

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

Issues to explore and consider

Date: 18 August 2017



Why we have written this paper

- 1 Powerco Limited (Powerco) has submitted a customised price-quality path (CPP) proposal to allow it to undertake the investment it says its network needs so that it can continue to meet customer expectations.
- 2 We have reviewed Powerco's proposal and concluded that it complies with the relevant rules and requirements relating to the process for, and content of, proposals seeking a CPP.¹ We will now evaluate Powerco's proposal and determine the amount of revenue and level of quality that will apply to Powerco for the five years from 1 April 2018.
- 3 We have written this paper to guide stakeholders in submitting their views on Powerco's CPP proposal and explain our role in the process.
- 4 This paper provides:
 - 4.1 an overview of our role, process, and approach in evaluating Powerco's proposal (including how you can have your say on it);
 - 4.2 a brief outline of Powerco's proposal; and
 - 4.3 issues and questions for consumers and stakeholders to consider.

This paper is not intended to fully summarise Powerco's proposal. Powerco has produced an executive summary alongside its proposal which can be downloaded from our website at: <http://www.comcom.govt.nz/dmsdocument/15554>

¹ These relevant rules and requirements are collectively known as 'input methodologies'.

Part 1 - An outline of our role, process and approach

Purpose of this part

- 5 This part provides a brief overview of the process that we will take to determine Powerco's CPP and the steps that have already been taken. It also explains how you can have your say on Powerco's CPP proposal.

Powerco is proposing to increase its revenue and change its quality standards

- 6 Powerco submitted a CPP proposal on 12 June 2017, to increase its revenue and alter its minimum quality standards for the five year period from 1 April 2018.² The proposed changes are intended to allow Powerco to undertake greater investment in its network.

Key features of Powerco's proposal

- Powerco is proposing to spend \$1.32 billion over the five year CPP period from 1 April 2018 until 31 March 2023, compared with \$937 million for the previous five years.³
- In order to fund this expenditure, Powerco is requesting that we allow it to recover this expenditure from its customers. This would result in an initial increase to Powerco's revenue of 5.7%.
- Powerco is also proposing to remove the incentives relating to planned outages.

We will evaluate Powerco's proposal against set criteria

- 7 Our task now is to review Powerco's proposal and determine the amount of revenue and level of quality that will apply to Powerco for the five years from 1 April 2018.
- 8 Our review of Powerco's proposal is to ultimately satisfy ourselves that Powerco's proposal is in the long-term benefit of consumers. We have specific evaluation criteria, set out in the input methodologies, which we will use to assess Powerco's CPP.⁴ These criteria are shown overleaf.

² Powerco's proposal and supporting documents can be downloaded at the following link: <http://www.comcom.govt.nz/regulated-industries/electricity/cpp/cpp-proposals-and-decisions/powercocpp/powerco-customised-price-quality-path-proposal/>

³ For presentation purposes, all values in this paper are reported in real \$2016 unless otherwise stated.

⁴ 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.

5.2.1 Evaluation criteria

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

- (a) whether the CPP proposal is consistent with the input methodologies specified in Part 5;
- (b) the extent to which a CPP in accordance with the CPP proposal would promote the purpose of Part 4 of the Act;
- (c) whether data, analysis, and assumptions underpinning the CPP proposal are fit for the purpose of the Commission determining a CPP under s53V, including consideration as to the accuracy and reliability of data and the reasonableness of assumptions and other matters of judgement;
- (d) whether proposed capital expenditure and operating expenditure meet the expenditure objective;
- (e) the extent to which any proposed quality standard variation provided in a CPP proposal better reflects the realistically achievable performance of the EDB [electricity distribution business] over the CPP regulatory period, taking into account either or both-
 - (i) statistical analysis of past SAIDI and SAIFI performance; and
 - (ii) the level of investment provided for in proposed maximum allowable revenue before tax, as the case may be; and
- (f) the extent to which-
 - (i) the CPP applicant has consulted with consumers on its CPP proposal; and
 - (ii) the CPP proposal is supported by consumers, where relevant.

Powerco's proposal has been reviewed by an independent verifier

- 9 Our task to review Powerco's proposal has already been supported by an advance review of Powerco's proposal by an independent verifier, a requirement of the CPP process.⁵
- 10 The verification process is intended to add value to the quality of CPP proposals and to our decision making by testing, in advance of submission, the assumptions that underpin forecast information on major capital projects, operating expenditure, and energy demand.⁶

⁵ The requirements for CPP proposals to be verified are set out in the IMs. See: Electricity Distribution Services Input Methodologies Determination 2012 Schedule G pp 232-241 available at: <http://www.comcom.govt.nz/dmsdocument/15235>

⁶ The role of the verifier was discussed in more detail in the 'verification requirements' chapter of our recent IM review decision paper on the CPP requirements. This paper can be downloaded at the following link: <http://comcom.govt.nz/dmsdocument/15107>

- 11 We propose to rely on the verifier findings in completing our review, the sections below provide context for the verification report and our proposal to rely on its findings.

Previous experience with the verification process

- 12 Following the Orion CPP, we received feedback from a number of stakeholders on the verification process.⁷ As a result we made a number of changes to the verification input methodologies (IMs) to improve the verification process.⁸
- 13 One of the key pieces of feedback we received was that we did not rely enough on the verifier for Orion, and that we may have duplicated some of the verifier's work.
- 14 We consider that it will be appropriate to rely on the verifier's findings where we have critically analysed the verification process and concluded that it has been robust. Ultimately the final decision on the CPP rests with the Commission.

Farrier Swier Consulting have acted as the verifier for Powerco's CPP

- 15 In December 2016 we agreed with Powerco to appoint Farrier Swier Consulting as the independent verifier for Powerco's CPP proposal. Powerco undertook a request-for-proposal process to identify a suitable verifier. We reviewed Farrier Swier's proposal for the work and we were satisfied that Farrier Swier's extensive experience (in Australia and abroad), coupled with expert assistance from WSP Australia, suitably qualified it to verify Powerco's CPP proposal. We were also satisfied that Farrier Swier was independent and could provide an impartial view on Powerco's proposal.
- 16 Farrier Swier signed a deed with us and Powerco requiring it to verify Powerco's proposal in line with the rules set out in the IMs. The deed specified that Farrier Swier would owe a duty of care to the Commission.
- 17 Farrier Swier produced a verification report, which drew on a five-month period of information review and iterative analysis. During this time Farrier Swier attended a workshop with Powerco and the Commission in December 2016, conducted site visits to Powerco's Wellington and New Plymouth offices, hosted Powerco staff in Melbourne on three occasions, and formally submitted questions to Powerco, resulting in over 350 responses.
- 18 Powerco have included Farrier Swier's verification report as part of its CPP application. You can download a version of the verification report by following this link: <http://www.comcom.govt.nz/dmsdocument/15550>

⁷ A summary of our feedback on the Orion CPP process is available at <http://comcom.govt.nz/regulated-industries/electricity/cpp/cpp-proposals-and-decisions/orions-2014-2019-cpp/orion-customised-price-quality-path-final-decision/>

⁸ These changes are outlined in the paper discussed and linked above in footnote 6.

- 19 As a result of the verification process Powerco have reduced their proposed capex forecasts by \$51 million (a 5.6% reduction), and opex forecast by \$23 million (a 4.8% reduction).

We seek your views on our proposal to rely on the verifier's findings

- 20 We have critically reviewed the verification report and the techniques and methods the verifier has used to test Powerco's proposal. This included a two-day workshop with the verifier in June to test the verifier's findings. A summary of our review of the verifier's report is set out in Attachment A. We were very satisfied by the rigour of Farrier Swier's analysis and we consider its review of Powerco's proposal to be thorough and undertaken to a high standard.
- 21 As a result, we have confidence in the verification report and we are proposing to rely on the verifier's opinion. At a high level:
- 21.1 we propose to rely on the verifier's findings and do not intend to duplicate the analysis already undertaken by the verifier;
 - 21.2 we propose to largely rely on the verifier's view that 89% of Powerco's capital expenditure (capex) and 94% of its operating expenditure (opex) meets the expenditure objective – subject to the comments below;⁹ and
 - 21.3 we intend to target **our** review primarily on areas of Powerco's proposal that the verifier suggested we scrutinise further.
- 22 We have identified a small number of issues that were not identified by the verifier, either because they were outside the scope of the verification process or because we seek further assurance than was provided in the verification report.
- 23 We welcome your views on our proposal to rely on the verifier's opinion and focus on the issues identified in the verification report. Specifically, we seek your views on any areas of the verification report where it would not be appropriate to rely on the verifier's findings and the reasons for this.
- 24 We discuss the results of the verifier's report throughout the next two parts of this paper.

We will make a final decision on Powerco's revenue and quality by March 2018

- 25 We expect to make our final decision on Powerco's maximum revenues and required quality standards by 29 March 2018. Our decision will apply to Powerco from 1 April 2018.
- 26 We intend to issue a draft decision by 17 November 2017. 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.

⁹ Notwithstanding, there may be issues with how this is linked to quality.

We want to hear and consider your views

- 27 Before we issue our draft decision, we want to hear and consider the views of consumers and other stakeholders. We welcome submissions on Powerco's proposal to change its prices and quality standards, including any comments on our initial views on the proposal and the questions we have identified as a result.
- 28 To give us time to consider submissions and meet our statutory timeframes for this process, we ask that we receive emailed submissions by 22 September 2017.
- 29 We will consider all submissions received by this date in reaching our draft decision on the maximum revenues and required quality standards that will apply to Powerco.
- 30 Please email your submission to powercocpp@comcom.govt.nz with 'Powerco CPP proposal' in the subject line of your email. All submissions will be published on our website.

