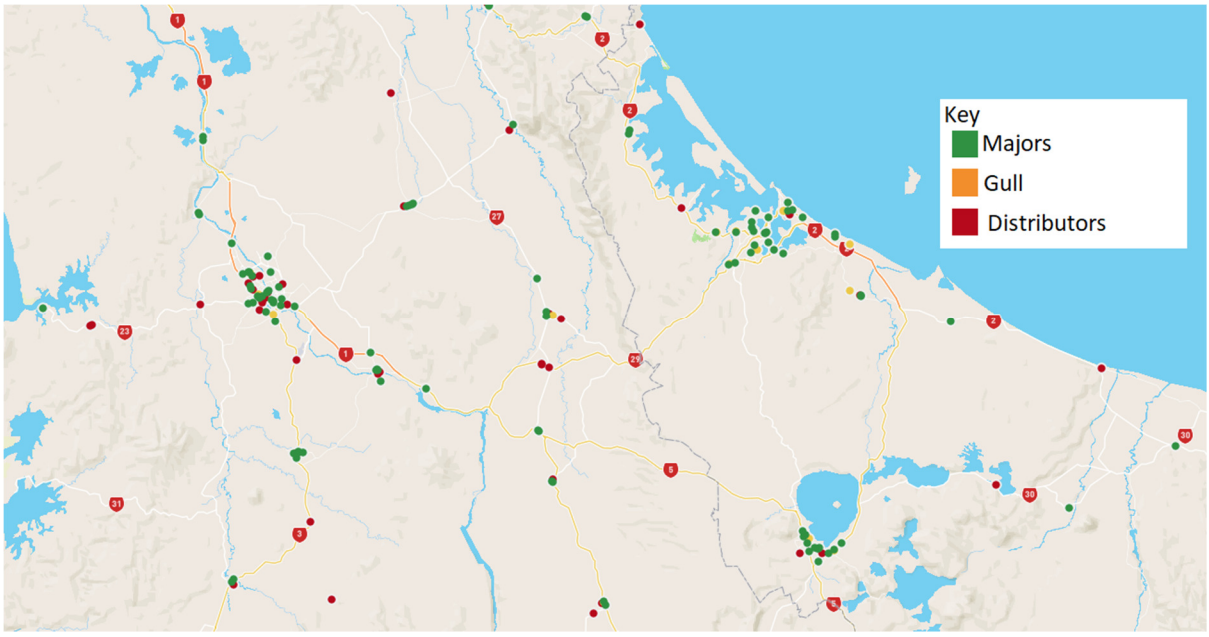
Zealand. It is evident that non-major retailers generally choose locations in less densely populated areas where they do not compete directly with the majors.

Figure H1 Location of major, non-major and Gull retail sites in the Auckland region



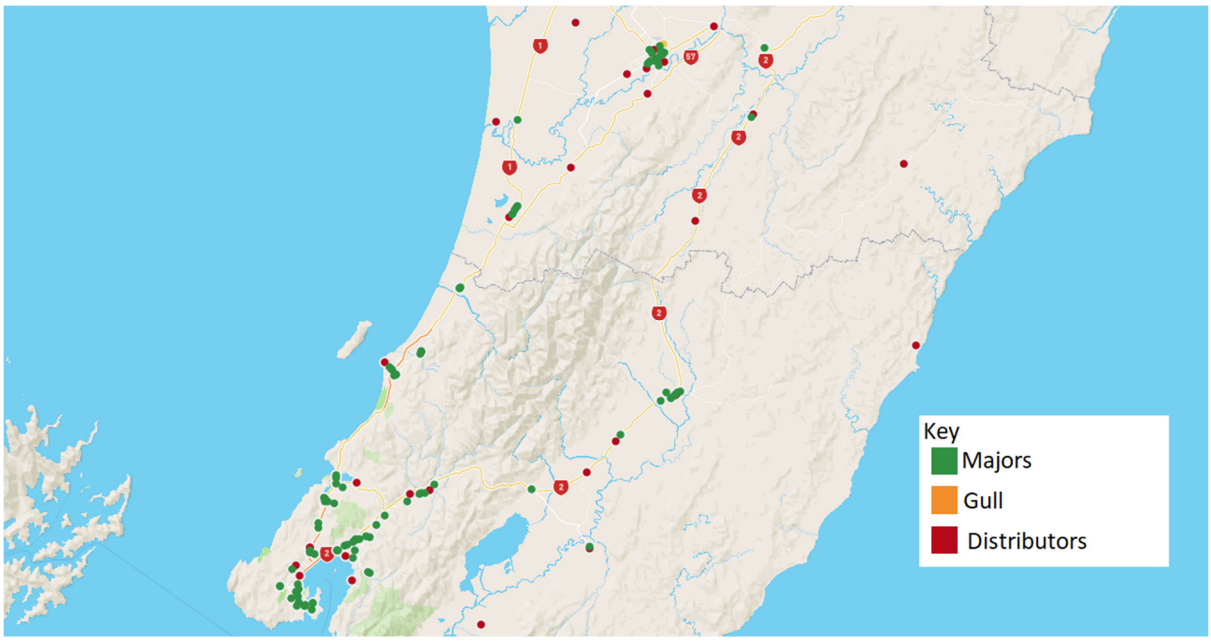
Source: Commerce Commission analysis of data provided by industry participants.

Figure H2 Location of major, non-major and Gull retail sites in Waikato and the Bay of Plenty



