

Decision on Aurora Energy's proposal for a customised price-quality path

Final decision

Date of publication: 31 March 2021



Associated documents

Publication date	Reference	Title
19 May 2020	N/A	Restoring Otago and Queenstown's power network – Fact sheet
19 May 2020	N/A	Introductory paper about Aurora Energy's upcoming CPP proposal
30 July 2020	ISBN: 978-1-869458-28-7	Discussion of key issues and questions for consumer and stakeholders
30 July 2020	ISBN: 978-1-869458-24-9	Regulatory framework and how we will assess the proposal
30 July 2020	N/A	Consumer summary key issues paper
30 July 2020	N/A	Fact sheet on Aurora's CPP proposal
30 July 2020	N/A	Fact sheet on the Commission's assessment process
30 July 2020	N/A	Consumer feedback form on key issues paper
30 July 2020	N/A	Aurora's proposed IM variations for its CPP
12 November 2020		Consumer summary of our proposed decisions
12 November 2020		Key decisions infographic
12 November 2020		Fact sheet on what we heard
12 November 2020	ISBN: 978-1-869458-47-8	[Draft] Aurora Energy Limited Electricity Distribution Customised Price-Quality Path Determination (with IM variations) 2021
12 November 2020		Questions for the Commission to Aurora
12 November 2020	ISBN: 978-1-869458-51-5	Quality Standard Variation (QSV) to Aurora's default price-quality path – Draft decision
22 December 2020	ISBN: 978-1-869458-65-2	Quality Standard Variation (QSV) to Aurora's default price-quality path – Final decision
22 December 2020	ISSN: 1178-2560 [2020] NZCC 28	Electricity Distribution Services Default Price-Quality Path (Aurora quality standard variation) Amendments Determination 2020
31 March 2021	ISSN: 1178-2560 [2021] NZCC 3	Aurora Energy Limited Distribution Customised Price-Quality Path Determination 2021
31 March 2021	ISBN 978-1-869458-75-1 [2021] NZCC XX	[DRAFT] Electricity Distribution Information Disclosure Amendments Determination 2021
31 March 2021	ISBN:	Aurora Energy Limited Proposed Additional Information Disclosure Requirements – Draft reasons

Commerce Commission
Wellington, New Zealand

Foreword

We were aware from the outset that evaluating Aurora Energy's proposal to spend more money on its network would involve unique challenges that have not been present during past considerations of previous customised price-quality path (CPP) proposals.

Aurora's historic underinvestment in maintenance and asset renewals has resulted in the safety and reliability of its network deteriorating. The level of expenditure needed to replace failing infrastructure and bring the network up to standard is significant and will come with a substantial cost to consumers.

Given these issues, it was vital that we put consumers at the centre of the Commerce Commission's consultation in relation to our decision-making process. While the set of criteria we used to assess Aurora's proposal did not change, we undertook extensive public consultation and concerns we heard have been kept front of mind during our deliberations and have been responded to in this decision.

The Commission would like to take this opportunity to acknowledge and thank Aurora for its efforts in preparing this CPP proposal and engaging with the Commission throughout our deliberations. We would also like to thank those who have participated in this process, including community organisations, local government, and businesses within the electricity sector.

We particularly want to thank Aurora's consumers for engaging with us over the past eight months. We have seen higher individual consumer engagement on this energy regulatory process than any other we have overseen. This reflects the importance of Aurora's services to local communities and the depth of feeling and concern they hold.

At a time when COVID-19 has severely impacted the local economy, we know an increase in energy bills will come at a difficult time for Otago communities. We also understand that they want a safe and reliable electricity supply, but we recognise they remain deeply concerned about whether they can afford to pay for it.

What also became clear during our discussions was the lack of trust and confidence consumers have in Aurora's ability and commitment to deliver on this plan, with this sentiment stemming from Aurora's historic performance.

Individuals and businesses, particularly those in Central Otago and Queenstown Lakes, also told us of their concerns about regional differences in levels of service quality, pricing, and investment and responsibility for the under investment which has led to the current position.

We recognise the depth of feeling held by consumers about Aurora's past performance. However, this CPP process cannot adjudicate on historical failings, decide who can and cannot own Aurora's assets, or direct its management on how to run its business. Our responsibility has been to assess Aurora's proposal for a customised price-quality path, and to ensure its accountability within the legal framework set out in Part 4 of the Commerce Act and the regulatory rules which currently apply to all electricity distribution businesses.

Ultimately, we are required to assess whether Aurora's investment plan is well-justified and if its spending will be efficient. We are required to look forward and primarily focus on the long-term benefits to consumers from a safe and reliable network, rather than the affordability of electricity prices and the wider economic context.

We have been conscious of the financial impact of this plan on consumers as much as possible within the constraints of our regime. We have not approved expenditure without being satisfied it is prudent and efficient for Aurora to make the required infrastructure improvements. We also expect Aurora to make substantial operational cost savings over the length of the CPP period.

We have also decided to cap Aurora's revenue increases over the five-year CPP period. Combined, these decisions will reduce the short-term price impact on consumers compared to Aurora's proposal. Some of the price increases will be pushed into the future as Aurora works towards the long-term benefit of a safe and reliable network.

As part of our consultation process, the Commission received a number of submissions on aspects of the draft decision from Aurora, its consumers, and other stakeholders. These have been considered, and where appropriate, changes have been made that result in a more informed and robust final decision.

Alongside our final CPP decision, we are also seeking feedback on additional reporting measures that are aimed at improving the transparency of Aurora's performance and making it more accountable to different communities across its network.

It has taken many years for the issues on Aurora's network to materialise, and it will take some years to fix them. Together, our CPP decision and proposed reporting requirements present a package of measures that we consider will help improve Aurora's performance over time. With these decisions made, the onus is now on Aurora to engage with its stakeholders, rebuild trust, and deliver on its plan.