Part 2 - Overview of Powerco's CPP Proposal

Purpose of this part

- 31 This part briefly outlines the key aspects of Powerco's CPP proposal to help interested persons understand what Powerco is proposing and the likely impacts. A more comprehensive summary can be found in Powerco's Main Proposal document available on both Powerco's and our own websites.¹⁰

Our initial views on Powerco's CPP application

- 32 Preparing a CPP application requires greater effort from the business than we require under a default price-quality path (DPP). We acknowledge Powerco's efforts to create a good quality CPP application.
- 33 We also acknowledge the progress that Powerco has made to improve its asset management practices leading up to the submission of its CPP. We consider that these developments have assisted Powerco to submit a better quality CPP proposal than would otherwise have been the case. We expect Powerco to continue this journey, by pursuing better asset management practices in the areas it, and the verifier, have identified (for example, by implementing its proposed asset criticality framework).
- 34 Powerco is a large electricity distribution business (EDB) by New Zealand standards and is proposing a large increase in expenditure across a number of areas. The level of information Powerco has provided reflects that. We note that future proposals by other suppliers may look different depending on the size of the business, the nature of their proposal, and the maturity of their asset management practices.¹¹

Key aspects of Powerco's CPP proposal

- 35 Powerco is proposing to spend \$1.32 billion during five years from 1 April 2018 to operate and maintain its electricity distribution network safely, reliably, and efficiently. This represents an increase of about 42% compared to what it has spent and is forecasting to spend in the five years leading up to the CPP period. The bulk of this increase in spend is aimed at replacing and upgrading ageing assets and meeting system growth demand.
- 36 The entire investment would be recovered through price increases impacting 320,000 homes and businesses in Manawatu, Whanganui, Taranaki, Tararua, Wairarapa, Coromandel, Eastern and Southern Waikato and Western Bay of Plenty.

¹⁰ Powerco's proposal and supporting documents can be downloaded at the following link:
<http://www.comcom.govt.nz/regulated-industries/electricity/cpp/cpp-proposals-and-decisions/powercocpp/powerco-customised-price-quality-path-proposal/>

¹¹ We encourage other suppliers considering applying for a CPP to contact us to discuss the CPP process.

37 Powerco has characterised the key aspects of its proposal into three themes which we briefly outline below:

- Providing safe and reliable networks
- Supporting communities
- Network evolution

Providing safe and reliable networks

38 Powerco states there has been degradation of its network operating position and condition, evidenced across a range of leading indicators (eg, asset health). It sees in-service asset failures rising, and asset condition degrading across a range of asset fleets, particularly in its overhead network. To address this, Powerco says that it has taken a holistic approach, proposing a substantial replacement and maintenance programme to improve the underlying condition of its network (rather than focusing on short-term reliability only).

39 Specifically, Powerco proposes to maintain and replace a large proportion of its assets that were constructed from the late 1950s through to the 1970s. These would include overhead conductors, overhead structures (such as poles) and zone substations.

Supporting communities

40 Powerco has outlined that the communities it serves continue to experience economic growth driven by an increasing population, and enhanced commercial and industrial activity. To meet this need, Powerco proposes to increase its investment to provide sufficient and appropriate future supply security.

41 Specifically, Powerco proposes to increase investment in:

- 41.1 restoring security of supply to acceptable levels; and
- 41.2 providing additional capacity supporting demand growth and managing load at risk.

42 Significant work in this space would be carried out in the Tauranga and Palmerston North areas where population and economic activity are expanding. For example, Powerco has proposed reinforcement of the Palmerston North Central Business District ('Palmerston North CBD reinforcement') supply to install a new 33kV underground cable. This is aimed at reinforcing the subtransmission network into the Palmerston North CBD as currently, in the event of a subtransmission fault, large parts of the CBD would not be supplied with power.¹²

¹² Further details are set out in Powerco's Main Proposal document at p 136.

Network evolution

- 43 Powerco is proposing significant investment in network evolution. It states in its proposal that new technologies and service offerings combined with increasing consumer willingness to take control of their energy options will require a change in the way it manages its network. It also considers opportunities exist for more cost-effective network solutions that are constantly emerging.
- 44 Powerco wants to invest in trials and pilot schemes of new solutions as it is of the view that this would enable it to stay abreast of these developments, and to ensure the continued stability and efficiency of its network.

Initial observations on forecast expenditure, price, and quality

- 45 This section provides a high-level summary of Powerco's proposed expenditure, the verifier's review of Powerco's expenditure forecasts, and concludes with observations on the likely impact of Powerco's proposal on average consumer bills and the quality of the service that customers could experience during the CPP period.

Powerco's expenditure forecasts

- 46 Powerco is proposing to spend \$1.32 billion over the CPP period (1 April 2018-31 March 2023) – \$873 million in capital expenditure, and \$455 million in operating expenditure.
- 47 Figures 1.1 and 1.2 below show the distribution of this expenditure over the proposed CPP period and the extent to which they have increased from previous DPP levels.

Figure 1.1 Powerco’s historical and forecast capex¹³

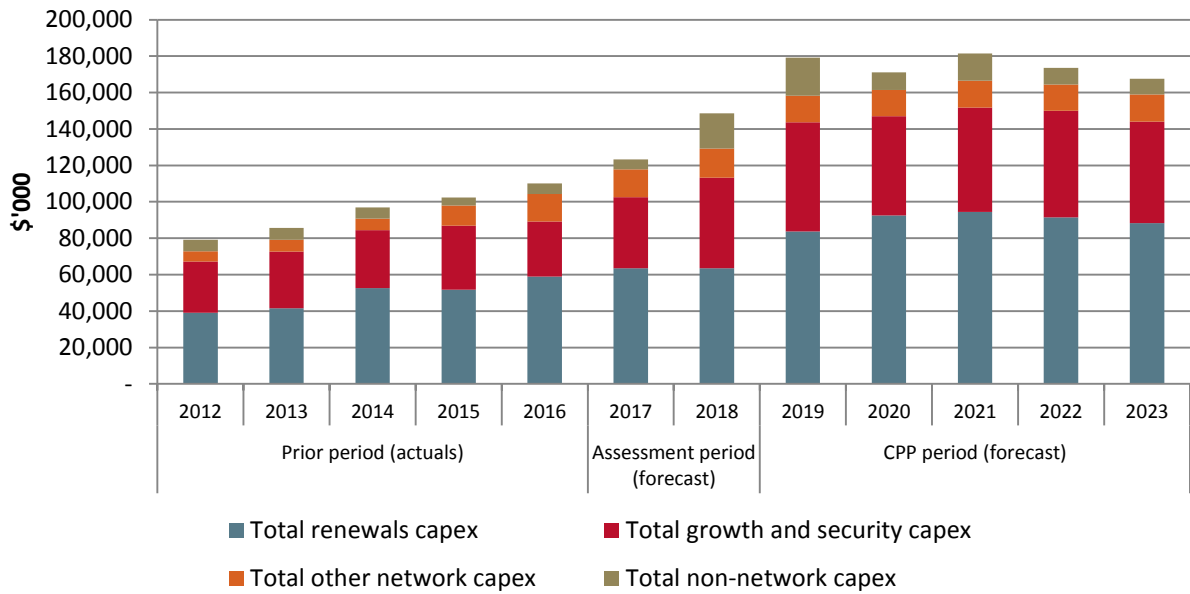
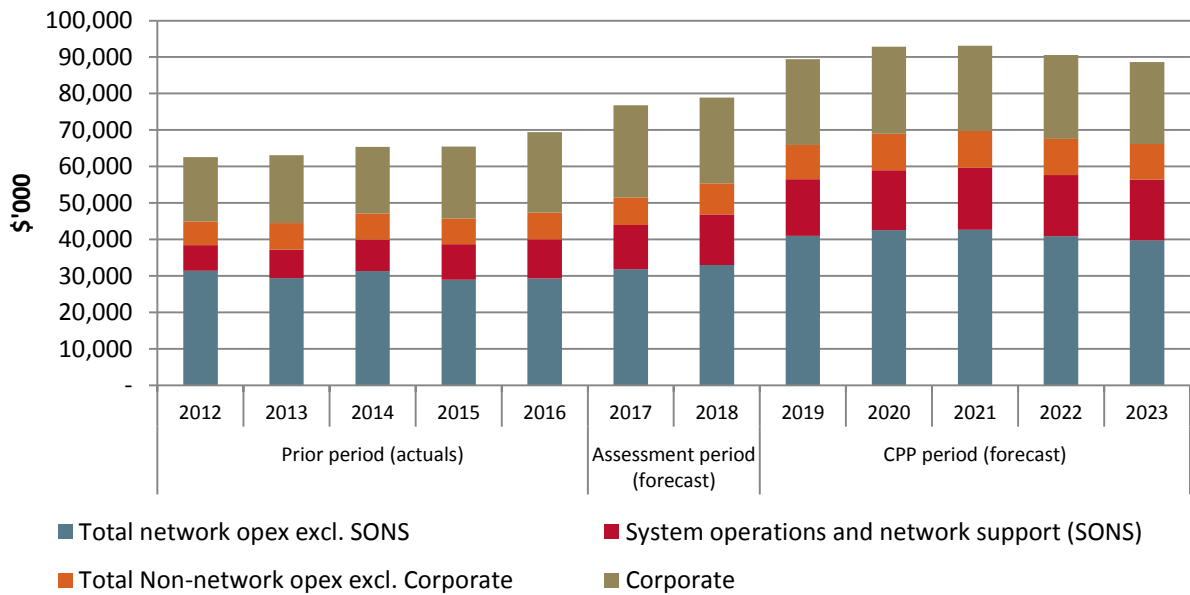


Figure 1.2 Powerco’s historical and forecast opex



48 The tables below outline capital and operating expenditure by portfolio. They show the forecast spend Powerco has included in its CPP proposal for each portfolio and the proportion the verifier was unable to verify against the expenditure objective.

¹³ The assessment period, for the purposes of these tables, is the two years directly prior to the CPP period, where Powerco provided forecasts because actual information for these years was not available.

