Invitation to have your say on Orion's proposal to change its prices and quality standards

Issues to explore and consider

Date: 1 May 2013

Why we have written this paper

1 The Commerce Commission is responsible for setting the maximum average prices and required quality standards for electricity lines companies. These prices are a major component of retail electricity prices.[1] This regulation exists because electricity lines companies face little or no competition.

2 The maximum average prices and required quality standards for Orion New Zealand Limited (Orion) are currently constrained by a default price-quality path (commonly referred to as a DPP). Orion's DPP was set in November 2009, for the five year period from 1 April 2010 to 31 March 2015.[2]

3 Electricity lines companies can propose an alternative price-quality path that better meets their particular circumstances, such as following a catastrophic event. This is known as a customised price-quality path (CPP). Orion has submitted a proposal, dated 19 February 2013, to increase its maximum average prices and reduce its required quality standards for the five years commencing 1 April 2014.[3]

4 Orion's proposal is intended to address the impact of the Canterbury earthquakes, including the recovery of additional costs, the recovery of lower revenues due to reduced demand, and to fund future investment in its network.[4]

5 Orion's proposal complies with the relevant rules and requirements relating to the process for, and content of, proposals seeking a CPP.[5]

6 This paper provides:

6.1 An outline of our role, process and approach in evaluating Orion's proposal;

6.2 How you can have your say on Orion's proposal;

6.3 Our outline of Orion's proposal;

6.4 Our initial assessment of Orion's proposal; and

6.5 Questions for consumers and stakeholders to consider.

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1 23.2% of the annual electricity bill of a typical New Zealand residential customer is made up of lines charges. For more information on how retail electricity prices are affected by charges from electricity lines companies, see Electricity Authority "Fact Sheet 2, Breakdown of a typical bill" (2013) www.ea.govt.nz/dmsdocument/13295 (Viewed on 19 April 2013).

2 The DPP was reset in November 2012 for 16 electricity lines companies, but not Orion.

3 We did not reset Orion's DPP in November 2012 because we had been expecting this proposal.

4 Our 'input methodologies' provide the opportunity for electricity lines companies to submit a CPP proposal if a catastrophic event occurs, such as the Canterbury earthquakes in 2010 and 2011.

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

7 This paper does not summarise Orion's proposal. Orion has provided a summary of its proposal which we append to this paper, and which can be downloaded from our website at www.comcom.govt.nz/orion-cpp.

An outline of our role, process and approach

Our role is to promote the long term benefit of consumers

8 In setting the maximum average prices and required quality standards for Orion, we seek to promote the long term benefit of Orion's consumers.[6]

9 Under Part 4 of the Commerce Act 1986, we are required to set the maximum average prices and required quality standards that we consider appropriate after receiving a proposal from a regulated business, in this case Orion. If we do not make a decision by 29 November 2013, Orion's maximum average prices and required quality standards will be those that it has proposed.[7]

10 We consider that if a catastrophic event occurs, such as the Canterbury earthquakes, our role is to provide certainty to a regulated business that it can recover the prudent costs of supplying regulated services (in this case, electricity lines services). This includes addressing the consequences of the catastrophic event, while providing appropriate incentives for the supplier to manage risk.[8]

11 In undertaking our role, we will:

11.1 Evaluate Orion's proposal, including detailed reviews of its proposed capital projects, its forecast costs, and its impact on prices; and

11.2 Obtain specialist engineering and economic opinions.

12 Orion's proposal reflects a need to provide for the most appropriate position for consumers given the changed circumstances in Canterbury. Our role is to evaluate the proposal on a principled basis, and ensure that we set appropriate maximum average prices and required quality standards to apply to Orion. This will involve

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6 Section 52A of Part 4 of the Commerce Act 1986 provides that "(t)he purpose of this Part 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 and 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."

7 We have a case stated in front of the High Court seeking confirmation of the final date by which we must make our decision on if Orion's maximum average prices and required quality standards will not be those that it has proposed.

8 Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paragraph 8.4.25.

robustly testing the assumptions that underpin Orion's proposal, and considering feasible alternatives to it.

13 The Canterbury earthquakes have been traumatic for those affected. We recognise that there are sensitivities in this situation. Consequently, we want to emphasise that legislation requires us to thoroughly assess Orion's proposal. This is so that we can decide how to achieve the best possible outcomes for the long term benefit of consumers.

Our process ends with a final decision in November 2013

14 We expect to make our final decision on Orion's maximum average prices and required quality standards by 29 November 2013. Our decision will apply to Orion from 1 April 2014.

15 We intend to issue a draft decision on Orion's maximum average prices and required quality standards on 19 July 2013. There will then be an opportunity for submissions on our draft decision, and then for cross-submissions on matters raised in submissions from other parties.

We want to hear and consider your views

16 Before we issue our draft decision, we want to hear and consider the views of consumers and stakeholders. We welcome submissions on Orion's proposal to change its prices and quality standards, including any comments on our initial assessment of the proposal and the questions we have identified as a result.

17 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 24 May 2013.[9]

18 We will consider all submissions received by this date in reaching our draft decision on the maximum average prices and required quality standards that will apply to Orion.

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9 Due to a delay to the original date of 29 April 2013 that we specified for release of this paper, we have extended the previously advised timeframe for receiving submissions by one week.

A summary of our process is shown in the table below

Process step	Date
Issues paper published	1 May 2013
Submissions due on Orion's proposal	24 May 2013
Draft decision on Orion's maximum average prices and required quality standards	19 July 2013
Submissions due on draft decision	16 August 2013
Cross-submissions due on matters raised in submissions on draft decision	30 August 2013
Final decision on Orion's maximum average prices and required quality standards	29 November 2013

We must evaluate Orion's proposal against set criteria

19 The criteria for our evaluation of Orion's proposal are set out in our 'input methodologies'.[10] Put simply, these are:

19.1 Whether Orion's proposal is consistent with the relevant rules, requirements and processes of regulation (which are collectively known as 'input methodologies');

19.2 The extent to which Orion's proposal promotes the long term benefit of Orion's consumers by promoting incentives to innovate, invest and improve efficiency, provide services at a quality that consumers demand, share efficiency gains with consumers, and limits Orion's ability to make excessive profits (the purpose of Part 4 of the Commerce Act);

19.3 Whether data, analysis, and assumptions underpinning Orion's proposal are robust, accurate, reliable and appropriate;

19.4 Whether Orion's proposed expenditure is prudent for the expected energy demand on its network, reflects appropriate service standards, and complies with regulatory obligations;[11]

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10 These evaluation criteria apply to any proposal for a customised price-quality path. See Commerce Commission "Electricity Distribution Services Input Methodologies Determination 2012" (15 November 2012), clause 5.2.1.

11 This is called the 'expenditure objective', which means considering whether expenditure proposed by Orion reflects the efficient costs that a prudent electricity lines company would require to meet or manage the expected demand for electricity lines services, at appropriate service standards, during the CPP period and over the longer term, and complies with applicable regulatory obligations associated with those services. In Orion's case, whether the proposed expenditure is appropriate for the expected energy demand on the network is in the context of the uncertainties faced after the earthquakes, particularly in terms of changes in the level and location of population. Commerce Commission "Electricity Distribution Services Input Methodologies Determination 2012" (15 November 2012), clause 1.1.4.

19.5 The extent to which any proposed changes to Orion's quality standards reflect what Orion can realistically achieve; and

19.6 The extent to which Orion's proposal is supported by its consumers, where relevant.

We decide what Orion's maximum average prices and required quality standards will be

20 After evaluating Orion's proposal against the above criteria, we are then required to decide what Orion's maximum average prices and required quality standards will be. As a result of the earthquakes, we need to consider the short-term costs of restoring electricity supply that Orion has faced, and the longer-term investment planning that has been, and will continue to be, required.