Kind regards

Sue Begg

Deputy Chair

John Crawford

Associate Commissioner

Derek Johnston

Commissioner

Elisabeth Welson

Commissioner

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Executive summary

- X1 On 12 June 2020, Aurora Energy Limited (Aurora) applied for a customised price-quality path (CPP) to increase its regulated revenues in order to repair and upgrade its electricity lines network and recover the cost of its spending from its consumers.
- X2 This paper details the decision we have made in relation to Aurora's CPP proposal. Alongside this decision we have released the details of the additional information disclosure requirements we are proposing to improve Aurora's accountability to consumers across its network.
- X3 Aurora is subject to price-quality regulation under Part 4 of the Commerce Act. This means that we determine the maximum revenue it can recover from its consumers and the minimum quality standards – measured in terms of the number and duration of outages on its network – it must meet. How the network is managed within these parameters is a matter for Aurora's Board and management.
- X4 Until now, Aurora has been on a default price-quality path (DPP). The DPP applies to every non-exempt electricity lines company that is not on a CPP. It is set every five years using a standard regulatory assessment, based on the previous performance and spending forecasts of the regulated businesses.
- X5 As a result of historic underinvestment, the safety and reliability of Aurora's network has deteriorated significantly in recent years. This resulted in Aurora breaching the quality standards we had set it in the DPP between 2016-2019. We brought proceedings against it in the High Court and it was fined \$5 million.
- X6 Having recognised the deteriorating condition of its network, in 2017 Aurora began increasing its investment and maintenance spend to urgently address safety risks. It filed a proposal for a CPP in June 2020 as it believes its current DPP will not permit recovery of the spending required to continue this work and operate a safe network at current levels of reliability. By applying for a CPP, Aurora is seeking a bespoke price-path based on a close assessment of the current state of its network and proposed investment plan.
- X7 Aurora proposed to spend \$383.3 million over three years, or \$609.3 million over five years, to replace ageing infrastructure and run its network. This is around \$119.6 million or \$177.0 million more respectively than what it would be permitted to recover under the current DPP, which began on 1 April 2020.

- X8 We acknowledge what we have been told about the importance of Aurora's performance to local communities and the depth of concern they hold about its current position. Aurora has nevertheless largely made the case for urgent and ongoing investment in its network set out in its proposed CPP to be included in the revenues it recovers from consumers. Without this CPP, its network would continue to deteriorate, safety incidents would increase, and consumers would experience more frequent and longer outages.
- X9 Aurora preferred a three-year CPP period, but we consider a five-year period offers greater long-term benefits for its consumers. We have assessed Aurora's plan and our decision would lower its proposed spending from \$609.3 million to \$563.4 million – a reduction of \$45.9 million (7.5%). This would be made up of:
- X9.1 \$327.4 million of the \$356.3 million proposed for capital expenditure;
- X9.2 \$236.0 million of the \$252.9 million proposed for operating expenditure.
- X10 Our decision on Aurora's capital spending reflects our view that it has largely made the case for the increased investment. Most of the proposed capital spending has been approved, with the difference between our decision and Aurora's proposal mostly attributable to the timing of when this work is required.
- X11 We consider Aurora has overestimated the amount of money it needs to run its network. We have not approved \$16.9 million of operating expenses that in our view are not prudent and efficient.
- X12 Overall, we have approved more expenditure than what was proposed in our draft decision. This is largely as a result of further analysis of evidence provided by Aurora that made the case that the spending was justified.
- X13 The CPP sets the maximum revenues that Aurora can recover from its consumers as a whole. We do not control how Aurora prices within the revenue cap we have set. How Aurora sets its prices is subject to the pricing principles established by the Electricity Authority. However, if it were to recoup less revenue than it is allowed in any given year, it can recover the remainder (along with interest) at some future date.
- X14 Aurora is not bound by the spending allowances that we have set. It can spend more or less and move expenditure between categories to best manage its operations and deal with changes in conditions. However, Aurora must absorb a portion of the cost of any expenditure above the limit we set, meaning it cannot be fully recovered from consumers.

- X15 To help mitigate the impact of increased bills on consumers we have decided to cap Aurora's total line charge revenue over the five-year CPP period. Annual increases will be limited to approximately 10% per year plus or minus any changes from the Consumer Price Index (CPI) forecasts we have used. There is provision also for increases in forecast Transpower transmission charges to be passed through to consumers.
- X16 Our draft decision also included an alternative scenario to cap revenue increases at 5% in the first year with a 10% increase in subsequent years. We have concluded that this scenario is likely to result in deferral of revenue recovery beyond the next regulatory period and would expose consumers to considerable interest costs arising from the deferral. We therefore decided not to proceed with this scenario.
- X17 Our decision substantially reduces the amount able to be recovered through increased lines charges compared to Aurora's proposal. However, the total increased expenditure we have allowed, including some already undertaken, will still result in substantial price increases.
- X18 We are also deferring more revenue recovery to the future than envisaged by Aurora's proposals or our draft decision. That will result in a higher revenue requirement and higher price increases than otherwise would be the case in the next regulatory period.
- X19 Aurora has recently announced that monthly line charges will increase by between \$4 to \$10 for the standard household consumer¹ for the year beginning 1 April 2021. Our analysis suggests that these increases would rise to around \$32 to \$51 by 2026, depending on consumers usage and location. Aurora's announced price increases are consistent with the revenue we have allowed for year one of the CPP period.
- X20 Given the state of Aurora's network, we accept that it is necessary to adjust its quality standards to better reflect its likely performance. In practice, we consider Aurora should be capable of meeting targets on the number and duration of network outages that are higher (ie, worse) than historical levels up until 2015, but similar to what it has actually been achieving over the past four years. Overall, this should see reliability stabilise at current levels before gradually improving over time.
- X21 We also want to improve Aurora's accountability for work across its network. Alongside our CPP decision we have released our draft decision on proposed additional reporting measures, aimed at improving the transparency of Aurora's performance and making it more accountable to different communities across its network.

¹ Aurora's announcement of the line charge increase defines standard residential household as one using 9,000 kilowatt hours per year

- X22 These proposed measures include requiring Aurora to publish an Annual Delivery Report which describes the work it is delivering for consumers during the CPP period. It is proposed Aurora be required to present a summary of this report to consumers at public meetings in each of its three regions. We are also proposing that Aurora reports more clearly on service quality issues, such as voltage quality monitoring practices, and how it sets its regional prices.
- X23 We are proposing that Aurora will also be required to procure a report mid-way through the CPP from an independent expert (or experts) that provide an opinion on aspects of Aurora's performance to ensure that the Commission, and other interested persons across its network, can effectively conduct their own assessments of Aurora's performance.
- X24 Taken together, our package of measures is focused on the long-term benefit to Aurora's consumers. It will take some time, and cost, to put Aurora back on the right track, but consumers will eventually be better off having Aurora efficiently and prudently invest in the security and reliability of their electricity supply.

Our decision package

- X25 The core aspects of Aurora's proposal that we consulted on, and which we provide further detail on here, include:

Under the CPP

- X25.1 the length of the CPP period
- X25.2 service quality and reliability
- X25.3 capital expenditure
- X25.4 operating expenditure
- X25.5 allowable revenue (and price implications for consumers)

As part of the wider package

- X25.6 accountability and delivery
- X26 Having reviewed Aurora's proposal, and assessed it against the framework and evaluation criteria set out in the rules and legislation that apply to us (which includes considering stakeholder views), we accept that the majority of Aurora's proposed investment is prudent and necessary to fix its network.
- X27 As a result of submissions made, further evidence provided by Aurora, and additional analysis we have undertaken, we have increased Aurora's allowances by \$40.3 million from the draft decision (which was \$86.2 million lower than Aurora's original proposal).