Table 1.1 Overview of capital expenditure

Portfolio	Objective for increased spend	Powerco proposal	Unverified
Asset renewals	<ul style="list-style-type: none"> Replacing assets that are reaching end-of-life (eg, overhead structures & conductors, zone substations) 	\$450m	\$72m
Network growth and security	<ul style="list-style-type: none"> Reducing demand at risk and providing additional capacity for growing communities 	\$286m	\$15m
Other network capex	<ul style="list-style-type: none"> Addressing increasing customer numbers (customer connection) Undertaking research and development and testing new solutions (network evolution) 	\$73m	\$8m
Non-network capex	<ul style="list-style-type: none"> Supporting Powerco's focus on improved operational efficiency (ERP system) Improving visibility and remote control of Powerco's network (Communication systems) 	\$63m	n/a

Table 1.2 Overview of operating expenditure

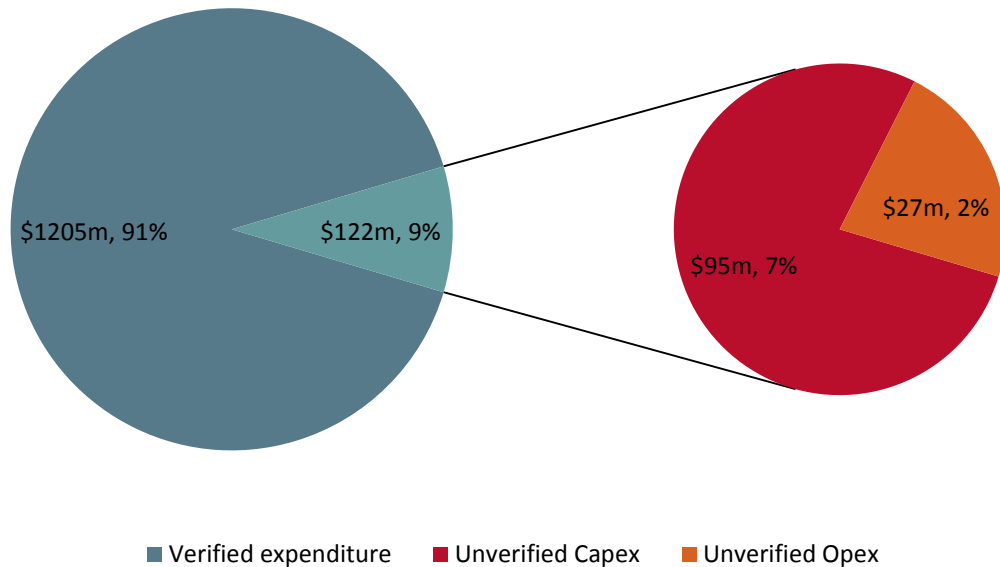
Portfolio	Objective for increased spend	Powerco proposal	Unverified
Network opex including system operations and network support (SONS)	<ul style="list-style-type: none"> Reducing the backlog of outstanding defects Improving inspection techniques to better understand actual asset and network condition Bringing vegetation management practices up to good industry standards Improving asset management practices up to good industry standards and to realise efficiencies Delivering the uplift in construction and maintenance work 	\$289m including \$82m SONS	\$9m SONS
Non-network opex including corporate opex	Supporting increased business complexity and demands	\$165m including \$116m corporate opex	\$18m (corporate opex)

Findings from the verifier

- 49 The key findings from the verifier’s review of this forecast are set out below and illustrated in Figure 1.3.
 - 49.1 The verifier was able to verify \$1.2 billion against the expenditure objective, which is equivalent to 91% of the total expenditure forecast.¹⁴
 - 49.2 The verifier was unable to verify \$122 million (9%) against the expenditure objective.
 - 49.3 Of the unverified amount \$95 million (7%) is capital expenditure and \$27 million (2%) is operating expenditure.
 - 49.4 Powerco had revised its forecast downwards by \$74 million to \$1.32 billion based on the findings of the draft report from the verifier.

- 50 The verifier noted that these values do not account for uncertainty relating to the growth and security (major projects and minor works) programmes, so the unverified amounts could be higher. We intend to do further analysis to determine the prudence of these forecasts, and will provide a view as part of our draft decision.

Figure 1.3 Proportion of unverified expenditure of total expenditure



Impact of Powerco’s CPP proposal on consumer bills

- 51 If we approve Powerco’s CPP proposal in its entirety, the maximum allowable revenue (MAR) would increase by 5.7% at the start of the CPP period and annually in

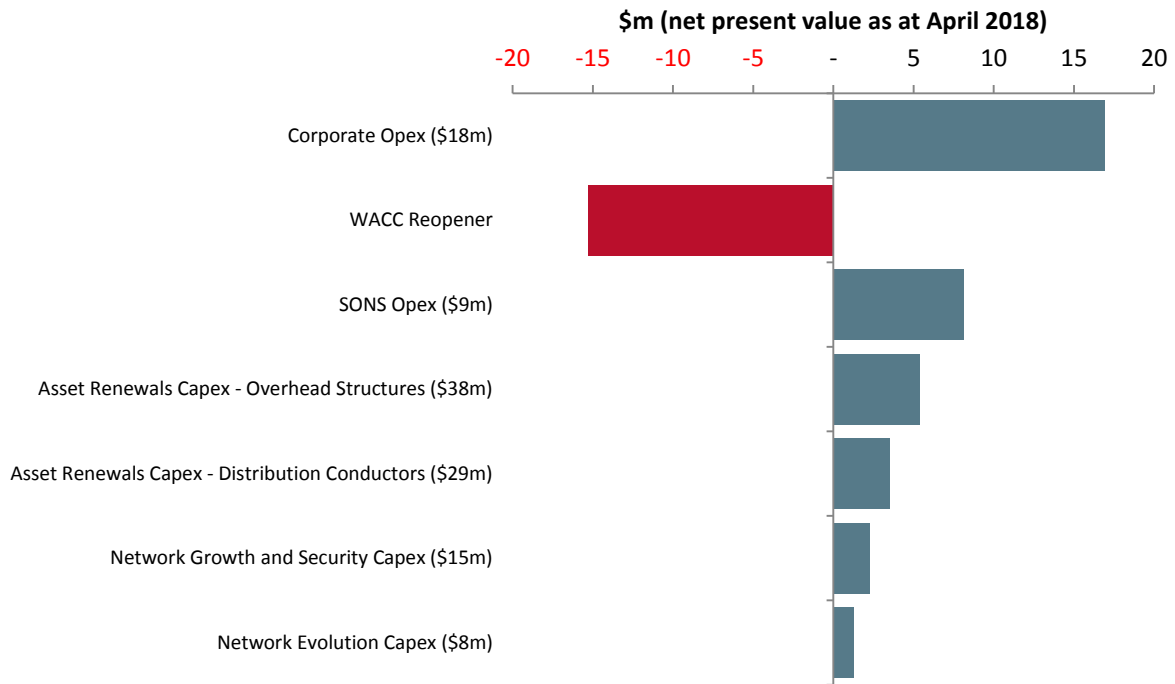
¹⁴ Throughout this paper, where we discuss verified expenditure, we are referring to expenditure which the verifier was able to verify against the expenditure objective.

line with inflation during this period. To place this in context, this would result in an increase of about 79c per week to an average household consumer bill, which is equivalent to an annual increase of 1.9%, plus inflation.¹⁵

- 52 We note that the investment proposed for the CPP period is likely to result in higher prices in subsequent regulatory periods as the recovery of capex occurs over the lifetime of the asset. We discuss this further in Chapter 2.
- 53 We have undertaken an indicative analysis that tested the sensitivity of the MAR to the unverified expenditure items, to help us further prioritise our efforts.¹⁶
- 54 Operating expenditure has a much greater impact on MAR as every single dollar allowed for under our decision would be fully recoverable during the CPP period. In contrast, capital expenditure has a much smaller impact on the MAR over the CPP period as it is recovered over the entire life of an asset. Our initial focus will therefore be on Powerco's forecast of corporate and system operations and network support (SONS) operating expenditure.
- 55 However, we will later turn our attention to the unverified capital expenditure items of Powerco's proposal. Despite having a much smaller impact on the MAR of the proposed CPP period, we consider these also warrant a thorough assessment as they eventually become the regulated asset base (RAB) Powerco will be entitled to make a return on in future pricing periods.

¹⁵ This calculation assumes that electricity distribution costs contribute 30% to the value of total consumer bills and that all increases will be passed on to consumers by retailers.

¹⁶ The analysis assumes that the unverified expenditure items would be removed from the proposal in their entirety.

Figure 1.4 Sensitivity of the MAR (before tax) to unverified expenditures

- 56 Figure 1.4 shows, for each unverified expenditure item, how much the MAR (before tax) will decrease (in net present value terms) if we do not approve the unverified expenditure items in our CPP decision. For example, including \$18 million of unverified corporate opex in our CPP decision would result in a ~\$17 million increase in MAR. For overhead structures however, given this is a capex item that would be recoverable over the entire asset life, including the unverified \$38 million would only result in a ~\$5 million MAR increase during the CPP period.
- 57 Figure 1.4 also shows the forecast impact on MAR from updating the weighted average cost of capital (WACC) applicable to the CPP, when the DPP is reset. Powerco has proposed an IM variation to allow us to use forecast WACC when setting the CPP in order for us to better smooth the impact of this change over the period. This proposed variation is explained in more detail in Chapter 2: Long term pricing impact of Powerco's proposal.
- 58 Powerco forecasts that interest rates are likely to drop from where they were when the current DPP WACC was set. This would result in a lower WACC during the remainder of the CPP period.¹⁷ The impact of this assumption, a decrease in MAR of ~\$15 million, is significant.¹⁸

¹⁷ Under Powerco's assumptions, WACC would drop from the current rate of 7.21% to 6.78%.

¹⁸ This \$15m reduction in MAR is equivalent to a 1.2% decrease.

Impact on quality of service

- 59 During the CPP period, Powerco will have to undertake a significant increase in the amount of construction and maintenance work across most parts of its network to deliver its investment plan. This will involve additional planned outages.
- 60 Powerco, however, concluded from the feedback it received from consumers on its consultation programme that consumers generally accept the need for planned work to maintain, replace and upgrade its network assets. Powerco is therefore suggesting, as it considers it cannot operate within its current reliability limits, a quality path for the CPP period which focuses on unplanned outages only (ie, Powerco would not be constrained in the number and duration of planned outages it can have).
- 61 We note that with no quality standard for planned outages in place, Powerco will not have an incentive to minimise these outages during the CPP period. We discuss this further in Part 3, Chapter 1 of this paper.

Part 3 - Issues and questions for submitters

Purpose of this part

- 62 This part focuses on some of the potential issues that we have identified with Powerco's proposal and asks for your views on these issues.
- 63 In some cases we have outlined potential options for addressing these issues. We also identify specific questions which we are interested in your feedback on.