Orion should have incentives to invest efficiently

21 The Canterbury earthquakes do not reduce the need to promote a balance between the various elements set out in the purpose of Part 4 of the Commerce Act. Orion should have the opportunity to earn a reasonable return on its efficient investment following the earthquakes, because this provides the incentives for it to continue to make that investment in its network.

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

23 In setting maximum average prices and 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. Although lower prices would likely provide immediate benefits to Orion's customers, they will only benefit in the long-term if Orion has incentives to invest efficiently.

Orion's proposal has been subject to independent verification

24 It is important that we are able to rely on information contained in Orion's proposal. An independent expert can add value to the quality of Orion's proposal and to our decision-making on that proposal by testing the assumptions that underpin forecast information on major capital projects, operating expenditure, and energy demand.

25 Under the process rules for making a proposal, Orion was required to obtain an opinion on its proposal from an independent expert known as a verifier. The verifier had a duty of care to us in carrying out its role and was required to report on a number of things that are set out in our input methodologies.

26 Orion has included the verification report in its proposal and we have taken this report into account in framing the initial questions we are asking on Orion's proposal.[12]

27 Orion's proposal also includes an independent engineer's report and an audit of financial information, which is in compliance with our 'input methodologies'.

12 Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 – Verification report and certificate.

How you can have your say

28 We want to hear and consider your views on Orion's proposal.

29 Please email your submission to regulation.branch@comcom.govt.nz, and show 'Orion CPP proposal' in the subject line of your email. All submissions will be published on our website.

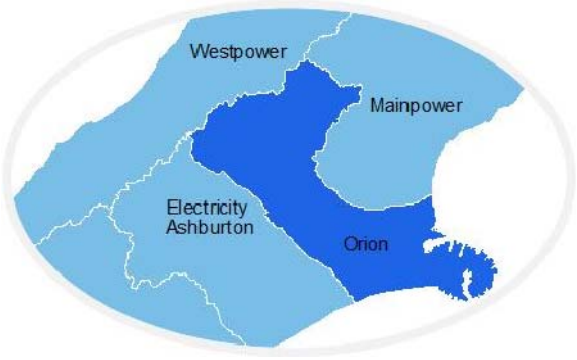
30 Orion's proposal, including additional information provided by Orion at our request after submission of the proposal, can be found on our website at www.comcom.govt.nz/orion-cpp.

Our outline of Orion's proposal

31 On 20 February 2013, we received a CPP proposal from Orion. Orion has proposed changes to its maximum average prices and required quality standards that are intended to address the extraordinary circumstances following the Canterbury earthquakes in 2010 and 2011.

Orion's proposal will affect electricity consumers

32 Orion's proposed changes to its maximum average prices and required quality standards would affect electricity consumers in Orion's network area, which is bordered by the Rakaia and Waimakariri rivers and stretches from the Southern Alps to Banks Peninsula.



33 A portion of a consumer's electricity bill is used to pay Orion for building, maintaining and operating the electricity lines within its service area.[13]

34 Maintaining good networks is essential to providing reliable and resilient electricity services. However, this activity can be costly, and additional expenditure is needed after the earthquakes. Orion has a track record of delivering reliable electricity services to the consumers in its network area, which it wants to maintain in the long-term.

35 Returning performance to pre-earthquakes levels will take time (Orion's proposed target is 2019) and has a cost for consumers. There are options for reducing these costs. For example, returning to pre-earthquakes levels of performance over a longer period of time.

Orion's proposal requires us to set a CPP

36 Orion's proposal requires us to set a CPP, which can take account of an electricity lines company's individual circumstances. In this case, Orion's decision to make a proposal has been prompted by the Canterbury earthquakes in September 2010 and

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13 23.2% of the annual electricity bill of a typical New Zealand residential customer is made up of lines charges. See Electricity Authority "Fact Sheet 2, Breakdown of a typical bill" (2013). www.ea.govt.nz/dmsdocument/13295 (Viewed on 19 April 2013)

February 2011. The earthquakes damaged Orion's network and have caused Orion to incur additional costs and earn lower than expected revenues.

37 We set the maximum average prices that Orion can charge for delivering electricity to its customers, and set the required quality standards (for example, the duration and number of outages that may occur during a year). Orion's current maximum average prices and required quality standards are constrained by a DPP that was set in November 2009, for the five year period from 1 April 2010 to 31 March 2015.[14] A DPP is based on general assumptions about the performance of the New Zealand electricity lines industry as a whole.

Orion is the first company to apply for a CPP

38 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 working with the experience of any other business in the past. Electricity lines companies that submit proposals in the future will benefit from being able to use Orion's proposal and our evaluation of this proposal as a guide.

39 The earthquakes have meant that Orion and its customers (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.

40 Despite these difficulties, we consider that Orion has produced a thorough and high-quality proposal, including supporting tables and models, and an addendum of additional information that we required after the proposal was submitted.

The earthquakes damaged Orion's network

41 Damage from the earthquakes was concentrated in the Christchurch CBD and the eastern suburbs of Christchurch, causing more power cuts than normal and affecting the network's resilience against future events (eg, major wind or snow storms).[15] This included:

41.1 Damage beyond repair to four of 314 substations (mainly brick);

41.2 Damage beyond repair to several underground cables;

41.3 Some damage to certain overhead lines;

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

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[14] The DPP was reset in November 2012 for 16 electricity lines companies, but not Orion.

[15] The February 2011 quake caused more faults on Orion's network than normally seen over a decade.

41.5 Total destruction of Orion's head office building; and

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

42 Despite the damage, Orion was able to restore power relatively quickly, even though some areas remain inaccessible. In the 15 years before the earthquakes, Orion spent $6 million on seismic strengthening, which proved to be a valuable resilience investment that limited the impact of the earthquakes on Orion's network, and therefore the impact on Orion's services to consumers.

Orion proposes to recover past costs and revenues

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

43.1 Additional costs in the period before April 2014, which were incurred in response to the earthquakes; and

43.2 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.[16]

44 Additional costs that Orion incurred 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.

45 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.

Orion proposes to be compensated for necessary future expenditure

46 Orion also proposes that its maximum average prices be set to compensate it for future expenditure that we understand Orion considers is necessary to:

46.1 Return the reliability performance of Orion's network to near pre-earthquakes levels by 2019;[17]

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

17 A number of terms are used in Orion's proposal and in this paper to refer to the quality characteristics of electricity networks. These include reliability, resilience and security of supply standards. Attachment 1 explains these terms and their relevance.

46.2 Improve the actual resilience of Orion's network against future catastrophic events, and not just earthquakes, to a higher level than existed before the earthquakes in 2010 and 2011;

46.3 Meet expected demand for new electricity connections and load growth, particularly as a result of population growth in northern parts of Christchurch;

46.4 Increase Orion's available resources for running its business; and

46.5 Increase the rate of asset replacement above past levels.

Orion's proposal is based on several assumptions

47 Orion's proposal makes several assumptions about, for example:

47.1 The size and location of Christchurch's future population;

47.2 Christchurch City Council limitations on the use of overhead lines;

47.3 The needs and wishes of consumers; and

47.4 The age and condition of its network assets, and the impact of this on future performance and network quality.

48 These assumptions affect the amount of expenditure that Orion proposes, so we will consider their appropriateness in our evaluation of Orion's proposal.