X28 While our decision reduces the amount of expenditure Aurora can recover over the next five years, compared to what it proposed, it will still result in substantial price rises for its consumers.

Five-year CPP

X29 Although Aurora requested a three-year CPP period, our analysis of its proposed service quality and expenditure led us to consider that the default five-year period would better promote long term benefits to consumers.

X30 While there may be more uncertainty over Aurora's forecasts in years four and five, we don't consider this requires preferring a three-year CPP. We have put contingency mechanisms in place that manage the risk of setting the revenue too low by providing some flexibility to deal with changes in circumstances which require additional investment.

X31 In our view, a five-year period best meets the purpose of Part 4 of the Act and provides greater certainty to both Aurora and its consumers to plan for the impacts of this investment.

Service quality and reliability

X32 Power outages and voltage issues are a source of loss for consumers, particularly businesses. Aurora's consumers told us that the quality and reliability of their supply were of significant concern to them. They did not necessarily want to pay more for improved reliability, but they also did not accept it should be allowed to deteriorate further.

X33 Aurora requested we relax the quality standards it is currently subject to under its DPP to better reflect the actual state of its network. In its proposal, it forecast longer and more frequent unplanned outages compared to the 2016-2020 period. It also expected planned outages to increase so that it can undertake network replacement.

X34 While Aurora asked us to amend its unplanned outage targets to more achievable levels, it has not sought a more lenient planned outage standard. This is partly because it expects it can significantly improve how it notifies its consumers of planned outages so that it stays within its current standard.

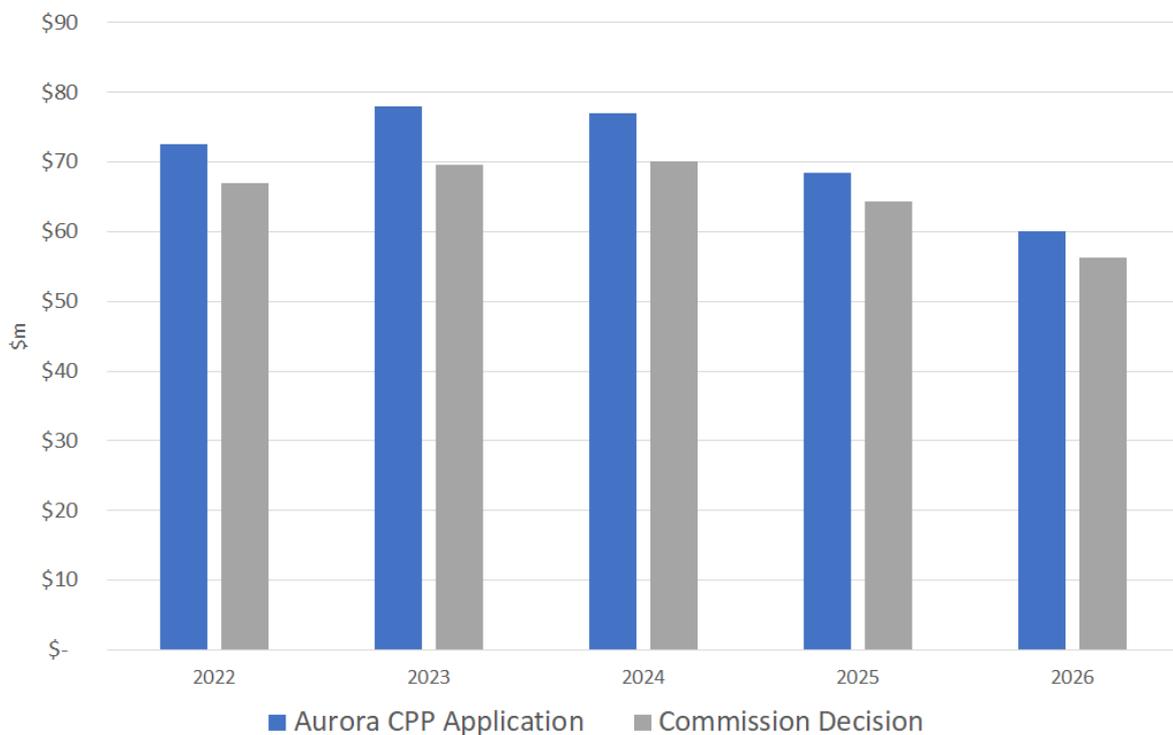
X35 We have set unplanned outage targets at levels that broadly reflect Aurora's performance over the past four years. These levels are stricter than what Aurora originally proposed but more lenient than currently prevails. Aurora will face the financial penalties if it breaches the standards we set it, and rewards if it outperforms them.

- X36 We have accepted its proposal to maintain the standards that it currently faces for planned outages. We are satisfied it reflects the scale of work required to be undertaken on the network, while also incentivising Aurora to improve its notification of outages and minimise cancellations at short notice.
- X37 Overall, our decision means that Aurora’s consumers can expect the reliability and quality of their electricity supply to stabilise at today’s levels, before gradually improving over time.

Capital expenditure

- X38 Capital expenditure is recovered over the life of an asset, which in an electricity lines network typically ranges from 25 to 70 years. Only a proportion of Aurora’s capital expenditure will be recoverable during this CPP period, with the full impact becoming clearer when we set its next price path as it is dependent on the timing of investments.
- X39 Aurora forecast it would spend \$356.3 million to replace ageing assets and invest in the growth of its network over the coming five years. Its consumers and stakeholders generally accepted that some investment was necessary.
- X40 Our final decision is to reduce this forecast expenditure by about \$28.9 million (8.1%). This would allow \$327.4 million of capital expenditure.

Figure X1 Forecast capital expenditure



X41 Table X4 below provides a breakdown of the capital expenditure proposed by Aurora compared to our final decision by category.

Table X1 Capital expenditure breakdown

Expenditure category	Aurora proposal \$m	Final decision \$m ²
Asset renewals	281.8	262.9
Network growth and security	30.3	23.8
Other network capex	29.1	25.7
Non-network capex	15.2	15.0
TOTAL	356.3	327.4

X42 Overall, we consider Aurora has largely justified its capital spending proposal. The major reductions we have identified largely relate to the need for Aurora to support a change in investment strategy with business cases, reductions proposed by the Verifier that we agree with, reductions to address forecast modelling issues, and a five percent top-down efficiency adjustment being applied consistently across the expenditure programme.

X43 We have decided to allow more capital spending than was proposed by our draft decision based on additional information we received in Aurora's submission. In particular, we have allowed additional capital expenditure for sub-transmission cables in light of additional information on failure rates from Aurora, and additional capital investment to meet increased electricity demand in Arrowtown.