How we decided on the issues that we would request feedback on

- 64 In developing this issues paper we have focused on the areas of concern identified by the verifier, and particularly on the issues that we think stakeholders can provide helpful feedback to us.
- 65 The issues discussed below ***are not*** an exhaustive list of what we are considering, and we are following up with Powerco on a number of matters. We are interested in your views on any aspect of Powerco's CPP proposal or the verification report.
- 66 We have grouped potential issues into the following chapters:
- Chapter 1: Quality – issues relating to Powerco's proposed quality measures and standards
 - Chapter 2: Long term pricing impact of Powerco's CPP proposal
 - Chapter 3: Potential price volatility from WACC change during the CPP period
 - Chapter 4: Asset health and criticality and its impact on capex forecasts
 - Chapter 5: Network evolution capex
 - Chapter 6: Opex forecasts
 - Chapter 7: Deliverability risk of Powerco's CPP proposal

Chapter 1: Quality – issues relating to Powerco’s proposed quality measures and standards

What are quality standards and why are they important?

- 67 Along with setting the maximum revenues that Powerco can recover from its consumers, we must also set the minimum quality standards that Powerco must deliver.
- 68 Quality standards are an important part of setting a price-quality path. Quality standards provide an incentive for regulated suppliers such as Powerco to provide an appropriate level of quality that reflects consumer demands. They also provide protection against regulated suppliers cutting costs or deferring expenditure if this places service quality at risk. Where a supplier breaches its quality standards it may face enforcement action.
- 69 Powerco’s proposed quality path for the CPP period is based on the existing measures of network reliability that currently apply under the DPP:
- 69.1 The existing measures reflect how often service interruptions occur (measured by SAIFI) and the average duration of these interruptions (SAIDI).¹⁹
- 69.2 The existing measures under the DPP also recognise that planned outages are less inconvenient for customers than unplanned outages, as planned outages are typically notified in advance. For the purposes of compliance under the DPP, Powerco is only required to record planned outages at 50% of the actual duration and frequency of the outages.

What quality standards has Powerco proposed?

- 70 Powerco has proposed that its customised quality path should focus exclusively on unplanned outages. Under Powerco’s proposal, planned outages would be excluded.
- 71 For unplanned outages, Powerco proposes to retain the DPP approach, which is to set SAIDI and SAIFI limits based on the 10-year average of these indicators.²⁰
- 72 Powerco proposes that planned outages should be excluded from the quality path for the CPP. According to Powerco, the current approach is based on historic levels of planned work, and this would prevent Powerco from efficiently undertaking the planned increase in construction and maintenance work it has proposed.

¹⁹ SAIFI stands for System Average Interruption Frequency Index, and SAIDI stands for System Average Interruption Duration Index. SAIFI and SAIDI are internationally recognised and common measures of reliability. A higher value for either index represents a deterioration of network reliability.

²⁰ The quality standards in the DPP are based on ‘normalised’ SAIDI and SAIFI data which limits the impact of major events. The ‘un-normalised’ SAIDI and SAIFI data includes the level of interruptions actually experienced by customers, including on normal and major event days. Further detail on setting quality standards in the DPP is available in Commerce Commission “Default price-quality paths for electricity distributors from 1 April 2015 to 31 March 2020 Main policy paper”, 28 November 2014 (Chapter 6).

- 73 Powerco proposes to retain the ‘cap’ and ‘collar’ approach in the DPP, which provides a financial incentive for Powerco to better its quality target.
- 74 Powerco considered including in its proposed quality path other quality measures that are important and valued by customers. Although Powerco ultimately decided not to include broader quality measures (beyond SAIDI and SAIFI) in its proposal, it proposes to increase reporting transparency with respect to other service quality measures (such as power quality, safety, environmental responsibility, and customer satisfaction). As it stands, Powerco is not proposing that these reporting requirements be included as a requirement of the CPP.

Summary of potential issues with Powerco’s quality proposal

- 75 We consider there are three key potential issues with Powerco’s proposal:
- 75.1 Powerco’s proposed unplanned outage targets may not reflect the improvements to reliability that we would expect from its increased expenditure;
- 75.2 Powerco’s proposal to exclude planned outages may weaken incentives for Powerco to minimise planned outages; and
- 75.3 Powerco’s proposal to use SAIDI and SAIFI as quality standards may not reflect the service outcomes that consumers value.

Unplanned outages may not reflect improvements that we would expect from additional expenditure

- 76 Powerco’s proposal to maintain unplanned outages broadly at their current levels may mean that the quality path for the CPP period does not adequately reflect Powerco’s increased investment. Under its CPP proposal, Powerco would be significantly increasing expenditure in areas such as asset renewal and vegetation management, which is expected to improve network reliability (and lead to lower levels of unplanned outages).
- 77 This was a key issue identified by the verifier, who observed that Powerco’s historic expenditure on asset replacement and reliability had led to a distinct trend of improving reliability (lower levels of unplanned outages). According to the verifier: ²¹

[T]he historical data shows a distinct trend of improving reliability. The historical expenditure shows that there has been an average increase of 11% per year in replacement expenditure since 2012 and an average expenditure of \$3 million per year on the reliability program. The forecast replacement expenditure for the CPP period is continuing to increase compared to historical replacement expenditure and the reliability program is forecast to continue. Therefore, with a similar mix of forecast expenditure, it would be expected for the improving trend in reliability to continue, which Powerco has not forecast.

²¹ Farrier Swier Consulting “Powerco’s Customised Price Path Application: Final verification report for Powerco”, 7 June 2017, p 216.

- 78 The verifier based its observation of improving reliability on trends in unplanned, un-normalised SAIDI and SAIFI. The verifier considers un-normalised data to be relevant for understanding the impact of Powerco’s proposed expenditure.²²

We seek your views on possible solutions to this issue

- 79 One way to address this issue would be to adjust Powerco’s proposed quality targets for unplanned outages to better factor in the expected improvement in network reliability resulting from Powerco’s proposed increased investment in areas such as asset renewals, vegetation management, and reliability programme. Increases in such investment in recent years have led to improvements in unplanned SAIDI and SAIFI reported by Powerco, and these trends could be expected to continue (as noted by the verifier).
- 80 We note that any improvements in reliability (fewer unplanned outages) as a result of Powerco’s increased expenditure under the CPP would eventually flow through to customers under Powerco’s proposed approach (ie, lower SAIDI/SAIFI in future years will feed into lower historic averages used for future periods). We are interested in your views as to whether this is sufficient, or whether targets set for the CPP period should be more directly reflective of these expected improvements. If the latter, we are interested in your views on how to set quality targets which take into account these expected improvements.

Powerco’s proposal may remove incentives to minimise planned outages

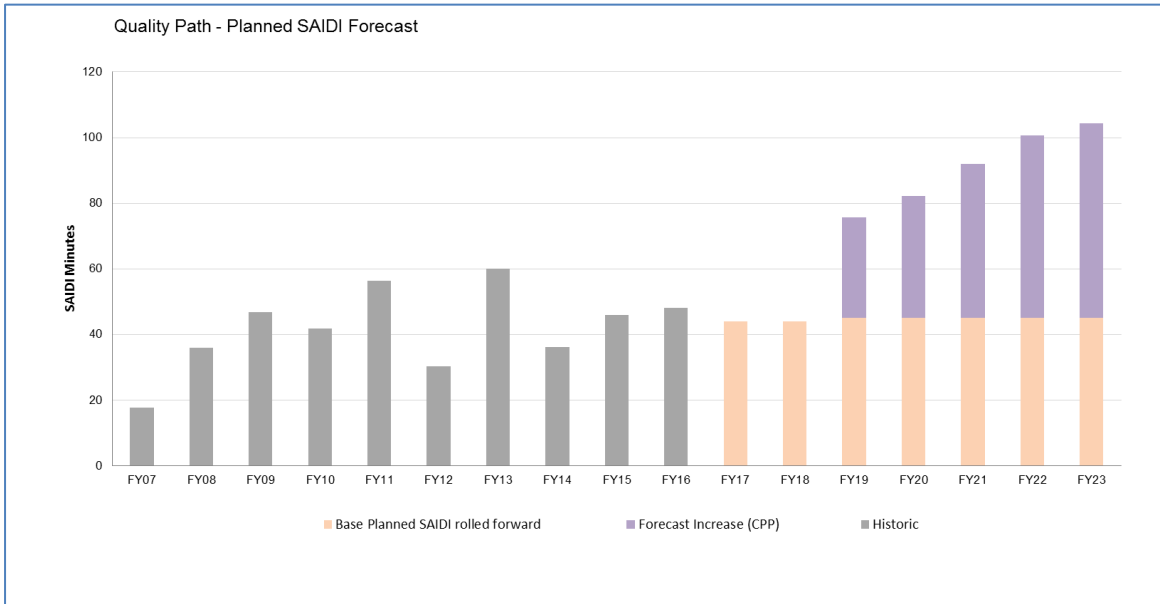
- 81 Powerco’s proposal to exclude planned outages would remove any compliance obligation from Powerco in respect of planned outages. This may weaken the incentives on Powerco to minimise disruptions to customers while undertaking its proposed CPP work programme.
- 82 It is not clear that Powerco has considered alternatives to completely excluding planned outages as a quality standard. We have identified some potential alternatives below.

We seek your views on potential options to ensure Powerco has incentives to minimise planned outages

- 83 This section explores some potential options to ensure that Powerco has proper incentives to minimise planned outages, while still allowing it to increase planned outages to undertake greater expenditure during the CPP period.
- 84 One option is for us to set a quality path for the CPP that includes separate targets for planned and unplanned outages. This would ‘de-link’ planned and unplanned outages, which would reduce the risk that any increase in unplanned outages (ie, during a year with severe weather) would restrict or prevent Powerco from undertaking its planned work programme.

²² Farrier Swier Consulting “Powerco’s Customised Price Path Application: Final verification report for Powerco”, 7 June 2017, p 209.

- 85 Setting a quality path which included planned outages could be done on the basis of Powerco’s forecast increase in planned outages under the CPP (rather than based on the 10-year historic average). This would address Powerco’s concerns that its proposed CPP will require a substantial increase in the level of planned outages, and that maintaining the current approach based on historic averages would hinder Powerco’s ability to undertake the work programme under the CPP proposal.
- 86 For example, in the case of the planned SAIDI measure, Powerco has forecast the following increase in planned outages over the CPP period.



Source: Powerco

- 87 Such forecasts could be used as a basis for setting a quality path for planned outages over the CPP period.
- 88 An alternative could be to retain the current approach to setting quality paths, which combines both planned and unplanned outages. If the current approach were to be retained, it may be appropriate to reduce the weighting on planned outages to recognise the increased investment proposed by Powerco under the CPP.