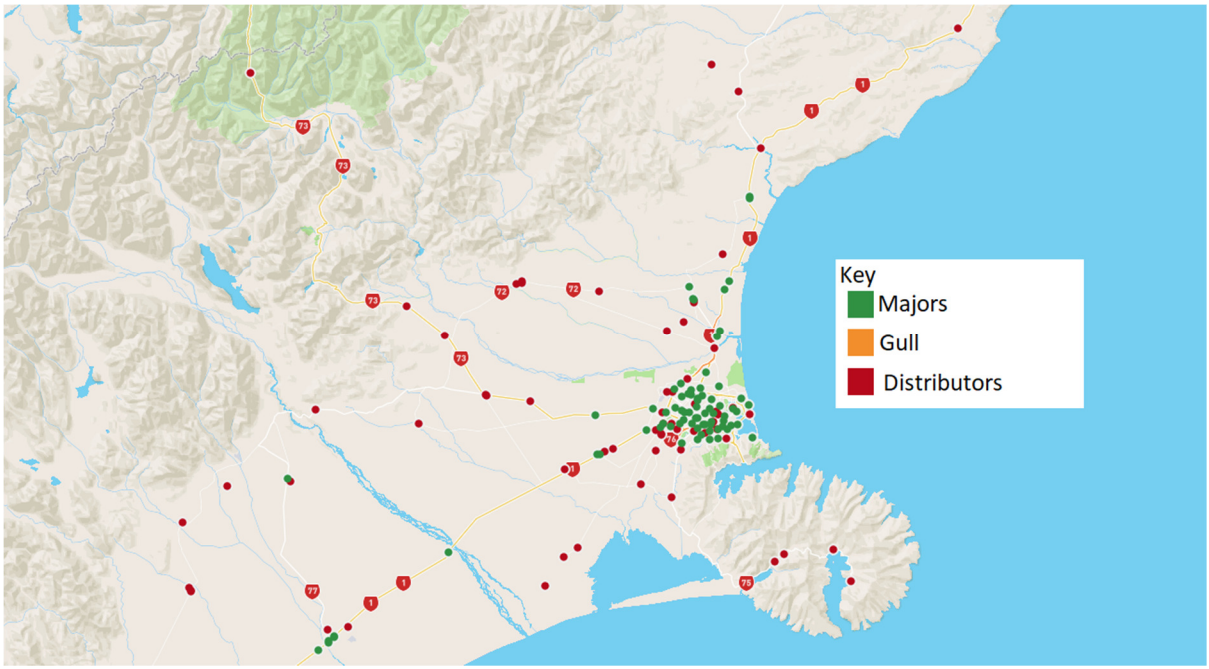
Source: Commerce Commission analysis of data provided by industry participants.

Figure H3 Location of major, non-major and Gull retail sites in Wellington and the Lower North Island



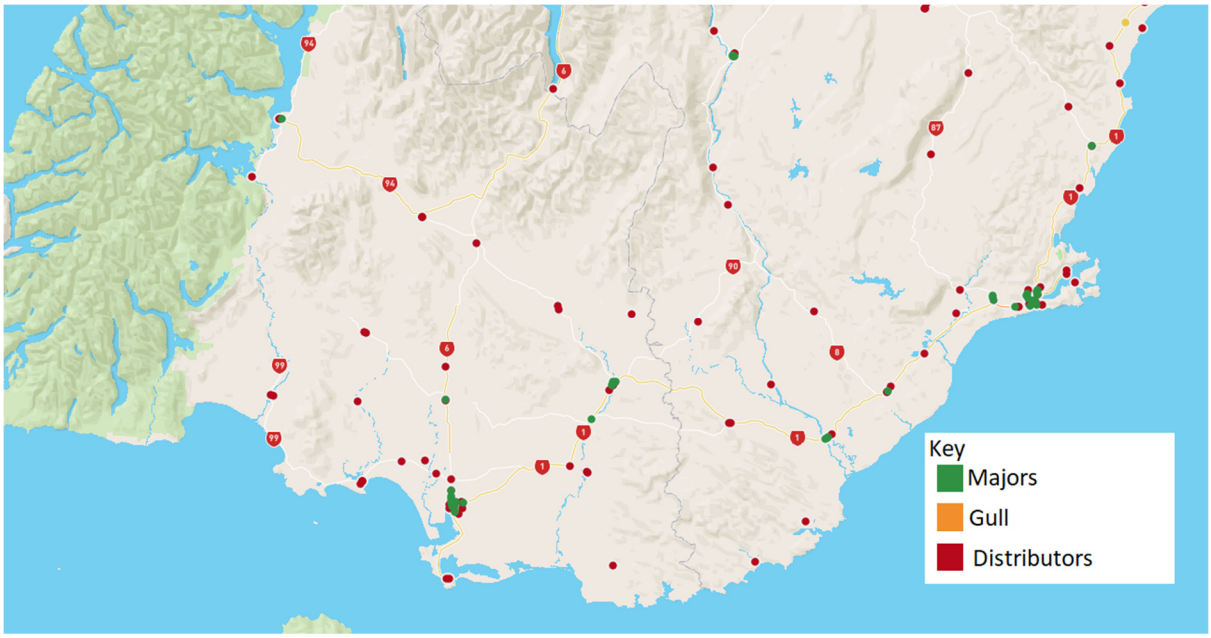
Source: Commerce Commission analysis of data provided by industry participants.

Figure H4 Location of major, non-major and Gull retail sites in the Christchurch region



Source: Commerce Commission analysis of data provided by industry participants.

Figure H5 Location of major, non-major and Gull retail sites in Dunedin and Southland



Source: Commerce Commission analysis of data provided by industry participants.

H18 The analyses we have done to assess the benefits of new retail sites are:

H18.1 to determine the location where fuel resellers and retailers have built their retail sites to see if these new retail sites were being located close to those of the majors (including the distributor's supplier); and

H18.2 to assess whether these new retail sites had led to a fall in the price and volumes at nearby retail sites of majors as measured by:

H18.2.1 a fall in the board price of regular petrol of nearby retail sites relative to a benchmark;

H18.2.2 a fall in the effective retail price of regular petrol (total revenues earned divided by total volume), relative to a benchmark; and/or

H18.2.3 a fall in retail volumes of regular petrol.

Data

H19 This section describes the underlying data sources we used to do our analysis on the extent of benefits to consumers in those areas where new or rebranded retail sites have opened.

Relevant underlying data received from industry participants

H20 The relevant underlying data we received from industry participants can be categorised as follows:

H20.1 retail site data; and

H20.2 daily retail sales data (prices, volumes and discounts by fuel type).

Retail site data

H21 We received relevant retail site data for each of Allied, BP, Challenge[1301], GAS, Gull, McKeown, McFall, Mobil, NPD, Southfuels, Waitomo and Z Energy. These retail site data include details such as the name and location of retail sites for each of the aforementioned parties. Some of these parties' retail site data also include details on the features, opening date and operation status of each retail site.

H22 The retail site data was requested for all retail sites that are currently in operation or have closed within the time period January 2009 to February 2019 throughout New Zealand. We also supplemented this data with information on new retail sites that have opened since March 2019.

H23 We used this data to create a distance matrix. The matrix contains the retail site names for a total of 1,669 unique retail fuel sites, including all currently active as well as some closed or divested retail sites. For each unique retail fuel site, the distance matrix uses the GPS coordinates provided to us by the parties to provide the drive distance to all other retail sites that are located within 100km drive distance.

H24 To the extent possible we have identified whether a retail site is currently active, divested or closed based on the information contained in the data provided to us by parties. Our analysis excluded all retail sites that were identified as closed. We removed all duplicate divested retail sites from our dataset to avoid double counting. Further, we note that we also excluded all truck stops from our analysis.

