PUBLIC VERSION

Setting the 2014-2019 customised price-quality path for Orion New Zealand Limited

Draft Decision

Date: 14 August 2013

Foreword

The Canterbury earthquakes in 2010 and 2011 significantly affected the region's electricity consumers, Orion's distribution network, and Orion's staff. Orion did an excellent job in planning for the risk of an earthquake, and in strengthening its network against the impacts of an earthquake. Orion estimates that the $6 million it spent on seismic strengthening from the mid-1990s saved it between $60 and $65 million in replacing assets that were damaged or destroyed by the earthquakes. After the earthquakes, Orion performed very well in extremely trying circumstances, with power being restored to 95% of its consumers within ten days.

Orion has proposed to significantly increase expenditure in many areas of its network to address damage caused by the earthquakes and to implement key elements of its longer term development plan for the network. Orion has proposed an increase in its maximum average prices of CPI+15% in 2014 and CPI+1.2% each year thereafter until 2019.

We consider that Orion manages its business well for the benefit of its consumers, supported by a strong engineering team.

Our main concern with Orion's proposal is that we consider Orion has proposed to do too much, too soon. We consider the extent and timing of the proposed expenditure has not been adequately justified.

We appreciate that Orion's proposal was put together in a short time frame and in difficult circumstances. The proposal is the first of its kind under the new regulatory regime for the industry too. With more time, and under more normal circumstances, Orion would likely have subjected its proposal to a higher level of internal scrutiny and challenge, with greater consideration of the available alternatives.

Given our concern with the level of expenditure proposed by Orion, we had to undertake our own detailed assessment of Orion's expenditure requirements, assisted by a number of independent experts. We agree with Orion that a significant increase in expenditure is required over the customised price-quality path period. However, our draft decision reflects a smaller increase than that sought by Orion. Our draft decision is to allow Orion to increase its maximum average prices by CPI+9.2% at the beginning of the customised price-quality path period with CPI increases thereafter.

Once the final customised price-quality path is set, Orion will be free to prioritise the projects and programmes it actually undertakes, but must meet the minimum required reliability standards in the price-quality path.

We look forward to hearing the views of all interested parties on our draft decision. In particular, this consultation process gives Orion a further opportunity to provide us with additional evidence in support of its proposed expenditure.

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Executive summary

Purpose of this paper

X1 This paper sets out our draft decision on, and reasons for, setting a customised price-quality path for Orion New Zealand Limited (Orion) that promotes the long-term benefit of consumers. We seek your views on our draft decision by 20 September 2013.

X2 The main impacts of our final decision will be on the maximum average prices and minimum required quality standards that will apply to Orion between 1 April 2014 and 31 March 2019 (the customised price-quality path regulatory period, which we refer to as the CPP period).

Orion is subject to price-quality regulation

X3 As Orion does not face competition, we cap the maximum average prices it can charge its consumers and set the minimum required quality standards its services must meet under a price-quality path. Orion's current price-quality path is due to end in March 2015, but the customised price-quality path that we set will replace this for five years from 1 April 2014.

X4 Orion owns and operates one of the largest electricity distribution networks in New Zealand. Its network covers 8,000 square kilometres across central Canterbury between the Waimakariri and Rakaia rivers, and stretches from the Canterbury coast to Arthur's Pass. Orion provides electricity lines services to around 192,000 consumer connections.

Orion was affected by the Canterbury earthquakes

X5 The Canterbury earthquakes of 2010 and 2011 damaged parts of Orion's network, interrupted services to consumers, and led to the demolition of its head office. Orion incurred additional costs in responding to the earthquake, and its revenues fell because of reduced consumer demand for electricity after the earthquakes.

We received a customised price-quality path proposal from Orion after the earthquakes

X6 On 20 February 2013, Orion submitted a customised price-quality path proposal to increase its maximum average prices and reduce its required quality standards for the five years commencing 1 April 2014. Orion's proposal was put together in a short time frame and in difficult circumstances

Orion has proposed higher expenditure

X7 Orion has proposed substantial increases in expenditure in most areas of its operations. This includes higher spending on major capital expenditure projects, asset maintenance and replacement, network management and operations, and corporate overheads. Average annual operating costs would increase by approximately 41% from a pre-earthquake level of $39 million per year to $55 million per year (in 2013 constant prices). Average annual capital expenditure would increase by around 40%.

Orion has proposed the recovery of additional costs and lower revenues

X8 Orion has also sought to recover all additional costs it incurred after the Canterbury earthquakes and lower than forecast revenues in the period leading up to April 2014. These additional costs and lower revenues amount to $86 million, and referred to as claw-back.

Orion has proposed lower quality standards

X9 The quality of service provided to Orion's consumers, in terms of the reliability of supply, has deteriorated after the earthquakes. Orion's current minimum required quality standards were set before the earthquakes, and Orion has proposed lower standards that better reflect the impact of the earthquakes on its network.

Orion's proposal would mean significant price rises for consumers

X10 Orion's proposed expenditure increases and its proposed claw-back means that it has sought to increase its maximum average prices for electricity lines services by CPI+15% from 1 April 2014. Orion has proposed further annual increases of CPI+1.2% for the remainder of the CPP period (to 31 March 2019).

We seek to best promote the long-term benefit of consumers

X11 We can determine any customised price-quality path that we consider appropriate for Orion once it has made a proposal.[1] Our objective is to best promote the long-term benefit of Orion's consumers, consistent with the purpose of Part 4 of the Act.

We have conducted a thorough evaluation of Orion's proposal

X12 We have conducted a thorough evaluation of Orion's proposal against the criteria in our input methodologies.[2] In particular, we have considered whether the operating expenditure (opex) and capital expenditure (capex) proposed by Orion reflects the efficient costs that a prudent supplier of electricity lines services would require to meet or manage expected demand for its services, at appropriate service standards. We refer to this as the expenditure objective.[3]

X13 Our evaluation has relied on our internal expertise, experience and skills as well as specialist advice from a range of independent experts.

We think that Orion's proposed expenditure is too much, too soon

X14 We acknowledge the short time frames and difficult circumstances within which Orion has produced its proposal. However, we are not satisfied that Orion's proposed expenditure reflects the efficient costs of a prudent supplier to meet or manage the expected demand for services over the CPP period. In short, Orion's

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1 Commerce Act 1986, s 53V(1).

2 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.2.1.

3 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 1.1.4.

proposed expenditure is too much, too soon. We think that Orion's proposed expenditure does not fully satisfy the expenditure objective because:

X14.1 Orion's processes for developing its proposed expenditure were inadequate: Orion did not undertake an effective top-down review and challenge nor demonstrate it robustly considered other options with less expenditure;

X14.2 Orion relied on a number of assumptions that were not fully justified;

X14.3 Orion has proposed a step change in expenditure that was not fully justified;

X14.4 Orion placed too much priority on further improving the resilience (to high impact, low probability events like earthquakes) of its already resilient network through relatively high cost projects, without evidence that Christchurch consumers require greater resilience and are willing to pay for it. (We consider Orion has appropriately focused on progressively improving the day-to-day reliability of the services back towards pre-earthquake levels);

X14.5 There was little acknowledgment or recognition by Orion of the option value of deferring capital projects, when there is still uncertainty over future growth projections and the profile of load demand in Orion's network area after the earthquakes; and

X14.6 Much of the expenditure proposed by Orion is not required to meet demand and is not otherwise necessary in the CPP period.

Accepting Orion's proposed expenditure would mean unjustified price increases

X15 We think that using Orion's proposed levels of expenditure to set maximum average prices would lead to Orion either over-investing (ie, too much expenditure, too soon) or earning excessive profits (ie, if it spent what the network actually requires, rather than what Orion proposes to spend). Neither of these outcomes would benefit Orion's consumers in the long term.

We have had to develop our own view of an allowance for Orion's required expenditure

X16 As Orion's proposed levels of expenditure are not in the best interests of consumers, we have had to develop our own view of an appropriate allowance for the required levels of opex and capex for Orion's network for the CPP period. We have done this by undertaking more detailed analysis of Orion's forecasts. We have exercised judgement, supported by the skills, experience and expertise in our own organisation (for example, economics and engineering), as well as independent expert advice on:

X16.1 Various technical engineering aspects of Orion's proposal;[4]

X16.2 Specific urban major capital expenditure projects in Orion's proposal;[5]

X16.3 The comparative costs of underground and overhead lines;[6] and

X16.4 The reasonableness of Orion's forecasts of construction related Canterbury labour costs including forecasts of labour cost inflation.[7]

X17 We asked Orion to clarify a number of issues and received a large volume of additional information and commentary from Orion. We had a number of discussions with Orion's management, and held workshops with Orion and our engineering experts in Christchurch. We appreciate the positive efforts that Orion has made in engaging with us and responding to our requests for additional information, which has materially assisted us in developing our view of an allowance for the required levels of opex and capex.

Our detailed analysis confirms that Orion's proposed expenditure is more than necessary

X18 Based on our detailed analysis, some expenditure is not required at this time and we think it would be prudent and more efficient if Orion's proposed levels of opex and capex were spread over a longer period of time. Therefore, deferring some of Orion's proposed expenditure until after the CPP period would be in the interests of consumers.

Some of Orion's proposed major capital expenditure projects can be deferred

X19 We consider that Orion's sub-transmission plans are well thought out from an engineering perspective. However, these plans require significant investment and we consider that consumers would benefit if Orion spread this expenditure over a longer period of time, which would reflect a better trade-off between price and quality.

X20 We think that significant components of Orion's proposed major capital expenditure projects can be deferred. In particular, the major capital expenditure project proposed to improve the resilience of the network to high impact but low probability events, such as earthquakes. This work does not need to be undertaken in the CPP

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4 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013).

5 Partna Consulting Group "Findings on the Orion CPP Proposal – Urban Major Projects - North (CPP1) and Dallington (CPP2)" (June 2013).

6 Calverton Business Consulting Group "Orion CPP Proposal: Comparative Costing for Overhead and Underground Lines" (1 July 2013).

7 New Zealand Institute of Economic Research (NZIER) "Canterbury Labour cost Escalation: Assessment of Orion's Projections" (17 June 2013). New Zealand Institute of Economic Research (NZIER) "Labour cost escalation in Canterbury" (July 2013).

period to meet Orion's demand forecasts and the reliability requirements of its major electricity consumers.

X21 Generally, we consider that major capital expenditure projects that are focused on further improving resilience levels are not required in the CPP period. This is because Orion's network already provides a high level of resilience, a view that is supported by our technical engineering experts. It is also evidenced by the performance of Orion's network during the Canterbury earthquakes (and the rapid restoration of service afterwards).

X22 We have also assumed a lower level of spending on other major capital expenditure projects. This includes some proposed investments in rural areas, because we do not consider that they will be needed to meet demand in the CPP period, or we think that a lower cost option is available that delivers the required level of service.

X23 An assumption that some of Orion's proposed major capital expenditure projects can be deferred until after the CPP period will give Orion the necessary time to observe the actual speed and profile of Canterbury's rebuild. Orion can then respond with investment plans that reflect a better understanding of the requirements of consumers.

Orion's proposed replacement capital expenditure is greater than is necessary

X24 Our view is that Orion's proposed replacement capital expenditure programme is greater than what is needed during the CPP period. The typical assets owned by electricity distributors like Orion are long-lived assets. Orion's own assessment is that almost all of its assets (such as switchgear) are in good or fair condition. Yet Orion has proposed a significant increase in expenditure on its asset replacement programme, which would replace large numbers of such assets before they have reached the end of their lives.

X25 This is inconsistent with Orion's own asset management approach, is unnecessary, and is not in consumers' best interests. Deferring some of the asset replacement would reduce expenditure and result in lower prices for consumers. Orion's own assessment of the condition of its assets suggests that deferring replacement will not adversely impact the quality of service provided to Orion's consumers.

Orion's proposed allowance for future increases in Canterbury labour costs is too high

X26 We think that Orion's proposed allowance for future increases in Canterbury labour costs is too high. Our view is supported by the expert advice we received from NZIER about the reasonableness of Orion's forecasts of construction related Canterbury labour costs and forecast rate of cost escalation. NZIER has described Orion's

forecast rate of cost escalation as "extremely unlikely".[8] Based on NZIER's advice we have allowed for a lower rate of increase in these costs.

X27 Orion and NZIER both expect a strong increase in Canterbury labour costs until 2017.[9] Orion will be able to take advantage of a forecast moderation in labour costs if it defers some proposed expenditure until after the end of the CPP period. In contrast, Orion's proposal indicates a higher level of expenditure at a time when the demand for labour (and its cost) is forecast to be greatest.

X28 We assume a smaller programme of required additional work during the CPP period than Orion. Consistent with this, we also assume a smaller increase in the staff needed to manage that expenditure programme.

Our expenditure allowances enable Orion to improve its reliability of service

X29 The day-to-day reliability of electricity lines services received by Orion's consumers has unavoidably deteriorated as a result of the earthquakes. Orion's current minimum required quality standards were set before the earthquakes, and Orion has therefore proposed lower quality standards. We accept that Orion's proposed minimum quality standards may be conservative but reflect what is realistically achievable after the earthquakes.

X30 Although our opex and capex allowances are less than Orion's proposal, some of Orion's proposed expenditure is unlikely to significantly improve the reliability of service to consumers during the CPP period. Our draft decision therefore reflects less of that expenditure, and includes the quality standards proposed by Orion. The minimum quality standards that Orion must meet require a gradual improvement in reliability over the CPP period toward the levels that existed before the earthquakes.

It is Orion, and not us, who will decide what work is undertaken and when

X31 Our opex and capex allowances do not determine the projects that Orion actually undertakes during the CPP period. Orion will decide what work proceeds, and when.

X32 The customised price-quality path we determine assumes an ex ante allowance for expenditure. Orion then has the freedom to prioritise the projects and programmes it actually undertakes throughout the CPP period without further intervention from us. Orion can spend more or less than our allowance, but it will need to meet the quality targets we have set.

X33 Our allowance for expenditure is higher than Orion's actual pre-earthquake expenditure (for example, the opex for the CPP period is assumed to average 24% above 2010 expenditure in real terms). This will enable Orion to undertake a

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8 New Zealand Institute of Economic Research (NZIER) "Labour cost escalation in Canterbury" (July 2013), p.1.

9 New Zealand Institute of Economic Research (NZIER) "Labour cost escalation in Canterbury" (July 2013).

substantial investment programme on its network so as to meet or manage expected demand for its services, at appropriate service standards, during the CPP period.

X34 Orion has recently released its actual financial results for the year to 31 March 2013. These show that Orion's actual expenditure in that year was lower than Orion had forecast in its proposal. Commissioned assets were $32m (41%) lower than forecast, and capex and opex were $14m (19%) and $8m (14%) lower than forecast respectively.

X35 Orion also achieved a better than forecast level of quality of service (as measured by reliability) for the year to 31 March 2013. In our view, this provides further support for our conclusion that the expenditure required by Orion's network is lower than Orion has included in its proposal. We have reflected these actual results into our draft decision on the customised price-quality path for Orion.

Our allowance for past additional costs and lower than forecast revenues (claw-back)

Orion has proposed claw-back of $86m

X36 Orion has proposed recovering all past additional costs incurred and lower than forecast revenues resulting from the earthquakes through future higher prices for consumers (this is known as claw-back). Orion proposes claw-back of $86m, which it seeks to recover over ten years.

Claw-back is limited to the transition period between September 2010 and 1 April 2014

X37 The potential scope of claw-back is time constrained. Consideration of claw-back is limited to the period between the first earthquake in September 2010 and the start of the CPP period on 1 April 2014.

X38 At the beginning of the CPP period on 1 April 2014, Orion's price-quality path will be reset. This reset will include allowances for increased expenditure and reduced revenues resulting from the earthquakes for the five years from 1 April 2014 to 31 March 2019.

We have discretion over claw-back

X39 Part 4 of the Commerce Act (the Act) gives us broad discretion about if and how we apply claw-back when setting a customised price-quality path. We think claw-back should only be provided following a catastrophic event where sufficient allowance for the risks of such events has not been provided to the regulated supplier beforehand.

X40 In our view, Orion's prices prior to the Canterbury earthquakes are likely to have included some compensation for the risks of catastrophic events. However, no explicit compensation was provided. Therefore, any compensation Orion may have received is simply one factor we have considered when exercising our discretion regarding claw-back.

Consumers should not bear all additional costs and lower than forecast revenues

X41 We do not agree with Orion's proposal to claw back all earthquake-related costs and lower than forecast revenues from consumers. Under Orion's proposed approach to claw-back, consumers would bear all the risks and costs associated with the Canterbury earthquakes.

X42 In our view, sharing the impact of past additional costs and lower than forecast revenues between Orion and consumers is more consistent with the Part 4 regulatory regime.

X43 We think regulated suppliers and their investors are generally better placed to manage the risks of catastrophic events (such as earthquakes) than consumers. For example:

X43.1 Suppliers can manage risks associated with catastrophic events in various ways, such as insurance, self-insurance, and investment in network strengthening/resiliency; and

X43.2 Investors can reduce their exposure to catastrophic risks by diversification.

X44 Orion's approach to claw-back would incentivise suppliers to take a risky approach to managing catastrophic events, knowing that consumers would bear the full costs after the event if a catastrophe occurs.

Our view is that Orion should be allowed claw-back of $28.6m

X45 Our draft decision includes claw-back of $28.6m (present value as at 1 April 2014). This claw-back amount allows Orion to recover:

X45.1 All of the additional net costs (net of insurance proceeds) it actually incurred between the first earthquake in September 2010 and 1 April 2013;[10] and

X45.2 Our assessment of an efficient level of additional net costs to be incurred between 1 April 2013 and 31 March 2014.[11]

X46 Our draft decision does not include any allowance for lower than forecast revenues experienced by Orion between September 2010 and 1 April 2014. Demand risk is broadly symmetric because suppliers face both upside and downside risk during a regulatory period. By diversifying across different regions, an investor is able to costlessly insure itself against the risk of population relocations due to a catastrophic event.

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[10] The 'additional net costs' represent costs incurred over and above the level of revenue Orion would have recovered had the earthquakes not resulted in reduced demand.

[11] Claw-back for this period is calculated by making a downwards adjustment to Orion's proposed additional net costs (consistent with our approach to the evaluation of forecast expenditure during the CPP period).

Other earthquake-related costs are recovered separately from claw-back

X47 Consistent with the input methodologies, major categories of earthquake-related costs are recovered from consumers separately from claw-back.

X47.1 The approach to the regulatory asset base (RAB) means that all capital expenditure (once commissioned) is added to the RAB and able to earn a return on and of capital. Therefore, expenditure to mitigate the impacts of catastrophic events gets recovered; as does any capital expenditure to repair, restore or improve services after a catastrophic event.[12]

X47.2 The value of damaged and destroyed assets (to the extent that exceeds insurance proceeds) remains in the RAB and will continue to be recovered through future prices, once the CPP is set. The value of damaged and destroyed network assets that remain in the RAB is estimated to be $71.3m before tax.

X48 The impact of reduced demand in future periods (after 1 April 2014) is borne by consumers. Our final decision will reset Orion's price-quality path from 1 April 2014 to reflect the current actual level of demand. Therefore, Orion will be compensated for reduced demand due to the earthquakes from this date.

X49 Our approach to damaged and destroyed assets, investment and claw-back will share the financial impact of the earthquakes between Orion and its consumers. Overall, we estimate that approximately 33% of the impact will be borne by Orion and 67% will be borne by consumers under our draft decision. In our view, Orion has been adequately compensated ex ante for bearing demand risk. We consider that our approach is consistent with Part 4 of the Act, our input methodologies, and outcomes in workably competitive markets.

Our draft decision

A smaller increase in expenditure and less claw back than Orion proposed

X50 In summary, our draft decision on the appropriate customised price-quality path for Orion allows for smaller increases in capex and opex than Orion's proposal. We also allow Orion to claw-back the additional costs it incurred in responding to the earthquakes, but do not allow it to recover the lower revenue earned.

X51 As a result the total revenue Orion would be allowed under our price-quality path is lower. Table X1 shows the difference between the maximum revenue expected by Orion in its proposal and the maximum revenue Orion can expect under our draft decision. Our decision does not defer any recovery to the next regulatory period. (Orion proposed to vary its depreciation rate to defer recovery of $27 million to the

[12] With the narrow exception of depreciation of, and return on, an asset in the claw-back period post commissioning but before the next reset, if claw-back is not applied.

subsequent regulatory period. It also proposed deferring recovery of $43 million of claw back to the next regulatory period.)

Table X1 - Maximum revenue expected by Orion ($m)

	2015	2016	2017	2018	2019
Orion's proposal	164.8	171.7	178.9	186.6	194.4
Our draft decision	155.8	160.4	165.2	170.2	175.2
Difference	-9.0	-11.3	-13.7	-16.4	-19.2

Note: Figures in table are nominal values.

Smaller price increases

X52 Table X2 shows the difference between the average rate of change in allowed price for each year of the customised price-quality path under Orion's proposal and our draft decision.[13]

Table X2 - Average rate of change in allowed price

	2015	2016	2017	2018	2019
Orion's proposal	CPI + 15%	CPI + 1.2%	CPI + 1.2%	CPI + 1.2%	CPI + 1.2%
Our draft decision	CPI + 9.2%	CPI	CPI	CPI	CPI
Difference	-5.8%	-1.2%	-1.2%	-1.2%	-1.2%

Progressive improvements in quality

X53 The minimum required quality targets in our price-quality path are the same as those proposed by Orion, and will progressively improve over the CPP period towards pre-earthquake levels.

We seek your views before we finalise our decision

X54 This is a draft decision. Before we issue our final decision, we want to hear and consider the views of consumers and stakeholders on the appropriate customised price-quality path for Orion. The consultation period also provides a further opportunity for Orion to provide us with additional information in support of aspects of its proposal.

[13] The maximum revenue expected by Orion and the average rate of change in allowed price described in this paper are based on our financial model, which was locked down in advance of finalising this paper. We have subsequently identified adjustments to inputs to the model that will need to be made when we finalise our decision on Orion's price-quality path. These do not have a material impact on our draft decision. See Attachment O of this paper for further details.

X55 Submissions are due by 5pm on 20 September 2013, with cross-submissions due on 11 October. Due to the tight timeframes for this project, this deadline will be strictly enforced and we are very unlikely to grant any extension. Further details on how to submit can be found at paragraphs 1.41-1.47 below.

X56 We have published all of the experts' reports that we commissioned on our website along with the financial model we have used when preparing this report.[14] Expert reports from Professor Yarrow (on claw-back) and Aon New Zealand (on insurance) were released for comment in June 2013. Professor Yarrow and Aon have considered the submissions on their earlier reports and revised advice from Professor Yarrow and Aon are also available on our website.

X57 We intend to publish a draft determination that reflects our draft decision by 30 August 2013. This will be accompanied by explanatory notes on how compliance with the customised price-quality path will work for Orion. Submissions on the draft determination and the form of compliance will also be due by 5pm on 20 September 2013.

X58 We will determine the final price-quality path for Orion by 29 November 2013. Orion will then be able to implement any allowed price increases from 1 April 2014. The modified service quality targets will apply from that date too.

[14] The website address for all reports, and all previous related material including Orion's proposal, is http://www.comcom.govt.nz/regulated-industries/electricity/cpp/orion-cpp/.

1. Introduction

Purpose of this paper

1.1 This paper sets out our draft decision on, and reasons for, the customised price-quality path for Orion New Zealand Limited (Orion) which we have set to promote the long term benefit of consumers, consistent with the purpose statement of Part 4 of the Commerce Act 1986 (the Act).[15] We seek your views on our draft decision by 5pm on 20 September 2013.

1.2 We expect to make our final decision on Orion's customised price-quality path by 29 November 2013. The main impacts of our decision will be on the maximum average prices and the minimum required quality standards that will apply to Orion between 1 April 2014 and 31 March 2019.

Electricity lines services are regulated under Part 4 of the Commerce Act

1.3 Electricity lines services are regulated under Part 4 of the Act because companies in this market face little or no competition. Orion is subject to default/customised price-quality path regulation, which means that we set its maximum average prices and minimum required quality standards which apply over the regulatory period.

1.4 Orion's existing default price-quality path was set in November 2009, for the five year period from 1 April 2010 to 31 March 2015.[16] This was achieved by rolling over Orion's existing prices, which in turn reflected its historic prices updated for inflation, less an efficiency factor, dating back to 2001. When we set Orion's prices under the CPP this will be the first time we have set Orion's prices to reflect current and future profitability.

1.5 The default price-quality path was reset in November 2012 for 16 electricity distributors, but not Orion.[17] This was the first time those firms had their prices reset to reflect current and future profitability and it was also the first time we used the input methodologies developed under Part 4 of the Act to set prices. Orion's prices were not reset because we were expecting its customised price-quality path proposal following the impact of the Canterbury earthquakes.

Orion has proposed increasing its prices and reducing its quality standards

1.6 Electricity distribution businesses (EDBs) can propose an alternative price-quality path that better meets their particular circumstances (called a customised price-quality path proposal). They can do so after a catastrophic event, such as an

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15 Commerce Act 1986, s 52A.

16 *Electricity Distribution Services Default Price-Quality Path Determination 2010* (Commerce Commission Decision 685, 30 November 2009).

17 Commerce Commission "Resetting the 2010-15 Default Price-Quality Paths for 16 Electricity Distributors" (30 November 2012), paragraph 1.19.

earthquake.[18] Orion has submitted a customised price-quality path proposal to increase its maximum average prices and reduce its minimum required quality standards for the five years commencing 1 April 2014.

1.7 Orion has proposed an initial price increase of 15% plus inflation in 2014, with subsequent annual price increases until 2019 equal to the rate of inflation (as measured by the CPI) plus an additional 1.2% price increase. Orion's prices are part of what makes up a typical electricity bill.[19]

1.8 Relative to pre-earthquakes levels, Orion's proposal includes:

1.8.1 Higher capital expenditure;

1.8.2 Higher operating expenditure; and

1.8.3 Lower minimum quality standards.

1.9 The proposal also seeks to recover past additional costs and past lower than expected revenues from consumers by increasing prices from April 2014.

Orion has proposed higher capital expenditure

1.10 Orion has proposed spending $526 million on capital expenditure in the seven years from 2013 to 2019 (called the next period) after adjustments for inflation.[20] This includes expenditure planned before the earthquakes to implement Orion's long-term development plan and new expenditure proposed after the earthquakes to respond to the earthquake impacts. Figure 1.1 shows a breakdown of this expenditure into Replacement, Major Projects, Non-Network and Other capital expenditure.

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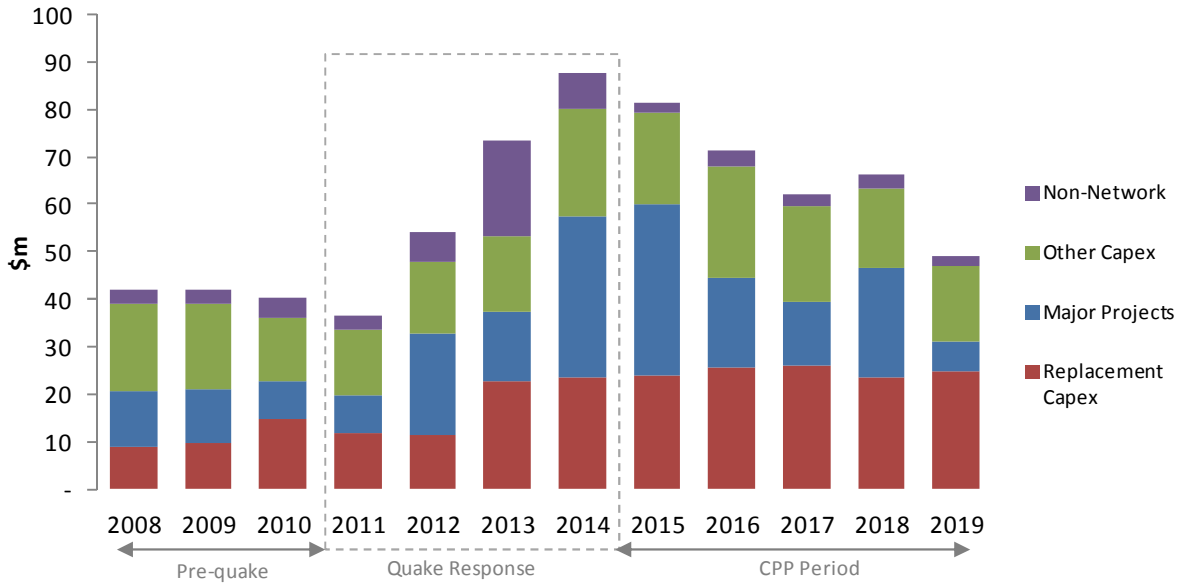
18 Catastrophic events are defined in paragraph 5.6.1 of the IMs (Electricity Distribution Services Input Methodologies Determination 2012).

19 23.2% of the annual electricity bill of a typical New Zealand residential customer is made up of these prices. See Electricity Authority "Fact Sheet 2, Breakdown of a typical bill" (2013), www.ea.govt.nz/dmsdocument/13295 (Viewed on 19 April 2013).

20 Capex spent in the two years prior to the five year CPP period impacts prices in the CPP period by increasing the regulatory asset base (RAB), which increases depreciation and the return required on that RAB.

Figure 1.1 - Capital expenditure



Note: Prices in 2013 constant prices.
Source: Commerce Commission analysis.

1.11 Spending on assets (capital expenditure or capex) increases the value of Orion's investment in its network. This results in an increase in Orion's maximum average prices to allow it to recover the value of this investment from its consumers over the life of the assets.

Orion has proposed higher operating expenditure

1.12 Orion has proposed spending $281 million on operating expenditure in the five years[21] from 2015 to 2019 (the CPP period). Figure 1.2 shows a breakdown of this expenditure into Asset Maintenance, Network Operations and Management, and General Management, Admin and Overheads expenditure. Again, this expenditure reflects Orion's long-term development plan, as well as expenditure directly required to address impacts of the earthquakes.

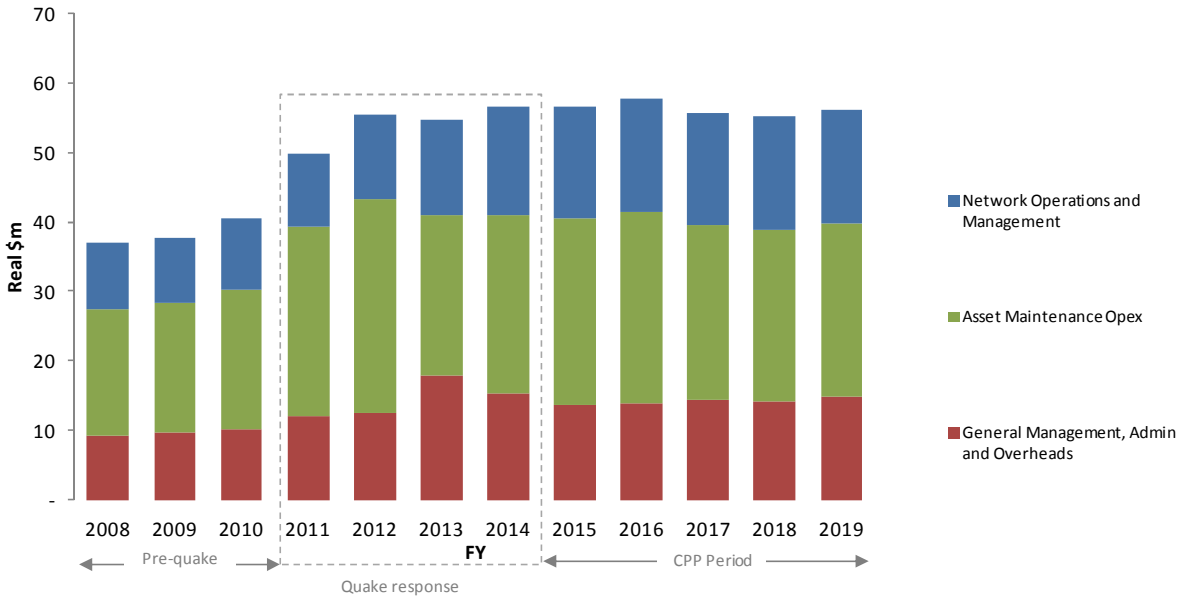
1.13 Figure 1.2 represents an increase in average annual expenditure of $16 million over actual expenditure levels in 2010 (adjusted for inflation).[22] An increase in forecast

[21] Unlike forecast capex, forecast opex directly impacts prices to consumers during the CPP period. Expenditure in the two years prior to the five year CPP period therefore does not directly impact prices to consumers in the CPP period.

[22] This has been calculated as the difference between average operating expenditure forecast by Orion for 2014-19 less actual operating expenditure for 2010 (adjusted for inflation). All figures are in 2013 constant price terms.

operating expenditure (opex) relative to previous periods increases Orion's maximum average prices.[23]

Figure 1.2 - Operating expenditure



Note: Prices in 2013 constant prices.

Source: Commerce Commission analysis.

Orion has proposed lower minimum quality standards

1.14 The existing quality standards reflect the reliability of service experienced by consumers on a day-to-day basis. In contrast, resilience is concerned with the network's ability to cope after a high impact, low-probability event such as an earthquake.

1.15 Orion proposes reducing its required quality standards for the supply of electricity on its network. Specifically it proposes increases in the allowed average duration of interruptions and allowed average number of interruptions. This is illustrated in Figure 1.3 and Figure 1.4, which shows Orion's proposed allowed duration of interruptions and their frequency, compared to its current required quality standards.

1.16 Orion's quality of service is affected by many factors, for example, the condition of the network, and the amount and timing of work to improve the quality of the network. Orion proposes restoring its quality of service to near pre-earthquake levels by 2019.

[23] Orion has not included any opex as controllable opex for the purpose of the Incremental Rolling Incentive Scheme (IRIS).

Figure 1.3 - System Average Interruption Duration Index (SAIDI)

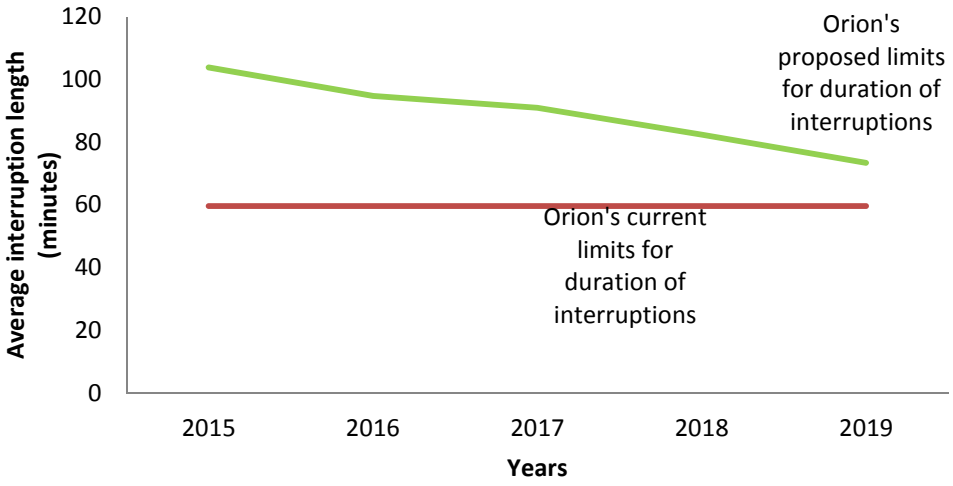
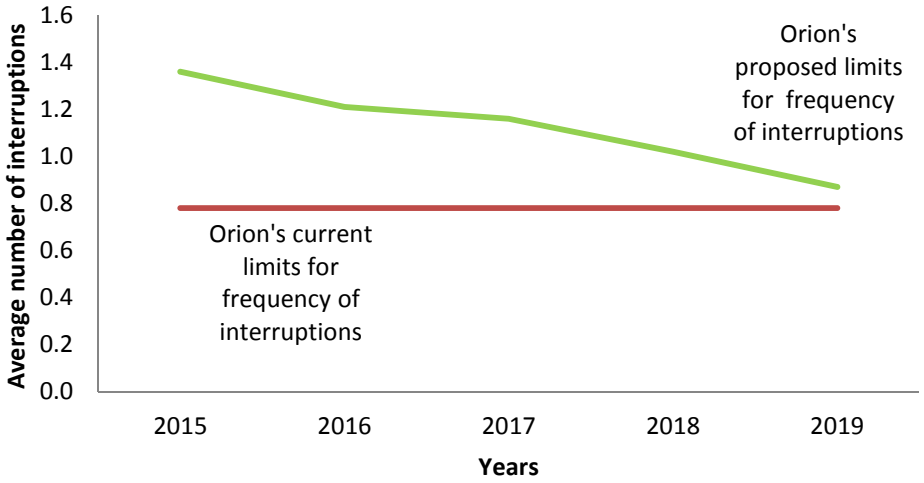


Figure 1.4 - System Average Interruption Frequency Index (SAIFI)



Orion has proposed claw-back of $86m

1.17 Orion proposes that it be allowed to recover $86 million from its consumers for:

1.17.1 Actual costs in the period before April 2014; and

1.17.2 Revenues it expected to earn in the period before April 2014 but did not earn because electricity use was lower than expected after the earthquakes.

1.18 The costs that Orion incurred in 2011, 2012 and 2013, and expects in 2014, included unanticipated costs in response to the earthquakes included repairing downed lines and poles, and constructing temporary lines. These costs were incurred before the period in which Orion's CPP would apply (ie, before April 2014). Orion proposes that prices for the period from April 2014 to 2019 should increase to reflect these additional costs.

1.19 Orion has earned lower than expected revenues after the earthquakes. This occurred because the amount of electricity supplied by Orion, and the number of premises which were supplied with electricity by Orion, fell as a result of the earthquakes.

1.20 This proposed recovery in future years of past costs and lower than expected historic revenues is called 'claw-back'.

Impact of the Canterbury earthquakes on Orion's network

1.21 The Canterbury earthquakes damaged parts of Orion's network and caused services to consumers to be interrupted. Orion incurred significant costs in responding to the impact of the earthquakes and restoring services.

1.22 Damage from the earthquakes was concentrated in the Christchurch CBD and the eastern suburbs of Christchurch, causing more power cuts than normal. Impacts included:

1.22.1 Damage beyond repair to four of 314 substations;

1.22.2 Damage beyond repair to several underground cables;

1.22.3 Some damage to overhead lines;

1.22.4 Some movement of poles and substations due to liquefaction in some parts of Christchurch;

1.22.5 The demolition of Orion's head office building following extensive earthquake damage (Orion moved into its new head office in June 2013); and

1.22.6 Damage to other assets, such as 11kV cables, which are being gradually tested and repaired.

1.23 Despite the damage, Orion was able to restore power relatively quickly. Services were restored to 95% of consumers within 10 days. Orion spent $6 million on seismic strengthening and additional investment on network resilience in the 15 years before the earthquakes. This proved to be a valuable investment which limited the impact of the earthquakes on Orion's network, and therefore the impact of the earthquake on Orion's services to consumers. Orion estimates the $6 million investment in seismic strengthening, saved $60 million to $65 million in direct asset replacement costs – a high level of payback for a small investment made over a 15 year period.

Our role is to promote the long-term benefit of consumers

1.24 In setting an appropriate customised price-quality path for Orion, we will promote the long-term benefit of Orion's consumers, as required by Part 4 of the Act. The purpose of Part 4 is:

> to promote the long-term benefit of consumers in markets referred to in section 52 by promoting outcomes that are consistent with outcomes produced in competitive markets such that suppliers of regulated goods or services—

(a) have incentives to innovate and to invest, including in replacement, upgraded, and new assets; and

(b) have incentives to improve efficiency and provide services at a quality that reflects consumer demands; and

(c) share with consumers the benefits of efficiency gains in the supply of the regulated goods or services, including through lower prices; and

(d) are limited in their ability to extract excessive profits.[24]

1.25 A catastrophic event such as the Canterbury earthquakes creates unique challenges for the regulated supplier. When a supplier seeks a customised price-quality path after a catastrophic event, our role is to set a customised price-quality path such that the supplier:

1.25.1 Has incentives to provide efficient electricity lines services, at a quality that reflects consumer demands and the ability of the network to deliver those services;

1.25.2 Has incentives to innovate and invest to deliver electricity lines services;

1.25.3 Can address the consequences of the catastrophic event;

1.25.4 Has appropriate incentives to manage risk; and

1.25.5 Can expect to earn a normal return during the CPP period.

1.26 We thoroughly evaluated Orion's proposal. The Act provides that we may determine any customised price-quality path that we consider appropriate.[25] In doing so, we seek to promote the long-term benefit of Orion's consumers. Our approach involves robustly testing the assumptions that underpin Orion's proposal, including considering feasible alternatives to it. The customised price-quality path we set for Orion must apply all relevant input methodologies.[26]

1.27 By setting the maximum average prices Orion can charge we influence the amount of expenditure Orion is likely to undertake during the CPP period. Orion is not required to undertake the expenditure we assume when setting the customised price-quality path. It has the discretion to spend more or less than we assume and it can prioritise and defer expenditure as it sees fit.

1.28 Once the customised price-quality path is set, Orion has a financial incentive to spend less than the path assumes as this will increase its profits. Any such efficiency

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[24] Commerce Act 1986, s 52A.
[25] Commerce Act 1986, s 53V(1).
[26] Commerce Act 1986, s 52S.

gains eventually benefit consumers as they will be reflected in prices when these prices are reset (generally every five years).

Orion should have incentives to invest efficiently

1.29 When we set a customised price-quality path for Orion, we seek to promote the long term benefit of consumers, consistent with the purpose statement of Part 4 . We ensure Orion continues to have the opportunity to earn a normal return ex ante on its efficient investment, and this provides an incentive for it to continue to make that investment in its network.

1.30 Where Orion is investing efficiently, making new investment at the appropriate time, and providing services at the appropriate quality, then Orion's consumers will benefit over the long term. Orion's consumers should not face prices that recover the costs of investment that is not efficiently delivered or is made well in advance of being needed.

1.31 In setting maximum average prices and minimum required quality standards for Orion, we are mindful of Orion potentially earning a return that is too low, which might discourage investment, versus a return that is too high, which might result in excessive profits or encourage over-investment. Although lower prices would likely provide immediate benefits to Orion's consumers, they will only benefit in the long-term if Orion has incentives to invest efficiently.

Orion has produced its proposal in difficult circumstances

1.32 The Canterbury earthquakes have been traumatic for those affected and have meant that Orion and its consumers (ie, residents and businesses of central Canterbury) are not operating in a business as usual environment. Orion's proposal has been produced in extremely trying circumstances when Orion's workload was significantly higher than normal.

1.33 Despite these difficulties, Orion has met the information content and process requirements of the input methodologies. It has produced a detailed proposal, including supporting tables and models, and an addendum of additional information that we required after the proposal was submitted, which has enabled us to undertake our substantive evaluation of Orion's proposal (our evaluation is discussed in Chapter 2). Since we decided that Orion's proposal was complete on 19 April 2013, Orion has continued a positive working relationship with Commission staff and responded to our requests for further information.

1.34 Orion's proposal is the first of its kind under the current regulation. There are rules and requirements that apply for the process and content of these proposals, but Orion has not had the benefit of learning from the experience of any other business in the past. EDBs that submit proposals in the future will gain assistance from reviewing Orion's proposal and our evaluation of it.

Our process to date

1.35 Orion submitted an application for a customised price-quality path on 20 February 2013.

1.36 We reviewed Orion's application for compliance with the relevant rules and requirements relating to the process for, and content of, proposals seeking a customised price-quality path.[27] On 19 April 2013, we decided that Orion's proposal complied with those requirements. We then had 150 working days, subject to any extension we agree with Orion, to determine a price-quality path for Orion.

1.37 We agreed with Orion to extend the period for determining the path until 29 November 2013.[28]

1.38 We released an 'issues' paper on 1 May 2013, which invited stakeholders to have their say on Orion's proposal and some initial issues that we had identified to explore and consider.[29] We received a range of views on Orion's proposal in the 20 submissions that we received from stakeholders in response to that issues paper. These are in our website and we have considered those submissions in making this draft decision.[30]

1.39 We commissioned expert advice from Professor Yarrow on claw-back, and AON on insurance matters. Given strong stakeholder interest in claw-back, and to give us an opportunity to consider stakeholder's views before making our draft decision, we released those expert reports for comment on 7 June 2013. Submissions we received on those reports have been considered in making this draft decision and are available on our website.[31]

1.40 Further advice from Professor Yarrow and AON, which responds to these submissions, is being released along with this draft decision.[32]

We want to hear and consider your views

1.41 This is a draft decision. Before we issue our final decision, we want to hear and consider the views of consumers and stakeholders. We welcome submissions on our draft decision on the appropriate customised price-quality path for Orion.

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27 These relevant rules and requirements are collectively known as 'input methodologies'.

28 If we do not make a decision by this date, Orion's maximum average prices and minimum required quality standards will be those that it has proposed.

29 Commerce Commission "Invitation to have your say on Orion's proposal to change its prices and quality standards - Issues to explore and consider" (1 May 2013).

30 Please visit http://www.comcom.govt.nz/regulated-industries/electricity/cpp/orion-cpp, under the heading "Submissions on Orion's CPP proposal".

31 Please visit http://www.comcom.govt.nz/regulated-industries/electricity/cpp/orion-cpp, under the heading "Submissions on Release of expert reports".

32 Please visit http://www.comcom.govt.nz/regulated-industries/electricity/cpp/orion-cpp.

1.42 To give us time to consider submissions and meet our statutory timeframes for this process, we ask that we receive emailed submissions by 5pm on 20 September 2013. Due to the tight timeframes for this project, this deadline will be strictly enforced and we are very unlikely to grant any extension.

1.43 There will then be an opportunity for cross-submissions on matters raised in submissions, which we ask to receive by 5pm on 11 October 2013.

1.44 We will consider all submissions and cross-submissions received by these dates in reaching our final decision on the maximum average prices and required quality standards that will apply to Orion.

How you can have your say

1.45 Please email your submission to regulation.branch@comcom.govt.nz, and show 'Orion customised price-quality path proposal' in the subject line of your email. All submissions will be published on our website.

1.46 Orion's proposal, our issues paper, prior submissions, expert reports commissioned by us, and the financial model that supports our draft decision can be found on our website.[33]

1.47 Table 1.1 summarises the next steps in our process.

Table 1.1 - Summary of next steps

Process step	Date
Draft decision on Orion's customised price-quality path	14 August 2013
Draft determination and paper on compliance	30 August 2013
Submissions due on draft decision	20 September 2013
Cross-submissions due on matters raised in submissions	11 October 2013
Final decision on Orion's customised price-quality path	29 November 2013
Orion's customised price-quality path begins	1 April 2014

[33] Please visit http://www.comcom.govt.nz/regulated-industries/electricity/cpp/orion-cpp/.

2. Evaluating Orion's proposal against the criteria

Purpose of this chapter

2.1 This chapter provides an overview of our approach to evaluating Orion's proposal against the evaluation criteria, and a summary of our evaluation.

Overview of the approach to setting a customised price-quality path

2.2 After we have determined that the application from a supplier complies with the process and content requirements, we undertake a substantive evaluation of the proposal which leads to us setting the customised price-quality path.[34]

2.3 We take two distinct steps to set a customised price-quality path: evaluating the proposal and setting the customised price-quality path.

2.4 In step one, we assess Orion's proposal against the evaluation criteria stated in the input methodologies. This includes assessing:

2.4.1 Whether the proposed expenditure represents the efficient costs a prudent supplier would require to meet or manage the expected demand for regulated services during the CPP period (the expenditure objective), and therefore is likely to promote the long-term benefit of consumers; and

2.4.2 Whether the proposal is consistent with the technical input methodologies applicable to Orion, such as those on asset valuation and cost allocation.

2.5 In step two, we determine the customised price-quality path.

2.6 Our conclusion on the first step informs the second step. If we conclude that the proposal fully satisfies the evaluation criteria, then setting the customised price-quality path is relatively straightforward. If we conclude that the proposal does not satisfy those criteria, further work is required. If we conclude at step one that the proposed level of expenditure does not satisfy the expenditure objective, then we will need to determine the level of expenditure used to set the customised price-quality path.

2.7 Therefore, the depth and extent of our analysis in step two will vary for different customised price-quality path proposals, depending on their quality (as reflected in our evaluation conclusions from step one). Other factors such as the size and complexity of the proposal will also affect the amount of analysis required in step two.

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[34] We determined Orion's proposal was complete on 19 April 2013, and published the proposal for comment on our website.

2.8 In the remainder of this chapter we discuss our assessment of Orion's proposal against the evaluation criteria (step one). We conclude that Orion's proposal does not satisfy the evaluation criteria, and in particular, it does not satisfy the expenditure objective. As a result, we have had to undertake a large amount of additional detailed analysis in step two to determine an efficient level of opex and capex for the CPP regulatory period so we can set a customised price-quality path for Orion. This is discussed in Chapter Four.

Criteria used in evaluating Orion's proposal

2.9 Box 2.1 sets out the evaluation criteria that we must use to assess a customised price-quality path proposal.[35]

Box 2.1 – Evaluation criteria for customised price-quality path proposals

The Commission will use the following evaluation criteria to assess each CPP proposal:

a) Whether the proposal is consistent with the input methodologies;

b) The extent to which the proposal promotes the purpose of Part 4 of the Commerce Act (the Act);

c) Whether data, analysis, and assumptions underpinning the proposal are fit for the purpose of determining a CPP;

d) Whether the proposed capital and operating expenditure reflects the efficient costs that a prudent regulated supplier would require to meet or manage expected demand for electricity distribution services, at appropriate service standards, and comply with applicable regulatory obligations (the expenditure objective);

e) The extent to which any proposed changes to quality standards reflect what the applicant can realistically achieve taking into account statistical analysis of past SAIDI and SAIFI performance; and/or (ii) the level of investment provided for in proposed; and

f) The extent to which the CPP applicant has consulted with consumers on its CPP proposal; and the proposal is supported by consumers, where relevant.

2.10 In this section, we briefly explain each of the evaluation criteria.

Whether the proposal is consistent with the relevant input methodologies

2.11 Orion's proposal must apply or adopt all relevant input methodologies.[36] The input methodologies establish the key rules, requirements and processes of regulation.

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35 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.2.1.

36 Commerce Act 1986, s 53Q(2)(d).

2.12 Our evaluation of Orion's proposal therefore included assessing whether the proposal was consistent with, for example, the input methodologies on asset valuation, cost allocation, taxation, and cost of capital.

The extent to which the proposal will promote the purpose of Part 4

2.13 We discuss the purpose statement in Part 4 of the Act in further detail in Attachment A.[37]

Whether the information in the proposal is fit for purpose

2.14 The information in a proposal must be sufficient in detail and quality to allow the Commission to undertake its assessment.[38] The assumptions used must also be robust. Where we considered further information was necessary we requested this from Orion. Where we had doubts about the appropriateness or robustness of an assumption, we have sought further sought for the assumption or to identify a more appropriate assumption. In this paper, we identify areas where Orion could provide additional information which may cause us to re-assess our draft decision on Orion's price-quality path.

Whether the proposed expenditure reflects the expenditure objective

2.15 The expenditure objective was included in the input methodologies as a specific evaluation criterion for the assessment of capital expenditure and operating expenditure.[39]

2.16 The expenditure objective requires us to assess Orion's proposed capital expenditure and operating expenditure on the basis that it reflects the efficient costs that a prudent supplier subject to price-quality regulation would require to:

2.16.1 Meet or manage the expected demand for electricity distribution services, at appropriate service standards, during the customised price-quality path regulatory period and over the longer term; and

2.16.2 Comply with applicable regulatory obligations associated with those services.[40]

2.17 The assessment of forecast expenditure was not a mechanistic process – it necessarily involved the exercise of judgement supported by expert advice. We note

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37 At paragraph A4-A10.

38 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.4.8.

39 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.4.10.

40 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 1.1.4.

that the expenditure objective provided flexibility to deal with Orion's particular circumstances.[41]

2.18 The assessment of forecast expenditure focuses on the customised price-quality path regulatory period. However, Part 4 of the Act has as its central purpose the long-term benefit of consumers, so we also consider circumstances beyond the period of Orion's customised price-quality path.[42]

Whether the proposed quality standard variation is realistically achievable

2.19 We assess the extent to which any proposed quality standard variation better reflects the realistically achievable performance of Orion over the customised price-quality path regulatory period.

2.20 We do this by considering statistical analysis of past SAIDI[43] and SAIFI[44] performance and/or the level of investment provided for in proposed maximum allowable revenue before tax (as applicable).[45] This criterion recognises that Orion's particular circumstances may mean that the historic time series of service quality data prescribed in its default price-quality path determination does not reflect Orion's realistically achievable performance during the customised price-quality path period.[46]

2.21 For some parts of Orion's network, damage caused by the earthquake means historical performance may not be a guide to realistically achievable performance over the customised price-quality path period. Where this is so, we have considered the proposed level of investment and its expected effects on quality.

The extent of Orion's consultation with consumers and support from Orion's consumers

2.22 A customised price-quality path must promote the long-term benefit of consumers. The Commission acknowledges that a supplier may have a better understanding of the need for network investment than its consumers. Accordingly, consumer agreement to the proposed customised price-quality path is not required. Instead, we took into account the extent of support (or opposition) for Orion's proposal.[47]

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41 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.4.11.

42 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.4.12.

43 System Average Interruption Duration Index (SAIDI).

44 System Average Interruption Frequency Index (SAIFI).

45 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.4.5.

46 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.3.29

47 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.4.16

2.23 Consumer feedback is particularly relevant where different price/quality trade-offs are available and proposed investments or changes to quality are justified on the basis of consumer demands.[48]

How we have approached our evaluation of Orion's proposal

2.24 Our Input Methodologies Reasons Paper explained how we would assess expenditure forecasts in a customised price-quality path proposal. Accordingly, we have focused on whether Orion's policies, strategies and procedures are appropriate, such that services will be provided efficiently and align with consumer demands. We have also considered whether Orion's policies, strategies and procedures have been applied in practice.[49]

2.25 We applied a top-down service-based approach to our evaluation of Orion's proposed opex and capex. At the core of the service-based approach is the concept that network expenditure is driven by the need to deliver regulated services.[50] There is therefore a direct link between the justification for the expenditure and the services delivered.[51]

2.26 We saw a service-based approach as complementary to the top-down approach. This is because it enables assessment of the proposal to primarily target business outputs and business systems, which is where we expect the focus of the supplier's senior management and Board typically rests.[52]

2.27 Our evaluation involved undertaking a critical review of the process through which Orion developed its proposed capex and opex and testing the validity and sensitivity of critical input assumptions.

2.28 Our evaluation of Orion's proposed opex and capex was informed and assisted by a range of inputs, including:

2.28.1 Reviewing the verifier's report (and our own discussions with the verifier);

2.28.2 Our own review of the proposal;

2.28.3 Expert advice (for example, of the assumptions such as forecast labour costs that Orion has used; and technical advice from Strata);

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48 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.4.16.

49 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph K3.5.

50 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph K3.3.

51 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph K3.4.

52 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph K3.3.

2.28.4 The request of further material from Orion and our consideration of that material;

2.28.5 Workshops and other discussion with Orion;

2.28.6 Submissions from interested persons to us on Orion's proposal following release of our issues paper;

2.28.7 An analysis of Orion's historical levels of expenditure and performance (ie, reliability); and

2.28.8 Comparisons with other EDBs (eg, on security of supply standards).

The consideration of alternatives to Orion's investment plan

2.29 In our Input Methodologies Reasons Paper, we stated that "[t]he Commission will assess each proposal on its merits using the evaluation criteria and not against any alternatives (including the default price-quality path applying to the supplier)".[53] This is consistent with the purpose of default/customised price-quality regulation to provide a relatively low-cost way of setting price-quality paths while still allowing suppliers to have alternative price-quality paths.[54] This means it is not necessary for a supplier to submit several alternative proposals.

2.30 To be consistent with the 'expenditure objective', we think that a customised price-quality path proposal should demonstrate how the supplier has concluded that its proposal provides the optimal trade-off between price and quality for its consumers. To support its preferred option, we expect that a prudent supplier would be able to demonstrate that it has considered alternative options for supplying services at the quality consumers demand, and chosen the best one.[55]

2.31 The 'expenditure objective' is one of the evaluation criteria that the Commission must use to assess a customised price-quality path proposal. This is an important step in enabling the Commission (and indeed the supplier's Board) to be confident that the proposed investment represents the efficient cost that a prudent EDB would incur to manage the expected demand for its services.[56]

2.32 Orion faces a range of different price/quality trade-offs, which are embedded in its proposal. For example, the required security of supply standard, the speed of

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53 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.4.6.

54 Commerce Act 1986, s 53K.

55 The 'expenditure objective' means considering whether the proposed expenditure reflects the efficient costs that a prudent regulated supplier would require to meet expected energy demand, at appropriate service standards, and comply with applicable regulatory obligations. Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.4.1(d).

56 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.2.1(d).

network development, the reliability of supply and consumers' willingness to pay higher prices in the customised price-quality path period.

2.33 Orion made a significant effort to notify its consumers about its proposal and to explain and obtain feedback on the content of its proposal. However, we consider that Orion did not provide sufficient information to consumers for them to understand the choices, or feasible alternatives to those choices, Orion had made in developing its proposal. Since, in electricity distribution there is a clear trade-off between price and quality, Orion's choice of its proposed level of opex and capex will determine the level of service consumers will receive and the prices they will have to pay.

2.34 Orion's consultation on its proposal did not explain to consumers that Orion could have chosen lower opex and capex in the CPP period (for example by deferring some opex and capex to later years). It did not explain to consumers what impact this would have had on the service consumers could expect to receive and on the price they would pay. Such information would have enabled consumers to provide better feedback which demonstrated they supported Orion's proposal, the levels of service offered, and the cost of this; or whether they preferred lower expenditure, prices, and service levels.

2.35 Our input methodologies do not require customised price-quality path applicants to undertake consultation in this way. However, as submissions on our issues paper note, consumers require specific information on the price-quality trade-offs for them to meaningfully express a preference.

2.36 Overall, we consider Orion did not provide enough information to consumers on the trade-offs in its proposal such that consumers could meaningfully express their desired level of quality, and their willingness to pay for it.

Our evaluation conclusions

2.37 In our view, Orion's proposal was consistent with the technical input methodologies applicable to it, such as the asset valuation and cost of capital input methodologies. We have considered the extent to which Orion's proposed quality standard variation is realistically achievable, and our views are set out in Attachment L.

2.38 Orion has consulted its consumers on its proposal and responded to those submissions. However, as discussed above, in our view consumers need additional information on the alternatives to be able to provide better feedback. Without that, we do not accept that Orion's proposal can be said to be supported by consumers.

Our conclusions from our evaluation of Orion's proposed opex and capex

2.39 Whether Orion's proposed opex and capex met the expenditure objective was central to our evaluation of Orion's proposal. Our main conclusions from this part of our evaluation were that Orion's proposal had:

2.39.1 Been subject to weak internal scrutiny (ie, lack of challenge) of its forecasts;

2.39.2 Limited or weak use of business cases;

2.39.3 Made assumptions which were not fully justified (or were inappropriate);

2.39.4 Placed undue emphasis on further improving resilience through high cost projects, rather than limiting price increases;

2.39.5 Made weak acknowledgement and justification for the step change in proposed expenditure;

2.39.6 Limited recognition of option value from deferring expenditure given uncertainty in demand growth and location; and

2.39.7 Not presented consumers with alternatives, so consumers had no ability to engage and provide feedback on Orion's plan.