Are SAIDI and SAIFI the most important quality measures for consumers?

- 89 Powerco has proposed that the quality path for the CPP period be based on two quality measures – SAIDI and SAIFI (reliability). It is possible that Powerco’s customers value a range of service attributes that extends beyond the frequency and duration of outages.
- 90 However, reliability appears to be a key attribute valued by customers, and Powerco’s proposal may be reasonable given the increased reporting proposed by Powerco.

We seek your views on what service measures are important to consumers and how these should be taken into account

- 91 We are interested in stakeholders' views on whether SAIDI and SAIFI are by themselves sufficient measures of quality, or whether we should consider introducing further quality standards. If the latter, we are interested in potential options, and how they address the quality measures that matter to consumers.
- 92 The set of quality measures to be used in the CPP quality path could potentially be expanded. Alternatively, the CPP quality path could be based on existing measures of reliability (SAIDI and SAIFI), with broader measures to be reflected in increased monitoring and reporting.
- 93 We note that Powerco has proposed to increase reporting transparency on a range of service performance measures relating to, among other things: reliability, fault response and restoration, power quality, safety, and customer satisfaction.²³
- 94 We also seek your views on how to monitor Powerco's progress against its planned CPP work programme. Such reporting on the deliverability of the CPP programme should help to ensure that Powerco's customers benefit from the additional expenditure.

²³ Powerco "Main Proposal", 12 June 2017, Section 17.1.6.

Chapter 2: Long term pricing impact of Powerco's CPP proposal

Issue description

- 95 We consider there is likely to be an additional price increase in the subsequent pricing period as a result of Powerco's CPP proposal.
- 96 In particular, our preliminary assessment indicates that the maximum allowable revenue (MAR) may increase by around 10% from the proposed CPP period to the subsequent pricing period due to the amount of expenditure being proposed for the 2018-2023 period. This expenditure will require further price increases after 2023 due to the fact that the majority of Powerco's capex will be recovered over subsequent regulatory periods. This MAR increase would be in addition to the 5.7% increase in MAR Powerco forecasts for the CPP period.
- 97 We consider this to be important as it may influence consumers' views on the extent and timing of Powerco's expenditure forecast, given that they may be unaware of this impact on long term pricing.

CPP proposal would result in an initial 5.7% increase in revenue

- 98 In its proposal, Powerco explains the impact of its expenditure forecast on MAR to be a 5.7% increase in the first year of the CPP period. In a scenario with no other changes to electricity prices, this increased revenue allowance would translate into a 1.9% increase in total electricity cost for the average consumer.²⁴
- 99 Powerco consulted with its stakeholders on whether to smooth-out the price increase over the five-year period as opposed to having an initial step change increase in the first year of the CPP period. The feedback, however, was not unanimous across all stakeholder groups and we remain open to both approaches.

Increase in revenue in the subsequent pricing period could be more significant

- 100 Our preliminary assessment of the impact of Powerco's proposal on pricing in a subsequent five-year pricing period indicates another MAR increase of around 10% in addition to the initial increase of 5.7%.
- 101 Our analysis uses Powerco's long term asset management plan (AMP) expenditure forecasts, an estimated WACC of 6.78% from 2021 onwards, and some simplifying assumptions for capex and depreciation. Using the same approach as Powerco in its Main Proposal, this would translate into a further increase in total electricity cost (including generation, transmission and retail costs) of around 3%.
- 102 We note that this impact would result from the fact that the opening regulated asset base (RAB) for the subsequent pricing period includes all of the commissioned assets from the CPP period, whereas the opening RAB of the CPP period is lower and its RAB only gradually increases while new assets are being commissioned.

²⁴ This calculation assumes that electricity distribution costs contribute 30% to the value of total consumer bills and that all increases will be passed on to consumers by retailers.

Consequently, the average RAB in the subsequent pricing period will be higher than in the CPP period.

- 103 This is important to clarify as the return on the RAB throughout both pricing periods is likely to be the main contributor to the maximum revenues that Powerco will be allowed to make. As indicated by our preliminary analysis, a higher average RAB in the subsequent pricing period than in the CPP period is therefore likely to result in higher allowable revenues to Powerco.

Understanding the long term pricing impact is important

- 104 In its CPP proposal, Powerco has complied with the requirements in the IMs by consulting on the pricing impact of its proposal in the proposed CPP period. However, in assessing Powerco's proposal, we consider it is also important for consumers to understand the long term pricing impact of the proposal, particularly in the light of our analysis indicating that the distribution price uplift could be more substantial in the longer term due to the extent and timing of expenditure in the CPP period.

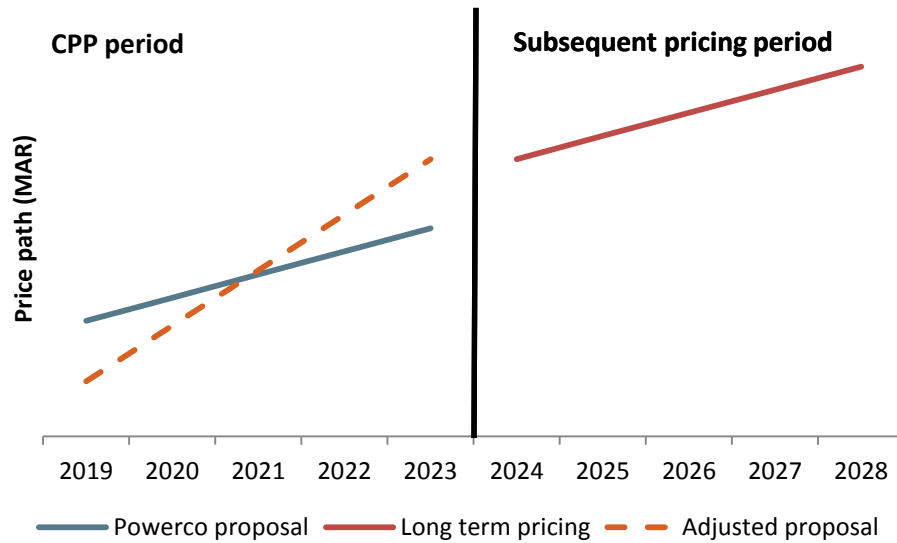
We seek your views on this issue

- 105 We would like to understand whether your awareness of this issue changes your views on the extent and timing of Powerco's expenditure forecast.
- 106 If we were to accept Powerco's proposal (either in its entirety or to a large extent), we would like your views on whether there is a price shock issue as a result of:
- 106.1 the aggregated impact on pricing across both the proposed and the subsequent pricing period; or
- 106.2 the likely impact on pricing in the subsequent pricing period only.
- 107 If you consider there might be a price shock issue we need to address, we are also seeking your views on the possible options we outline below. We would also want to understand whether you consider an alternative solution (ie, not included below) to be more appropriate.
- 108 The possible solutions we currently see to this issue include:
- 108.1 **Addressing the long term pricing impact in the proposed CPP period**, by adjusting the price path (ie, the MAR series) such that any price increases would be minimised from the CPP period to the subsequent pricing period.²⁵ As shown in the illustrative figure below, this would result in a lower initial MAR followed by steeper year-on-year increases for the proposed CPP period.²⁶

²⁵ In real terms.

²⁶ This could be done in a way that is indifferent in net present value terms.

**Figure 1.5 Possible adjustments to the price path
(for illustrative purposes)**



- 108.2 **Addressing the long term pricing impact in the subsequent pricing period.** If we accepted the proposal in its entirety, this would leave the price path of the CPP period unchanged to what Powerco has proposed. We would then consider in the subsequent pricing period whether there is a price increase that should be minimised.

Chapter 3: Potential price volatility from WACC change during the CPP period

The new IMs require us to reopen Powerco's price path to update WACC in 2020

- 109 Following our review of the input methodologies last year, we changed the WACC rate that we use to determine customised price paths. We now use the current DPP WACC to calculate the price path, rather than the most recent estimate.
- 110 The IMs then allow for us to reopen the CPP when the DPP WACC changes as a result of setting a new DPP (this will occur for Powerco in 2020).
- 111 At this point, a CPP price path that continues into a new DPP regulatory period will be recalculated using the new WACC, revaluation rate and cost of debt. Accordingly, the IMs require us to assume, when evaluating the CPP proposal and calculating the initial price path, that the current DPP WACC will prevail for the entirety of the five-year CPP regulatory period even if it is likely that the DPP WACC will decrease or increase at the DPP reset.

Issue description

- 112 Current and projected forecasts of interest rates indicate that the current DPP WACC is likely to be adjusted downwards when the DPP WACC is next reset in 2020. This means that:
- 112.1 the price path derived at the commencement of the CPP regulatory period may overstate the impact of the full CPP regulatory period on prices; and
 - 112.2 consumers may experience multiple price changes as a consequence of the CPP: at the commencement of the CPP, and then again when the DPP WACC resets.
- 113 Powerco currently estimate that the updated DPP WACC will reduce Powerco's MAR by \$15 million or 1.2% over the last three years of the CPP.

Powerco's proposal – Use forecast WACC to reduce impact

- 114 To address this price volatility, Powerco has proposed a variation to the IMs that would allow us to:²⁷
- 114.1 use the current DPP WACC to calculate the price path for that part of the CPP regulatory period that coincides with the current DPP regulatory period; and
 - 114.2 use a forecast of the DPP WACC for that part of the CPP regulatory period that coincides with the subsequent DPP regulatory period.
- 115 The resulting CPP MAR will therefore produce a revenue reset that reflects the anticipated DPP WACC decrease in a smoothed, average path. This will minimise the

²⁷ Section 53V(2)(c) of the Commerce Act allows us to vary the IMs with the agreement of the supplier.

likely variance between the price path derived at the outset of the CPP regulatory period and the price path that will ultimately result from the DPP reset in 2020.

- 116 Further explanation of this issue and Powerco's proposed approach is available in Powerco's CPP application document.

We seek your views on Powerco's proposed solution to this problem

- 117 We are interested in your views on Powerco's proposed approach to address this situation. We are also interested in how important this issue is to consumers.