Retail sales data

H25 The relevant retail sales data provided by industry participants include daily retail site-level retail sales data broken down by different fuel types, for each of Allied, BP, Mobil, NPD, GAS, Gull, Waitomo and Z Energy. We note that although our initial data request covered the period January 2009 to February 2019, some of the parties were unable to provide data for the full period of the request.

H26 We describe the data cleaning and consolidation process of the retail sales data in more detail in Attachment E.

Results of our analysis

H27 In this section we describe the analysis we undertook to determine the potential benefits to consumers in those areas where new retail fuel sites (NTIs) of resellers and distributors have opened.

[1301] Data for Challenge branded retail sites were provided by Farmlands.

H28 We have tested whether:

H28.1 the new retail sites were being located close to those of the majors (and so they were competing more directly against retail sites that may be earning higher margins); and

H28.2 the new retail sites had led to a fall in the price and volumes at nearby retail sites of majors.

Location of new retail sites in proximity to the majors

H29 If the NTI sites were competing directly with the majors, we would expect to find they were located near to the majors (see Chapter 6). We would also expect to see a greater pricing and volume impact of new retail sites in locations where there are fewer competing NTI sites of other resellers and distributors, including Gull.

H30 We used retail site data provided by market participants to identify all NTI retail sites that are currently open and actively trading. We then used our distance matrix to count the number of competing retail sites to each NTI, separately for various categories of interest.

H31 We have excluded rebranded retail sites from our analysis. We agree with CRA's submission that rebranding is less likely to affect volumes of existing retail sites, as the number of retail sites within a local market will not change.[1302] Although we acknowledge that there could potentially be benefits to consumers when an existing retail site is rebranded, in this part of our analysis we are mainly concerned with testing whether retailers are building new retail sites in direct competition with existing retail sites in local markets as an alternative for consumers. Our analysis could serve as a starting point to better understand the strategic considerations of fuel retailers when deciding on the location of new retail sites, but this extension is beyond the scope of the study.

H32 We acknowledge that the distance at which a retail site imposes a constraint on a given new retail site will depend on factors such as traffic flows and the quality of rivals. We agree with CRA's submission that distance is an imperfect measure of competitive intensity.[1303] However, our analysis is still valid as it is based on the premise that the closer two retail sites are located to one another, the more likely it is that they will impose a competitive constraint on each other. For these reasons, a retail site within 2km driving distance of a NTI site is very likely to compete closely with the new retail site. Although retail sites within 5km and 10km driving distance of the NTI site may also compete with the new retail site, the extent of competition will become weaker at these greater distances.

[1302] CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 35.

[1303] CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 35.

H33 We have treated all retail sites that are independently owned and operated but that carry the brand of a major fuel firm (such as most Caltex stations) as a major fuel firm. As such, our count of the major fuel firm retail sites includes:

H33.1 all Z Energy and Caltex branded retail sites;

H33.2 all BP branded retail sites (including Connect and 2GO); and

H33.3 all Mobil branded retail sites.

H34 The data we used includes four sets of counts:

H34.1 the number of retail sites of the majors located within 2km, 5km and 10km driving distance of the new retail site, respectively;

H34.2 the number of retail sites within 2km, 5km and 10km of the new retail site that is operated by the supplier of the reseller in question to determine if the reseller is competing directly against its supplier;

H34.3 the number of Gull retail sites located 2km, 5km and 10km driving distance from each NTI; and

H34.4 the number of retail sites of other resellers and distributors within 2km, 5km and 10km driving distance of the new retail site.

H35 In Table H1 below we present the results of our analysis. It shows the average number of competing retail sites to each NTI in our dataset, according to different categories.

H36 Our results indicate that, on average, Gull, Waitomo and Challenge are most likely to locate their new retail sites within close proximity (2km driving distance) to those of the majors. It is evident that the further the distance from each NTI, the average number of competing retail sites of majors' retail sites increase for most retailers.

H37 With regards to the proximity of NTIs to their respective fuel suppliers our analysis shows that resellers and distributors are generally not located within close driving distance of their respective wholesale fuel suppliers. The numbers in Table H1 for this measurement are noticeably lower than the average distance from any major, indicating that locating away from one's fuel supplier is very likely.

H38 Finally, our analysis also shows that on average, resellers and distributors are generally not building new retail sites in locations close to Gull and retail sites of other non-majors. One possible explanation for this observation is that this could be an outcome of the fact that retail sites of non-majors compete more directly with each other as opposed to the full service offering of majors. Therefore, retailers might be reluctant to choose locations where they would be in close proximity to retail sites offering a similar no-frills service.

Table H1 Average number of competing retail sites within 2km, 5km and 10km of each NTI site

	Average number of majors		
Retailer	**2km**	**5km**	**10km**
Allied	0.7	2.2	4.9
Challenge	1.3	4.6	8.8
GAS	0.9	4.3	13.0
Gull	2.2	7.0	17.0
McFall	1.0	2.7	3.3
McKeown	0.7	1.7	2.7
NPD	1.2	3.8	9.0
RD Fuels	0.1	0.2	0.4
Southfuels	0.0	0.2	0.2
Waitomo	1.5	4.5	7.7

	Average number of fuel supplier sites[1304]		
Retailer	**2km**	**5km**	**10km**
Allied	0.1	0.4	1.1
Challenge	0.6	2.2	4.4
GAS	0.1	0.9	3.0
McFall	0.0	0.7	0.7
McKeown	0.2	0.6	1.1
NPD	0.2	0.8	1.9
RD Fuels	0.0	0.1	0.1
Southfuels	0.0	0.2	0.2
Waitomo	0.3	0.8	1.6

	Average number of Gull retail sites		
Retailer	**2km**	**5km**	**10km**
Allied	0.1	0.1	0.3
Challenge	0.1	0.3	0.6
GAS	0.1	0.4	1.3
McFall	0.0	0.0	0.0

[1304] This analysis was done based on the driving distance from the location of each NTI site to retail sites operated by each of their respective wholesale fuel suppliers. Mobil supplies fuel to Allied, Waitomo and NPD. Z Energy supplies Southfuels, McKeown and Farmlands (Challenge), and BP supplies RD, McFall and GAS with fuel in the wholesale market.