2.40 Overall, we concluded that Orion's proposal reflected too much expenditure, too soon.

2.41 Box 2.2 provides a selection of views that we received which support these conclusions.

Box 2.2 – Views that supported our conclusions on Orion's proposed opex and capex

Weak internal scrutiny (ie, lack of challenge) of forecasts

"Processes in place at a corporate level to challenge or control expenditure forecasts were weak."[57]

"[W]e consider that the high level controls to ensure that the opex forecast was both reasonable and efficient were weak."[58]

"The annual replacement programme is determined by our Infrastructure Lifecycle Manager and the Network Asset Manager in conjunction with the scheduled maintenance programmes for each asset category. A similar process…has been adopted for the CPP forecasts, albeit without the benefit of annual review and refinement which is a normal part of our budgeting and planning process."[59]

"The proposed expenditure shows hallmarks of a bottom up budgeting process with insufficient evidence of a rigorous top down review."[60]

Limited or weak use of business cases

[57] Geoff Brown & Associates Ltd "Verification of Orion's CPP Proposal" (1 March 2013), Presentation to Commerce Commission, p.7.

[58] Geoff Brown & Associates Ltd "Verification Report", p.56. This report can be found in Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 - Verification report and certificate.

[59] Orion "Proposal for a customised price-quality path" (19 February 2013), p.513.

[60] Strata Consulting Ltd "Presentation to the Commission" (7 June 2013), p.3.

"There is no requirement for large one-off projects to be supported by a detailed business case with a detailed comparison of alternative options or to be individually signed off by the Board."[61]

"[W]e have not seen the level of cost benefit and consumer-need analysis on a project-by-project basis that we would expect to see in support of expenditures of the size included in Orion's major capex plan."[62]

"While [Orion's] green field justification for the architecture is useful as a guide, the economic efficiency of the proposed projects can only be tested on a brown field basis. In this regard we do not consider that Orion has adequately tested the projects proposed."[63]

Assumptions not fully justified or inappropriate assumptions used

"Our main reservation is that Orion's asset management systems and processes, and indeed its CPP proposal, are underpinned by high level assumptions that are taken for granted. In our view, the reasonableness of these assumption[s] merit further scrutiny, and possibly public debate, as Orion recovers from the earthquakes."[64]

"[T]he replacement expenditure profile for most asset classes is predicated on the basis that risk levels at the end of the 10-year modelling period should mirror the current (pre earthquake) risk levels. No consideration is given to whether this level of risk is appropriate or to differences in the level of risk between asset classes if risk was assessed from an overall business perspective."[65]

"A surge in wage inflation should be expected and to some extent has already been observed but near term wage inflation of 7.5% is high by NZ and international experience and is large relative to experience of Canterbury construction labour costs to date. It is extremely unlikely that such high levels of inflation would persist."[66]

Undue emphasis on further improving resilience through high cost projects

"The cost of resilience is a significant component of the proposed projects and is built in as an up-front cost."[67]

"[T]here is a potential trade-off between expenditure and reliability, although quantifying this trade-off is outside our current scope. More specifically, there are indications that modifying Orion's security standard to extend restoration times following an N-2 sub-transmission event could

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61 Geoff Brown & Associates Ltd "Verification Report", p.17. This report can be found in Orion New Zealand Limited "Application for a customised price-quality path" (1 March 2013), Appendix 7 - Verification report and certificate.

62 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013), paragraph 61.

63 Partna Consulting Limited "Findings on the Orion CPP Proposal – Urban Major Projects – North (CPP1) and Dallington (CPP2)" (June 2013), paragraph 4e.

64 Geoff Brown & Associates Ltd "Verification Report", p.18.

65 Geoff Brown & Associates Ltd "Verification Report", p.36.

66 New Zealand Institute of Economic Research (NZIER) "Labour cost escalation in Canterbury" (July 2013), p.1.

67 Partna Consulting Limited "Findings on the Orion CPP Proposal – Urban Major Projects – North (CPP1) and Dallington (CPP2)" (June 2013), paragraph 4d.

materially reduce the required network capex going forward, without having a substantial impact of reliability."[68]

Consumers were more concerned with limiting price increases in electricity prices than with improving the current level of service or improving resilience.[69]

Weak acknowledgement and justification for the step change in proposed expenditure

"The CPP as proposed provides for significant increases in network development, asset replacement capex and opex. At the same time, Orion intends to acquire additional subtransmission assets from Transpower. This would represent an extremely ambitious programme during normal times."[70]

"In our view, Orion's proposed step changes in all major expenditure areas are not fully justified and should be adjusted."[71]

"Over the two year period FY13-FY14 Orion's total network works expenditure is expected to increase by 84% above the level achieved in FY12 and we question whether the delivery of such a large increase in works over such a short period of time is achievable."[72]

Limited recognition of option value given uncertainty in demand growth and location

"There are likely to be development alternatives that can be more effectively staged to match the timing of demand growth (accounting for the uncertainty involved) and provide optionality as to when and how Orion's reliability and resilience criteria are met."[73]

"There is a high level of uncertainty in the environment within which Orion will need to operate over the forecast period. This relates not only to the rate and location of demand growth, but also to the costs that Orion will incur in delivering its capex and opex programme…[I]n its appraisal the Commission should primarily focus on the need for the works described in the CPP proposal and the benefits that these works will provide consumers and other stakeholders."[74]

Consumers not presented with alternatives

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68 Geoff Brown & Associates Ltd "Verification Report", p.9.

69 See for example the quotes at paragraphs 2.42-2.44.

70 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013), paragraph 204.

71 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013), paragraph 14.

72 Geoff Brown & Associates Ltd "Verification Report", p.1.

73 Partna Consulting Limited "Findings on the Orion CPP Proposal – Urban Major Projects – North (CPP1) and Dallington (CPP2)" (June 2013), Report for the Commission) paragraph 4a.

74 Geoff Brown & Associates Ltd "Verification Report", p.1.

"Orion's pre-earthquake reliability was very good by New Zealand standards and we have seen no evidence that consumers would want this in preference to other price quality paths that might be available."[75]

"We suggest that stakeholder (and most particularly consumer) consultation is more helpful than consultation measuring general consumer satisfaction when there are two or more distinct alternatives to choose from. If this is the case, then stakeholder consultation as part of this CPP approval process will be most effective if consumers are presented with possible alternative price-quality paths with the impact of each alternative on both quality and price appropriately quantified."[76]

Overall Conclusion - too much expenditure, too soon

"We consider that during post-earthquake reconstruction, the highest priority expenditures should proceed, but it is to the benefit of consumers if expenditure that can be reasonably deferred, is deferred."[77]

"[The] replacement capex is larger than would be expected given the: i) age and condition of assets; and ii) impact of the network development programme." [78]

Views of consumers

2.42 We invited submissions from consumers and other interested parties on Orion's proposal.[79] While we could not provide detailed information on specific alternatives, submissions from consumers were more concerned with increases in electricity prices than with improving the current level of service. For example, Smart Power submitted that:[80]

> "..we don't get feedback from our client base that would indicate that they were unhappy with the security of supply on Orion's network. As such we do not believe there is a ground swell of demand for improved performance and this would be particularly true if it were to result in additional cost."

2.43 Synlait Milk Limited submitted that:[81]

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75 Geoff Brown & Associates Ltd "Verification Report", p.9.

76 Geoff Brown & Associates Ltd "Verification Report", p.9.

77 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013), paragraph 58.

78 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013), paragraph 14c.

79 Commerce Commission "Invitation to have your say on Orion's proposal to change its prices and quality standards - Issues to explore and consider" (1 May 2013).

80 Smart Power "Smart Power submission on Orion's proposal' (29 May 2013), p.1.

81 Synlait Milk Ltd "Response to Commerce Commission's Invitation to have your say on Orion's proposal to change its prices and quality standards" (31 may 2013), p.1. See also the NZ Manufacturers and Exporters Association, Orion's Proposal to Change its Prices and Quality Standards, 24 May 2013, pp.2-4.

> "We do not consider that there is a general need to create a network which was better than the one previously in existence and also that while it may appear opportune to Orion to do this now it is inappropriate in terms of consumer's ability to pay for it at this time."

2.44 Major Electricity Users' Group submitted:[82]

> "The priority should be to limit increases in Orion charges and given that limit for Orion to demonstrate it is applying resources to the highest priority work that customers will benefit from."

We need to develop our own view on required opex and capex

2.45 Overall, we consider that Orion's proposed levels of opex and capex are greater than is prudently required to meet or manage the cost of providing services to the required standard. Using Orion's forecasts as a basis for setting the customised price-quality path would lead either to over-investment (to the detriment of consumers if Orion actually spent what they had forecast to spend) or to Orion earning excess returns (if actual spending more closely reflected the level of expenditure required by the network during the CPP period). Neither of these outcomes is consistent with the purpose of Part 4.

2.46 Our conclusions meant that Orion's forecasts could not be used as inputs to set the customised price-quality path. Therefore, it was necessary for us to develop our own forecasts of Orion's opex and capex for the CPP period so as to ensure that the customised price-quality path promotes the long term benefit of consumers.

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82 Major Electricity Users Group "Orion's CPP Proposal" (24 May 2013), p.2.

3. Opex and capex allowances for Orion's customised price-quality path

Purpose of this chapter

3.1 This chapter explains how, in order to set a customised price-quality path, we have estimated the opex and capex required by Orion's network during the CPP period to supply distribution services at the quality demanded by consumers.

Overview of the approach to setting a CPP

3.2 Under s 53V the Commission may determine any CPP that it considers appropriate for a supplier that has made a proposal. The scope of this power is broad in the sense that, as clarified under subsection (2) of that section, we may set a price-quality path that is lower or otherwise less favourable to the regulated supplier than a DPP; or, we may set a higher price than applied under a DPP. However, we are restricted in that:

3.2.1 We must set a CPP that complies with s 53M (which contains the generic provisions applicable to a price-quality path); and

3.2.2 In the absence of any agreed variation to an applicable IM under s 53V(2)(c), we must apply all relevant applicable IMs.[83]

3.3 For the reasons outlined in the previous chapter, we do not accept Orion's proposed levels of opex and capex are a reasonable basis for setting a customised price-quality path for Orion. In our view, their use to set a price-quality path would not promote the long term benefit of consumers.

Our options for determining opex and capex forecasts for the price-quality path

3.4 Our approach to determining opex and capex forecasts for the price-quality path is driven by the Part 4 Purpose statement. The long-term best interests of consumers are met by an allowance for opex and capex that meets the expenditure objective. This ensures that the prices consumers are charged, and the quality of services that is required, reflect demand and the current performance of the network, consumer's requirements, the network's need for expenditure to fill the gap, and the expectation of a normal return.

3.5 Given we considered we could not use Orion's opex and capex proposals to set the price-quality path, we had three options to develop alternative opex and capex forecasts.[84] These options were to set opex and capex:

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[83] Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.4.2.

3.5.1 Based on Orion's historical levels of opex and capex;

3.5.2 Using a step and trend approach, similar to that used for expenditure forecasts in the DPP; or

3.5.3 By adjusting Orion's forecasts following a more detailed assessment of Orion's proposal and the needs of its network.

3.6 In our view, the third option involving a more detailed assessment of Orion's proposal was most likely to identify a level of expenditure which was consistent with the expenditure objective and to best promote the long interests of consumers. This is because that option:

3.6.1 Takes account of Orion's specific circumstances;

3.6.2 Allows us to identify and address specific weakness in Orion's proposal and therefore result in a forecast of expenditure that was closer to the actual expenditure needs of Orion's network;

3.6.3 Provides Orion a better opportunity to address our concerns (in particular, in response to this draft decision); and

3.6.4 Means we are targeting only the areas of Orion's proposal where we have identified an issue.[85]

3.7 The detailed assessment approach still recognises that it is neither practicable, nor desirable, for us to attempt to replicate the asset management and decision-making processes of Orion. Rather, we have sought to undertake a robust, detailed assessment of Orion's forecasts in the time available and with available resources to ensure the expenditure allowances are not higher than is necessary to provide the regulated services.[86]

3.8 We note that our approach is also good value for money for consumers, in that the incremental cost to consumers from us developing our own forecasts is relatively small. The end result is significantly lower price increases to consumers, while

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[84] Note also that although the verifier questioned, in some areas, whether the opex and capex proposed by Orion was fully justified, the verifier did not quantify what level of expenditure the verifier thought was appropriate (and the verifier was not required to do this). See, for example, the discussion on asset replacement expenditure Geoff Brown & Associates Ltd "Verification Report", section 5.5.4, page 36. This report can be found in Orion "Application for a customised price-quality path" (19 February 2013), Appendix 7 – Verification report and certificate.

[85] In areas where we have no issue, the opex and capex forecasts used by us will still incorporate Orion's view on the required opex and capex. This is appropriate as Orion will have better information on its expenditure needs generally – the other options would not incorporate this information.

[86] Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.5.1.

ensuring an improving quality of services for consumers, as proposed by Orion, during the CPP period and beyond.

A detailed assessment of opex and capex forecasts utilising Orion's expenditure forecasts

3.9 In our approach to setting opex and capex allowances for Orion, we identified the areas of expenditure where we would undertake more detailed assessment. Our assessment of the area of expenditure in the first instance was broken down as per Orion's proposal (which breaks expenditure into major projects, connections, reinforcement, etc).

3.10 We did not look at all areas of expenditure. For example, we did not review Orion's proposed expenditure on non-system fixed assets or information technology costs.

3.11 In the areas where we undertook more detailed assessment, we took a progressive approach considering further detail and disaggregation of the proposed expenditure until:

3.11.1 We were satisfied that Orion had demonstrated that the particular component of Orion's proposal met the expenditure objective;[87] or

3.11.2 Where Orion could not demonstrate the proposed expenditure met the expenditure objective, we or our expert advisors were able to estimate the level of expenditure that met the expenditure objective (either by adjusting Orion's forecast or by substituting an alternative view).

3.12 Our process differed for different types of expenditure. For example, we were dependent on the type of information Orion could provide which was greater in some areas (eg, major projects) than in other areas.

3.13 Important elements of our detailed analysis were to:

3.13.1 Identify the driver for the expenditure;

3.13.2 Assess the robustness of the business case (or rationale) for the expenditure (including considering alternative options and the relative benefits of the proposed expenditure);

3.13.3 Assess benefits to consumers;

3.13.4 Assess the robustness of the assumptions and external factors including the level of uncertainty;

3.13.5 Consider the robustness of the forecast process used;

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[87] As we were, for example, with Orion's reinforcement expenditure proposal. Refer Attachment K.

3.13.6 Consider the maturity of Orion's asset management practice; and

3.13.7 Consider the scope for efficiencies.

3.14 We have previously noted the importance of judgement in assessing expenditure.[88] To support our exercise of judgement, we obtained a range of advice. For example, we used:

3.14.1 Strata to advise on various technical aspects of Orion's proposal (including to peer review some of our own analysis noted below);[89]

3.14.2 Partna Consulting to advise on two large urban major projects in Orion's proposal;[90]

3.14.3 Internal engineering expertise to extend the initial Strata and Partna Consulting analysis which concentrated on the urban north projects (terms CPP1 and CPP2 by Orion) to a range of smaller major projects (termed CPP3-CPP20 by Orion). We then asked Strata to peer-review our findings in respect of these smaller projects;

3.14.4 Calverton to look at the comparative costs of underground and overhead lines;[91] and

3.14.5 NZIER both to review the reasonableness of Orion's forecasts of construction related Canterbury labour costs, and to provide its own forecasts of the rate of escalation of these costs.[92]

3.15 This approach was necessary as we could not rely on Orion's proposed level of opex and capex as a reasonable forecast of the efficient costs that Orion, acting prudently, would require to meet the demand for services, at the required standard.

3.16 Our opex and capex forecasts are summarised in Chapter Five.[93]

3.17 We have sought to test the reasonableness of our projections, including by looking at historical levels of expenditure both before and after the Canterbury

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88 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.5.1.

89 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013).

90 Partna Consulting Group "Findings on the Orion CPP Proposal – Urban Major Projects - North (CPP1) and Dallington (CPP2)" (June 2013).

91 Calverton Business Consulting Group "Orion CPP Proposal: Comparative Costing for Overhead and Underground Lines" (1 July 2013).

92 New Zealand Institute of Economic Research (NZIER) "Canterbury Labour cost Escalation: Assessment of Orion's Projections" (17 June 2013). New Zealand Institute of Economic Research (NZIER) "Labour cost escalation in Canterbury" (July 2013).

93 See Tables 5.3 and 5.4, and paragraphs 5.19-5.21.

earthquakes.[94] We have also considered the impact of our expenditure allowance on asset condition or age, where we could.

3.18 We have then used these forecasts to develop a customised price-quality path. This is explained further in Chapter Five.

[94] See also our discussion of Orion's actual financial results for the year to March 2013 in Attachment N.

4. Other aspects of Orion's customised price-quality path

Purpose of this chapter

4.1 This chapter discusses certain other aspects of our draft decision on Orion's customised price-quality path, in particular:

4.1.1 The length of the CPP period for Orion;

4.1.2 Why Orion's ultimate ownership is not relevant to Orion's customised price-quality path;

4.1.3 When the period for determining claw-back commences;

4.1.4 Incremental Rolling Incentive Scheme (IRIS) and controllable opex;

4.1.5 Energy efficiency; and

4.1.6 An overview of the process for setting the customised price-quality path.

4.2 Our estimates of the expected impact of our draft decision on prices between 1 April 2014 and 31 March 2019 are discussed in more detail in Chapter 5.

Orion's customised price-quality path will apply for five years

4.3 The customised price-quality path we will set for Orion will apply for five years from 1 April 2014 to 31 March 2019. This part of our draft decision is consistent with Orion's proposal. On balance, our preference is for a five year term, but we welcome submissions from consumers and stakeholders on this issue.

4.4 The standard length of a customised price-quality path is five years, however, we are able to set a customised price-quality path for three or four years if we consider it would better meet the purpose of Part 4.[95] We have considered whether a period less than five years would be more appropriate because of uncertainty about the costs and timing of the recovery from the Canterbury earthquakes. A shorter period, say three years, would enable Orion's price-quality path to be reset again in 2017. There is likely to be better information available about the speed and pattern of the rebuild at this time.

4.5 There are potential advantages for both Orion and consumers of a CPP period shorter than five years. For example, Orion could more accurately reflect its investment requirements and their cost. Consumers could have a smaller price increase now and the opportunity of an earlier reset to reflect improved information about investment requirements.

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[95] Commerce Act 1986, s 53W.

There is a trade-off between providing strong incentives and reducing uncertainty

4.6 There is a trade-off between providing strong incentives for suppliers and reducing uncertainty about investment requirements and their cost.

4.7 Incentive regulation aims to give suppliers incentives to make efficient decisions by providing certainty over maximum prices for a period (usually five years). This allows suppliers to earn greater returns by spending less than was assumed in the price-quality path. This incentive effect is stronger when prices are set for longer rather than shorter periods, because a supplier can keep the efficiency gains for a longer (ie, before prices are reset).[96]

4.8 A shorter regulatory period would better reflect the uncertainty over the growth and profile of the electricity load in Canterbury, of the speed of the recovery and rebuild in Canterbury, and the uncertainty over future labour costs. It would also increase the likelihood of Orion being set maximum average prices which more closely reflects Orion's likely expenditure. If more weight is given to mitigating the impact of uncertainty, we could set a shorter customised price-quality path period.

4.9 Our decision, on balance, is to set a five year term for the CPP period, although we could consider other potential mechanisms to deal with uncertainty.[97]

Orion's ownership does not affect our decision

4.10 The ultimate shareholders of Orion are the Christchurch City Council (89.3%) and the Selwyn District Council (10.7%). Some interested parties have asked whether Orion's dividend payments should be reduced in order to pay for the increased expenditure proposed by Orion.

4.11 When we set maximum prices the principal considerations relate to the services sought by consumers, changes in demand, the condition and capability of the network, and the expenditure required by the network. Our focus is on the quantum of expenditure, and not how it could or should be financed. Similarly, the ultimate ownership structure is generally not relevant to assessing the amount of expenditure that is required during the regulatory period.

4.12 We set the maximum prices Orion can charge. Whether it 'prices up' to the maximum prices, and if so how quickly it moves its price up, is a matter for Orion to decide. It is not required to increase prices to the maximum level we allow.

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[96] The IMs also establish an Incremental Rolling Incentive Scheme (IRIS). Orion does not seek this incentive. This is discussed in paragraphs 4.18-4.22.

[97] We considered mechanisms in relation to labour costs in the Canterbury region, and discussed this with Orion, but this is not proposed in this draft decision. This is discussed further in Attachment I, at paragraphs I42-I44. Some options for dealing with uncertainty would require Orion and the Commission to agree to a variation of the IMs.

4.13 Consistent with finance theory, our IMs and in particular our cost of capital IM,[98] assumes that investors diversify broadly. That is, we assume investors hold a wide range of investments to limit the impact of a particular ("unsystematic") risk on the value of their total portfolio. To the extent that an investor has not done so, and therefore is more exposed to a particular risk than more diversified investors are, is a matter for that investor. That is, if an undiversified investor suffers a loss that diversification would have mitigated, that investor should suffer the loss, and not consumers.

4.14 A diversified investor does not require compensation for risks where diversification protects the investor from overall loss. For example, such investors would recognise that their return from a diversified portfolio would be unaffected by relocation of consumers. This is because higher returns earned from investments in areas that consumers have moved into offset lower returns from investments in areas that consumers have moved away from. A diversified investor would be diversified across sectors as well as across geographical areas.

4.15 Therefore, diversified investors would not generally factor into their required return on capital compensation ex ante or ex post for the relocation of consumers away from Christchurch after the earthquakes. Given diversified investors would not require ex ante or ex post compensation for the risk of relocation of consumers, we think that there is no case for us to include an ex ante or ex post allowance for the risk of relocation in our determinations. This issue is discussed further in Attachment C of this draft decision.

When the claw-back period commences – Variation to the input methodologies

4.16 Before Orion submitted its proposal, we advised that we would consider claw-back to the September 2010 earthquakes, as long as its proposal was received within the 2 year window of the February 2011 earthquakes. Giving formal effect to this advice requires a variation to the input methodologies that apply to Orion's customised price-quality path. We have agreed a variation to this effect with Orion. This variation allows, but does not require, any determination of the amount of claw-back to commence from the September 2010 earthquake.

4.17 Attachment C provides further detail of our evaluation of Orion's proposal for claw-back.

Incremental Rolling Incentive Scheme (IRIS) and controllable opex

4.18 An incremental rolling incentive scheme ('IRIS') is an incentive mechanism that can be used to promote operational efficiencies.

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[98] *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clauses 5.3.22-5.3.32.

4.19 The IMs require us to determine an amount for controllable opex (which is the critical component of an IRIS) and to implement an IRIS for a customised price quality path determination.

4.20 Orion's CPP proposal does not include an amount of controllable opex for implementing the IRIS.[99] Orion provided the following justification for its approach:

> Given the current uncertainties which face us (including the rebuild, future earthquakes and costing escalation) and the wider Canterbury community we do not believe it is appropriate to include this mechanism in this CPP proposal. We are not currently operating in a business as usual state. Our consumers and other stakeholders such as CERA are also not yet working in a stable environment. This makes our forecasting extremely difficult. In addition we don't have an accurate baseline against which to assess our potential for efficiency improvements in opex. While we support the aims of the IRIS mechanism, and while we continue to improve the way we run our business, and seek to achieve efficiencies in our cost structures we have not elected to include any opex as controllable opex for the purpose of this CPP proposal. We believe it is more important for our consumers that we 'get the job done' over the next five to seven years, rather than strive for some potentially 'arbitrary' efficiency gains.

4.21 We seek the views of interested parties on whether we should:

4.21.1 Determine an asymmetric IRIS for Orion, consistent with the IMs;

4.21.2 Vary the IMs so that we can determine a symmetric IRIS for Orion; or

4.21.3 Vary the IMs so that we do not need to determining an IRIS for Orion, consistent with its CPP Proposal.

4.22 We note that we are currently reviewing incentive mechanisms in a separate IM amendment process, and would similarly welcome the views of interested parties on how the IRIS may be modified/improved in this context.[100]

Demand side management, loss reduction and energy efficiency

4.23 Orion was not specifically required to include demand side management, loss reduction and energy efficiency measures as part of its customised price-quality path proposal. However, we note that Orion's proposal includes a description of its support for energy efficiency programmes and commitment to environmental sustainability.

4.24 Section 54Q of the Act requires that we promote incentives, and avoid imposing disincentives, on Orion to invest in energy efficiency and demand side management, and to reduce energy losses.

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[99] Orion "Proposal for a customised price-quality path" (19 February 2013), pp.570-571.

[100] A notice of intention was issued on 30 April 2013. A process and issues paper is proposed for release in September 2013.

4.25 We are satisfied that the draft customised price-quality path that we have set for Orion would not impose disincentives on Orion to invest in demand side management, energy losses and energy efficiency.[101] We continue to consider ways of more directly promoting investment in energy efficiency for all regulated suppliers.

Setting Orion's prices has four main steps

4.26 The approach used to set Orion's prices has four main steps, which are shown in Figure 4.1.

4.27 Each of the steps in the approach is explained in the sections that follow. We begin by setting out how the input methodologies are applied to our decision-making for Orion's customised price-quality path (ie, by directing us to calculate Orion's costs in a particular way).

Step one – How we forecast Orion's efficient costs over the CPP period

4.28 Consistent with the input methodologies, we have applied a 'building block' based approach to forecast Orion's efficient costs. This enables us to determine Orion's building block allowable revenue (BBAR) for each year of the customised price-quality path period.

4.29 The main building block cost categories are:[102]

4.29.1 The return *on* capital, net of any revaluations of the Regulatory Asset Base (RAB);

4.29.2 The return *of* capital, through annual depreciation;

4.29.3 Operating expenditure (excluding pass through costs and recoverable costs);

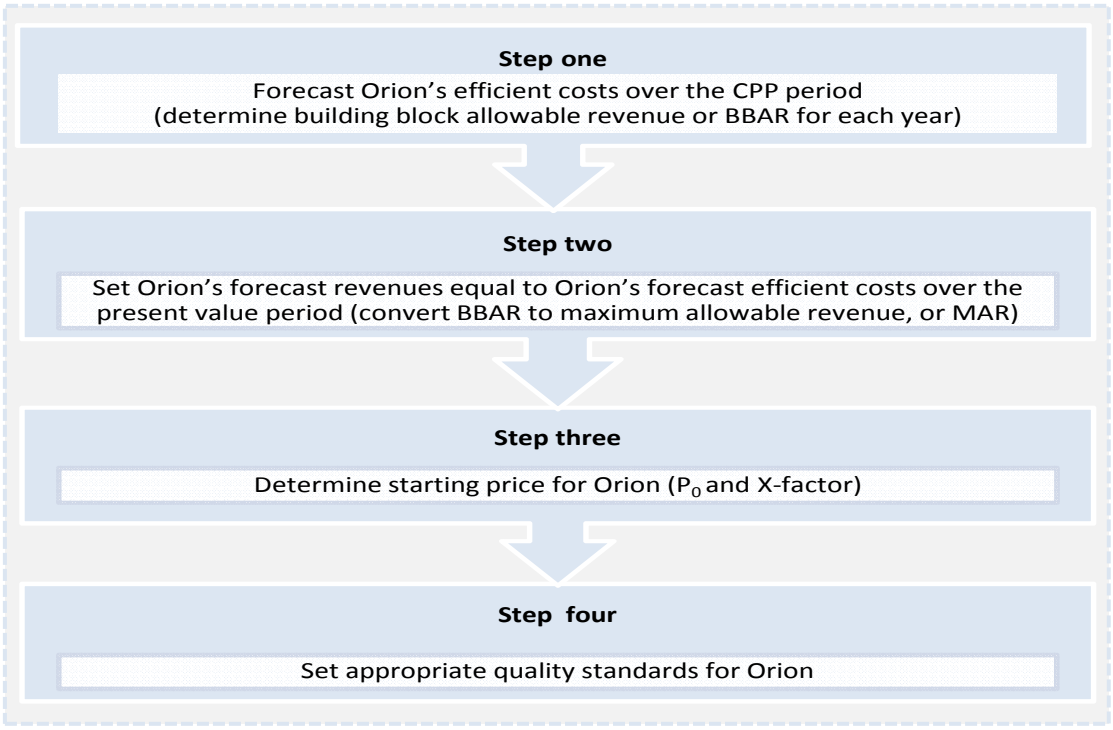
4.29.4 Tax costs; and

4.29.5 Other regulated income.

[101] Our capex allowance includes expenditure for power factor correction equipment in rural areas which may reduce energy losses. See paragraphs D122-D124.

[102] Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.3.4.

Figure 4.1 – Overview of the approach we use to set Orion's prices



4.30 To calculate each of these cost categories, we applied the input methodologies, which set out how:[103]

4.30.1 Forecast and existing investments are valued;

4.30.2 Depreciation and revaluations are calculated;

4.30.3 Tax costs are calculated;

4.30.4 Costs are allocated; and

4.30.5 The cost of capital is estimated.

4.31 In Chapter 3 we explained how we set opex and capex for the CPP regulatory period. Further discussion can be found in the attachments to this paper.[104]

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[103] As we explained in our reset of the 2010-2015 Default Price-Quality Paths for 16 Electricity Distributors, prior to input methodologies being introduced, these matters were amongst the most contentious aspects of regulatory decision making. Commerce Commission "Resetting the 2010-15 Default Price-Quality Paths for 16 Electricity Distributors" (30 November 2012), paragraph 4.26 (footnote 69).

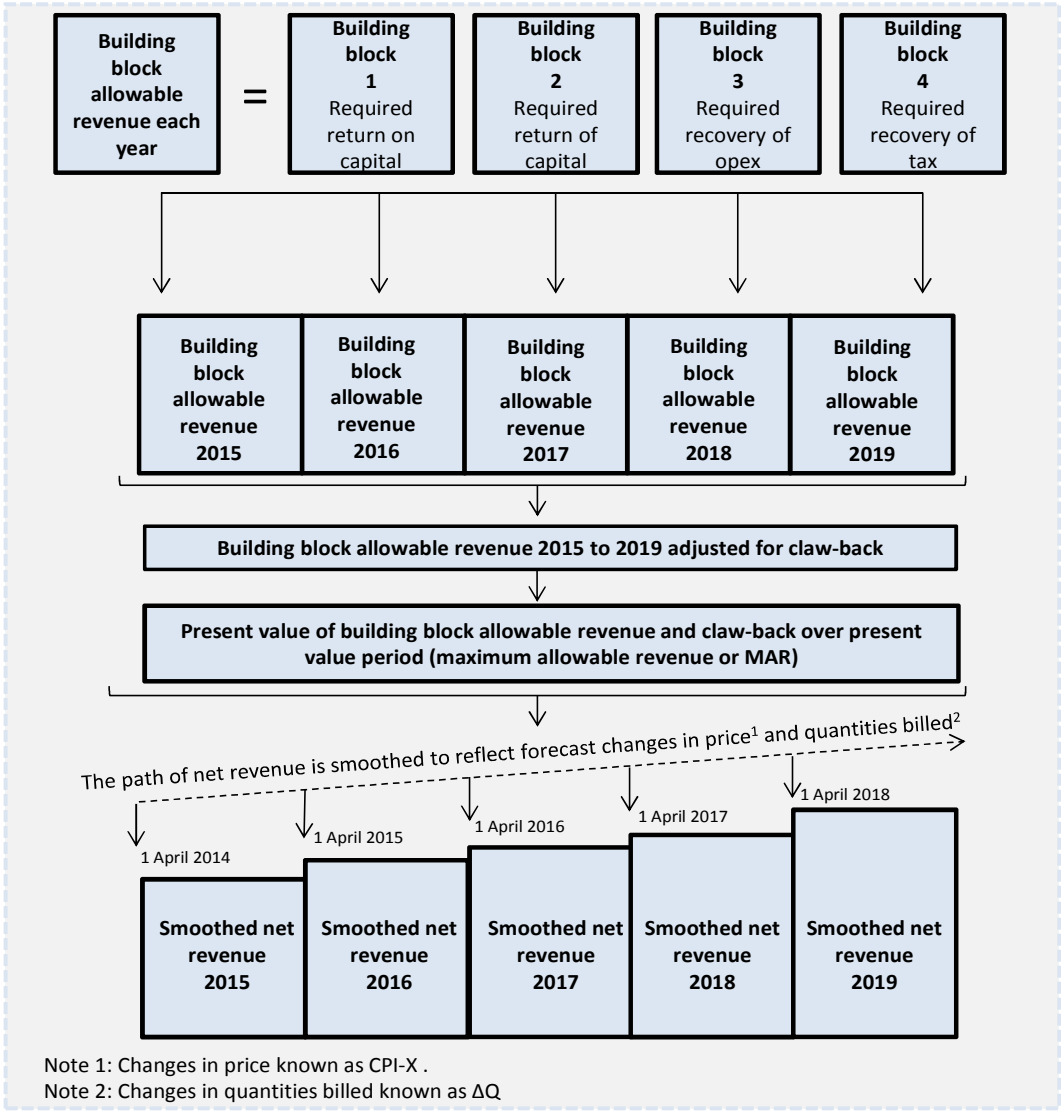
[104] Refer in particular to Attachments D-K.

Step two – How we set Orion's forecast revenue equal to its forecast efficient costs

4.32 Figure 4.2 provides an overview of the model that we used to set Orion's forecast revenue equal to forecast efficient costs over the CPP period.

4.33 Once we set an allowance for forecast building block costs for a particular year of the regulatory period, we added the various components together to determine 'building blocks allowable revenue'. Building blocks allowable revenue is our estimate of the amount of revenue that Orion should be allowed to recover so as to offset the efficient costs of providing services to consumers.

Figure 4.2 – Setting Orion's forecast revenues equal to its forecast efficient costs



Note 1: Changes in price known as CPI-X .
Note 2: Changes in quantities billed known as ΔQ

4.34 Figure 4.2 also shows that we calculated building blocks allowable revenue in each and every year of the regulatory period. These amounts will vary depending on a number of factors, such as annual movements in opex.

4.35 We then added the amount of past costs and revenues allowed to be recovered by Orion across the regulatory period (claw-back). Attachment C discusses our assessment of Orion's proposed recovery of past costs and revenues.

4.36 Next, we calculated the present value of building blocks allowable revenue and claw-back over the present value period. The discount rate used in the present value calculation is the cost of capital.

4.37 Finally, we determined the path of revenue that would mean that Orion is able to recover the present value of building blocks allowable revenue over the present value period. This 'smoothed' path:

4.37.1 Starts on 1 April 2014; and

4.37.2 Determines the amount of revenue that Orion can expect to recover through its distribution charges between 1 April 2014 and 31 March 2019.

4.38 The slope of the 'smoothed' path of revenue reflects the factors that affect Orion's revenue during the regulatory period. In particular, a supplier's revenue depends on:

4.38.1 The price changes that Orion is able to make, which we have set as the CPI (ie, CPI-0%); and

4.38.2 Forecast changes in the quantities billed, which result in 'constant price revenue growth'.[105]

Step three – How we determined Orion's starting prices

4.39 Once we have determined the appropriate 'smoothed' revenue figure for 2015, it is possible to calculate the starting price for Orion's customised price-quality path. We determined the starting price (ie, as at 1 April 2014) that results in Orion expecting to earn the appropriate amount of revenue in 2015.

Step four – How we set appropriate quality standards for Orion

4.40 Quality standards may be prescribed in any way we consider appropriate.[106] Under the initial DPP reset for EDBs the quality standards use reliability limits based on historic averages of System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI). We assume the DPP quality standards are appropriate to be applied in a CPP unless the supplier proposes a variation to them.[107]

4.41 The earthquakes have impacted Orion's ability to continue to achieve the historic levels of SAIDI and SAIFI reliability and Orion has proposed revised SAIDI and SAIFI targets. We propose to retain the SAIDI and SAIFI measures. Consistent with the evaluation criteria in our IMs, we assess the extent to which Orion's proposed quality

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105 This is discussed in Attachment M.

106 Commerce Act 1986, s 53M(3).

107 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.3.26.

standard variation better reflects the realistically achievable performance over the CPP regulatory period, taking into account:

4.41.1 Statistical analysis of past SAIDI and SAIFI performance; and

4.41.2 The level of investment provided for in proposed maximum allowable revenue before tax.

4.42 Our assessment of reliability is discussed further in Attachment L.

5. Our draft determination of Orion's customised price-quality path

Purpose of this chapter

5.1 This chapter describes how we have used the results of our evaluation of Orion's CPP proposal to arrive at our draft decision on Orion's customised price-quality path. It sets out the steps for determining the price path, including how those steps comply with the input methodologies. Please note the spreadsheet model we used to calculate the financial values for Orion's price path has been released with this reasons paper. Finally we briefly discuss compliance.

5.2 The steps outlined in this chapter follow this sequence:

5.2.1 *Step one* - identify the input methodologies that apply to setting the price-quality path, including any agreed variations;

5.2.2 *Step two* - determine the CPP regulatory period;

5.2.3 *Step three* – seek to identify the reliability targets sought by consumers to act as a point of reference for the expenditure evaluation;

5.2.4 *Step four* - determine forecast opex and capex allowances that meet the expenditure objective over the CPP regulatory period;

5.2.5 *Step five* - calculate the value of the building block components that comprise allowable revenues (BBAR before tax and BBAR after tax);

5.2.6 *Step six* - calculate the BBAR amounts for each year of the CPP regulatory period;

5.2.7 *Step seven* - convert the BBAR amounts for the CPP period to a present value of BBAR at 1 April 2014;

5.2.8 *Step eight* - determine the allowable claw-back amounts;

5.2.9 *Step nine* - convert the claw-back amount to a present value of claw-back at 1 April 2014;

5.2.10 *Step ten* - combine BBAR and claw-back to calculate total maximum allowable revenues (MAR before tax and MAR after tax) for the CPP period at 1 April 2014;

5.2.11 *Step eleven* - determine CPI and constant price revenue forecasts over the CPP period;

5.2.12 *Step twelve* - determine the X-factor to apply to the 'CPI-X' price path for the CPP period;

5.2.13 *Step thirteen* - smooth the total MAR over the CPP period to determine the price path and derive the maximum starting prices (P_0) to apply from 1 April 2014; and

5.2.14 *Step fourteen* - confirm the quality standards that are to apply to the CPP period.

Step one – identify the input methodologies that apply

5.3 In order to calculate the forecast BBAR for each of the disclosure years in the CPP period, the 'Building blocks allowable revenue before tax' of the EDB IMs must be applied.[108] This in turn requires the application of:

5.3.1 The 'Cost allocation and asset valuation' IM;[109]

5.3.2 The 'Treatment of taxation' IM;[110]

5.3.3 The 'Cost of capital' IM;[111] and

5.3.4 Our published determination which set the weighted average cost of capital (WACC) we have used for setting Orion's customised price-quality path.[112]

5.4 To convert these forecast BBAR and the claw-back to a forecast MAR and determine a price path for the CPP period requires the application of:

5.4.1 The 'Price path' IM;[113] and

5.4.2 The 'Specification and definition of prices' IM.[114]

The claw-back period requires an agreed variation to the input methodologies

5.5 The calculation of claw-back requires the application of the 'Price path' IM.[115] In particular, claw-back may be calculated (in Orion's case) for the period from the catastrophic event to 31 March 2014.

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108 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.3.2.

109 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clauses 5.3.5-5.3.12.

110 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clauses 5.3.13-5.3.21.

111 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clauses 5.3.22-5.3.32.

112 The cost of capital estimate we use in this draft decision was set in the following determination: *Cost of capital determination for electricity distribution businesses to apply to a customised price-quality path proposal* [2012] NZCC 25.

113 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.3.4.

114 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 3.1.1.

115 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.3.4(4)(b).

5.6 We have agreed with Orion that for the purposes of the claw-back calculations the date of the catastrophic event is 4 September 2010, being the date of the first major earthquake.[116] This will be recorded as an agreed variation of the input methodologies.[117] The variation is required because a CPP proposal arising from a catastrophic event must be received by the Commission within two years of the catastrophic event occurring. The 4 September 2010 date is more than two years prior to our receipt of Orion's CPP proposal.

Step two - determine the CPP period

5.7 As discussed in Chapter 4, the customised price-quality path regulatory period is the five years from 1 April 2014 as proposed by Orion.[118]

Step three - identify reliability targets

5.8 Orion has proposed variations to the SAIDI and SAIFI limits that apply under its DPP determination.[119] These variations are referred to in the input methodologies as quality standard variations (QSVs).[120]

5.9 We considered the impact on quality assessing the opex and capex allowances.

5.10 The targets proposed by Orion are shown in Table 5.1.

Table 5.1 - Desired reliability targets for the CPP period (minutes)

Quality targets	2015	2016	2017	2018	2019
SAIDI limit	103.8	94.7	91.0	82.4	73.4
SAIFI limit	1.36	1.21	1.16	1.02	0.87

116 Letter to David Freeman-Greene (Orion), *Re: Timeframe for submitting a CPP proposal in relation to the Canterbury earthquakes*, 17 May 2012

117 Commerce Act 1986, s 53V(2)(c).

118 See Chapter Four of this paper, paragraphs 4.3-4.9.

119 *Electricity Distribution Services Default Price-Quality Path Determination 2010* (Commerce Commission Decision 685, 30 November 2009), clauses 9.1-9.2 and Schedule 3.

120 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.4.5.

Steps four, five and six - calculate the BBAR components

5.11 Our calculations of the main building block components that make up the BBAR amounts for each year of the CPP period are summarised in Table 5.2. These components are calculated from our opex and capex allowances that meet the expenditure objective.

Table 5.2 – Main building blocks components for the CPP period ($m, unless stated)

Component	2015	2016	2017	2018	2019
Regulatory investment value	931.2	985.4	1,016.4	1,036.6	1,066.1
Cost of capital	6.92%	6.92%	6.92%	6.92%	6.92%
Total value of commissioned assets	76.0	55.7	45.5	56.3	35.7
Total revaluation	21.5	22.1	22.8	23.3	24.0
Total depreciation	35.7	39.2	42.2	44.9	47.9
Forecast operating expenditure	53.3	56.3	55.9	55.8	56.4
Regulatory tax allowance	14.2	15.1	15.7	16.3	16.7

Note: Nominal values.

5.12 Further detail on the following inputs to the BBAR calculations are provided below:

5.12.1 Depreciation, which is also an input to the RAB roll forward and 'regulatory investment value' (RIV);

5.12.2 Forecast capex, which is an input to the 'total value of commissioned assets' and the RAB roll forward;

5.12.3 Forecast opex; and

5.12.4 Cost escalation factors, which are inputs for the conversion of real forecast values to nominal values used in setting inputs.

Depreciation

5.13 In order to reduce the potential for price shocks to consumers, Orion proposed an alternative depreciation profile.[121] The practical effect of this was to shift $27 million of proposed charges to consumers out to regulatory periods after the end of the CPP period (ending in March 2019) and therefore to reduce the extent of the proposed increase in prices during the CPP period.

5.14 We accept there can be benefit to consumers from smoothing the effect of a price shock. When we reset the default price-quality path for EDBs with effect from April 2013 we limited the starting price adjustments to CPI+10%. We considered price increases in excess of this would constitute a price shock to consumers.[122] We reduced the price shock in the default price-quality paths by restricting the initial price increase and allowing prices increases in excess of CPI in subsequent years (ie, we set an alternative X-factor (discussed later in this chapter).

5.15 Our draft decision on Orion's customised price-quality path would increase maximum average prices by an average of CPI+9.2%. This is slightly below the CPI+10% level. We do not consider that such an increase is at a level which requires us to spread the price increase differently, to attempt to reduce the price shock for consumers.

5.16 If we apply claw-back we are required to smooth its impact over time to minimise price-shocks.[123] We have spread the claw-back amount over the five years of the CPP regulatory period.[124]

5.17 If submissions on this draft decision consider that an alternative spreading is required, we have the option of spreading claw-back over a longer period, or by setting a non-zero X-factor. In any event, we do not consider it would benefit consumers to defer the recovery of costs beyond the CPP period by adopting Orion's non-standard depreciation method.

5.18 Accordingly, we have set the depreciation input for the BBAR by applying the standard depreciation method.

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121 An alternative depreciation method to the straight line method can be considered in setting a CPP. *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.3.8.

122 Commerce Commission "Resetting the 2010-15 Default Price-Quality Paths for 16 Electricity Distributors" (30 November 2012), paragraph 6.3.

123 Section 52D(3).

124 Attachment C, paragraphs C136-C137.

Forecast capex

5.19 Our decisions on the totals of the forecast capex are discussed in Attachments D, E, F, and K. The value of forecast capex is used to establish a 'total value of commissioned assets' input for each year of the CPP regulatory period for the BBAR calculation by adopting the forecast annual commissioning date assumptions of the capex proposed by Orion.[125]

5.20 Our decisions on the forecast value of commissioned assets are summarised in Table 5.3, where we reconcile Orion's proposals with our draft decision allowance.

Table 5.3 - Forecast commissioned assets input totals ($m)

Capital expenditure	2015	2016	2017	2018	2019
Orion CPP Proposal	92.013	98.674	69.918	76.791	59.604
Commission adjustments:					
CPP1 &CPP2 Urban North projects	(2.371)	(25.156)	-	2.636	-
Other major projects	(4.275)	(5.915)	(11.747)	(5.937)	(7.322)
Replacement capex	(7.930)	(8.822)	(9.068)	(8.418)	(9.180)
Connections & contributions	-	-	-	(2.632)	(2.056)
Cost escalation factors	(1.458)	(2.939)	(3.583)	(6.148)	(5.358)
Total Commission adjustments	(16.034)	(42.932)	(45.521)	(56.291)	(35.688)
Commission draft decision on commissioned asset values	**75.979**	**55.743**	**45.521**	**56.291**	**35.688**

Note: Nominal values.

Forecast opex

5.21 Our decisions on the totals of the forecast opex inputs are summarised in Table 5.4 and are discussed in more detail in Attachments E, G, and H. In the table we reconcile Orion's opex proposals with our draft decision opex allowance.

[125] *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.3.11.

Table 5.4 – Forecast opex input totals ($m)

Operating expenditure	2015	2016	2017	2018	2019
Orion CPP Proposal	61.205	65.242	64.884	66.419	69.852
Commission adjustments:					
Scheduled maintenance contingency	(1.570)	(1.616)	(1.656)	(1.697)	(1.740)
Emergency maintenance	(2.034)	(2.165)	(2.262)	(2.364)	(2.471)
Network management	(1.067)	(1.097)	(1.122)	(1.148)	(1.175)
Maintenance & overhead	(1.537)	(1.586)	(1.590)	(1.581)	(2.506)
Cost escalation factors	(1.689)	(2.452)	(2.342)	(3.858)	(5.565)
Total Commission adjustments	(7.898)	(8.916)	(8.973)	(10.649)	(13.456)
Commission draft decision on opex	**53.307**	**56.326**	**55.912**	**55.771**	**56.396**

Note: Nominal values.

Forecast cost escalation factors

5.22 We carried out our evaluations of expenditure in 2013 real values. The inputs resulting from those evaluations were then adjusted by cost escalation factors so that the BBAR for each year of the CPP period reflects nominal values for that year.

5.23 Our evaluation of Orion's proposed escalation factors is set out in Attachment I.

BBAR

5.24 The BBAR before tax calculation formula is set out in clause 5.3.2(1) of the EDB IMs. The calculations take into account the cash flow timing assumptions for expenditure, depreciation and revenues as specified in the input methodologies. The BBAR after tax is calculated in accordance with clause 5.3.3 of the EDB IMs.

5.25 Our draft decisions on the BBAR before tax and BBAR after tax for each of the years in the CPP regulatory period are set out in Table 5.5.

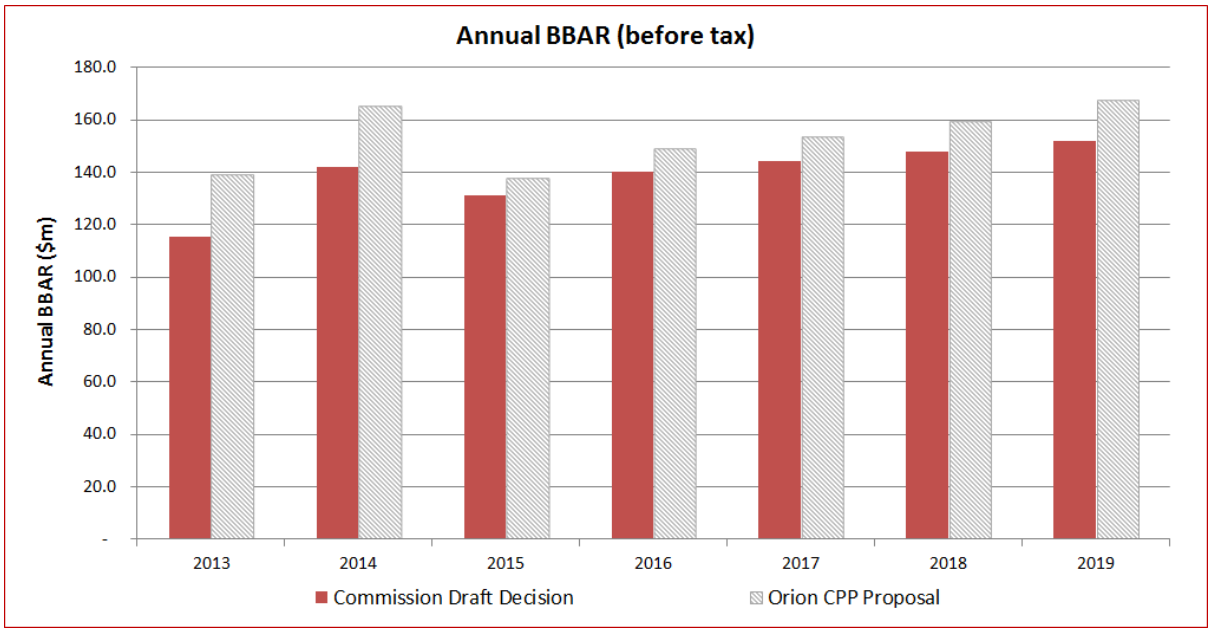
Table 5.5 – Building blocks allowable revenue (BBAR) for the CPP period ($m)

	2015	2016	2017	2018	2019
Building blocks allowable revenue before tax	145.4	155.3	159.8	164.1	168.8
Building blocks allowable revenue after tax	131.2	140.2	144.1	147.8	152.0

Note: Nominal values.

5.26 A comparison of Orion's forecast of the BBAR before tax for each year with the results of our calculations is shown in Figure 5.1.

Figure 5.1 – Comparison of BBAR in Orion CPP Proposal with our draft decision



5.27 Note that the comparison of Orion's proposed BBARs and our decisions include 2013 and 2014. The input methodologies require that we determine the BBAR before tax and BBAR after tax for those years, although those values are not used directly in setting the price path. They are included in the above table for comparative purposes.

Step seven - the present value of BBAR

5.28 The annual BBAR after tax amounts for the CPP period are converted back to a present value BBAR after tax total as at 1 April 2014 by applying the CPP WACC (6.92%).[126] This total is the first component of the price path calculations.

5.29 The total present value of the BBAR after tax at 1 April 2014 based on the above annual BBAR numbers is set out in Table 5.6.

Table 5.6 – Conversion of BBAR after tax to 2014 present value ($m)

	2014 present value
Present value of building blocks allowable revenue for the CPP period	**601.3**

Step eight - our draft decision on claw-back

5.30 The second component of the price path calculation is claw-back. Orion has proposed claw-back of $86 million for the recovery of:

5.30.1 Assets damaged or destroyed by the earthquakes;

5.30.2 Additional operating costs; and

5.30.3 Lower revenues as a result of a reduction in energy demand.

5.31 Our approach to evaluating the proposal for claw-back is outlined in Attachment C. Our claw-back decisions for each year of the period from the earthquakes to 31 March 2014 as a result of that evaluation are set out in Table 5.7. The numbers are net of insurance proceeds, which is why the number for 2012 is negative.

Table 5.7 - Claw-back amounts ($m)

	2011	2012	2013	2014
Claw-back	7.2	(10.8)	0.0	32.1

Note: Nominal values.

Step nine – convert the claw-back amounts to a 2014 present value

5.32 The annual claw-back amounts are converted to a present value claw-back total as at 1 April 2014 by applying the DPP WACC (8.77%). Our decision on the total present value of claw-back at 1 April 2014 is set out in Table 5.8. This amount is the second component of the price path calculations.

[126] We use a vanilla WACC for setting price-quality paths. The vanilla WACC is a weighted average of the pre-corporate tax cost of debt and the cost of equity. It was set at 6.92% for Orion's CPP period. *Cost of capital determination for electricity distribution businesses to apply to a customised price-quality path proposal* [2012] NZCC 25.

Table 5.8 – Conversion of claw-back amounts to 2014 present value ($m)

	2014 present value
Present value of claw-back for the current period and the assessment period before tax	**28.6**

Step ten – Combine BBAR and claw-back to calculate the MAR

5.33 The MAR for the CPP period must be determined such that the present value of the MAR after tax for each year of the CPP period equals the sum of the present value of the BBAR after tax at 1 April 2014 and the present value of claw-back at 1 April 2014.

5.34 Maximum allowable revenue (MAR) after tax for the CPP period is set out in Table 5.9.

Table 5.9 – Maximum allowable revenue after tax ($m)

	MAR at 1 April 2014
Present value of building blocks allowable revenue after tax at 1 April 2014 (Table 5.6)	601.3
Present value of claw-back at 1 April 2014 (Table 5.8)	28.6
MAR after tax (total) at 1 April 2014	**629.9**

Step eleven – calculation of price

5.35 The customised price-quality path must specify maximum average prices and minimum quality standards. Both matters must be determined in a manner consistent with the Act.

5.36 Amongst other things, we are required to establish a 'baseline' for maximum price across the CPP period. The two components of this baseline are:

5.36.1 The 'starting price' allowed at the start of the CPP period; and

5.36.2 The 'rate of change in price', relative to the Consumer Price Index (CPI), that is allowed in later parts of the CPP period.

5.37 The EDB input methodologies set out the calculation requirements for the setting of the price path.[127] It requires that the MAR before tax for the first year of the CPP

[127] *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.3.4.

period (2015) must be solved such that the MAR before tax for each subsequent year of the CPP period takes into account for each year:[128]

5.37.1 the inflation rate (CPI);[129]

5.37.2 the X-factor; and

5.37.3 the forecast weighted average growth in quantities from the preceding year to the current year.[130]

5.38 MAR before tax is calculated using the forecast tax allowance (table 5.2) and MAR after tax (table 5.9).

The inflation rate (CPI)

5.39 For the purposes of determining the customised price-quality path we have applied the Consumer Price Index (CPI) formula in the EDB IMs. We have since identified that this is inconsistent with the compliance formula that uses a lagged CPI formula. If the lagged CPI is used in both the setting of the price path and in the compliance formula, this would require a variation to the EDB IMs and require agreement from Orion.

Forecast weighted average growth in quantities

5.40 We use the same forecast weighted average growth in quantities for each year of the CPP period that Orion proposed. Our reasons for doing so are outlined in detail in [Attachment M].

Steps twelve and thirteen - X-factor and smoothing of total MAR

5.41 The X-factor impacts the value of the starting price (P_0, or 2015 MAR) and the slope of the price path over the CPP period. In particular, Orion used an X-factor of 1.19% in its proposal to mitigate potential price shock effects in the CPP period.

5.42 As discussed above on non-standard depreciation, the maximum price increase resulting from our draft decision is less than the CPI+10% guide we used in the DPP reset to identify a price shock (and above which we would consider setting an alternative X-factor). We considered that an initial price increase of 9.2% is not so large that we should seek to smooth it over time, by using non-standard depreciation or a non-zero x-factor. Accordingly, we concluded that the X-factor for

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128 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.3.4(6).
129 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 3.3.1(5).
130 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clauses 5.3.4(6) and 5.3.4(7).

Orion's CPP should be zero, which equates with the value adopted for 11 out of 16 of the other non-exempt EDBs in the default price-quality path reset determination.[131]

5.43 If as a result of submissions or further analysis by us, we alter the opex and capex allowances, other input assumptions, or the allowed price increases, we will consider whether smoothing of the price increase is required to limit the impact of any price shock on consumers.

5.44 Our decision on the starting price for 2015 (P_0), or 2015 MAR before tax, and the X-factor for the CPP period are therefore set out in Table 5.10.

Table 5.10 – The customised price path for the CPP period determined

	Application of the total MAR before tax to the CPP period
P_0 (2015 maximum allowable revenue before tax, $m)	**155.8**
X-factor	**0.0**

5.45 The resulting annual forecast MAR amounts are set out in Table 5.11.

Table 5.11 - Maximum allowable revenue before tax ($m)

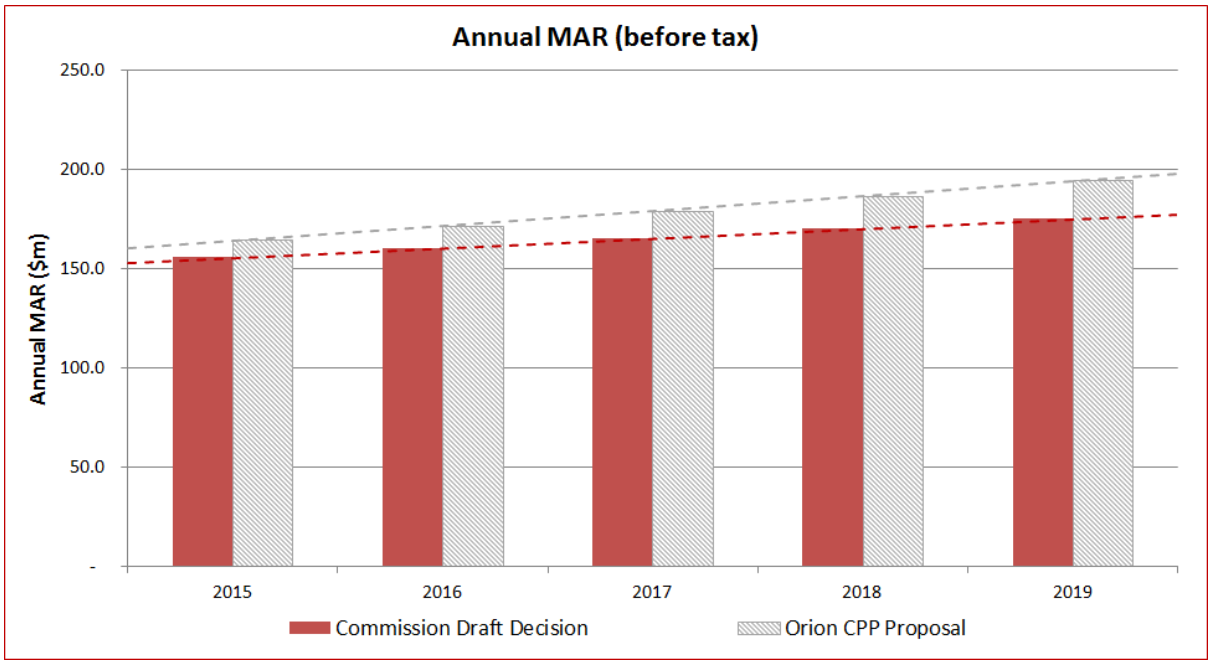
	2015	**2016**	**2017**	**2018**	**2019**
Orion's proposal	164.8	171.7	178.9	186.6	194.4
Our draft decision	**155.8**	**160.4**	**165.2**	**170.2**	**175.2**
Difference	(9.0)	(11.3)	(13.7)	(16.4)	(19.2)

Note: Nominal values.