Chapter 4: Asset health and criticality and its impact on capex forecasts

Issue description

- 119 The capital expenditure (capex) programme Powerco has applied for in its CPP proposal is significant and there is the risk of:
- 119.1 Assets being replaced earlier than they needed to be because of asset health analysis and modelling practices potentially not being fit-for-purpose. This could result in overstated capex forecasts and, ultimately, lead to unnecessary costs for consumers; and
 - 119.2 Asset replacement programmes not prioritising those assets that have the highest value to consumers and the business due to the absence of an asset criticality framework.
- 120 The effect of these risks could be a sub-optimal outcome for consumers in terms of both cost and quality of the services they receive. This could be due to an insufficient understanding as to what the most critical assets for replacement and maintenance are.

The capex programme is largely aimed at replacing and upgrading ageing assets

- 121 Powerco is proposing capex of \$873 million over the CPP period. This is a 50% increase (\$292 million) compared to capex in five years leading up to the CPP period.
- 122 Increases in the capex programme are largely attributable to:
- 122.1 increased replacements of the overhead network, particularly overhead conductors, poles and cross-arms;
 - 122.2 Increased replacements of zone substation transformers and indoor switchboards;
 - 122.3 growth and security network upgrades to meet stated reliability standards; and
 - 122.4 investment into information and communication technology.

Identifying the most critical assets for replacement is important

- 123 We consider that being able to identify the most critical assets for replacement and maintenance results in benefits to consumers. This is of particular importance in the context of Powerco's CPP proposal which is largely driven by the need for replacing and upgrading ageing assets.

124 In identifying the most critical assets for replacement and maintenance, asset health and asset criticality analysis can play a vital role. For clarification, and in the context of this issues paper, we define these types of analysis as follows:

124.1 Asset health analysis determines the remaining serviceable life of an asset with a view to underpinning the decision making to replace assets such as conductors, poles, cross-arms and transformers.

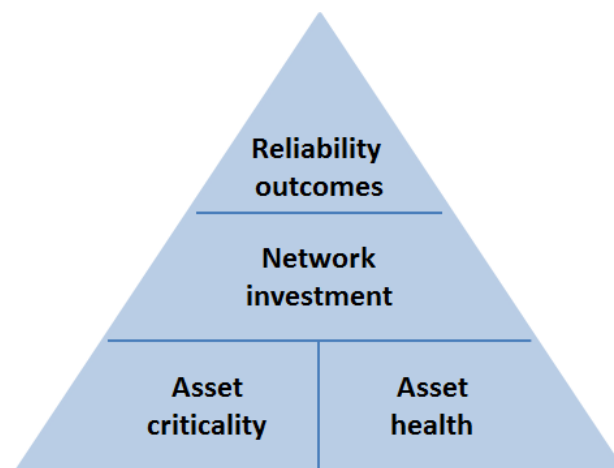
124.2 Asset criticality analysis is aimed at:

- targeting the replacement of assets with the highest safety risks; and
- in parallel, identifying those assets that carry the highest value to the consumer and the business. For example, a prudent supplier would prioritise investment in assets that benefit a large amount of consumers as opposed to those that only benefit a few.

125 We note that, while safety is an important outcome of understanding asset criticality, prioritising asset replacement and renewal expenditure, such that consumers obtain maximum benefit, is also a key element of any asset criticality analysis.

126 In summary, as illustrated in Figure 1.6 below, we consider it important that EDBs understand how asset health and criticality underpins investment in network assets, and how this benefits reliability outcomes that are in the interest of the consumer.

Figure 1.6 Asset health and criticality analysis should underpin investment in network assets



Powerco is planning on further implementing an asset criticality framework during the CPP period

- 127 Powerco is proposing to further develop its asset criticality framework as part of its CPP proposal.²⁸

We will further expand and embed our existing asset criticality framework. The goal is to include criticality assessments in all asset investment planning decisions – Capex and maintenance. It will also support our risk management initiative.

Powerco’s asset health and criticality analysis practices may not be fit-for-purpose

- 128 The verifier concluded in the verification report that Powerco’s practices regarding asset health analysis may not all be reasonable. The verifier makes the more generic statement that:²⁹

Several of Powerco’s key assumptions relevant to the capex forecast do not appear to be reasonable and are likely to result in an overstatement of expenditure.

- 129 With regards to Powerco’s asset health modelling and analysis practices in particular, the verifier explains that:³⁰

Some of Powerco’s policies – if applied in practice – may lead to an over-forecast of capex, particularly in relation to inspection and defecting practices for wood poles and conductors

- 130 With regards to Powerco’s asset health and criticality practices, the verifier explains that:³¹

Powerco has not adequately assessed the risks presented by overhead conductor failures, including considering the probability of failure and likelihood of damage or injury occurring. Therefore, in our view, Powerco has not yet proven that the proposed expenditure is prudent. Additionally, some assumptions included in the replacement model did not appear to be supported; a key example being the target fault level adopted which directly leads to the volume of conductor replacements forecast, also driving around half of expenditure in the overhead structures renewal program. The portion unverified across the conductor and poles renewal programs is \$58 million (\$2016); allocated approximately 50% in each category.

- 131 We note that Powerco disagrees with the verifier’s view. In response to the above quotation, Powerco explains that:³²

Our distribution conductor fault rate has been steadily climbing over the past decade, and our benchmark overhead line performance is poor compared to other EDBs. We have identified several types of conductor on our network that fail much

²⁸ Powerco “Main Proposal”, 12 June 2017, p 70.

²⁹ Farrier Swier Consulting “Powerco’s Customised Price Path Application: Final verification report for Powerco”, 7 June 2017, p 48.

³⁰ Farrier Swier Consulting “Powerco’s Customised Price Path Application: Final verification report for Powerco”, 7 June 2017, p 41.

³¹ Farrier Swier Consulting “Powerco’s Customised Price Path Application: Final verification report for Powerco”, 7 June 2017, p 42.

³² Powerco “Main Proposal”, 12 June 2017, p 55.

more often than other types, and therefore carry increased risk of property damage or public injury. Our conductor investment plans are primarily centred on replacing this poor performing conductor. Though we have not quantitatively assessed this risk, our customers expect a safe and reliable network – something we are currently struggling to provide when compared to others.

- 132 We consider that the identification of asset health issues, even when carried out reasonably, is only one part of the decision making process to replace assets before they fail. The replacement decision should also be made with an understanding of asset criticality in mind, including safety considerations, in order that consumers obtain the best value for money, and to link asset replacement decisions to reliability outcomes.
- 133 In Chapter 1 we discuss the relevance of linking the forecast network asset expenditure to reliability outcomes and that the evidence Powerco has provided underpinning this linkage may be insufficient. In this regard, we consider that understanding asset criticality is an important step in the process in establishing this linkage.

We seek your views on this issue

- 134 We are interested in stakeholders’ experiences with asset health and criticality analysis, and how practices have been implemented and integrated into industry asset management processes. We are interested in your views as to whether EDBs should be prioritising these asset management practices as an industry.
- 135 In addition, we also seek your views on Powerco’s intention expand and embed its asset criticality framework, during the CPP period, which will apply a risk based approach to prioritising asset replacements based on safety consequence.³³ We seek your views on whether this work should be prioritised during the period.
- 136 We are also interested in hearing whether such a framework should purely focus on safety, or whether it should also cover, in line with our definition of asset criticality analysis in this issues paper, identification of those assets for replacement that carry the highest value to the consumer and the business.

³³ Farrier Swier Consulting “Powerco’s Customised Price Path Application: Final verification report for Powerco”, 7 June 2017, p 48.

Chapter 5: Network evolution capex

Powerco is proposing increases in network evolution capex

- 137 Powerco's CPP proposal includes a number of network evolution investments which represent one of the major programmes in its proposal.³⁴ Powerco has proposed \$18.1m of expenditure for network evolution over the CPP period, representing a substantial uplift compared with its historical expenditure in this category.³⁵
- 138 Powerco explains in its proposal that this additional network evolution expenditure is intended to support the transition to a more flexible, dynamic network that will respond quickly and efficiently to changing load patterns and can be tailored to customer requirements.
- 139 The verifier explained that Powerco's network evolution program is aimed at:
- ...establishing a smart network and moving Powerco towards being a distribution system integrator over the next five to ten years, including providing for two way flows of electricity, allowing unfettered connection of localised generation and allowing customers to conduct energy transactions over the network. Individual projects range from developing battery storage and electric vehicle charging systems to investigating self-healing networks.

Issue description

- 140 We consider it is important that EDBs innovate and invest to ensure that their networks can support emerging technologies and future load patterns. However, the verifier's view was that Powerco has not provided sufficient information to justify its proposed network evolution expenditure.

Verifier's views on network evolution expenditure

- 141 In the verification report the verifier provided its view on Powerco's proposed network evolution expenditure:

Based on our assessment of the CPP proposal, it appears reasonable for some research and development expenditures to be included in the CPP period.

However, we have not been able to determine the appropriate level of expenditures. Powerco has stated elsewhere that 'uptake rates of solar PV, energy storage devices and EVs on the network is extremely low and, at current growth rates, will not have a material impact within the next ten years'. Although this statement is somewhat at odds with the plan to invest considerable capex during the CPP in this area Powerco maintain that 'R&D' work is required

³⁴ A list of the main network evolution programmes Powerco has identified can be found in Box 13.4 on page 156 of Powerco's main proposal.

³⁵ Powerco proposes to increase its network evolution expenditure by 370% compared with the previous 5 years. This is illustrated in figure 22 on page 171 of the Verifier's report.

The verifier was not satisfied that Powerco had identified the consumer benefits of network evolution expenditure

142 The verifier's view was that Powerco had not provided sufficiently detailed information as to what specific benefits customers would receive from the network evolution initiatives proposed. This is partly due to the fact that Powerco is still in the process of refining its network evolution strategy.

Why this is important

143 Ongoing innovation in how network businesses conduct their business operations is important in meeting future consumer demands, particularly as the implications of emerging technologies remains uncertain.

144 However, while we recognise the difficulties of quantifying the benefits of innovation expenditure, it is important that we are satisfied that the proposed initiatives are likely to deliver long term benefits to consumers, and that those benefits will outweigh the likely costs involved.

We seek your views on how to approach this issue

145 We seek your views on whether Powerco's proposal for network evolution expenditure is appropriate. Specifically, which projects or programmes do you consider should be included as part of Powerco's network evolution allowance?