X44 We have included two reconsideration mechanisms that would allow Aurora flexibility to apply for additional expenditure during the CPP period. Aurora may apply to us to include approval of expenditure for:

X44.1 additional work that is dependent on growth on Aurora's network; and

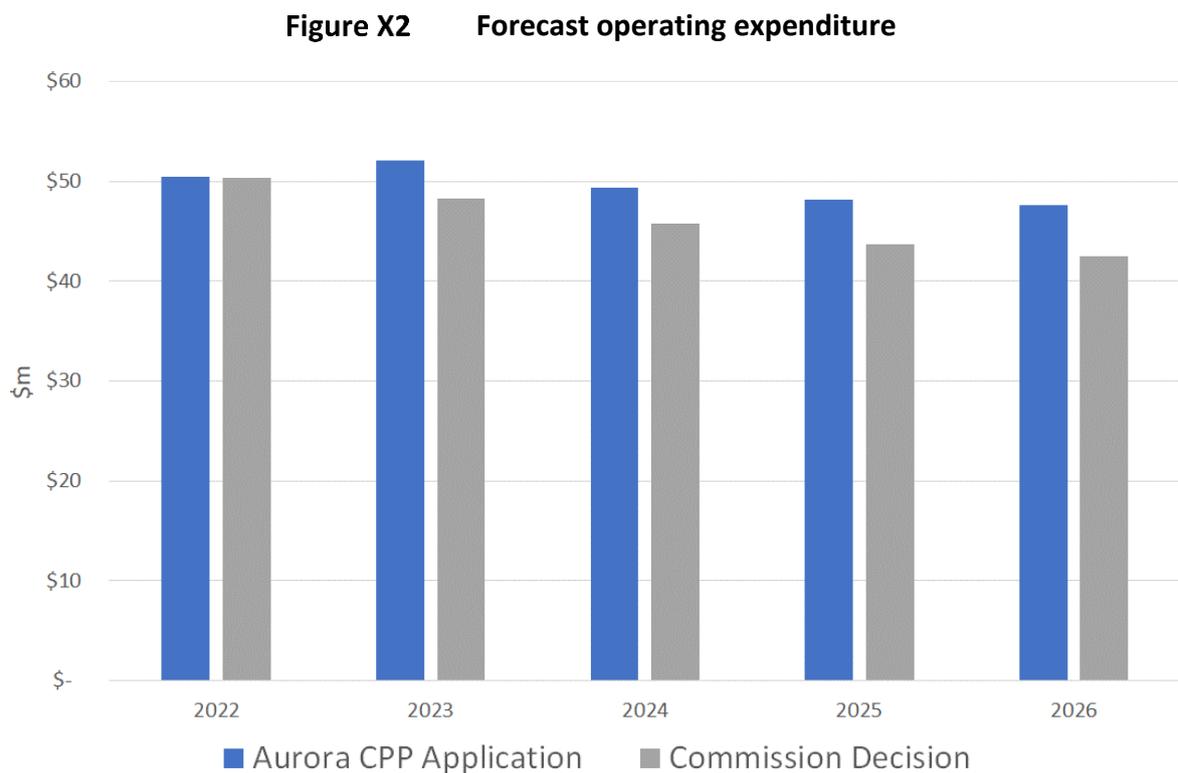
X44.2 additional work that may be required due to risks relating to the condition of the network.

X45 We consider these are appropriate safeguards to ensure Aurora has the ability to implement the investment programme should the need for specific work become apparent.

² Excludes capital contributions and any capex associated with Right of Use assets.

Operating expenditure

- X46 Aurora forecast it would need \$252.9 million of operating expenditure, which would all be recovered from its consumers over the five-year CPP period. It considered this funding would, among other things, primarily enable it to move from a reactive to a proactive maintenance approach and improve its internal capabilities to implement its investment plan.
- X47 During consultation, stakeholders and consumers highlighted, among other things, staff and executive salaries, vegetation management practices and general capability concerns that they felt could affect Aurora's operating costs.
- X48 The Verifier reviewed 91% of Aurora's operating expenditure programme and highlighted some key areas it considered we should investigate further.
- X49 Our final decision is to allow Aurora to spend \$236.0 million of the \$252.9 million – a reduction of \$16.9 million or 6.7%.
- X50 The final annual operating expenditure allowance compared to what Aurora proposed is shown below.



- X51 The breakdown of this spending is summarised as:

Table X2 Operating expenditure breakdown

Expenditure category	Aurora proposal \$m	Final decision \$m ³
Preventive, Corrective & Reactive Maintenance	70.3	69.7
Vegetation Management	21.2	21.2
System Operations and Network Support (SONS) and People costs	120.7	104.4
IT Opex	17.0	17.0
Premises, Plant and Insurance	5.1	5.1
Governance and Administration	15.6	15.6
DER Upper Clutha	3.0	3.0
TOTAL	252.9	236.0

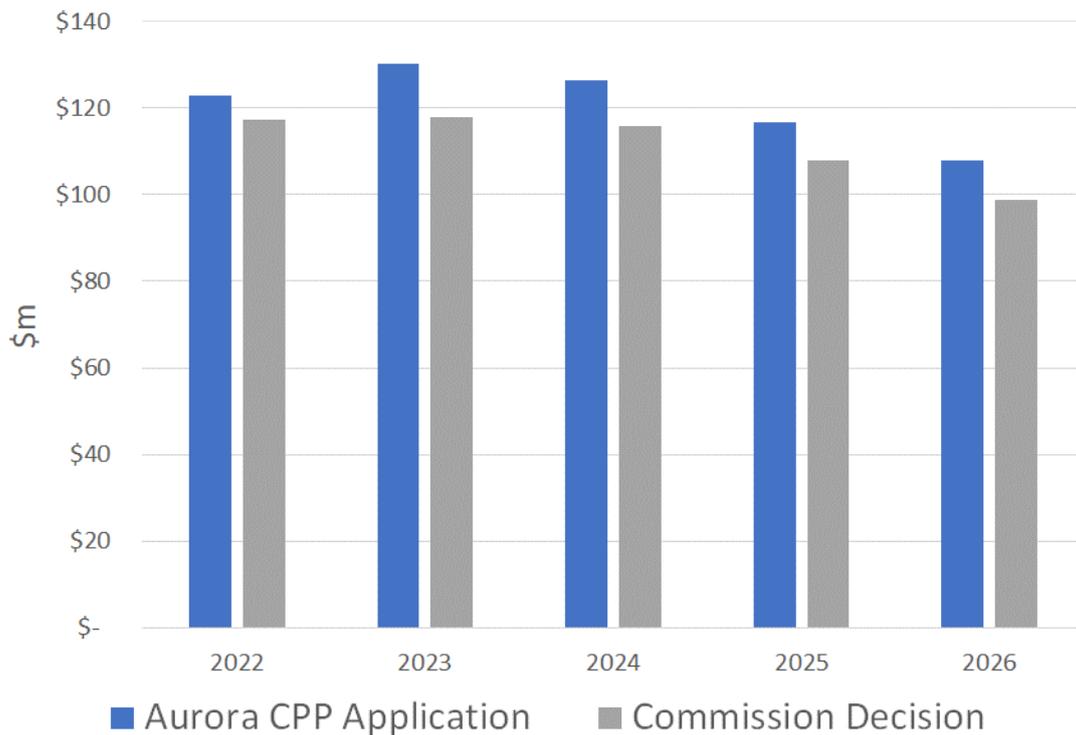
- X52 Our decision to not approve aspects of the proposed operating expenditure reflects the fact that we do not consider all of Aurora’s forecast spending was efficient.
- X53 We further consider that Aurora should become more efficient over time, which would lead to general cost savings across the CPP period.
- X54 The operating expenditure allowance is greater than that proposed by our draft decision. We increased the allowance for vegetation management to the level proposed by Aurora after it provided us with confidential information on unit rates for vegetation management charged by its contractor. Submissions on the draft decision in relation to aspects of Aurora’s non-network operating expenditure led us to undertake further analysis on those costs, and on systems operations and network support (SONS) and people costs in particular.
- X55 As a result, we have increased the allowance for SONS and people costs as we now accept that Aurora’s forecast SONS and people costs for RY22 is justified in the first year of the CPP, given Aurora’s need to invest and build capability. We assess that these costs should fall over the next decade as Aurora’s costs reduce to a more steady state level which is in line with expenditure levels of comparable EDBs.