5.46 A comparison of the annual MAR amounts is set out in Figure 5.2.

[131] Commerce Commission "Resetting the 2010-15 Default Price-Quality Paths for 16 Electricity Distributors" (30 November 2012), Table X1.

Figure 5.2 - Comparison of annual MAR before tax in the price path



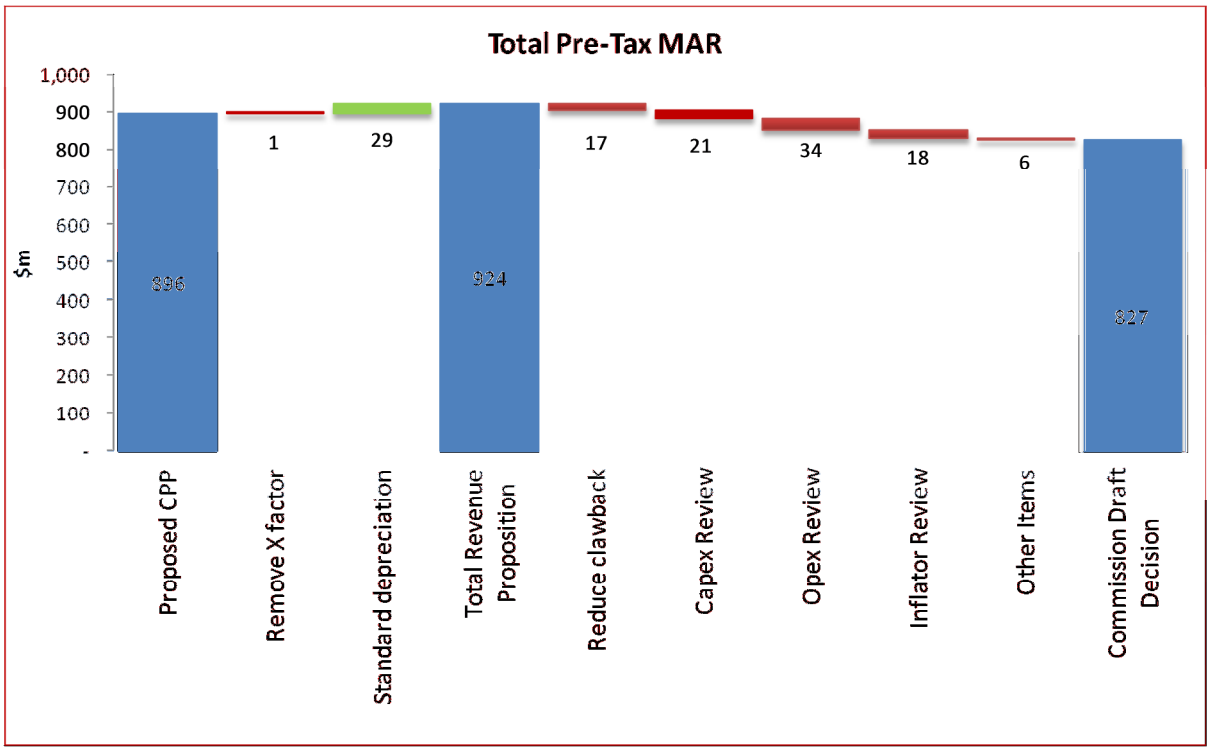
5.47 Figure 5.3 compares the total nominal value of maximum revenue proposed by Orion for the CPP period with that which results from our draft decision. It shows the total nominal revenue effect of the adjustments we have made to Orion's CPP proposal:

5.47.1 Removing the price shock mitigation mechanisms proposed by Orion (alternative X factor and alternative depreciation) increases the total revenues in the CPP period by $28 million; and

5.47.2 The adjustments resulting from implementing our decisions on opex and capex allowances, together with the effect of all other decisions made on financial modelling inputs, will reduce the total revenues by $97 million.

5.48 Our calculation of the claw-back amount does not allow the balance of claw-back that Orion was proposing to recover in the five years following the CPP period (ie, half of $86 million, or $43 million in 2014 values).

Figure 5.3 - Comparison of Orion's proposed MAR with our decision ($m)



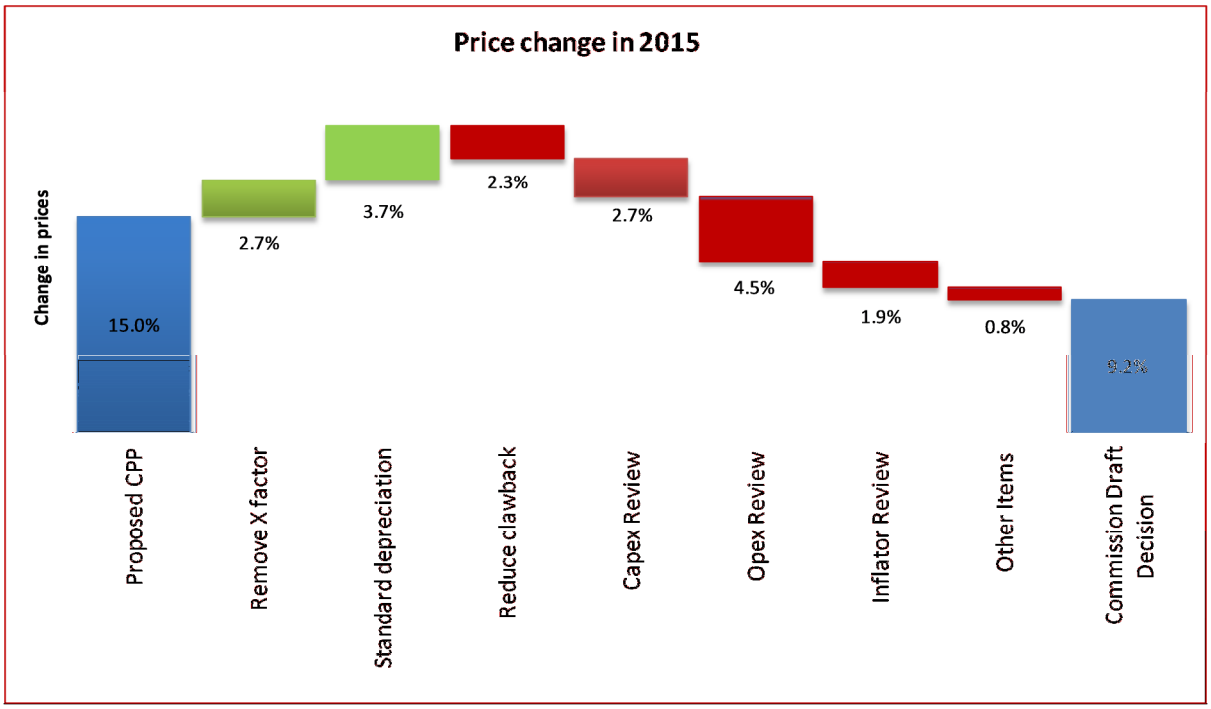
5.49 Orion's CPP proposal would result in an average CPI+15.0% increase in prices from 1 April 2014, and a further CPI+1.19% increase in each later year of the CPP period if Orion priced to recover maximum allowable revenues from consumers. Further recovery was proposed for the following regulatory period. These are averages and depending on the Orion tariffs that apply to each consumer - the actual percentage changes for individual consumers could vary from these averages.

5.50 Our decisions on the price path will result in a CPI+9.2% maximum average price increase from 1 April 2014 and permits CPI increases in each later year of the CPP period. Again, these are averages and for individual consumers the percentages changes could vary from these averages.

5.51 Figure 5.4 sets out how the adjustments we have made in our customised price-quality path decisions have impacted Orion's proposed average price increases. These are in real dollars (that is, excluding the impact of CPI). Actual permitted prices can rise by the CPI as well.[132]

[132] The maximum revenue expected by Orion and the average rate of change in allowed price described in this paper are based on our financial model, which was locked down in advance of finalising this paper. We have subsequently identified adjustments to inputs to the model that will need to be made when we finalise our decision on Orion's price-quality path. These do not have a material impact on our draft decision. See Attachment O of this paper for further details.

Figure 5.4 - Comparison of Orion's proposed change in average prices with our decision



Pass-through and recoverable costs for the CPP period

5.52 The categories of pass-through and recoverable costs that Orion may recover in its prices (and that are not included in the BBAR or the setting of the price path) are defined in the input methodologies. In addition, the Commission is required to specifically determine the following amounts in the CPP determination:

5.52.1 The fee payable to the verifier for Orion's CPP proposal;[133]

5.52.2 The auditor's costs for Orion's CPP proposal;[134] and

5.52.3 The independent engineer's fees for Orion's CPP proposal.[135]

5.53 The amounts for these items will be included in the draft CPP determination which we propose to release by 30 August.

5.54 The fees payable to us by Orion for assessing the CPP proposal will also be treated as recoverable costs under the input methodologies.[136]

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133 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clauses 3.1.3(1)(j) and 3.1.3(3).

134 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clauses 3.1.3(1)(k) and 3.1.3(3).

135 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clauses 3.1.3(1)(l), 5.4.5(c), 5.4.12(4)(c) and 3.1.3(3).

Financial model that demonstrates our price-quality path decision

5.55 We have published our financial model that demonstrates our decision on Orion's price-quality path together with this reasons paper.[137]

Step fourteen – confirming the quality standards to apply

5.56 Orion has proposed to vary the quality standards that will apply during the CPP period. The proposed quality standards will continue to use SAIDI and SAIFI measures and have less demanding limits than those that applied under the DPP.

5.57 Our evaluation of the proposed quality standards is outlined in more detail in Attachment L. We accept Orion's proposed limits.

5.58 Our draft decisions on the quality standards are set out in Table 5.12.

Table 5.12 – Quality standard variation for the CPP period determined

Quality targets	2015	2016	2017	2018	2019
SAIDI limit	103.8	94.7	91.0	82.4	73.4
SAIFI limit	1.36	1.21	1.16	1.02	0.87

Annual compliance requirements

Compliance is demonstrated using notional values

5.59 To assess compliance with the price cap in an assessment year, we will compare the amount of revenue that Orion has generated through its pricing, with the maximum amount of before-tax revenue that Orion is permitted to generate under the price path.

5.60 However, rather than assessing Orion's actual revenue, we will assess compliance on the basis of 'notional revenue'. The revenue is 'notional' because it is based on quantities that are lagged by two years, rather than the quantities for the year in question. This will ensure that all the values can be calculated at the time that it sets its prices.

5.61 Two types of notional revenue figures will be calculated:

5.61.1 'Allowable notional revenue', which is the amount that Orion's prices are allowed to generate on a notional basis; and

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136 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clauses 3.1.3(1)(h)-(i).

137 Please visit http://www.comcom.govt.nz/regulated-industries/electricity/cpp/orion-cpp.

5.61.2 'Notional revenue', which is the amount that the Orion's prices actually generate on a notional basis.

5.62 The difference between notional revenue and allowable notional revenue will reflect Orion's pricing decisions. This is because equivalent quantity terms will be used in both expressions. If Orion prices appropriately, then notional revenue will be less than or equal to allowable notional revenue.

5.63 In practice, Orion's actual revenue will differ from its notional revenue. We will take this difference into account at the start of the CPP period, by adjusting Orion's allowable notional revenue by the forecast difference between lagged and current quantities.

Formula used to assess compliance

5.64 The CPP determination will set out the compliance formula. The requirement will be that the notional revenue for the year must not exceed the allowable notional revenue for the year.

5.65 If Orion's prices change during the assessment year, then allowable notional revenue will be calculated using the weighted average price that applied to the corresponding lagged quantity during the pricing year, ie, rather than the closing price.

Orion will not be penalised for pricing below its price cap

5.66 If Orion prices below its price cap in any year, the price allowed in subsequent years will not be affected. This is because we will include a revenue differential term in the calculation of allowable notional revenue for the second and subsequent assessment years. This term will ensure that allowable notional revenue will not be affected by the prices Orion set in the previous assessment year.

5.67 There will be no revenue differential term for the first assessment year (2015). This is because the price cap applies from the start of the CPP period onwards.

5.68 The revenue differential term will not allow Orion to recoup any under-recovery in a previous year. So while Orion will not be penalised for pricing below its allowable price, it cannot subsequently attempt to undo those actions by pricing above the cap in later years.

Treatment of pass-through costs and recoverable costs

5.69 Some costs that Orion faces may be passed through directly to its consumers. These costs have been defined as pass-through costs and recoverable costs in the IMs.

5.70 When demonstrating compliance, Orion will deduct pass-through and recoverable costs from its regulated revenues. Both cost categories capture spending that Orion has little or no control over.

When pass-through and recoverable costs can be deducted

5.71 The requirements for determining the amount of pass-through and recoverable costs that may be recovered in a pricing period will be set out in Orion's CPP determination.

5.72 Orion can only deduct pass-through and recoverable costs that are known prior to the start of the assessment period, ie, they cannot deduct values that have been forecast. The reason for this is to minimise the chances of Orion over- or under-recovering its revenue.

5.73 In addition, the pass-through costs or recoverable costs that are used to calculate notional revenues and allowable notional revenues must:

5.73.1 not have already been recovered by Orion, and not be able to be otherwise recovered from consumers or other parties, ie, these costs must not be recovered twice; and

5.73.2 not relate to costs that were incurred by Orion prior to the CPP period, with an exception for any unrecovered pass-through amounts relating to Transpower transmission charges for 2011 and 2012.[138]

Pass-through and recoverable costs may be adjusted for the time value of money

5.74 Pass-through costs and recoverable costs that become known after Orion sets its prices may be claimed in a future year and may be adjusted for the time value of money using one of two options:

5.74.1 Based on general assumptions about when pass-through and recoverable costs are paid; or

5.74.2 By linking the adjustment to the actual dates when pass-through and recoverable costs are paid and the date that revenue through prices are assumed to be received.

5.75 We will set the factor for making adjustments for the time value of money using the 5-year cost of debt rate (pre-corporate tax) that was used to determine the WACC.

[138] Orion has identified that as a result of reduced demand in 2011 and 2012 it was not able to fully recover the Transpower transmission charges relating to those years in its prices. It estimates that a total of $7.7m of unrecovered pass-through costs will need to be recovered as a 'recoverable cost' in the CPP period. This results from the catastrophic event and therefore should be treated as an exception to the general rule that pass-through costs for prior to the CPP period should not be recovered as pass-through or recoverable costs in the CPP period.

Calculation of changes in the CPI

5.76 The rate of change we have allowed for Orion is CPI-0%. This means that allowable notional revenue will increase in line with inflation each year, where inflation is measured using changes in the Consumer Price Index (CPI).

5.77 The allowed adjustment will be calculated using the eight most recent quarterly CPI values that are available prior to each pricing year (ie, 'lagged' CPI is used for measuring compliance with the price path).

Treatment of price restructuring

5.78 Orion may restructure or change its prices during an assessment period. Given the potential implications of price restructures for compliance, the compliance statement is an appropriate vehicle to highlight price restructure information.

5.79 These changes will affect how notional revenue is calculated for that assessment period. Notional revenue is calculated using prices and corresponding quantities from an earlier year. It should be possible to trace the historical quantity information to a restructured price.

5.80 We plan to closely monitor price restructures where estimates are used. Orion will therefore be required to produce information concerning a restructured price for the compliance statement. This information will be important for ensuring that Orion takes care in making an estimate and to allow us to assess whether Orion's estimate and forecast assumptions were reasonable.

5.81 As allowable notional revenue is determined using prices and quantities from a prior year, it will not be possible for a price restructure to increase allowable notional revenue in that year.

Price transition at the end of the CPP period

5.82 The DPP determination that applies to all other non-exempt EDBs apart from Orion is due to expire on 31 March 2015 (ie, one year after Orion's CPP period commences).

5.83 The next DPP determination is scheduled to commence on 1 April 2015 and, assuming the standard 5 year term is determined by the Commission for that next DPP period, the DPP determination will expire on 31 March 2020 (ie, one year after Orion's CPP expires).

5.84 At the expiry of the CPP period, Orion will have the option of applying for a further CPP determination (at least one year before 1 April 2019) or of stepping onto the DPP determination for one year from 1 April 2019.[139]

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[139] Commerce Act 1986, s 53X.

5.85 In the event that a further CPP determination does not follow the current CPP determination, the Act specifies:

> The starting prices that apply at the beginning of the default price-quality path are those that applied at the end of the customised price-quality path unless, at least 4 months before the end of the customised price-quality path, the Commission advises the supplier that different starting prices must apply. [140]

5.86 As there are a number of key variables that may change between now and 1 April 2019, Orion has asked for a more detailed indication of how prices will be set for 2020 in the absence of any further CPP determination.

5.87 We will give further consideration to this issue and consider whether to provide any guidance on it. This could be included in the final reasons paper, or earlier, but will not be reflected in the draft CPP determination.

[140] Commerce Act 1986, s 53X(2).

Attachment A: The regulatory framework under which we have determined Orion's customised price-quality path

Purpose of this attachment

A1 This attachment sets out the regulatory framework under which we have evaluated Orion's CPP proposal and determined Orion's draft customised price-quality path.

A2 In this attachment we address:

- A2.1 The purpose of Part 4 of the Act;
- A2.2 The role of default/customised price-quality regulation under Part 4 of the Act;
- A2.3 The role of a customised price quality path in addressing the impacts of a catastrophic event;
- A2.4 Constraints on the exercise of our discretion when determining a price quality path;
- A2.5 Our approach to evaluating a customised price-quality proposal;
- A2.6 Our approach to determining claw-back;
- A2.7 Our approach to determining expenditure;
- A2.8 Our approach to determining quality; and
- A2.9 Our approach to determining incentives.

A3 For completeness, we have also included an overview of the CPP Proposal process.

The purpose of Part 4 of the Act

A4 Section 52A of the Commerce Act 1986 ('Act') states that the purpose of Part 4 is:

> to promote the long-term benefit of consumers in markets referred to in section 52 by promoting outcomes that are consistent with outcomes produced in competitive markets such that suppliers of regulated goods or services—
>
> (a) have incentives to innovate and to invest, including in replacement, upgraded, and new assets; and
>
> (b) have incentives to improve efficiency and provide services at a quality that reflects consumer demands; and
>
> (c) share with consumers the benefits of efficiency gains in the supply of the regulated goods or services, including through lower prices; and
>
> (d) are limited in their ability to extract excessive profits.

A5 The central purpose of Part 4 of the Act is to promote the long-term benefit of consumers in markets where there is little or no competition and little or no likelihood of a substantial increase in competition.[141] EDBs, including Orion, are subject to price-quality regulation under Part 4 of the Act because they face little or no competition. [142]

A6 'Competition', in the context of Part 4 of the Act, means 'workable or effective competition'.[143]

A7 Section 52A(1) requires us to promote outcomes that are consistent with outcomes produced in workably competitive markets. We have therefore sought to identify the outcomes typically produced in workably competitive markets. Guidance as to which of the variety of outcomes produced in workably competitive markets should be promoted by us is provided by the regulatory objectives in s 52A(1)(a)–(d), and the central purpose of promoting the long term benefit of consumers.

A8 Our view is that the objectives in paragraphs (a) – (d) are integral to promoting the long term benefit of consumers, and reflect key areas of supplier performance that characterise workable competition. None of the objectives are paramount, and further, the objectives are not separate and distinct from each other, or from s 52A(1) as a whole. So, for example, it is not appropriate to consider incentives to invest without also considering the importance of efficiency of investment. Similarly, providing incentives to invest that depend on allowing excessive profits or which are otherwise not in the long term benefit of consumers (for example by setting an inappropriate allocation of risk) would not be consistent with the purpose of Part 4.

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141 Commerce Act 1986, s 52A(1).
142 Commerce Act 1986, s 54E.
143 Commerce Act 1986, s 3(1).

A9 Incentive-based price-quality regulation attempts to mimic some of the pressure that rivalry exerts in a workably competitive market, thereby promoting outcomes consistent with the outcomes in such markets. By their very nature price-quality paths influence the behaviour of regulated suppliers in a manner consistent with the regulatory objectives in s 52A(1)(a) – (d).

A10 Determination of a customised price-quality path for regulated suppliers following a catastrophic event involves the exercise of regulatory judgement in setting an appropriate price-quality path that, as a whole and in conjunction with the other aspects of the regulatory regime, will provide further incentives for suppliers to act in a manner consistent with the Part 4 purpose. [144]

The role of default/customised price-quality regulation under Part 4 of the Act

A11 In order to meet the purpose of Part 4, price-quality regulation seeks to mimic some of the pressures that rivalry between suppliers exerts in workably competitive markets, to promote outcomes consistent with outcomes in such markets. Competitive rivalry can usually be relied on to provide suppliers with incentives to innovate, invest, and improve efficiency, while constraining excessive profits, through competitive pressure on supplier's prices. The objectives of price-quality regulation set out under the four limbs of the Part 4 purpose statement are intended to replicate these pressures in markets where competition is otherwise limited.

A12 Our price-quality paths determine:

A12.1 The maximum average prices which EDBs can charge; and

A12.2 The minimum quality standards that EDBs must meet.

A13 By setting maximum prices and minimum quality standards, profit-maximising suppliers have incentives to outperform the assumptions explicitly or implicitly underpinning how the price-quality path was set. As price-quality paths are set in advance for a specific period based on an estimated normal rate of return, EDBs have the opportunity to earn a higher-than expected rate of return by being more efficient and innovating. This is the nature of incentive regulation.[145] If suppliers are successful in achieving efficiencies or innovating, their expenditure may be less than the path assumes, and the reward greater returns to their shareholders. The quality standards in the price quality path are present to ensure that innovation and efficiency do not come at the expense of the service quality expected by consumers.

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[144] For a more extensive discussion of the Commission's approach to the purpose of Part 4 see the Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), sections 2.4 to 2.6.

[145] Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraphs 1.2.1 – 1.2.3.

A14 Under a weighted average price path, demand risk is shared between suppliers and consumers. Suppliers bear the risk (whether to their detriment or benefit) of variations in demand during the regulatory period. At the end of the regulatory period when prices are reset, the risks (of demand being higher or lower than expected) are transferred to consumers.

A15 Price-quality regulation under Part 4 is implemented through:

A15.1 Default price-quality paths, which apply to all 17 non-exempt EDBs; and

A15.2 Customised price-quality paths, which provide an alternative to a default price quality path, where an individual EDB wishes to have its specific circumstances addressed.

The purpose of default/customised price-quality regulation

A16 Section 53K of the Act sets out the purpose of default/customised price-quality regulation:

> The purpose of default/customised price-quality regulation is to provide a relatively low-cost way of setting price-quality paths for suppliers of regulated goods or services, while allowing the opportunity for individual regulated suppliers to have alternative price-quality paths that better meet their particular circumstances.

A17 To meet the purpose of price-quality regulation, any approach to a default price-quality path must be relatively low cost. A significant contributor to the costs of setting customised price-quality paths are supplier specific audit, verification and approval processes. Default price-quality paths instead take a combination of low cost techniques, including existing information disclosed under requirements set for suppliers generally, the supplier's own forecasts, and independent forecasts.[146]

A18 Although the approach we take to a default price-quality path is relatively low cost, most EDBs can expect to earn at least a normal return because:

A18.1 Actual opex and capex outturns at the end of a regulatory period are used as the base from which projections are made for the next regulatory period;

A18.2 Our modelling takes into account an EDB's own forecasts of capital expenditure;

A18.3 Our modelling of operating expenditure and revenue relies on independent forecasts that are free of systematic bias, in either direction; and

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[146] Orion's DPP is currently a carry-over from the previous thresholds regime. See Schedule 1 of the *Electricity Distribution Services Default Price-Quality Path Determination 2010* (Commerce Commission Decision 685, 30 November 2009).

A18.4 The rate of return that we allow is above the mid-point estimate of the cost of capital for the industry. Specifically, we use the 75th percentile, which is equivalent to about 0.7 percentage points above the mid-point weighted average cost of capital.[147]

A customised price-quality path is available where a default price-quality path does not allow a supplier to earn a normal return due to their particular circumstances

A19 Because in a default price-quality path we rely on some information that is different to EDBs' own forecasts, some EDBs may nonetheless expect to earn less than a normal return under the default price-quality path due to their particular circumstances. Given that it would be costly to take into account all supplier-specific information when setting a default price-quality path, the option of a customised price-quality path provides an alternative for an EDB to have all of its relevant forecast information taken into account after testing through audit, verification and evaluation processes.

A20 The availability of a customised price-quality path is a fundamental feature of default/customised price-quality regulation as it ensures EDBs can have alternative price-quality paths that better meet their particular circumstances relative to the generic default price-quality path.

A21 The customised price-quality path is not, however, intended to be a 'one way bet.' It does not simply allow a supplier to add an extra increment on top of its default price-quality path. Part 4 of the Act explicitly provides that customised price-quality paths can be set lower than default price-quality paths.[148] This has important incentive qualities, as otherwise it may be worth applying for a CPP purely because it raises the possibility of increasing average price caps.[149]

A22 Regardless of its relativity to the existing default path, the customised price-quality path seeks to achieve the right balance for the supplier against the purpose of Part 4 of the Act, including the s 52A(1)(a)-(d) objectives, based on a detailed assessment of supplier-specific information.

Customised price-quality paths are not designed to ensure certainty for suppliers

A23 Customised price-quality paths provide a mechanism for addressing supplier-specific circumstances that are not accommodated in the price-quality path we set under the generic default price-quality path.

A24 They provide suppliers with certainty in the same way as a DPP – for instance, they know beforehand what their starting prices and MAR will be for the next regulatory

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147 Note that we consider the mid-point is our best estimate of a normal return.

148 Commerce Act 1986, s 53V(2)(a).

149 This is more likely to be true for the larger suppliers given not all costs of a CPP can be passed on to consumers. For example management time.

period and can plan their business affairs accordingly. However, we do not think the legislature's intention was for the availability of a customised price quality path to provide the level of certainty that EDBs appear to be arguing for.

A25 Submissions from EDBs[150] have emphasised the need for certainty to encourage investment incentives.[151] Although the purpose of Part 4 of the Act emphasises incentives for suppliers to undertake long term investment in infrastructure (by virtue of the inclusion of limb (a) of the section 52A(1) purpose statement), the reference to "...promoting outcomes produced in competitive markets" assists in placing the concept of certainty in its proper context.

A26 As noted by the Court of Appeal in *Vector v Commerce Commission*: [152]

> Participants in competitive markets generally face conditions of considerable uncertainty; that is the nature of competition. In the present context, while Parliament undoubtedly saw certainty as being important, particularly in terms of encouraging investment, it was not identified as the predominant consideration.

A27 We also note the Court's observations that the language in section 52R of the Act (which describes the purpose of IMs as to promote certainty) suggests that certainty is a relative rather than absolute value, which may take time to achieve as the regime beds in.[153] Indeed, the explanatory note (cited with approval by the Court of Appeal) said that the regime would "...provide an effective regime that *over time* produces more timeliness, certainty and incentives for investment."[154]

Default/customised price quality regulation is designed to ensure that suppliers can <u>expect</u> to earn a normal return

A28 Our approach allows a supplier to earn a normal return but does not guarantee it.

A28.1 Suppliers can potentially earn higher or lower than normal returns over a period when the average prices are fixed; and

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150 Electricity Networks Association "Submission on Yarrow Report in Relation to Orion's CPP Application" (26 June 2013), paragraph 10; Orion New Zealand Limited "Submission on the Orion CPP issues paper" (24 May 2013), paragraphs 18-21; Vector Limited "Submission to the Commerce Commission on Orion CPP Issues Paper" (24 May 2013), paragraphs 31, 51(d).

151 This argument is advanced for instance at Vector Limited, "Release of expert reports for public consultation" (27 June 2013), paragraph 8 (emphasis added): "The Commission needs to recognise that by signalling through consultation that it is open to considering options that would preclude regulated suppliers being properly compensated for the risks of operating a network, and/or adopting an approach that is inconsistent with its own IMs (in a manner detrimental to Orion) *it could undermine certainty, heighten risks to regulated suppliers of applying for a CPP (be it perceived risk or actual risk) and reduce confidence about the ability of regulated suppliers to recover their (efficient) costs*"; Orion New Zealand Limited "Orion CPP Proposal: Commerce Commission's Expert Reports" (27 June 2013), paragraph 10.

152 *Commerce Commission v Vector* [2012] NZCA 220, paragraph 34.

153 *Commerce Commission v Vector* [2012] NZCA 220, paragraph 34.

154 Explanatory Note to the Commerce Amendment Bill, paragraph 24 [emphasis added], cited with approval by the Court of Appeal in *Commerce Commission v Vector*, [2012] NZCA 220, at paragraph 34.

A28.2 There are significant incentives for suppliers to keep costs down in order to do so.

A29 The DPP is set to recover efficiently incurred costs at the time it is set. While there is no provision for wash ups as a result of what transpires over the regulatory period, overs and under are factored in at the time of the next reset.[155]

A30 We note that our approach is consistent with workably competitive markets in the broader sense, where:

A30.1 There is no guarantee that all costs incurred will be passed through to consumers; and

A30.2 Suppliers may bear the risk of an increase in costs, while the consumer price remains unaffected in the short term, but not the long term.

A31 Our approach to default/customised price quality regulation aligns with Professor Yarrow:[156]

> [E]xpected ex ante efficiently incurred costs, including *ex ante* costs of risk borne by suppliers, should fall on consumers, but deviations of cost out-turns from expectations should fall chiefly on suppliers, unless explicitly specified otherwise. Chiefly does not mean exclusively, but it does imply that after-the-event adjustments in cost allocations should be kept to a minimum, to minimise the requirement for *ex post* regulatory assessments of business performance.

A32 A number of submissions made in response to Professor Yarrow appear to imply that suppliers are effectively guaranteed recovery of their costs incurred in a catastrophic event, so as to ensure that they earn a normal return.[157] In its second report, Incenta appears to imply that each and every item in costs and in allowed revenues must be identified and linked.[158]

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155 A price path cannot guarantee a normal return even if a supplier is efficient over the control period.

156 Professor George Yarrow, "Further advice on claw-back" (4 August 2013), page 3.

157 See Orion New Zealand Limited "Submission on the Orion CPP issues paper" (24 May 2013) , Appendix 1 (PWC report), pg. 2: "consistent with the treatment of costs in general, the efficient and prudent costs caused by catastrophic events should be recovered from customers." Orion New Zealand Limited "Submission on the Orion CPP issues paper" (24 May 2013), Appendix 1 (PWC Report), pg. 3: "For the avoidance of doubt, the full cost caused by the catastrophic event should be recovered from customers." Orion New Zealand Limited "Orion CPP Proposal: Commerce Commission's Expert Reports" (27 June 2013), Attachment A – Incenta Economic Consulting – Response to Professor Yarrow Advice on Orion CPP Determination, page 2: "The question is not whether, but how or when customers bear [the costs of a catastrophic event]."

158 Orion New Zealand Limited "Orion CPP Proposal: Commerce Commission's Expert Reports" (27 June 2013), Attachment A – Incenta Economic Consulting – Response to Professor Yarrow Advice on Orion CPP Determination, p. page 2.

A33 Professor Yarrow disagrees with this approach:[159]

> To identify and explicitly provide an allowance for each and every possible cost element would not be administratively efficient, and price cap regulation of the type favoured in New Zealand has explicitly sought to avoid over-intrusive and disproportionate regulation. No price or revenue cap system with which I am familiar seeks to identify every possible cost component, and it is integral to these systems that individual revenue allowance are not hypothecated. The key question for regulators is whether the price/revenue settlement as a whole will provide a reasonably efficient operator with the funds to cover the aggregate costs that it is expected (ex ante) that the business will incur in meeting its obligations.

A34 We agree. A price quality path needs to be appropriate to allow an EDB an expectation of recovering efficient costs going forward, including the return on and of capital. Accordingly, we set appropriate starting prices based on projected profitability. We do not consider every cost individually, or review actual expenditure for efficiency, in deciding the costs that EDBs should recover. That said, an EDB's *expectation* of a normal return is by no means a *guarantee*.

A customised price quality path is the correct mechanism for addressing the impacts of a catastrophic event

A35 Clause 5.6.1 of the IMs defines catastrophic events:

> Catastrophic event means an event-
>
> (a) beyond the reasonable control of the **EDB**;
>
> (b) in relation to which expenditure-
>
> (i) was neither sought in a **CPP proposal**; nor
>
> (ii) is explicitly or implicitly provided for in the **DPP** or **CPP**,
>
> as the case may be;
>
> (c) that could not have been reasonably foreseen at the time the **CPP** or **DPP** was determined; and
>
> (d) in respect of which-
>
> (i) action required to rectify its adverse consequences cannot be delayed until a future **regulatory period** without quality standards being breached;
>
> (ii) remediation requires either or both of **capital expenditure** or **operating expenditure** during the **regulatory period**;

[159] Professor George Yarrow "Further advice on claw-back" (4 August 2013), pages 8 -9.

(iii) the full remediation costs are not provided for in the **DPP** or **CPP**; and

(iv) in respect of an **EDB** subject to a **CPP**, the cost of remediation net of any insurance or compensatory entitlements would have an impact on the price path over the **disclosure years** of the **CPP** remaining on and after the first date at which a remediation cost is proposed to be or has been incurred, by an amount at least equivalent to 1% of the aggregated **allowable notional revenue** for the **disclosure years** of the **CPP** in which the cost was or will be incurred.

A36 In the IM Reasons Paper, we indicated that a customised price quality path is the correct mechanism for a supplier to address some of the impacts of a catastrophic event.[160]

A37 Vector's submission on the 'Issues' Paper questions whether it would be more appropriate to address the impacts of a catastrophic event through a default price-quality path re-opener:[161]

> Vector recommends the Commission engage with stakeholders to design a more practicable method than a full CPP application of funding a regulated supplier to address a catastrophic event in its area. For example, the costs could be accommodated through a DPP re-opener. This should be subject to some Commission scrutiny but with less costly reporting, forecasting and analysis than is required in a full CPP proposal.

A38 We note that the issue is academic, as Orion has applied for a customised price-quality-path and this is what we are considering. However, we disagree with Vector's suggestion that a default price-quality path re-opener would more appropriately address the impacts of catastrophic events:

A38.1 A default price-quality path re-opener for something like an earthquake, which requires us to consider and evaluate detailed supplier-specific data, and supplier specific context, would be complex and inconsistent with a generic path.

A38.2 By contrast, a customised price-quality path that relooks at the right overall balance against the Part 4 purpose based on supplier-specific information seems well suited to a large scale natural disaster such as the Canterbury earthquakes.

A38.3 An automatic presumption in favour of recovery of catastrophic event related costs will, in any event, not necessarily best meet the Part 4 purpose

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[160] Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 8.4.22.

[161] Vector Limited "Submission to the Commerce Commission on Orion CPP Issues Paper" (24 May 2013), paragraph 126.

statement, for reasons discussed in greater detail below, primarily around incentivising behaviour in the long term interest of consumers.[162]

A39 Accordingly, we think that addressing the impacts of a catastrophic event through a customised price-quality path is the better approach.

We have a broad discretion when determining a customised price-quality path

A40 In reaching our draft decision, we have undertaken a two-step process. First, we *evaluated* Orion's customised price-quality proposal against specific evaluation criteria in the IMs.[163]

A41 Secondly, we *determined* a customised price-quality path. The IMs give us a much greater degree of flexibility and discretion when we *determine* a supplier's customised price-quality path as opposed to when we evaluate Orion's customised price quality path.

A42 The Act provides clear guidance that we:

A42.1 Can determine any customised price-quality path we consider appropriate (provided it is consistent with relevant IMs); and

A42.2 Must exercise our regulatory judgment in determining a customised price-quality path in a manner that reflects the long term interests of consumers, consistent with the purpose of Part 4 of the Act.

A43 In *Vector v Commerce Commission* the Supreme Court recognised that our legislative discretion is an essential element of default/customised price-quality regulation under Part 4 of the Act:[164]

> The availability of a full merits appeal on customised price-quality paths as compared to the appeal confined to points of law in relation to default price-quality paths implies a legislative recognition that the fixing of price-quality paths will involve regulatory judgments and not just the largely mechanical application of published methodologies. Put another way, it is clear that the legislature did not require published methodologies to cover all the issues which the Commission might have to address in reaching a regulatory decision.

We left open the possibility of some ex post recovery in the case of a catastrophic event (through claw-back)

A44 Without limiting our discretion, we left open the possibility of some recovery of costs associated with a catastrophic event by allowing for claw-back in a customised price quality path. This is discussed in greater detail below under the heading "our

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[162] See discussion below beginning at paragraph A95.

[163] Evaluation criteria for a CPP Proposal were discussed in Chapter 2, from paragraph 2.9.

[164] *Vector v Commerce Commission* SC 46/2012 NZSC 99 [15 November 2012], paragraph 74.

approach to determining claw-back", but in terms of explaining our discretion, we point to the following by way of summary:

A44.1 Our broad discretion under the Act and IMs;

A44.2 Our reluctance to consider claw-back in general terms given its potential impact on the regime (consistent with the approach taken by Professor Yarrow and for the same reasons he articulated in his second report);

A44.3 Our prior acknowledgement in the IMs Reasons Paper of the specific usefulness of claw-back providing certainty to suppliers that unforeseen operating and capital expenditure required to respond to catastrophic events will generally be allowed;[165] and

A44.4 Our residual broad discretion to allow claw back if the particular circumstances warrant it.

A45 Part 4 provides a clear discretion for us to allow claw back, and if so, how much. This is supported by the broader context of the regime, as it stands in contrast to other areas where claw-back is mandatory. This indicates there are some areas where the legislature considered that the integrity of the regime required compensation for suppliers or consumers, and other areas where it was comfortable with us retaining discretion.

A46 Our approach to determining claw back is discussed in greater detail later in this attachment, and in the claw back attachment.

Constraints on the exercise of our discretion

A47 In this section, we consider whether there are any constraints on our generally wide discretion to set a customised price quality path (including allowing claw back). In particular, whether we are required to ensure that:

A47.1 Orion recovers all of its efficient and prudent costs incurred prior to the date of the customised price quality path associated with a catastrophic event; and/or

A47.2 We fund Orion to deliver all of its planned operational and capital activities set out in its customised price quality path.

A48 We consider the exercise of our discretion in the context of the following:

A48.1 The scheme of Part 4 of the Act;

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[165] Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraphs 8.4.23-30.

A48.2 Our previous statements and decisions about the allocation of risk in relation to an earthquake;

A48.3 Whether there was a regulatory compact between us and EDBs such that they could reasonably expect to:

A48.3.1 recover all of their prudent and efficient costs;

A48.3.2 deliver all of their planned operational and capital activities; and

A48.3.3 be made whole for all foregone revenues;

A48.4 The impact of legal, moral and humanitarian obligations that suppliers have to restore and maintain the supply of essential services, such as electricity.

Scheme of Part 4 of the Act: what incentive regulation is meant to achieve

A49 Incentive regulation aims to promote the outcomes in the Part 4 purpose statement, including:

A49.1 providing certainty to suppliers about acceptable price/revenue levels over the regulatory period, which promotes incentives for investment;

A49.2 promoting efficient expenditure so that suppliers do not, amongst other things, over-invest;

A49.3 promoting incentives for innovation or efficiency gains to be made to increase profitability of the supplier (by outperforming the path);

A49.4 allowing suppliers to keep benefits of efficiency gains until the end of each regulatory period;[166]

A49.5 sharing the benefits of efficiency gains with consumers; and

A49.6 setting quality standards.

A50 Guaranteeing full cost recovery for past and planned expenditure is not necessarily consistent with the scheme of incentive based regulation. Part 4 of the Act only contemplates that suppliers expect to recover (on an *ex ante* basis) expenditure under a price-quality path if that expenditure is efficient, prudent and consistent with the quality of service consumers demand.

A51 Some submitters appear to imply that our starting point should be to simply accept that an EDB's costs have been efficient and prudent in the absence of information to

[166] We note that an IRIS allows suppliers to retain the benefits for a full five years no matter when the efficiencies occur within the regulatory period.

the contrary.[167] We disagree. A prudency and efficiency review of an EDB's proposed expenditure is an important part of our role in assessing a customised price quality path proposal. Starting with the assumption an EDB's costs have been efficient and prudent would, amongst other things, provide undesirable incentives for the provision of information, where the EDB possesses the most useful information.

Our previous statements and decisions about the allocation of risk in relation to catastrophic events

A52 A number of submissions express concern that our previous comments regarding the appropriate allocation of risk for catastrophic events have implied a clear intention to address the impacts of catastrophic events *ex post* in a customised price-quality path.[168] Balchin in the PwC report relies in particular on previous comments we have made on:

A52.1 The benefits to suppliers of creating a self insurance fund; and

A52.2 Our decision not to adjust for type I asymmetric risks in the weighted average cost of capital ('WACC') for EDBs in our Cost of Capital IM.[169]

A53 We address these comments below in turn.

A54 In our Revised Draft Guidelines for the Cost of Capital in June 2009,[170] we supported, in accordance with expert advice, establishing an insurance fund to address type I asymmetric risks. Experts proposed that suppliers charge an insurance premium that would then be invested in a reserve fund, which would effectively operate as a form of self insurance.

A55 However, in our final IMs we modified our original approach and chose instead to make the establishment of a self-insurance fund discretionary, and required that any separate self-insurance fund be justified:[171]

> For the purpose of a CPP, the Commission will allow a supplier to recover an allowance for self-insurance as long as it is clear: what risks are being insured; that these risks are credibly self-insured (as opposed to being recoverable *ex post* through reconsideration of the price-

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167 See for instance Vector Limited "Submission to the Commerce Commission on Orion CPP Issues Paper" (24 May 2013), pages 8 and 21.

168 See for instance Orion "Proposal for a customised price-quality path" (19 February 2013), Appendix 1 - PwC Report on Catastrophic Event Cost Recovery, page 21.

169 We note that Balchin's argument is not relevant to Orion because Orion's price quality path was not set based on building blocks and the WACC IM.

170 Orion "Proposal for a customised price-quality path" (19 February 2013), Appendix 1 - PwC Report on Catastrophic Event Cost Recovery, citing to Commerce Commission "Revised Draft Guidelines for the Cost of Capital" (June 2009), page 54.

171 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph K3.26.

quality path); and the self-insurance premium has been independently verified as appropriate by an actuary with the necessary expertise. A supplier must provide the information specified in clause D15 of the IM Determinations. Should a self-insured risk eventuate during the CPP period, then the supplier will not receive *ex post* compensation for that event via a reconsideration of the price-quality path.

A56 A self-insurance reserve or captive must be included in the price-quality path expressly. The default price-quality path does not involve detailed analysis of individual components of cost, given that it is set in a low-cost way. It does not therefore make an explicit allowance for self-insurance unless the EDB has established a captive insurer, although that does not preclude an implicit allowance.

A57 The regulatory arrangements pass many of the risks of catastrophic events to consumers (see paragraph A59.3, below), so the residual risk borne by EDBs is relatively small. Self-insurance for these risks is one of many costs we expect businesses to accommodate within the price path, unless the particular circumstances of the risks faced by the business are extraordinary.

A58 In our view, our previous statements are not inconsistent with our current approach. Our approach is to look at what was known to EDBs at the time, and only exercise our discretion regarding costs that were not explicitly or implicitly dealt with *ex ante*. As discussed in further detail in the claw back attachment (Attachment C), this includes through self insurance and maintaining a strong balance sheet.

A59 In formulating our Cost of Capital IM, we elected not to make an additional *ad hoc* adjustment to the WACC to account for type I asymmetric risks. We did this on the basis that:

A59.1 suppliers are exposed to different levels of asymmetric risks, and an *ad hoc* adjustment may over-compensate some suppliers and under-compensate other suppliers;

A59.2 we preferred other adjustments and mechanisms to address this risk (such as front-loaded depreciation, provision for establishment of a captive insurer and cash flow adjustments); and

A59.3 the IMs already provide for Type I risk in a variety of ways including treatment of destroyed and stranded assets (not written out of RAB); the absence of a used and useful test in IMs or other optimisation criteria which allows capital expenditure in response to a catastrophe, or expenditure to improve network resilience to enter the RAB without review. The regulatory scheme involving periodic price path resets, limits the maximum period of a supplier's exposure to the consequences of a catastrophic event to the remaining years of a regulatory period.

A60 We do not accept that any of our previous statements or decisions can be reasonably construed as suggesting either:

A60.1 That suppliers had no obligation and/or ability to mitigate the risk of catastrophic events *ex ante*; or

A60.2 The risk of these events should therefore be allocated fully to consumers in all circumstances.

We do not think there was a regulatory compact that EDBs could claw back all of the costs and foregone revenue associated with a catastrophic event

A61 A number of submissions from EDBs have argued that there is a "regulatory compact" between the Commission and EDBs such that they had a reasonable expectation that following a catastrophic event, EDBs would:[172]

A61.1 recover *all* of their prudent and efficient costs;

A61.2 deliver *all* of their planned operational and capital activities; and

A61.3 be made whole for *any* foregone revenues.

A62 We are surprised that EDBs appear to have misconstrued the regime in this regard.

A63 In order to establish a regulatory compact, Orion and other suppliers must point to something particular, outside the legislation, and separate from the general features and the nature of the regulatory regime, which overrides the statutory discretion and commits us to allowing full claw-back following a catastrophic event, regardless of the particular circumstances of an individual EDB.

A64 We have at no time committed to allowing *all* additional costs and lower revenues resulting from a catastrophic event.

A64.1 In all of our statements relating to catastrophic events in the IMs Reasons paper we only discussed (and responded to submissions about) capex and opex costs.

A64.2 At no time did we discuss lost revenue, whether caused by the delay embedded in the regime, or otherwise.[173]

A65 Importantly any *ex post* allowance for lower revenues and additional costs is discretionary. In this regard we note that:

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[172] Electricity Networks Association "Submission on Yarrow Report in Relation to Orion's CPP Application" (26 June 2013), paragraphs 12, 40, 49-52; Orion New Zealand Limited "Orion CPP Proposal: Commerce Commission's Expert Reports" (27 June 2013), paragraph 35; Vector Limited "Release of expert reports for public consultation" (27 June 2013), paragraphs 7, 9-12.

[173] Letter from Sue Begg to Orion dated 10 December 2012, where we say "The Commission is in the process of confirming its approach for the assessment and determination of Orion's proposed customized price-quality path application. We have not made any final decision about catastrophic cost and/or revenue recovery. In this respect your comments will contribute to our deliberations."

A65.1 claw-back is *discretionary* under the Act; and

A65.2 the IMs only provide for the *possibility* of claw-back.

A66 That said, we acknowledge that we expressly provided for the potential availability of claw-back in our IMs so that suppliers would be able to obtain financing, if necessary, following a catastrophic event.[174] However, even for that purpose, we emphasised that claw-back was discretionary.[175] The availability of claw-back under the IMs must be understood in that context. Our intention was that suppliers have certainty that, subject to our decision on the appropriate incentives for suppliers to manage risk, they can recover the prudent costs of supplying regulated services, including rectifying for catastrophic events.[176] In this regard, we note (as discussed in detail above) that the Court of Appeal has provided clear guidance that certainty is a relative rather than absolute value.

A67 We also note that:

A67.1 Neither Orion or its experts in the initial CPP proposal refer to any promise by us that we would always allow full claw-back where a customised price quality path is set in response to a catastrophic event, essentially waiving the discretion in section 53V(2)(b).

A67.2 Orion's terms of reference to PWC do not refer to any such expectation or understanding by Orion.

A68 The lack of initial identification of such a promise appears to be inconsistent with later statements of a clear expectation by suppliers that we are required to allow full claw-back because we have committed to do so.

A69 Some submitters appear to be implying we may have predetermined how we intend to exercise our discretion when determining a customised price quality path in responding to a catastrophic event. Submitters will appreciate that there is a proper process we must follow when determining a customised price quality path, including any claw-back, in which we must consider the views of interested parties, including consumers. For this reason, we will always approach a customised price quality path determination with an open mind.

A70 When exercising our discretion, we recognise we have an important impact on regulatory predictability and incentives to invest.

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174 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 8.4.27.

175 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 8.4.27.

176 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 8.4.25.

Suppliers have legal, moral and humanitarian obligations to restore and maintain supply of essential services

A71 In its submission on Orion's CPP Issues Paper, Vector highlighted the need for us to consider the implications of our approach for the restoration of services following a catastrophic event. Vector noted:[177]

> [A] supplier of essential services has legal, moral and humanitarian obligations to restore supply of those services as quickly as possible following a catastrophic event. At least some, and probably more, of Orion's losses will result from Orion meeting such obligations.

A72 Vector also noted that suppliers of electricity and gas transportation services are listed lifeline utilities in Part B of Schedule 1 of the Civil Defence Emergency Management Act 2002 which requires them to take all necessary steps to undertake civil defence emergency management and ensure that they are able to function to the fullest possible extent after an emergency.[178]

A73 The Electricity Network Association ('ENA') frames the argument in the context of the significant information asymmetry that exists between suppliers and us:[179]

> The Commission...has very little information on the particulars of a given network and is reliant on advisers to guide it on these matters, who in turn may have little knowledge of the particular network of its customers. Neither the Commission nor its advisers has accountability for the ongoing service performance arising from these decisions. Thus it is a context where there is substantial information asymmetry in favour of the supplier and moral hazard on the part of the Commission (i.e. the Commission would not bear the costs of its decisions). In this context the process of testing decisions, and the respective roles of the parties involved when doing so, is important to achieving results that are in the long term interests of consumers.

A74 We appreciate that suppliers of essential services have obligations to restore their networks following a catastrophic event. We also agree that there is significant information asymmetry regarding their networks. This very point is reflected in the evaluation criteria.

A75 However, as ENA suggest, the accountability for the ongoing service performance arising from a supplier's decisions rests solely with that supplier.[180] Accordingly, we agree that the decisions regarding the capex and opex responses undertaken to

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177 Vector Limited "Submission to the Commerce Commission on Orion CPP Issues Paper" (24 May 2013), paragraph 8.

178 Vector Limited "Submission to the Commerce Commission on Orion CPP Issues Paper" (24 May 2013), paragraph 47.

179 Electricity Networks Association "Comment on Commissions Paper on Orion's CPP Application" (24 May 2013), page 3.

180 Electricity Networks Association "Comment on Commissions Paper on Orion's CPP Application" (24 May 2013), page 3.

restore a network most appropriately lie with the supplier who knows its network best.

A76 Following an emergency or catastrophic event, it is not business as usual. Suppliers of essential services will inevitably reprioritise their expenditure and direct previously allocated funds to address the impacts of such an event. In this respect, we note the following:

A76.1 In responding to an emergency it is appropriate that suppliers divert funds previously allocated elsewhere.

A76.2 We do not seek to second guess how a supplier elects to allocate or divert its funds.

A76.3 We do not control how a supplier spends the pool of money they are allocated through a default price-quality path.

A77 Claw-back provides a mechanism whereby, at our discretion, we *may* adjust a price path to account for a supplier's response to a catastrophic event, where we think that this will strengthen incentives.

A78 We think the approach in the IMs, in which we *retain* a wide discretion to determine claw-back, best fits the purpose statement because it allows suppliers to make specific decisions that they are best placed to make while still promoting incentives that spread risk in the long term interests of consumers.

A79 Further, in the context of the Part 4 regime it is appropriate that we retain a wide discretion. The customised price-quality regime explicitly permits us to come to whatever answer we think is right. In establishing the regime, Parliament elected not to create rules that moral hazard should constrain the exercise of that discretion. Put another way, it was open to Parliament to design a different propose/respond type regime, which would essentially remove our discretion. It did not.

A80 If it was our objective to minimise prices and nothing else, moral hazard would be a real cause for concern. However, our objectives (as laid out in the Act) do not include this.

A81 We note that in Orion's case, we have exercised our discretion to adjust its price path to account for its response to the Canterbury earthquakes, such that it will be allowed to earn more money than it has ever earned before.

We evaluate a CPP proposal against specific criteria

We do not intend to take a counterfactual approach when assessing proposed capital expenditure

A82 Suppliers have raised concerns that the 'Issues' Paper indicates that we intend to take a counterfactual approach.[181]

A83 During the IMs determination process, we considered whether a customised price-quality path proposal should be assessed against the relevant default price-quality path. The driver of this consideration was whether it was appropriate in the context of considering whether a price-quality path would be likely to best give effect to the Part 4 purpose.[182] We assess a customised price-quality path on its merits.[183]

A84 The questions in the Orion customised price-quality path 'Issues' Paper were not intended to indicate a counterfactual approach would be taken when assessing a customised price-quality path proposal. Rather, they were intended to assist us to understand consumer expectations regarding the level of service required in the context of the evaluation criteria of the extent of support (or opposition) for a supplier's proposal.

Options for proposed capital expenditure would assist us in evaluating a proposal and understanding consumer preferences

A85 We consider that understanding consumer expectations regarding the level of service required is important for assessing the merits of specific proposed expenditure. That is why the extent of support (or opposition) for a supplier's proposal is a specific criterion against which we are required to assess a CPP proposal under the IMs.

A86 We are interested in the views of consumers because a customised price-quality path should promote the long-term benefit of end-users, consistent with the Part 4 purpose statement. Limb (b) of the Part 4 purpose statement refers to services at a quality demanded by consumers.

A87 Given significant information asymmetries exist, a supplier may have a better understanding of the need for network investment than its consumers, which is why consumer agreement to a proposed CPP is not required.[184] However, this

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181 See, eg, Vector Limited "Submission to the Commerce Commission on Orion CPP Issues Paper" (24 May 2013), paragraphs 100-101.

182 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.4.6.

183 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.4.6.

184 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph9.4.16.

information asymmetry means it is challenging for consumers to meaningfully engage without different options to consider.

We are entitled to consider other options

A88 There is nothing in the Act or IMs that prevents us from:

A88.1 making our own assessment;

A88.2 asking (or actively seeking) consumers for their views; or

A88.3 asking EDBs for alternative options, and considering those options.

A89 Asking an EDB for options does not suggest we will undertake a full counterfactual analysis. Instead, it acknowledges that our decision is not an absolute judgement like in a more restrictive propose/respond framework. In the absence of an absolute standard against which to assess a proposal the regime requires us to consider the merits of a proposal and make a judgement, which cannot and should not be done in a vacuum. Considering an EDB's proposal relative to the options they were faced with assists us in making that judgement.

A90 Given information asymmetries, an EDB's views on a range of options would greatly assist us in engaging consumers and exercising our judgement. As Vector acknowledges:[185]

> Questions regarding desirable service quality and network configuration involve substantial judgment and knowledge of the network, where the supplier generally has the best understanding of the issues.
>
> The Commission, given information asymmetries, is not well placed to substitute its own judgment for that of the regulated supplier when assessing the optimal investment decision to make.

A91 Our role is not to dictate to Orion or a supplier on the optimal investments, but to ensure that the expenditure proposed is justified for the quality benefits it will provide. The exploration of options is necessary to assess whether the EDB has properly balanced these trade-offs in its proposal, and only goes to a determination of the appropriate revenue allowance. Ultimately, the EDB is free to undertake the optimal investments as it sees fit.

A92 Having options in a CPP Proposal better allows us to evaluate whether the customised price quality proposal meets the evaluation criteria and expenditure objectives, and helps us to engage with customers.

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[185] Vector Limited "Submission to the Commerce Commission on Orion CPP Issues Paper" (24 May 2013), paragraphs 102(a)-(b).

A93 We evaluate a supplier's customised price-quality proposal against specific evaluation criteria[186] set out in clause 5.2.1 of the IMs:

A93.1 consistency with relevant IMs;

A93.2 the extent to which the proposal promotes the Part 4 purpose;

A93.3 whether the data, analysis, and assumptions in the proposal are fit-for-purpose;

A93.4 the expenditure objective (discussed in further detail below);

A93.5 whether proposed quality standard variations better reflect the realistically achievable performance and/or investment provided for in the MAR; and

A93.6 the extent of consumer consultation and consumer support.

A94 Our conclusions are used to inform our decisions on the key inputs to determining the customised price-quality path, quality variations, claw-back, and incentive mechanisms.

Our approach to determining claw back

Claw-back is discretionary under the Act and IMs

A95 Claw-back is permitted in a CPP determination under s 53V(2)(b):

> To avoid doubt, and without limitation, in determining a customised price-quality path that complies with s 53M the Commission may do any of the following:
>
> …
>
> (b) if it sets a lower or a higher price than applied under the default price-quality path, apply claw-back

A96 Claw-back is defined in s 52D:

> (1) A reference to the Commission applying claw-back is a reference to the Commission doing either of the following:
>
> (a) requiring a supplier to lower its prices on a temporary basis in order to compensate consumers for some or all of any over-recovery that occurred under the prices previously charged by the supplier:
>
> (b) allowing a supplier to recover some or all of any short-fall in its revenues that occurred under the prices previously charged by the supplier.

A97 The two key statutory directions regarding claw-back are:

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[186] We are required to determine evaluation criteria under s 52T(1)(d)(ii) of the Commerce Act 1986.

A97.1 claw-back is discretionary when we determine a customised price quality path; and

A97.2 where claw-back is applied, it needs to be done so in a manner that minimises price shocks on consumers.

A98 The IMs otherwise preserve the general discretion in section 53V. Clause 5.3.4 of the IMs provides further guidance on our discretion to apply claw-back:

A98.1 confirming that claw-back applies to a CPP;

A98.2 confirming that the decision on whether to apply claw-back is at our discretion. (Specifically, by stating that the application of claw-back in a CPP is pursuant to section 53V(2)(b), which, as discussed above, is a provision which makes it clear that our decision to apply claw-back is *discretionary)*; and

A98.3 providing for two instances where claw-back may apply:

A98.3.1 where delay is caused by the exercise of our prioritisation powers;[187] and

A98.3.2 where the customised price quality path proposal is made in response to a catastrophic event.[188]

We will only exercise our discretion to allow claw back where the costs have not been provided for ex ante

A99 We will only exercise our discretion to apply claw back following a catastrophic event where the costs have not already been accounted for in the price-quality path. However, this is not the only factor which influences the exercise of our discretion.

A100 We signaled this approach at paragraph 8.4.22 of the IMs Reasons (emphasis added):

> 8.4.22 Catastrophic events are events that:
>
> • are outside the reasonable control of a regulated supplier;
>
> • are unforeseen at the time the price-quality path was determined; and

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[187] In this case the delay results in suppliers having to wait longer than the statutory timeframes. Allowing claw-back in these circumstances acknowledges that there is a pressure point where suppliers should no longer bear the cost of delay based solely on the regulator's choice.

[188] The Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" indicated that claw-back would be considered to address the additional costs incurred in responding to a catastrophic event, rather than a DPP re-opener. This was in response to submissions from regulated suppliers, who raised the question of how the costs incurred prior to a CPP being determined may be recovered.

- in respect of which:
    - action required to rectify its adverse consequences cannot be delayed until a future regulatory period without quality standards being breached;
    - remediation requires either or both of capital expenditure or operating expenditure during the regulatory period; and
    - **the full remediation costs are not provided for in the price-quality path.**

8.4.23 As discussed above, if a material catastrophic event occurs for a supplier on a DPP, then the appropriate way to deal with that will generally be for the supplier to apply for a CPP that takes account of their particular circumstances. The Commission may also decide to exercise enforcement discretion, as discussed further below.

A101 We have also previously signalled that if a supplier receives *ex ante* compensation for a risk in the form of a self-insurance allowance, then *ex post* compensation will not be provided.[189]

A102 More generally relevant to the exercise of our discretion is the extent to which the IMs and the regulatory regime allocate a significant proportion of the costs of a catastrophic event to consumers. For instance:

A102.1 The approach to RAB, which has no *ex ante* approval or *ex post* prudency review, means all capex (once commissioned) is added to the RAB and can earn a return on and of capital. Therefore, all expenditure to mitigate the impacts of high impact, low probability events are recovered (though there may be a delay between the expenditure and its inclusion in the RAB for pricing purposes). So is any capital investment to repair, restore or improve services after a catastrophic event (with the narrow exception of depreciation of, and return on, an asset post commissioning but before the next reset, if claw-back is not applied).