McKeown	0.0	0.0	0.0
NPD	0.0	0.0	0.0
RD Fuels	0.0	0.0	0.1
Southfuels	0.0	0.0	0.0
Waitomo	0.3	0.5	0.7

	Average number of competing reseller and distributor retail sites		
Retailer	**2km**	**5km**	**10km**
Allied	0.4	0.9	1.7
Challenge	0.4	1.5	3.2
GAS	0.2	0.8	2.6
Gull	0.4	1.3	3.0
McFall	0.3	0.3	0.7
McKeown	0.7	1.1	1.9
NPD	0.6	1.7	3.7
RD Fuels	0.5	0.8	1.0
Southfuels	0.3	0.7	0.7
Waitomo	0.3	0.9	1.7

Source: Commerce Commission analysis of data provided by industry participants.

The impact on board prices, discounts and volumes of majors in local markets

H39 We also expanded our analysis on the location of new retail sites by looking at whether new retail sites have affected prices and volumes at nearby retail sites of majors, and if so, how far those effects extend to the benefit of consumers. We have focused our analysis on regular fuel prices and volumes.

H40 We have tested the new and rebranded retail sites separately on the following metrics:

H40.1 board price relative to Z Energy's MPP. We have compared the board price against MPP as a means to control for the normal changes in retail prices as the price of crude oil goes up and down.[1305]

[1305] We have used MPP data provided by Z Energy for the period Jan 2014 to Feb 2019 for purposes of our analysis. [ ]

H40.2 effective retail price relative to Z Energy's MPP. Effective price was calculated as total revenues divided by total volumes so that it will capture any discounts. If effective price has decreased (even if board price has stayed the same) it may reflect competing retail sites responding to the new or rebranded retail site by doing more promotions or encouraging the take up of discount and loyalty programmes[1306]; and

H40.3 volumes of regular petrol sold by majors close to new or rebranded retail sites. A fall in volumes of competing firms within small local markets might suggest that customers have switched from purchasing fuel at a retail site of a major fuel firm to the new or rebranded retail site.

H41 We have completed an analysis on each of these metrics for each of the 50 new and 22 rebranded retail sites in our sample. Our analysis was limited to include only the five closest retail sites to each of the new or rebranded retail sites, as it could reasonably be expected that the retail sites located closer to a new retail site would impose the strongest competitive constraint on any new entrant.

H42 Due to data limitations we were unable to test the impact on retail prices and volumes of all the closest competing retail sites (ie, including non-majors) within each local market. For the same reason we were also unable to expand our analysis to account for new entry prior to 2014.

Results

H43 Using event study techniques, we have looked at the evidence on how these new retail sites are impacting on the retail prices and volumes of the five nearest majors' retail sites located within a driving distance of 10km of each new retail site. This analysis was done separately for each NTI and rebranded retail site of non-major fuel retailer brands that opened during the period January 2014 to February 2019 and for which we had data available. We have limited our analysis to assessing the impact of new entry on regular petrol prices and volumes. In instances where we observe a material decline in at least one of these three measures we regarded it as evidence of positive benefits to consumers from new entry.

H44 Table H2 below provides a summary of the number of retail sites included in our analysis and the total number of instances where we observe a material impact on retail prices and volumes after new entry. It shows the number of retail sites for each retailer where we observed a material impact on board prices, effective retail prices and volumes of the five closest majors after new entry occurred during the period 2014-2019, expressed as a percentage of the total number of retail sites for each retailer in our sample.

[1306] As effective price is quite volatile, we smoothed the data by using a moving average of 7 days observations before and after any given date.

Table H2 The impact of new retail sites on prices and volumes of the five closest majors' retail sites within 10km driving distance (Jan 2014 to Feb 2019, regular petrol)

Retailer	Material impact on board prices (% of total)	Material impact on effective prices (% of total)	Material impact on volumes (% of total)	Total number of NTI sites in our dataset
Gull	38	31	13	16
Waitomo	36	36	27	11
Allied	10	0	0	10
NPD	11	78	67	9
GAS	0	25	0	4

Source: Commerce Commission analysis of data provided by industry participants.

H45 The results in Table H2 suggest that new retail sites of Gull and Waitomo have the greatest impact on board prices of majors' retail sites located within 10km driving distance. However, we find that new entry by non-major brands generally have more impact on the discounted prices of majors than board prices. Overall, the evidence suggests mixed results as to whether new retail sites have had a positive competitive impact on board prices of majors' retail sites located within 10km driving distance of the NTI.

H46 Table H2 also shows that there were a significant number of instances where the effective price (which is the price after discounts) fell following a new NPD retail site opening. This may indicate that the majors have reacted by offering more discounts and encouraging loyalty offers after new entry by NPD. We note that in some cases it appears that our observations of a material impact on effective prices of majors could be indicative of a longer term trend of increasing discounts by majors.

H47 There were a few examples in our analysis where board prices, effective prices or volumes clearly fell after a new Gull, Allied or GAS retail site opened. However, there were fewer instances where we observe this in comparison to new retail site openings of NPD.

H48 We note that in the majority of instances where we observe a material impact on effective prices of majors following the opening of a new NPD retail site, those new retail sites were manned service stations. This implies that new entry in the form of service stations may impose a stronger competitive constraint on the service stations of the majors as opposed to unmanned retail sites.

H49 In the few instances where we do have evidence of the "Gull effect" there are no other Gull retail sites located within at least 20km driving distance from the new Gull retail site. One explanation for why we have not observed many examples of the "Gull effect" is that those are instances where a new Gull retail site opened within 10km of an existing Gull retail site. However, our analysis only applied to testing the extent of benefits to consumers of new retail sites that opened during the period

2014-2019. It is possible, therefore, that there was an earlier "Gull effect" where Gull entered a local market before 2014 that our analysis has not been able to detect.

H50 Further, the results in Table H2 show that on the few occasions when the retail volumes of the majors dropped materially after a new retail site opened, these instances were observed most commonly after a new NPD retail site opened. Our analysis also shows a few examples where the effective prices of majors fell following a new Waitomo retail site opening. Those examples are mainly in areas where there were none or few competing retail sites of other reseller and distributors.

H51 The lack of volume retail effect that we could observe in some cases could be due to the location differentiation identified above or because it came from retail sites other than the majors. This is consistent with the evidence that NTI retail sites tend to be located away from majors. In some cases, it may also be that we were unable to detect any significant impacts due to data limitations.

H52 For comparison purposes we also analysed the effect on retail prices and volumes of majors in local markets after an existing retail site of a major was divested and rebranded. Although we observe some impact on board prices after a Gull or Allied rebranding, our analysis confirms that, overall, rebranding an existing retail site does not benefit consumers to the same extent as new retail site entry.