³ Excludes operating lease costs.

- X56 A number of stakeholders raised concerns on some aspects of our draft decision. In particular, suppliers focused on our approach to SONS and people costs where our draft decision had departed from the views of the Verifier, and was informed, in part, by comparative benchmarking. Our evaluation starts with the Verifier's report, but where the expenditure has materially increased – for SONS and people costs it had tripled – and the Verifier raised various matters for us to consider further, then we need to investigate it more. Aurora's expenditure proposal for SONS and people costs did not include detailed business case, or clear evidence of effective challenge (such as independent reviews) so we also looked at comparative benchmarking. Our final decision on SONS and people costs does not rely on the comparative benchmarking analysis, though we have had regard to that when assessing Aurora's proposal.
- X57 Submitters raised a number of queries about our rules and regulatory processes, and how they are applied. We are open to feedback on how the CPP regime could be improved and the rules and processes that govern price-quality paths. There is an opportunity to do so as part of the upcoming review of Input Methodologies which will begin later in 2021.

Allowable revenue and price impact for consumers

- X58 In total, Aurora proposed to spend \$609.3 million of opex and capex to fix and operate its network over the next five years, which would be recovered through an increase in its allowable revenue.
- X59 Our decision has reduced Aurora's expenditure to \$563.4 million over the five-year period. The difference for each year of the CPP period is shown below:

Figure X3 Aurora's total proposed expenditure

X60 The total line charge revenue that Aurora recovers from its consumers includes three main components:

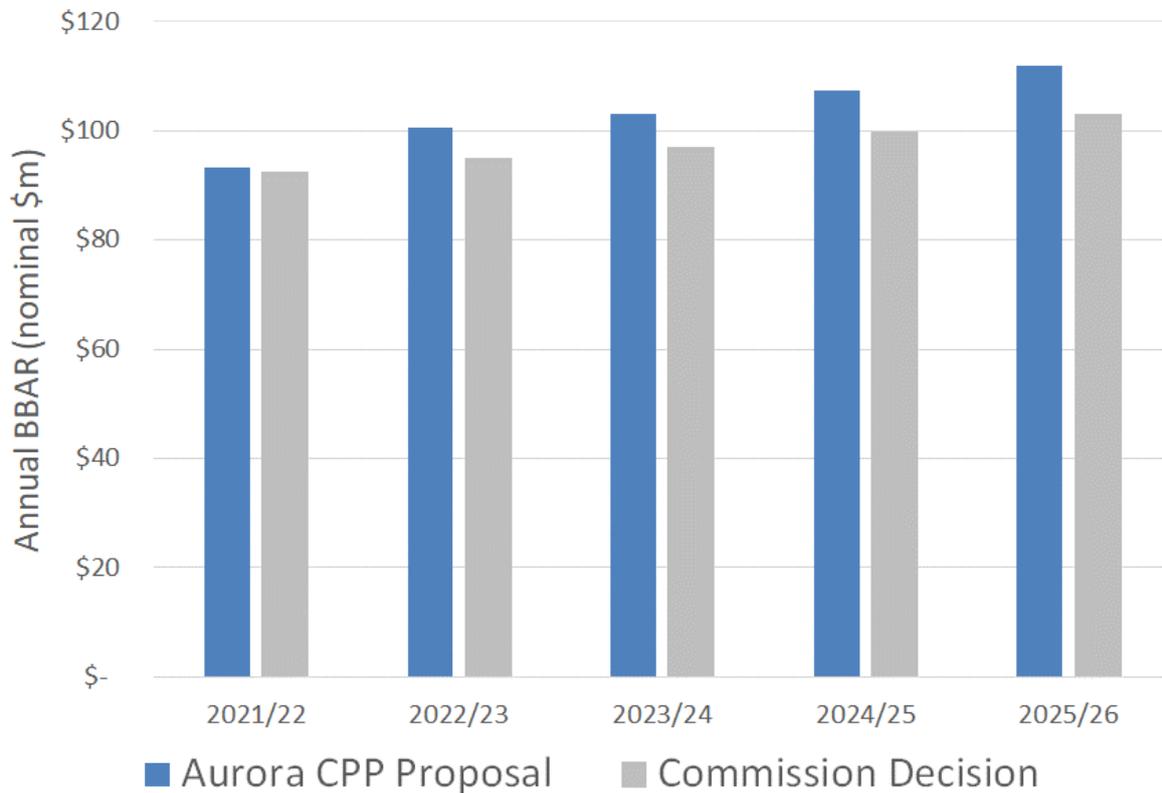
X60.1 revenue to cover opex and capex associated with its distribution network;

X60.2 revenue changes relating to regulatory incentive schemes; and

X60.3 revenue to recover the costs outside Aurora's control, including transmission charges passed on by Transpower.

X61 A large portion of Aurora's revenues that we regulate is called the building blocks allowable revenue. This includes various individual costs such as operating expenses, depreciation, tax and allowable return on capital invested in the business. The figure below illustrates how our decision to reduce Aurora's proposed operating and capital expenditure has reduced the costs it can recover associated with its distribution network.