A102.2 The approach to damaged and destroyed assets allows a regulated supplier to earn a return on and of capital on such assets (from the time a CPP is set) though firms in a workably competitive market would generally be unable to do so in the absence of a contract with its customers specifically providing for this.[190]

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189 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph K3.26.

190 In a workably competitive market, a supplier could only continue to earn a return on and of damaged and destroyed assets to the extent that all competitors were sufficiently affected, such that the industry's costs had increased (including costs for new entrants) and prices increased to allow recovery of these costs.

A102.3 Prices are reset at the beginning of the CPP period to reflect the impact of the earthquakes (including reduced demand). This feature of the regulatory regime benefits suppliers, because it limits the period in which they bear the risk of reduced demand.

A102.4 Using the 75th percentile estimate of WACC rather than the mid-point increases MAR. The IMs specify using the 75th percentile to reflect:

A102.4.1 uncertainty in estimating the cost of capital;

A102.4.2 the Part 4 purpose; and

A102.4.3 that in workably competitive markets not all risks can be passed on to the consumer in the form of higher prices.[191]

Claw back was never intended to ensure full recovery

A103 In submissions on our Issues Paper and Report from Professor Yarrow, Orion and other EDBs have argued that the IMs envisaged *full* claw-back of all prudent and efficient costs following a catastrophic event. As discussed earlier, submitters justify this on the basis that:

A103.1 There is no explicit provision for self-insurance under the DPP; and

A103.2 The WACC excludes an adjustment for Type 1 asymmetric risks.

A104 We disagree. There are no clear representations in the Act or IMs that full claw-back will always be allowed for a customised price quality path following a catastrophic event. The approach advocated by suppliers is contrary to:

A104.1 the discretion reserved to the Commission in section 53V; and

A104.2 the express reference to section 53V(2)(b) which directly incorporates the statutory discretion.

A105 Nor do we agree that "...any approach to providing for the cost of catastrophic events will ultimately be borne by consumers."[192]

A106 As Professor Yarrow notes:[193]

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191 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph H11.65.

192 Vector Limited "Submission to the Commerce Commission on Orion CPP Issues Paper" (24 May 2013), paragraph 58.

193 Professor George Yarrow "Advice to the Commerce Commission: The Orion CPP Determination" (June 2013), page 4.

> In practice...*ex post* outcomes differ from *ex ante* expectations, and it is an integral part of price cap regulation that, for the most part, such deviations of outcomes from expectations are borne by the supplier. Thus, if costs are lower than anticipated, the supplier retains the benefits. By the same token, if costs are higher than anticipated, those unanticipated costs are borne by the supplier, not by consumers.

A107 Professor Yarrow goes on to note that risk only tends to be reallocated to consumers where this strengthens incentives in the long term interests of consumers. This aligns with our working assumption that once a price quality path is set, suppliers bear the risk, not consumers.[194]

A108 We accept that this assumption can be displaced, and a catastrophic event may be one instance where it may be possible to do so. However, the onus is on suppliers to demonstrate we should do so; allowing claw back is always at our discretion.

Fluctuations in demand risk are not the same as other costs

A109 Orion and the other EDBs have also argued that full recovery of costs includes recovery of foregone revenue resulting from a step-change in demand following a catastrophic event.

A110 Balchin argues strongly that additional costs and revenue losses should be treated in the same manner, on the basis that they have similar effects on Orion's bottom line:[195]

> I note for completeness that there is no conceptual difference from a regulatory perspective between adverse events that cause a reduction in revenue (through reducing demand) and those that occur to cost.

A111 NERA adopts a similar position, arguing that demand risk should be shifted to consumers.[196]

A112 Conversely, Professor Yarrow suggests that suppliers are best placed to bear demand risk:[197]

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194 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), page 30 "contracts in workably competitive markets tend to manage risks efficiently, by allocating identified risks to the party considered best placed to manage them."; Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), page 37 : "the allocation of risks between suppliers and consumers will usually mean that, although suppliers might have expected to earn a normal return *ex ante*, such a return is not earned ex post"; Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 8.2.11 "suppliers should bear the risks that they are best placed to manage, including risks of any cost variations and demand risk".

195 Orion "Proposal for a customised price-quality path" (19 February 2013), Appendix 1 - PwC Report on Catastrophic Event Cost Recovery, page 9.

196 Orion "Proposal for a customised price-quality path" (19 February 2013), Appendix 2 - James Mellsop and Will Taylor of NERA Expert Report, paragraph 2.2.1.

> From the perspective of consumers, a reduction in demand is a rather different matter from an increase in repair and replacement costs. In the absence of the second, there might have been, or might be, a deterioration in the services offered to consumers; and that is an obvious consumer detriment. A reduction in demand, on the other hand, has no such direct and immediate implication for quality of service. It may represent nothing more than some consumers moving out of the area, and there is not very obvious reason why consumers as a whole will benefit if some are asked to make good the entirety of the reduced business incomes caused by the decisions (to leave the area) of others.

A113 In our view, Professor Yarrow's approach better aligns with the Part 4 purpose statement. As opposed to specific repair and replacement expenditure, it is less clear that compensating for a reduction in demand benefits consumers. While each 'cost' claimed by Orion needs to be assessed on its merits, compensation for demand risk may therefore need to be justified against quite different considerations. As Professor Yarrow puts it in his second report:[198]

> Ensuring recovery of ex ante expected costs, including a normal rate of return on capital, is a means to an end, but it is not an end in itself.

A114 Claw back is discussed in greater detail in Attachment C.

We do not agree that a 'delay' in determining a customised price-quality path guarantees claw back

A115 In its CPP Proposal, Orion included foregone revenue resulting from a reduction in demand following the earthquakes. To support this, Orion suggested that it would be prejudiced by the systemic regulatory delay in our determination of its customised price-quality path.[199]

> There would be very little claw-back if our network prices had been allowed to adjust quickly on 1 April 2011 and not 1 April 2014. The claw-back issue is a regulatory construct and not of our making.

A116 This view was also expressed by other EDBs.[200]

A117 While we acknowledge there is an unavoidable regulatory delay in determining a customised price-quality path, we do not think this amounts to a prejudice that guarantees claw-back.

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197 Professor George Yarrow "Advice to the Commerce Commission: The Orion CPP Determination" (June 2013). page 5.

198 Professor George Yarrow "Further advice on claw-back" (4 August 2013), page 5.

199 Orion New Zealand Limited "Submission on the Orion CPP issues paper" (24 May 2013), paragraph 25.

200 See, for example, Vector Limited "Submission to the Commerce Commission on Orion CPP Issues Paper" (24 May 2013), paragraph 51(a); Wellington Electricity Lines Limited "Invitation to comment on Orion's CPP proposal" (24 May 2013), page 1. We note that Vector has previously acknowledged the "risks, costs uncertainties and timing difficulties associated with the CPP process" in its submissions on the IMs appeals. See paragraphs 3.6-3.7 and 3.14 of Vector's submission.

A118 This is consistent with the scheme of the Act:

A118.1 the Act has set an inflexible statutory timeframe for evaluating a CPP and determining a price-quality path. If we fail to meet this timeframe, Orion's proposal becomes its price-quality path;

A118.2 the Act fails to give CPPs retrospective application; and

A118.3 if Parliament had intended for claw-back to correct the impacts of the delay, it would have made claw-back mandatory rather than discretionary.[201]

A119 The IMs reasons paper implicitly recognises that suppliers bear the risk associated with delay in implementing a CPP. Conversely, the IMs specifically allow claw-back where a CPP proposal is delayed because of our use of prioritisation powers.

A120 Although we allowed claw-back due to delays in the November 2012 DPP reset, the delay (due to court action) was out of the control of regulated suppliers and not contemplated in the legislation.[202] There were no obvious negative incentive impacts associated with granting claw-back in the DPP case either.

A121 In the context of a catastrophic event customised price-quality path, on the other hand, the decision regarding whether to grant claw-back could have significant implications for regulated suppliers (in terms of their incentives to manage the risk of catastrophic events efficiently) (see Attachment C).

A122 The regime contemplates that setting a customised price-quality path will take a reasonably long period of time: it does not promise immediate relief, only a faster (and more tailored) adjustment than waiting for the next default price quality path reset. The standard customised price quality path is envisaged to take 14 months from the time the proposal is lodged, so delay is contemplated. The legislation contemplates that claw-back *may* be allowed. Either way, it will only address the delay where we exercise our discretion and if it meets the statutory purposes in s 52A and 53K.

A123 The fact that demand risk is curtailed by regulatory price sets (whether through a default price-quality path or a customised price-quality path) is a construct of the

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201 In addition, Parliament provided no opportunity for claw-back during the last year of a price-quality path, and made no special accommodation for claw-back for that period.

202 In the November 2012 DPP reset claw-back was applied to compensate suppliers for delays in the regulatory process for resetting the DPP (due to court action), however claw-back was not applied for all under-recovery. This decision was explicitly made on the basis that: (1) the power to apply claw back for earlier years is not mandatory; and (2) no arguments were advanced by regulated suppliers pursuant to that they would be adversely affected and investment deferred if it did not go back further (though Unison did note there were potential disincentives to invest for the purpose of efficiency gains if these might not be realised – Unison Networks Limited "Submission on Revised Draft Reset of the 2010-2015 Default Price-Quality Paths" (1 October 2012), at paragraph 55).

regulatory framework which balances incentive properties against other objectives. This is not unique to a customised price quality path; an unexpected drop in demand midway through a default price quality path has a greater impact than at the end of a default price quality path. To the extent the submission is that demand risk following a catastrophic event should not be borne by Orion at all, we disagree.

Our approach to determining expenditure

A124 Forecasts of capex and opex are key inputs to the building blocks allowable revenue (BBAR) calculated for each disclosure year for our determination of a customised price-quality path.[203]

A125 We have broad discretion in determining amounts for forecast capex and opex.[204]

CPP evaluation criteria

A126 We are required by the EDB IMs to consider whether Orion's proposed expenditure complies with the evaluation criteria for assessment of the CPP proposal.[205] Accordingly, we:

A126.1 evaluated whether data, analysis and assumptions in Orion's CPP proposal are fit for purpose for each segment of expenditure we assessed;

A126.2 considered whether Orion's proposed expenditure meets the *expenditure objective* (see below);

A126.3 analysed the extent to which quality standard variations proposed by Orion are consistent with the expenditure it has proposed and therefore whether they better reflect the realistically achievable performance and/or investment provided for in the MAR; and

A126.4 evaluated the extent to which Orion has undertaken consumer consultation and the reliability of Orion's interpretations of the outcomes of this consultation from the perspective of identifying the service levels it is seeking to achieve through its proposed expenditure.[206]

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203 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.3.2.

204 Forecast capital expenditure is determined under cl. 5.3.11(5)(b) by assessing the CPP applicant's capex forecast against the expenditure objective. Forecast operating expenditure is determined under cl. 5.3.2(6)(b) by assessing the CPP applicant's opex forecast against the expenditure objective.

205 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.2.1.

206 As discussed above in paragraphs 2.37-2.46.

The expenditure objective

A127 In making our decision on the appropriate levels of expenditure for Orion, we are required to be informed by our assessment of its proposed expenditure against the *expenditure objective*:[207]

> **expenditure objective** means objective that **capital expenditure** and **operating expenditure** reflect the efficient costs that a prudent **non-exempt EDB** would require to-
>
> (a) meet or manage the expected demand for **electricity distribution services**, at appropriate service standards, during the **CPP regulatory period** and over the longer term; and
>
> (b) comply with applicable regulatory obligations associated with those **services**

A128 In order to evaluate whether Orion's proposed expenditure meets the *expenditure objective*, we looked for:

A128.1 evidence of the service levels that are required by Orion's customers;

A128.2 service levels that Orion is proposing to deliver as a result of expenditure proposed to be undertaken;

A128.3 any differences between the desired and proposed service levels;

A128.4 forecasts of expected demand for services over the period and in particular expected growth in demand;

A128.5 the extent to which Orion has evaluated options for delivering services to its customers, and whether its chosen alternative can be said to represent the lowest lifetime cost alternative for doing so; and

A128.6 whether expenditure proposed by Orion is required to deliver the services it is seeking to deliver.

A129 Where we reviewed the information provided and concluded that the proposed expenditure was not justified under the expenditure objective, we considered the following options were available to us:

A129.1 Using Orion's historical levels of expenditure;

A129.2 Using a step and trend approach similar to that used for expenditure forecasts in the DPP; or

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[207] *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 1.1.4.

A129.3 Undertake a more detailed analysis of the expenditure and determine an amount most consistent with the expenditure objective based on the information available.

Our initial approach to assessing expenditure

A130 Our initial approach in assessing expenditure was to carry out a top-down review of the information in Orion's proposal. This included the review of:

A130.1 information included on proposed expenditure in Orion's proposal;

A130.2 additional information provided by Orion in project summary documents for identified projects; and

A130.3 the views and findings of the independent verifier.

A131 We were assisted in this approach by our consultant Strata Energy Consulting (Strata).

Our initial review highlighted issues for further detailed examination

A132 The independent verifier's findings and our own assessment against the evaluation criteria raised a number of questions which prompted a more detailed review of the expenditure contained in Orion's CPP proposal. In particular:

A132.1 we were unable to identify the drivers of Orion's proposed expenditure across the expenditure categories; and

A132.2 information provided could not in many significant cases be reconciled with proposed expenditure projects, despite verification.

A133 Where the link between expenditure and the benefits the expenditure was intended to deliver was unclear, or the expenditure did not appear justified, we undertook a more detailed analysis of the assumptions and forecasts built into Orion's proposal and extended our examination to a wider range of proposed expenditure. We reviewed material assumptions, and assessed the sensitivity of the proposed expenditure to changes in assumptions.

A134 The level of detail of our assessment varied depending on our concerns and any concerns expressed by the independent verifier or our external consultants. One of the challenges that both we and the independent verifier faced was that the information provided did not provide a complete picture or failed to accurately explain the reasons for proposed expenditure. We used a number of expert consultants to assist in our review, including Strata Energy Consulting (Strata), Partna Consulting Limited (Partna), New Zealand Institute of Economic Research (NZIER),

Calverton Business Consulting Group (Calverton) and Aon New Zealand Limited (Aon).

A135 Some submissions suggest we gave insufficient weight to the independent verifier's report.[208] We disagree. The independent verifier's report identified a number of areas of possible concern regarding Orion's proposal, particularly the appropriateness of Orion's planning criteria (which constituted a significant proportion of proposed expenditure).[209] Our analysis logically followed from these concerns.

A136 Going forward, we expect EDBs will be able to minimise the cost of a customised price quality proposal by ensuring that their CPP proposals, and the information provided by the verifier, address the sorts of concerns we had (see chapter 2). This will ensure that customised price-quality paths are more cost-effective.

Our approach to determining quality standards

Determining appropriate quality standards

A137 We assess the specific circumstances of an EDB and decide whether it is appropriate to make changes to the quality standards set by the default price-quality path. We have a broad discretion in determining the appropriate quality standards for a supplier in a customised price-quality path.[210]

A138 Determining a quality standard different from the DPP is likely to be particularly relevant where an EDB has applied for a customised price-quality path following a catastrophic event. This is because, generally, consumers should not receive a lower standard of quality as a result of the supplier being on a customised price-quality path. However, a drop in the applicable quality standards may be appropriate following a catastrophic event, where the drivers of quality are not totally within the control of the supplier.

A139 We aim to ensure that the natural cost-reducing incentives provided by price-quality regulation do not cause suppliers to lower service quality below the level demanded by consumers. This is consistent with limb (b) of the Part 4 purpose statement.

A140 Our evaluation criteria in assessing a quality standard variation is the extent to which any proposed quality standard variation better reflects the realistically achievable performance of the EDB over the customised price-quality path regulatory period

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208 Vector Limited "Submission to the Commerce Commission on Orion CPP Issues Paper" (24 May 2013), paragraph 103-104.

209 See Geoff Brown & Associates Ltd "Verification Report", executive summary. This report can be found in Orion New Zealand Limited "Application for a customised price-quality path" (1 March 2013), Appendix 7 - Verification report and certificate.

210 Commerce Act 1986, s 53M(3).

taking into account statistical analysis of past SAIDI and SAIFI performance and/or the level of investment provided for in the proposed MAR before tax.[211]

A141 This criterion recognises that there may be circumstances in which the historic time series of service quality data prescribed in a default price-quality path determination is unrepresentative of the realistically achievable performance of the EDB over the customised price-quality path regulatory period.[212]

Our approach to determining an IRIS

A142 An incremental rolling incentive scheme ('IRIS') is an incentive mechanism that can be used to promote operational efficiencies.

A143 The IMs require us to determine an amount for controllable opex (which is the critical component of an IRIS) and to implement an IRIS for a customised price quality path determination.

Determining an IRIS for Orion's CPP

A144 Orion's CPP proposal does not include an amount of controllable opex for implementing the IRIS.[213] Orion provided the following justification:

> Given the current uncertainties which face us (including the rebuild, future earthquakes and costing escalation) and the wider Canterbury community we do not believe it is appropriate to include this mechanism in this CPP proposal. We are not currently operating in a business as usual state. Our consumers and other stakeholders such as CERA are also not yet working in a stable environment. This makes our forecasting extremely difficult. In addition we don't have an accurate baseline against which to assess our potential for efficiency improvements in opex. While we support the aims of the IRIS mechanism, and while we continue to improve the way we run our business, and seek to achieve efficiencies in our cost structures we have not elected to include any opex as controllable opex for the purpose of this CPP proposal. We believe it is more important for our consumers that we 'get the job done' over the next five to seven years, rather than strive for some potentially 'arbitrary' efficiency gains.

A145 We seek the views of interested parties on whether we should:

A145.1 Determine an asymmetric IRIS for Orion, consistent with the IMs;

A145.2 Vary the IMs so that we can determine a symmetric IRIS for Orion; or

A145.3 Vary the IMs so that we can determine no IRIS for Orion.

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211 See the evaluation criteria, *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.2.1(e). See, also, discussion at paragraph 9.3.29 of the Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010).

212 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 9.3.29.

213 Orion "Proposal for a customised price-quality path" (19 February 2013), pages 570-571.

A146 We note that we are currently reviewing incentive mechanisms in a separate IM amendment process and would similarly welcome the views of interested parties on the IRIS in this context.[214]

We propose to vary the IMs to allow Orion to claw-back to the date of the first earthquake

A147 Under section 53V(2)(c) of the Act, we may vary the IMs that apply to our customised price quality path determination with the agreement of Orion. This variation applies only to our determination of a customised price quality path for Orion, and does not amend the IMs directly.

A148 We have agreed a variation to the IM to allow Orion to claw-back to the date of the first earthquake. This allows, but does not commit, us to clawing back in that period.

A149 The IMs require that a customised price quality path proposal relating to a catastrophic event is submitted within 2 years of the catastrophic event occurring.[215] Orion's CPP proposal was made within 2 years of the February 2011 earthquake. However, under the IMs, this would exclude us from considering the costs associated with responding to the earlier September 2010 earthquake.

A150 Given the difficulties faced by Orion during this extraordinary time, we propose varying our IMs, subject to the agreement of Orion and consideration of views made in submissions from interested parties, to allow claw-back to the September 2010 earthquake.

Overview of the CPP proposal process

A151 The process for making a customised price-quality proposal is described in the Act and in relevant IMs.

A152 In summary:

A152.1 The supplier makes a CPP proposal in accordance with the relevant process and content IMs.[216]

A152.2 Within 40 working days of receipt of the proposal,[217] we determine whether or not the proposal is complete.[218]

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214 A notice of intention was issued on 30 April 2013. A process and issues paper is likely to be released in September 2013.

215 *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.3.4(4).

216 Commerce Act 1986, s 52T(1)(d) and s 53Q.

217 This may be extended under s 53U of the Commerce Act 1986 by up to 30 working days by agreement of the Commission and the applicant.

218 Commerce Act 1986, s 53S.

A152.3 We evaluate the proposal in accordance with evaluation criteria (as discussed earlier) within 150 working days of determining the proposal is complete.[219]

A153 Our decision becomes the EDBs customised price-quality path when we amend the section 52P default price-quality path determination applicable to that supplier.[220] In this case, we will give effect to our decision by amending the Orion DPP Determination.

We must determine a CPP within 150 working days of determining the proposal is complete

A154 We applied to the High Court under section 100A of the Act for clarification regarding the timeframe for completing a CPP determination following receipt of the proposal under the Act.

A155 The Court directed that we have 150 working days to complete a CPP determination following the date we determine that a CPP proposal is complete.

A156 We note that under the Act we may extend that timeframe by up to 30 working days if the relevant supplier agrees.[221]

A157 If we do not determine a CPP within the 150 working day period, a supplier's proposal will take effect as its new price-quality path.[222]

The regulatory period

A158 The regulatory period for a customised price-quality path must be 5 years unless a shorter period would better meet the purpose of Part 4 of the Act. A shorter period may be no less than 3 years.[223]

A159 There is no explicit commencement date of a CPP period in the Act. The IMs provide for an *ex ante* approach to determining maximum allowable revenues on a forward-looking basis, and calculate incentive mechanisms accordingly. Therefore a CPP will commence on or after the date of the CPP determination.

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219 Commerce Act 1986, s 53T. The 150 working days can be extended by agreement by up to another 30 working days under section 53U.
220 Commerce Act 1986, s 53V(3).
221 Commerce Act 1986, s 53U.
222 Commerce Act 1986, s 53ZA(3).
223 Commerce Act 1986, s 53W(2).

Attachment B: Completeness review of Orion's application

Purpose of this attachment

B1 This attachment provides a summary of our review of the completeness of Orion's proposal. This review looked at whether Orion's proposal had complied with the rules and requirements relating to the process for, and content of, customised price-quality path proposals.

B2 Our Issues Paper, released on 1 May 2013, discussed this stage of our CPP proposal evaluation process in more detail.[224]

The CPP proposal process requirements of the proposal were satisfied

B3 Orion submitted its application for a CPP on 19 February 2013. The application contains Orion's CPP proposal, Appendices, and other supporting documents comprises in excess of 2,000 pages.

B4 Under s 53S(1) we were required to determine within 40 working days of application whether the proposal complied with the IMs relating to the process and content for CPP proposals.[225]

B5 We carried out a detailed analysis of the completeness of Orion's CPP proposal. The analysis was carried out by Commission staff using a detailed checklist. The analysis work was peer-reviewed by other staff members and the overall results of the completeness review were also reviewed for consistency of approach. We also considered the independent verifier's report however there was nothing in that report that raised any completeness questions for us.

B6 We identified several areas where the CPP proposal was incomplete and we sought further information from Orion in respect of:

B6.1 Related party contractual and transaction information;

B6.2 Evidence to demonstrate that Orion's proposed alternative depreciation method better meets the purpose of Part 4;

B6.3 A table of alternative and standard depreciation by asset type over the complete lives of assets;

B6.4 Evidence to demonstrate that Orion's proposed X factor better meets the purpose of Part 4;

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[224] Commerce Commission "Invitation to have your say on Orion's proposal to change its prices and quality standards - Issues to explore and consider" (1 May 2013).

[225] Refer Part 5 of the *Electricity Distribution Services Input Methodologies Determination 2012.*

B6.5 A price path calculation that includes claw-back in the MAR;

B6.6 An explanation of the treatment of capital contributions in Orion's forecasts, including Orion's policies; and

B6.7 An explanation of the treatment of network spares in Orion's forecasts.

B7 Orion provided the necessary additional information with appropriate certifications to enable the Commission to conclude that those matters were complete. The additional information was provided within the required 40 working day period for Orion's response.[226]

B8 The additional information was compiled by Orion into an Addendum to the CPP proposal, and the CPP proposal inclusive of that Addendum formed the complete CPP proposal for our substantive consideration of the CPP proposal. The addendum was published on our website.[227]

B9 Based on the information provided by Orion in the CPP proposal and the Addendum to the proposal, we concluded on 18 April 2013 that Orion's proposal meets the requirements of the process and content IMs, as required by s 53S.[228] On that basis we considered that the proposal was suitable for the next step, our detailed substantive evaluation of the proposal.

B10 As required by s 53T(1)(a) and (b), once we determined that the proposal was complete, it advised interested persons that the CPP proposal was under consideration by us, and invited submissions on Orion's proposal. On 1 May we released an Issues Paper.[229] The Issues Paper was issued to interested persons to explain:

B10.1 Our outline of Orion's CPP proposal;

B10.2 Our role, process and approach in evaluating Orion's proposal;

B10.3 Our initial assessment of Orion's proposal;

B10.4 Questions for consumers and stakeholders to consider; and

B10.5 How interested persons could have their say on Orion's proposal.

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226 Refer s 53S(2)(b).

227 http://www.comcom.govt.nz/regulated-industries/electricity/cpp/orion-cpp/ under the heading Orion customised price-quality path proposal.

228 Commerce Commission, "Invitation to have your say on Orion's proposal to change its prices and quality standards, Decision process and consideration of submissions", 19 April 2013.

229 Commerce Commission, "Invitation to have your say on Orion's proposal to change its prices and quality standards, Issues to explore and consider", 1 May 2013.

The Issues Paper invited comment on some initial evaluation issues and some questions

B11 The Issues Paper set out key assumption made by Orion which we had identified from our initial analysis of Orion's CPP proposal, and from the report of the independent verifier, as requiring further analysis.

B12 We invited comment on these and other matters:[230]

B12.1 Orion's proposal is based on a specific forecast for demand growth;

B12.2 Possible alternatives to Orion's sub transmission architecture plan or transparency on the sensitivities of costs to any relaxation in its underlying assumptions;

B12.3 Orion's sub transmission architecture planning process is based on standards which are at the top end of network security planning practice in New Zealand;

B12.4 Orion has made specific assumptions on quality and has concluded that consumer expectations are unchanged following the earthquakes;

B12.5 Orion's proposed price-quality path is based on levels of operating expenditure and replacement capital expenditure that are higher in inflation adjusted terms than expenditure levels before the earthquakes;

B12.6 The price impact of Orion's proposed recovery of additional costs in the period before April 2014, which were incurred in response to the earthquakes, and revenues it expected to earn in the period before April 2014 but did not earn because electricity use was lower than expected after the earthquakes; and

B12.7 The impact of Orion's proposed alternative depreciation methodology, which defers costs and some of the price increases to later years.

B13 We provided the following questions for consumers and stakeholders to consider. The questions were provided as a guide and were not intended to exhaust or restrict the issues that interested parties might cover in submissions.

[230] Commerce Commission, *Invitation to have your say on Orion's proposal to change its prices and quality standards; Issues to explore and consider*, 1 May 2013

Recovery for costs incurred by Orion in responding to the earthquakes

Question 1

Should prices charged to consumers increase from April 2014 to recover costs Orion has already incurred in responding to the Canterbury earthquakes? If so, should all of these costs be recovered from consumers or only some of these costs (with the rest borne by Orion)?

Compensation for revenue to date being lower than expected revenues

Question 2

Should Orion be allowed to increase its future prices to consumers from April 2014 to compensate it for the lower than expected revenues it earned over the period from the time of the earthquakes to April 2014? If so, should consumers make up all or only some of the revenues Orion expected to earn?

Proposed increases in operating and capital expenditure

Question 3

Do consumers in Orion's network area consider that the highest priority goal for Orion's electricity distribution network for the next five years is:

a) reducing the risk of power outages and how long it takes to restore power

b) improving the network's ability to cope with high impact but infrequent events (like severe storms or earthquakes) or

c) limiting the increase in prices consumers have to pay?

Question 4

Do consumers in Orion's network area prefer smaller price increases, even if this may mean a greater chance of being without power? Or is it more important to minimise the risk of electrical faults?

Question 5

Would consumers in Orion's network area prefer to pay higher prices and have two cables supplying Rawhiti and Waimakariri, or are you willing to accept the possibility of, say, a two hour localised loss of power if the existing cable fails?

Question 6

Would consumers in Orion's network area prefer the power cable to Rawhiti to be placed underground, even if this has a higher total cost, or would you prefer the cable to Rawhiti to be constructed at the least possible cost?

Deferring the impact of future price increases

Question 7

Would consumers in Orion's network area prefer to accept some risk of power outages from faults, or high impact but infrequent events from storms or earthquakes, if it meant delaying part of the proposed price increases? Or is it more important to improve the architecture of the network as quickly as possible?

Question 8

Would consumers in Orion's network area prefer that Orion leaves older network assets in place, where safety is not impacted, to minimise the price impact of spending to replace such assets, even if this means a higher level of risk of power outages from faults in the future?

Is a smaller initial increase in prices preferred even if it means higher prices in the medium term?

Question 9

Would consumers in Orion's network area prefer a smaller initial increase in price if it means accepting larger ongoing annual price increases?

Question 10

Do consumers in Orion's network area prefer to pay higher prices beyond 2019 for costs Orion will incur before 2019, or would they expect prices to more quickly reflect the costs of Orion's proposed expenditure?

Attachment C: Recovery of past costs and revenues (claw-back)

Purpose of this attachment

C1 This attachment:

C1.1 summarises Orion's proposed recovery from consumers of *all* past additional costs incurred and lower than forecast revenues resulting from the Canterbury earthquakes (claw-back), including how this amount was calculated;

C1.2 explains that the potential scope of claw-back is limited to the transition period between first earthquake in September 2010 and the start of the CPP period on 1 April 2014;

C1.3 notes that we will only exercise our discretion to apply claw-back following a catastrophic event where costs have not already been accounted for *ex ante* in the price-quality path;

C1.4 outlines the reasons for our view that Orion is likely to have already received some *ex ante* compensation for catastrophic events under its current price-quality path (although, any allowance is not explicit, so the possibility of claw-back cannot be discounted);

C1.5 summarises our view that the risks of additional costs and lower than forecast revenues should be shared between Orion and consumers, and explains why this approach is more consistent with the Part 4 purpose statement (and the regulatory regime more generally) than Orion's proposed approach;

C1.6 explains the reasons why we think past additional costs due to the earthquakes and lower than forecast revenues should be considered separately when assessing claw-back;

C1.7 explains our view that Orion should be allowed to claw-back $28.6m of past additional net costs from consumers over the five year CPP period, but receive no allowance for past lower than forecast revenues; and

C1.8 notes that the WACC for DPPs and CPPs determined under the cost of capital IM incorporates some *ex ante* allowance for the risks of catastrophic events, although this is not directly relevant to Orion's claw-back proposal (because Orion's current price-quality path was not determined based on the IMs).

Orion has proposed recovery of all past lower than forecast revenues and additional expenditure due to the Canterbury earthquakes

Orion's CPP proposal includes claw-back of $86.3m

C2 Orion has proposed claw-back of $86.3m to recover lower than expected revenues and additional expenditure due to the earthquakes. This claw-back amount is calculated over the period from when the first major earthquake hit in September 2010 until the start of the CPP period on 1 April 2014 (the claw-back period).[231]

C3 Orion explains its claw-back proposal as follows:[232]

> Our proposed claw-back allowance seeks to recover our earthquake related costs which were not anticipated or insurable when our DPP price path was set. This ex-post cost recovery is:
>
> - consistent with the manner in which our DPP price path was set (because our DPP price path includes no allowance for unanticipated costs of this nature)
>
> - in the long term interests of consumers.
>
> It ensures that we retain the economic incentives to continue to provide the services that consumers require of us because we are compensated for our prudent and efficient costs in providing those services, including a risk adjusted commercial return on our investment.
>
> Our proposed cost recovery includes ex-post compensation for reduced revenues as a result of the earthquakes which has contributed to our under recovery of costs since the earthquakes.

C4 The proposed claw-back amount of $86.3m is calculated as the present value (on 31 March 2014) of the difference between BBAR before tax and actual or projected revenues received over the claw-back period.[233] This approach assumes that:

C4.1 Orion recovers its actual (and projected) costs for the claw-back period, including a return on and of the RAB and commissioned assets;

C4.2 damaged and destroyed assets remain in the RAB; and

C4.3 new capital expenditure enters the asset base in accordance with the asset valuation IM as it is commissioned.

C5 Orion proposes to spread recovery of claw-back over 10 years. The main reason for proposing to recover claw-back beyond the CPP period is to minimise price shocks to consumers.[234]

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231 Orion submitted its CPP proposal in February 2013, which is two years from the February 2011 earthquake. We have allowed claw-back from the first earthquake in September 2010 by varying the IMs (with agreement from Orion). See paragraphs 4.16-4.17.

232 Orion "Proposal for a customised price-quality path" (19 February 2013), p.162.

233 Orion "Proposal for a customised price-quality path" (19 February 2013), p.168-175.

> Our proposal is to spread the catastrophic event claw-back recovery over 10 years. This comprises at least two regulatory periods – the initial five year CPP regulatory period followed by one or more CPP or DPP regulatory periods. Our key driver for spreading this recovery over more than one period is to minimise price shocks to our consumers. At the same time, it is essential that the catastrophic event claw-back is ultimately recovered in order to maintain long term incentives to invest in the Orion network, and all electricity distribution networks regulated under Part 4 of the Commerce Act.

C6 Under Orion's proposal, $43m would be recovered from consumers during the CPP period, and the remaining $43m recovered in the five years after the CPP period.

Orion's proposal includes claw-back of both additional expenditure and lower than forecast revenues

C7 Two main components are captured in Orion's proposed claw-back amount:

C7.1 Additional costs due to the earthquakes, including increased operating expenditure and a return on and of additional capital expenditure. This increased expenditure reflects the costs of repairing and replacing damaged and destroyed assets resulting from the earthquakes.[235]

C7.2 Lower than forecast revenues due to lower than expected demand. This reflects all factors that influence demand including the impact of customers moving away from Orion's network area (eg to other EDB areas), or having their electricity consumption constrained due to outages on Orion's network (or damage to their properties).

C8 Additional costs and lower than forecast revenues are not separated in Orion's proposal. Submissions from Orion and its experts argue that these two components of claw-back should be treated the same, and both should be fully recovered from consumers *ex post*.[236]

C9 We asked Orion to estimate the portion of the proposed claw-back amount that is attributable to additional net costs and the portion attributable to lower than forecast revenues.[237] This was done by comparing the present value of three different paths:

C9.1 the first path calculates the BBAR for each year from 2011 to 2014, representing the total costs borne (or expected to be borne) by Orion in each of these financial years;

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234 Orion "Proposal for a customised price-quality path" (19 February 2013), p.86.

235 The expenditure is included net of insurance proceeds received by Orion in the claw-back period.

236 See, for example, paragraphs C91 to C93 below for further discussion.

237 We suggested a methodology for the calculations and invited Orion to comment on whether it could identify a more appropriate approach. In carrying out the calculations, Orion adopted our suggested methodology and adjusted the inputs to the projected DPP price path revenues to more accurately reflect expected values.

C9.2 the second path is the projected DPP price path revenues from 2011 to 2014 that would likely have applied absent the earthquakes. For 2011 and 2012 the projected path was calculated by rolling over Orion's 2010 revenues under its DPP price-quality path. For 2013 and 2014 the projected path was calculated from an estimate of the path that would have applied to Orion under the 2012 DPP reset;[238] and

C9.3 the third path is the actual or forecast regulated revenues for 2011 to 2014, with 2011 to 2012 based on actual revenues and 2013 to 2014 based on forecast revenues.

C10 In the calculation process Orion identified that its net costs for 2013 had been under-estimated as a result of including a regulated revenue amount as a credit in the BBAR. Correcting this results in a present value of the claw-back amount of $87.8m (rather than $86.3m).

C11 Of the total claw-back amount of $87.8m, Orion's calculations indicate that approximately $44.8m is due to additional net costs and approximately $43.0m is due to lower than forecast revenues. The approach to estimating the split between additional net costs and lower than forecast revenues is described below.

C11.1 The 'additional net costs' component of claw-back is calculated by comparing the first path, the 2014 present value of BBAR for the claw-back period (as at 31 March 2014), with the second path, the present value of Orion's price path revenues for the claw-back period. The present value of BBAR in excess of the present value of the price path revenues is assumed to represent additional costs incurred in response to the earthquakes. Orion estimates this to be $44.8m.

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[238] In respect of the projected DPP price path revenues, Orion's response to our request to calculate the three different paths explains:

"Our FY11 and FY12 revenues are based on DPP compliant prices and budgeted quantities for FY11 and FY12 (net of transmission and other pass through costs). These budgeted values were prepared prior to the earthquakes...

[T]here is no reason our DPP would not have been reset along with other non-exempt EDBs in the absence of the earthquakes. Accordingly we have used the models published alongside the final 2012 DPP EDB reset determination to estimate our reset DPP price path. We have used the same formulae and logic as used for the other non-exempt businesses, with specific input values for Orion where appropriate. Most of these are derived from FY10 data which is included in our CPP models (ie: it is IM compliant), our 2010 AMP and the DPP forecasting models. For the purpose of this analysis we have not included the insurance opex uplift provided to other non-exempt EDBs which was (at least) partially in response to the Canterbury earthquake impacts on the NZ insurance market."

For the purpose of this draft decision, we have adopted the approach proposed by Orion. We will consider further whether this is the correct approach before making our final decision. Once we have received submissions, we may consider other approaches which could include, for example, projecting the existing DPP prices out to 2013 and 2014.

C11.2 The 'lower than forecast revenues' component of claw-back is calculated by comparing the second path, the present value of Orion's price path revenues for the claw-back period and forecast revenues for this period. The amount by which Orion's present value of price path revenues exceeds the present value of actual and forecast revenues over this period is assumed to represent the value of lower than forecast revenues resulting from the earthquakes. Orion estimates this to be $43.0m.

Consideration of claw-back is limited to the transition period between the September 2010 earthquake and the start of the CPP period

C12 The potential scope of claw-back is time constrained. Consideration of claw-back is limited to the additional costs and lower than forecast revenues between the first earthquake in September 2010 and the start of the CPP period on 1 April 2014.

C13 At the beginning of the CPP period on 1 April 2014, Orion's price-quality path will be reset. This reset will include allowances for increased expenditure and reduced revenues resulting from the earthquakes for the five year period from 1 April 2014 to 31 March 2019. Consumers will pay for all efficient and prudent earthquake-related costs incurred by Orion after 1 April 2014.

C14 Our decision regarding claw-back is limited to the extent to which consumers should also bear the financial impacts of the earthquakes prior to 1 April 2014.

C15 Consistent with the IMs, major categories of earthquake-related costs are recovered from consumers separately from claw-back.

C15.1 The approach to RAB, which has no *ex ante* approval or *ex post* prudency review, means all capex (once commissioned) is added to the RAB and can earn a return on and of capital. Therefore, all expenditure to mitigate the impacts of high impact, low probability events is recovered (though there may be a delay between the expenditure and its inclusion in the RAB for pricing purposes). So is any capital investment to repair, restore or improve services after a catastrophic event (with the narrow exception of depreciation of, and return on, an asset post commissioning but before the next reset, if claw-back is not applied).

C15.2 The approach to damaged and destroyed assets allows a regulated supplier to earn a return on and of capital on such assets (from the time the CPP is set) though firms in a workably competitive market would be unlikely to do so.[239] The value of damaged or destroyed assets (to the extent that they

[239] In a workably competitive market, a supplier could only continue to earn a return on and of damaged and destroyed assets to the extent that all competitors were sufficiently affected by the catastrophic event, such that the industry's costs had increased (including costs for new entrants) and prices increased to allow recovery of these costs, or the supplier had a contract with its customer that provided such compensation.

exceed insurance proceeds) remains in the RAB and will be continue to be recovered through future prices.[240] Orion has estimated that the GAAP value of damaged and destroyed network assets that remain in the RAB after the Canterbury earthquakes is approximately $51.3m after tax ($71.3m before tax).[241]

C15.3 The impact of reduced demand in future periods (ie after the claw-back period) is borne by consumers. Prices are reset at the beginning of the CPP period to reflect the impact of reduced demand. Therefore, this impact will be met by consumers after the CPP reset.

Costs associated with catastrophic events should only be clawed-back to the extent that a diversified investor would require compensation and where costs have not been accounted for ex ante

C16 As described in the regulatory framework chapter, claw-back is discretionary. In particular there is no 'regulatory compact' guaranteeing *ex post* compensation for additional costs or lower than forecast revenues because:

C16.1 claw-back is discretionary under the Act; and

C16.2 the IMs only provide for the possibility of claw-back.[242]

C17 *Ex post* compensation (via claw-back) should only be provided where sufficient allowance for risk (taking into account diversification) is not provided *ex ante*. Where a supplier receives an *ex ante* allowance for bearing certain risks, it would be inappropriate to subsequently provide *ex post* compensation if the risk eventuates.

C18 In the IMs reasons paper we noted that if a supplier receives *ex ante* compensation for a risk, in the form of a self-insurance allowance, then *ex post* compensation would not be provided.[243] Further, the definition of catastrophic events in the IMs is limited to events for which "the full remediation costs are not provided for in the DPP or CPP".[244]

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240 The overall sharing of the financial impacts of the earthquakes between Orion and its consumers is relevant when considering our approach to claw-back. For example, the incentives associated with allowing claw-back would be likely to differ depending on whether damaged and destroyed assets were allowed to remain in the RAB.

241 Orion New Zealand Limited, Audited Financial Statements for the year ended 31 March 2012, Notes to the financial statements, Note 2. "Estimated impacts of the Canterbury earthquakes", "Write-down of the electricity distribution network" p.44.

242 See paragraphs A95 to A98 in Attachment A].

243 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph K3.26.

244 Commerce Commission "Electricity Distribution Services Input Methodologies Determination 2012" (15 November 2012), clause 5.6.1(d)(iii).

C19 Consequently, in the context of Orion's claw-back proposal, we have considered what (if any) compensation for the risks of catastrophic events Orion received *ex ante*. As described in the regulatory framework chapter, we will only exercise our discretion to apply claw-back following a catastrophic event where the costs have not already been accounted for *ex ante* in the price-quality path.[245]

Orion's current prices have likely included some ex ante allowance for catastrophic risk

C20 In our view, Orion is likely to have received at least some *ex ante* compensation for the risks of catastrophic events. This is because:

C20.1 earthquake risk was anticipated by Orion;

C20.2 Orion's current regulated prices are a roll-over of historic prices which were derived from prices set by Orion itself in the early 2000s;

C20.3 evidence of actual returns is not inconsistent with the view that Orion's current price path has been sufficient to include some provision for catastrophic risk; and

C20.4 insurance for earthquake risks was available and Orion is likely to have self-insured to some extent.

C21 Considering these factors in combination, we think Orion's current price path, which was originally set under the Part 4A thresholds regime, likely includes some provision for the risks of catastrophic events. In this context it is important to recognise that the amount of *ex ante* provision should be assessed against the risk and scale of potential loss as perceived by a diversified investor.

C22 However, we recognise that no explicit *ex ante* allowance for catastrophic risks has been made in the assessments underlying the setting of price paths, albeit that such assessments have included general provisions to guard against inadequate incentives for investment based on the Commission's long standing views favouring dynamic efficiency over lower short term prices.

C23 Given that material uncertainty exists regarding the extent of any *ex ante* compensation for catastrophic risk received by Orion, we do not think the evidence is clear enough to eliminate the possibility of Orion receiving claw-back. Rather, any *ex ante* compensation Orion is likely to have received is simply a factor that we have considered when exercising our discretion regarding claw-back.

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[245] See paragraphs A99-A102 for further discussion.

Earthquake risk was anticipated by Orion

C24 Earthquake risk was identified by the Christchurch Engineering Lifelines Group in the 1990s.[246] Orion was aware of earthquake-related risks and undertook vulnerability assessments. As described by Professor Yarrow, earthquake risk was a 'known unknown'.[247]

C25 In previous asset management plans (AMPs) Orion highlighted earthquake risk. In its 2006 AMP, Orion noted that there was "…a 65% chance of a major earthquake occurring in Canterbury in the next 50 years".[248] Asset vulnerability assessments for liquefaction and related damage were included in the 2006 AMP.

C26 Strengthening work was conducted by Orion during the 1990s and 2000s to address earthquake risk. Orion notes that the work of the lifelines group "…led to the inception of an ongoing seismic strengthening programme that commenced in 1996 and progressed systematically each year".[249]

C27 Orion reports that $6m of pre-earthquake expenditure on seismic protection saved $60-$65m in direct asset replacement costs after the earthquakes.[250]

Orion's current regulated prices are a roll-over of historic prices set by Orion itself

C28 Orion's current prices are based on a roll-over of historic prices originally set under the previous Part 4A thresholds regime. Therefore, current prices were not set using a building blocks approach.

C29 The history of regulatory price control in New Zealand means Orion's current regulated prices are fundamentally derived from historic prices determined by the company itself in the early 2000s. The approach to deriving Orion's current prices, and the history of the Part 4A thresholds regime, is briefly summarised below.

C29.1 The first Part 4A thresholds period was from August 2001 to March 2004. Thresholds determined by the Commission were used as a screening mechanism to identify EDBs whose performance warranted further investigation and, if required, regulatory price control.

C29.2 Under the thresholds regime, prices were not built up from costs allowed by the regulator. Rather, the initial prices had been set by suppliers themselves. The initial threshold adopted by the Commission was that base-weighted notional annual revenue would not increase in nominal terms.

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246 Centre for Advanced Engineering "Risks & realities: A multi-disciplinary approach to the vulnerability of lifelines to natural hazards" (November 1997).

247 Professor Yarrow "The Orion CPP determination" (30 May 2013), p.7.

248 Orion "Asset management plan: Electricity network – year ending 31 March 2006" (June 2005), p.150.

249 Orion "Proposal for a customised price-quality path" (19 February 2013), p.66.

250 Orion "Proposal for a customised price-quality path" (19 February 2013), p.23.

C29.3 The thresholds were revised in April 2004 for the 5 year period to 2009. There was a quality threshold (comprising reliability and consumer engagement criteria) and a price threshold. The price threshold was based on a CPI – X approach, where the X factor was set by benchmarking.[251]

C29.4 In April 2009, the thresholds were rolled over. The remedy for breaches of the thresholds was to declare price control. However, we concluded that it would be more cost-effective to address any breaches through the first DPP to be determined under (the then new) Part 4 regime.

C29.5 The first DPP applied from April 2010. The April 2010 DPP was essentially a roll-over of existing prices; it took starting prices as the prices that applied as at 31 March 2010 and applied an annual rate of change as CPI - 0%.[252]

C29.6 In November 2012 the DPP was reset. This was the first reset determined using a building blocks approach. However, Orion was excluded from the November 2012 reset because it decided to seek a catastrophic event CPP following the earthquakes.

C30 Therefore, no *explicit ex ante* compensation for catastrophic risk is included under Orion's current price path. This is because Orion's current prices were not set using explicit building blocks.

C31 However, to the extent that Orion's prices at August 2001 allowed for costs associated with the risks of catastrophic events, current prices are likely to include an allowance for insurance and self-insurance costs.

C32 Marsh notes that "from circa 1980 to 2001, New Zealand EDBs purchased T&D insurance cover through a scheme called "TRIP" (transmission reticulation insurance programme)". In 1999 Orion purchased $41m of cover under the TRIP scheme (which provided material damage cover only).[253]

C33 Unless Orion reduced its prices when the TRIP scheme ended in 2001, its current price path will have continued to include a self-insurance premium equivalent to that purchased under TRIP.

C34 Given that earthquake risk was well known to Orion, and it incurred costs to manage this risk (including the strengthening programme that commenced in 1996 and T&D

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[251] The 'X factor' was informed by industry-wide improvements in efficiency (over the period from 1996-2003) and relative performance of groups of distribution businesses (over the same time period). The X factor was based on high-level benchmarking and did not explicitly consider specific costs that should be ruled in or out of the price threshold. Orion's X factor was 1%.

[252] The X factor was 0% for all EDBs (including Orion) under the first DPP.

[253] Marsh "Orion's network catastrophe insurance – Material damage (MD) and business interruption (BI): A second expert report for Orion and the Commerce Commission" (25 June 2013), p.4.

insurance purchased under the TRIP scheme), it is reasonable to expect that some *ex ante* compensation is built into its current prices.

Evidence of actual returns is not inconsistent with the view that Orion's current price path has been sufficient to include provision for catastrophic risk

C35 Evidence of actual returns tends to support the view that Orion's current price path has provided at least some *ex ante* compensation for the risks of catastrophic events. Orion's disclosures prior to the Canterbury earthquakes show ROIs of 10.09%, 10.02% and 8.60% for the 2008, 2009 and 2010 disclosure years respectively.[254] As at 1 September 2009, the mid-point and 75th percentile post-tax WACCs for EDBs (estimated under the cost of capital IMs) were 7.06% and 7.78% respectively.[255]

C36 Orion's returns for these years were not disclosed in accordance with the IMs. However, the most material changes affecting ROIs as a result of introducing the IMs were:[256]

C36.1 a change in tax treatment from tax payable to deferred tax, which was a *NPV-neutral change*;

C36.2 a change in treatment of capital contributions, which was a *NPV-neutral change*; and

C36.3 allowing adjustments to the initial RAB, which was an *NPV-positive change*.[257]

C37 Therefore, although Orion's current price path has no explicit allowance for self-insurance, it appears to have been sufficient to include some provision for self-insurance (or more precisely to compensate diversified investors for the risks as assessed from their, rather than Orion's, perspective). In our view, the *practical effect* of Orion's current price-path has been to allow some *ex ante* compensation for catastrophic risk.

Insurance for earthquake risks was available and Orion is likely to have self-insured to some extent

C38 Orion argues that insurance for its transmission and distribution (T&D) assets is uneconomic. In its CPP proposal, Orion refers to estimated premiums of

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254 Orion "Information disclosure for the year ended 31 March 2010" (10 August 2010), p.17.

255 The corresponding mid-point and 75th percentile vanilla WACCs were 8.05% and 8.77% respectively. Commerce Commission "Determination of the cost of capital for services regulated under Part 4 of the Commerce Act 1986 – Decision number 718" (3 March 2011), paragraph 2.

256 Orion's ROIs for the 2008, 2009 and 2010 disclosure years are primarily based on year-end cash flows, which suggests these may be underestimates of returns.

257 See paragraphs 4.13.1 and 4.13.2 of the November 2012 DPP reset for further discussion. The RAB adjustments would not materially affect the disclosure returns in Orion's case.

approximately $100 million per annum, based on an asset replacement value for cables and lines of approximately $1 billion.[258]

C39 In our view, Orion has overstated the unavailability of insurance for its T&D assets. The analysis provided by Orion to support its conclusion that insurance is "uneconomic" relies on estimated premiums for purchasing cover for the full $1 billion of its T&D assets.

C40 However, insurance cover for the full value of the network is not required. It is extremely unlikely that a single catastrophic event would damage or destroy an entire electricity distribution network. Rather, damage from events such as earthquakes tends to be relatively localised.

C41 Aon comments that the availability and cost issues in respect of T&D coverage are not as pronounced as Orion and Marsh indicate, particularly when a thorough analysis of risks and mitigation approaches to the various assets is undertaken.[259] For example, Aon notes that if a policy limit of $50 million was selected, the premium might be in the order of $3.75 million to $5 million for "full cover".[260]

C42 Further, Aon emphasises that insurance (either external or captive) is not the sole means of risk financing (as implied by Orion and Marsh). Rather, Aon notes that enterprises need to be "savvy in their risk financing requirements":[261]

> …risks are holistic, therefore a holistic approach is required to be taken in relation to risk financing them. This is especially so for those risks which have been identified as having a high impact but low probability (HI/LP). Some HI/LP risks will be unique to the sector or enterprise and be uninsurable.
>
> Differing risk financing approaches will be appropriate for enterprises with differing positions in their life own cycle (or the life cycle of their sector in which they operate). Enterprises that are mature (such as Orion) could reasonably be expected to have set aside capital reserves from their profits over the years in order to (at least in part) risk finance for HI/LP risks. Insurance cover would only be needed in excess of such reserves up to an (independently) calculated estimated maximum loss limit. The dependency on insurance as a risk financing mechanism will start to tail off once enterprises have achieved a scale that will allow day to day losses to be funded from cash flows. Day to day losses can be calculated as a known constant and are funded by incorporating their cost into price margins. That approach is taken for example in instances of stock shrinkages (which are uninsurable).
> ….
> Where the cost of capital outweighs the cost of risk transfer, then the option is to transfer risk to an insurer or other financial institution. Clearly though in determining such pros and cons, close consideration must be taken of the risk analysis that has been undertaken especially as to the maximum possible loss and the maximum retention (deductible) that the

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258 Orion "Proposal for a customised price-quality path" (19 February 2013), p.569.
259 Aon "Orion CPP Proposal – Insurance Review" (May 2013), p.4.
260 Aon "Orion CPP Proposal – Insurance Review" (May 2013), p.4.
261 Aon "Orion & Risk Financing" (24 July 2013), p.2.

enterprise can bear safely. Only then will the most cost effective risk financing solution be achieved. That solution has to be continuously reviewed. Risk profiles continue to evolve and develop over time.

C43 Similarly, Professor Yarrow highlights that the "…majority of risks faced by businesses are 'self-insured' via balance sheet positions:[262]

> By self-insurance here I mean any decision to bear or 'retain' a particular risk, which may or may not involve the deliberate setting aside of hypothecated or ear-marked funds. From an economics perspective, any ear-marking for particular purposes is usually notional only, since the relevant funds are, ultimately, not beyond the reach of companies if, at some future date, they are required for other purposes. In fact, the great majority of risks faced by businesses are 'self-insured' via balance sheet positions, not by hypothecation, and, if greater insurance is believed to be warranted, it is most commonly achieved by simple strengthening of balance sheets.

C44 Incenta agrees with Professor Yarrow that businesses can self-insurance against risk, and that this may require a strong balance sheet.[263] However, they argue:[264]

> Importantly, however, allocating risk to businesses to bear on customers' behalf is not a free option and it is insufficient for a firm to merely think about risk for it to be compensated. Instead, it requires that a premium be added to prices. When faced with the premium on prices for businesses bearing the risk, the decision for customers is whether they benefit more from paying the business to bear the risk or by bearing the risk themselves and paying lower prices.

C45 In our view, Orion is likely to have self-insured against the risk of catastrophic events, at least to some extent. As described earlier:

C45.1 Orion's current price-path was derived from prices it set itself in the early 2000s. To the extent that Orion's prices at August 2001 allowed for costs associated with the risk of catastrophic events, current prices will implicitly include provision for self-insurance;[265] and

C45.2 Orion's current price path appears to have been sufficient to provide some compensation for the risks of catastrophic events. This has the practical effect of providing a self-insurance allowance.[266]

C46 Further, Orion has a strong balance sheet built up over many years. A strong balance sheet can be considered a self-insurance fund.[267]

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262 Professor Yarrow "The Orion CPP determination" (30 May 2013), p.6.
263 Incenta "Response to Professor Yarrow Advice on Orion CPP Determination" (27 June 2013), p.16.
264 Incenta "Response to Professor Yarrow Advice on Orion CPP Determination" (27 June 2013), p.9.
265 See paragraphs C28to C34above for further discussion.
266 See paragraphs C35to C37above for further discussion.

C47 More fundamentally, as noted earlier it is important to assess whether *ex ante* provision for catastrophic risk has been provided from the perspective of a diversified investor.

C48 Despite this, there is uncertainty regarding the extent to which Orion received *ex ante* compensation for the risks of catastrophic events. Therefore, evidence that Orion is likely to have received some ex ante compensation is simply one factor that we have considered when exercising our discretion regarding whether claw-back should be applied.

Risk sharing between Orion and consumers is consistent with the Part 4 regulatory regime

C49 In exercising our discretion regarding whether claw-back should be applied, we have considered the Part 4 purpose and the regulatory regime more generally.

C50 In our view, risk-sharing between Orion and consumers is consistent with the Part 4 regulatory regime. Allowing claw-back for *all* additional costs and lower than forecast revenues associated with a catastrophic event (as proposed by Orion), on the other hand, is inconsistent with the regulatory regime because:

C50.1 providing claw-back for *all* past additional costs and lower than forecast revenues is inconsistent with the Part 4 purpose;

C50.2 incentive regulation provides no guarantees to suppliers; and

C50.3 claw-back is something that good-practice regulation seeks to avoid where possible.

Providing claw-back for all additional costs and lower than forecast revenues is inconsistent with the Part 4 purpose

C51 To meet the Part 4 purpose, price-quality regulation must mimic some of the pressures that rivalry exerts in workably competitive markets. This is necessary for price-quality regulation to promote outcomes consistent with outcomes in workably competitive markets.

Workably competitive markets manage risks efficiently

C52 Workably competitive markets tend to manage risks efficiently, by allocating identified risks to the party considered best placed to manage them.[268]

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[267] Orion's 2013 audited accounts indicate that it has a strong balance sheet and good cash flows. Orion's long-term borrowing of $61.1m is low when compared to total shareholder equity of $632.8m. Further, the after tax net profit of $48.1m provides headroom for funding interest costs on additional borrowing.

[268] Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), p.30.

C53 Regulated suppliers and their investors are generally better placed to manage risks of catastrophic events (such as earthquakes) than consumers. For example:

C53.1 suppliers can manage risks associated with catastrophic events in various ways, such as insurance, self-insurance and investment in network strengthening/resiliency; and

C53.2 investors can reduce their exposure to catastrophic risks by diversification. For example, investors do not require compensation for the risk of electricity consumers relocating following a catastrophic event. For a diversified investor, increased demand in regions which consumers relocate to will offset the reduced demand in the area where the catastrophic event occurred.

C54 Under Orion's proposed approach to claw-back, consumers would bear all the risks and costs associated with catastrophic events. Orion proposes that consumers should compensate it for all additional costs and lower than forecast revenues resulting from the earthquakes, through higher prices after the event.

C55 Professor Yarrow suggests that it is unlikely workable competition would lead to a situation where the earthquake risk was removed from suppliers and allocated to consumers.[269]

> Prima facie, it does not appear to be the case that Christchurch electricity consumers are so well placed to bear earthquake risk that workable competition would lead to outcomes and arrangements in which all relevant risk was removed from suppliers and allocated to consumers. Perhaps the most obvious point is that suppliers, particularly larger suppliers, at least have the opportunity to spread risks beyond the Christchurch area via ownership diversification or via borrowing in geographically wider markets.

C56 Implementing Orion's claw-back proposal would create a moral hazard.[270] Regulated suppliers (such as Orion) would be incentivised to take a risky approach to managing catastrophic events, knowing that consumers would bear the full costs *ex post* if catastrophe occurs.

C57 In our view, isolating regulated suppliers from the risks of catastrophic events is inconsistent with the Part 4 purpose. The Part 4 purpose is focussed on serving the long-term interests of consumers by promoting outcomes consistent with workably competitive markets. It is important that suppliers bear (at least some of) the risks of catastrophic events to strengthen their incentives to manage these risks efficiently (consistent with s 52A(1)(b)).

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[269] Professor Yarrow "The Orion CPP determination" (30 May 2013), p.2.

[270] A moral hazard is a situation where a party will have a tendency to take risks because the costs that could result will not be felt by the party taking the risk.

Orion's proposal does not meet the Part 4 purpose

C58 Orion's claw-back proposal is inconsistent with the Part 4 purpose statement. For the reasons described above, we consider that consumers bearing *all* the costs and risks of catastrophic events is inconsistent with the outcome that would result from a workably competitive market.