146 We have requested further justification from Powerco for its network evolution expenditure and including more details on the specific benefits that consumers will receive from it.

147 Given the inherent ambiguities with this expenditure one potential option could be to accept a notional amount somewhere between accepting and rejecting Powerco's proposal, with no further scrutiny applied. The verifier noted this may be appropriate and suggested \$2 million per annum may be suitable (resulting in a total allowance over the CPP of \$10 million).

148 We therefore welcome feedback as to whether the level of network evolution expenditure proposed by Powerco is appropriate and whether providing specific allowances to individual EDBs will provide the best outcomes for consumers and the sharing of innovation among EDBs.

Chapter 6: Opex forecasts

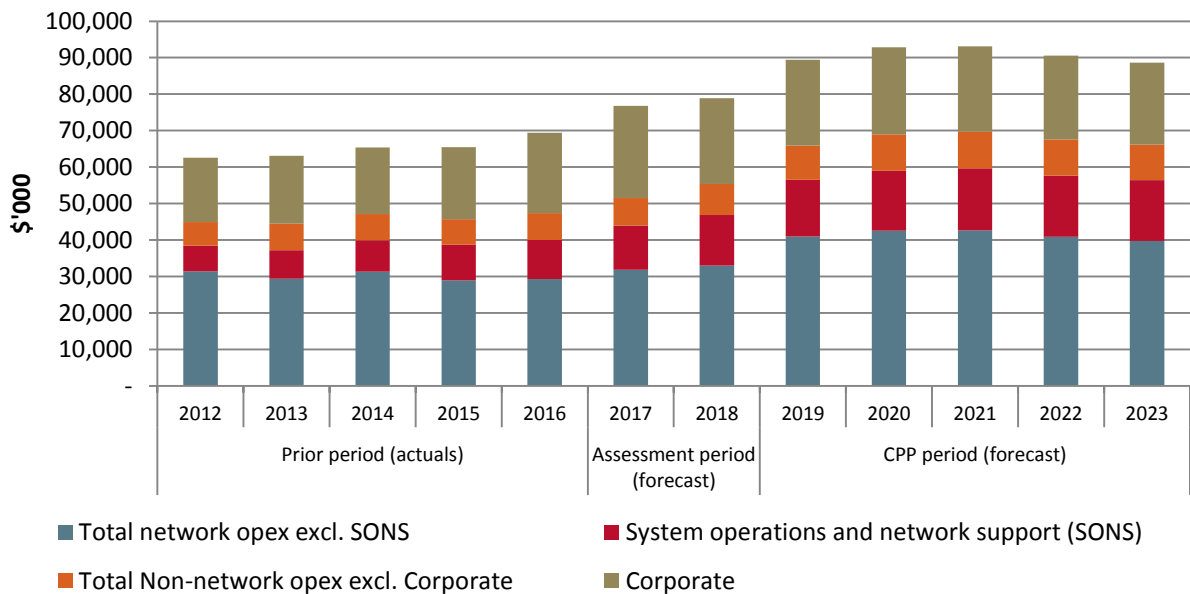
Issue description

- 149 The verifier has identified that some aspects of Powerco’s opex forecasts do not have sufficient detail or basis to substantiate the expenditure required and this section discusses those issues.
- 150 A key component of Powerco’s expenditure forecasts is the opex forecasts.³⁶ The opex forecasts that we use to set Powerco’s CPP will have a direct impact on allowable revenues, as Powerco will be allowed to recover the full forecast opex from consumers during the CPP period. This impact is explained further in Part 2 of this paper.

Powerco has proposed a significant uplift in operating expenditure

- 151 Powerco proposes to recover \$455 million of opex over the CPP period, an increase of \$99 million (27.7%) on the five years leading up to the CPP period. An overview of Powerco’s opex forecast over the CPP can be seen below:

Figure 1.7 Powerco’s historical and forecast opex



- 152 Powerco initially proposed opex of \$478 million, but reduced its forecast following the verification process by \$23 million (or 4.8%). The verifier subsequently found that \$27 million (6%) remained unverified at the time of preparing its final report, but considered that \$427 million (94%) of Powerco’s opex forecasts could be relied upon.

³⁶ Powerco’s opex proposals can be found on pages 168-207 of its main proposal.

- 153 Of the total opex proposed by Powerco, \$289 million relates to network opex (including preventative, reactive & corrective maintenance, vegetation management and system operations and network support (SONS)). A further \$165 million of the total opex proposed relates to non-network opex (including corporate, ICT and facilities opex).
- 154 It has been suggested by Powerco that its current investment rates have led to a backlog of maintenance and vegetation work, and Powerco is experiencing an increasing number of asset failures and network faults. The proposed increase in opex over the CPP period is driven by Powerco's desire to correct the backlog of maintenance defects it has accrued, improve asset inspection and assessment practices, supporting its increased capex programme and transitioning to a more proactive vegetation management approach.
- 155 It is also important to note that the verifier identified that Powerco did not appear to be proposing any opex reduction initiatives, but that it would be reasonable to expect some of the opex and capex forecast expenditure to result in opex reductions over the CPP period. However, Powerco has indicated in its proposal that internal improvements resulting from additional opex in the CPP period should result in capex efficiencies of \$6 million per annum and opex efficiencies of \$2 million per annum by the financial year 2023. We would welcome your views as to whether such savings are appropriate over the CPP period.

The verifier's view was that Powerco has not adequately justified all of its proposed opex

- 156 The verifier noted that further justification is required regarding some items of opex against the expenditure objective. The areas where further supporting information is required relate to Powerco's increased forecast for SONS opex.
- 157 In the view of the verifier:³⁷
- Powerco has not sufficiently demonstrated that the proposed increase in SONS FTEs included within the strategy-driven step changes are all needed to satisfy the expenditure objective.
- 158 Under this category, during the CPP period, Powerco is proposing to increase its full time equivalent employees (FTEs) by 46 people. It is also intending to increase SONS expenditure to \$4 million per annum by the 2021/22 financial year.
- 159 We consider it is important to note that in addition, Powerco also intends to increase the number of its non-network opex FTEs by a further 21 people during the CPP period (from a current base of 138 FTES in these areas).

³⁷ Verification report at p 78, under the section 'System operations and network support (SONS)'.

160 The verifier found that the opex forecasts, and associated work that this increase in expenditure would allow, was not undeliverable but that some uncertainties existed. For example, the verifier noted:³⁸

It is less certain at this stage whether the logistics of procuring, training and integrating the significant step up in internal resources is achievable in the timeframes proposed, particularly for the uplift in capacity required within the SONS portfolio.

161 We would welcome your views on whether the proposed increases in FTEs are appropriate and proportionate to the proposed increases in capex and opex activities planned for the CPP period, and whether you think the work and initiatives that the proposed increases in opex would allow is achievable within the CPP period.

162 There are other aspects of Powerco's proposed opex forecasts that we would particularly welcome your views on. This includes the proposal to bring its fault calls in-house by establishing a call centre with associated costs of \$600,000 per annum from the financial year 2020. We would like to receive your views on whether you consider this is appropriate and what benefits you would expect to see if this initiative were to proceed.

163 We are in the process of requesting further justification from Powerco for some of its opex forecasts. We will assess responses from submitters together with the responses we receive from Powerco in drafting our decisions.

We are seeking your views on these opex issues

164 We would welcome your views on the overall appropriateness of Powerco's opex proposals and whether you consider these will deliver better outcomes for consumers through the CPP period.

165 We are interested in whether you agree with Powerco's proposal to increase its opex during the CPP period, as well as any specific comments you have on any aspect of Powerco's proposed opex.

166 We are specifically interested in views on:

166.1 whether Powerco's forecast capex and opex efficiencies are appropriate;

166.2 whether Powerco's proposed increases in FTEs reflect the work and initiatives proposed within the CPP period;

166.3 whether you think that Powerco's proposal to bring its fault calls in-house (by establishing a call centre) and the costs associated with this initiative provide good value for consumers; and

166.4 whether Powerco's proposed increase in opex is required and has been suitably justified for the purposes of the CPP period.

³⁸ Verification report at p 80, under the section 'Powerco proposal and our general observations'.

Chapter 7: Deliverability risk of Powerco's CPP proposal

Issue description

167 The work programme proposed by Powerco is significant and substantially more than what it has delivered in previous periods. Although Powerco has undertaken work to plan and manage delivery taking this into account, there is a risk that this is not sufficient. As a result work could remain undelivered during the CPP period or delivered to an inferior standard.

A work programme of this size carries some deliverability risk

168 Powerco proposes to spend \$1.32 billion in total during the CPP period which is a 42% increase (\$390 million) in expenditure compared to the five years leading up to the CPP.

169 As outlined in the overview part of this paper, the work programme proposed for the CPP period would cover a wide range of activities. The additional expenditure, however, will largely be focused on replacing and upgrading ageing assets such as overhead networks and zone substations transformers. To a lesser extent, it would also go towards upgrading growth and security networks to meet reliability standards and investment into information and communication technology.

170 This will rely on Powerco's ability to acquire resources and materials, manage contracts, and increase staff on a much larger scale. This is likely to be challenging, and as with most large scale work programmes, this carries a significant degree of deliverability risk.

The deliverability risk specific to Powerco's CPP proposal

171 In addition to the generic risk that is associated with the delivery of a work programme of this size, we have identified some deliverability risk that may be specific to Powerco's situation:

171.1 Upsizing the organisation may take longer than anticipated - Powerco will have to expand across its business to deliver the work programme. The risk is that this may take longer than anticipated and resources necessary to ensure work programmes are delivered on time and to standard are not in place when required.

171.2 Asset inspection practices may not improve fast enough to inform delivery - although Powerco is explaining that many of its asset practices are improving, some of the verifier's comments suggests that the asset inspection practices in particular may not be fit-for-purpose.³⁹ We consider this important because insufficient asset information as a result of inadequate asset inspection practices could further impact on timely, efficient and effective project deliveries.

³⁹ Farrier Swier Consulting "Powerco's Customised Price Path Application: Final verification report for Powerco", 7 June 2017, p 45.