Table H3 The impact of rebranded retail sites on prices and volumes of the five closest majors within 10km driving distance (Jan 2014 to Feb 2019, regular petrol)

Retailer	Material impact on board prices (% of total)	Material impact on effective prices (% of total)	Material impact on volumes (% of total)	Total number of rebranded retail sites in our dataset
Gull	33	17	17	6
Waitomo	0	0	0	1
Allied	17	0	17	6
NPD	0	0	0	2
GAS	0	11	11	9

Source: Commerce Commission analysis of data provided by industry participants.

H53 The results in Table H3 show that there are very few instances where there was any material impact on retail prices and volumes of majors' located within 10km driving distance after a retail site was rebranded. In the few examples where we observe that prices fell after an existing retail site was rebranded as a Gull or GAS retail site, we note that those retail sites were located in areas where the majority of competing retail sites are operated by the majors. It is therefore possible that rebranded retail sites have the greatest impact on competition in areas where there are few or no existing retail sites operated by other resellers and distributors, although our evidence on this is not conclusive.

Submissions from industry participants

H54 BP and Z Energy submitted that new entry in local areas has a substantial impact on competition and that this is being felt in local markets, including Wellington and the South Island.[1307] BP states that there has been an increase in the market share and number of independent retail sites throughout New Zealand and that this is indicative of strong competition by independents. In addition, Z Energy is also of the view that the continued growth of independent retail brands and different service offerings prove there are sufficiently low barriers to entry that drives competition to the benefit of consumers.

H55 In response to these submissions we note that new entry in and of itself is not confirmation of sustainable long-term positive benefits to consumers. It is not the evidence of entry in and of itself in a market that is most important, but rather whether such entry has been effective, sustainable and has managed to exert a competitive constraint on existing firms in the market.

H56 In this regard we also note and agree with the submissions from CRA that entry is not random and is most likely to occur in locations that are most sheltered from direct competition.[1308] Therefore, it does not immediately follow that evidence of new entry by independent retailers necessarily implies that competition is strong or that consumers have gained substantial benefits from new entry, if new retail sites are sheltered from direct competition. This is also reflected in our finding that there is little evidence of material long-term impacts on board prices of majors located close to new retail sites.

H57 CRA submitted that a finding that volumes and prices do not decrease following entry may not justify a conclusion that entry has not had an effect. This is based on the premise that entry is most likely to occur in areas where volumes are expected to increase, such as along a newly built road or close to a new shopping centre. According to CRA, it is therefore possible that volumes and prices would have increased in the absence of entry, and so a finding that volumes and prices do not decrease following entry may not justify a conclusion that entry has not had an effect.[1309]

H58 We agree with CRA that it is possible that new entry could have positive benefits for consumers if prices and volumes would have increased in the absence of entry. However, we note that it is not possible to analyse and measure this effect using the data and information we have available. Further, for purposes of our analysis we are

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1307 BP "BP New Zealand – submissions on the August 2019 Draft Report" (13 September 2019) at [3.15] and [3.18]; and Z Energy "Z Energy Submission on the Commerce Commission's Market Study into the Retail Fuel Sector: Draft Report" (13 September 2019) at [184].

1308 CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 34.

1309 CRA "Comments on the NZCC's Retail Fuel Sector Draft Report – Profitability Analysis and Econometric and Empirical Modelling" (13 September 2019) at 35.

specifically interested in testing for positive benefits to consumers as reflected in a decrease in prices and/or volumes of majors located close to new retail sites, as those retail sites are most likely to have long-term positive benefits for consumers.

Limitations of the analysis

H59 We do not have pricing, discount and volume data for independently operated retail sites that are branded as a major retail fuel site. This means that we do not have data for Caltex, BP2GO and independently operated Mobil retail sites. We have therefore not been able to assess the potential impact on retail prices, discounts and volumes on all majors located in close proximity to new or rebranded retail sites.

H60 Our analysis does not extend to non-price benefits to consumers such as convenience of location. We note that there could still be benefits to consumers of new entry in instances where our findings do not show any clear declines in prices or volumes of majors located nearby.

H61 Due to the data limitations we focused our assessment on the impact of new retail sites and rebranded entry on the majors. However, we note that it is possible that new retail sites could also have had an impact on prices, discounts and volumes of other resellers and retailers within local markets. This could inform part of the reason why we are not finding any consistent evidence of long-term benefits to consumers after new or rebranded retail site entry.

H62 Similarly, our analysis was limited to assessing the potential impact on competition to the five closest retail sites from the retail site of new entry. However, it is possible that in some instances the greatest impact of new entry was on retail sites outside the five closest retail sites.

Attachment I Overview of distributors' retail sites

Distributor	Fuel supplier	Description
Waitomo	Mobil	– **Waitomo**[1310] has a supply contract with Mobil. – Waitomo provides bulk fuel delivery services to commercial customers and delivers fuel to its own reseller network of around 37 Waitomo branded retail sites and around 17 diesel stops in the North Island. – Waitomo has announced plans to open sites in the South Island.
Challenge	Farmlands co-operative Z Energy	– **Challenge**[1311] is supplied fuel by Farmlands, which is in turn supplied by Z Energy. – There are around 83 Challenge branded retail sites throughout New Zealand, which are dealer sites owned and operated by individual owners who set the retail price. The owners each have individual agreements with Farmlands to be supplied fuel. – Some retail sites have a mechanical workshop and ancillary business attached (eg, tyre fitter or retailer).
RD Petroleum	bp	– **RD Petroleum**[1312] has a supply contract with BP, who also has a 49% ownership interest in RD Petroleum. – RD Petroleum distributes bulk fuel, lubricants and petroleum related products to the rural, residential and commercial sectors, and to its own reseller network of around 21 retail sites in the South Island. It operates tankers from bases in Nelson, the West Coast, Christchurch, Timaru, Dunedin and Invercargill.
npd	Mobil	– **NPD**[1313] has a supply contract with Mobil. – NPD provides bulk fuel delivery services to commercial customers and around 54 NPD branded retail sites and around 20 diesel stops, including some independently owned and operated. Some retail sites have a workshop attached. – NPD's retail sites are concentrated at the top of the South Island, though NPD has a growing number of sites, as far south as Invercargill.
southfuels	Z Energy	– **Southfuels**[1314] has a supply contract with Z Energy. – Southfuels distributes fuel and lubricants to the primary sector throughout New Zealand. Southfuels also delivers fuel to around eight of its own retail sites operating under the Southfuels or Northfuels brand, including some independently owned and operated sites.
McFall Fuel	bp	– **McFall Fuel**[1315] has a supply contract with BP, who also has a 49% ownership interest in McFall Fuel. – McFall Fuel primarily provides bulk fuel delivery services to commercial customers and delivers fuel to four retail sites that it owns. – McFall Fuel operates around four retail sites that operate under the name "Fuelling [location name]" (eg, "Fuelling Kapiti"). – McFall purchased Rural Fuel in 2017.