Orion proposes an initial price increase of 15%

49 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.[18]

50 Under Orion's proposal, the value of its assets will increase by 64% by 2019, and its annual operating expenditure will increase by 36% (both of these percentages have been adjusted for the impact of inflation).[19] The effect on prices of these increases is explained below.

51 Increased spending for the next five years will likely affect pricing for decades to come. This is because assets in electricity networks have long lives, which means that

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18 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)

19 We are unclear at this stage to what extent Orion is proposing to retain in its asset base, assets that have been impaired or destroyed by the earthquakes.

the costs associated with them are recovered from consumers over a long period. The current level of operating costs also sets a baseline for future pricing decisions.

52 The increased costs proposed by Orion will be recovered from a customer base that has reduced as a consequence of people moving away from Canterbury after the earthquakes.

Higher expenditure means higher prices

53 The higher the level of investment required, the higher the maximum average prices Orion can charge its customers. We will set Orion's maximum average prices and required quality standards, while still allowing Orion to earn a return on investments in its network and cover the day to day costs of running its business. This return will be for the long term benefit of consumers, as it will be based on efficient levels of investment.

54 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.

55 An increase in forecast operating expenditure (opex) relative to previous periods increases Orion's maximum average prices.

56 When we set Orion's maximum average prices, we need to evaluate whether Orion's proposed expenditure is prudent for the expected energy demand on its network, reflects appropriate service standards, and complies with regulatory obligations.[20]

Orion is proposing higher capital expenditure

57 Orion proposes spending $526 million on capital expenditure in the seven yearsfrom 2013 to 2019 (called the next period) after adjustments for inflation.[21] This includes expenditure planned before the earthquakes and new expenditure proposed after the earthquakes. Figure 1 shows a breakdown of this expenditure into Replacement, Major Projects, Non-Network and Other capital expenditure.

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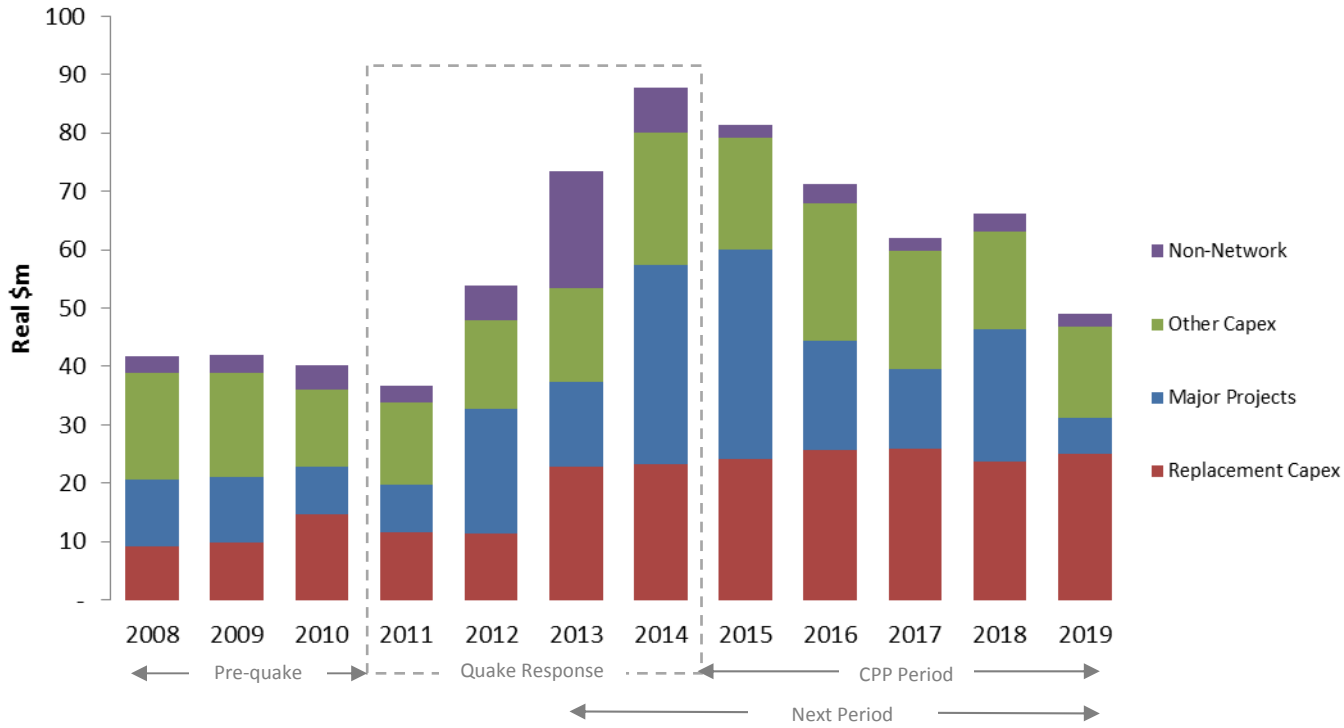
20 This is called the 'expenditure objective', which means considering whether expenditure proposed by Orion reflects the efficient costs that a prudent electricity lines company would require to meet or manage the expected demand for electricity lines services, at appropriate service standards, during the CPP period and over the longer term, and complies with applicable regulatory obligations associated with those services. See Commerce Commission "Electricity Distribution Services Input Methodologies Determination 2012" (15 November 2012), clause 1.1.4.

21 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.

58 Our analysis shows that each additional $10 million of capex forecast by Orion drives an average additional $3 million in Orion's maximum average prices to customers in the CPP period (adjusted for inflation).[22] [23]

Figure 1 - Capital expenditure



Note: Prices in 2013 constant prices

Source: Commerce Commission analysis

Orion is proposing higher operating expenditure

59 Orion proposes spending $281 million on operating expenditure in the five years[24] from 2015 to 2019 (the CPP period). Figure 2 shows a breakdown of this expenditure into Asset Maintenance, Network Operations and Management, and General Management, Admin and Overheads expenditure.

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22 This is based on $10m added evenly across each year of the next period (ie, the seven years from 2013 to 2019).

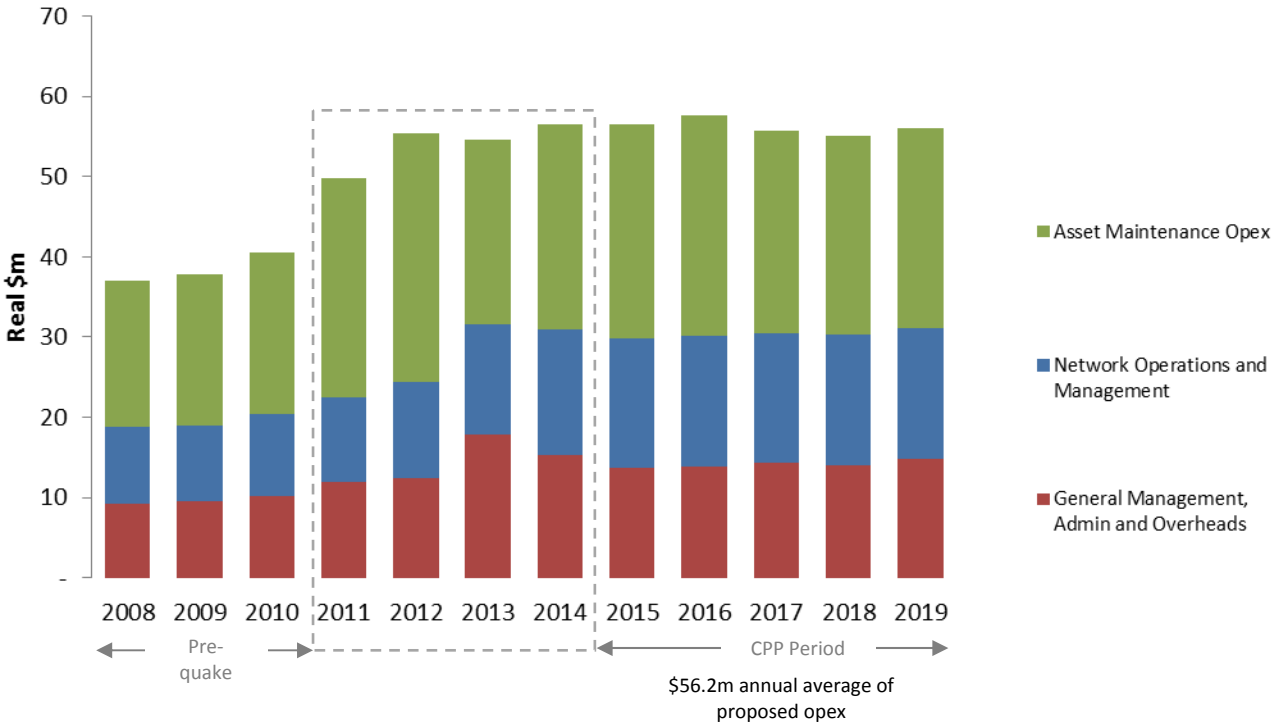
23 Figures are also based on the weighted average composition and commissioning timing of assets proposed by Orion and include depreciation calculated using the standard method, not the alternative method proposed by Orion.