The impact of deliverability risk can be significant

- 172 We consider that deliverability risk can manifest in work programmes not being delivered on time or being delivered to an inferior standard.
- 173 When work programmes are not delivered on time:
- 173.1 Consumers would pay too much in the respective pricing period;
 - 173.2 Unplanned outages may exceed the pre-defined limits; and
 - 173.3 Hazard control performance and customer service quality may be inferior due to reduced network capacity.
- 174 When work programmes are delivered to an inferior standard:
- 174.1 Consumers may pay too much in the longer term resulting from reduced asset lives and ongoing maintenance requirements;
 - 174.2 Hazard control risks become more significant; and
 - 174.3 Consequently, consumers and landowners are likely to become increasingly frustrated with Powerco.
- 175 We also consider that Powerco's efforts to mitigate deliverability risk can have some noticeable industry wide implications on the availability of skilled people and general remuneration practices. The pool of skilled people in New Zealand is limited and Powerco will, as proposed in its CPP application, try to recruit new staff from this labour market. This may result in upward pressure on remuneration levels in the industry and potentially result in some shortages of skilled people in other EDBs.

We seek your views on this potential issue

- 176 At this stage, we do not have a view on whether any action is required to mitigate deliverability risk.
- 177 In addition to getting your views on whether you consider Powerco will be able to deliver the work programme as proposed in its CPP proposal, we would like to understand if you consider other factors may impact delivery of its proposal. We also want to hear from you if you have any specific concerns relating to non-delivery or inferior delivery of the proposed work programme.
- 178 A potential solution may be to monitor Powerco's year-on-year progress against its planned work programme. This would effectively hold Powerco accountable for the delivery of its work programme and shed light on areas where deliverability is at risk.
- 179 If you consider this to be a feasible solution, we are also interested in your views on the level of detail, and frequency, that Powerco would be required to provide. We consider this could be a wide range of options from some high-level reporting against key milestones to a detailed breakdown of their work programme into individual projects.

Attachment A – Our view of verification process

180 This attachment outlines our process for testing the verification of Powerco’s CPP proposal. This supports our proposal to rely on the verifier’s findings in our own assessment of Powerco’s proposal.

Summary of our view

181 In summary, our view is that:

- 181.1 the verification process has been comprehensive, the verification report is high quality, and that many conclusions reached by the verifier can be relied upon by the Commission;
- 181.2 the verification process appeared to work as designed, with the verifier working in parallel with Powerco as it developed and refined its proposal;
- 181.3 the verification process resulted in Powerco modifying some of its policies, procedures and modelling approaches; and led to a significant expenditure forecast reduction between the draft CPP material to final proposal stages.⁴⁰

Testing of the verification report

182 As we set out in the IM review process, it is our intention in every CPP process to rely on work undertaken by the verifier where possible. To ensure this is appropriate, we have extensively reviewed the verification report produced by Farrier Swier to understand their assessment approach and gain confidence in their findings.

183 Our review involved three key steps:

- 183.1 A workshop with Farrier Swier to discuss the contents of the verification report at length held in Wellington over two days in June 2017.
- 183.2 Testing the verification report against the requirements of Schedule G of the EDB IMs which set out the verification process and Terms of Reference.⁴¹
- 183.3 A critical review of the verifier’s assessment techniques and methods used to reach its findings.

Summary of our review of the verifier’s findings

184 The key conclusions made by the verifier about the CPP proposal, and the reasons why the Commission proposes to accept these conclusions, with reference to the Schedule G requirements, are summarised in the table below.

⁴⁰ “In response to our draft verification report and feedback Powerco reduced its capex forecasts by \$51.4 million (a 5.6% reduction) and opex by \$21.3 million (a 4.8% reduction) over the CPP period” Farrier Swier verification report p 12. Available at <http://www.comcom.govt.nz/dmsdocument/15550>

⁴¹ Electricity Distribution Services Input Methodologies Determination 2012, Schedule G, p 232-241 available at <http://www.comcom.govt.nz/dmsdocument/15235>

Summary of verifier's findings against Schedule G requirements

Schedule G requirements	Verifier's approach and conclusions	Key Commission comments
<p>G4 – selection of identified programmes</p>	<p>15 identified programmes were selected which covered a significant amount of the CPP proposal.</p> <p>These 15 programmes were selected from the 15 capex and 9 opex programmes Powerco included in its CPP.</p> <p>A selection process was used that applied the requirements of Schedule G4 (e.g. key risk applicant exposed to such as aging assets, key driver of the proposal, applicants rationale for seeking a proposal)</p> <p>The selection process also included considerations of materiality (project or programme comprising 5% of total spend and a CPP period expenditure step change being greater than \$1m or 30%)</p>	<p>The process that the verifier undertook to select the identified programmes was robust and complied with the relevant IM clauses.</p> <p>We consider that the identified programmes selected by the verifier have permitted a comprehensive verification process to occur.</p> <p>We consider that the verifier's engagement with, and scrutiny of, the identified programmes has led to:</p> <ul style="list-style-type: none"> • an improvement of Powerco's policies, procedures and modelling practices; • a reduction in proposed expenditure in the final proposal; and • a higher quality proposal.
<p>G3 - service measure, levels and quality standards</p>	<p>The verifier's view was that Powerco's unplanned SAIDI and SAIFI targets (which were based on historic performance) are realistically achievable, although Powerco should be able to deliver superior performance to these targets following the proposed CPP investment programme (vegetation management, improved maintenance and asset renewals programmes).</p> <p>The verifier considered that the net effect of the network investment program (and vegetation management) should reduce unplanned SAIDI and SAIFI, but Powerco's modelling of the investment program effect on reliability outcomes was not convincing.</p> <p>The verifier did not opine on the appropriateness of Powerco's proposed 0% weighting for planned SAIDI and SAIFI, as it was of the view that this was an issue better suited for the Commission's consideration.</p>	<p>The verifier has extensively reviewed Powerco's proposal, supporting documentation and models relevant to service levels and service measures.</p> <p>The verifier highlighted issues that are both material and non-material to Powerco's proposed quality standards, and identified issues the Commission may wish to focus its attention.</p> <p>We agree with the verifier that based on material available Powerco may not have adequately made the linkage between the investment program and the unplanned SAIDI/SAIFI outcomes.</p>

<p>G5 – Capex forecast</p> <p>G6 – Opex forecast</p> <p>G10 – Assessment techniques</p>	<p>The Powerco CPP capex forecast has been assessed against the requirements of Schedule G5, Schedule G6, and using a range of assessment techniques prescribed by Schedule G10.</p> <p>At a high level the verifier’s key findings were:</p> <ul style="list-style-type: none"> • Powerco has a comprehensive set of policies and planning documents that are generally of the nature and quality to meet the expenditure objective. • In many expenditure categories Powerco’s forecast expenditure has fully met the expenditure objective such as the following programmes: Secondary systems renewals program, Growth and security major and minor works programmes, ICT capex, Preventative maintenance and inspection, Corrective maintenance and Vegetation management. • However, the verifier identified a number of specific issues with some expenditure programmes, which may mean that they do not meet the expenditure objective and may result in an over-forecast of expenditure. For example: <ul style="list-style-type: none"> • Overhead structure inspection and modelling practices may lead to asset replacement earlier than needed, • The conductor failure modelling approach includes some assumptions that may result in an over-forecast of expenditure; • The network evolution capex program has not identified the benefits of the investment; • Some of the reliability program expenditure may not been justified as the link to reliability outcomes has not been made. • Powerco’s modelling suggests that some transformer replacements are not needed in the CPP period. • The proposed uplift in SONS and corporate opex expenditures have not been fully justified – Powerco’s business cases do not clearly demonstrate the benefits of the proposed FTE uplift. 	<p>We consider that the verifier has carried out a comprehensive assessment of the Powerco CPP expenditure in line with the requirements of Schedule G5, G6 and G10.</p> <p>We have reviewed the assessment and analysis techniques that have been used by the verifier and we consider these to be appropriate, (with one potential exception).⁴²</p> <p>The conclusions reached by the Verifier regarding Powerco’s policies and procedures, and how these are applied in practice, are robust:</p> <ul style="list-style-type: none"> • These conclusions reference industry good practice to both compare and contrast Powerco’s approach to capex forecasting and the modelling that is applied to determine that forecast. • For example the verifier has concluded that the methods Powerco use to test poles and to model some conductor replacement could be improved as they don’t follow accepted industry practice. <p>Overall, we are confident that the verifier’s report and supporting engineering advice following the review of proposed CPP capex and opex forecast can be relied on because:</p> <ul style="list-style-type: none"> • The verification process has followed the Schedule G5 and Schedule G6 requirements in assessing the capex and opex forecasts; and • The verification process has, appropriately applied a range of the assessment techniques set out in Schedule G10, to assess the capex and opex forecast; • The verifier has demonstrable and significant industry experience in carrying out EDB expenditure reviews.
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⁴² With regards to the verifier’s view that Powerco’s unit costs are appropriate we intend to test this with the verifier and Powerco further.

	<p>The verifier concluded that it could not verify up to \$95m (\$2016) of capex expenditure (11% of total), and \$27.3m (\$2016) of opex (6% of total) over the CPP period.</p>	
G7 – Capital contributions	<p>The verifier reviewed Powerco’s capital contribution forecasts (CC’s) by reviewing models and assumptions, correlating ICP growth with demand forecast, comparing CC’s over the period with asset relocation and customer connections capex, and comparing the proposed CC’s with those observed historically.</p> <p>Some modelling issues were noted but it was concluded that these did not materially affect the capital contributions forecast.</p>	<p>We consider that the variety of techniques the verifier has used to review forecast capital contributions are reasonable and suitable for this purpose.</p> <p>We agree with the verifier’s view that while there were some small issues identified, that they do not materially affect the forecast capital contributions.</p>
G8 – Demand forecasts	<p>The demand forecasting does not materially affect Powerco’s capex and opex forecasts over the CPP period, given the nature of the proposal.</p> <p>The verifier considered that the assumptions Powerco used to forecast demand were reasonable.</p> <p>Some modelling issues were noted but it was concluded that these did not materially affect the proposals ability to meet the expenditure objective.</p>	<p>We are satisfied with the analysis carried out by the verifier and the conclusions reached. It appears to be comprehensive and robust and the Commission agrees with the conclusions.</p> <p>We agree with the verifier regarding the materiality of the demand forecasts, and we would be likely to increase our focus on this area for a CPP of a different nature (eg, one that was based primarily on ICP growth)</p>