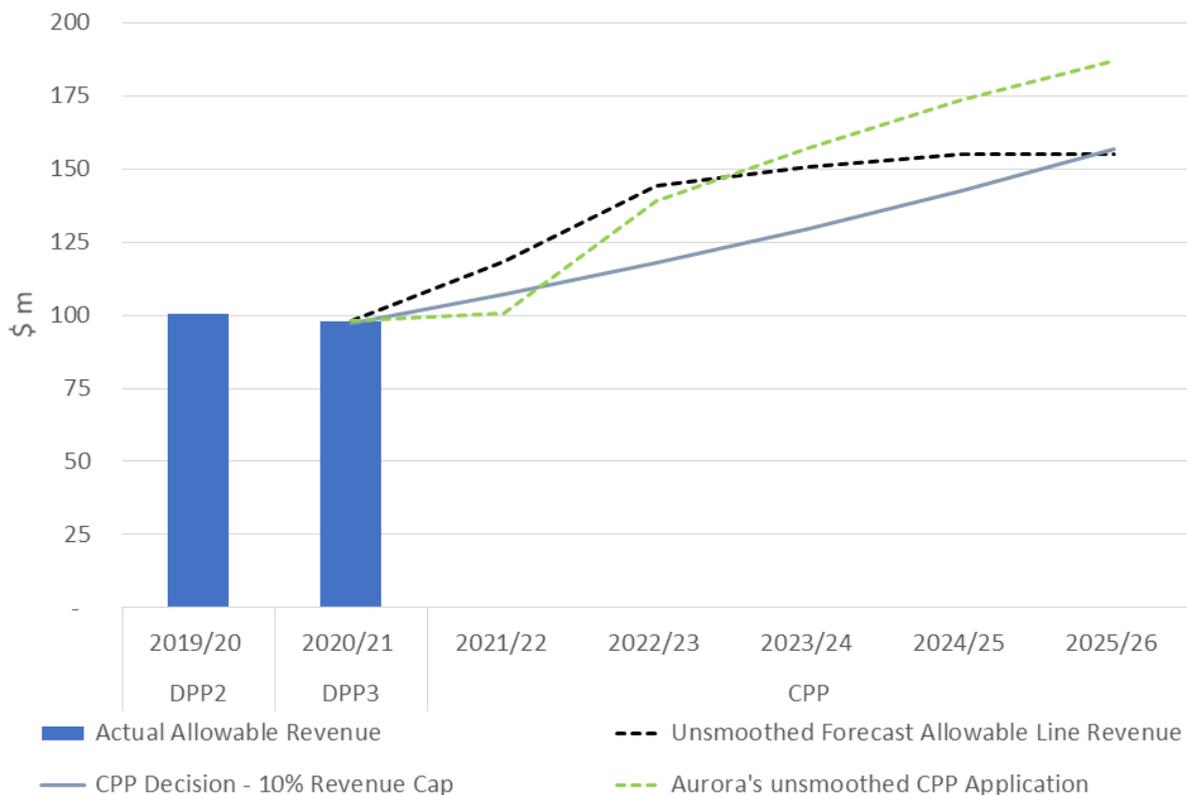
Figure X4 Aurora CPP Building Blocks Allowable Revenue: Application vs Commission Decision



- X62 An electricity lines company is incentivised to efficiently outperform the expenditure allowances that we set. When the company spends more than is set out in its DPP allowance as Aurora has, the price-quality regulatory regime requires it to absorb some of that extra spend itself. However, to avoid disincentivising the delay of critical work, under the CPP it is entitled to recover the greater part of this additional expenditure from its consumers in future years.
- X63 Over the past five years Aurora has spent an estimated \$174 million more than its approved expenditure allowance under the DPP to fix the priority issues it has identified on its network. It did so ahead of our decision on the CPP as it had identified work that needed to be actioned immediately.
- X64 Our Input Methodologies allow Aurora to recover approximately \$136 million of this estimated \$174 million overspend.
- X65 As part of our consultation process, we sought feedback from Aurora’s consumers on options for managing the impact of increased lines charges on their electricity bills. Consumer views were balanced on how to manage the impact, with a slight preference for price rises to be spread over a longer period to reduce the immediate bill shock.

- X66 We have decided to cap Aurora’s line charge revenue over the five-year CPP period to minimise price shocks in consumers’ bills. Annual increases in Aurora’s forecast revenue from prices will be limited to approximately 10% per year plus or minus any changes in the inflation forecasts that were used to set the CPP.
- X67 We have also introduced a mechanism to allow Aurora to pass greater than forecast increases in Transpower’s forecast transmission charges through to consumers. This is similar to the approach we adopt for other EDBs under the DPP but the annual adjustment could lead to an annual price increase which is greater than 10%.
- X68 The following figure describes Aurora’s allowable revenues, including the effect of capping Aurora’s line charge revenue. Aurora’s proposed allowable revenue is shown in green. The black dashed line shows the impact of our reductions to Aurora’s proposed expenditure. Our 10% revenue cap further reduces Aurora’s revenues in the CPP period, as shown in blue.

Figure X5 Forecast allowable lines revenue



- X69 The effect of the revenue cap is deferring the recovery of some of Aurora’s revenues into the next regulatory period when they will be recovered together with interest. We have forecast that recovery of \$69 million (plus interest) will be pushed to the next five-year regulatory period.

Price impact on consumers

- X70 Aurora's recovery of this additional revenue to fund this investment plan will impact on the prices charged to consumers. We modelled the likely price impact on consumers arising from Aurora's CPP and our revenue cap over the next five years. We also had independent experts (Castalia) review our methodology for accuracy.
- X71 Aurora's original estimates of the price increases did not include GST or account for inflation, and so understate the potential impact on consumers. We have adjusted Aurora's 2023-2024 prices estimates in its proposal to include those additional factors and have provided estimates on how our decision reduces these estimated price impacts, as shown in the table below.

Table X3 Estimated total monthly bill price increase (\$) as at 2023-2024

	Dunedin	Central Otago and Wanaka	Queenstown
Aurora CPP proposal (excludes GST and inflation)	20.30	30.90	24.10
Aurora CPP proposal adjusted (includes GST and inflation)	32.70	47.30	39.80
Final Decision (includes GST and inflation)	22.20	31.50	22.70
Difference	-10.50	-15.80	-17.10

- X72 By using the third year as a snapshot, this table highlights how our decision substantially lowers the potential bill increase faced by consumers compared to Aurora's proposal.
- X73 Since making its proposal, Aurora has made some changes to the pricing methodology that determines how costs are allocated across the three network regions. Aurora has indicated it intends to consult on potentially more substantial changes to the way it allocates costs across the regions on its network later in the CPP period. We support any moves by Aurora to make its pricing more cost reflective. Aurora has already announced the line charges increases that come into effect from 1 April 2021. It has estimated that the monthly price increase on the standard residential household will be \$4.94 in Dunedin, \$9.19 in Central Otago, and \$6.20 in Queenstown Lakes. These prices reflect the initial changes in Aurora's regional pricing methodology.