24 Opex spending impacts prices to consumers in the year of spending. Expenditure in the two years prior to the five year CPP period therefore does not directly impact prices to consumers in the CPP period.

60 Figure 2 represents an increase in average annual expenditure of $16 million over actual expenditure levels in 2010 (adjusted for inflation).[25]

61 Our analysis shows that each additional $10 million of operating expenditure forecast by Orion drives an additional $13 million in Orion's maximum average prices to customers in the CPP period (adjusted for inflation). [26] [27]

Figure 2 - Operating expenditure



Note: Prices in 2013 constant prices

Source: Commerce Commission analysis

Orion's proposal means that prices may rise

62 To recover the amounts proposed by Orion, its revenue will have to rise by around $369 million in total over the five year period. That is, the prices paid by consumers will need to rise to generate around $369 million more in revenue over five years.

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25 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.

26 This is based on $10m added evenly across each year of the CPP period (ie, the five years from 2015 to 2019).

27 Additional prices over and above the assumed $10m spending increase are mainly driven by the application of inflation over the CPP period. To a lesser extent, the application of timing factors is part of the generation of the CPP.

63 This is illustrated in Figure 3, which provides an estimate of indicative current revenue requirements, excluding the cost impacts of the earthquakes ($604 million over five years). Orion's proposal means that total revenues would need to rise to $973 million (again over five years).

64 Four main factors affecting the amount Orion is proposing to recover from consumers are:

64.1 An increase in the value of Orion's assets (reflecting substantial investment by Orion);[28]

64.2 An increase in Orion's operating costs;

64.3 An expected increase in Canterbury construction labour costs above the New Zealand average;[29] and

64.4 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.[30]

65 Figure 3 shows that:

65.1 Orion's proposed levels of capital expenditure will increase the revenue required from consumers by $160 million over five years of the proposed CPP;

65.2 Orion's proposed levels of operating costs will increase the revenue required from consumers by $88 million over five years of the proposed CPP;

65.3 Orion's expectation that the increase in Canterbury construction labour costs will be greater than the New Zealand average drives an additional $21 million of charges to consumers over and above expected inflation adjusted price increases based on the general labour cost index (LCI);[31] and

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28 We are unclear at this stage to what extent Orion is proposing to retain in its asset base, assets that have been impaired or destroyed by the earthquakes.

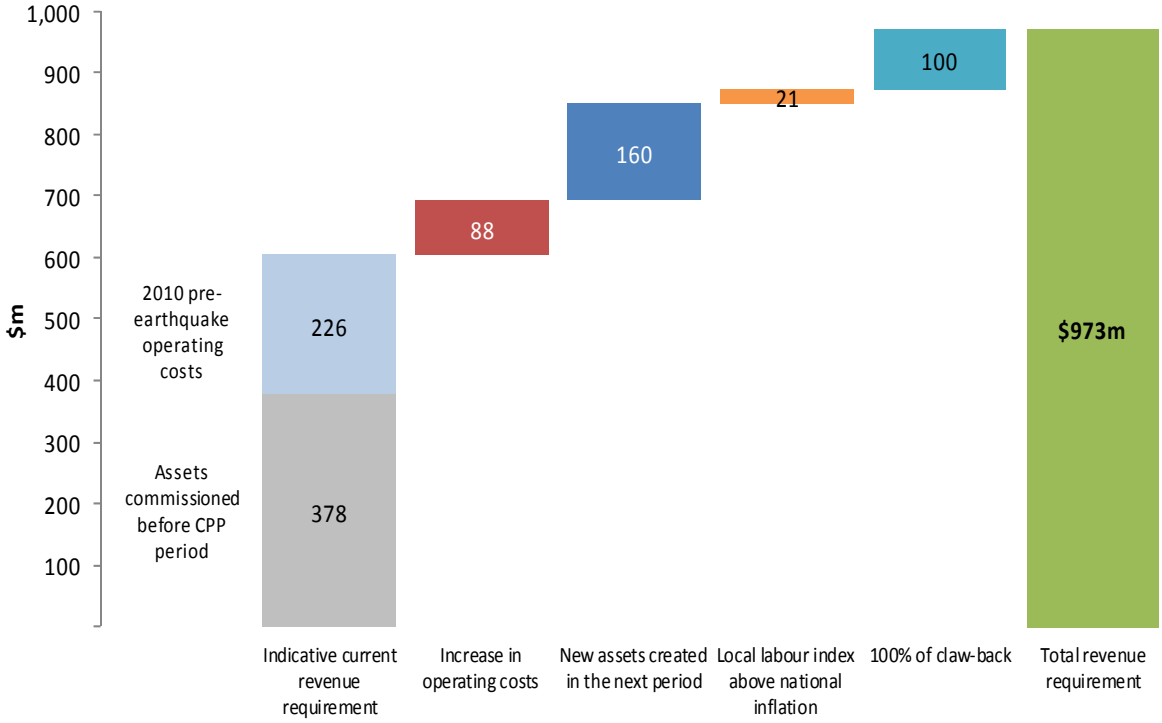
29 Orion assumes that Canterbury construction labour costs will increase by 7.5% per year between 2014 and 2016 and by 5% per year between 2016 and 2019. This increase is expected because of the increased demand for construction labour for the rebuild. This compares to Orion's forecast New Zealand-wide labour index for the same period, which ranges from 1.9% in 2014 to 2.2% in 2019.

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

31 LCI forecasts used by Orion are based on the NZIER quarterly predictions from September 2012.

65.4 Orion's proposed recovery of past costs and lower than expected revenues results in an additional $86 million of charges to consumers (in present value terms).[32]

Figure 3 – Factors affecting the amount Orion proposes to recover from consumers



Source: Commerce Commission analysis

Orion proposes delaying the full impact of expenditure on maximum average prices

66 Orion proposes delaying the full impact of expenditure on the price increases on customers until after the end of the CPP period. That is, Orion proposes part of the price increases required to pay for the increases in expenditure would occur after 2019.

67 When we set Orion's maximum average prices, we need to evaluate whether mechanisms proposed by Orion for shifting and/or smoothing the timing of increases faced by consumers are in the long term benefit of consumers.