C59 Vector has argued that our analysis in paragraphs C52to C57.above is not valid in the context of the Part 4 purpose statement. They believe we should be focussed on the objectives in limbs (a) to (d) of the purpose statement only, as opposed to more general workably competitive market considerations:[271]

> What ultimately matters, in terms of the purpose of Part 4 of the Commerce Act, is what approach best promotes objectives (a) to (d) to the long-term benefit of consumers; with relevant considerations being consumer desire for prudent investment and maintenance in the network to occur and for recovery from natural disasters to occur in a timely manner.

C60 In response, Professor Yarrow questions whether Vector's approach is appropriate, expressing the view that "from an economics perspective the limbs {of the Part 4 purpose statement} are not separable".[272] He also notes (emphasis added):[273]

> The four limbs do not themselves exhaust the possible outcomes that might be produced by competitive markets and which might be of relevance for the long-term interests of consumers. An obvious example of an omitted factor is product variety, the demand for which will tend to reflect differences in the preferences of different consumers or of different types or groups of consumer. **Perhaps more relevantly, (a) – (d) do not mention risk sharing, which tends to be a matter of great importance for consumer welfare in utility sectors and which obviously is a central issue in the context of the Orion claw-back application**.

C61 Risk allocation between suppliers and consumers is an important consideration when applying the Part 4 purpose in the Orion CPP context – most parties discuss risk allocation in their submissions. As well as impacting on investment (limb (a)), the degree of risk sharing can have important implications for a supplier's incentives to improve efficiency (limb (b)) and ultimately share the benefits of efficiency gains with consumers (limb (c)).

C62 We think the conclusion that consumers should not bear all the costs and risks of catastrophic events is supported both by considering how workably competitive markets might operate generally, and by considering limbs (a) to (d) of the Part 4 purpose statement. In our view:

C62.1 limb (a) "incentives to innovate and to invest" must be balanced against limbs (b) "incentives to improve efficiency", (c) "share with consumers the

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271 Vector "Release of expert reports for public consultation" (27 June 2013), paragraph 27.
272 Professor Yarrow "Further advice on claw-back" (4 August 2013), p.9.
273 Professor Yarrow "Further advice on claw-back" (4 August 2013), p.10.

benefits of efficiency gains" and (d) "limited in their ability to extract excessive profits";

C62.2 to be consistent with limb (b), suppliers must have incentives to improve efficiency. Dynamic efficiency is a crucial dimension of economic efficiency, and relates to investing and innovating over time in the most optimal manner (so that welfare of society is maximised over time). This includes efficient investment to manage the risk of catastrophic events;

C62.3 the approach to risk allocation impacts on incentives to innovate and invest (limb (a)), as well as economic efficiency (limb (b)). Providing appropriate incentives to manage risks efficiently will lead to the opportunity for consumers to benefit from sharing of efficiency gains (limb (c)).

C63 If suppliers were 'made whole' after a catastrophic event via claw-back, economic efficiency would suffer. Suppliers would not face positive incentives to invest in the optimal amount of network strengthening and resilience prior to a catastrophic event occurring. Rather, they would be indifferent to whether the investment occurs *ex ante* or *ex post*.[274]

C64 The benefits of investing prior to a catastrophic event are highlighted in Orion's CPP proposal. Orion notes that $6m of pre-earthquake expenditure on seismic protection saved it $60-$65m in direct asset replacement costs.[275] This example highlights the importance of ensuring that regulated suppliers face appropriate incentives to manage risk *ex ante*.

C65 Efficient risk management by suppliers is likely to ultimately benefit consumers. For example:

C65.1 if suppliers face appropriate *ex ante* incentives to mitigate risk (including insurance, self-insurance and network strengthening), the burden faced by consumers will be spread efficiently over a long period of time. This minimises the costs faced by consumers after the event (a time at which they are also facing other disaster-related costs). This is consistent with limbs (b) and (c) of the purpose statement; and

C65.2 network strengthening work prior to a catastrophic event reduces the disruption to consumers when the event occurs, ensuring that consumers continue to receive services at a quality they demand (consistent with limb (b) of the purpose statement).

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[274] This is because ex ante expenditure on network strengthening and resilience enters the RAB and is able to be recovered from consumers, once prices are reset. See paragraph C15.1 above.

[275] Orion "Proposal for a customised price-quality path" (19 February 2013), p.23.

C66 Regulated suppliers are unlikely to face incentives to manage risks efficiently if they are compensated in full by consumers after a catastrophic event occurs. Therefore, allowing *ex post* compensation for *all* additional costs and lower than forecast revenues associated with a catastrophic event does not meet the Part 4 purpose.

C67 In the event that suppliers are compensated *ex post* for additional net costs incurred by a catastrophic event, but not for lower than forecast revenues, there will still be an incentive to take positive steps to mitigate the risks of damage to their assets. This is because the more assets that are damaged or destroyed by a catastrophic event, the greater the reduction in revenues is likely to be.

Public private partnerships and risk allocation in workably competitive markets

C68 In response to Professor Yarrow's May 2013 report, Castalia considered whether evidence from public private partnerships (PPPs) suggests that workably competitive markets tend to allocate the costs of catastrophic events (such as earthquakes) to suppliers.

C69 Castalia concluded that "…empirical evidence from the actual workably competitive markets for long lived infrastructure shows there is a high degree of explicit risk sharing between the public and private parties for catastrophic events".[276]

C70 The above evidence from Castalia regarding PPPs supports the view that Orion should not be compensated *ex post* by consumers for *all* additional costs and lower than forecast revenues. Rather, Castalia points out that PPPs involve a high degree of risk-sharing.

C71 New Zealand evidence also supports the view that PPPs involve risk-sharing for catastrophic events. For example, the NZTA Transmission Gully PPP business case lists "force majeure events during operations (e.g. an earthquake)" as a shared risk.[277]

C72 Professor Yarrow notes that the Castalia submission "…comes to a conclusion not at all dissimilar to one that I had suggested in my advice". However, he highlights two main limitations when considering PPPs as empirical examples of workably competitive markets:[278]

> (i) Whilst the evidence relates to circumstances in which there is a degree of competition among providers, the single counter-party (to suppliers) is typically an arm of government. In a competitive market, however, we would expect to see multiple buyers, and public procurement is not necessarily either a close substitute for multiple, competing procurers, or a good indicator of what risk sharing arrangements might look like in a competitive market. For example, it is a standard argument in economics, made by Samuelson, Vickrey and Arrow

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[276] Castalia "Orion CPP Application: Submission on Professor Yarrow's Expert Advice" (26 June 2013), p.2.
[277] NZTA "Business Case for Implementation: Transmission Gully Motorway" (25 September 2012), p.XXXIII.
[278] Professor Yarrow "Further advice on claw-back" (4 August 2013), p.3-4.

among others, that governments may be able to bear risk at lower cost than most other counterparties because of their capacity to spread that risk over large communities. Such a view would imply that a government might be expected to (efficiently) bear significantly more risk than a private buyer of services, including when entering into PPPs.

More generally, the various economic factors that influence public procurement decisions are not necessarily similar to those that influence buying decisions in competitive markets. Having been involved in a number of such exercises, I can testify that there can be numerous constraints on what can and can't be done which would be absent in the case of a commercial buyer.

(ii) Force majeure provisions in contracts deal with circumstances which are beyond the control of the contracting parties (a condition certainly satisfied by an earthquake) and make it impossible for the affected party to fulfil its contractual obligations. What is still lacking is evidence to the effect that Orion would not have been able to carry on with its activities in the absence of additional revenue, or of the secure prospect of such additional revenue, from its customers. Whilst doubts have been expressed by submitters about the relevance of Orion's balance sheet, it seems to me obvious that it is a material factor in assessing whether it is impossible for the business to fulfil its obligations.

C73 Based on observations regarding PPPs, Castalia argues that a regulatory approach that involves an *ex ante* allowance for catastrophic events would include "an arrangement to claw-back the excess costs over the amount of the provision in the event of an earthquake, subject to a "light handed" ex post prudency test":[279]

This is essentially a "top up" arrangement which recognises that either the self insurance premium was insufficient, the expected cost was greater, or that the arrangement had not been in place for sufficient time.

C74 Professor Yarrow, however, expresses the view that none of the reasons suggested by Castalia for a "top up arrangement" justify claw-back. He considers that "…the first two are re-visitations of the past to correct mistaken expectations/forecasts, which is an argument that can be used much more broadly and is an open invitation to more intrusive regulation" and "the third does not fit with evidence from competitive markets, or from PPPs for that matter".[280]

Incentive regulation provides no guarantees to suppliers

C75 Orion and other EDBs subject to price-quality regulation under Part 4 operate under a weighted average price cap. The New Zealand regulatory regime adopts an incentive-based approach to regulation, using a CPI-X methodology to setting price-quality paths.

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[279] Castalia "Orion CPP Application: Submission on Professor Yarrow's Expert Advice" (26 June 2013), p.11-12.

[280] Professor Yarrow "Further advice on claw-back" (4 August 2013), p.4.

C76 Incentive regulation provides suppliers with an expectation of a normal return *ex ante*, based on information available at the time of setting the price-quality path. The price-quality path sets an upper limit on the prices that suppliers can charge. However, it is not a guaranteed entitlement to earn a certain level of returns.

C77 Although a supplier might have a reasonable expectation of earning a normal return *ex ante*, it is possible that a normal return is not earned *ex post*. This is because incentive regulation allocates certain risks to suppliers, in order to strengthen incentives to operate efficiently.

C78 The fact that regulated suppliers are not guaranteed to earn a normal return *ex post* was highlighted in the IMs reasons paper (emphasis added):[281]

> Over the lifetime of its assets, a typically efficient firm in a workably competitive market would expect ex ante to earn at least a normal rate of return (i.e. its risk-adjusted cost of capital). Because allowing a firm the expectation of being able to earn normal returns over the lifetime of an investment provides it with the chance to preserve its 'financial capital' in real (not nominal) terms, such an outcome is often referred to as 'financial capital maintenance' or 'FCM'. **In a regulatory context, FCM is achieved, on an ex ante basis**. This is comparable to expectations in competitive markets that are conducive to promoting investment. It is not, however, possible to guarantee that regulated suppliers earn a normal return over the life of assets, because any analysis used to monitor profitability, or to set regulated prices, will typically be conducted part way through the lifetimes of the assets utilised in supplying regulated services. Some information about past performance may not be known. **Further, the allocation of risks between suppliers and consumers will usually mean that, although suppliers might have expected to earn a normal return ex ante, such a return is not earned ex post**.

C79 Similarly, Professor Yarrow notes that price cap regulation generally affords no guarantees, even to efficient suppliers:[282]

> In relation to outcomes, price-cap regulation generally affords no absolute guarantees, even to efficient firms, that full costs will be recovered. This is emphasised in NZ in by the adoption of the workable competition benchmark. Thus, suppliers in workably competitive markets are not guaranteed to recover full costs, even if efficient. For example, they may suffer unexpected loss of demand in consequence of product innovations in substitutes.

C80 Therefore, suppliers should not (by default) expect to be compensated *ex post* if they fail to earn a normal return under the price path that was set *ex ante*. This is a key feature of incentive regulation.

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[281] Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), p.36-37.

[282] Professor Yarrow "The Orion CPP determination" (30 May 2013), p.21.

Claw-back is something that good-practice regulation seeks to avoid where possible

C81 Claw-back is something good-practice regulation seeks to avoid where feasible. This is because claw-back:[283]

C81.1 necessitates *ex post* regulatory review, which can encourage hindsight bias and increase regulatory uncertainty; and

C81.2 can lead to overly stringent prudency reviews (to avoid reversion to a cost-plus price setting).

C82 In its report *long-term incidence of cost recovery following a catastrophic event*, PwC (for Orion) acknowledges that *ex post* compensation for the costs of a catastrophic event can be expected to dampen a regulated supplier's incentives to be efficient. Therefore, PwC refers to use of prudency reviews in the event that *ex post* compensation is provided:[284]

> …if Orion expected to recover the actual cost caused by such an event after the event, then this could have dampened its incentive to be efficient. Thus, it is reasonable for consumers to expect Orion to demonstrate the prudence of its expenditure prior to and after the event.

C83 However, as Professor Yarrow explains, *ex post* prudency reviews are generally problematic (and therefore, claw-back should be avoided where feasible) :[285]

> …use of claw-back is something that good-practice regulation tends to seek to avoid where feasible, by which I mean where such avoidance does not cause significant harm. There are a number of reasons for this, including:
>
> - In its general sense, claw-back has sometimes been used by regulators to 'correct' what have come to be perceived as over-generous regulatory settlements in the past. More active use of claw-back powers, therefore, corresponds to a widening of the domain of (ex post) regulatory review, which in turn can encourage hindsight bias and increase regulatory uncertainty.
>
> - Where provisions for the possibility of ex post adjustments have been clearly defined ex ante, so as to limit scope for the aforementioned tendencies to develop, they nevertheless may come to be associated with the more active use of prudency reviews, or of something close to such reviews. This is because, if the ex post adjustments are substantial (as they frequently are), it is not usually thought permissible for a regulator to simply 'tick off' the expenditure items, since to do so would in effect be a reversion to cost-plus price setting, with its known adverse effects for consumers/buyers. The risk then is that the precedent may encourage more general tendencies toward reliance on overly stringent prudency reviews by a regulatory agency.

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283 See the comments from Professor Yarrow at paragraph C83 below.

284 PwC "Long-term incidence of cost recovery following a catastrophic event" (17 December 2012), p.5.

285 Professor Yarrow "The Orion CPP determination" (30 May 2013), p.3.

C84 Consequently, Professor Yarrow comments that "…ex post assessments, which include the assessments necessitated by claw-back issues, have 'potentially toxic implications for regulatory policy'".[286]

Past additional expenditure and lower than forecast revenues should be considered separately

C85 In our view, past additional expenditure due to the Canterbury earthquakes should be considered separately from past lower than forecast revenues when assessing whether (and, if so, how much) claw-back should be applied. Our main reasons for this view are:

C85.1 shocks to demand and supply functions can be expected to have different impacts in a workably competitive market;

C85.2 demand risk associated with catastrophic events is largely symmetric (when considered across all regulated businesses and different types of events), but the impact on costs is asymmetric;

C85.3 evidence from PPPs and insurance markets suggests that additional costs and lower than forecast revenues are considered separately; and

C85.4 Orion itself has previously considered additional costs resulting from a catastrophic event separately from lower than forecast revenues.

Shocks to demand and supply functions have different impacts in a workably competitive market

C86 In a workably competitive market shocks to demand and supply functions can be expected to have very different impacts.

C86.1 Reduced demand can be expected to put downward pressure on prices (due to excess capacity and short-run marginal costs below the prevailing price level).

C86.2 In contrast, the costs of repairing and replacing damaged assets may be vital to meet demand, or to avoid deterioration in the quality of service offered to consumers.

C87 Professor Yarrow expresses the view that it is appropriate to consider repair and replacement costs separately from lower than forecast revenues. He notes that in workably competitive markets, shocks to cost functions and shocks to demand

[286] Professor Yarrow "Further advice on claw-back" (4 August 2013), p.3.

functions can be expected to have differing implications for prices, volumes traded and profits in the short- to medium-term.[287]

C88 In reaching the view that additional costs and lower than forecast revenues should be considered separately, Professor Yarrow highlights the significance of the Part 4 purpose statement, which is centred on the long-term interests of consumers:[288]

> …the legislation is focused on the long term interests of consumers, and the appropriate approach to business profitability is derived from consideration of what would best serve those interests. Thus, the notion of ensuring that expected costs, if efficiently incurred and including a reasonable rate of return on capital, can be recovered flows from the point that, if it were otherwise, investment incentives would be chilled, to *the detriment of consumers in the longer term*.

C89 Due to the focus on the long-term interests of consumers in the legislation, Professor Yarrow considers the impact of reduced demand and increased repair and replacement costs from the perspective of consumers. He notes that in the absence of expenditure to repair damage to the network, consumers will suffer from reduced quality of service, but a demand reduction has no such immediate implications for consumers:[289]

> From the perspective of consumers, a reduction in demand is a rather different matter from an increase in repair and replacement costs. In the absence of the second, there might have been, or might be, a deterioration in the services offered to consumers; and that is an obvious consumer detriment. A reduction in demand, on the other hand, has no such direct and immediate implications for quality of service. It may represent nothing more than some consumers moving out of the area, and there is no very obvious reason why consumers as a whole will benefit if some are asked to make good the entirety of the reduced business income caused by the decisions (to leave the area) of others.

C90 Professor Yarrow also notes that, in a workably competitive market, reduced demand can be expected to place downward (rather than upward, as with Orion's proposal) pressure on prices:[290]

> In the context of supply of a reasonably homogeneous product/service, using long-lived specialised assets, demand reduction in a competitive market can be expected to put downward pressure on prices, more or less immediately in spot markets and potentially more gradually in contract markets (depending upon the form of the contracts used: a long term contract for specified volumes at a price determined by a spot price index would likely show a price response almost [*sic*] quick as the spot price response itself). It would, I think, be surprising if, having lost some customers, competitive firms with excess capacity and shortrun marginal costs well below the prevailing price level, then increased prices to

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287 Professor Yarrow "The Orion CPP determination" (30 May 2013), p.5.
288 Professor Yarrow "The Orion CPP determination" (30 May 2013), p.5.
289 Professor Yarrow "The Orion CPP determination" (30 May 2013), p.5.
290 Professor Yarrow "The Orion CPP determination" (30 May 2013), p.13.

remaining customers to restore their profitability. Cartelisation might do the trick, but the market could not then be said to be workably competitive.

C91 Submissions from Orion's experts have argued that lower than forecast revenues and additional costs should be treated the same. For example, Incenta argues that:[291]

> …there [*sic*] a number of incremental costs that are caused by the earthquake, including additional costs for repairs or lost revenue from the changed location of demand and reduced consumption, and it is all of these categories of costs that need to be considered in the context of a claw-back application

C92 This is consistent with an earlier submission from PwC, which states:[292]

> …there is no conceptual difference from a regulatory perspective between adverse events that cause a reduction in revenue (through reducing demand) and those that occur to cost. An unexpected (and uncompensated) event that leads to a reduction in anticipated revenue (arising from a reduction in demand) for a firm with largely fixed costs will result in costs being unrecovered, just like an unexpected (and uncompensated) increase in costs.

C93 Similarly, NERA argues:[293]

> The regulatory bargain envisages Orion clawing-back both extra costs and lower revenues. Anything else would mean that Orion would not recover its costs, which would be inconsistent with the long term interests of consumers, the regulatory bargain and good regulatory practice.

C94 We agree that the additional net costs and lower than forecast revenues associated with the earthquakes both need to be considered. We also agree that suppliers having incentives to invest is an important consideration.

C95 However, for the reasons described in paragraphs C86to C90above, the impact of a catastrophic event on a supplier's costs and demand for its services can be expected to have very different effects. Therefore, in our view the additional net costs and lower than forecast revenues resulting from the earthquakes should be considered separately.

Risk is asymmetric for costs but broadly symmetric for demand

C96 EDBs subject to price-quality regulation under Part 4 operate under a weighted average price cap. Use of a price cap (as opposed to a revenue cap) strengthens incentives for regulated suppliers to meet demand growth.

C97 A price cap implies that demand risk is borne by suppliers during the regulatory period.[294] Arguably, this is appropriate because demand risk is broadly symmetric.

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[291] Incenta "Response to Professor Yarrow Advice on Orion CPP Determination" (27 June 2013), p.18.
[292] PwC "Long-term incidence of cost recovery following a catastrophic event" (17 December 2012), p.9.
[293] NERA "Review of Yarrow report" (27 June 2013), p.4.

An EDB operating under a weighted average price cap will be subject to both upside and downside demand risk during the regulatory period.

C98 The risk of depopulation resulting from a catastrophic event is one example of demand risk faced by suppliers. Suppliers operating under a price cap will suffer from reduced revenues if customers move out of *their* network footprint.

C99 However, the impact on demand of depopulation resulting from a catastrophic event is not necessarily asymmetric on an *ex ante* basis. The probability of a region gaining population as a result of a catastrophic event elsewhere will be similar to the risks of losing population due to a local event. For example:

C99.1 if a catastrophic event (such as a large earthquake) occurred outside of Orion's network area, it is likely that Orion would benefit from increased demand due to consumers relocating away from the earthquake affected region; and

C99.2 given that Orion's network covers only a portion of New Zealand, the likelihood of a catastrophic event occurring *outside* Orion's footprint is greater than within Orion's footprint (on an *ex ante* basis).

C100 In the context of claw-back, Professor Yarrow expresses the view that providing *ex post* compensation for reduced revenues resulting from depopulation could be considered discriminatory because of this symmetry:[295]

> I understand that one of the causes of lower demand is relocation of customers to other areas of the country, which can be viewed as switching between alternative EDBs (implying a low-intensity form of competition among EDBs). In that case, loss of demand for Orion implies increased demand for other EDB's, and allowing claw-back of revenue losses for Orion without making adjustments to other price controls could be held to be discriminatory in nature, and certainly difficult to square with the notion of promoting the long-term interests of consumers.

C101 As discussed in paragraph 4.14, a diversified investor will not require compensation for the risk of population relocations. By diversifying across different regions, an investor is able to costlessly insure itself against relocation risk. This is a specific example of the standard analytical result that investors do not require compensation for non-systematic risks.

C102 In addition, demand is affected by a range of events that carry positive and negative risks for suppliers. Hosting a major event such as the 2011 Rugby World Cup, which resulted in increased demand for a vast range of goods and services throughout New Zealand, is an example of a positive event. Electricity demand can also be affected by

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[294] Demand risk refers to the possibility of actual revenues being higher or lower than forecast during the regulatory period.

[295] Professor Yarrow "The Orion CPP determination" (30 May 2013), p.13.

factors such as a cold winter that are independent of, or negatively correlated with, economic fluctuations.

C103 The broadly symmetric nature of demand risk supports the proposition that, in general, it is reasonable for regulated suppliers and their investors to bear these risks during the regulatory period. Investors will not, in general, require any compensation for bearing such diversifiable risks.[296]

C104 The impact of a catastrophic event on costs, on the other hand, is asymmetric. A catastrophic event can only result in increased costs for a supplier. There is no potential for significant offsetting cost reductions resulting directly from a catastrophic event, at least in the short term.[297]

C105 Importantly, an event that has an asymmetric effect on costs may not have a similar asymmetric effect on demand. While a winter storm may result in damage to parts of the network, and the resulting costs are asymmetric, electricity demand may increase overall during such an event.

Evidence from PPPs and insurance markets suggests that additional costs and lower than forecast revenues are considered separately

C106 Empirical evidence from PPPs and insurance markets also supports the view that additional costs and lower than forecast revenues should be assessed separately.

C107 Castalia argues that PPPs are a form of workably competitive market that should be considered when assessing Orion's claw-back proposal.

C108 The Castalia submission draws on evidence from the European PPP Expertise Centre (EPEC). Castalia notes that "…EPEC's analysis of typical PPP contracts across 16 European jurisdictions found that nearly all jurisdictions provide for some type of compensation in the case of force majeure termination".[298]

C109 Significantly, EPEC also found that "compensation typically does not provide for any loss of future income".[299]

C110 As noted by Professor Yarrow, the evidence from EPEC supports the view that additional costs and lower than forecast revenues due to the earthquakes should be treated separately:[300]

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[296] As Professor Yarrow notes "…it is only to the extent that the catastrophic event causes a level of harm that lies outside the limits of what might be considered a normally anticipated range that new issues arise." Professor Yarrow "The Orion CPP determination" (30 May 2013), p.10-11.

[297] However, a supplier that is affected by a catastrophic event is able to rearrange its spending priorities. Therefore, it is not a given that total expenditure after a catastrophic event will exceed forecast expenditure determined before the event.

[298] Castalia "Orion CPP Application: Submission on Professor Yarrow's Expert Advice" (26 June 2013), p.2.

[299] European PPP Expertise Centre "Termination and Force Majeure Provisions in PPP Contracts" (March 2012).

> The second aspect of the evidence that is worth noting, and which is fairly cited by Castalia, is the EPEC finding, in a study of European PPPs, that "Compensation does not typically provide for any loss of future income." To the extent that the earthquakes can be regarded as equivalent to events that would trigger a force majeure clause in a commercial contract, the Orion claw-back application can be viewed as asking for compensation for income losses that, at the time of the events, lay in the future. The EPEC evidence therefore seems to me to count against the Orion application on this particular issue.
>
> The point is worth emphasising because both NERA and Incenta argue strongly that revenue losses and additional costs should be treated in the same way. They do so largely on the basis that these different phenomena have similar effects on Orion's bottom line, but, in my view that is neither the only, nor even the primary consideration, that is relevant for the Commission in making its determinations. The regulatory arrangements are designed to promote long-term consumer benefits, and to do so in a way that is guided by references to outcomes in competitive markets. Ensuring recover of ex ante expected costs, including a normal rate of return on capital, is a means to an end, but it is not an end in itself.

C111 EPEC's finding is consistent with comments by Marsh regarding insurance markets. The Marsh report indicates that the treatment of business interruption (BI) insurance is different to material damage (MD) insurance:[301]

> BI insurance covers specified loss of revenues and specified increased costs of working.
>
> BI is only very rarely offered by insurers on a stand-alone basis. The insured must first purchase MD insurance.
>
> With limited exceptions, BI claims are only triggered by BI losses caused by damage to physical assets which are specifically insured under an associated MD policy.

C112 Therefore, insurance markets also appear to provide different treatment for additional costs and lower than forecast revenues resulting from a catastrophic event.

Orion has previously considered additional costs resulting from a catastrophic event separately from lower than forecast revenues

C113 Orion's submissions following the September 2010 earthquake focussed on the costs incremental capital expenditure and operating expenditure incurred in responding to a catastrophic event. In response to the October 2010 IM Update Paper, Orion submitted (emphasis added):[302]

> 12 In our view, the efficiency or otherwise of operating or capital expenditure prior to a catastrophic event is not necessarily relevant. **What matters is whether an EDB can identify and isolate the incremental costs arising from that event**. Provided that the additional

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300 Professor Yarrow "Further advice on claw-back" (4 August 2013), p.5.

301 Marsh "Orion's network catastrophe insurance" (8 October 2012), p.7.

302 Orion "Submission on part 5 of the input methodologies update paper" (19 November 2010), paragraphs 12-14.

expenditure attributable to the event in question can be identified, the efficiency of past operating or capital expenditure is immaterial. The focus should be on whether the new expenditure was reasonable.

13 For this reason, **EDBs should not be prevented from recovering identifiable incremental costs arising from catastrophic events**. Orion has suggested that the most expeditious way to resolve such matters is to broaden the definition of pass-through costs so as to include those costs:

> 13.1 that are unforeseen and outside the control of the supplier; and
>
> 13.2 that have not otherwise been recovered under a DPP or were not included in the derivation of a CPP.

14 **To be clear, the costs eligible for pass-through would include incremental operating and capital costs**. The latter could be managed by allowing immediate pass-through of the return on and of capital expenditure that would otherwise be lower. For example, if a catastrophic event occurred two years into a five-year regulatory period, resulting in unanticipated capital expenditure, then:

> 14.1 That additional capital expenditure could be rolled into the RAB at the beginning of the next regulatory period; but
>
> 14.2 There could be an immediate pass-through of the return on and of capital required to compensate the business for the next three years of returns that would otherwise be lower.

C114 The emphasis on incremental operating and capital costs (and not lower than forecast revenues) in Orion's previous submission can be contrasted with the current views of its experts. As described earlier, Incenta and NERA both argue that additional costs and lower than forecast revenues are both "costs", and should be treated the same.[303]

Our evaluation of past additional expenditure and lower than forecast revenues that should be recovered from future consumers

C115 For the reasons described in paragraphs C85 to C114 above, we have considered and assessed past additional expenditure and lower than forecast revenues separately. Our views on claw-back for past additional expenditure and lower than forecast revenues are described below.

[303] Further, Orion's statements indicate that only extra costs resulting from a catastrophic event were contemplated. This suggests that the "regulatory compact" referred to in submissions could not have included ex post compensation for demand risk.

Our evaluation of past additional net expenditure that should be recovered from future consumers

Orion should be allowed to claw-back net additional costs of $28.6m

C116 Our view is that Orion should be allowed to claw-back $28.6m of additional net expenditure due to the earthquakes over the period from the first earthquake in September 2010 to 31 March 2014. This amount is calculated by:

C116.1 estimating the present value of additional net expenditure actually incurred by Orion for the 2011, 2012 and 2013 financial years; and

C116.2 making a downwards adjustment to the present value of Orion's proposed additional net costs for the 2014 financial year (consistent with our approach to the evaluation of forecast expenditure during the CPP period).

C117 Allowing claw-back for additional costs incurred in the first two to three years after a catastrophic event helps ensure that regulated suppliers are able to restore their networks with confidence. This approach acknowledges that the supplier will be focussed on restoring its network in the aftermath of a catastrophic event, without necessarily being able to maintain the same level of planning and oversight as they would for business as usual expenditure.[304]

C118 On balance, we consider that claw-back of $28.6m is appropriate. Additional expenditure following a catastrophic event may be vital to meet demand in a region. Consumers benefit from this expenditure because it helps avoid any deterioration in quality of service.

How we calculated claw-back for additional net costs of $28.6m

C119 We have used Orion's estimate of the additional net costs due to the Canterbury earthquakes ($44.8m) as the starting point when determining the amount of claw-back. We adjusted Orion's forecast expenditure for 2013 and 2014 when calculating claw-back for additional net costs of $28.6m.

C120 Orion's claw-back proposal (submitted in February 2013) was based on actual expenditure for 2011 and 2012 and forecast expenditure for 2013 and 2014.[305] Since Orion's proposal was received, we received data on actual expenditure for 2013 from Orion following public release of its audited 2013 financial accounts.

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[304] Vector argues that there is a legal, moral and humanitarian obligation to restore the supply of essential services following a catastrophic event. Our approach to claw-back of additional expenditure recognises the importance of restoring supply after the event. The importance of restoring supply is also acknowledged by allowing damaged and destroyed assets to remain in the RAB.

[305] The claw-back period covers the latter part of the 2011 financial year (following the September 2010 earthquake), and the entire 2012 to 2014 financial years.

C121 The adjustments we made to Orion's forecast expenditure for 2013 and 2014 are as follows.

C121.1 We adjusted forecast expenditure for 2013 to reflect actual expenditure (Orion significantly underspent its forecast 2013 opex and capex). This adjustment results in a reduction of additional costs for 2013 of $9.4m (2014 present value). Apart from this alignment of forecast expenditure with the actual amounts spent, we have not undertaken an *ex post* prudency review of the expenditure.

C121.2 We adjusted forecast expenditure for 2014 following an *ex ante* prudency review of costs. In our view, Orion's forecasts for 2014 are higher than necessary to meet the required quality standards. The adjustments to forecast expenditure for 2014 draw on the conclusions of our expenditure evaluation for 2015 to 2019. This adjustment results in a reduction in 2014 additional costs of $6.6m (2014 present value).

C122 Overall, our adjustments to 2013 and 2014 expenditure led to a reduction in additional net costs of $16.2m, from $44.8m to $28.6m (2014 present value).

C123 We have accepted Orion's expenditure figures for 2011 and 2012. We do not consider it appropriate to undertake a review of the prudency of the expenditure for these years because this would involve second guessing Orion's immediate response to the earthquakes (which was made in very difficult circumstances). Further, we have seen no evidence to suggest that expenditure incurred by Orion in these years warrants closer attention.

Our evaluation of past lower than forecast revenues that should be recovered from future consumers

Orion should not be allowed to claw-back lower than forecast revenues

C124 Our view is that no claw-back should be allowed for past lower than forecast revenues resulting from the earthquakes.[306] Our key reasons for this decision are:

C124.1 Orion was operating under a price cap, not a revenue cap. A price cap implies that demand risk is borne by suppliers. This is appropriate as suppliers are generally better placed than consumers to manage demand risk.[307]

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306 We estimate that the value of past lower than forecast revenues is approximately $48.4m. This is the value estimated by Orion of $43.0m (see paragraph C11above), adjusted for lower actual revenues for 2013 than originally forecast by Orion.

307 Commerce Commission "Input Methodologies (EDBs & GPBs) Reasons Paper" (22 December 2010), paragraph 8.3.8. Also see paragraphs C52to C57above.

C124.2 Demand risk is largely symmetric; suppliers face both upside and downside risk during the regulatory period. Orion suffered a reduction in demand due to the earthquakes. However, suppliers in neighbouring regions are likely to earn higher than expected returns because of unexpected increases in demand due to relocating households. Therefore, allowing claw-back for Orion's lower than forecast revenues would lead to greater than normal returns across the entire industry (contrary to the objectives of Part 4).

C124.3 A diversified investor will not require compensation for the risk of population relocations. By diversifying across different regions, an investor is able to costlessly insure itself against relocation risk.

C124.4 Due to the largely symmetric nature of demand-risk, suppliers (and their investors) can reasonably be expected to bear these risks during the regulatory period. The asymmetric nature of the impact of a catastrophic event on costs, on the other hand, suggests that there is a stronger case for *ex post* compensation for additional costs than lower than forecast revenues.

C125 Other reasons for concluding that no claw-back should be allowed for lower than forecast revenues include:

C125.1 We estimate that revenues were approximately 7% lower than forecast during the claw-back period.[308] Reduced demand of 7% does not obviously lie outside a normal range (particularly if we were to adjust for demand that shifted to other areas). By way of comparison, Professor Yarrow notes that London's Stansted airport, which is price controlled, suffered a fall in passenger volumes of around 24% between 2007/8 and 2011/12.[309]

C125.2 It is not clear how future consumers benefit in the long-term from compensating Orion for past revenues that were lower than expected. Compensating Orion for increased expenditure on the other hand, helps ensure that demand continues to be met in the future.

C125.3 Prices are reset at the beginning of the CPP period to reflect the impact of the earthquakes (including reduced demand). This limits the period in which Orion suffers from reduced demand and passes these risks on to consumers in the form of higher prices.

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[308] As noted in footnote 306 above, we estimate that the value of past lower than forecast revenues is approximately $48.4m. The value of Orion's projected DPP price path revenues from 2011 to 2014 is estimated at $674.9m.

[309] Professor Yarrow "The Orion CPP determination" (30 May 2013), p.11.

C126 Further, we made no commitment that claw-back of lower than forecast revenues would be allowed following a catastrophic event.[310] We also note that, under our draft decision, Orion will have higher allowable revenues during the CPP period than under the DPP.

Under-recovery of Transpower transmission costs for 2011 and 2012

C127 Orion has noted that a portion of the past lower than forecast revenues in 2011 and 2012 relates to under-recovered Transpower transmission costs. Under the DPP these are treated as pass-through costs and are not subject to regulation under the price-quality path.[311]

C128 Orion estimates the under-recovery of pass-through costs for 2011 and 2012 as $7.7m (2014 present value). We consider that this amount should be recovered by Orion through the future recoverable cost element of its prices in the CPP period and should not form part of claw-back.[312]

Overall sharing of the financial impact of the earthquakes between Orion and consumers

C129 In total, we estimate that the pre-tax financial impact of the Canterbury earthquakes on Orion is approximately $148.3m. This amount includes:

C129.1 the 2014 present value of additional net costs during the claw-back period of $28.6m;[313]

C129.2 the 2014 present value of lower than forecast revenues during the claw-back period of $48.4m;[314] and

C129.3 the write-down of damaged and destroyed network assets in the RAB (which Orion has already recovered or will recover through its prices) of $71.3m.[315]

C130 Of this amount, $48.4m (33%) will be borne by Orion and $99.9m (67%) will be borne by consumers under our draft decision.[316] Our estimate of the after-tax effect

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310 See paragraphs A61 to A70 in Attachment A.

311 These costs are intended to pass directly through pricing from Transpower to consumers. The costs are deducted from total revenues each year before compliance with the price cap for that year is tested.

312 Under the DPP determination that currently applies to Orion, the Transpower transmission charges are classified and recovered from consumers as "pass-through costs". However, consistent with the definitions used in the DPP reset determination, the draft CPP determination describes these as "recoverable costs". This change of definition has no impact on Orion's ability to recover the costs from consumers in its prices.

313 As described above, this amount is comprised of: (a) additional net expenditure actually incurred by Orion in the 2011, 2012 and 2013 financial years, and (b) forecast additional net expenditure for the 2014 financial year (reduced in accordance with our approach to forecast expenditure during the CPP period).

314 This is the $43.0m calculated by Orion, adjusted by $5.4m for actual revenues being lower than forecast revenues in 2013.

315 See paragraph C15.2 above for further details.

on Orion equates to approximately one annual average Orion dividend or approximately 6% of Orion's total value of equity.

C131 It should be noted, however, that the sharing described above overstates the proportion of the financial impact of the earthquakes borne by Orion. This is because Orion will also be compensated for additional costs and lower than forecast revenues from the earthquakes in future periods (ie beyond the claw-back period) through the CPP price reset and in future DPPs. The impact of reduced demand due to the earthquakes is effectively borne by consumers once the CPP takes effect.

C132 In reaching our view regarding claw-back, we have considered not only Orion's particular circumstances, but also the resulting incentives for all suppliers subject to price-quality regulation under Part 4. In our view, our approach strikes an appropriate balance between:

C132.1 allowing suppliers to respond quickly in the aftermath of a catastrophic event, by compensating them for net prudent additional expenditure required to repair their networks over the first two to three years; and

C132.2 ensuring that suppliers are not compensated for all additional costs and lower than forecast revenues incurred in response to the catastrophic event, thereby preserving incentives to manage risk efficiently.

C133 Sharing the risks of catastrophic events between regulated suppliers and consumers in this manner should incentivise suppliers to seek prudent and efficient levels of insurance. If suppliers were exposed to all the costs of a catastrophic event, they may be incentivised to seek insurance at any cost (resulting in an inefficiently high level of insurance cover).

Our decision regarding claw-back will not chill investment

C134 Submissions from Incenta and NERA argue that if Orion does not receive *ex post* compensation for the additional costs and lower than forecast revenues associated with the earthquakes, investment incentives will be diminished.

C135 Incenta submitted that if suppliers do not receive *ex post* compensation via claw-back:[317]

> …distributors would expect to earn less than a normal return, in turn adversely affecting the incentives and capacity for investment in necessary network assets. This outcome would not

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316 We note that a sharing factor of approximately 30:70 can be observed in other regulatory settings. For example, The AER's Efficiency Benefit Sharing Scheme (EBSS) effectively results in a 30:70 sharing ratio between suppliers and network users. AER "Proposed - Electricity transmission network service providers, Efficiency benefit sharing scheme" (April 2008), p.5.

317 Incenta "Response to Professor Yarrow Advice on Orion CPP Determination" (27 June 2013), [p.2].

be consistent with the requirements of the purpose statement in Part 4 of the Commerce Act and not with the long term interests of consumers.

C136 Similarly, NERA submitted:[318]

> If we focus attention on the long-term interests of consumers, then a firm having insufficient revenue to recover its (efficient) costs is not in the interests of consumers. Consumers will care if firms are not recovering their costs, as this would mean firms cannot continue to invest, or supply services generally. Consumers need firms to be viable.

C137 We agree that regulated suppliers should have a reasonable expectation of earning a normal return *ex ante*. This is important to ensure that suppliers have incentives to innovate and to invest.

C138 Our approach to claw-back is consistent with this view. Under our draft decision, Orion would have had a reasonable *ex ante* expectation of a normal return because it would:

C138.1 be compensated *ex post* for asymmetric costs associated with the earthquakes. Specifically, our decision allows claw-back of $28.6m for net additional costs incurred in responding to the earthquakes; and

C138.2 not require compensation for demand risk, which is broadly symmetric. As described earlier, by diversifying across different regions, an investor is able to costlessly insure itself against the risk of population relocations due to catastrophic events.

C139 Under this approach, Orion would not have been guaranteed to actually earn a normal return *ex post*. The possibility of suppliers failing to earn a normal return *ex post* is a fundamental feature of incentive regulation.

C140 We also note that:

C140.1 Orion's current price path likely incorporates some *ex ante* allowance for the risks of catastrophic events, although any allowance is not explicit; and

C140.2 consumers bear all prudent and efficient costs of the earthquakes, including the impact of reduced demand, once the price-quality path is reset at the beginning of the CPP period (on 1 April 2014). Resetting the price-quality path limits the period in which Orion suffers from reduced demand.

Spreading claw-back over time to minimise price shocks to consumers

C141 We have spread the claw-back amount of $28.6 million over the five year CPP period when generating our price-quality path for Orion.

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[318] NERA "Review of Yarrow report" (27 June 2013), p.3.

C142 We consider that spreading claw-back over a five year period (rather than the ten year period proposed by Orion) is appropriate and does not contribute to price shocks to consumers. Given the reduced amount of claw-back relative to Orion's CPP proposal ($28.6m compared to $86.3m), we do not think it is necessary to extend recovery of claw-back beyond the CPP period.

Allowance for catastrophic risk under the cost of capital IM

The cost of capital IMs are not directly relevant to Orion's claw-back proposal

C143 Orion's current price path was not determined based on the IMs. Therefore, any *ex ante* allowance for the risks of catastrophic events incorporated in the IM-based cost of capital is not directly relevant to Orion's specific circumstances (in the context of claw-back under the CPP proposal).

C144 However, any *ex ante* allowance for catastrophic risk included under the WACC IM is relevant for other suppliers subject to price-quality regulation under Part 4.

The cost of capital IMs include some allowance for the risk of catastrophic events

C145 The IMs apply the 75th percentile (rather than the mid-point) estimate of vanilla WACC for DPPs and CPPs. The IMs specify using the 75th percentile to reflect: (a) the Part 4 purpose; (b) the uncertainty in estimating the cost of capital; and (c) that in workably competitive markets not all risks can be passed on to the consumer in the form of higher prices (instead, in workably competitive markets firms have to manage some risks).[319]

C146 The IMs do not make any separate adjustments to the cost of capital for catastrophic asymmetric risk. [320] However, this does not mean that there is no implicit allowance for catastrophic events in the WACC.

C147 The market risk premium and debt premium incorporate some *ex ante* allowance for the risks of catastrophic events because:

C147.1 the tax-adjusted market risk premium is determined from forward-looking estimates (which would reflect investor's expectations of the return required to address risks, including the risks from catastrophic events) and

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319 Commerce Commission "Input Methodologies (EDBs & GPBs) Reasons Paper" (22 December 2010), paragraph H11.65.

320 Commerce Commission "Input Methodologies (EDBs & GPBs) Reasons Paper" (22 December 2010), paragraph H12.1. We did this as we were concerned about "conflating" different risks (asymmetric risk and the risk that the WACC was wrong); that the asymmetric risk borne by suppliers may differ between suppliers and would be difficult to determine; that calculating an ex ante allowance would be difficult; and ensuring that a supplier honoured the arrangement ex post might be difficult.

backward-looking (historic) estimates which reflect the returns earned over periods of time including the volatility of returns;[321] and

C147.2 the debt premium reflects the observed debt premium on BBB+ rated debt securities issued by NZ regulated suppliers, and the risk of default priced in by investors would reflect all risks of default (including the risk of default stemming from a catastrophic event).

C148 It is a difficult empirical question to determine whether the *ex ante* allowance for the risk of catastrophic events included in the cost of capital is sufficient for the asymmetric risks of a catastrophic event that are not explicitly allocated to consumers by the IMs.[322] Any empirical assessment should consider the specific features of the Part 4 regulatory regime and the IMs, which already protect suppliers from a number of significant costs and risks through the calculation of the various building blocks.

C149 As noted above, the Commission uses the 75th percentile estimate of WACC when setting price-quality paths. This provides regulated suppliers with a return which is above the best estimate of a normal rate of return (ie, the mid-point WACC).[323]

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321 The difference between the 75th percentile and mid-point WACC depends on the volatility of the parameters being estimated. Catastrophic events would have increased the volatility of historic estimates of the market risk premium and this volatility is explicitly included in the WACC through the cost of capital range and use of the 75th percentile.

322 Available evidence is that the cost of natural disasters should have a relatively small impact on the observed cost of capital (ie, likely to be less than 0.1% of WACC). For example, the Global Assessment Report on Disaster Risk Reduction estimate the total expected global loss from earthquakes and cyclone wind damage is around US$180 billion per annum. Relative to the market value of capital provided to listed companies, this implies a cost of 0.30% per dollar of capital per annum. However, as some of the cost of loss would be insured, and since the annual global loss from earthquakes and cyclone wind damage would be shared among government, households, and private businesses as well as listed businesses, the impact on the cost of capital from earthquakes and wind damage would be substantially less than 0.30% per annum (and almost certainly much less than 0.1% per annum). By contrast, the 75th percentile estimate of WACC increases the cost of capital by greater than 0.7% per annum.

323 Orion's CPP proposal includes a large capital expenditure programme that is greater than the minimum required for Orion to meet its minimum service obligations to end users. Orion advancing this proposal suggests that the return on capital provided under the IMs is adequate to attract investors to provide capital.

Attachment D: Major projects

Purpose of this attachment

D1 This attachment discusses our evaluation of the forecast major capital expenditure projects in Orion's proposal. This is an input into capex and commissioned assets.

Summary of our conclusions on major projects

D2 We consider that Orion's proposed expenditure of $97.5 million on major capex projects in the CPP period exceeds the amount required to meet the expenditure objective and is not in the long term interests of consumers.[324]

D3 We have determined an allowance that reflects the needs of the network and is in the long interests of consumers.

D4 As there is no practical way of determining the appropriate level of expenditure for major projects using a top down approach, we had to undertake a project by project review in order determine the total level of expenditure on major projects required during the CPP period.

D5 Given the circumstances faced by consumers in Christchurch, we have concluded Orion should prioritise projects within the CPP period that:

D5.1 are required to meet demand while maintaining the current levels of security; over

D5.2 projects which are required to meet more onerous planning and security standards or to increase resilience or facilitate the roll out of the 66 kV subtransmission network and (which, for the most part, can be deferred to beyond the CPP period).

D6 A major benefit of prioritising projects in this manner is to achieve a price-quality trade-off more consistent with the feedback received from consumers. Our consultant, Strata, notes a number of other benefits from slowing down implementation of some of the major projects proposed by Orion stating it will:

- provide more time for demand growth patterns to more clearly emerge, allowing greater visibility of the benefits of alternative options to Orion's proposed development plan;
- -free up resources to deliver higher priority projects within the expenditure plan;
- obtain the time value of money benefits derived from deferring expenditure;
- avoid the need to increase project management and project delivery resources;

[324] The expenditure objective is set out in the Input Methodologies (EDBs & GPBs) Reasons Paper (22 December 2010) [paragraph 9.4.1d, p.226].

- allow expenditure to be moved outside the period when contracting labour costs will be particularly high; and

- lessen the likelihood of mistakes from rushed design, construction and commissioning activity.

The counter-argument is that a slower rate of build will prolong the period within which targeted security and resilience objectives are not met and increase the likelihood of service interruptions. In respect of this, we consider that:

- this dilemma is representative of the trade-offs that resource-constrained asset managers routinely make – appropriately, it requires that managers prioritise resources to the highest value alternatives; and

- even if Orion's rate of build was slower, Orion's consumers would still receive a safe and reliable supply of electricity and Orion would have the capacity to meet the demand for new load and connections over the CPP period and beyond. Orion's consumers would not receive a supply of electricity less reliable than that of other typical New Zealand EDBs and it would improve more gradually over time.

D7 Orion based its proposal on the basis of providing a more reliable and resilient network in line with its subtransmission architecture plan. We consider that Orion's subtransmission development plan is generally well thought out, in engineering terms. However, we consider that Orion should build the subtransmission network in a staged manner over a longer period of time. As noted above by Strata, we consider that with a staged approach, Orion's consumers would still receive a safe and reliable supply of electricity, while reducing the magnitude of the price increase they would face. As we consider that a number of projects proposed by Orion can be deferred till after the CPP period, we have set capex at a lower level than proposed by Orion.

D8 The impact of this lower capex allowance is reflected in the inputs into the financial model (Attachment O) and in the setting of the price path (Chapter 5). It results in lower prices in the CPP period than proposed by Orion.

D9 Our adjustments to Orion's proposed expenditure amounts are set out in Table D1.

Table D1 - Major projects expenditure during CPP period ($m)

	2015	2016	2017	2018	2019	Total
Orion's proposed capex	35.9	18.7	13.7	22.8	6.4	97.5
Our capex allowance	18.6	2.0	0.3	16.0	0.2	37.1
Difference	17.3	16.7	13.4	6.8	6.2	60.4

Note: Prices in 2013 constant prices.

What Orion proposed

D10 As set out in Table D2, Orion has proposed the following expenditure on major projects within the CPP period.

Table D2 - Major projects expenditure during CPP period ($m)

	2015	2016	2017	2018	2019
Orion's proposal	**35.9**	**18.7**	**13.7**	**22.8**	**6.4**

Note: Prices in 2013 constant prices.

D11 Orion's proposal includes:

D11.1 rebuilding sections of the network damaged in the Canterbury earthquakes;

D11.2 improving the resilience of parts of its 66 kV network that were damaged in the earthquakes by implementing, amongst other things, circuit route diversity and accelerating the development of part of its 66 kV subtransmission network to attain compliance with its network planning standards;

D11.3 expanding and reinforcing the network to meet growing demand as people relocate to new subdivisions in the northern suburbs of Christchurch and in the Selwyn District and as a result of other commercial and industrial growth in other parts of its network; and

D11.4 investing to progress its network towards meeting security standards set as part of its 2006 review.[325]

D12 As set out in Table D3, Orion's proposal includes the following project expenditure.

Table D3 - Project expenditure during CPP period and total ($m)

Orion reference	Major projects (description)	CPP total	Total project cost
CPP1	Urban Major North - Growth in Marshland and Waimakariri areas.	46.2	60.5
CPP2	Urban Major - Dallington	-	19.6
CPP3	Urban Major West - Growth in Hornby area	6.7	6.7

[325] Orion's Network Architecture Review 2006.

Orion reference	Major projects (description)	CPP total	Total project cost
CPP4	Urban Major southwest. Lancaster-Milton reliability and provision for Hoon Hay	8.8	8.8
CPP5	Urban South Major - Awatea Substation land	-	0.3
CPP6	Urban Major CBD - Aesthetic and landscape Armagh and Oxford-Tuam substations	0.5	0.5
CPP7	Rural Major Rolleston. Includes Larcomb and Weedons	5.8	14.0
CPP8	Rural Major - Hororata Creyke 66 kV - Darfied Creyke section	5.9	5.9
CPP9	Rural Major - Central Plains water.	3.7	5.0
CPP10	Rural Major - Springston	1.2	1.3
CPP11	Rural Major - Norwood	5.8	5.8
CPP12	Rural Major -Power Factor	0.6	0.7
CPP13	Rural Major -Annat	0.4	0.4
CPP14	Rural Major - Banks Peninsula	0.8	1.2
CPP15	Rural Major – Southbridge	4.4	4.4
CPP16	Rural Major – Dunsandel	2.4	2.4
CPP17	Rural Major - Porter Heights	4.1	4.1
CPP18	Rural Major – Kimberley	-	2.6
CPP19	Rural Major - Castle Hill and Arthurs Pass	0.2	0.2
CPP20	Rural Major - GFN	-	2.0
Total		97.5	146.4

Note: Prices in 2013 constant prices.

D13 Orion has included $146.4 million of major projects capex within its proposal. Of this, $48.4 million is forecast to be completed by the end of 2014 (ie, prior to the CPP period). Orion proposes to spend $97.5 million on major projects during the CPP period.[326]

D14 In the north of Christchurch (projects CPP1 and CPP2), Orion proposes to construct new zone substations at Waimakariri and Marshlands and link these to existing zone

[326] The amounts are in 2013 constant prices.

substations to the north-west and north-east. The link is proposed to be via new underground 66 kV cables running from Hawthorndon to Rawhiti, via Waimakariri and Marshlands.

D15 Orion has advised that investment in new zone substations will remove constraints at existing zone substations in northern Christchurch. Cables linking the three zone substations will improve supply security in northern and eastern Christchurch.

D16 Orion also proposes to improve the reliability of supply to Belfast and surrounding areas by installing diesel generators in the area.

D17 Earthquake damage to assets in the east of Christchurch has also provided the opportunity for Orion to accelerate the development of its 66 kV network backbone and bring more parts of the network up to the security levels set out in its planning standards.

D18 To the south and west of the city and in rural areas (refers to projects CPP3 - CPP20), Orion proposes to spend $51.3 million within the CPP period to meet forecast increases in demand driven by domestic, commercial, agricultural and industrial growth. Orion's proposal also involves expenditure to upgrade some of its 33 kV subtransmission network in the rural areas to 66 kV.

D19 Orion stated in its submission on the Issues Paper that its proposal is to:

> "restore our network's resilience and reliability to near pre-earthquake levels by FY19 and to prudently implement other improvements by applying lessons from the earthquakes. This also includes continuing with our strategic approach to network resiliency that we have adopted since the year 2000 and our requirement to support the region's rebuild and growth."[327]

Verifier assessment

D20 Projects CCP1, CPP2 and CPP7 were the only identified programmes reviewed by the verifier. In the verifier's view, these projects were not adequately justified.

D21 In respect of CPP1 (total project cost $60.5 million), the verifier stated that:[328]

> Orion was unable to provide any technical planning report or economic analysis that compared the merits of its planned urban north project with possible alternative solutions. We are thus unable to comment on whether or not a more optimal and cost effective solution is available. In addition, we have seen no detailed analysis supporting the subproject timings proposed by Orion, …

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[327] Orion New Zealand Limited "Submission on the Orion CPP issues paper" (24 May 2013), p.7.

[328] Geoff Brown & Associates Ltd "Verification Report", p.A5. This report can be found in Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 – Verification report and certificate.

> Orion's demand growth projections are subject to an abnormally high level of uncertainty, due to the speculative nature of many of the assumptions around earthquake recovery.

D22 In respect of CPP2 (total project cost $19.6 million), the verifier accepted the project was required to replace damaged assets and was committed, but considered "there would be a significant reduction in the cost of this project if the new 66 kV circuits were installed overhead".[329] It was noted that no cost benefit analysis had been provided.[330]

D23 In respect of CPP7 (total project cost $14 million), the verifier indicated that while some parts of the planned work were reasonable, the "need for the Highfield 66 kV line conversion and substation upgrade is more speculative" as it would depend on whether or not potential new industrial load in the area materialises.[331] The verifier considered the likelihood of deferring that part of the project was relatively high.

Our assessment of the required level of expenditure

D24 We consider that expenditure is justified and should be included in the capex allowance where a project:

D24.1 is already committed (this is because it would be inefficient to stop a project that is already being implemented);

D24.2 is required to meet forecast demand growth at current levels of security;

D24.3 represents the lowest cost alternative for responding to network growth within the CPP period;

D24.4 is required to meet committed service requests from consumers (particularly large individual consumers) and being net of any consumer contributions;

D24.5 is justified based on benefits of rolling out 66 kV subtransmission strategy to an area of the network at the time proposed; or

D24.6 is justified under the expenditure objective for any other reason, including where it would provide option value for future developments at a relatively low cost.

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329 Geoff Brown & Associates Ltd "Verification Report", p.A12. This report can be found in Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 – Verification report and certificate.

330 Geoff Brown & Associates Ltd "Verification Report", p.A12. This report can be found in Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 – Verification report and certificate.

331 Geoff Brown & Associates Ltd "Verification Report", p.29 and p.A13. This report can be found in Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 – Verification report and certificate.

D25 As a result of this analysis, we have included within our allowance for capex all amounts proposed by Orion for 2014 as these expenditures are already committed. This affects projects CPP2, CPP5, CPP18 and CPP20.

D26 For projects requiring expenditure within the CPP period, we have adjusted Orion's proposed expenditure downwards by $60.4 million.[332]

D27 The reasons for these adjustments and adjustment amounts for individual projects are set out in 0 below. The table only shows projects for which we have adjusted the level of expenditure proposed by Orion.

Table D4 - Adjustments and reasoning for adjustments

	Not required to meet forecast demand growth	No evidence that Orion's proposal is the lowest cost alternative	Third party commitment not confirmed or demand growth highly uncertain	Project will increase resilience or security of supply above current levels	Not justified for any other reason	Orion's CPP period capex	Our downward adjustment amount
CPP1				x		46.2	20.0
CPP3	x					6.7	6.4
CPP4				x		8.8	8.1
CPP6					x	0.5	0.5
CPP7	x	x				5.8	5.8
CPP8		x				5.9	4.1
CPP9			x			3.7	2.8
CPP10			x			1.2	0.7
CPP11	x					5.8	5.5
CPP13			x			0.4	0.2
CPP15	x		x			4.4	4.2
CPP17	x		x			4.1	2.1
Total reduction							**60.4**

Note: Prices in 2013 constant prices.

[332] Note that our technical advisers have recommended a downward adjustment of $61.2 million for major projects. Strata Energy Consulting "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013), paragraph 15.

D28 Based on the adjustments set out in 0, we have set project allowances for capex as set out in 0. These figures provide our best view of the forecast expenditure required by Orion to meet the expenditure objective for each major project.

Table D5 - Capex by projects ($m)

Orion reference	Major project description	2014	2015	2016	2017	2018	2019	CPP Period Total
CPP1	Urban Major North - Growth in Marshland and Waimakariri areas.	11.5	12.8	1.3	-	12.1	-	**26.2**
CPP2	Urban Major - Dallington	9.6	-	-	-	-	-	**-**
CPP3	Urban major west. Growth in Hornby area		0.1	0.1	0.1			**0.3**
CPP4	Urban Major southwest. Lancaster-Milton reliability and provision for Hoon Hay		0.5	0.2	-	-	-	**0.7**
CPP5	Urban south Major - Awatea Substation land	0.25	-	-	-	-	-	**-**
CPP7	Rural Major Rolleston. Includes Larcomb and Weedons	7.2	-	-	-	-	-	**-**
CPP8	Rural Hororata/Creyke 66 kV major projects.		1.5	0.3				**1.8**
CPP9	Rural Major - Central Plains water.	1.3	-	-	-	-	0.9	**0.9**
CPP10	Rural Major - Springston		0.5	-	-	-	-	**0.5**
CPP11	Rural Major - Norwood		-	-	-	0.3	-	**0.3**
CPP12	Rural Major - Power Factor	0.1	0.1	0.1	0.1	0.1	0.2	**0.6**
CPP13	Rural Major Annat					0.2		**0.2**
CPP14	Rural Major -	0.38	0.8	-	-	-	-	**0.8**

Orion reference	Major project description	2014	2015	2016	2017	2018	2019	CPP Period Total
	Banks Peninsula							
CPP15	Rural Major - Southbridge		-	-	-	0.2	-	**0.2**
CPP16	Rural Major - Dunsandel				2.4			**2.4**
CPP17	Rural Major - Porter Heights		2.0					**2.0**
CPP18	Rural Major – Kimberley	2.6	-	-	-	-	-	**-**
CPP19	Rural Major - Castle Hill and Arthurs Pass			0.3	-	-	-	**0.3**
CPP20	Rural - GFN	1.1						
								37.2[333]

Note: Prices in 2013 constant prices.

D29 We consider that most of the projects are likely to be needed in the medium term if demand develops as forecast. These projects will enhance the capacity and performance of Orion's network and provide long term benefits for consumers when they are completed. However, we consider that some of the proposed expenditure could be deferred until after the CPP period without materially affecting the quality of service to consumers during the CPP period.

D30 One of the main benefits of deferring these projects will be a lower increase in prices to Orion's consumers. Our consultation shows that consumers are more interested in the cost quality trade-off, where they would accept the current level of reliability if that resulted in lower prices.[334] There are a range of other benefits in particular as set out in the Strata report and summarised in the quote in paragraph D6 above.