1310 See http://www.waitomogroup.co.nz/.

1311 See https://www.challenge.net.nz/.

1312 See https://www.rdp.co.nz/.

1313 See https://www.npd.co.nz/npd-retail-network/.

1314 See https://southfuels.co.nz/.

1315 See https://www.mcfallfuel.co.nz/.

Allied	Mobil	– **Allied Petroleum**[1316] provides bulk fuel delivery services to Mobil's retail service station network, Mobil's commercial customers, and its own commercial customers. – Allied Petroleum also delivers fuel to its own reseller network of around 97 retail sites throughout New Zealand, including fuel stops, which primarily cater to commercial vehicles and do not sell petrol. – Some of Allied Petroleum's sites are independently owned and operated. – Allied Petroleum also has a 50 percent shareholding, and management control, of Weallans Allied Petroleum Ltd. There are around four Weallans retail sites.
McKeown	Z ENERGY	– **McKeown**[1317] supplies bulk fuel to commercial customers and its own retail sites, of which there are around 36 in the South Island. Many are unmanned sites operating in the Otago region.
g.a.s. Petrol Service Stations	bp	– **GAS**[1318] has a supply contract with BP. – BP distributes fuel to a network of around 130 GAS retail sites operating throughout the country. – Most GAS sites are independently owned and operated.

Source: Commerce Commission analysis based on data provided to us by fuel firms and publicly available sources.

1316 See https://alliedpetroleum.co.nz/.

1317 See https://mckeown.co.nz/.

1318 See https://www.gas.kiwi/.

Attachment J The impact of EVs on future fuel demand

Introduction to this attachment

J1 This attachment contains more information on the impact of EVs on future fuel demand, which was discussed in Chapter 2.

Material impact on fuel demand of improved vehicle efficiency and EV uptake is likely some time away

J2 It appears that demand for petrol in New Zealand is likely to remain reasonably flat over the next decade or more before potentially declining as a consequence of improved fuel efficiency and more extensive uptake of EVs. At the same time, demand for diesel (and aviation fuel) is expected to increase.

J3 Given these timeframes and demand expectations, we do not expect the uptake of EVs or increased fuel efficiency to have a meaningful impact on fuel sales for at least 10 years. However, we acknowledge that they are likely to reduce demand for retail fuel over a longer timeframe.

J4 Despite the small growth in petrol demand nationally in recent times, Refining NZ and the fuel suppliers expect petrol demand to be reasonably flat across the coming decade, especially in light of the New Zealand Government's intention to become carbon neutral by 2050.[1319] BP Global expects demand for fuel used by cars to be broadly flat out to 2040.[1320] In addition, other commentary suggests that fuel companies do not expect EV uptake to have a significant impact on fuel demand in the medium term.[1321]

J5 We have also been provided with fuel demand forecasts that suggest that over the short-medium term, New Zealand petrol demand is expected to remain relatively flat while diesel demand is expected to grow marginally. These forecasts include annual growth estimates that range from below one percent to up to six percent, depending on the fuel type (petrol or diesel).[1322]

[1319] This expectation was shared with the Auckland Fuel Supply Disruption Inquiry. Government Inquiry into The Auckland Fuel Supply Disruption (August 2019), [13.15].

[1320] BP "BP Energy Outlook – 2019 edition" at 51. Available at <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/energy-outlook/bp-energy-outlook-2019.pdf>.

[1321] [ ] and [ ]

[1322] Macquarie Research "Z Energy" (2 August 2018) at 12, [ ]; [ ] and [ ]

J6 Hale and Twomey have recently modelled long-term fuel demand in New Zealand, producing results which are broadly consistent with the outlook described above. Hale and Twomey forecast that:[1323]

J6.1 petrol demand is expected to decline due to changes in efficiency and fuel composition within the passenger vehicle fleet;

J6.2 diesel growth in the short-term will be driven by the International Maritime Organisation's implementation of a global cap on sulphur in marine fuel, and growth in the mid to longer term is likely to be low; and

J6.3 jet fuel growth is expected to be driven by increased demand from international long haul aircraft. The high case forecast has the Auckland Airport long-term jet fuel demand growth at 4% per annum.

J7 Hale and Twomey's forecast decline in petrol demand over the longer term due to changes in efficiency and fuel composition reflects the same industry expectation. It is also consistent with an expectation that the uptake of EVs will eventually have a meaningful impact on reducing demand for retail fuel.

J8 However, given that demand is predicted to remain relatively flat over the short to medium term, we consider that neither fuel efficiency improvements nor the uptake of EVs are likely to have a substantial impact on fuel sales for at least 10 years.

J9 We recognise that uncertain expectations of EV uptake, improved fuel efficiency and reductions in retail fuel demand, even in 10 to 20 years' time, may discourage some investment in expensive and long-lived assets that help supply retail fuel. Z Energy submitted that demand risk is asymmetric, as a meaningful increase in demand for retail fuel is highly unlikely.[1324]

J10 Nonetheless, any negative effect on fuel firms' investment strategies and viability is likely to be somewhat offset by expectations of increasing growth in diesel and aviation fuel demand, which are less affected by EV uptake.[1325] For example, Z Energy's 2019 annual report notes (emphasis added):[1326]

1323 Fueltrac "Options to achieve better resilience and security of fuel supply for Auckland, in particular for jet fuel" (June 2019) at 21.

1324 Z Energy ""Submission on the Commerce Commission's market study into the retail fuel sector: Draft report" at [70] – [72].

1325 A 2018 report from the Columbia Centre on Global Energy Policy notes that "…any decline in oil demand from the passenger vehicle sector could be offset by demand growth in the petrochemical, aviation, or freight transport sectors, which have fewer and more costly substitutes for oil." Columbia Center on Global Energy Policy "Electric vehicles and their impact on oil demand: Why forecasts differ" (July 2018), at 1. See also Hale and Twomey long term fuel demand forecasts in Fueltrac "Options to achieve better resilience and security of fuel supply for Auckland, in particular for jet fuel" (June 2019) at 21.