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32 Figure 3 shows the effect of this recovery of past costs and lower than expected revenues over five years, which results in the claw-back amount shown of $100 million, not $86 million, due to the time value of money.

Delaying the recovery of 50% of Orion's past costs and lower than expected revenues

68 Orion proposes delaying the recovery of past costs and lower than expected revenues, which shifts half ($50 million) of the charges to consumers to the five year period following the end of the CPP period in 2019.

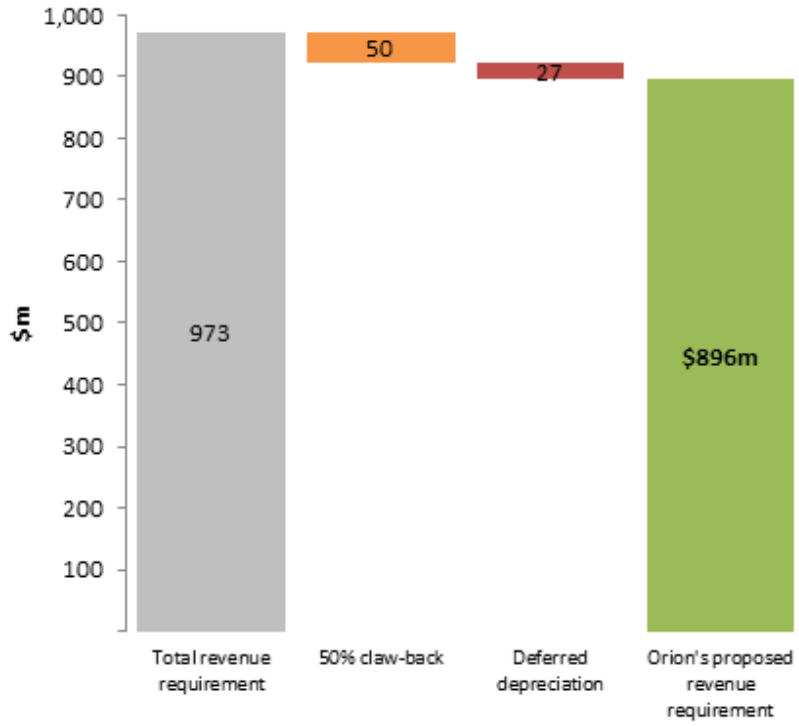
Orion proposes using an alternative depreciation methodology

69 Orion also proposes to defer part of the price increases by using an alternative depreciation methodology. Use of an alternative depreciation methodology shifts a further $27 million of charges to years following the end of the CPP period in 2019.

Orion's proposed shifting and/or deferring of price increases reduces the revenue required

70 Figure 4 summarises the impact of price deferral mechanisms included in Orion's proposal on the profile of increases in future charges to consumers. In short, the recovery of only half ($50 million) of the claw-back amount between 2014 and 2019, and the use of non-standard depreciation reduces the total revenue Orion seeks to recover from consumers by $77 million over the five years of the CPP period.

Figure 4 – Impact of price deferral mechanisms in Orion's proposal



Source: Commerce Commission analysis

Orion proposes reducing its required quality standards

71 Orion proposes reducing its required quality standards for the supply of electricity on its network. Specifically it proposes increases in the allowed duration of interruptions and allowed number of interruptions. This is illustrated in Figure 5 and Figure 6, which shows Orion's proposed allowed duration of interruptions and their frequency, compared to its current required quality standards.

72 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-earthquakes levels by 2019. If we were to set maximum average prices that are lower than proposed by Orion, this may impact on Orion's ability to restore quality levels as proposed, and if and when this can be achieved.

Figure 5 – System Average Interruption Duration Index (SAIDI)[33]

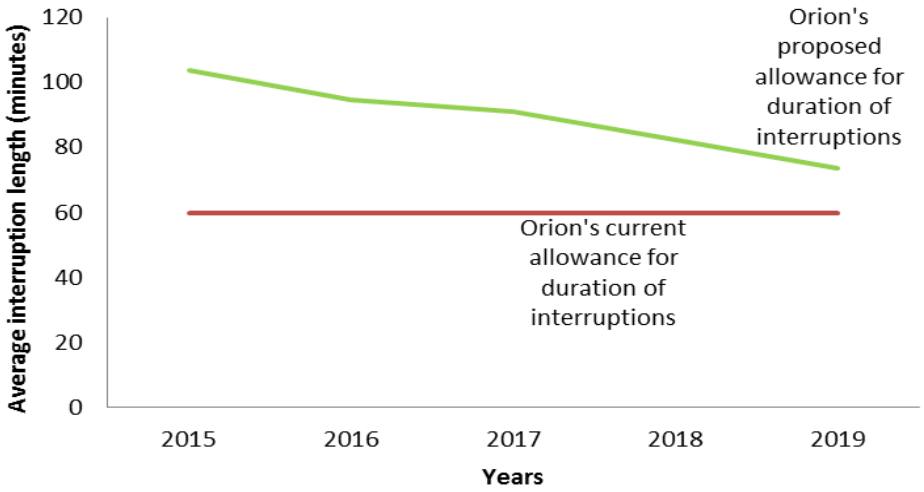
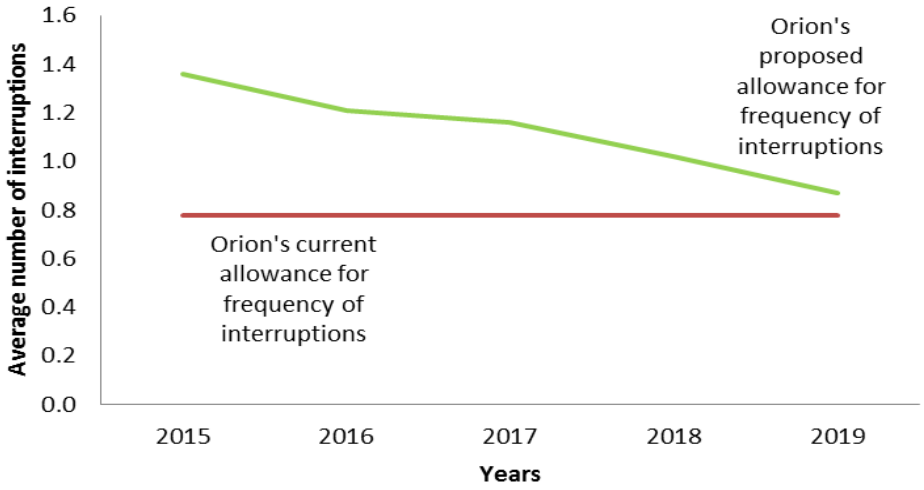


Figure 6 – System Average Interruption Frequncy Index (SAIFI)[34]



33 See Attachment 1 for further explanation of standard industry terminology such as SAIDI and SAIFI.

34 Ibid.

Our initial assessment of Orion's proposal

73 We have undertaken a preliminary review of Orion's proposal. In doing this, we have been assisted by findings of the independent verifier.[35]

74 To analyse Orion's proposal further, and to set Orion's maximum average prices there are a number of issues and/or questions we will need to evaluate.

We propose to consider alternatives to Orion's investment plan

75 We think that an exploration of alternatives to Orion's investment plan is likely to be important for our draft decision.

76 Orion's proposal was prepared in trying circumstances and contains a substantial amount of information about its proposed investment plan. However, it contains limited information on possible alternatives to Orion's proposal. The relative trade-offs between the cost and quality of different investment alternatives is not explicit.

77 The absence of information on alternatives means it is difficult to assess whether Orion's proposed investment represents the most efficient cost that a prudent electricity lines company would incur to manage the expected demand for its services.