D31 Slowing investment is particularly appropriate for projects required to enhance security of supply standards or increase resilience, given the level of resilience already provided by Orion's network as evidenced by its performance after the earthquakes. Orion has proposed a number of projects of this nature. We consider that such projects could be deferred until after the CPP period to minimise the impact of price increases to consumers. In the present circumstances we expect that

[333] Orion's proposal includes $97.5 million of capex. We have reduced this by $60.4 million to arrive at a capex allowance of $37.1 million for major projects. Table D5 differs by a non-material rounding difference.

[334] Refer to submissions in Chapter 2, at paragraphs 2.42-2.44.

prioritising resilience expenditure is unlikely to meet consumer expectations in the short term. There are no indications that consumers generally seek greater resilience or reliability. Our consultants, Strata, advise:

> It is important to note that planning standards are used by EDBs as planning guidelines. They do not represent absolute minimum standards to be implemented and maintained in all situations, at all times…[335]

D32 We also have reservations about whether it is appropriate to invest this heavily at a time when labour costs are anticipated to be high. We therefore consider that delaying major expenditure at this time is in consumers' long term interests as the expected premium on labour costs is expected to be temporary.

D33 The results of our project-specific analysis is discussed in the following section.

CPP1 - urban major north

D34 Orion's estimated expenditure for Project CPP1 within the CPP period is $46.2 million (out of a total $60 million cost of that project).[336] This includes expenditure to:

D34.1 meet demand in the urban north;

D34.2 improve the network security level in this area; and

D34.3 improve the resilience of this section of its network to high impact, low probability events.

D35 We do not consider that all of the proposed expenditure under Project CPP1 is required during the CPP period. In a post-earthquake environment, where uncertainty remains as to how Christchurch's suburbs and CBD will develop, there are benefits to consumers from Orion slowing its proposed development path. Strata states: [337]

> Having reviewed the specific projects included in the CPP1 and CPP2 programmes, we have observed that, as the city rebuild is at a very early stage, a significant level of planning uncertainty exists in the current environment. This uncertainty increases the risk to consumers that capital investments made now may become significantly suboptimal or stranded as patterns of electricity demand develop over a period of many years.

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335 Strata Energy Consulting "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013), paragraph 31.

336 Orion will spend $14.4m on a 66 kV cable between Bromley and Rawhiti which will replace the two cables damaged in the earthquake and installing diesel generation at QEII Park, prior to the beginning of the CPP period. This expenditure is not included in our expenditure allowance for the CPP period. Similarly CPP 2 will be completed in 2014 and is not included in our expenditure allowance for the CPP period.

337 Strata Energy Consulting "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal (2 August 2013), paragraph 48.

D36 A slower pace of development will reduce the cost of electricity network services to consumers and may allow Orion to select a more appropriate 66 kV network architecture. Partna Consulting indicated that:

D36.1 There is at least one alternative architecture that could provide adequate subtransmission capacity and security across Christchurch.[338]

D36.2 Development alternatives exist that would more effectively stage the investment to match the timing of demand growth to account for uncertainty and provide option value as to how Orion's reliability and resilience criteria are met.[339]

D36.3 Staging of investments in this way would also lower the economic cost to Christchurch consumers.[340]

D37 We concur with these views and consider that the benefits likely to accrue to consumers as a result of the lower short term expenditure required from this alternative development path are likely to more than outweigh potential reductions in service levels to consumers as a result of delays in expenditure on investment driven by resilience.[341]

D38 In response to our issues paper, consumers submitted that they are more concerned with increases in electricity prices than with improving the current level of service.[342]

D39 In addition, Strata advised that slowing down major project capex expenditure would: [343]

- provide more time for demand growth patterns to more clearly emerge, allowing greater visibility of alternative options to Orion's proposed development plan;
- free up resources to deliver high priority projects within the expenditure plan;
- obtain the time value of money benefits derived from deferring expenditure;
- avoid the need to increase project management and project delivery resources;

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338 Partna Consulting Group "Findings on the Orion CPP proposal -Urban major projects North (CCP1) and Dallington (CPP2)" (June 2013), paragraph 14.

339 Partna Consulting Group "Findings on the Orion CPP proposal -Urban major projects North (CCP1) and Dallington (CPP2)" (June 2013), paragraph 3a.

340 Partna Consulting Group "Findings on the Orion CPP proposal -Urban major projects North (CCP1) and Dallington (CPP2) (June 2013), paragraph 3b.

341 Based on Orion's planning standards, set out in section 5.3.1 of Orion's 2012 Asset Management Plan, consumers supplied from urban zone substations fed by a single 66 kV cable would experience an interruption to supply of up to one hour, if the 66 kV cable fails, and up to two hours if critical components within the zone substation fails.

342 See, for example, the quotations at paragraphs 2.42-2.44, chapter 2.

343 Strata Energy Consulting "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013), paragraph 56.

- allow expenditure to be moved outside the period when contracting labour costs will be particularly high; and
- lessen the likelihood of mistakes from rushed design, construction and commissioning activity.

D40 We consider that it is reasonable for Orion to invest to meet demand growth within the CPP period, but consider it is appropriate to delay investments that improve resilience or meet security of supply standards. Our consultants Strata and Partna support this view. Strata states:[344]

> Of note is that Orion is seeking within its CPP proposal to strengthen its 66 kV network to provide a sub-transmission backbone that replaces suburban transfer capacity that has historically been provided at 11 kV.
>
> A strategic change of this significance requires that gradual redevelopment is carried out in a staged manner over many years. As the 66 kV network is developed over time, the change will enable significant simplification of the 11 kV network so that it increasingly provides only local distribution service.

D41 Partna states:[345]

> Partna recommends that enhanced security and resilience investments are removed from the CPP capex plan and undertaken in future time periods.

D42 We have therefore set a capex allowance that provides for a pool of expenditure to allow investment in projects which will allow Orion to:

D42.1 meet growing demand in the Waimakariri, Marshland and Belfast areas;

D42.2 maintain current levels of security of supply to consumers in the urban north areas for the CPP period; [346] and

D42.3 maintain option values for the build out of Orion's network in this area to meet its planning standards after the end of the CPP period.

D43 By providing for this level of expenditure, we have allowed for one 66 kV cable into each of the new substations at Waimakariri and Marshlands. Orion had proposed two cables and therefore two sources of supply to both these substations.

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344 Strata Energy Consulting "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal (2 August 2013), paragraphs 35-36.

345 Strata Energy Consulting "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013), paragraph 53.

346 Consumers in these areas are currently supplied by 11 kV circuits from Dallington, McFaddans, Papanui and Rawhiti. When failure of these circuits interrupts supply to consumers, Orion restores supply by switching consumers to healthy feeders.

D44 The level of reliability provided by our proposed level of expenditure will be lower than the level proposed by Orion, but will be similar to the current level of reliability experienced by these consumers. In the event of a failure of a 66 kV cable, consumers supplied from these substations will have their power interrupted for up to two hours.[347] In Orion's proposal, electricity supply would be restored within a few minutes. However, compared to existing 11 kV cables in the area, the likelihood of 66 kV cable failure is low because the 66 kV cables will be newer.

D45 Once Orion has installed a new 66 kV cable from Bromley to Rawhiti, reliability of the Rawhiti substation will also be improved when compared to the current level, albeit less than the level that would be provided under Orion's plan. Two factors could contribute further towards improving the reliability of the Rawhiti substation:

D45.1 The new underground cable supplying Rawhiti is likely to be more reliable than the current temporary overhead 66 kV line;

D45.2 If Orion retains the 66 kV line to Rawhiti until it builds the second circuit to Rawhiti, then up to 20 MW of demand at Rawhiti will be on n-1 security if the 66 kV cable fails. Demand in excess of 20 MW would be restored within 11 kV switching time.

D46 The capex allowance for Project CPP1 is set out in 0:

Table D6 - CPP1 Capex in CPP Period ($m)

CPP1	2015	2016	2017	2018	2019	CPP Period Total
Waimakariri zone substation - Stage 1	5.3					5.3
Hawthornden to Waimakariri 66 kV cable	7.5					7.5
Belfast Diesel Generation - Stage 1		1.3				1.3
Marshland zone substation				6.3		6.3

[347] This is the current level of reliability to consumers in areas. Currently consumers are supplied by 11 kV cables from neighbouring zone substations. A fault in an 11 kV cable interrupts electricity supply to consumers supplied by that cable for up to two hours. The two hour interruption applies to Class C2 zone substations in Orion's Network security of supply standard presented on page 112 of the Orion's Proposal.

CPP1	2015	2016	2017	2018	2019	CPP Period Total
McFaddens - Marshland				5.8		5.8
Total	12.8	1.3	0	12.1	0	26.2

Note: Prices in 2013 constant prices.

Underground or overhead?

D47 As a result of its review of expenditure proposed by Orion under CPP1 the verifier considered that proposed expenditure could be reduced if proposed 66 kV circuits were constructed overhead.[348] We investigated this further. Based on the information provided we consider that there is no material advantage in exploring overhead lines for the outer northern ring.

D48 Material provided to us by Orion states that the difference in the cost of installing overhead lines and underground cables lies in the cost of private property easements, rather than the comparison between underground costs and the cost of building overhead lines.

D49 Estimates provided by Orion indicate that private property easements along Orion's proposed route would cost between $33.5 million and $55.8 million.

D50 Analysis carried out for the Commission by Calverton Business Consulting Group (Calverton) indicates that the assumptions used by Orion to calculate these numbers appears to have resulted in over estimation of the property costs. However, Calverton also states that:

> "Even with this estimate, the overhead option still … remains economically less viable than the underground alternative…[T]his cost differential is largely a reflection of the fact that the route passes through built-up residential areas which will cause significantly easement cost and injurious affection to be payable by Orion."[349]

D51 Calverton also states that even if it was possible to use a different route, the activity would be non-conforming under Christchurch City Council planning frameworks, and Orion would likely meet with considerable resistance from opposing submissions during the Resource Management Act Hearing process.[350]

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348 Geoff Brown & Associates Ltd "Verification Report", p.1. This report can be found in Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 – Verification report and certificate.

349 Calverton" CPP Proposal: Comparative Costing for Overhead and Underground Lines", p. 1.

350 Calverton" CPP Proposal: Comparative Costing for Overhead and Underground Lines", p. 1.

Our assessment of projects planned for south, west and rural regions (CPP2 – CPP20)

D52 We consider that some of the proposed expenditure for projects in the south, west and rural regions is not necessary within the CPP period to meet customer's price-quality expectations.[351] We consider that a significant number of projects and expenditure could be deferred until after the CPP period.

D53 Strata has reviewed our assessment of projects in the southwest and rural regions. Strata has confirmed our assessment of all projects except projects CPP12 and CPP16. Strata considered that projects CPP12 and CPP16 did not have strong business cases for inclusion within the CPP period. Strata discussed its review of our analysis of these projects in section 3.4 of its report.[352]

D54 We are conscious that due to the time difference between planning in 2013 and implementation in 2017 or later, there is uncertainty on how much expenditure will be required during the CPP period. While some projects will proceed within the CPP period, others will likely not.

D55 By (implicitly) assuming all projects proceed during the CPP period we consider that Orion's proposed level of capex is likely to be considerably too high. A more realistic approach would be to probability weight the level of capex. In the absence of robust information about the probabilities, we assume 50% proceed within the CPP period.

D56 For projects that we consider uncertain, we have therefore adjusted Orion's expenditure downwards by 50% for these projects. Within the overall capex allowance, Orion will be able to select which projects and what expenditure proceeds in the CPP period and what proceeds subsequent to that.

D57 Where we consider that industrial or major capacity growth is relatively certain, we have adjusted the expenditure to 50% of the project costs. Orion's contribution of 50% of the project cost reflects Orion's contribution policy. The remaining 50% is funded by the consumer which would directly benefit from the investment.

D58 We consider that the remainder of project CPP7 and some components of project CPP8 are driven by Orion's 66 kV rollout strategy. Cheaper alternatives appear to be available which Orion could explore. Our concerns and possible alternatives are discussed in the next section of this attachment.

D59 Orion has also stated that a number of projects are required due to constraints in the 11 kV network. Orion has not provided details on these constraints. In the absence of specific information we consider that there may be other options for

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351 Projects in the south, west and rural regions are CPP3, CPP4, CPP6 to CPP17 and CPP19. We have not assessed CPP2, CPP 5, CPP18 and CPP20 because these projects will be completed before the start of the CPP period.

352 Strata Energy Consulting "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013), section 3.4.

managing these constraints that could be more efficient. Strata also confirms this view. In relation to project CPP15 Strata states:

> The proposal also mentions 11 kV constraints but other options to relieve those in the short term (e.g. line regulators and/or PFC) are not considered.[353]

CPP2 - urban major Dallington

D60 This project seeks to reinstate the Dallington zone substation that was damaged during the earthquake, and install cables between Dallington and the Transpower's grid exit point (GXP) at Bromley and between Dallington and McFaddens zone substations.

D61 Orion forecasts to complete this project in 2014 at a total project cost of $19.6 million.

D62 The 2014 expenditure for this project is included within the capex allowance for 2014 on the basis that the expenditure is committed.

CPP3 - urban major west

D63 Under Project CPP3, Orion proposes to upgrade the capacity of cables at Moffett substation, convert Shands substation to 66 kV and buy land for a future substation at Templeton. Orion's estimated cost for these projects in the CPP period is $6.7 million.

D64 Orion states that the need for these investments is driven by planned industrial developments in south Hornby along with likely residential growth around Templeton. This load growth will give rise to constraints in the 11 kV network:

> It is these 11 kV constraints as much as the zone substation capacities that are driving the need for investment:
>
> Parts of the 11kV network are already constrained in outages at Moffett, Hornby or Shands zone substations.
>
> The Islington 33 kV GXP N-2 event would result in lost load at present winter demand levels. Further growth will escalate this security gap.[354]

D65 We do not consider that Orion needs to convert Shands substation to 66 kV in the CPP period in order to meet demand according to the demand forecast presented to us.[355] Demand forecasts show that demand growth in the area will be less than the

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353 Strata Energy Consulting "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013), p.20.

354 Orion "Urban major Projects - West CCP3 Project Summary", p. 11.

355 Orion plans to convert Shands to 66kV in 2017. Orion "Urban major Projects - West CCP3 Project Summary", p.3.

combined firm capacity of the Moffett, Hornby and Shands substations.[356] In the absence of any information demonstrating that Orion is unable to transfer or upgrade the 11 kV network effectively, we consider that it is more prudent to transfer demand between these substations to manage network constraints. Transferring demand between substations may require reinforcement of the 11 kV network, which can be funded from the reinforcement budget.[357]

D66 However, Orion's proposal to acquire land for new substations and replacing the transformer cables at Moffett appears reasonable. Buying land for these substations as it becomes available preserves an option to develop them when demand in the area exceeds the firm capacity of the three substations.

D67 Orion has forecast a cost of $0.3 million in 2013 real dollars for the land purchases and the cable replacement at Moffett. We have included this amount within the capex allowance for the CPP period.

CPP4 - urban major southeast

D68 Under the CPP4 suite of projects, Orion proposes to:

D68.1 provide a 66 kV link between Lancaster and Milton substations;

D68.2 buy additional land for Milton substation; and

D68.3 buy land for a future substation in Hoon Hay.

D69 Orion estimates the cost of this project as $8.8 million within the CPP period.

D70 Orion states that the purpose of the 66kV cable is to improve network resilience to central Christchurch and to provide increased support for a failure at Transpower's Addington GXP. Orion states that plans for this cable have been in preparation for some time.[358]

D71 We are not convinced, based on information available to us, that Orion needs to install the cable between Lancaster and Milton within the CPP period, which at this stage, would be a resilience investment.[359] In line with our findings on CPP1, we consider that it is appropriate to delay a resilience investment of this type.

D72 Uncertainty in the manner and timing in which central Christchurch will develop means that a delay will allow Orion to review the need for a cable between

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356 Orion "Urban major Projects - West CCP3 Project Summary", p.11.

357 This is discussed generally in Attachment K.

358 Orion "Major Urban - Southeast CPP4 Project Summary", p.3.

359 A driver for the need for this cable within the CPP period would be if the two Addington-Milton cables are in poor condition and there is a high risk that both could fail simultaneously.

Lancaster and Milton substations after there is more certainty on how load centres and demand within central Christchurch are likely to develop.

D73 However, Orion's proposal to acquire land for expansion of Milton and Hoon Hay substations appears reasonable because acquiring reasonably priced land now preserves an option to build when necessary.

D74 Orion has forecast $0.7 million for these land purchases. We have included this amount within our capex allowance for this project.

CPP5 - urban major south

D75 This project is to purchase land for a 66 kV zone substation at Awatea.

D76 Orion forecasts to complete this project in 2014. Its total cost is $0.25 million.

D77 Expenditure for this project is included within our capex allowance for 2014 on the basis that it is committed.[360]

CPP 6 - urban major CBD

D78 Orion's proposed expenditure on this project covers landscaping Armagh and Oxford-Tuam substations, which will be sited in future in a zone without buildings along the Avon River. The forecast cost for these investments in improving the exterior of the substations is $0.5 million in 2015.

D79 We also consider that it is more appropriate for the requesting authority to fund this type of public amenity project, not consumers, in the same way for example that requesting parties are required to fund overhead to underground conversions or the relocation of legally installed pre-existing network assets.

D80 We have not included this amount within our capex allowance.

CPP7 - rural major Rolleston

D81 Orion proposes to spend $13.6 million for a suite of projects in the Larcomb, Highfield and Rolleston areas.

D82 Orion's proposed expenditure of $7.8 million on CPP7 includes a number of investments prior to the CPP period:

D82.1 conversion of Larcomb substation and associated lines to 66 kV;

D82.2 building a new substation at Railway road for Westmilk; and

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[360] Orion has forecast project capex for 2014. Although this is not in the CPP period, this capex is used to calculate the building blocks available revenue for 2014 which we used to calculate the allowance for claw-back, and is used to calculate the opening RAB value for 2015 (ie, the CPP period).

D82.3 buying land for future substations at Burnham and Rossendale.

D83 Orion's project summary document for CPP7 indicates that the above investments have been proposed to allow Orion to meet residential and industrial demand growth in the Rolleston and wider Rolleston areas.[361]

D84 During the CPP period, Orion proposes to invest $5.8 million to:

D84.1 build stage 1 of the Burnham 66 kV substation;

D84.2 convert Highfield substation to 66 kV; and

D84.3 convert a section of line between Weedons and Highfield to 66 kV.

D85 Orion's project summary states that the reason for converting Highfield to 66 kV is to allow Orion to extend its 66 kV network to either its Dunsandel substation or to the Greendale, Burnham or Norwood substation sites.[362] Orion has indicated that the new substation is most likely to be sited at Norwood.

D86 Orion's 'Rural Subtransmission proposal' indicates that there are likely to be alternatives for supplying Norwood, Burnham and Dunsandel that do not require conversion of Highfield to 66 kV.[363] 'Rural Subtransmission proposal' shows that Orion plans to construct a 66 kV line between Greendale and Norwood in 2019 and between Dunsandel, Greendale and Norwood in 2021. Both these lines have the potential to supply any of Orion's proposed substations at 66 kV.

D87 Orion's "Rural Subtransmission proposal" indicates that the timing for Burnham substation is uncertain.[364] The Burnham substation will replace the Rolleston substation when demand exceeds Rolleston substation's capacity. Orion's demand forecast shows that demand will remain within the capacity of Rolleston substation within the CPP period.

D88 CPP7 was the only south west or rural major project included within the identified programmes reviewed by the verifier. In his report, the verifier indicated that:[365]

> The need for the Highfield 66 kV line conversion and substation upgrade is more speculative. Much will depend on the new substation at Norwood, which in turn will be driven by whether or not potential new industrial load materialised. While we cannot be certain, we assess the likelihood that Orion will be able to defer this work until beyond the end of the CPP regulatory period to be relatively high.

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361 Orion "Rural Major Capex Project - Rolleston CPP 7 Project Summary", p.3.
362 Orion "Rural Major Capex Project - Rolleston CPP 7 Project Summary", p.22.
363 Orion "Rural Major Projects - Rolleston CPP7 Project Summary", p.4.
364 Orion "66 kV network plan - Rural Subtransmission proposal", Burnham's need date is indicated as 2015/2030. Legend on this plan states that 2030 implies significant uncertainty.
365 Geoff Brown & Associates Ltd "Verification Report", p.29.

D89 We provide further discussion on our assessment of the timing of the need for the Norwood substation under CPP11 below.

D90 We do not consider that conversion of Highfield substation and the associated lines to 66 kV needs to be undertaken in the CPP period. We have therefore excluded amounts for these investments from our capex allowance.

CPP8 - rural major Hororata - Creyke

D91 Under CPP8, Orion proposes to:

D91.1 install a 10 MVA 66/11 kV transformer at Hororata to replace the existing 33/11 kV transformer in 2015 for $1.5 million; [366]

D91.2 buy land for a substation at Creyke in 2017 for $0.3 million.

D91.3 construct a 66 kV line between Darfield and Creyke in 2018 for $0.6 million;

D91.4 build a 33/11 kV substation at Creyke in 2018-20 for $2.8 million; and

D91.5 install ripple control Bankside and Annat substations for $0.7 million.

D92 The forecast cost for this suite of projects is $5.9 million.

D93 Orion states that the reason for this expenditure is to remove the capacity constraints on the 66/33 kV transformers at Hororata. [367] Orion plans to achieve this by transferring load from the Hororata 33 kV network to the 66 kV network. Orion states that Creyke substation will relieve capacity constraints at Darfield substation and will eventually replace Darfield substation. Orion plans to supply Creyke Road from Hororata 66 kV to further remove the 33 kV constraints at Hororata in the longer term.[368]

D94 Our analysis indicates that it may be more economic to manage the Hororata 33 kV capacity constraints using the Transpower's Kimberley GXP. Transpower Kimberley substation is planned to be commissioned in 2014. There is a 33 kV substation at Kimberley that interconnects Darfield and Annat substations. Both Darfield and Annat substations are closer to Kimberley GXP than they are to Hororata substation.

D95 By establishing a 33 kV supply from Transpower's Kimberley substation and using this to supply Darfield and Annat, Orion will reduce demand on the 33 kV network at Hororata. 33 kV supply from Transpower's Kimberley substation can be established for a price similar to the price of the new 66/11 kV transformer bay at Hororata proposed by Orion.

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366 Orion "Rural Hororata/Creyke 66 kV Major Capex Project CPP8 Project Summary", p.16.
367 Orion "Rural Hororata/Creyke 66 kV Major Capex Project CPP8 Project Summary", p.5.
368 Orion "Rural Hororata/Creyke 66 kV Major Capex Project CPP8 Project Summary", p.18.

D96 In addition, this option would omit the need for a 66 kV substation at Creyke or 66 kV lines between Hororata and Creyke.[369]

D97 Orion states that it plans to establish a substation at Creyke because Darfield substation is no longer central to the load it serves and cannot be easily upgraded to 66 kV.[370] However, if it is feasible to supply Darfield from Kimberley at 33 kV, the Creyke substation will not be required.

D98 Orion also plans to replace its Darfield transformer. This is because Orion's demand forecast shows that Darfield demand would be 7.3 MVA in 2015 and 7.9 MVA in 2019. Transformer capacity is 7.5 MVA. There may, however, be scope to transfer some of the Darfield load to Kimberley by reinforcing the 11 kV network.

D99 We do not consider, based on information available to us, that the proposal is the lowest cost alternative. There appears to be lower cost alternatives to that proposed by Orion.

D100 We consider that the proposal to install the ripple control units at Bankside and Annat substations is reasonable. These ripple plants will replace the ageing ripple plant at Hororata and allow Orion to simplify its 33 kV supply at Hororata.[371] We also consider that to manage the Hororata 33 kV capacity constraints, it is reasonable to provide a new 66/11 kV or 66/33 kV transformer depending on the outcome of Orion's analysis.

D101 We have therefore included $1.8 million in our capex allowance to cover expenditure for this project. We have excluded the amount associated with the Creyke substation from our capex allowance.

CPP9 rural major Central Plains Water

D102 Under CPP9, Orion proposes to undertake two separate investments:

D102.1 provide electricity supply to the Central Plains Water Scheme in 2014; and

D102.2 provide a substation at Steeles Road to service a proposed hydro power station nearby.

D103 The first of these investments is forecast to cost $1.3 million and will be completed in 2014. The second is forecast to cost $3.7 million and is forecast for completion in 2018.

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369 Orion plans to upgrade the Hororata-Darfield line to 66 kV in 2020. Orion "Rural Hororata/Creyke 66 kV Major Capex Project CPP8 Project Summary", p.5.

370 Orion "Rural Hororata/Creyke 66 kV Major Capex Project CPP8 Project Summary", p.17.

371 Orion "Rural Hororata/Creyke 66 kV Major Capex Project CPP8 Project Summary", p.19.

D104 We have included amounts for the Central Plains Water Scheme project within our capital allowance for 2014. However, we have however not included the full $3.7m to cover forecast expenditure on the Steeles Road substation. We have included 25% of the project cost in our capex allowance. In line with Orion's contribution policy, 50% would be funded by the consumer. The other 25% represents our adjustment to large projects that have a high level of uncertainty.

D105 Any investment in a substation at Steeles Road is a customer-initiated investment that is dependent on the proposed hydro power station going ahead. Orion has indicated in its responses to the Commission's information requests, that "it does not have sufficient information at this stage to undertake a risk assessment including the stranded asset potential."[372] Based on information made available to us, it is not clear whether this project will go ahead.

D106 We note comments from Strata that this project is speculative at this stage[373] and that there are a number of similar projects that are customer-driven but have a low probability of being committed within the CPP period.

D107 Even though the likelihood that any of these projects may go ahead is low, we consider that some allowance should be made within our capex allowance for the possibility that some may go ahead. We have therefore allowed 50% of Orion's share of the capital costs for such projects on the assumption that some of such projects may proceed within the CPP period.[374]

D108 Furthermore, as stated by Orion:[375]

> we anticipate that this kind of connection may require a contribution in the order of 50% of total cost. On this basis the connection contribution would be $2,489,500. This connection contribution to assets has not been included in our CPP application.

D109 Like the verifier, we have sighted Orion's Connections and Extensions policy document,[376] but we have not seen the model which calculates contributions for this group of customer connections.[377]

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372 Orion, Additional information submitted in response to Commerce Commission information requirement Q022, 3 July 2013, p7.

373 Strata Energy Consulting "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013), p.19.

374 We have allowed 25% of the project costs which represents 50% of Orion's costs. The other 50% of the costs is contributed by the major consumer.

375 Orion, Additional information submitted in response to Commerce Commission information requirement Q022, 3 July 2013, p7.

376 Connections and Extensions Policy NW70.00.45.

377 We note here comments from the verifier, who also stated that "despite detailed calculations being used in the economic model a rather arbitrary approach has been taken to calculating and publishing a final capital contribution charge" Geoff Brown & Associates Ltd "Verification Report", p.62.

D110 As stated by our consultants, Strata, we consider that it is appropriate for third parties to contribute to investments of this type.[378] We have therefore used the 50% proportion indicated by Orion as being payable under its Connections and Extensions policy.

CPP10 - rural major Springston

D111 Forecast expenditure under this project includes:

D111.1 building a new 11 kV switchgear room at Springston;

D111.2 buying land for Greenpark substation; and

D111.3 building a section of 66 kV line to Greenpark substation site.

D112 Orion estimates the cost of the project as $1.2 million in the CPP period[379] and states that this project is designed to meet forecast load growth in the Lincoln and Springston area.

D113 As part of its rationale, Orion states that the:

D113.1 11 kV switchgear room is required to accommodate new switchgear at Springston.[380]

D113.2 66 kV line to Greenpark substation will allow Orion to remove a section of an overhead 33 kV line in Lincoln Township.[381]

D114 In line with our view on CPP6, we do not consider that Orion should build the new 66 kV line to enable removal of an existing line unless funded by the local council. This is in line with our understanding of funding of similar projects under Orion's CPP50 Underground Conversions. For this reason, we have not included an amount to cover this expenditure within our capex allowance.

D115 However, we consider that Orion's plan to build a new substation building to accommodate new switchgear at Springston appears reasonable. This represents an efficient approach to installing ripple control equipment required now and increasing the size of the 11 kV switchboard in the future, as Orion proposes.

D116 We have included Orion's forecast cost of $0.5 million within our capex allowance.

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[378] Strata Energy Consulting "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013), p.19.

[379] Orion "Rural major Projects – Springston CPP10 Project Summary", p.3.

[380] Orion "Rural major Projects – Springston CPP10 Project Summary ", p.15.

[381] Orion "Rural major Projects – Springston CPP10 Project Summary", p.15.

CPP11 - rural major Norwood

D117 CPP11 includes expenditure to provide subtransmission assets to cover forecast load growth in the Norwood area. Orion forecasts expenditure of $5.8 million on this project.

D118 Orion states that this project involves providing for anticipated additional demand from two major industrial users – Meadow Mushrooms and Malvern Abattoirs in addition to meeting natural growth in demand. Orion also states that the timing for the industrial expansion is uncertain and has planned a substation in 2019. Orion also states that without the additional demand from the two major industrial sites, Norwood zone substation would be required sometime after 2020. [382]

D119 Since the timing of the project is uncertain, we consider that this investment could be delayed until after the CPP period.[383]

D120 We also note that Orion has linked this project with expenditure proposed under Project CPP7 to convert the Highfield substation to 66 kV at a cost of $5.8 million.[384] We consider that the cost to convert Highfield to 66kV is significant enough for Orion to explore supplying Norwood from Dunsandel when Norwood zone substation is the main driver for converting Highfield to 66kV mentioned in CPP7.

D121 We have therefore not included the total expenditure proposed for this project in our capex allowance. We have, however, included an allowance for buying land for Norwood substation of $0.25 million in 2018.

CPP12- rural major power factor

D122 Orion proposes to install power factor correction equipment in the rural network. Orion estimates the cost of the project as $0.6 million over the CPP period.[385]

D123 We consider it is reasonable to include this expenditure in our capex allowance. We consider that this investment will reduce energy losses and therefore promote energy efficiency. This outcome aligns with the requirements of 54Q of the Act. The investment also has a potential to defer other expenditure to upgrade the network, to the potential benefit of consumers.

D124 We have included the full cost of $0.6m within the capex allowance.

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382 Orion "Rural major Projects – Norwood CPP11 Project Summary ", p.5.

383 This is a view shared by the verifier, who indicated following his analysis of the need for related investments under CPP7 that "The need for the Highfield 66 kV line conversion and substation upgrade is more speculative. Much will depend on the new substation at Norwood, which in turn will be driven by whether or not potential new industrial load materialised. While we cannot be certain, we assess the likelihood that Orion will be able to defer this work until beyond the end of the CPP regulatory period to be relatively high." See Geoff Brown & Associates Ltd "Verification Report", p29.

384 Orion "Rural Rolleston Major Capex Project CPP7 Project Summary", p.22.

385 Orion "Rural major Projects – Power Factor CPP11 Project Summary ", p.3.

CPP13 - rural major Annat

D125 Expenditure under this project has been proposed by Orion to upgrade the capacity of the transformer at Annat zone substation in order to supply electricity for pumping in the Central Plains Water Scheme. Orion estimates the cost of project as $0.4 million.

D126 Although the wording of Orion's project summary document for CPP13 indicates that this expenditure is being undertaken by Orion as a result of predicted load growth driven by the Central Plains Water Scheme, we have been advised by Orion that "work undertaken to physically provide new or upgrade connections on the Central Plains Water Scheme sites will be handled under the network connections budget."[386]

D127 We are unclear, based on this response, as to what further expenditure outlined in Orion's project summary document remains within this project which would not relate to expenditure that is directly driven by the Central Plains Water Scheme. We have treated the project as one that is third party initiated, and consistent with our view on CPP9, have included 50% of the cost of this project in our capex allowance. On the basis that third party contributions have been included by Orion within its CPP53 network connections budget, we have not made any further adjustment for contributions payable on expenditure included within CPP13.[387] We have therefore included $0.2 million within our capex allowance.

CPP14 - rural major Banks Peninsula

D128 Project CPP14 includes expenditure proposed by Orion to upgrade the transformers at Motukarara and Teddington substations.[388]

D129 Orion estimates the cost of this project as $0.8 million in the CPP period.[389]

D130 Orion's load forecast shows that if the transformer at Diamond Harbour is out of service, Teddington substation will not be able to supply demand in the area.[390]

D131 This investment proposal appears reasonable in order to continue to meet demand in the region. We have therefore included Orion's proposed expenditure on this project within our capex allowance for the CPP period.

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386 Orion, Additional information submitted in response to Commerce Commission information requirement Q022, 3 July 2013, p7.

387 We note that, as for CPP9, Strata consider that this project is speculative and that as for CPP9, proposed expenditure for it should be excluded from our building block inputs, see Strata report p.20.

388 Orion "Rural Major Projects – banks Peninsula (CPP14 Project Summary", p.5.

389 Orion "Rural Major Projects – banks Peninsula (CPP14) Project Summary", p.10.

390 Orion "Rural Major Projects – banks Peninsula (CPP14) Project Summary", p.8.

CPP15 - rural major Southbridge

D132 Expenditure proposed by Orion under Project CPP15 covers provision of a new zone substation in the Southbridge district to improve capacity and security of supply in the district. Orion estimates the cost of this project as $4.4 million.[391]

D133 We consider Orion's demand forecasts do not justify undertaking this project within the CPP period. Accordingly, we think this expenditure can be deferred until after the CPP period.

D134 Strata peer-reviewed our analysis and concurred.[392]

D135 We consider that it is reasonable to purchase land to preserve option value for building this substation and have included $0.2 million in 2018 in our capex allowance.

CPP16 - rural major Dunsandel

D136 Proposed expenditure under Project CPP16 covers upgrading the transformers at Dunsandel substation to 23 MVA.[393]

D137 Orion has indicated in its project summary document that the project is to provide additional capacity to the Synlait dairy factory and is estimated to cost $2.4 million.[394] [

[Confidential to Orion]

]"[395]

D138 [Confidential to Orion]

]

D139 We have included $2.4 million for this project in our capex allowance.

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391 Orion "Rural Major Projects – Southgate (CPP15) Project Summary", p.3.

392 Strata Energy Consulting "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013), p.20.

393 Orion "Rural Major Projects – Dunsandel CPP16 Project Summary", p.3.

394 Orion "Rural Major Projects – Dunsandel CPP16 Project Summary", p.3.

395 Orion, Additional information submitted in response to Commerce Commission information requirement Q022, 3 July 2013, p.5.

CPP17 - rural major Porter Heights

D140 Expenditure under this project will provide network connected supply to a proposed winter sports centre and alpine village near Porters Pass. Orion estimates the cost of this project to be $4.1 million during the CPP period.[396] Orion states that this project will be required in 2015, indicating that it is reasonably certain.

D141 [Confidential to Orion], we consider it is reasonable to include $2 million in our capex allowance.

CPP18 - rural major Kimberley

D142 This project is forecast to be completed in 2014. We have therefore included $2.6 million within our capex allowance for 2014.

CPP19 - rural major Alpine

D143 This project is to improve security and reliability of supply to Castle Hill and Arthurs Pass for an estimated cost of $0.3 million.[397]

D144 This investment proposal appears reasonable based on the information we have reviewed. Diesel generation provides an alternative to upgrading the network to Castle Hill and Arthurs Pass.

D145 We consider this project is consistent with the expenditure objective and have included $0.3 million in our capex allowance.

CPP20 - rural major GFN

D146 This project is a programme to install ground fault neutralisers (GFN) in the rural network.

D147 The project is forecast to be completed in 2014. We have therefore included $1.1 million within our capex allowance for 2014.

396 Orion "Rural Major Projects – Porters Height CPP17 Project Summary ", p.3.
397 Orion "Rural Major Projects - Alpine (CPP19) Project Summary", p.3.

Attachment E: Maintenance and replacement of network assets

Purpose of this attachment

E1 In this attachment we discuss our assessment of Orion's proposal and, in particular, the rationale for the adjustments we have made to arrive at the opex and capex allowances used in our draft decision on the price path.

E2 We review network maintenance opex and replacement capex together in this attachment, as they are both required to maintain network assets. The categorisation of expenditure into opex and capex is required for accounting purposes. Reviewing these items of expenditure collectively provides a better indication of how much Orion spends on maintaining its assets.

What Orion proposed

E3 Orion submitted forecast opex and capex using alternative categories, as permitted under the Input Methodologies.[398] Table E1 is therefore broken down into these categories rather than those specified within the Input Methodologies.

Table E1 - Orion's proposed expenditure to maintain and replace network assets ($m)

Expenditure Category	2014	2015	2016	2017	2018	2019	CPP Total	Total 2014 to 2019
Scheduled Maintenance	17.0	18.2	17.8	16.7	16.4	16.5	85.6	102.6
Emergency Maintenance	6.5	6.5	7.7	6.5	6.5	6.5	33.7	40.2
Unscheduled Maintenance	2.0	2.0	2.0	2.0	2.0	2.0	10.0	12.0
Total Network Maintenance	**25.5**	**26.7**	**27.5**	**25.2**	**24.9**	**25.0**	**129.3**	**154.8**
Replacement Capex	23.4	24.1	25.8	25.9	23.7	24.9	124.4	147.8
Total Asset Management Spend	**48.9**	**50.8**	**53.3**	**51.1**	**48.6**	**49.9**	**253.7**	**302.6**

Note: Prices are in 2013 constant prices.

Summary of conclusions

E4 We consider that Orion's proposed expenditure for maintaining and replacing its network assets is greater than is required by the network during the CPP period. This is because:

E4.1 Orion's proposed expenditure for replacement capex includes amounts required to replace assets it has categorised as being in good or fair condition under its own asset health rating measures;

[398] Electricity Distribution Services Input Methodologies Determination 2012 [2012] NZCC 26, clause 5.4.31.

E4.2 Whilst Orion's use of a bottom-up approach to forecasting expenditure is appropriate, we do not consider that Orion has sufficiently challenged the proposed expenditure to ensure it is prudent and reflects organisation-wide efficiencies;

E4.3 Orion has not been able to demonstrate that its proposed expenditure for emergency maintenance is based on reasonable assumptions for future underground cable fault rates; and

E4.4 Orion has not been able to demonstrate that its forecast contingency sums are necessary.

E5 The adjustments we have made are summarised in Table E2.

Table E2 - Summary of our adjustments to expenditure required to maintain and replace network assets ($m)

Spend to maintain and replace network assets	2014	2015	2016	2017	2018	2019	CPP total 2015 to 2019	Total 2014 to 2019
Network Maintenance								
Orion's proposed network maintenance	25.5	26.7	27.5	25.2	24.9	25.0	129.3	154.8
Our allowance for network maintenance	22.8	22.5	23.3	21.0	20.7	20.7	108.3	131.1
Difference	**(2.7)**	**(4.2)**	**(4.2)**	**(4.2)**	**(4.2)**	**(4.3)**	**(21.0)**	**(23.7)**
Replacement Capex								
Orion's proposed replacement capex	24.3	24.1	25.8	25.9	23.7	24.9	124.4	148.7
Our allowance for replacement capex	17.0	16.9	18.0	18.1	16.6	17.4	87.1	104.1
Difference	**(7.3)**	**(7.2)**	**(7.8)**	**(7.8)**	**(7.1)**	**(7.5)**	**(37.3)**	**(44.6)**
Total difference	**(10.0)**	**(11.4)**	**(12.0)**	**(12.0)**	**(11.3)**	**(11.8)**	**(58.3)**	**(68.3)**

Note: Prices are in 2013 constant prices.

E6 Orion's proposed expenditure to maintain and replace network assets includes $11.0 million of maintenance and replacement costs associated with the planned acquisition of spur assets over the CPP period. A breakdown of these costs is provided in Table E3 below.[399]

[399] The breakdown of expenditure to maintain and replace spur assets as provided by Orion.

Table E3 - Expenditure associated with maintaining and replacing spur assets ($m)

Spur Asset Expenditure Category	2014	2015	2016	2017	2018	2019	CPP Period Total 2015 to 2019	Total 2014 to 2019
Network maintenance	0.2	0.3	0.3	0.3	0.3	0.3	1.5	1.7
Replacement capex	1.0	2.8	1.1	2.8	0.6	2.2	9.5	10.5
Total spur asset costs	**1.2**	**3.1**	**1.4**	**3.1**	**0.9**	**2.5**	**11.0**	**12.2**

E7 We discuss our findings on the planned acquisition of spur assets in more detail in Attachment J.

Our assessment of Orion's proposal

E8 Orion has generated its proposed expenditure using a bottom up forecast process similar to the one it uses to produce its Asset Management Plans. However, Orion notes within its CPP proposal that the proposed expenditure has been prepared without the benefit of annual review and refinement, a process which Orion considers is an important part of refining what it in fact spends on an annual basis.

E9 We understand Orion uses its annual budgeting and planning processes to ensure assets are managed prudently to provide a reliable and appropriate level of service that is delivered efficiently. However, its CPP proposal has not benefited from a similar level of refinement and challenge.[400] Since the proposed levels of expenditure will determine the prices consumers pay, we consider it is important that the forecasts are refined and adequately reviewed and challenged for prudency and efficiency. If the forecasts of expenditure are higher than the network requires, consumers will pay too much (and Orion may generate a return that is greater than normal).

E10 We acknowledge the limited time Orion has had to prepare its CPP proposal and the fact that a CPP proposal requires expenditure to be forecast over a 7 year period. However, to ensure consumers do not pay too much, and Orion does not either over-invest or expect to earn a greater than normal return, the forecasts must reflect the efficient costs of delivering services to the required standard.

E11 In our view, in order for the proposed expenditure to meet the expenditure objective it should be adjusted to reasonably reflect:

E11.1 Likely gains from improved asset knowledge and prudent management;

[400] The CPP proposal includes the Assessment period (2013 and 2014), as well as the CPP regulatory period (2015 to 2019).

E11.2 The impact of the network development programme;

E11.3 The need to manage workload through the rebuild period;

E11.4 Optimization of expenditure across the organization; and

E11.5 Opportunities to reduce spend through proactive management of known drivers of costs (for example, emergency faults caused by third parties could be proactively managed by monitoring digger location by GPS).

Contracting processes and policies

E12 As part of our assessment we also reviewed Orion's contracting processes and policies given that Orion relies on its tendering process to establish unit costs used within its bottom up forecast of proposed expenditure.

E13 Orion operates a contracting outsource model for implementing much of the maintenance and capital expenditure on its network. Orion's policy requires that all jobs over $20,000 are tendered and multiple quotes are required for jobs over $5,000.

E14 Orion advised that operating a 'full' contracting model, seeking multiple tenders for every project, even in a market the size of Canterbury, can be complex and costly. This is because:

E14.1 Much of the work is specialised and therefore requiring all contractors to have the appropriate skills and experience; and

E14.2 The costs of ensuring that contractors meet Orion's required quality standards.

E15 Our analysis of Orion's contracting process found that:

E15.1 Orion invites tenders from a pool of specialised contractors, all of whom meet Orion's standards;

E15.2 Because of the specialised nature of the work, work is generally performed by a small subset of contractors, with Connetics (Orion's subsidiary) winning around 70% of the total; and

E15.3 As part of its budgeting process Orion seeks to maintain an active market for the provision of electrical maintenance and construction in the Canterbury region.

E16 While we consider Orion's tendering approach is likely to result in favourable long-term prices and a sustainable, high quality workforce, we note that:

E16.1 We have not evaluated a breakdown of pricing within tenders;

E16.2 In our review of the information Orion provided to us, we did not see evidence that jobs over $5,000 received multiple quotes (although this is not to say Orion did not obtain competing quotes);

E16.3 While multiple tenders were always requested for contracts over $20,000 for contracts we reviewed, there were several cases where Orion received only one quote from its subsidiary, Connetics, as the other contractor invited to tender by Orion declined to tender due to workload;

E16.4 We have concerns over Orion's perceived need to balance contract works to support 'an active market', as opposed to tendering work based on the prioritised needs of the network, particularly, given the likely demand for contracting resources since the earthquakes and that we have noted that contractors are declining to tender due to workload (we address this issue in further detail later in this attachment);

E16.5 We also have some concern about the significant increase in contracting costs, which Orion has identified as being driven by a need to attract and maintain suitably-qualified staff within a highly competitive workforce environment (of particular concern is the increase that may be obtained by Orion's own subsidiary, Connetics); and

E16.6 These increases in contract labour costs are based on the rationale that pressures on the labour market during the city reconstruction will lead to increased local labour costs. We have considered the reasonableness of Orion's labour cost forecasts in more detail in Attachment I of this report.

Replacement capex

E17 We consider that Orion's proposed expenditure for replacement capex exceeds the amount required to deliver the services required by consumers at an efficient level of cost during the CPP period. This is because:

E17.1 Orion's proposed expenditure for replacement capex includes amounts to replace assets it has categorised as being in good or fair condition under its own asset health rating measures;

E17.2 Orion has the ability to make improved prudent decisions on asset management through the acquisition of improved asset condition assessment practices as its Condition Based Risk Management (CBRM) tool is rolled out;

E17.3 Forecasts will be optimised as the replacement programme is implemented and reviewed as part of Orion's annual budgeting processes;

E17.4 The impact on network development projects has not been considered in conjunction with the replacement capex programme; and

E17.5 The need to manage workloads across the overall expenditure programme.

E18 Our technical adviser, Strata, has proposed a 30% reduction in Orion's forecast of replacement capex. The 30% reduction to Orion's forecast recommended by Strata is made up of:

E18.1 A reduction of 20% of the proposed expenditure to account for assets in good and fair condition; and

E18.2 A further reduction of 10% to account for prudency and organisation-wide efficiencies that would lead to the deferral of some replacements (for example, the impact of the development capex projects on the replacement capex programme).

E19 The evidence Orion has provided in support of its proposed expenditure level is not compelling. For the reasons set out above, we agree with Strata's recommendation, and consider a replacement capex forecast that is 30% lower than Orion's proposed expenditure would better meet the expenditure objective.

The replacement of assets in good and fair condition

E20 Orion has provided us with condition and age based data for switchgear and protection relays. Taken together, expenditure on these two asset classes makes up approximately 50% of Orion's proposed replacement capex of $124.4m over the CPP period.

E21 Figures E1 and E2 highlight the current condition of Orion's switchgear and protection assets derived from Orion's 2013 Asset Management Plan. This assessment has been undertaken as at 2013, before the commencement of Orion's planned switchgear replacement programme as forecast in its CPP proposal.

Figure E1 - Assessed Condition of Protection systems

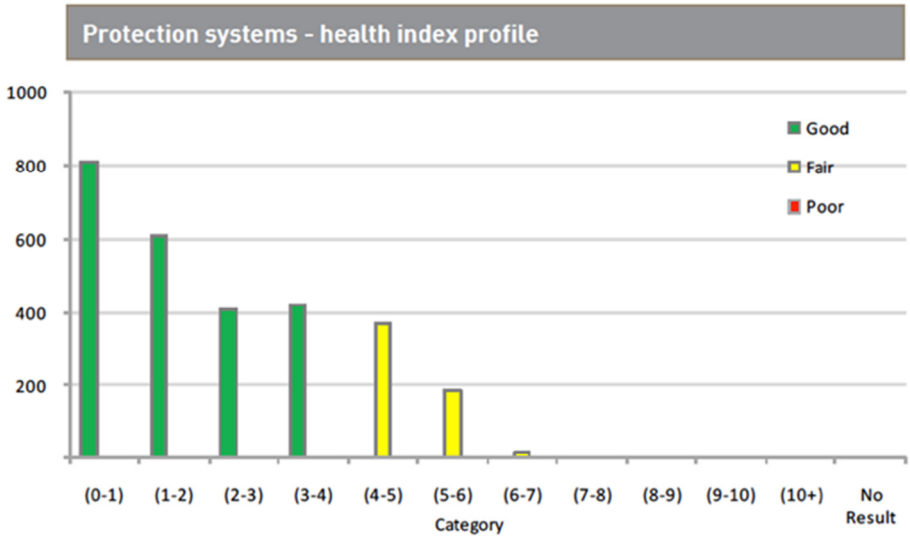
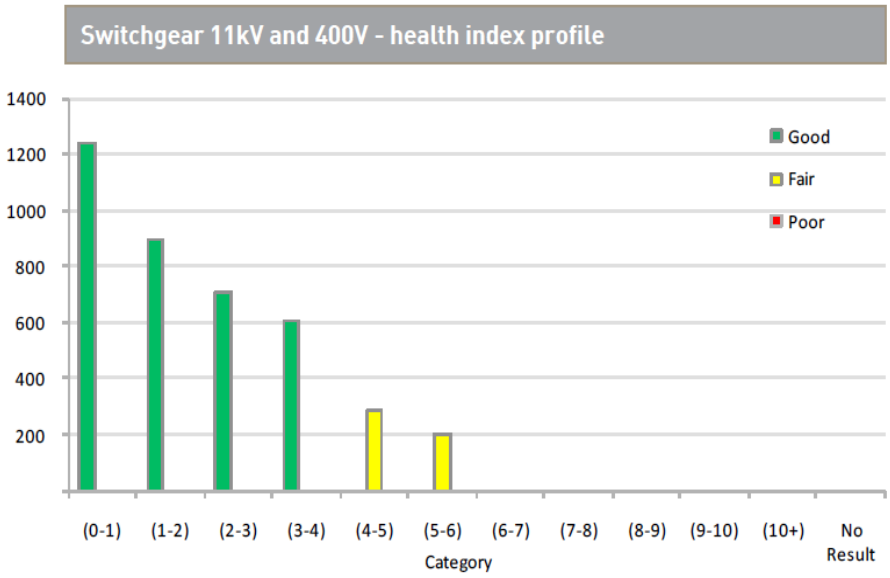


Figure E2 - Assessed Condition of Switchgear



Source: Orion's 2013 AMP

E22 As can be seen in Figures E1 and E2, Orion's switchgear and protection assets are identified by Orion as being in good or fair condition, and we note in particular that Orion assesses that no assets are in poor condition. From the information provided to the verifier by Orion it appeared that Orion's switchgear replacement programme was justified by the average age profile of the assets to be replaced during the CPP period.[401]

E23 In its Asset Management Plan 2013-2023, Orion states that all switchgear is in satisfactory working condition with the overall condition being very good, with the exception of a few sectionalisers and air-breaker isolators.[402]

E24 We engaged Strata to review and test the appropriateness of the assumptions made by Orion. Strata's assessment of information provided by Orion identified that its proposal includes the replacement of assets within switchgear and protection relay that are rated to be in good and fair condition.

E25 Strata produced a number of scenarios to test the appropriateness of the replacement levels forecast by Orion. From this work it determined an alternative scenario that reflected a reasonable level of replacement based on condition and

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401 Geoff Brown & Associates Ltd "Verification Report", page A25, table A5.2. This report can be found in Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 - Verification report and certificate.

402 Orion New Zealand Limited "Asset Management Plan - A 10-year management plan for Orion's electricity network from 1 April 2013 to 31 March 2023" (March 2013), available at http://www.oriongroup.co.nz/publications-and-disclosures/asset-management-plan.aspx.

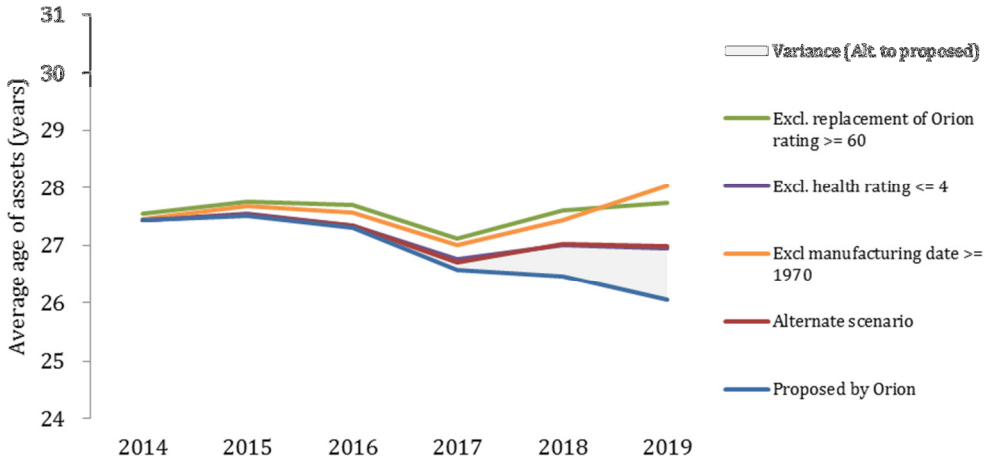
age data. This resulted in a proposed expenditure reduction of 20% to that proposed by Orion.[403]

E26 Strata relied on the robustness of Orion's own condition data within its alternative scenario. Strata's work did not extend to testing the optimal point of replacement based on Orion's condition data.

E27 For further detail of the analysis carried out by Strata and the methodology it used in determining the alternative scenario refer to Strata's detailed report released with this report.

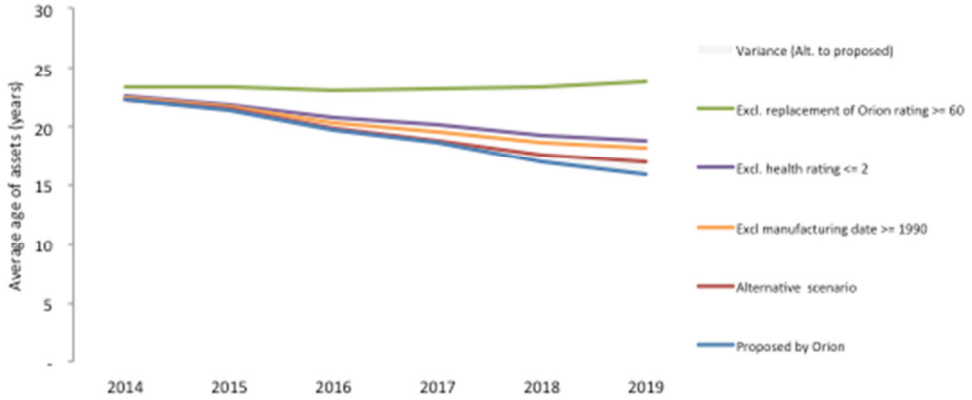
E28 As a cross check Strata also reviewed the impact on the average age of switchgear and protection relay assets after having run their alternative scenario. This showed that the average age of the fleet (alternative scenario) would be maintained at or near levels within Orion's CPP proposal (blue line).

Figure E3 - Average asset age: Switchgear



[403] Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraph 129.

Figure E4 - Average asset age: Protection Relays



Note: Source for Figures E3 and E4 is Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013).

E29 As Orion has not extended its condition assessment to asset classes other than switchgear and protection relays, Strata was not been able to assess other asset classes.

E30 However, Strata considers that it is reasonable to apply a similar extrapolation across other asset replacement categories.[404] This is supported by:

E30.1 Strata's findings in switchgear and protection relays;

E30.2 Switchgear and protection relays making up approximately 50% of total replacement capex;[405]

E30.3 The verifier's conclusions that the increase in expenditure on asset replacement is not fully justified;[406]

E30.4 Strata's view that Orion's condition ratings for switchgear and protection relays indicate there is scope to delay replacement capex without impacting on reliability or taking assets to a point where a risk of failure will be of a significant detriment to consumers;[407] and

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404 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraph 130.

405 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraph 127(a).

406 Geoff Brown & Associates Ltd "Verification Report", page 36, section 5.5.4

407 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraph 128.

E30.5 Strata considering that the overall condition of assets reviewed indicates no need to make a material change to opex to account for additional maintenance requirements given the adjustment in replacement levels.[408]

E31 The verifier was not convinced that the forecast level of expenditure was fully justified because:

E31.1 Orion's replacement expenditure profile for most asset classes was predicated on the basis that risk levels should mirror pre earthquake levels. No consideration had been given to whether this level of risk was appropriate or to the differences in the level of risk between asset classes if risk was assessed from an overall business perspective;[409]

E31.2 Two of the three identified programmes it examined (transformers and protection relays) forecast replacement rates significantly higher than historic levels, and while Orion had based its replacement programmes on age, there was little evidence to support the proposed level of increase being needed to mitigate a deteriorating asset condition problem.[410]

E32 Of the three identified programmes (Transformer replacement (CPP37), Protection relays (CPP33) and Switchgear replacement (CPP36)) which the verifier reviewed in detail, the verifier noted:

E32.1 The proposed expenditure on transformers asset replacement did not factor in the overall condition of the assets and was higher than it needs to be, and in most situations the risk of a distribution transformer failure is small;[411]

E32.2 The protection relays asset replacement program was driven by the need to maintain the current health index over time without any evidence to demonstrate that the current health index is the optimal level for Orion. The verifier also noted that Orion's analysis appeared to use asset age as a proxy for condition due to a limited amount of data on relay failure rates and condition. The verifier went on to say it would not normally endorse a forecast where age rather than condition is the main criteria for asset replacements and, as with all replacement programmes, there is a trade-off between reliability and cost. There is, however, a lack of evidence of this trade-off provided by Orion, and on current relay failure rates and the

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408 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraph 129.

409 Geoff Brown & Associates Ltd "Verification Report", page 36, section 5.5.4

410 Geoff Brown & Associates Ltd "Verification Report", page 36, section 5.5.4

411 Geoff Brown & Associates Ltd "Verification Report", page 36, section 5.5.3

impact on reliability. Based on the age profile the verifier was "inclined to view" the proposed level of expenditure as reasonable;[412]

E32.3 The principal question arising out of the verifier's review of switchgear related to whether or not the current health index for switchgear is an optimal one, or whether a lower level of asset health would suffice as this was the factor which drove the level of replacement;[413] and

E32.4 The verifier also notes as part of its switchgear review that, while condition rather than age should be the primary driver for an asset replacement programme, the average age of the switchgear being replaced is high in comparison to their expected life. This indicates that the condition of these assets could be poor and on this basis an accelerated level of expenditure is probably justified.[414]

E33 Strata's analysis went further than the verifier's analysis for switchgear and protection relays. Strata was able to carry out sensitivity analysis around the impact of a lower level of expenditure given Orion's own condition ratings. This work supported the point raised by the verifier that average age is not necessarily a strong driver of the need for replacement.

E34 Even though the average age of the switchgear assets being replaced by Orion is high, Strata's sensitivity analysis found that fewer assets could be replaced than proposed by Orion while still maintaining health ratings and the overall average age of the fleet.

E35 We agree with the verifier's overall conclusion that forecast levels of replacement expenditure are not fully justified and have identified, through the work of Strata, that there is excess expenditure. Given this, we consider Orion's proposed expenditure is not prudent and efficient to manage the expected demand for services.

E36 We have not tested the optimal level of replacement based on Orion's condition ratings.

Applying prudency and organisation wide efficiencies

E37 Strata states that Orion's replacement capex forecast is made up of individual unit costs that take into account historical actual costs. In previous reviews of electricity

[412] Geoff Brown & Associates Ltd "Verification Report", page 35, section 5.5.3
[413] Geoff Brown & Associates Ltd "Verification Report", page 35, section 5.5.3.
[414] Geoff Brown & Associates Ltd "Verification Report", page 35, section 5.5.3.

network businesses, Strata has found that this method has a tendency to over-estimate costs that will actually be incurred.[415]

E38 The verifier states that "processes in place at a corporate level to challenge or control expenditure forecasts were weak".[416]

E39 Strata also highlights during its review that a number of assets will not require replacement because this requirement will be superseded by the network development programme.[417]

E40 Orion seems to accept this point, as it responded by suggesting it would bring other replacements forward to 'fit the budget' on the basis that it considers the proposed level of expenditure is required to enable contractors to maintain adequate resources and management practices over the longer term.[418]

E41 Given the proposed step change in replacement capex, Orion's large network development programme and the broader Christchurch rebuild, Strata felt it unlikely that contractors will be placed in a position of maintaining insufficient work to sustain appropriate business practices.[419] We are also concerned to note the advancement of expenditure which is not driven by network needs, and would not benefit consumers (though they will pay for it through higher prices).