- X74 Below we provide some estimates of future line charges or increases in future line charges. These do not take into account Aurora’s most recent or potential further changes to Aurora’s regional pricing methodology.

Using currently available information, we estimate the increase in monthly lines charges for medium residential electricity users in Regulatory Year 2026 to be \$32.40 in Dunedin, \$51.30 in Central Otago, and \$33.00 in Queenstown Lakes. The progression of line charge increases over the course of the five-year CPP period is outlined in Figure X9 below.⁴

Figure X6 Estimate of increase in residential monthly lines component relative to RY21 – Medium Consumer Profile⁵

	2021/22	2022/23	2023/24	2024/25	2025/26
Dunedin	\$ 4.70	\$ 11.60	\$ 18.10	\$ 24.90	\$ 32.40
Central Otago	\$ 9.40	\$ 17.50	\$ 27.50	\$ 39.10	\$ 51.30
Queenstown	\$ 7.10	\$ 10.80	\$ 17.40	\$ 24.80	\$ 33.00

- X75 It is important to note that it is difficult for the Commission to provide accurate long-term estimates of the particular price increases for specific consumers or groups of consumers that result from Aurora’s CPP. There are a number of factors that impact future prices (including any changes Aurora makes to its regional pricing method) which make it inappropriate to rely solely on the above figures. Ultimately, Aurora is responsible for, and in the best position to provide estimates of the price impact of its investment plan to its consumers.
- X76 The following graphs show the estimated average prices in dollar terms for low, medium and high residential electricity users for each of Dunedin, Central Otago and Wanaka, and Queenstown Lakes for the five years of the CPP when compared to Regulatory Year 2021. These are estimates of the lines (distribution and transmission) charges alone.

⁴ Aurora’s definition of a standard residential household is one which uses 9,000 kilowatt hours per year. The Commissions price estimates are based on the median usage of a residential consumer in each of Aurora’s regions and are broadly comparable.

⁵ The numbers presented in this figure for 2023/24 differ from the numbers presented in Table X3 above because the numbers in table X3 refer to the total monthly bill price increase.