We also have some specific issues that we plan to explore further

78 Specific issues we plan to focus on in assessing Orion's proposal are:

78.1 Orion's proposal is based on a specific forecast for demand growth;[36]

78.2 Possible alternatives to Orion's subtransmission architecture plan or transparency on the sensitivities of costs to any relaxation in its underlying assumptions;[37]

78.3 Orion's subtransmission architecture planning process is based on standards which are at the top end of network security planning practice in New Zealand;

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35 Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 – Verification report and certificate.

36 Orion's proposal is based on the Greater Christchurch Urban Development Strategy 'Quick Recovery' scenario. Under this scenario, population and household numbers in Christchurch City would lag pre-earthquakes levels for seven years. The Strategy also included a faster 'Rapid Recovery' scenario where rebuild activity would attract permanent residents to compensate for the initial post-earthquake loss of population. See Market Economics "Greater Christchurch Household Scenarios 2011-2041 Summary" (March 2012).

37 See Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 – Verification report and certificate, p.A5.

78.4 Orion has made specific assumptions on quality and has concluded that consumer expectations are unchanged following the earthquakes;

78.5 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;

78.6 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;[38] and

78.7 The impact of Orion's proposed alternative depreciation methodology, which defers costs and some of the price increases to later years.

Orion's proposal is based on a specific forecast for demand growth

79 Orion has based its proposal on a specific forecast for demand growth and has not provided details of the sensitivities of its proposal to this assumption. Given the uncertainty associated with the post-earthquakes environment in Canterbury, it is important that consumers are aware of how inputs used by Orion affect proposed costs, and the sensitivities of Orion's planned expenditure to changes in these inputs.[39]

80 The uncertainty of demand for electricity, and its location within Orion's network area also means that there is risk attached to committing to the full network design proposed by Orion at this time. We will consider to what extent it is desirable and possible to use contingency measures, such as wash-ups, as a way of addressing the uncertainty in some of Orion's cost and demand forecasts.

Possible alternatives to Orion's subtransmission architecture plan

81 Orion has used its 2012 subtransmission architecture review to identify the major project investments in its proposal.[40] This review identified one overall architecture plan for development of Orion's network. Orion has not set out possible alternatives

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

39 The independent verifier has stated: "…using the Urban Development Strategy (sic) quick recovery scenario as a basis for demand forecasting is a reasonable approach…and note that the Christchurch City Council uses this scenario for its own planning purposes. However, the level of uncertainty surrounding this forecast is significantly higher than we would normally expect". See Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 – Verification report and certificate, p.63-64.

40 Orion New Zealand Limited "Proposal for a customised price-quality path" (19 February 2013), Appendix 6 - Network Architecture Review: Subtransmission.

to this plan, or details of the sensitivities of proposed costs to its input assumptions.[41]

82 We consider that it is appropriate to assess whether there are other options that may be less costly and deliver the same level of quality. Possible alternatives could include, for example, a portion of the 66kV lines that are proposed for northern Christchurch being constructed overhead rather than underground.[42]

Orion uses high standards for its subtransmission architecture planning process

83 Orion's subtransmission architecture planning process is based on standards which are at the top end of network security planning practice in New Zealand:[43]

83.1 Orion's standards exceed the requirements of the Electricity Engineer's Association's "Guidelines for Security of Supply in NZ Electricity Networks" issued in 2000;[44] and

83.2 Orion's standards for Christchurch's CBD are lower than the standards applied by Vector for Auckland's CBD, but Orion's standards for non-CBD zone substations are higher than Vector's non-CBD standards.[45]

84 Orion's proposed application of its standards could have a material impact on the timing of network investments. Vector, the electricity lines company that serves the

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41 The independent verifier has stated that: "…the reasonableness of these assumptions merits further scrutiny, and possibly public debate, as Orion recovers from the earthquakes. These assumptions have a significant impact on the outcome of Orion's proposal." See Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 – Verification report and certificate, p.A5 and p.18.

42 The independent verifier has commented that: "…the use of 66kV underground cable carries a cost premium that includes not only the additional cost of installing a circuit underground rather than overhead but also the cost of additional circuits to provide the increased security needed to cover for the longer repair times for a 66kV cable fault." See Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 – Verification report and certificate, p.26.

43 Attachment 1 discusses the meaning and role of network security standards within architecture planning processes. The independent verifier has also commented that "there is a need to review the basis [Orion is using] for its planning criteria, since relaxing the criteria currently used could result in a significant reduction in major capex requirements." See Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 – Verification report and certificate, p.A5.

44 Electricity Engineer's Association "Guidelines for Security of Supply in NZ Electricity Networks" (June 2000).

45 Orion's reasons for applying higher standards for non-CBD substations relative to Vector include Christchurch's colder winter climate and ban on open fires. Loss of life is a real possibility in Christchurch if there are prolonged power outages. Attachment 2 provides a technical comparison of Orion's security of supply standards with those of Wellington Electricity, Vector and the EEA's "Guidelines for Security of Supply in NZ Electricity Networks". Our initial analysis has selected Vector and Wellington Electricity as comparator electricity lines companies for Orion, but our further evaluation will likely be extended to comparisons with other electricity lines companies.

Auckland area, states that it is best practice to relax the standards for the few hours each year when their network is supplying its peak demand, thereby deferring network reinforcement and the associated capital expenditure. In comparison, Orion appears to apply its standards in a wider range of circumstances. This could lead to some of Orion's proposed network investments occurring earlier than may otherwise be the case.

Orion's proposal concludes that consumer expectations are unchanged

85 Orion's proposal makes specific assumptions about quality and concludes that consumer expectations are unchanged following the earthquakes. Orion has also based its proposal on the conclusion that consumers want its network to be restored to pre-earthquake quality levels by 2019. This will contribute to the increase in electricity prices from 2014.

86 We consider that there has been a lack of consultation on price-quality trade-offs regarding Orion's network architecture options.[46] A consequence of this is that Orion has concluded that consumers agree with its selected network architecture options, which appear to exceed standards that existed before the earthquakes.[47]

Orion proposes higher levels of spending, which results in higher maximum average prices

87 We have shown earlier that Orion's proposed maximum average prices are based on levels of operating expenditure and replacement capital expenditure that are higher in inflation adjusted terms than expenditure levels before the earthquakes. We are uncertain about what is driving these proposed expenditure increases.

88 For example, it is unclear to what extent expenditure increases are driven by changes in assumptions about the quality of services provided to consumers or by the amount of proposed expenditure.[48] The extent to which Orion's decisions on the timing of operating expenditure affect its proposed replacement capital expenditure is also unclear.[49]

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46 The independent verifier has commented 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." See Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 – Verification report and certificate, p.9.

47 Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), p.13. Orion New Zealand Limited "Proposal for a customised price-quality path" (19 February 2013), p.482.

48 The independent verifier has stated that: "Orion should be required to provide further justification for the level of expenditure in its forecast." See Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 – Verification report and certificate, pp.1, 47, 51.

49 The independent verifier has commented that: "Typically there are trade-offs between maintenance expenditure, capital expenditure, system reliability and safety levels in terms of asset replacement considerations. Orion has not attempted to quantify the benefits of selecting its proposed replacement

Orion proposes to recover past costs and lower than expected revenues

89 We also have questions about the extent of Orion's proposed recovery of:

89.1 Additional costs in the period before April 2014, which were incurred in response to the earthquakes; and

89.2 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.[50]

90 We will consider whether Orion should recover these past costs and lower than expected revenues from consumers through higher prices. If so, a subsequent issue for us to consider is whether Orion should recover all of the amounts from consumers or just a portion.