E42 A further example of where gains are likely to be seen is due to the investment Orion has made in enhancing its condition based risk management system, which Orion has stated it has not fully integrated into its CPP proposal.[420]

E43 Based on these reasons we make an adjustment of 10% to forecast replacement expenditure (as proposed by Strata).[421]

Network Maintenance

E44 Orion proposed expenditure of $129.3 million for network expenditure during the CPP period. We consider that Orion's proposed expenditure for network

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415 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraph 132.

416 Geoff Brown & Associates Ltd "Verification of Orion's CPP proposal" (1 March 2013), Presentation to Commerce Commission, p.7

417 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraph 136.

418 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraph 137.

419 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraph 138.

420 Orion New Zealand Limited "Proposal for a customised price-quality path" (19 February 2013), page 515, 517 and 518.

421 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraph 144(ii).

maintenance exceeds the amount prudently required to deliver the services required by consumers at an efficient level of cost. This is because:

E44.1 We have concerns that Orion's forecasts are built from the bottom up without the benefit of applying review and challenge processes similar to its annual budgeting and planning processes across all years of the CPP forecast. As a result we do not believe Orion will have captured normal cost reduction initiatives and/or organisation-wide expenditure efficiencies;

E44.2 The proposed increase in emergency cable maintenance expenditure appears greater than signalled by Orion's forecast cable defect rates and the latest available defect rate information; and

E44.3 A contingency factor has been included that is not appropriate. We consider any variances in costs should be able to be managed within the overall forecast for network maintenance.

E45 We consider Orion's proposed level of network maintenance expenditure should be adjusted for the following factors:

E45.1 A reduction of 5% to scheduled and unscheduled maintenance expenditure to reflect the opportunities to be found for reducing expenditure when assessing organisation-wide expenditure;

E45.2 A $9 million reduction in emergency maintenance opex to take into account a reasonable expectation of future cable fault rates; and

E45.3 The removal of the unsupported contingency sum of $7.5 million.

Cost reduction initiatives / efficiencies when assessing organisation-wide expenditure

E46 We accept that it is reasonable for Orion's focus on the implementation of opex cost efficiencies to have slowed during the response to the earthquake. That is, given the urgent need to respond to emergencies and reconnect consumers, operational efficiency was not a high priority and may have reduced. However, as Orion moves toward a more business-as-usual environment, we expect Orion to focus increasingly on ensuring that all available efficiencies are realised.

E47 Strata has recommended that, at a minimum, Orion should be delivering efficiency and prudency gains of at least 5% of its opex programmes.[422]

E48 The verifier noted that Orion did not apply any specific opex reduction initiatives other than efficiencies culminating from its competitive tendering process.[423]

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[422] Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraph 184.

E49 The verifier had concerns over the preparation of individual forecasts being the responsibility of the relevant general manager rather than Orion using an enterprise-wide high level top down approach to forecasting expenditure.[424]

E50 The verifier also noted that individual forecasts were approved as they were completed. This left little room for the consideration of the full proposal, in its totality, from a top down perspective.[425]

E51 The verifier also noted that while each line was generally forecast using a bottom up approach, the detailed methodology appears to have been left to the discretion of the manager concerned. While the reasonableness of forecasts were checked by individual department managers before release to the CPP steering committee and the Board, there was no indication of individual forecasts having to go through a formalised challenge process, external to the section concerned.[426]

E52 Overall, the verifier considered that the high level controls to ensure that the expenditure forecast was both reasonable and efficient were weak.[427]

E53 Based on the findings of our consultants we make a 5% adjustment, as proposed by Strata. We consider this reasonable, if not generous, especially given our concerns around the way the forecast has been prepared without the benefit of a top down evaluation and proper challenge. We do however recognise in applying this adjustment that it is appropriate to only adjust scheduled maintenance and unscheduled maintenance given the largely reactionary nature of emergency maintenance.

Assumptions on future cable fault rates

E54 While Strata acknowledge the difficulty in forecasting future failures, particularly for buried cables, it was unconvinced of the robustness of Orion's defect assumptions. Strata note the more recent fault performance data suggests that the outlook could become more optimistic. [428]

E55 The chart below, taken from Orion's 2013 Asset Performance Report shows that while cable faults that led to supply interruptions increased dramatically during the earthquakes, they appear to have significantly reduced since the earthquakes.

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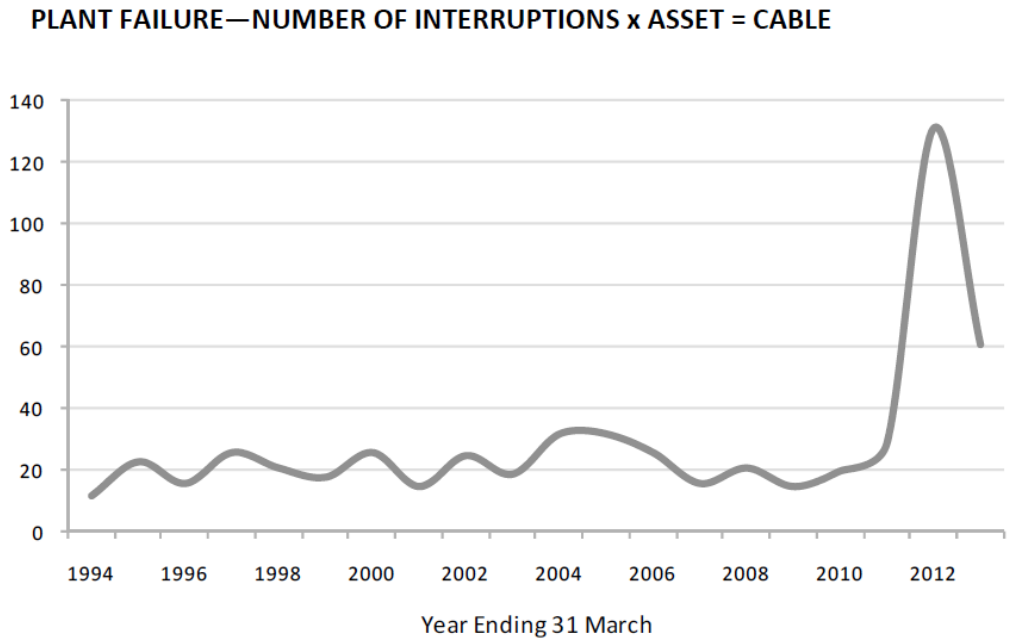
423 Geoff Brown & Associates Ltd "Verification Report", page 47, section 6.4.2.5.
424 Geoff Brown & Associates Ltd "Verification Report", page 55 and 56, section 6.6
425 Geoff Brown & Associates Ltd "Verification Report", page 55 and 56, section 6.6
426 Geoff Brown & Associates Ltd "Verification Report", page 55 and 56, section 6.6
427 Geoff Brown & Associates Ltd "Verification Report", page 56, section 6.6
428 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraph 172.

Figure E5 - Cable faults



Source: Orion's 2013 Asset Performance Report

E56 The verifier also highlighted the level of uncertainty regarding future fault rates on cables and noted that the 30% increase in fault rates did not appear to justify the corresponding increase in repair costs.[429] However, the verifier concluded there was reasonable evidence at the time of its review to indicate Orion's 30% assumption was low and that actual fault rates over the CPP period may be much higher.[430] Although, the verifier concluded that it had no evidence for finding Orion's forecast to be unreasonable, the verifier noted that what was unknown was whether (as Orion had assumed) the high fault rates would continue unabated throughout the CPP period.[431]

E57 The verifier completed its report on 18 February 2013. However more recent information indicates cable faults that led to supply interruptions during the earthquakes have significantly reduced since the earthquakes. On this basis, Strata proposes a maximum allowance of 200% of the 2010 emergency maintenance costs which would reduce forecast emergency maintenance by $9 million over the CPP period.[432]

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429 Geoff Brown & Associates Ltd "Verification Report", page A81, section 17.6.3

430 Geoff Brown & Associates Ltd "Verification Report", page A82, section 17.7

431 Geoff Brown & Associates Ltd "Verification Report", page A82, section 17.7

432 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraphs 176 and 177.

E58 We consider that the best data available to us suggests the reduction of $9 million over the CPP period proposed by Strata is appropriate. The proposed adjustment provides Orion with an additional 30% in total emergency expenditure over 2010 levels in recognition of the uncertainty associated with future faults. We would however consider revising our estimate of emergency expenditure if Orion could provide information indicating that fault rates are not abating, and the expenditure is likely to be greater than our forecast.

Orion's contingency sums

E59 Strata proposes the removal of the scheduled maintenance contingency of $7.5 million given that it is reasonable to expect any variations within cost components to be managed within the dynamics of the overall asset management budget.[433]

E60 The verifier also highlights that it did not consider the contingency factor was necessary and points out that forecast scheduled maintenance could be reduced even further given the levels of spending pre and post-earthquake.[434]

E61 Based on the findings of Strata and the Verifier, we consider it is reasonable to remove the contingency allowance. We consider the contingency is not necessary, consumers do not benefit from such a contingency, and including it risks setting a price-quality path that would provide Orion with a greater than normal return.

Appropriate expenditure allowances

E62 Our assessed allowances for expenditure to maintain and replace network assets are set out in Table E4.

Table E4 - Our allowances for expenditure to maintain and replace network assets ($m)

	2014	2015	2016	2017	2018	2019	Total CPP period 2015 to 2019	Total 2014 to 2019
Allowance for replacement capex	17.0	16.9	18.0	18.1	16.6	17.4	87.1	104.1
Allowance for maintenance opex	22.8	22.5	23.3	21.0	20.7	20.7	108.3	131.1
Total allowance for expenditure to maintain and replace network assets	**39.8**	**39.4**	**41.3**	**39.1**	**37.3**	**38.1**	**195.4**	**235.2**

Note: Prices in 2013 constant prices.

[433] Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraph 187.

[434] Geoff Brown & Associates Ltd "Verification Report", page 50, section 6.4.2.8

E63 Our assessed building block inputs have been calculated by deducting adjustments proposed by our consultants Strata from Orion's proposed expenditure amounts. Inputs for 2014 have been calculated by applying Strata's adjustments during the CPP period to Orion's proposed expenditure for that financial year.

E64 The following sections summarise the calculations we have made to arrive at our assessed inputs.

Replacement capex

E65 We have calculated Orion's allowance for replacement capex by:

E65.1 Reducing the allowance for replacing assets in good and fair condition; and

E65.2 Making an allowance for prudency and organisation wide efficiencies.

E66 The numbers have been derived based on a review of Orion's forecasting procedures, a sample of asset classes our consultant has been able to review in detail the application of the results from this work to remaining asset classes based on its professional judgement and experience.

Table E5 - Our adjusted allowance for replacement capex ($m)

Replacement Capex Adjustments	2014	2015	2016	2017	2018	2019	Total CPP Period 2015 to 2019	Total 2014 to 2019
Orion's proposed replacement capex	24.3	24.1	25.8	25.9	23.7	24.9	124.4	148.7
20% reduction to proposed expenditure to account for assets replaced that are in good or fair condition	(4.7)	(4.8)	(5.2)	(5.2)	(4.7)	(5.0)	(24.9)	(29.6)
10% reduction to account for forecasting accuracy and prudent decision making	(2.4)	(2.4)	(2.6)	(2.6)	(2.4)	(2.5)	(12.4)	(14.7)
Total adjustments	(7.2)	(7.2)	(7.8)	(7.8)	(7.1)	(7.5)	(37.3)	(44.6)
Allowance for replacement capex	**17.0**	**16.9**	**18.0**	**18.1**	**16.6**	**17.4**	**87.1**	**104.1**

Note: Prices in 2013 constant prices.

Network maintenance

E67 We have calculated Orion's allowance for network maintenance by making the following adjustments to Orion's proposed expenditure:

E67.1 Organisation-wide expenditure cost reduction initiatives / efficiencies;

E67.2 A reduction in assumed cable fault rates; and

E67.3 The removal of Orion's contingency provision.

E68 These numbers have been arrived at based on our expert consultants' recommendations.

Table E6 - Our adjusted allowance for network maintenance ($m)

Network Maintenance Adjustments	2014	2015	2016	2017	2018	2019	Total CPP Period 2015 to 2019	Total 2014 to 2019
Orion's proposed network opex	25.5	26.7	27.5	25.2	24.9	25.0	129.3	154.8
Adjustment to future cable fault rates	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(1.8)	(9.0)	(10.8)
The removal of the Orion's contingency provision	-	(1.5)	(1.5)	(1.5)	(1.5)	(1.5)	(7.5)	(7.5)
A 5% reduction to account for cost reduction initiatives within scheduled and unscheduled maintenance	(0.9)	(0.9)	(0.9)	(0.9)	(0.9)	(1.0)	(4.5)	(5.4)
Total adjustments	(2.7)	(4.3)	(4.2)	(4.2)	(4.3)	(4.3)	(21.0)	(23.7)
Allowance for network opex	**22.8**	**22.5**	**23.3**	**21.0**	**20.7**	**20.7**	**108.3**	**131.1**

Note: Prices in 2013 constant prices.

How our allowances for expenditure to maintain and replace network assets compare to historic levels

E69 Table E7 below compares our assessed expenditure levels of replacement capex to a time series of Orion's historic expenditure of replacement capex as a high level check of our assessment of forecast expenditure.

Table E7 - Time series of replacement capex expenditure ($m)

Replacement Capex	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Replacement capex expenditure -Orion Proposal						22.9	23.4	24.1	25.8	25.9	23.7	24.9
Replacement capex expenditure -actual and allowance	9.1	9.7	14.6	11.7	11.3	14.5	17.0	16.9	18.0	18.1	16.6	17.4

Note: Prices in 2013 constant prices.

E70 Table E7 shows that our allowance for replacement capex assumes a significant increase in replacement expenditure from historic levels. We consider this is reasonable, and possibly generous, even after considering an increase in planned

spur assets replacement expenditure of approximately $2 million a year and the roll out of Orion's switchgear replacement program (which began in 2010).

E71 Table E8 below compares our assessed expenditure levels of network maintenance to a time series of Orion's historic expenditure of network maintenance as a high level check of our assessment of forecast expenditure.

Table E8 - Time series of network maintenance expenditure ($m)

Network Maintenance	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Network maintenance expenditure - Orion Proposal						23.1	25.5	26.7	27.5	25.2	24.9	25.0
Network maintenance expenditure - actual and allowance	18.2	18.8	20.1	27.3	30.9	19.8	22.8	22.4	23.3	21.0	20.7	20.8

Note: Prices in 2013 constant prices.

E72 Table E8 indicates that our assessment of network maintenance expenditure is reasonable, and possibly even generous, when compared against historical spend after accounting for an increase in planned spur assets maintenance expenditure of approximately $0.3 million a year.

E73 As an additional sense check we have compared our total allowance for all expenditure relating to the maintenance and replacement of network assets to pre earthquake levels in the Table E9 below.

Table E9 - Comparison of assessed building blocks of expenditure to historical levels of actual spend ($m)

Network maintenance and replacement capex expenditure	CPP Period 2015 to 2019	Source
Total allowance for maintaining and replacing network assets	195.4	Table E4
Extrapolated historic spend for network opex and replacement capex	140.0	To extrapolate historic spend we have taken Orion's average spend over 2008 to 2009 and extrapolated this out over a 5 year period
Increase in spending over historical levels	**55.4**	

Note: Prices in 2013 constant prices.

E74 Our allowance for expenditure is $55.4 million higher in real terms over the 5 year CPP period when compared to an extrapolated historical spend. An additional $11 million per annum over the CPP period appears reasonable in order to allow Orion to:

E74.1 Repair and maintain acquired spur assets;

E74.2 Continue to meet its planned switchgear replacement programme in the optimal way;

E74.3 Provide some flexibility to address on-going earthquake- related expenditure requirements; and

E74.4 Maintain adequate service levels, especially given Orion's own condition-based data indicates our assessed level of replacement spending is unlikely to impact reliability or increase the need for significant additional maintenance.

E75 We also note that Orion's network will be under less stress during the CPP period than prior to the earthquakes, given lower load and customer numbers as a result of the earthquakes. However, we have not made a specific adjustment for this.

Attachment F: Connections, extensions, conversions and undergrounding forecasts

Connections and extensions forecasts

Summary of connections and extensions forecasts

F1 Orion's CPP proposal includes forecast expenditure on connections and extensions for 2013 to 2019. Expenditure on connections and extensions is used to establish new connection points for customers to Orion's network, or to upgrade existing connections.

F2 Forecast capital contributions for connections and extensions are also included for 2013 to 2019. Capital contributions can be made either by payment from customers to Orion, or by vesting of electricity distribution assets to Orion.

F3 We consider that Orion's forecast expenditure is in excess of the level required to meet expected demand for connections and extensions (especially in 2018 and 2019), and so does not meet the expenditure objective.[435] Therefore, we have adjusted the connections and extensions forecasts as set out in Table F1 below. Our forecasts result in a reduction of $4.9m compared to Orion's forecasts.

Table F1 - Connections and extensions expenditure forecasts ($m)

	2014	2015	2016	2017	2018	2019
Our forecast expenditure (net of contributions)	11.9	13.1	13.4	12.3	8.2	8.2
Orion's forecast expenditure (net of contributions)	11.9	13.1	13.4	12.3	10.9	10.4
Difference in forecast expenditure (net of contributions)	-	-	-	-	(2.7)	(2.2)

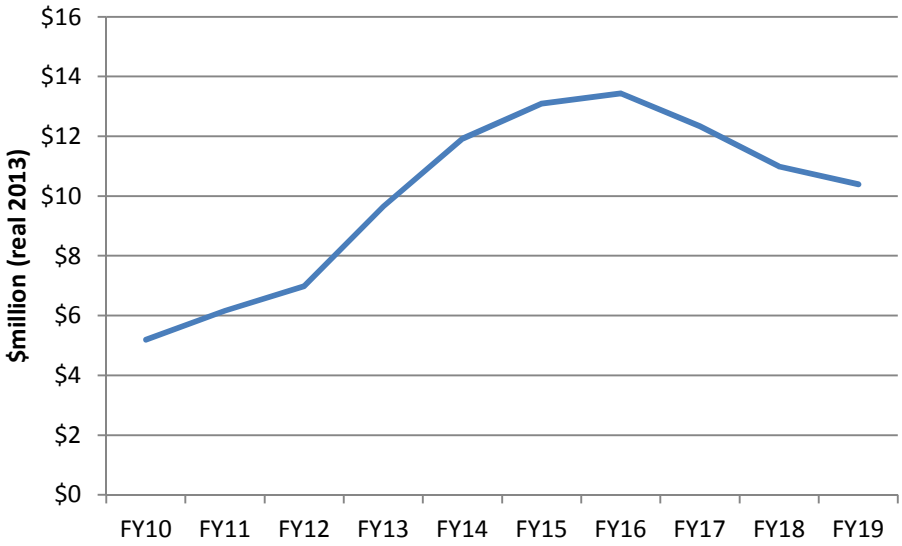
Note: Prices in 2013 constant prices.

Orion's proposed forecasts for connections and extensions

F4 Orion's forecast of connections and extensions expenditure is displayed in Figure F1 below.

[435] Clause 1.1.4(2) of the EDB IMs.

Figure F1 - Orion's forecast connections and extensions expenditure



F5 Actual expenditure on connections and extensions was approximately $5.2 million in 2010.[436] This is the only year for which actual data, unaffected by earthquakes, is available from Orion.[437]

F6 Orion proposes significant increases in forecast expenditure on connections and extensions through to the end of the CPP period. Orion forecasts expenditure of $10.4 million in 2019. This is approximately double actual expenditure in 2010 (in real terms).

F7 Orion states that its forecasts are "…largely based on assessed long term levels of connections (by connection type) with allowances for cost escalators".[438] Orion's forecasts include allowances for the:

F7.1 expected impact of the Canterbury earthquakes on the volume of connections and extensions (due to relocating households and businesses); and

F7.2 "…additional transformers and switchgear required in order to accommodate the new connections".[439]

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436 Nominal expenditure on connections and extensions in FY2010 was $5.1m. We converted nominal expenditure to real expenditure (in 2013 dollars) using CGPI, which is consistent with the approach used in the November 2012 DPP reset.

437 The data available to us suggests that 2010 had a lower than average level of activity. We have attempted to correct for this in our revised forecasts for 2018 and 2019. See paragraphs F19 to F20 below.

438 Orion "Additional information submitted in response to Commerce Commission information requirement - Q#021 Connections and extensions forecasts" (11 June 2013), [p.2].

439 Orion "Additional information submitted in response to Commerce Commission information requirement - Q#021 Connections and extensions forecasts" (11 June 2013), [p.2].

Orion's forecasts for connections and extensions do not meet the expenditure objective

F8 Given the movement of consumers from the CBD and eastern suburbs, an initial large increase in connections and extensions expenditure is unsurprising. However, Orion forecasts expenditure in 2018 and 2019 to be at levels which are still, in real terms, more than double that of 2010. In our view, the level of expenditure in 2018 and 2019 is not justified.

F9 Orion's forecasts include an additional 3,800 residential connections and extensions over the five year period from 2013 to 2017 to account for the impact of households relocating due to the earthquakes.[440] Forecasts for household connections and extensions return to the "assessed long term levels of connections" from 2018 onwards.[441]

F10 The forecast additional 3,800 residential connections and extensions appears reasonable based on a household growth report prepared by Market Economics. This report refers to "net demand for some 4,110 replacement dwellings" under the quick recovery scenario, which has been used in Orion's CPP proposal.[442] The 4,110 replacement dwellings are across the entire UDS area, which is wider than Orion's network boundaries.

F11 Orion states that the increase in expenditure between 2010 and 2019 is attributable to four main factors.[443]

F11.1 Additional switchgear costs due to the introduction of ring main units (RMUs) compared to the use of Magnifix AIUs. According to Orion the resulting difference in switchgear costs is approximately $1.7m per annum.

F11.2 Transformer costs will be higher than historically as more large transformers will be installed in the CBD and industrial areas.

F11.3 The overall spend on urban large connections is expected to be maintained above historical levels.

F11.4 Forecast expenditure is expected to remain at a higher level than historically as households and premises relocate.

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440 Orion's forecasts allow for an additional 2,200 residential sections, and 1,600 urban (up to 100A) connections, above the long-term levels over the five year period from 2013 to 2017.

441 Orion "Additional information submitted in response to Commerce Commission information requirement - Q#021 Connections and extensions forecasts" (11 June 2013), [p.2].

442 Market Economics "Greater Christchurch household scenarios 2011-2041 - Final report" (March 2012), [p.15].

443 Orion "Additional information submitted in response to Commerce Commission information requirement - Q#022 Contributions information, 2013 financial analysis, confirmation of earthquake related spend within network maintenance and replacement capex and reconciliation of protection maintenance expenditure numbers" (12 July 2013), [p.4].

F12 Of these factors, we acknowledge that changing switchgear from Magnifix AIUs to RMUs will lead to increased expenditure for new connections and extensions.

F13 We also appreciate that greater transformer capacity is likely to be required in some areas, particularly in the CBD and in new or enlarged industrial areas, as businesses relocate from earthquake-damaged areas. However, in our view Orion's forecasts for urban large connections and transformers are excessive, given historic levels of expenditure, for 2018 and 2019.

F14 Further, there is no allowance for earthquake-related household relocations beyond 2017 within Orion's forecasts. Therefore, household relocations cannot explain forecast increases in expenditure for 2018 and 2019 (relative to pre-earthquake levels).

F15 Our view is that Orion's connections and extensions forecasts are in excess of the level required to meet the expected demand for connections and extensions in the latter part of the CPP period.

Our alternative forecasts for connections and extensions

Forecast expenditure on connections and extensions

F16 Our view is that Orion's proposed connections and extensions expenditure for 2018 and 2019 is too high. Orion's forecasts for 2015 to 2017, on the other hand, appear reasonable based on available information.

F17 We have developed alternative forecasts for 2018 and 2019. These forecasts have been estimated by:

F17.1 starting with actual expenditure for 2010, which is the only year for which we have data on actual expenditure for connections and extensions which is unaffected by the earthquakes;

F17.2 scaling up actual expenditure for 2010 based on data on building consents for the Canterbury region, which indicate that the volume of connections and extensions in 2010 was likely lower than historical averages; and

F17.3 making an allowance for additional switchgear costs.[444]

F18 Orion was unable to provide information on the actual volume of connections and extensions for 2008 to 2013 (ie, the level of connection activity rather than the level of expenditure).[445] The lack of this historical data makes it difficult to determine a reasonable future 'steady state' level of expenditure on connections and extensions.

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[444] We have allowed for additional switchgear costs associated with changing from Magnifix AIUs to RMUs.

[445] Orion "Additional information submitted in response to Commerce Commission information requirement - Q#022 Contributions information, 2013 financial analysis, confirmation of earthquake related spend

F19 In the absence of further information from Orion, we have used Statistics New Zealand data on consents for "new" (as opposed to altered) buildings as a proxy for the number of connections and extensions each year. Data on building consents for the Christchurch City, Selwyn District and Banks Peninsula territorial authorities is used to approximate Orion's network boundaries.[446]

F20 In developing our alternative forecasts for 2018 and 2019, we have scaled up actual expenditure for 2010 by 29%. The number of building consents for 2010 was 2,288, which is below the five year average from 2006 to 2010 of 2,958. This indicates that the volume of connections and extensions in 2010 is likely to have been approximately 29% lower than the historical average.

F21 Calculation of our connections and extensions expenditure forecasts for 2018 and 2019 is summarised in Table F2 below.

Table F2 - Summary of revised forecasts for 2018 and 2019 ($m)

	2018	2019
Actual expenditure for 2010	5.2	5.2
Scaling factor due to lower volumes in 2010	1.29	1.29
Adjusted 2010 expenditure	6.7	6.7
Switchgear allowance[447]	1.5	1.5
Revised forecasts	**8.2**	**8.2**

Note: Prices in 2013 constant prices.

Forecast capital contributions for connections and extensions

F22 For 2014 to 2017 we have used Orion's forecasts of capital contributions for connections and extensions.[448]

F23 We have calculated capital contributions for 2018 and 2019 using the percentage of contributions for these years (relative to forecast expenditure) based on Orion's

within network maintenance and replacement capex and reconciliation of protection maintenance expenditure numbers" (12 July 2013), [p.3].

446 See http://www.stats.govt.nz/infoshare. The data on building consents we have used is available under "Industry sectors>Building consents - BLD> Number, value and floor area by building type, nature and territorial authority (Annual-Mar)". Building type = "total buildings", building nature = "new" and observations = "number".

447 The additional switchgear costs are driven by changing from using Magnifix AIUs to RMUs (which have a higher unit cost). We have calculated the switchgear allowance using the quantity of RMUs forecast by Orion, multiplied by the difference in unit costs between RMUs and Magnifix AIUs.

448 We have relied on the capital contributions forecasts provided by Orion in response to Q#015. These forecasts differ from those contained in Orion's CPP proposal. Orion's response to Q#021 explains: "The original calculations we prepared to determine forecast revenues for the CPP were not able to be found. A new spreadsheet was prepared to validate the projections for the verifier. This new spreadsheet did not exactly replicate the original figures".

forecasts. We have applied the capital contribution percentage for 2018 and 2019 to our revised expenditure forecasts for these years.

Conversions and undergrounding forecasts

Summary of conversions and undergrounding forecasts

F24 Conversions and undergrounding expenditure includes amounts spent by Orion to convert existing urban overhead reticulation to underground cables. This expenditure cannot generally be justified by Orion on a general commercial basis and Orion does not have a programme to systematically remove all overhead assets from its urban network. Conversions only take place as required by:

F24.1 Christchurch City or Selwyn District Councils as part of their neighbourhood planning improvements;

F24.2 NZTA or local councils as part of roading upgrades; or

F24.3 at the request of private individuals or property developers; and

F24.4 in each case, where the costs are partially or totally subsidised by the initiating third party.

F25 Orion has proposed $6.1 million of expenditure in 2014 and $12.3 million in the CPP period. After allowing for forecast contributions it is forecasting it will bear $1.4 million of net expenditure in 2014 and $4.7 million in 2015-2019.

F26 On the basis that the council-initiated conversions are effectively in lieu of dividends to Orion's council shareholders (although no longer described as such) and do not demonstrably contribute to the long term benefit of Orion's consumers in their capacity as electricity consumers (rather than as ratepayers), we have concluded that the proposed net expenditure on conversions and undergrounding does not meet the expenditure objective.

F27 In our view the forecast contribution rates for the council-initiated projects should be adjusted upwards. The councils are currently contributing at a rate of 80% to conversion projects. This rate was negotiated with the councils some time ago based on the concept that the contributions were in lieu of foregone dividends and based on the tax regime applying at that time. In our view, the offsetting tax benefits for Orion that potentially justify a 20% discount on contributions no longer appear to exist.

F28 We have adjusted the forecast contribution rate for council-initiated projects to 100%. This results in forecast net expenditure totals on conversions and urban undergrounding of $1.2 million for 2014 and $3.7 million for 2015-2019.

Attachment G: Network management and operations

G1 In this attachment we discuss expenditure on network management and operations, and the rationale for the adjustments we have made.

Preliminary conclusions

G2 Orion has increased employee numbers in the Network Management and Operations group from 100 full-time equivalent personnel in 2010 to 120 in 2012 and proposes to further increase this to 145 full-time equivalent personnel for the full CPP period.

G3 None of ourselves, Strata, our technical adviser, or the Verifier were persuaded that Orion had demonstrated the need for this level of increase in Orion personnel and for it to be required for the full CPP period.

G4 We consider that Orion's proposed expenditure on network management and operations exceeds the level required to meet the expenditure objective.

G5 We note also that:

G5.1 Orion’s proposed expenditure has not been adjusted for organisation-wide optimisation of staff numbers required; and

G5.2 it is likely that there is potential to reduce expenditure forecasts by reducing workload and improving process efficiencies.

G6 The adjustments we have made are summarised in Table G1 below:

Table G1 - Network Management and Operations Expenditure ($m)

Network Management and Operations	2014	2015	2016	2017	2018	2019	CPP Total 2015 to 2019	Total 2014 to 2019
Orion's proposed network management and operations expenditure	15.7	16.2	16.3	16.1	16.2	16.3	81.1	96.8
Our allowance	**14.7**	**15.2**	**15.3**	**15.1**	**15.2**	**15.3**	**76.1**	**90.8**
Difference	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(5.0)	(6.0)

Note: Prices in 2013 constant prices.

What Orion proposed

Table G2 - Network Management and Operations Expenditure ($m)

Expenditure Category	2014	2015	2016	2017	2018	2019	CPP Total 2015 to 2019	Total 2014-2019
Network management and operations expenditure	15.7	16.2	16.3	16.1	16.2	16.3	81.1	96.8

Note: Prices in 2013 constant prices.

G7 The Network Management and Operations group is responsible for safety, network strategic planning, asset management / property management, engineering support, lifecycle management and operations management (which includes customer service).[449]

G8 The Network Management and Operations group included 131 FTE's as at December 2012 (including technical engineers[450]). As at December 2012 this group represented approximately 75% of Orion's total staff.[451]

G9 Around 85% of the forecast expenditure proposed for this group is employee remuneration. The remaining 15% of expenditure is made up of training, equipment and recruitment costs.[452]

G10 Table G3 below shows actual staffing increases within the Network Management and Operations group between 2010 and 2012 and Orion's proposed staffing increases as at 2019 and 2025:

[449] Orion "Proposal for a customised price-quality path" (19 February 2013), Infrastructure Management Opex CPP 167 Programme Summary, Appendix 36

[450] Orion budgets for Technical Engineers under the engineering support team but utilises them throughout the Network Management and Operations group.

[451] Orion "Proposal for a customised price-quality path" (19 February 2013), page 554, section 9.22.1

[452] Geoff Brown & Associates Ltd "Verification Report", page A102, section A22.4. This report can be found in Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 - Verification report and certificate.

Table G3 - Orion infrastructure staff projections (FTEs)[453]

Network Management and Operations	2010	2012	2019	2025
Safety and Risk	2	3	4	3
Strategic Planning	6	3	5	4
Asset Management	29	37	39	33
Engineering Support	9	8	10	8
Lifecycle Management	14	24	28	24
Operations	40	50	59	55
Total Network Management and Operations FTEs	**100**	**125**	**145**	**127**

G11 Staff within the Network Management and Operations group increased by 25 FTEs between 2010 and 2012 from 100 to 125, a period which included dealing with the direct aftermath of the Canterbury earthquakes and the period when one might have expected the need for personnel to be greatest. However, Orion has proposed to grow personnel numbers by a further 20 staff by the end of 2015, with staffing levels forecast to remain at that level until the end of FY19. This represents a 45% increase in staffing levels, when compared to the levels in 2010.

G12 Orion has stated that it has no information indicating when the earthquake recovery phase will end or slow down during the CPP period and that it therefore does not see staffing levels decreasing until after the CPP period as reflected in the table above. Figures given above for 2025 therefore represent Orion's forecast future "steady-state" staffing levels. This new proposed "steady-state" level represents an increase of 27% over 2010 levels (ie, pre-earthquake levels).

Our assessment of Orion's proposal

G13 Orion has prepared its forecast on a bottom up, manager by manager basis. Each department has assessed its staffing needs on the basis of:[454]

G13.1 Reducing workloads on individuals;

G13.2 Reducing outstanding holiday accrual levels;

G13.3 Managing expected increases in workload due to the increase in capex and opex related activities; and

[453] Source: Orion's infrastructure staff projections May 2012. The analysis excludes technical engineers.

[454] Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraph 155).

G13.4 Managing increasing customer and other third party interactions due to expected increases in numbers of connection applications, customer queries and other third activity in and around Orion assets during the earthquake rebuild.

G14 Strata made the following comment in response to this proposal:

> "Whilst consideration of increasing staff to meet expected increase in workload is a legitimate response, it is not the only response that management should take into account…
>
> Orion should explore options to:
>
> - Reduce activities that can be reasonably delayed; and
> - Introduce process improvements that will reduce workload on staff."[455]

G15 Strata's two major concerns with the methodology used by Orion are that:

G15.1 "No organisation wide optimisation or calibration has taken place and it is likely that there is potential to reduce workload and improve process efficiency."[456]

G16 An example of this was seen during our review of spur assets. A number of section managers identified that they had factored into their forecast additional staffing requirement to account for spur asset acquisitions. However the total allowance across all section manager forecasts had not been considered in totality.

G17 Orion also believe they are likely to make efficiency gains after the acquisition of a number of spur assets from Transpower. However, it was not clear to us if or how this was factored into overall staffing requirements.

G18 The verifier also commented on Orion's proposed number of additional staff, employees, stating that: [457]

> While we are unable to form a view on whether or not the peaking staffing level of 151 is reasonable, we think that staff numbers should reduce again towards the end of the forecast period and that this has not been factored into the forecast.

G19 The verifier concluded that: [458]

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455 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraph 192).

456 Strata Consulting Limited "Technical Advisor Report on the Orion New Zealand Ltd CPP Proposal" (2 August 2013) paragraph 188).

457 Geoff Brown & Associates Ltd "Verification Report", page 51, section 6.4.3.2. The peak staffing level of 151 includes Technical engineers. These are not included in the 145 staff quoted above.

458 Geoff Brown & Associates Ltd "Verification Report", page A105, section A22.6.7

> Given the time available to us we were unable to assess the need for an additional 20 FTE staff by FY16. However, even if the earthquake rebuild continue[d] for longer than currently planned, as anticipated by Orion, we would expect the volume of rebuild activity to abate toward the end of the forecast period. This abatement is reflected in Orion's own CPP forecasts… However, in suggesting that staff numbers must be sustained at their peak through to the end of the CPP period, Orion is arguing that its own forecast reduction in activity will have no impact on work within its system management and operations department. We do not accept this and consider that the forecast staff numbers in the final years of the forecast period are too high.

G20 We too consider that Orion's forecasts for FTEs are too high. We consider Orion has not adequately made the case for large additional increases in personnel, nor how doing so would benefit consumers.

G21 We consider Orion should review options to further reduce its expenditure by reducing workload and improving process efficiency.

G22 We also consider, in line with comments from the verifier and Strata, that there are likely to be additional reductions in work volumes as a result of our proposed reduction in volumes of capex and opex spending across the CPP period.

Appropriate expenditure allowances

G23 Our allowance for network management and operation expenditure is set out in Table G4. We have set these inputs by reducing the levels proposed by Orion's.

G24 Our allowance has been calculated by deducting adjustments proposed by our consultants Strata from Orion's proposed expenditure amounts. Inputs for 2014 have been calculated by applying Strata's adjustments during the CPP period to Orion's proposed expenditure for that financial year.

Table G4 - Allowance for network management and operations expenditure ($m)

	2014	2015	2016	2017	2018	2019	Total CPP 2015 to 2019	Total 2014 to 2019
Orion's proposed network management and operations spending	15.7	16.2	16.3	16.1	16.2	16.3	81.1	96.8
50% reduction in the increase in forecast FTEs	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(5.0)	(6.0)
Our allowance for network management and operations spending	**14.7**	**15.2**	**15.3**	**15.1**	**15.2**	**15.3**	**76.1**	**90.8**

Note: Prices in 2013 constant prices.

G25 We propose a 50% reduction to the size of Orion's increase in additional personnel above the 2012 levels. After this reduction, the total level of personnel will still be 35% above 2010 levels for the full CPP period and will provide for an additional 10 staff over and above the December 2012 level.

G26 We consider such an adjustment is appropriate given Orion has moved beyond the initial phase of its response to the earthquakes to a time when Orion should be in a position to plan work in a more managed and controlled way.

G27 Table G5 below compares our assessed expenditure levels of network maintenance and operations to a time series of Orion's historic expenditure of network maintenance and operations as a high level check of our assessment of proposed expenditure.

Table G5 - Time series of network maintenance and operations expenditure ($m)

Network Maintenance and Operations Expenditure	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Network Maintenance and Operations expenditure - Orion Proposal						13.7	15.7	16.2	16.3	16.1	16.2	16.3
Network Maintenance and Operations expenditure - actual and allowance	9.6	9.4	10.2	10.6	12.0	12.0	14.7	15.2	15.3	15.1	15.2	15.3

Note: Prices in 2013 constant prices.

G28 Reviewing the table above indicates that our assessment of network maintenance and operations expenditure looks reasonable and possibly even generous when compared against historical spend.

G29 We note also that Orion did not meet forecast expenditure levels in 2013, $12 million versus a forecast of $13.7 million. Orion's financial analysis of its performance in 2013 highlights that this was largely driven by lower recruitment and staff costs due to the inability to fill some positions when planned.[459]

G30 We have however not made any further adjustments for any timing implications associated with planned hiring dates given the difficulty Orion has experienced in sourcing staff. We have limited our adjustments to reducing the peak level of FTEs and therefore consider our adjustment to be conservative given we have not addressed any possible delay Orion may face in employing additional staff.

[459] Variance analysis provided by Orion to the Commission in response to additional information request #22.

Attachment H: General management, administration and overheads

H1 In this attachment we discuss expenditure on general management, administration and overheads and the rationale for the adjustments we have made.

Preliminary conclusions

H2 We consider that Orion's proposed expenditure for general management, administration and overheads exceeds the level required to meet the expenditure objective. This is because we do not consider that Orion's contingent provisions for special projects, which are to cover regulatory related activity, are necessary.

H3 The adjustments we have made are summarised in Table H1 below:

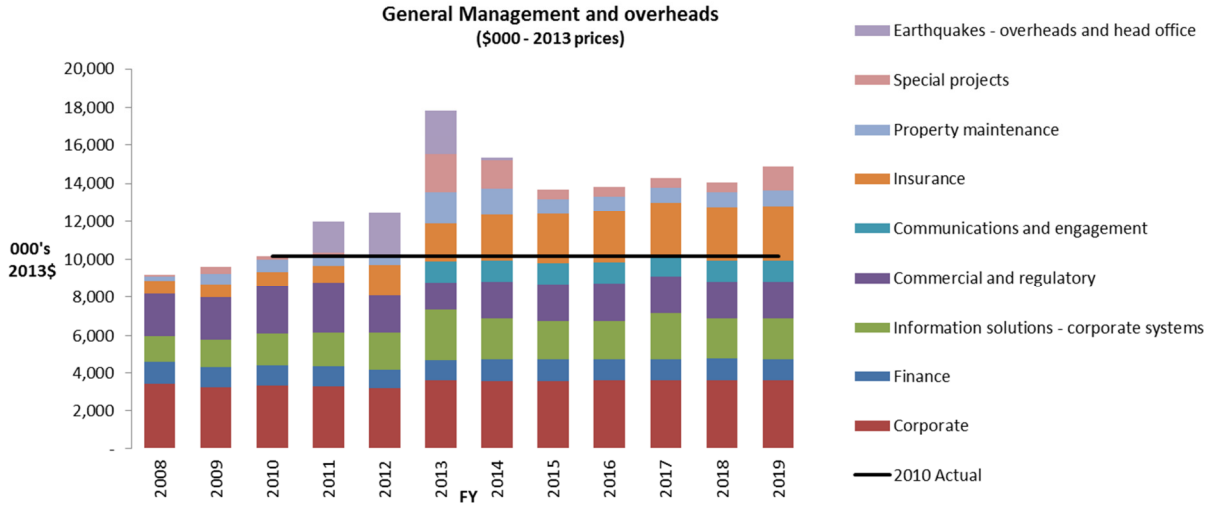
Table H1 - General management, administration and overhead expenditure ($m)

General management, administration and overhead expenditure	2014	2015	2016	2017	2018	2019	CPP Total 2015 to 2019	Total 2014 2019
Orion's proposed expenditure	15.4	13.8	13.9	14.4	14.1	15.0	71.2	86.6
Our allowance	**14.9**	**13.3**	**13.4**	**13.9**	**13.6**	**13.7**	**67.9**	**82.8**
Difference	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(1.3)	(3.3)	(3.8)

Note: Prices in 2013 constant prices.

What Orion proposed

Figure H1 - Orion's proposed expenditure on general management and overheads



H4 Figure H1 above highlights a step change in general management, administration and overhead expenditure in 2013 and subsequently from historic levels. The step change, once excluding one off earthquake related overheads and head office demolition costs, is driven primarily by an increase in insurance costs.

H5 The balance of the increase in expenditure is made up of:

H5.1 an increase in special project expenditure;

H5.2 an increase in property maintenance costs as a result of Orion moving into its new head office;

H5.3 an increase in corporate information solutions and Orion appointing a new General Manager of Communications and Engagement as part of establishing a specialised group to focus on stakeholder communications (this function was previously managed by the Commercial team) after the earthquakes.

Our view on expenditure on general management, administration and overheads

H6 In our assessment of overheads we looked at the increase in insurance costs given the rise in insurance expenditure is the most significant component of the increase to proposed general management, administration and overhead expenditure.

H7 We appointed Aon to review Orion's insurance arrangements. While Aon identified the possibility of future refinement as to how EDB's insure or self-insure their network assets, Aon was not engaged to evaluate how much this may cost Orion.

H8 On the basis that the advice Orion received from Marsh on the current cost of Insurance is not inconsistent with Aon's broader conclusions on risk financing, we have accepted the insurance costing provided by Orion.

H9 We also note that a special allowance was provided for insurance premiums in the last DPP reset to recognise the increased costs of insurance following the Canterbury earthquakes.[460] We do not believe that any adjustment needs to be made in this case, given Orion has had the opportunity to reflect this cost in its proposed expenditure.

H10 For proposed expenditure that makes up the balance of the increase in general management, administration and overheads expenditure we note that:

H10.1 We have not evaluated a breakdown of Orion's increase in proposed property maintenance expenditure. Given the size of the increase and that the increase is as a result of Orion moving to a new purpose built head office we consider that, on balance, the increase is reasonable;

H10.2 We have not evaluated a breakdown of Orion's increase in proposed information systems expenditure;

H10.3 We note Orion provides $200,000 per annum of sponsorship to AMI stadium. We question why consumers should pay for this given that Orion is a monopoly. If Orion wishes to provide sponsorship we would expect these costs to be paid for by shareholders rather than the consumer. We have left this amount in our expenditure forecasts.

H10.4 Orion proposes to increase expenditure to focus on communication and engagement with stakeholders as a result of the earthquakes;

H10.5 We do not consider contingencies that are primarily for regulated activities are justified. In particular:

H10.5.1 We do not consider a $500,000 per annum provision is needed given the current regulatory regime and Orion's historic spend in this area which averages around $200,000 per annum (excluding Orion's current CPP application). We would expect any costs in this area to be managed within overall budget allocations; and

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[460] Commerce Commission "Resetting the 2010-15 Default Price-Quality Paths for 16 Electricity Distributors" (30 November 2012), paragraph A5.

H10.5.2 We also do not consider that a $750,000 per annum provision in 2019 to meet the costs of Orion transitioning from a CPP to a DPP is warranted. We have removed this cost from our assessment of proposed expenditure.

H11 We welcome submissions on these points should interested parties feel strongly about the nature of the costs being recovered by Orion, irrespective of their materiality.

Appropriate expenditure allowance

H12 Our allowance for general management, administration and overheads expenditure is set out in Table H2. We have set these inputs by determining the reductions required to be made to Orion's proposed expenditure to meet the expenditure objective.

H13 Our expenditure allowance has been calculated by deducting adjustments from Orion's proposed expenditure amounts. Inputs for 2014 have been calculated by applying adjustments made during the CPP period to Orion's proposed expenditure for that financial year, and are shown in Table H3.

Table H2 - Allowance for general management, administration and overheads ($m)

General Management, Administration and Overheads	2014	2015	2016	2017	2018	2019	Total CPP 2015 to 2019	Total 2014 to 2019
Orion's proposed expenditure	15.4	13.8	13.9	14.4	14.1	15.0	71.2	86.6
Removal of special projects contingency provision	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(2.5)	(3.0)
Removal of forecast by Orion to transition from a CPP to a DPP in 2019						(0.8)	(0.8)	(0.8)
Our expenditure allowance	**14.9**	**13.3**	**13.4**	**13.9**	**13.6**	**13.7**	**67.9**	**82.8**

Note: Prices in 2013 constant prices.

H14 We propose to remove the special projects contingency provision of $500,000 per annum from 2014, as well as the $750,000 per annum provision in 2019 which Orion has budgeted for transition costs from the CPP to the DPP. Both these provisions are not supported by suitable evidence to suggest these costs are reasonably likely to occur.

H15 Table H3 below compares our allowed expenditure levels of general management, administration and overheads to a time series of Orion's historic expenditure of general management, administration and overheads as a high level check of our assessment of proposed expenditure.

Table H3 - Time series of general management, administration and overheads ($m)

General Management, Administration and Overheads	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Orion proposed expenditure						17.8	15.4	13.8	13.9	14.4	14.1	15.0
Actual and allowed expenditure	9.2	9.6	10.2	12.0	12.4	15.0	14.9	13.3	13.4	13.9	13.6	13.7

Note: Prices in 2013 constant prices.

H16 Table H3 indicates that our assessment of general management, administration and overheads expenditure is reasonable against historical spend, allowing for the one off costs associated with the demolition of Orion's former head office on Manchester Street in 2013 and 2014.

Attachment I: Cost escalation factors

Purpose of this attachment

I1 This attachment discusses the cost escalators Orion has used to account for changes in input prices over time, including in particular:

I1.1 The rate of escalation in Canterbury construction labour costs;

I1.2 NZD / USD exchange rates; and

I1.3 The use of the producer price index.

Summary

I2 Orion adjusted its proposed capex and opex for expected changes in input prices over time. Orion's proposed forecasts of how it expects prices of inputs (such as labour and materials) to change over the regulatory period. Orion used these forecasts together with weighting factors to adjust its forecasts of capital and operating expenditure.

I3 This attachment summarises Orion's approach to developing expenditure escalators and the various assumptions it made, and our assessment.

I4 We have assessed the escalators proposed by Orion against the relevant CPP evaluation criteria.[461] The two criteria that are most relevant to escalators are:

I4.1 the extent to which the data, analysis and assumptions used in developing them are fit for purpose; and

I4.2 when applying the escalators to expenditure, the extent to which they meet the expenditure objective.

I5 Orion's approach to developing cost escalators is appropriate. However, when we assessed the data, analysis and assumptions we found that some results overestimated the expected growth in Orion's input prices over the CPP regulatory period.

I6 As a result, applying Orion's escalators would result in opex and capex forecasts that are above the efficient costs of meeting the expected demand for services.

I7 Some of the assumptions we used in setting the customised price path therefore differ from those proposed by Orion:

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[461] *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.2.1.

I7.1 We used a forecast of construction labour costs developed by NZIER instead of Orion's forecast;

I7.2 We used forward foreign exchange rates taken from Bloomberg instead of Orion's forecast of foreign exchange rates (based on Orion's extrapolation of an NZIER forecast); and

I7.3 We used a forecast of the consumer price index (CPI) for some expenditure (such as materials) instead of Orion's proposed use of a forecast of the producer price index (PPI).

I8 In this draft decision, we have not changed other assumptions that Orion proposed in relation to expenditure escalators.

I9 The combined impact on maximum allowable revenue of replacing some of Orion's proposed assumptions with those we used to set the customised price path is illustrated graphically in Chapter 5.

I10 The following tables compare the inputs that we used in the draft decision with those proposed by Orion.

I11 Table I1 below compares the forecasts of the change in the Canterbury construction labour index we used in the draft decision (developed by NZIER) and the one proposed by Orion (based on the opinion of three quantity surveyors).

Table I1 - Comparison of draft decision and Orion's proposal for Canterbury construction labour index (year-on-year % change)

	2014	2015	2016	2017	2018	2019
Orion proposal (quantity surveyors' opinion)	7.5	7.5	7.5	5.0	5.0	5.0
Draft decision (NZIER forecast)	3.7	4.5	5.5	6.2	-2.4	-2.9
Difference	-3.8	-3.0	-2.0	1.2	-7.4	-7.9

I12 Table I2 below compares the forecasts of the NZ dollar/US dollar exchange rates we used in the draft decision (the forward NZ dollar/US dollar exchange rates reported by Bloomberg) and the one proposed by Orion (based on NZIER's forecast and extrapolation).

Table I2 - Comparison of draft decision and Orion's proposal for NZ dollar/US dollar exchange rates

	2014	2015	2016	2017	2018	2019
Orion proposal (NZIER and extrapolation)	0.780	0.752	0.690	0.655	0.655	0.655
Draft decision (Bloomberg forward exchange rates)	0.762	0.739	0.717	0.700	0.683	0.670
Difference	-0.019	-0.013	0.027	0.045	0.028	0.015

I13 Table I3 below compares the forecasts we used to allow for input price growth for capital expenditure on non-system fixed assets and non-labour operating expenditure in the draft decision (a forecast of the CPI) with the one proposed by Orion (a forecast of the PPI).

Table I3 - Comparison of draft decision and Orion's proposal for capital expenditure on non-system fixed assets and non-labour operating expenditure (year-on-year % change)

	2014	2015	2016	2017	2018	2019
Orion proposal (PPI)	3.0	3.3	3.7	3.2	3.2	3.2
Draft decision (CPI)	1.1	1.8	2.2	2.2	2.2	2.2
Difference	-1.9	-1.6	-1.5	-1.0	-1.0	-1.0

What Orion proposed

Orion's approach to adjusting expenditure for expected changes in input prices

I14 Orion adjusted its proposed capex and opex for expected changes in input prices. The approach involves:

I14.1 developing forecasts of various inputs that Orion considers affect the price of capital and operating expenditure over time;

I14.2 for each project, allocating the expenditure into relevant categories;

I14.3 determining weighting factors that reflect the share that different inputs make up in the different cost or asset categories (some of the weighting factors change over time); and

I14.4 applying the input price indices and weighting factors to the various categories of proposed expenditure at the project level.

I15 Orion stated that its approach for adjusting input prices is based on that adopted in other jurisdictions.[462] It specifically considered the approaches used by Ofwat (the regulator of water companies in England and Wales), Ofgem (the UK energy networks regulator), and the Australian Energy Regulator.

Orion's approach to adjusting capital expenditure for expected changes in input prices

I16 Orion's approach to adjust for expected changes in the price of its proposed capital expenditure involves:

I16.1 developing forecasts of inputs that in Orion's view affect the price of capital expenditure over time (Canterbury construction labour costs, various commodities, exchange rates, producer prices);

I16.2 for each project, allocating the capital expenditure to the following asset categories:

I16.2.1 66kV underground cables;

I16.2.2 other underground cables;

I16.2.3 overhead line conductors;

I16.2.4 transformers;

I16.2.5 switchgear; and

I16.2.6 other;

I16.3 determining weighting factors that reflect the share that different inputs make up in the different asset categories (some of the weighting factors change over time); and

I16.4 applying the input price indices and weighting factors to the various categories of proposed expenditure at the project level.

I17 Orion proposed forecasts for Canterbury construction labour cost, the price of various commodities, exchange rates and the input prices faced by producers. These forecasts apply to a varying extent (determined by weighting factors) to all expenditure on electricity system fixed assets (broken down into various asset categories). For non-electricity system fixed assets, Orion used a forecast of producer prices.

I18 Table I4 below summarises the forecasts that Orion used to adjust its proposed capital expenditure for expected changes in input prices.

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[462] Orion "Proposal for a customised price-quality path" (19 February 2013), [p.576-576].

Table I4 - The forecasts that Orion proposed to use to adjust capital expenditure for changes in input prices (year-on-year % change)

	2014	2015	2016	2017	2018	2019
Construction labour cost	7.5	7.5	7.5	5.0	5.0	5.0
Commodity prices						
Aluminium	18.1	9.0	6.6	4.4	4.2	2.9
Copper	7.4	-4.6	-8.6	-5.0	-3.1	3.6
Iron ore	4.5	-7.7	-5.8	-7.1	-4.0	7.5
Crude oil	3.5	3.7	3.4	2.7	2.8	2.2
Producer prices	3.0	3.3	3.7	3.2	3.2	3.2

I19 Orion also proposed to adjust the price of commodities for expected fluctuations in the NZ dollar/US dollar exchange rate. Its proposed forecast (based on NZIER's forecast up to 2017 and an extrapolation of that forecast after that) is set out in the Table I5 below.

Table I5 - The forecast NZ dollar/US dollar exchange rate that Orion proposed to use in forecasting commodity prices

	2014	2015	2016	2017	2018	2019
NZ dollar/ US dollar exchange rate	0.780	0.752	0.690	0.655	0.655	0.655

I20 Orion developed weighting factors that reflect the share of each commodity in different asset components based on Orion's engineering judgement. These weighting factors are set out in Table I6 below.

Table I6 - Factors to determine the weight of each commodity in different asset components

Asset component	Commodity	Weighting (%)
66kv underground cables	Copper	100
Other underground cables	Aluminium	95
	Copper	5
Overhead line conductors	Aluminium	95
	Copper	5
Transformers	Steel	45
	Copper	50
	Oil	5
Switchgear	Copper	75
	Steel	25

I21 Table I7 below sets out for each of the inputs the data sources Orion has used in developing its forecast, and the date on which the information was published.

Table I7 - Information and publication date of information Orion used to develop capital expenditure escalators

	Forecast source	Date published
Construction labour cost	Orion, based on the opinion of three local quantity surveyors firms of expected changes in the price of Canterbury construction labour	October 2012
Commodity prices		
Aluminium	World Bank commodity price forecasts	September 2012
Copper	World Bank commodity price forecasts	September 2012
Iron ore	World Bank commodity price forecasts	September 2012
Crude oil	World Bank commodity price forecasts	September 2012
Producer prices	NZIER, Quarterly Predictions, PPI	September 2012
NZ dollar/ US dollar exchange rate	Orion, based on NZIER Quarterly Predictions and extrapolation	September 2012

Source: Based on Orion's CPP proposal, p 580.

Orion's approach to adjusting operating expenditure for expected changes in input prices

I22 Orion's approach to adjust for expected changes in the price of its proposed operating expenditure involved:

I22.1 developing forecasts of inputs that in Orion's view affect the price of operating expenditure over time (such as labour costs and producer prices);

I22.2 determining weighting factors that reflect the share that different inputs make up in the different categories of expenditure (the weighting factors for operating expenditure do not change over time); and

I22.3 applying the input price indices and weighting factors to the various categories of proposed expenditure at the project level.

I23 Orion proposed forecasts for two types of labour, and for the price faced by producers:

I23.1 for field work labour costs Orion applied the same forecast of Canterbury construction labour costs as the one it proposed to use in forecasting capital expenditure;

I23.2 for non-field work labour costs (such as corporate and network management operations) Orion applied a New Zealand wide forecast of labour costs; and

I23.3 for materials and other non-materials expenditure Orion applied a forecast of producer prices.

I24 Table I8 below summarises the forecasts that Orion proposed to use to adjust its proposed operating expenditure for expected changes in input prices.

Table I8 - The forecasts that Orion proposed to use to adjust operating expenditure for changes in input prices (year-on-year % change)

	2014	2015	2016	2017	2018	2019
Field work labour cost	7.5	7.5	7.5	5.0	5.0	5.0
Non-field work labour cost	1.9	2.0	2.6	2.2	2.2	2.2
Producer prices (non-labour costs)	3.0	3.3	3.7	3.2	3.2	3.2

I25 Table I9 below sets out for each of the inputs the data sources Orion has used in developing its forecasts of input prices for operating expenditure, and the date on which the information was published.

Table I9 - Information and publication date of information Orion used to develop capital expenditure escalators

	Forecast source	Date
Construction labour cost	Orion, based on estimates of two quantity surveyors (Rider Levett Bucknall and Davis Langdon) of how the price of Canterbury construction labour can be expected to change over the regulatory period	October 2012
Non- construction labour cost	NZIER, Quarterly Predictions, Labour Cost Index	September 2012
Materials and other non-materials	NZIER; Quarterly Predictions, Producer Price Index	September 2012

Source: Based on Orion's CPP proposal, p 580.

Our view

I26 Below we discuss our reasons for replacing some of Orion's forecast with alternative forecasts. We also briefly discuss the assumptions which we have not changed as part of our draft decision.

Orion's approach to developing forecasts of expenditure escalators is appropriate

I27 Overall, we consider that Orion's approach to developing expenditure is appropriate. The approach it proposed is broadly similar to that used in other jurisdictions and by Transpower in its opex capex review for the period 2012/13 to 2014/15, which we assessed.[463]

I28 However, while we agree with the overall approach, in setting the customised price path we have used several assumptions that differ from those proposed by Orion.

I29 Orion's choice of some assumptions leads to expenditure escalators that overestimate the expected growth in input prices over the regulatory period. As a result, applying Orion's escalators would result in opex and capex forecasts that are above the efficient costs of meeting the expected demand for services.

I30 Allowing for input prices that are higher than those expected over the regulatory period would lead to a higher price-quality path which provides an expectation of, and could result in, actual excessive profits (all other things being equal). Orion's proposed escalators would therefore not promote outcomes consistent with those in workably competitive markets. With respect to the other evaluation criteria we note that:

[463] Refer to www.comcom.govt.nz/regulated-industries/electricity/electricity-transmission/transpower-price-path-compliance/opex-capex-review-2012-13-2014-15/

I30.1 Orion consulted on the proposed increase in prices, including impact of cost escalators. Consumers did not provide feedback on the input prices. Given the technical nature of the issue, we consider that Orion's consultation was sufficient;

I30.2 The criterion that reflects the extent to which any quality standard variation is realistic does not apply to input prices; and

I30.3 There is no input methodology for input prices and this evaluation criterion is not relevant to input prices.