1326 Z Energy "Annual Report 2019", at 15. This is also supported by
[ ]

> This year the Board travelled overseas to learn how other countries and industry participants are preparing for a lower carbon future. As a result of the trip the Board is confident that we will have adequate time to properly navigate the expected market transition. **We accept that our industry faces long-term disruption, but it will not manifest as material demand destruction in New Zealand for some considerable time.**

EVs represent a small but growing portion of the light vehicle fleet

J11 The proportion of light vehicles primarily fuelled by electricity is currently low but is growing strongly. At the end of 2018, EVs represented about 0.27% of all registered vehicles in New Zealand and 0.29% of light vehicles.[1327]

J12 The 3,155 new and used light EVs registered in the first half of 2019 represented 2.62% of total light passenger vehicles registered in that period.[1328] By October 2019 there were 17,629 EVs registered in New Zealand, a 49% increase on the 11,762 EVs in December 2018. This is 0.4% of the total vehicle fleet (as at December 2018).[1329]

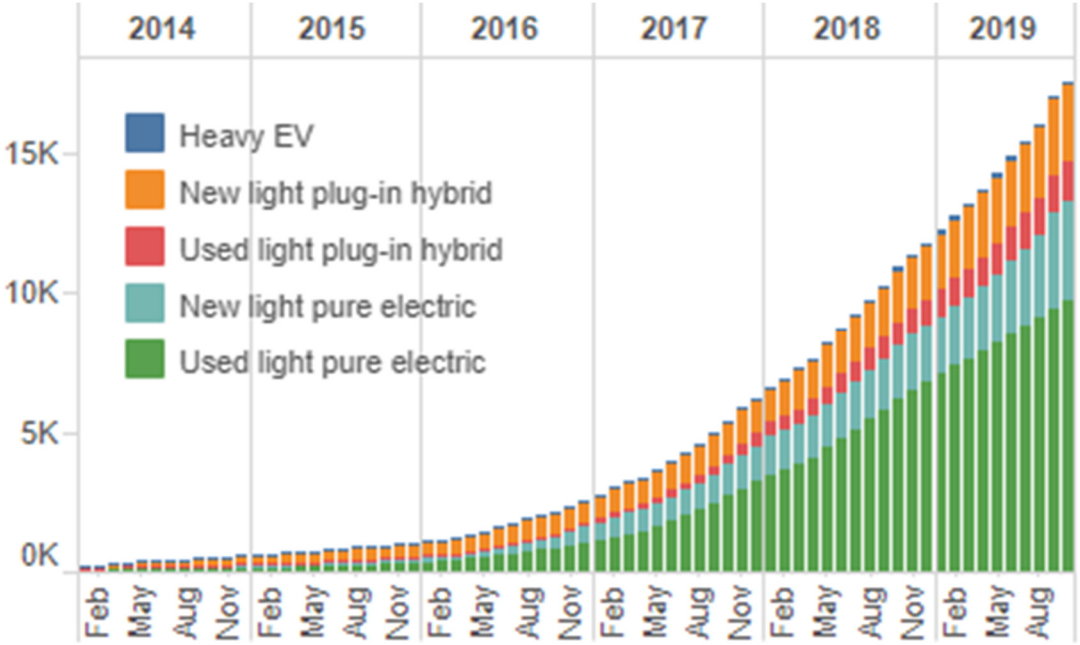
J13 The growth in New Zealand's EV fleet size over time is shown in Figure J1 below.

1327 There were around 4.3 million registered vehicles in 2018. Ministry of Transport "Annual fleet statistics 2018" (2019), at 7. Available at <https://www.transport.govt.nz/mot-resources/vehicle-fleet-statistics/>.

1328 Ministry of Transport "Quarterly Fleet Statistics (Data tables) – April to June update". Available at <https://www.transport.govt.nz/mot-resources/vehicle-fleet-statistics/quarterly-fleet-statistics-data-tables-april-to-june-2019-update/>. (Viewed on 6 October 2019).

1329 We have compared to December 2018, as this is when total fleet size data is available. Ministry of Transport, available at <https://www.transport.govt.nz/mot-resources/vehicle-fleet-statistics/monthly-electric-and-hybrid-light-vehicle-registrations/>. (Viewed on 16 August 2019).

Figure J1 New Zealand's EV fleet size



Source: Ministry of Transport (2019).[1330]

J14 The adoption rate of EVs will depend on factors that improve the performance of EVs and reduce their price, compared to fuel powered vehicles. These factors include:

J14.1 technological developments, such as changes in the cost and capacity of batteries; and

J14.2 government regulations that change the supply and demand for EVs. For example, the Government currently has a range of policies in place, with a goal of increasing EV uptake to approximately 64,000 by the end of 2021.[1331]

J15 The rate at which petrol and diesel vehicles exit the fleet (rather than just being sold between vehicle users) will depend on when these vehicles are scrapped and whether they are replaced by EVs or new petrol and diesel vehicles. Government policy can affect this too. For example, some countries and cities have announced

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1330 Available at <https://www.transport.govt.nz/mot-resources/vehicle-fleet-statistics/monthly-electric-and-hybrid-light-vehicle-registrations/>. (Viewed on 16 August 2019).

1331 Available at <https://www.transport.govt.nz/multi-modal/climatechange/electric-vehicles/ and , which outlines the Government's response to recommendations>. (Viewed on 11 November 2019). In August 2019, the Government responded to how it is implementing and investigating recommendations made by the Productivity Commission to reduce emissions in transport. See "Transitioning to a low-emissions future – the Government response to the Productivity Commission's Low Emissions Economy report" (August 2019) at 15 – 17.

commitments to ban sales of new petrol and diesel vehicles from specified dates.[1332] The current Government recently considered and rejected banning the import of fossil fuel vehicles from 2035 onward.[1333] It has proposed the introduction of a feebate scheme, aimed at making fuel efficient vehicles and EVs more affordable and requiring vehicle importers to bring in progressively more fuel efficient vehicles.[1334]

A range of projections of EV uptake have been modelled

J16 A range of projections of future EV uptake have been modelled in New Zealand.[1335] These remain highly uncertain.

J17 A 2018 report by Vivid Economics, Concept Consulting and Motu considered three main scenarios regarding EV take up. These are noted in Table J1 below along with broad indications of the impact these scenarios have on reductions in fuel volume.

1332 Michael J. Coren "Nine countries say they'll ban internal combustion engines. So far, it's just words" (7 August 2018). QUARTZ, available at <https://qz.com/1341155/nine-countries-say-they-will-ban-internal-combustion-engines-none-have-a-law-to-do-so/>. (Viewed on 7 June 2019).

1333 See <https://www.stuff.co.nz/motoring/news/115222259/government-considered-banning-fossil-fuel-vehicles>. (Viewed on 6 November 2019).

1334 Public consultation on these proposals closed in August 2019. See Ministry of Transport "Moving the light vehicle fleet to low-emissions: discussion paper on a Clean Car Standard and Clean Car Discount" (9 July 2019).