91 Orion has proposed getting a full return on its investments despite the earthquakes. However, it is not clear to us that consumers in Canterbury are better placed than Orion to bear the risk of not earning a full return following the earthquakes. We are mindful in this context that others in Canterbury have suffered losses that cannot be recovered. In contrast, for example, investors in Orion had the opportunity to spread risks beyond the Canterbury market through diversification of their investments.

Impact of Orion's proposed alternative depreciation methodology

92 We have a question over the impact of Orion's proposed alternative depreciation methodology and whether there is a good rationale for this. It has the effect of pushing some of the costs of assets out into price increases beyond 2019.

We need to evaluate Orion's proposal further and we invite your comments

93 We need to further assess each of the above issues before we can decide whether:

93.1 Orion's proposed expenditure is prudent for the expected energy demand on its network, reflects appropriate service standards, and complies with regulatory obligations;[51] and

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strategy." See Orion New Zealand Limited "Application for a customised price-quality path" (19 February 2013), Appendix 7 – Verification report and certificate, p.32.

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

51 This is called the 'expenditure objective', which means considering whether expenditure proposed by Orion reflects the efficient costs that a prudent electricity lines company would require to meet or manage the expected demand for electricity lines services, at appropriate service standards, during the CPP period and over the longer term, and complies with applicable regulatory obligations associated with those services. See Commerce Commission "Electricity Distribution Services Input Methodologies Determination 2012" (15 November 2012), clause 1.1.4.

93.2 Mechanisms proposed by Orion for shifting and/or smoothing the timing of increases faced by consumers are in the long term benefit of consumers.

94 We invite consumers and stakeholders to comment on these issues, including whether these are the right issues and whether there are other issues that we should consider. In our draft decision paper in July 2013 we plan to consult with consumers on the details of our draft decision on Orion's maximum average prices and required quality standards.

Questions for consumers and stakeholders to consider

95 The questions we have identified in this section for consumers and stakeholders to consider are a guide only. These questions are not intended to exhaust or restrict the issues that interested parties may cover in submissions.

96 Are there other questions and/or issues that you think we should be focussing on in reaching our draft decision on Orion's maximum average prices and required quality standards?

97 If you think that there are other questions and/or issues we should consider, please provide an explanation for why you think these might make a difference to our draft decision.

Recovery for costs incurred by Orion in responding to the earthquakes

98 Orion incurred higher costs after the earthquakes as it responded to the impacts of the earthquakes on its network. For example, Orion had to repair downed lines and construct 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 offset these additional costs.

> *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

99 The amount of electricity supplied over Orion's network and the number of premises that were supplied electricity fell as a result of the earthquakes. This reduced the amount of revenue that Orion recovered after the earthquakes, such that its revenues were much lower than expected.

100 Orion, like other infrastructure businesses, needs to earn sufficient revenues over time to cover the costs of its business. If it does not expect to recover all of its costs, Orion and its investors may be unwilling to further invest in the electricity network. Ultimately, consumers suffer if the network is not adequately built and maintained, including through additional investment.

101 On the other hand, setting maximum average prices for electricity lines companies usually requires these businesses to bear a substantial degree of demand risk. While the environment in Canterbury after the earthquakes is not 'normal', it is rare that businesses are able to raise prices when demand falls, or to recover past amounts of revenue that were lower than expected.

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

102 Orion proposes to increase spending on its network to improve the quality of service to consumers and to improve actual resilience to high impact but infrequent events (like severe storms or earthquakes). Orion proposes to recover this increased spending through higher prices.

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?

103 One way to reduce the increase in prices would be for Orion to spend less money on the network to reduce the number of faults and improve resilience.

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?

104 Since the earthquakes, the eastern suburbs have been supplied with electricity via the Rawhiti substation. The Rawhiti substation is supplied through one cable. If this cable fails, there will be up to two hours of interruption to supply to consumers in the area.

105 Orion plans to spend $22 million between April 2015 and March 2016 to improve the reliability of supply to its substations at Rawhiti and Waimakariri. This investment will avoid interruptions to supply to either of these substations if there is a fault in the cables supplying these substations. This investment increases Orion's charges to all consumers by approximately 1%.

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?

106 Orion proposes to underground all of the major 66kV cables supplying power to Rawhiti. Generally, constructing underground lines costs between three and five times as much as using overhead lines, but there are other potential costs in addition to construction (such as legal costs, and repair and maintenance expenses, which might be higher for overhead lines). Overhead lines are more susceptible to storm damage but less likely to be damaged by earthquakes than underground lines. However, underground lines have less visual impact than overhead lines.

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

107 The impact of the proposed future price increases could be reduced by delaying some of the expenditure (and thus the need to increase prices).

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?

108 Orion proposes an initial price increase of 15%, with subsequent annual increases of 1.19% plus the rate of inflation. The size of the initial increase in price could be reduced if the subsequent annual prices increases were larger than 1.19%.

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?

109 Orion has also proposed deferring the impact on prices of some costs until beyond 2019. It will incur some costs now, but these will not impact on prices until 2019. Prices beyond 2019 will therefore be higher than they would otherwise have been.

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?

Please contact us with any questions

110 Please contact John Groot, Orion CPP Project Manager, if you have any questions.

Email: regulation.branch@comcom.govt.nz, attention: John Groot

Phone: 04 924 3671

Attachment 1 – Background on Orion and network planning

What does Orion do?

111 The national grid, which is owned and operated by Transpower (NZ) Ltd, carries bulk electricity supplies into the region from hydro power stations in the Mackenzie Basin and regions further south.

112 Orion's network links consumers with the national grid. Orion's network is supplied by two major substations in the region, referred to as grid exit points (GXPs). These are at Islington (west Christchurch) and Bromley (east Christchurch).

113 Orion's primary business purpose is to supply electricity through 13,600 kilometres of lines and cables to over 190,000 homes and businesses.

How does Orion supply customers?

114 Orion's network supplies customers through different network levels of decreasing voltage. In an urban setting, these are:

114.1 Bulk supply to districts, eg, east Christchurch, (33kV and 66kV), known as subtransmission;

114.2 Supply to suburbs, eg, New Brighton, or single large industrial/commercial sites, (11kV), known as distribution; and

114.3 Supply along streets, eg, along Pages Road, (400V and 230V), known as low voltage.

115 Electricity consumers are connected to Orion's network at the distribution level (for large industrial and commercial users) or, more commonly, at the low voltage level (for all residential and many commercial users).

116 Orion's network uses transformers that convert electricity between the various voltage levels. These can range in size from large zone substation supply transformers to transformers housed in small street-level kiosks (see pictures below).

Source: Orion's 2013 Asset Management Plan

How do consumers pay for their electricity supply?

117 Electricity consumers receive two distinct services from suppliers. These are supply of electricity and delivery of that electricity.

118 In New Zealand, electricity lines companies like Orion provide only the delivery component of the service, using their network assets. The energy component of the service is provided by electricity retailers, such as Genesis or Meridian.

119 Consumers are billed by their chosen electricity retailer. Orion's charges are incorporated by the retailer into consumers' fixed daily charges (in cents per day) and variable use-based charges (in cents per kWh). Consumers pay their retailer for delivered energy and the retailer pays Orion for its delivery services to each of its consumers.

120 It is not generally possible to unbundle Orion's charge from the overall price that consumers pay. The exception to this is for the largest consumers. Orion may charge these consumers directly.

121 Consumers normally call Orion directly if faults or other problems relating to electricity supply occur. They also deal directly with Orion for new connections, safety disconnections and end-of-life service decommissioning.

What service qualities do consumers require from electricity networks?