We replaced Orion's forecast of construction labour cost with NZIER's forecast

I31 We do not consider that all of the data, analysis and assumptions Orion used to develop the forecast of Canterbury construction labour costs result in a forecast that reflects the expected growth in the price of inputs that Orion intends to use over the regulatory period. We consider that Orion's forecast overestimates the expected growth in input prices over the regulatory period.

I32 Orion's proposed Canterbury construction labour cost index does not meet the expenditure objective. Applying Orion's escalators would result in opex and capex forecasts that are above the efficient costs of meeting the expected demand for services.

I33 The Verifier noted that using a Canterbury specific labour cost index was reasonable as labour cost growth could be higher than the overall national cost. However, the verifier commented that the range of estimates made by the quantity surveyors was wide.[464]

I34 We canvassed the views of various agencies on the likely construction labour cost pressures in Canterbury over the regulatory period, including officials from the Ministry of Business, Innovation & Employment, the Treasury, the Reserve Bank of New Zealand and the Canterbury Earthquake Recovery Agency. While none of the agencies had developed their own quantitative forecasts of construction price growth in Canterbury, the information and analysis they had undertaken suggested that Orion's forecast was too high.

I35 We therefore asked NZIER to advise us on the reasonableness of Orion's labour cost escalators.[465]

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[464] See page 77 of the verifier's report.

[465] NZIER, Canterbury Labour Cost Escalation, Assessment of Orion's projections, 17 June 2013.

I36 NZIER concluded that:[466]

> Orion's escalation assumptions are too high. This is based on our analysis of an economic thought exercise, historical experience and international experience. Orion's projection of a sustained period of 5%-7.5% wage inflation would see labour costs stretch away from national trends in a persistent manner. Such a sustained deviation in labour costs is unprecedented in New Zealand and internationally, and contrary to economic logic that supply and demand respond to price signals over time.

I37 NZIER acknowledges the uncertainty in how the labour market will respond to the significant task of rebuilding Canterbury. However, a labour supply response that reduces wage growth can be expected, making the sustained increase in labour costs as assumed by Orion very unlikely.[467]

I38 We do not consider that Orion's forecast of construction labour cost is based on appropriate assumptions. We agree with Orion that for the purpose intended the Canterbury labour construction index is the appropriate index to forecast. However, Orion's forecast, based on two quantity surveyors' views, is likely to miss important supply and demand adjustments that can be expected to occur in labour markets.[468] This means that Orion's forecast overestimates the expected growth in construction labour costs.

I39 We therefore asked NZIER to develop a forecast of the changes in Canterbury construction labour cost (as a proxy for field-work labour cost in Canterbury) over the regulatory period.[469]

I40 Table I10 below shows NZIER's forecast, which we used in the draft decision, and compares this to Orion's proposal.

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466 NZIER, Canterbury Labour Cost Escalation, Assessment of Orion's projections, 17 June 2013, per the introduction.

467 NZIER, Canterbury Labour Cost Escalation, Assessment of Orion's projections, 17 June 2013, per the conclusion. In addition, while NZIER's modelling report does not explore this in detail, faced with very high input prices, the market demand for construction services might adjust (for example, by spreading out construction work over a longer period).

468 Orion asked three quantity surveyors' views but based its forecast on the estimates of only two.

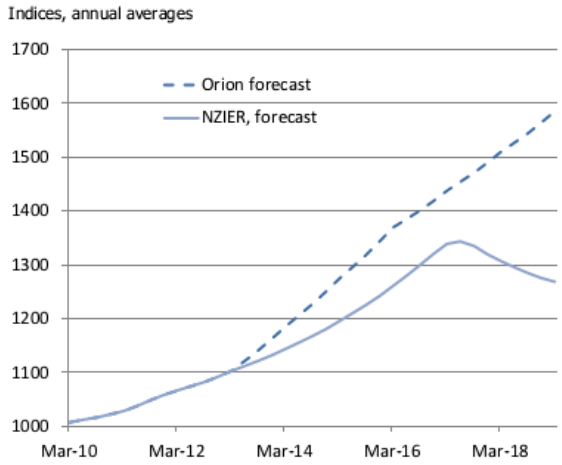
469 NZIER's modelling makes a number of assumptions, a key assumption being the timing of the rebuild effort. For a discussion of NZIER's modelling refer to the July report. NZIER's model was built in the software package Vensim. NZIER, Labour cost escalation in Canterbury forecasts, 15 July 2013.

Table I10 - Comparison of draft decision and Orion's proposal for Canterbury construction labour index (year-on-year % change)

	2014	2015	2016	2017	2018	2019
Orion proposal (quantity surveyors' opinion)	7.5	7.5	7.5	5.0	5.0	5.0
Draft decision (NZIER forecast)	3.7	4.5	5.5	6.2	-2.4	-2.9
Difference	-3.8	-3.0	-2.0	1.2	-7.4	-7.9

I41 Figure I11 below compares NZIER's forecast with that proposed by Orion. In both forecasts construction labour costs increase significantly. However, unlike in NZIER's forecast, Orion's forecast grows at rates of 5% or higher over the entire period.

Figure I1 - Comparison of NZIER's and Orion's forecast of construction labour costs in Canterbury



Source: NZIER, Labour cost escalation in Canterbury, July 2013

I42 Given the uncertainty associated with forecasting changes in construction labour costs, we considered whether a mechanism that compensates Orion for actual changes in labour prices would be in the interest of Orion and its consumers. We consider that any such mechanism would need to maintain strong incentives for Orion to control labour costs to promote the Part 4 purpose.

I43 We require Orion's agreement to amend the input methodologies to include such a mechanism in a customised price path. Orion told us that it preferred a forecast amount of construction labour prices. Our draft decision therefore does not include any mechanism that compensates for actual labour price changes.

I44 We welcome your submissions on whether it would be appropriate to consider a mechanism that compensates for actual changes in labour prices. As part of your submission you should consider the implications of such a mechanism for Orion's incentives to incur its labour costs efficiently.

Orion's approach to forecasting exchange rates ignores readily available information

I45 We consider that Orion's approach to forecasting the NZ dollar/US dollar exchange rate is not appropriate.[470] We propose to replace Orion's forecast with a forecast from Bloomberg.[471]

I46 Orion bases its forecast of the NZ dollar/US dollar exchange rate on NZIER (up to 2017), which it then extrapolates out to the end of the regulatory period in 2019. There is no single accepted way for forecasting foreign exchange rates. However, the use of extrapolation in Orion's approach unnecessarily discards information from foreign exchange markets that is readily available.[472]

I47 We have replaced Orion's forecast of the exchange rate with the forward exchange rates extracted from Bloomberg. This forecast incorporates information in the foreign exchange market on future NZ dollar/ US dollar exchange rates over the entire regulatory period.

I48 Table I11 below shows our proposed forecast for NZ dollar/US dollar exchange rates and compares this to Orion's proposal.

Table I11 - Comparison of draft decision and Orion's proposal for NZ dollar/US dollar exchange rates

	2014	2015	2016	2017	2018	2019
Orion proposal (NZIER and extrapolation)	0.780	0.752	0.690	0.655	0.655	0.655
Draft decision (Bloomberg forward exchange rates)	0.762	0.739	0.717	0.700	0.683	0.670
Difference	-0.019	-0.013	0.027	0.045	0.028	0.015

Note: The draft decision exchange rates are based on forward NZ dollar/US dollar provided by Bloomberg's professional data services on 5 July 2013. We calculated the forward exchange rate as the arithmetic average of the bid and the offer rates at that time. The settlement date for the forward rates is the middle of each calendar year, ie the first week of July in each of the forecast years.

We used consumer instead of producer prices for adjusting 'other' expenditure

I49 We consider that Orion's proposal to use the PPI as an escalator for capital expenditure on non-system fixed assets and non-labour operating expenditure is not

[470] Orion uses commodity price forecasts in US dollars as an input to calculate materials cost escalators for capex projects.

[471] Bloomberg is a recognised provider of business, financial and economic information.

[472] Research has shown that it is not possible to develop models that are consistently more accurate at forecasting exchange rates than exchange rate market data like forward exchange rates. See for example Meese, R., and Rogoff, K. S. (1983), The Journal of International Economics, Exchange Rate Models of the Seventies. Do They Fit Out of Sample? Issue 14, 3-24.

appropriately justified. Orion has not provided consistent or sufficiently detailed information on what these expenditure categories include.[473] Orion has not explained the nature of these costs that would allow us to assess whether a forecast of PPI would more appropriately reflects expected changes in these costs than, say, a broader price index measures such as the consumer price index.

I50 We propose to replace forecast PPI where it is used and instead use the same forecast of CPI as used elsewhere in our draft decision. In the absence of information that justifies the use of an alternative measure we consider it is appropriate to apply forecast CPI as the default escalator.

I51 Table I12 below shows our proposed forecast for 'other' expenditure (a forecast of the CPI) and compares this to Orion's proposal (a forecast of the producer price index).

Table I12: Comparison of draft decision and Orion's proposal for capital expenditure on non-system fixed assets and non-labour operating expenditure (year-on-year % change)

	2014	2015	2016	2017	2018	2019
Orion proposal (PPI)	3.0	3.3	3.7	3.2	3.2	3.2
Draft decision (CPI)	1.1	1.8	2.2	2.2	2.2	2.2
Difference	-1.9	-1.6	-1.5	-1.0	-1.0	-1.0

Our assessment of other assumptions used in forecasting input prices

I52 The approach to developing expenditure escalators proposed by Orion, in addition to forecasts of input prices discussed above, requires forecasts of commodity prices, weighting factors and rules for allocating expenditure to different projects.

I53 We undertook a high level assessment of these other assumptions. Based on this assessment we consider that the assumptions are appropriate. However, we gave greater priority to assessing other parts of Orion's proposal and may request further clarification from Orion on some of the assumptions it used as part of its forecasts.

I54 Orion uses forecasts of commodity prices produced by the World Bank. We consider that the World Bank is a credible forecaster.

I55 For some of the components proposed by Orion we were concerned with a lack of transparency and we may ask Orion to provide further clarification. For example:

[473] The explanation of 'other' expenditure in Orion's proposal differed from the explanations which we received in information requests after it submitted the proposal.

I55.1 Orion has not fully explained the rules that Orion adopted to allocate expenditure between projects.[474] We do note that the verifier carried out some spot checks and noted that the individual allocations were reasonable.

I55.2 Orion explained that the weights it attached to individual commodities in developing asset price indices were based on engineering judgement but did not explain what rules were adopted as part of this judgement.

[474] Orion told us that this was undertaken by project managers.

Attachment J: Spur assets

Purpose of this attachment

J1 This attachment discusses the purchase by Orion of spur assets from Transpower.

Summary

J2 Spur assets form part of the national grid owned by Transpower. They typically provide service at 110kV or less, they form part of Transpower's non-core grid, and they generally serve the purpose of local distribution rather than national transmission. Transpower is willing to sell spur assets.

J3 As spur assets are essentially distribution assets rather than national transmission assets, a change to EDB ownership could allow strategic and operational benefits to be achieved through the integration of spur assets into local distribution networks.

J4 Orion is proposing to buy a number of Transpower's spur assets and then incorporate them into its own network configuration. Transpower's Board has agreed for resource to be allocated to assessing the merits of spur asset transfers to Orion.

J5 Prior to purchasing these assets, Orion has been paying transmission charges to Transpower based on Transpower's pricing methodology and these charges have been recovered from Orion's customers as part of Orion's pricing. After purchase, the assets will form a part of Orion's RAB and the cost of acquiring and maintaining them will continue to be charged to customers under Orion's pricing methodology.

J6 From the consumer point of view the costs relating to these assets before and after a purchase should be approximately neutral apart from slight differences in the respective pricing methodologies. However, it is expected that once the assets are integrated into Orion's network there will be cost savings and that these will pass to consumers in the longer term.

Conclusions

J7 The Commission proposes to allow Orion to treat avoided transmission charges as a recoverable cost in accordance with the EDB IMs, subject to an adjustment to reduce the amount allowed for forecast costs already included in the BBAR for the CPP period.[475]

J8 To ensure consumers are charged appropriately for the cost of the assets, the adjustment mechanism proposed by the Commission will account for any variations between:

[475] Clause 3.1.3(1)(e) of the EDB IMs.

J8.1 planned and actual Transpower spur asset avoided or actual transmission charges; and

J8.2 planned and actual spur asset acquisition dates.

J9 This mechanism will alter the annual amount of recoverable costs. It is similar to one in the DPP reset determination.[476]

J10 We have estimated the spur asset cost component included in Orion's BBAR for each year of the CPP period. This amount will be deducted each year from Orion's recoverable costs so that there is no double counting of that portion of the actual transmission charge or avoided transmission charge, whichever applies to each asset each year.

J11 We were not provided with detailed business cases for each spur asset acquisition planned by Orion. However, we have reviewed the forecast replacement capex and network maintenance planned by Orion to operate and maintain the spur assets. Those forecasts are subject to our adjustments made as a result of our overall review of Orion's forecast expenditure required to maintain and replace network assets.

Incentive framework for acquisition of assets from Transpower

J12 The EDB IMs and the DPP reset determination contain an incentive mechanism that encourages an EDB to buy assets from Transpower and rationalise them with its distribution network where efficiency savings will arise from the acquisitions. The benefits of any cost saving for the first five years of ownership are retained by the EDB and after that the EDB is required to pass the cost savings to its consumers.

J13 The Commission proposes that Orion's CPP determination would apply similar rules for the calculation and disclosure of recoverable costs as apply to other non-exempt EDBs under the DPP reset determination. Recoverable costs are not dealt with under the DPP determination that currently applies to Orion.

J14 Under the DPP reset determination EDBs are able to recover recoverable costs from consumers. Recoverable costs are defined in the EDB IMs to include Transpower's transmission charges paid by Orion and also any amount of Transpower's transmission charges that Orion avoids by purchasing Transpower assets.[477]

J15 To protect the interests of consumers, certain key conditions will apply:

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476 Electricity Distribution Services Default Price-Quality Path Determination 2012 [NZCC 35], the treatment of 'recoverable costs' in clause 8.4, Compliance with the price path, and in clause 11.3(d), Annual Compliance Statement.

477 See EDB IMs, clauses 3.1.3(1)(b) and (e).

J15.1 The Commission must approve the amount of each avoided charge through specifying the amount by way of formula in the applicable price-quality path determination;[478]

J15.2 Orion may claim an avoided charge as a recoverable cost for only the first five years of ownership;[479] and

J15.3 Orion must make disclosures each year of the amounts it has treated as avoided charges in recoverable costs.[480]

J16 To ensure the acquisition does not lead to consumers paying higher prices for these assets, the acquired assets must enter Orion's RAB at Transpower's RAB value for each asset.

What Orion has proposed

J17 Orion has commenced a programme of spur asset acquisitions from Transpower. The programme will effectively bring all major distribution network assets in Orion's area under Orion management.

J18 The successful acquisition of these spur assets will allow planning and development of Orion's sub-transmission network to be undertaken on an integrated basis for the region. Many of the spur assets Orion plans to acquire are central to the long term network architecture it has proposed. Orion is proposing to acquire approximately $36.8m of Transpower assets (at current RAB values).

J19 Within the CPP proposal Orion has proposed that any avoided charge claimed in recoverable costs will be capped at current Transpower charges for the first 5 years post acquisition. This ensures that consumers are no worse off in the first 5 year post acquisition than currently under Transpower ownership. After that time, consumers will share in any cost savings.

J20 Table J1 outlines the schedule of proposed purchases and how Orion plans to recover costs.

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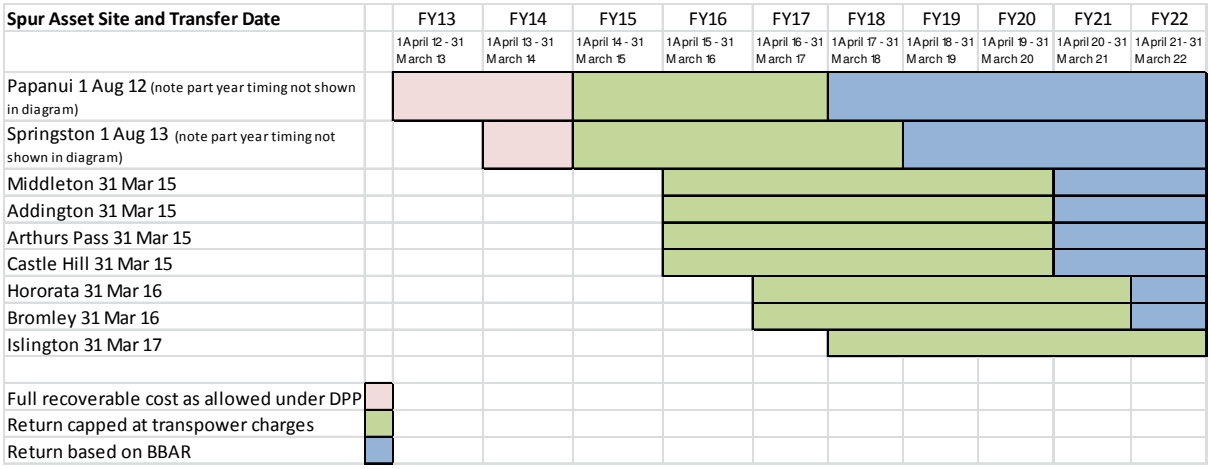
478 See EDB IMs, clause 3.1.3(2).

479 See EDB IMs, clause 3.1.3(4).

480 Electricity Distribution Services Default Price-Quality Path Determination 2012, subclauses 11.3(c) and (d), and clause 11.4.

Table J1 - Proposed schedule of spur asset acquisitions



J21 Orion has advised the Commission that the forecast acquisition dates in Table A1 have already changed in some cases since the CPP proposal was submitted to us. We do not propose to amend the BBAR for this. Instead we propose that the estimated BBAR amounts for spur assets should be as stated in this reasons paper and that the total of recoverable costs each year, whether comprising avoided transmission charges, actual transmission charges or a mix of both in respect of the spur assets should be reduced by the fixed amount of the estimated BBAR. This will protect the interests of consumers and leave Orion with the flexibility to negotiate the best timing for each proposed acquisition with Transpower.

Our view of Orion's proposed spur asset purchases

J22 The EDB IMs incentivise Orion to acquire Transpower's spur assets through the recoverable cost mechanism by allowing Orion to keep all of the first five years' efficiency benefits realised by Orion from owning and managing the spur assets and giving the benefits to consumers thereafter. The direct cost impact of owning the spur assets to consumers should be neutral between Transpower ownership and Orion ownership, at least in the first five years.

J23 However, this does not remove the need to consider whether the acquisitions are in the long term interests of Orion's consumers. We have therefore evaluated the acquisitions as if they were a capex programme using the CPP proposal evaluation criteria.

J24 Although the cap on the avoided cost calculation proposed by Orion ensures consumers can be no worse off within the first 5 years of acquisition and shows that when spur assets are looked at on a collective basis the net effect is an overall benefit to consumers, there are some spur asset sites that appear initially more expensive to manage under Orion ownership than Transpower ownership. These assets are Arthurs Pass, Castle Hill, Bromley, Islington and Middleton. However, there are mitigating factors that make the asset purchases more favourable:

J24.1 Orion has not calculated any wider network savings from being able to rationalise its network due to owning the spur assets.

J24.2 Orion has not included NIA (New Investment Agreement) charges as part of Transpower's overall charges when calculating avoided costs.

Price path compliance for recoverable costs relating to the spur assets

J25 To avoid double counting of the costs of the spur assets within the BBAR (and hence in the MAR) and within recoverable costs, it is necessary to quantify the annual cost effects of the spur asset purchases in the BBAR. This will act as the base amount of each avoided transmission charge (or actual transmission charge[481]) and the difference between that amount and the forecast total avoided charge would be a recoverable cost (if it is a positive amount).

J26 Within the CPP proposal Orion's financial model breaks down costs by asset type, asset category and project. The model however does not map assets to a spur asset category. This means that costs associated with spur assets are co-mingled across asset types, asset categories and projects. Therefore no visibility of the make-up of BBAR by spur assets is provided within Orion's model.

J27 Given the lack of granularity within Orion's CPP input models, the spur asset component of each BBAR forming part of the avoided charges has needed to be calculated by the Commission outside of the model.

J28 Orion has outlined the costs incurred from its spur asset acquisitions in Table J2 below. We have adjusted these figures to reflect our adjustments of Orion's network asset expenditure following our overall assessment of Orion's forecast of expenditure to maintain and replace network assets (which includes the planned acquisition of spur assets).

[481] If a forecast spur asset acquisition is delayed, Orion will continue to incur an actual transmission charge, which is effectively already partially or wholly provided for in the BBAR and MAR. Applying the same treatment to avoided and actual charges removes any disparity in treatment and will leave Orion and consumers unaffected by any variance in timing of acquisition.

Table J2 - Estimated BBAR effect of proposed spur asset purchases ($000 nominal)

Location	Forecast purchase date	2015	2016	2017	2018	2019	Total
Papanui	Aug 12	614	651	668	647	675	3,255
Springston	Aug 13	662	666	662	659	662	3,311
Middleton	Mar 15		200	199	199	188	786
Addington	Mar 15		1,726	1,667	1,676	1,658	6,727
Arthurs Pass	Mar 15		235	210	209	277	931
Castle Hill	Mar 15		79	66	65	59	269
Hororata	Mar 16			56	53	51	160
Bromley	Mar 16			968	955	928	2,851
Islington	Mar 17				463	436	899
Orion Total		1,276	3,557	4,496	4,926	4,934	19,189
Adjust opex[482]		(17)	(18)	(18)	(18)	(18)	(89)
Adjust capex[483]		(660)	(660)	(660)	(660)	(660)	(3,300)
Adjusted Total		**599**	**2,879**	**3,818**	**4,248**	**4,256**	**15,800**

J29 We have not included in this table any forecast asset upgrade costs as they do not form a like-for-like cost with historic Transpower charges. They form instead part of Orion's asset upgrade programme which we have separately evaluated.

[482] A 5% adjustment to proposed spur asset maintenance expenditure is made annually to reflect our assessment of network maintenance spending. Refer Attachment E, paragraph E46.1.

[483] A 30% adjustment to proposed spur asset replacement capex expenditure is made to reflect our assessment of replacement capex spending. Refer Attachment E, paragraph E20. The adjustment to BBAR made in the table is calculated by taking total replacement spend over the CPP period, divide it by 2 to proxy the timing of replacement spend and calculating an annual investment return at 6.92% and an annual depreciation recovery component assuming a 50 year useful life.

J30 The amended BBAR in this table for each of the FY2015 to FY2019 years serves as a reference for the amounts to be used in the calculation of the avoided charge/actual charge allowance in the draft CPP determination.

Attachment K: Reinforcement

Purpose of this attachment

K1 This attachment discusses the forecast of expenditure on network reinforcement.

Orion's proposal

K2 Orion has defined reinforcement as investments in the 11 kV network required as a result of load growth that is remote from the network constraint; when capacity or security of supply on a feeder is eroded and new assets are required to relieve the constraint.[484]

K3 Table K1 below provides a summary of Orion's proposed urban and rural reinforcement expenditure.

Table K1 - Urban reinforcement expenditure during CPP period ($m)

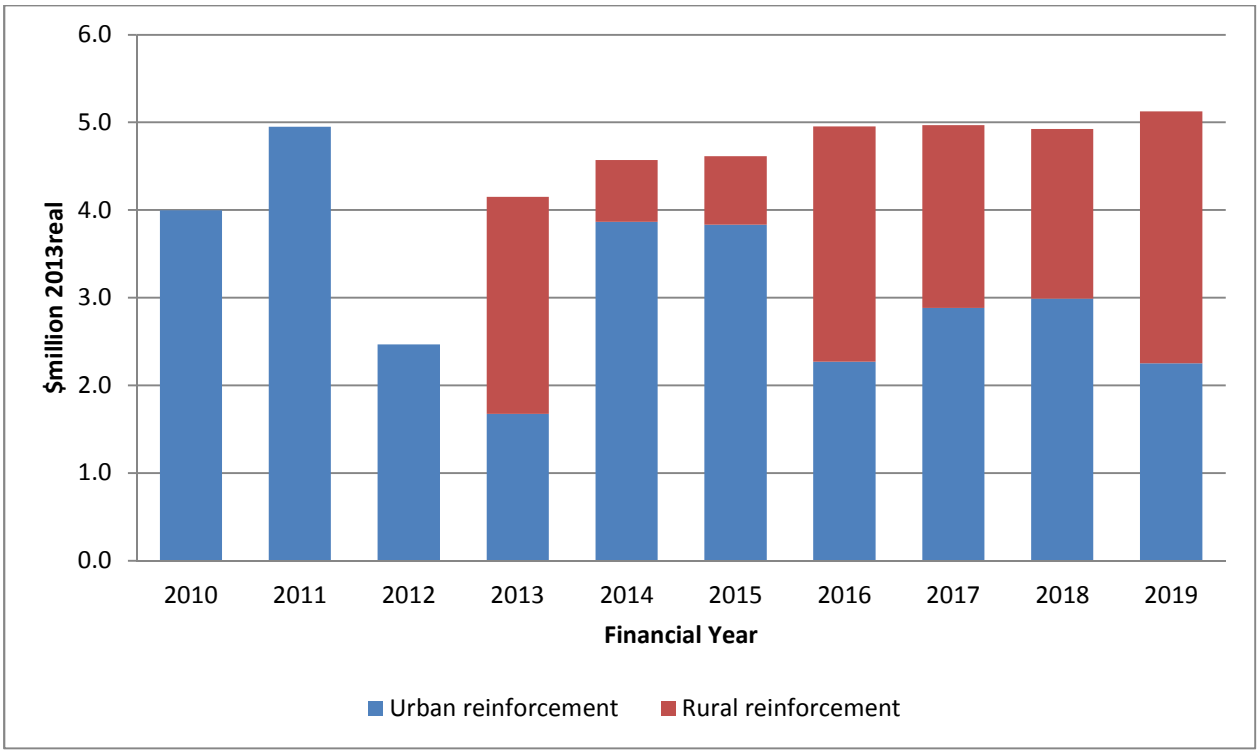
	2015	2016	2017	2018	2019
Urban reinforcement	3.8	2.3	2.9	3.0	2.3
Rural reinforcement	0.7	2.2	1.6	1.5	2.3
Total reinforcement	4.5	4.5	4.5	4.5	4.6

Note: Prices at 2013 constant prices.

K4 Orion states that the proposed expenditure for 2014 and 2015 is based on currently planned work and the forecasts for 2016 to 2019 are based on the average of 2012 and 2013 expenditure.[485] Orion states that the forecast reinforcement expenditure is similar to its historical levels since 2007.[486]

[484] Orion "Urban reinforcement CPP51 Project Summary", [pp.3-4] included in Appendix 36 of Orion's proposal.
[485] Orion "Urban reinforcement CPP51 Project Summary", [p.8].
[486] Orion "Urban reinforcement CPP51 Project Summary", [p.10].

Figure K1 - Historical and forecast reinforcement budget



Our view is that Orion's forecasts are reasonable

K5 From our further analysis, we consider that Orion's total reinforcement expenditure is a reasonable forecast of the amount that a prudent EDB would require to reinforce the 11 kV network. Therefore it meets the expenditure objective and we have included Orion's forecasts in the building block inputs.

K6 Based on Orion's reason for reinforcement projects, we consider that since Orion is planning to build two new substations and install diesel generation in the urban north area the need to reinforce the 11 kV network in the urban area may be less in the later years of the CPP period than in the earlier years. However, there could be a greater need to reinforce the 11 kV network in the rural areas in the later years of the CPP period. Orion also states that the split between urban and rural reinforcement cannot be reliably estimated more than 2-3 years out.[487] Figure K1 above shows the year to year variation in expenditure between rural and urban reinforcement.

K7 Orion has not provided information on the reinforcement projects it plans to undertake.

K8 Orion has stated that since reinforcement is more tactical than major capex it does not have firm plans for projects more than 2-3 years out. So for 2017 onwards most

[487] Orion "Urban reinforcement CPP51 Project Summary", [p.10].

of the budget is considered unidentified and projects will be specified closer to the time they are undertaken.[488]

K9 There is no direct linkage between reinforcement investments and proposed quality standard variations. We assume that Orion will time reinforcement projects to maintain the target quality standards.

[488] Orion "Urban reinforcement CPP51 Project Summary", [p.10].

Attachment L: Quality

Purpose of this attachment

L1 This attachment discusses the quality standards that Orion has proposed will apply during the CPP period. The quality standards measure reliability which is defined as SAIDI[489] and SAIFI.[490] As required by the IMs Orion's proposal reflects a request to vary the targets that apply under its current DPP.

What Orion proposed

L2 Before the earthquakes Orion provided a highly reliable service to its consumers.[491]

L3 The Canterbury earthquakes caused damage to Orion's network and have increased the number and duration of power interruptions experienced by consumers, particularly as a result of faults on the 11 kV and the 66 kV urban networks.[492] Fault rates experienced in 2011, 2012, and in 2013 are well above historic levels. Tests by Orion's contractors indicate that some of the 66 kV urban cables may have been significantly stressed by the earthquakes. This could increase the future rate of failure of these cables.[493]

L4 In its CPP proposal Orion has proposed lower minimum reliability of supply targets (reflecting a reduction in the level of quality provided to its consumers) to apply for the CPP period (April 2014 - March 2019). The proposed SAIDI and SAIFI limits for the CPP period are set out in Table L1.[494]

Table L1: SAIDI and SAIFI limits proposed by Orion

	2015	2016	2017	2018	2019	Orion's Pre-earthquake limits
SAIDI Limit	103.8	94.7	91.0	82.4	73.4	59.7
SAIFI Limit	1.36	1.21	1.16	1.02	0.87	0.78

L5 Orion's historic levels of performance, and the new minimum reliability standards proposed by Orion, are illustrated in the following figures (Figure L2 and Figure L3). Orion's proposal has an initial increase in SAIDI and SAIFI limits, relative to the

489 System Average Interruption Duration Index.
490 System Average Interruption Frequency Index.
491 Orion "Proposal for a customised price-quality path" (19 February 2013), [p.92-96].
492 Orion "Proposal for a customised price-quality path" (19 February 2013), [p.134].
493 Orion "Proposal for a customised price-quality path" (19 February 2013), [p.141] and appendix 8 of Orion's proposal.
494 Orion "Proposal for a customised price-quality path" (19 February 2013), [p.89].

current minimum reliability targets, at the start of the CPP period. Reliability gradually improves during the CPP period.

Figure L2: Orion's SAIDI actuals and forecast

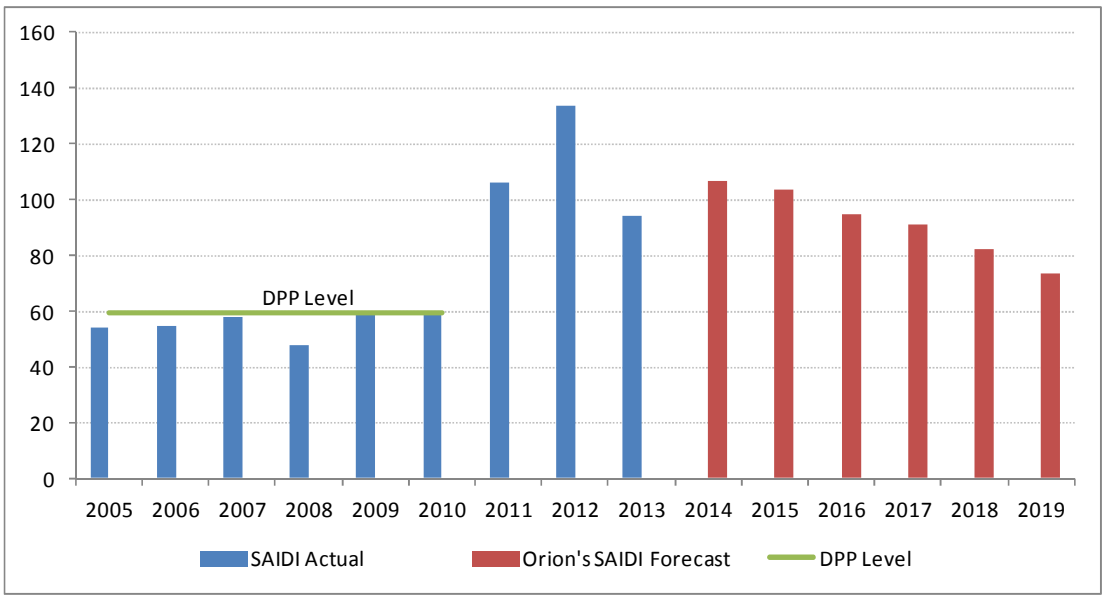
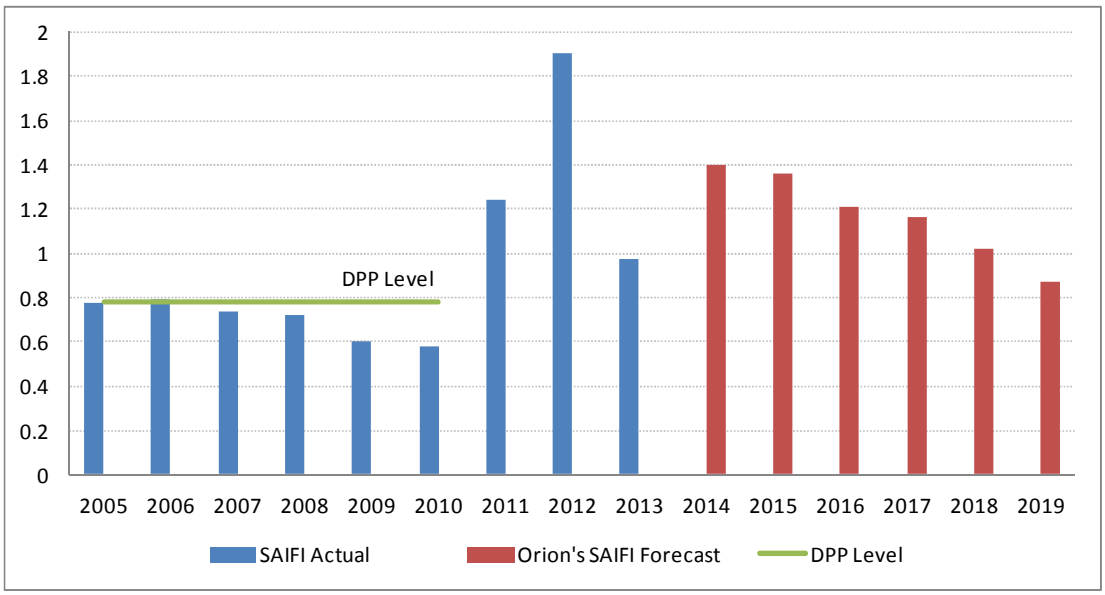


Figure L3: Orion's SAIFI actuals and forecast



L6 The improvement in SAIDI and SAIFI performance over the CPP period is largely due to the expected reduction in the number of faults on parts of the network damaged during the earthquakes.[495]

L7 Overall, Orion is proposing to achieve near pre-earthquake levels of reliability by FY19.[496]

Our assessment of Orion's proposal against the evaluation criteria in the IMs

L8 Our criteria for evaluating proposals to vary the quality standards were set out in the IMs.[497] Specifically, we have evaluated the extent to which Orion's proposal better reflects the realistically achievable performance over the CPP period, taking into account either or both:

L8.1 Statistical analysis of Orion's past SAIDI and SAIFI performance; and

L8.2 The level of investment provided for under the proposed maximum allowable revenue before tax.

L9 We have applied both limbs of this evaluation criterion. We include performance following the earthquake in the analysis of historic performance.

Historic performance

L10 Orion has used the method we set out in the DPP to forecast its SAIDI and SAIFI quality standard variations.[498] Orion used the updated historical reference period to financial years 2008 to 2012 and, where appropriate, included the effects of the earthquakes on failure rates.[499]

L11 Orion's current DPP SAIDI and SAIDI limits were set using data over the period FY05-09. Orion has used the DPP method to forecast targets for the following interruption causes:

L11.1 third party damage for 11 kV network;

L11.2 external causes (such as weather) for the 11 kV, rural 33 kV and rural 66 kV networks;

L11.3 planned outages for the 11 kV network; and

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[495] The damaged assets will fail and be replaced over time. As a result, the number of assets remaining on the network which suffered earthquake damage will reduce, resulting in a decreasing number of failures over time.

[496] Orion "Proposal for a customised price-quality path" (19 February 2013), [p.21].

[497] Electricity Distribution Services Input Methodologies Determination 2012 [2012] NZCC 26, clause [5.2.1(e)].

[498] ADD REFERENCE

[499] Orion "Proposal for a customised price-quality path" (19 February 2013), [s 6.4], pp.124-150.

L11.4 system failure for the 33 kV and rural 66 kV networks.

L12 It has also identified four asset categories that were significantly impacted by the earthquakes. The four categories of assets are:

L12.1 the 11 kV urban network;

L12.2 the 11 kV rural network;

L12.3 the part of the 66 kV urban network that is not subject to staged rebuild; and

L12.4 the part of the 66 kV urban network that is subject to staged rebuild.

L13 Orion has forecast increased SAIDI and SAIFI values for these assets using 24 months of post-earthquake data from September 2010 to August 2012. It has then assumed a reduction in earthquake-driven failure rates over the CPP period at a rate of reduction in faults it has estimated.

L14 In its proposal, Orion separately identified the impact on performance from the spur assets Orion has already acquired and plans to acquire from Transpower. Orion also used the same method (ie, that used in the DPP) to forecast the SAIDI and SAIFI limits for these assets.[500]

L15 In our view, the proposed quality standard variation for the assessed asset categories, and causes of interruptions, which are not affected by the earthquake, is realistic. We consider the use of a method similar to that used in the DPP is appropriate, and that Orion has made the appropriate adjustments (eg, to account for spur assets).

Level of expenditure and reliability

L16 Orion proposes a substantial increase in expenditure on its network. Orion's proposed increase in expenditure is targeted at further improving network resilience to high-impact, low probability events, increasing capacity for changes in demand including new connections, maintaining current levels of performance and replacing the increased number of assets expected to fail as a result of earthquake damage.

L17 There is still uncertainty around the extent of damage to some components of Orion's network (particularly the 11kV and 66 kV underground network), and some damage may not manifest itself until faults actually occur. Therefore, in respect of the expenditure required to replace failed assets, there is uncertainty as to how much expenditure is required, how much this will reduce faults (as the damaged assets are replaced), and how many faults may nonetheless occur from all other causes (including from third party damage during the recovery).

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[500] Orion "Proposal for a customised price-quality path" (19 February 2013), [p.145].

L18 In our view, it appears that Orion's assumptions are conservative (ie, actual performance may be better than forecast). For example: [501]

L18.1 Figure L2 illustrates SAIDI performance in 2013 was significantly below the limits proposed for 2014 and 2015;

L18.2 Figure L3 illustrates SAIFI performance in 2013 was significantly below the limits proposed for all the years in the CPP period except 2019;

L18.3 the recent data we've seen supports these observations. Recent weather conditions have resulted in wet ground conditions, which is a primary driver triggering cable faults on damaged parts of cables, yet fault rates are below the limits; and

L18.4 Orion has forecast up to four failures per annum in the 66 kV urban cables.[502] While it is reasonable to assume failures, and there is uncertainty over forecast failure rates, this failure rate does appear to be based on very conservative assumptions (ie greater probability of actual performance being better than forecast rather the worse).[503]

L19 On balance, we conclude that Orion's proposed variation meets the evaluation criteria and is in the best interests of consumers. While the proposed reliability limits may be conservative, there is still uncertainty about fault rates and we would not want to encourage over-investment by Orion, or for the reliability limits to be breached too readily when the failure rate of assets damaged in the earthquake is largely outside Orion's control, at least in the near term.

L20 Orion's proposal shows that its SAIDI and SAIFI quality standards will return to within 25% of the pre-earthquake levels by 2019.

The impact on reliability of our lower expenditure allowance

L21 As set out in Chapter 2, Orion's proposed levels of expenditure did not meet the expenditure objective and, following our more detailed assessment of its proposed levels of expenditure, we have set lower expenditure allowances than Orion proposed. For the following reasons, we do not consider that this lower allowance for expenditure requires us to alter the quality targets proposed by Orion.

L22 In our view, the level of expenditure we have allowed is adequate for Orion to maintain network performance (of the undamaged network at the historical levels seen from 2008 and 2012). This is because although we have proposed a slower rate

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501 Orion "Asset performance 2013" [p.15].

502 Orion forecasts four events in 2014 and 2015, three in 2016 and 2017, two in 2018 and one in 2019.

503 This provides 18 SAIDI minutes in 2015 which decreases to 4.1 SAIDI minutes in 2019 and SAIFI of 0.3 in 2015 which decreases to 0.07 in 2019. In comparison, Orion's pre-earthquake baseline SAIDI was 0.3 SAIDI minutes and SAIFI was 0.03.

of maintenance and development work than Orion has proposed, the decrease in network performance that would result from the slower work programme is relatively small. We consider it represents a reasonable trade-off between expenditure and performance. We consider that the targets Orion has proposed are realistic but that Orion has significantly over-estimated the expenditure needed to achieve them.[504]

L23 Our expenditure allowance is also adequate to deal with the increased failure rates of the parts of the network that have been damaged by the earthquakes:

L23.1 Over time, as damaged parts of the network fail and are subsequently replaced, the performance of the network is expected to return to historical levels (after adjusting for the purchase of spur assets). Orion's actual SAIDI and SAIFI outcomes in 2013 demonstrate a strong improvement in performance relative to 2012 (and are below 2011 levels; performance in 2011 was only partly affected by the earthquakes);

L23.2 We agree with Orion that a return to quality levels by 2019 to within 25% of pre-earthquake levels is an acceptable trade-off between price and quality and in the long term interest of consumers;

L23.3 Additional expenditure to return to pre-earthquake levels sooner is likely to be disproportionately expensive and, in our view, would not reflect the preference of consumers (who generally do not seem to prefer higher reliability, or faster improvements in reliability, ahead of limiting price increases);

L23.4 Although we have some concerns that Orion's proposed limits may be conservative, the actual performance is uncertain and in some cases out of the control of Orion. There is a risk that setting more challenging targets could create an incentive for Orion to over-invest in quality improvements (which is not in the long term interest of consumers) or, through factors which are largely outside of Orion's control (ie future failure rates of assets damaged by the earthquakes), to breach the quality path; and

L23.5 We note that even at 25% above pre-earthquake levels, the level of quality received by Orion's customer would be better than that experienced by most other EDBs.

[504] It is possible that our proposed reduction of Orion's forecast level of expenditure will also reduce the need for planned interruptions (as the volume of work requiring outages is reduced). We have assumed the impact on Orion's SAIDI and SAIFI would not be material and have therefore not made an adjustment to the targets to reflect this.

Attachment M: Weighted average growth in quantities

Purpose of this attachment

M1 This attachment:

M1.1 summarises Orion's forecast weighted average growth in quantities during the CPP period;

M1.2 demonstrates the sensitivity of weighted average growth in quantities to changes in household growth projections; and

M1.3 explains the reasons why we think Orion's forecast weighted average growth in quantities are reasonable.

Orion's forecast weighted average growth in quantities

M2 Orion's CPP proposal includes forecast weighted average growth in quantities through to the end of the CPP period. Weighted average growth in quantities reflects expected changes in demand over time. Orion states:[505]

> The slope of the series for MAR before tax is set such that real price changes are constant over the CPP regulatory period. This requires adjusting for forecast changes in quantities. We forecast weighted average growth in quantities for this purpose.

M3 Orion's forecast weighted average growth in quantities is shown in Table M1 below.

Table M1 – Orion's proposed forecast of weighted average growth in quantities (year-on-year % change)

	FY14	FY15	FY16	FY17	FY18	FY19
Weighted average growth in quantities	0.82	0.81	0.79	0.80	0.85	0.76

M4 When calculating forecast weighted average growth in quantities, Orion's demand forecasts are broken down into five main customer groups. The five groups are: general connections (residential and small business), major customer connections (including embedded networks), irrigation connections, street lighting connections and large capacity connections (Synlait and Fonterra).[506]

Sensitivity of weighted average growth in quantities to household growth

M5 Household growth forecasts are the most material input under Orion's approach to calculating the weighted average growth in quantities. Residential and small business connections form the bulk of Orion's revenues, and forecasts of weighted average

[505] Orion "Proposal for a customised price-quality path" (19 February 2013), [p.177].
[506] In addition, forecasts are provided for export and generation customers.

growth in quantities are revenue weighted. Based on data supplied by Orion, residential and small business connections (referred to as "general connections") account for approximately 80% of Orion's budgeted revenues for FY2013.[507]

M6 Orion has based its expectations for growth in general connections on the Greater Christchurch Urban Development Strategy (UDS) "quick recovery" household growth scenario. Four possible scenarios are included in the UDS household growth model: rapid recovery, quick recovery, moderate recovery and slow recovery.[508] Orion notes that the Christchurch City Council (CCC) Monitoring unit recommends using the quick recovery scenario.[509]

M7 Assumed growth rates for other customer groups differ based on underlying drivers.[510] For example, it is assumed that Fonterra's capacity will double in 2014 due to a planned upgrade, but no increase in capacity is expected for Synlait between 2014 and 2019.[511]

M8 Table M2 below shows forecast weighted average growth in quantities under each of the UDS household growth scenarios. The forecasts in this table are calculated by varying the household growth input in Orion's "projected chargeable quantities" model, which it used to forecast weighted average growth in quantities.

Table M2 – Sensitivity of weighted average growth in quantities to UDS household growth scenarios (year-on-year % change)

UDS household growth scenario	Underlying growth rate based on UDS scenario[512]	Weighted average growth in quantities					
		FY14	FY15	FY16	FY17	FY18	FY19
Rapid recovery scenario	1.30	1.29	1.28	1.26	1.27	1.32	1.23
Quick recovery scenario (Orion's proposal)	**0.80**	**0.82**	**0.81**	**0.79**	**0.80**	**0.85**	**0.76**
Moderate recovery scenario	0.50	0.54	0.53	0.51	0.52	0.57	0.48
Slow recovery scenario	0.30	0.35	0.34	0.32	0.33	0.38	0.29

M9 Table M2 shows that household growth is the key driver of the weighted average growth in quantities. There is a very strong correlation between the UDS household

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507 General connections, major customer connections (including embedded networks), irrigation connections, street lighting connections and large capacity connections account for 79.6%, 11.8%, 6.1%, 1.7% and 0.9% of budgeted distribution revenues for the 2013 financial year respectively.

508 Market Economics "Greater Christchurch household scenarios 2011-2041: Final report" (March 2012).

509 Orion "Proposal for a customised price-quality path" (19 February 2013), p.190.

510 Orion "Proposal for a customised price-quality path" (19 February 2013), p.177.

511 Orion "Proposal for a customised price-quality path" (19 February 2013), p.184-185.

512 This column contains underlying growth in the number of households per annum, based on each of the UDS household growth scenarios. Orion states that the underlying growth rates for each scenario are: 1.3% for rapid, 0.8% for quick, 0.5% for moderate and 0.3% for slow.

growth scenario that is selected and the overall weighted average growth in quantities.

M10 Demand forecasts for other customer groups, on the other hand, have a relatively minor impact.[513] As indicated above, this is because other customer groups contribute a relatively small proportion of Orion's revenues.

Our view is that Orion's forecasts are reasonable

M11 Our view is that Orion's forecasts of weighted average growth in quantities are reasonable. The key reasons are described below.

M11.1 Household growth projections are the main input under Orion's approach to forecasting weighted average growth in quantities.

M11.2 Orion has based its household growth projections on independent forecasts prepared by Market Economics (in March 2012) for the Greater Christchurch UDS. The four household growth scenarios included in the UDS report appear to cover a reasonable range of possible timeframes for population levels to recover from the earthquakes.[514]

M11.3 Orion has based its household growth projections on the "quick recovery" scenario. Orion notes that the Christchurch City Council recommends using the quick recovery scenario.[515]

M11.4 Orion has consistently applied the quick recovery household growth scenario across its CPP proposal. For example, the quick recovery scenario is also applied in Orion's load growth forecasting model, which is used for network planning.

M11.5 It is not clear at this stage whether there is a forecast that better reflects expected household growth in the Canterbury region than the quick recovery scenario. At present, it is still relatively early in the earthquake recovery period and there is considerable uncertainty regarding household growth.

M12 We acknowledge the current uncertainty surrounding household growth forecasts for the Canterbury region. Further, we note that there are other potential predictors of demand growth which may also be relevant and take into account the very high

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513 For example, increasing the annual growth rate for irrigation connections from 1.3% per annum (as per Orion's proposal) to 10% per annum only increases the weighted average growth in quantities from approximately 0.8% per annum to 0.9% per annum. Irrigation connections are the third largest category (by revenue weighting).

514 Market Economics "Greater Christchurch household scenarios 2011-2041: Final report" (March 2012), [p.2-3].

515 Orion "Proposal for a customised price-quality path" (19 February 2013), [p.190].

amount of construction activity in the CPP period (for example, GDP growth for the Canterbury region).[516] We invite submissions on the approach to forecasting weighted average growth in quantities and will consider updating our approach in our final decision.

[516] We note GDP forecasts for Christchurch City are available. See Canterbury Development Corporation "Background Paper to the Christchurch Economic Development Strategy", (February 2013).

Attachment N: Review of Orion's 2013 financial results

Purpose of this attachment

N1 This attachment discusses Orion's actual results for the year to 31 March 2013 and how we have used these in this draft decision.

Orion's financial results for 2013

A1 The timing of our evaluation has meant that we have been able to compare Orion's actual financial results for the year to 31 March 2013 with the forecasts contained in its proposal. Orion's proposal was submitted in February 2013, which meant that it relied on actual financial results for 2010, 2011 and 2012, but forecasts for 2013 and 2014 and the proposed customised price-quality path period.

N2 The comparison of financial forecasts and actual results has implications for our assessment of the customised price-quality path proposed by Orion, including claw-back. Table N1 provides an overview of forecasts used by Orion in its proposal and actual results for 2013.

N3 Given that Orion's proposal was submitted in February 2013, we expect that the forecasts in the proposal for the year to 31 March 2013 reflected actual results for at least some part of that year. Despite this, the variances between the actual results and Orion's forecasts were relatively large. In particular, commissioned assets were almost $32m (41%) lower than forecast, capex was $14m (19%) less than forecast, and opex was almost $8m (14%) less than forecast.

Table N1: Comparison of Orion's proposal forecasts and actual results for 2013 ($m)

	Capex	Commissioned assets	Opex	Revenue
Orion's proposal	75.4	77.1	54.7	143.8
Actual results	61.1	45.3	46.8	138.9
Variance	-14.3	-31.8	-7.9	-4.9

Source: Orion response to Commerce Commission additional information requirement, Q#022.

How we have used the information in Orion's 2013 results

N4 The availability of these actual results is useful from a variety of perspectives. First, Orion has proposed claw-back from the September 2010 earthquake (which falls within the 2011 financial year) through to the end of its current default price-quality path on 31 March 2014. Orion's actual financial results for 2013 provide a good basis for assessing whether the amount of Orion's proposed claw-back over this period is reasonable.

N5 Second, the 2013 results have also allowed us to build an updated forecast for 2014 for claw-back purposes. This updated forecast has focused on Orion's opex because this has a larger impact on building blocks allowable revenue in any given year, relative to capex that is amortised over the lifetimes of the relevant assets.

N6 The 2013 results also give us a better basis to assess what levels of capex to expect from Orion in the coming years. They inform a revised view of Orion's forecast capex for 2014, which affects the forecast value of Orion's RAB at the start of the proposed customised price-quality path period. Refined capex numbers therefore flow through into the forecast building blocks for future years and potentially impact our view of the appropriate customised price-quality path for Orion.

N7 The overall effect of comparing Orion's proposal forecasts and actual results for 2013 is to create an amended benchmark for assessing the differences between the inputs for Orion's proposed customised price-quality path and our draft decision. As a result of Orion's lower than forecast opex, capex, commissioned assets and revenues in 2013, our claw-back calculation is different from that in Orion's proposal ($28.6m compared to $86m). Attachment C provides more detail about our assessment of Orion's proposal to recover past costs and lower revenues (claw-back).

N8 The variance between Orion's forecast and actual results for 2013 provides us with comfort that our draft decision represents a reasonable allowance for expenditure. We have also noted public commentary by Orion regarding its 2013 financial results. Orion has stated that it has deferred some capital expenditure and is operating more efficiently than before the earthquakes.

N9 In the immediate aftermath of the earthquakes, Orion, like many in Canterbury, was in a strongly reactive mode. It was faced with a large and unexpected volume of critical work. As the length of time from the earthquakes passes, and the need for urgency subsides, there is a greater opportunity to plan and carefully manage expenditure, including by deferring expenditure.

Attachment O: Financial model for Orion's customised price-quality path

Purpose of this attachment

O1 This attachment describes how the financial model accompanying this paper produces the financial values required to establish Orion's CPP price path.

Our financial model produces an IM-compliant price path

O2 We have developed a financial model which uses the CPP input methodologies to produce Orion's price path for the 5 year CPP period. The input methodologies in Part 5 of the EDB IM determination for annual allowable revenues, cost allocation and asset valuation, treatment of taxation, and the cost of capital are used.[517]

O3 Our model is contained in a Microsoft Excel workbook that is published with this paper. The workbook uses a set of 40 inputs contained in the 'Inputs' worksheet to calculate the following values:[518]

O3.1 Maximum Allowable Revenues for each year of the CPP period (2015-19); and

O3.2 Building Blocks Allowable Revenues for each year of the assessment period (2013-14) and the CPP period (2015-19).

O4 As required by the IMs, the Maximum Allowable Revenues (MAR) values represent a 'smoothed' profile of Building Block Allowable Revenue (BBAR) values for the 5 year CPP period using an 'X factor' of 0.[519] The MAR values also incorporate our allowance for claw-back.[520]

O5 The MAR value for 2015 will be used to establish starting prices in the CPP determination for Orion.

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[517] Although the model makes provision for the calculation of IM compliant output values such as controllable opex, pass-through costs and recoverable costs, these are not required to determine Orion's MARs or BBARs and have not been calculated at this stage.

[518] Both before-tax and after-tax amounts of MAR and BBAR have been calculated as required by clause 5.3.1 of the EDB IMs.

[519] The conversion of the BBAR series into a MAR series is achieved through a goal seek function contained in a macro in the 'MAR' module of the financial model. This macro must be re-run if inputs are modified.

[520] The conversion of the BBAR series into a MAR series is achieved through a goal seek function contained in a macro in the 'MAR' module. This macro must be re-run if inputs are modified.

The inputs to the model are based on data supplied by Orion

O6 The 40 input values contained in the model have been calculated from the information that Orion submitted as part of its CPP application in February 2013, which included a suite of Orion's own Excel models containing financial input values.

O7 In our model, some of Orion's data has been modified consistent with our decisions on items such as forecast operating expenditure (INPUT13). The modifications to values of inputs are outlined in each relevant section of this paper. Other inputs such as other regulated income (INPUT14) have been considered and accepted without change.

O8 A separate column in the 'Inputs' worksheet in the model describes where the various input values have been sourced from. Two matters require explanation:

O8.1 Our model applies a standard depreciation method for the CPP period. This differs to Orion's CPP application where an alternative depreciation methodology for newly-commissioned assets was proposed;[521] and

O8.2 We have used the current CPI values available from Statistics New Zealand and Reserve Bank of New Zealand to modify input values. It was not possible, however, for some asset-related data to be updated in this way (for example, CPI-indexed revaluations for existing assets) and we will request further information from Orion to arrive at IM-compliant values for the final determination. Our best estimate of the effect on the nominal value of the total MAR would be an overall increase of approximately $3.6 million, implying a real change in average prices from 2014 to 2015 not of 9.2%, but approximately 9.65%.

How to provide feedback on the accuracy of our model

O9 The outputs of our model have been checked against those that would be produced by the financial models submitted by Orion in its CPP application. We are confident that there are no material discrepancies between the two.

O10 It is possible, however, that interested persons may identify inaccuracies in our model or have suggestions for improvements that could be made.[522]

O11 Submissions relating to the accuracy of our model or suggested improvements can be made as part of the normal consultation process outlined in this paper. It would

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521 This is discussed in Chapter 5 of this paper.

522 Our model is 'unlocked' and it is therefore possible for the inputs and the formulae in the model to be modified by interested persons. However, as some of our inputs are 'hard-coded' in order to produce outcomes consistent with the financial data supplied by Orion our model cannot be relied on to produce IM-compliant outcomes in every circumstance where inputs or formulae are modified.

assist us if these submissions could be identified under the heading 'Financial model submission'.

Some changes may not be reflected in the model

O12 A necessary part of our process in preparing our draft decision was to 'lock down' the numbers in our model in advance of finalisation of this paper. On reviewing the linkage between our decisions on capex described in this paper and the calculations contained in our model, we identified after 'lock down' that some adjustments may not have been completely reflected in the model inputs. If further adjustments are required to be made to the model inputs then our best estimate of the effect on the nominal value of the total MAR would be an overall reduction of $1.8 million, from $826.8 million (see Table 5.14) to $825.0 million. This would imply a proposed change in average prices from 2014 to 2015 not of 9.2%, but 8.9% (see Table 5.15). We will continue to review these matters, and, subject to our consideration of points made in submissions, will resolve them for the purposes of our final decision on the price-quality path.

Attachment P: Glossary

Abbreviation	Definition
Act, The	Commerce Act 1986
Aon	Aon New Zealand Limited
BBAR	Building Blocks Allowable Revenues
CAIDI	Customer Average Interruption Duration Index
Calverton	Calverton Business Consulting Limited
Capex	Capital expenditure
CBD	Central Business District
Commission, The	Commerce Commission
CPI	Consumer Price Index
CPI-X	CPI minus X
CPP	Customised price-quality path
DPP	Default price-quality path
2010 DPP Determination	Electricity distribution services default price-quality path determination [2012] NZCC 35
EDBs	Electricity Distribution Businesses
EDB IMs	Electricity Distribution Services Input Methodologies Determination *2012* [2012] NZCC 26
ENA	Electricity Networks Association
FTEs	Full time equivalents
GAAP	Generally Accepted Accounting Practice
GST	Goods and Services Tax
GXP	Grid Exit Point
IMs	Input Methodologies
IRIS	Incremental Rolling Incentive Scheme
kV	Kilovolt
kWh	Kilowatt hour
MAR	Maximum Allowable Revenues
MEUG	Major Electricity Users' Group
MW	Megawatt
NERA	National Economic Research Associates
NPV	Net Present Value
NZIER	New Zealand Institute of Economic Research
Opex	Operating expenditure

Orion	Orion New Zealand Limited
Orion's DPP Determination	Electricity Distribution Services Default Price-Quality Path Determination 2010 (Commerce Commission Decision 685, 30 November 2009)
Part 4 purpose, [T]he	The purpose of Part 4, set out in section 52A of the Act
Partna	Partna Consulting Limited
PV	Present Value
PwC	Price Waterhouse Coopers
QSV, or Quality Standard Variation	Variation to the quality standards under a DPP
RAB	Regulatory Asset Base
RIV	Regulatory Investment Value
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
Strata	Strata Energy Consulting Limited
UDS	Urban Development Strategy
Vector	Vector Limited
WACC	Weighted Average Cost of Capital