1335 For example, see BusinessNZ Energy Council "New Zealand Energy Scenarios Navigating energy futures to 2050" (2015); and Vivid Economics, Concept Consulting and Motu "Modelling the transition to a lower net emissions New Zealand: Uncertainty analysis" (July 2018) at 21-22.

Table J1 EV uptake scenarios to 2030 and impact on fuel demand

Scenario[1336]	Number of EVs (assuming the 2018 fleet size of 4.3m)	Displacement of the 3.2blpa petrol consumed in 2018[1337]
The stabilising scenario: EVs reach 5% of the total vehicle fleet by 2030	0.22m	Displacing 230mlpa in 2030
The policy-driven scenario: EVs reach 10% of the total vehicle fleet by 2030	0.43m	Displacing 459mlpa in 2030
The disruptive scenario: EVs reach over 40% of the total vehicle fleet by 2030	1.72m	Displacing 1.84blpa in 2030

Source: Commerce Commission analysis based on Ministry of Transport data and Vivid Economics et al. assumptions.

J18 If every new vehicle purchased was an EV, it would take over 20 years to replace the entire petrol vehicle fleet, assuming the current trends in vehicle addition and attrition rates continue.[1338]

J19 Z Energy states that the BusinessNZ Energy Council (BEC) has developed two plausible scenarios for energy supply and demand extending out to 2050.[1339] Both scenarios predict that industry demand for petrol fuels will decline, with the "waka" scenario leading to a much more significant decline than the alternative "kayak" scenario. BEC forecasts for petrol demand to 2040 are shown in Figure J2 below.

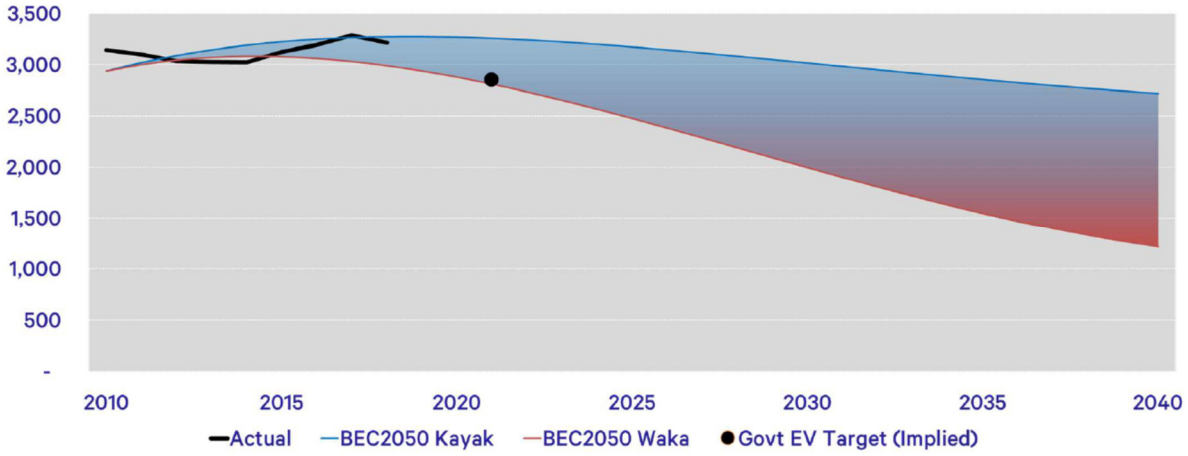
1336 Vivid Economics, Concept Consulting and Motu "Modelling the transition to a lower net emissions New Zealand: Uncertainty analysis" (July 2018) at 21-22.

1337 Calculated using assumptions about light vehicle travel, given EVs are expected to replace light vehicles and assuming the total vehicle fleet size remains at 4.15m vehicles (as at December 2017). Key assumptions include: fuel consumption per vehicle of 9.14 litres per 100km (based on the mean economy for light vehicles in 2017) and average distance travelled per light passenger vehicle of 11,691 km per year. These assumptions are based on: Ministry of Transport - New Zealand Fleet Statistics 2017 data. Available at <https://www.transport.govt.nz/news/land/we-are-driving-further-and-more-than-ever-before>. (Viewed on 12 June 2019).

1338 Over the last 17 years, the number of new vehicles added to the fleet each year is between 150 and 300 thousand. The vehicle attrition rate is steadier, at around 150 to 180 thousand vehicles each year. Ministry of Transport "Annual fleet statistics 2017" (2017), at 6 and Table 6 at 46. Available for download at <https://www.transport.govt.nz/mot-resources/vehicle-fleet-statistics/>.

1339 Z Energy "Annual Report 2019" at 46 and Z Energy "Market study into the retail fuel sector: Z energy's response to invitation to comment on preliminary issues" at [70].

Figure J2 Industry petrol demand tracking to upper range of the Kayak scenario (ML)



Source: Z Energy "2019 results presentation: For the year ended 31 March 2019" (2 May 2019), at 21.

J20 New scenarios are currently being developed by the BEC, forecasting oil energy demand out to 2060. Z Energy reports that recent growth in demand sees the BEC 2060 scenarios starting with higher demand than the prior BEC2050 scenarios (set out in Figure B2 above), but with steeper longer term trajectories.[1340]

EV uptake unlikely to disrupt the market soon

J21 While the retail fuel industry can be viewed as a "sunset" industry, as submitted by Z Energy,[1341] evidence suggests this is likely to be a relatively long sunset period, with no material acceleration of decline in fuel demand over the medium term.

J21.1 Current industry fuel volumes are much more aligned with the upper range of BEC kayak scenario (gradual reduction in fuel demand) and well above the BEC waka scenario (accelerated reduction in fuel demand).[1342]

J21.2 EV growth is considered unlikely to impact fuel volumes over the medium term,[1343] with the material impact from technology expected to occur at least 10 years out for New Zealand.[1344]

1340 Z Energy ""NZX:ZEL Investor Day 2019 Thursday, 1 August 2019" (1 August 2019) at 51.

1341 Z Energy "Z Energy comments on 18 April working papers" (7 May 2019) at 28-30.

1342 Z notes that the BEC scenarios are currently being updated. Z Energy "2019 results presentation: For the year ended 31 March 2019" (2 May 2019) at 21.

1343 For example, [ ]; [ ] and [ ]

1344 For example, [ ]

J21.3 The market (enterprise) value of Z Energy carries a significant premium relative to the replacement costs of its assets. This suggests that investors in Z Energy do not value Z Energy as if it were operating in a sunset industry. We discuss this in more detail in Attachment C.