122 Broadly speaking, electricity consumers seek a continuous and reliable electricity supply that meets their usage needs at all times at the lowest possible cost. Electricity consumers also want their networks to be resilient to outages resulting from some less frequent events where the benefits are not outweighed by the costs.

123 Orion and other electricity distribution businesses use a range of terms to describe the service qualities sought by consumers. These are network reliability, network security, and resilience. The following sections explain the main concepts.

What is network reliability?

124 Network reliability is the term used by engineers to refer to the extent that a network provides consumers with a continuous, uninterrupted supply of electricity. In practice, network reliability is measured and reported using standard industry terminology:

124.1 SAIDI (System Average Interruption Duration Index) is usually defined as the average interruption length within a given time period for each customer served by the network and is measured in minutes;

124.2 SAIFI (System Average Interruption Frequency Index) is usually defined as the average number of interruption events a customer experiences within a given time period; and

124.3 CAIDI (Customer Average Interruption Duration Index) is usually defined as the average time it takes to restore a customer's power after an

interruption experienced within a given time period and is measured in minutes per event.

125 Each of these performance measures is typically measured and reported for a year. Electricity lines companies are required to plan the management of their network assets to deliver target SAIDI, SAIFI and CAIDI levels over a 10 year forecast period and report performance against their targets annually.

What is network security?

126 Network security is the ability of a network to maintain continuous supply to consumers following one or more faults that impact a specific part of that network.

127 The simplest way to think of security is that a network will be more secure if there are one or more parallel paths along which electricity can flow to a consumer. If one path (eg, circuit or transformer) develops a fault and is automatically switched off to avoid further damage, supply can be maintained along the non-faulted parallel path.

128 Network security criteria are set by the electricity lines company for each network voltage level. The electricity lines company determines the ability of that part of the network to withstand one or more faults while maintaining continuous supply to consumers. Implementing higher levels of security generally requires:

128.1 Duplication of network assets;

128.2 Investment in other non-network assets, such as local generation; and/or

128.3 Investment in demand management, such as control of supply to non-critical loads (eg, electric storage water heaters).

129 Greater levels of network security are therefore more costly to provide and maintain. Optimal investment in network assets balances consumer demands for reliable supply with the cost involved in providing duplicated assets or other non-network solutions.

130 Orion's security standards are set out in its Asset Management Plan and its CPP proposal and these generally provide for greater levels of security at higher voltage levels in the network and for supplies to more critical customers.

131 For example, for supplies to the Christchurch CBD, Orion's standard is to provide a network that will not result in an interruption to any consumer supplied through that part of the network following a single network fault. If a second fault occurs affecting the same part of the network before the first fault has been repaired, the standard allows an interruption to supply but requires that supply must be restored within sixty minutes. Orion's standard is comparable to that used by Vector for its Auckland network.

132 A technical comparison between Orion, Vector and Wellington Electricity's network security standards, and the EEA's "Guideline for Security of Supply in NZ Electricity Networks" is provided in Attachment 2.

What is network resilience?

133 Network resilience is the ability of a network to maintain supply to consumers following a high impact, low probability (HILP) event. More resilient network architectures (or designs) will perform better in HILP conditions than less resilient architectures.

134 HILP events are usually associated with multiple faults and outages caused by extreme environmental events such as earthquakes and severe weather-related events (eg, snow storms, extreme high winds, and major floods).

135 The level of network resilience is usually defined by reference to the specific type of HILP event being planned for. Similar to considerations of network security, choices relating to network resilience require a balance of risk, performance and cost considerations.

How are planning criteria and expenditure linked to service quality?

136 The ability of an electricity network to provide the service quality sought by its consumers is linked to the level of investment in network assets and this is dependent on:

136.1 Network security standards adopted, which determine the scope and timing of network upgrades;

136.2 Forecast levels of consumer demand and their impact on network loading at all levels in the network; and

136.3 Adoption of sound asset lifecycle and operating practices that seek to optimise asset maintenance and replacement expenditure while minimising the time that equipment is removed from service.

137 Planning criteria that provide for more resilient and more secure networks will generally require more assets, more upfront spending on assets (capital expenditure) and more ongoing operational expenditure.

138 Of critical importance for investment in, and management of, electricity network assets is the balance between the cost of committing additional expenditure and the benefit achieved from it. Optimal expenditure decisions therefore require careful choices between a wide range of options. These include whether to:

138.1 Repair old or damaged equipment or replace it;

138.2 Inspect and regularly maintain equipment or simply run it to failure;

138.3 Replace equipment that might pose a health and safety risk or mitigate the risk in some other way; and/or

138.4 Invest in new lines and transformers or in non-network options (such as mobile generators and network automation equipment) to provide network security.

139 The timing of expenditure is also critical in optimising the balance between cost and benefits. Age and condition monitoring, fault analysis and information systems play an important role in informing optimal asset management decisions by making relevant information available to asset managers.

Attachment 2 – Comparison of network security standards for Orion and other New Zealand electricity lines companies

Network Security Standards	Orion				Vector			Wellington Electricity Lines		
	Reference	Equipment	# of contingent events	Criteria	Equipment	# of contingent events	Criteria	Equipment	# of contingent events	Criteria
CBD subtransmission & zone substations	C1 15-40MW	cable, line or transformer	1	no interruption	110 kV	1	no interruption	all	1	interruption of < 1 min for > 99.5% of year
			2	interruption of < 60 minutes		2	interruption of < 5 minutes		1	interruption of < 180 mins for remaining time
		bus or switchgear fault	1	no interruption for 50% load	22kV	1	no interruption			
				interruption of < 120 minutes for other 50%		2	interruption of < 5 minutes			
Non-CBD subtransmission & zone substations	C2 15-40MW	cable, line or transformer	1	no interruption	all	1	residential: interruption of < 5 min for > 95% of year	all	1	interruption of < 1 min for > 98% of year
			2	interruption of < 120 minutes		1	commercial/industrial: interruption of < 5 min for > 95% of year		1	interruption of < 180 mins for remaining time
		bus or switchgear fault	1	no interruption for 50% load						
				interruption of < 120 minutes for other 50%						
If no criteria are stated for 2 interruptions, the interruption time will be the repair time										

Network Security Standards	Orion				EEA Security of Supply Guidelines			
	Reference	Equipment	# of contingent events	Criteria	Reference	Equipment	# of contingent events	Criteria
CBD subtransmission & zone substations	C1 15-40MW	cable, line or transformer	1	no interruption	Class E 60 - 200 MW supply to major city CBD	cable, line or transformer	1	no interruption for peak demand less 12 MVA
								interruption < 180 mins for remaining 12MVA
			2	interruption of < 60 minutes			2	interruption of < 60 minutes for peak demand less 12 MVA
								interruption < 180 mins for remaining 12MVA
		bus or switchgear fault	1	no interruption for 50% load		bus or switchgear fault	1	no interruption for 50% of peak demand
				interruption of < 120 minutes for other 50%				interruption for repair or restoration time for 100% of peak demand
Non-CBD subtransmission & zone substations	C2 15-40MW	cable, line or transformer	1	no interruption	Class D 12 - 60 MW supply to district substations	cable, line or transformer	1	no interruption for peak demand less 12 MVA
								interruption < 180 mins for remaining 12MVA
			2	interruption of < 120 minutes			2	interruption for repair or restoration time for 100% of peak demand
		bus or switchgear fault	1	no interruption for 50% load		bus or switchgear fault	1	interruption for repair time for 100% of peak demand
				interruption of < 120 minutes for other 50%				

If no criteria are stated for 2 interruptions, the interruption time will be the repair time