Figure X7 Estimated Dunedin Residential Annual Lines Charges

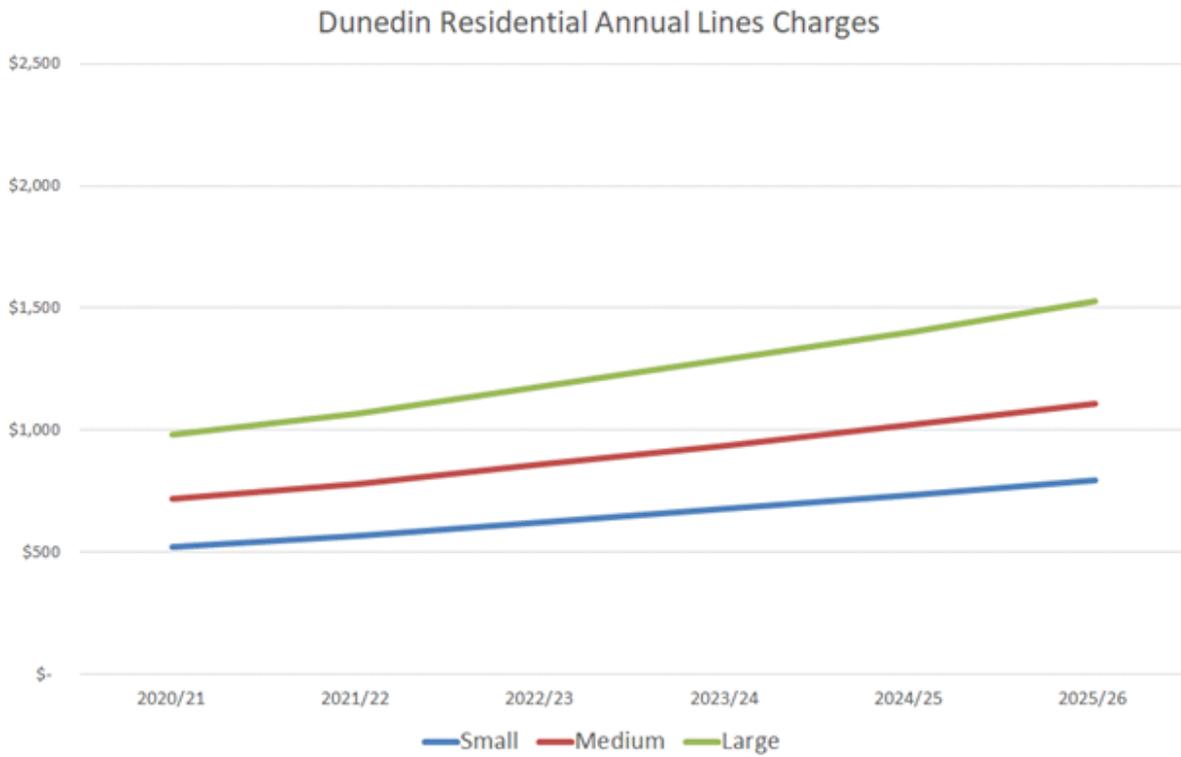


Figure X8 Estimated Central Otago Residential Annual Lines Charges

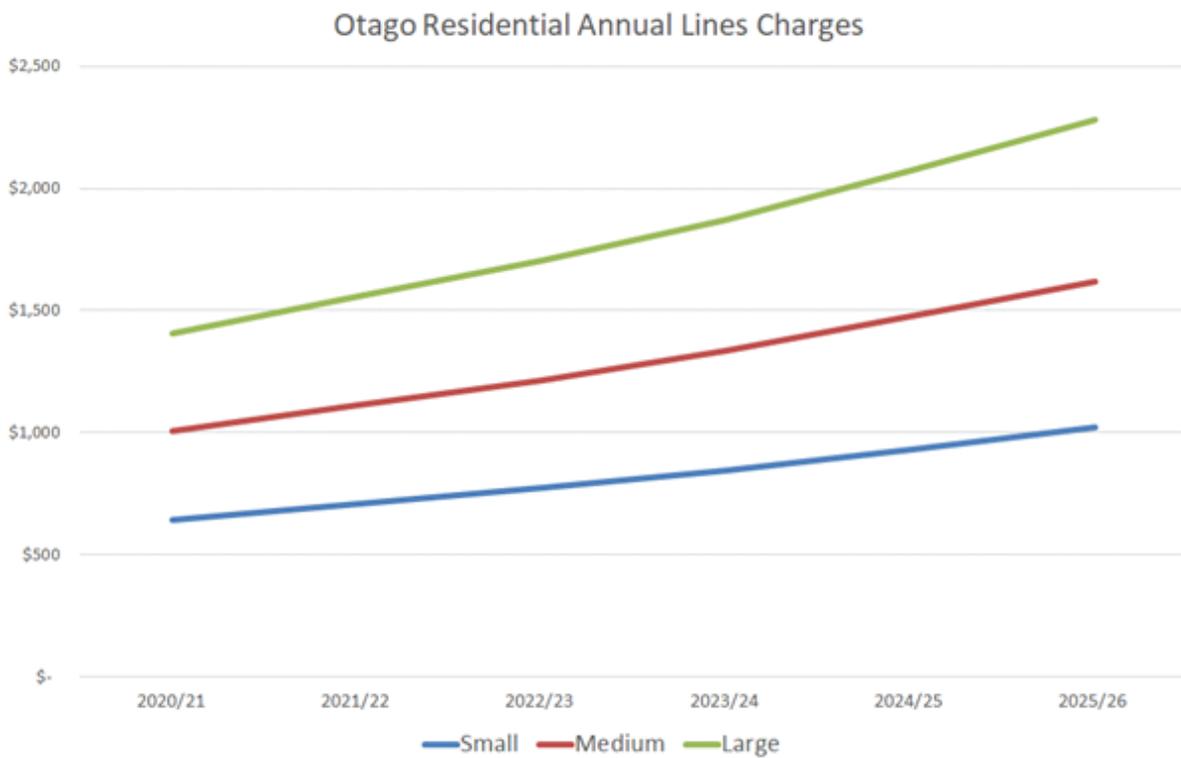
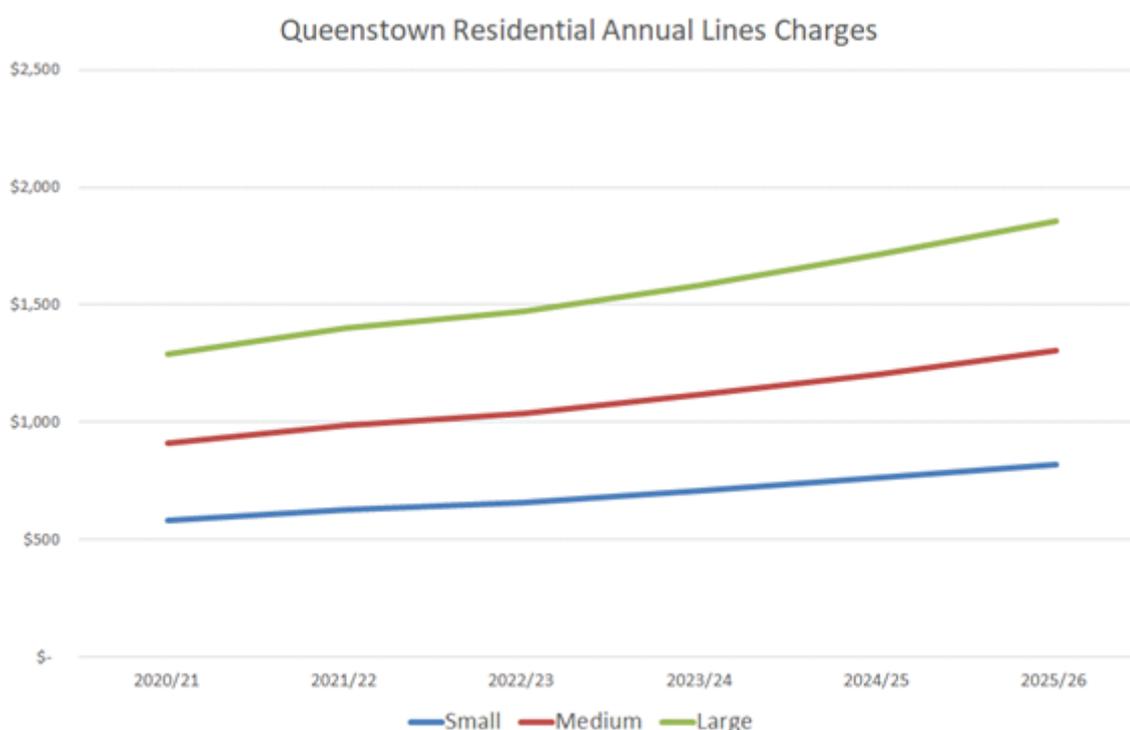


Figure X9 Queenstown Residential Annual Lines Charges

Accountability and delivery

- X77 A recurring theme from our engagement with Aurora’s consumers, and feedback received during public meetings, was the lack of trust and confidence they had in Aurora’s ability and commitment to deliver what it says it will. Aurora itself has acknowledged it has work to do to restore faith in its business and improve how it communicates with its communities.
- X78 With a work programme of this scale, a key risk is that priority maintenance and asset replacement is not undertaken quickly enough, which could affect the quality of supply for consumers. Aurora has already taken steps to mitigate this risk and improve its ability to deliver, which are detailed in its CPP proposal and backed-up by the Verifier’s report.
- X79 Our focus has turned to how we can ensure Aurora reports on how it is delivering against its plan and improving performance in the longer term.
- X80 The CPP does provide for accountability at some level. However, to ensure the Commission, consumers and other interested parties have the information needed to assess its progress and performance over time, we have proposed a series of additional information disclosure measures to improve Aurora’s accountability. We have released our draft decision on these alongside the CPP decision.

- X81 The objective of these measures is to allow interested persons to assess the extent to which:
- X81.1 Aurora completes the necessary work on its network and applies for approval of expenditure for additional work if this is required;
 - X81.2 Aurora's spend on the required work is right-sized, it is incentivised to complete its work efficiently and it continues to work on cost efficiencies;
 - X81.3 Aurora delivers on the planned work it has committed to;
 - X81.4 Aurora improves transparency and responsiveness towards consumers; and
 - X81.5 Aurora enables its consumers to better understand the impact of its CPP on prices across its regions.
- X82 The proposed measures would require Aurora to:
- X82.1 Produce an Annual Delivery Report which will compare what it has delivered against what it said it would deliver, and present a summary of the report to consumers in each of Aurora's three regions;
 - X82.2 Disclose information annually on the quality of services (including reporting by Aurora on its voltage quality monitoring practices on its LV network), regional pricing and improvements in asset management, project quality assurance, data collection and quality, and cost estimation processes; and
 - X82.3 Procure a report (during Year 3 of the CPP period) from an independent expert (or experts) that provides an opinion on Aurora's performance in some of the more complex areas of the above requirements to ensure that we, and other interested persons across its network, can effectively conduct our own assessments of Aurora's performance.
- X83 Aurora also has an existing consumer charter and compensation scheme and plans to consult on potential improvements. We support the existence of these initiatives and think they can improve the relationship between lines companies and their consumers.
- X84 We are proposing to require Aurora to publicly report on its performance against the existing commitments in its consumer charter and whether (and if so how) it has consulted with its consumers on changes to its charter commitments and compensation scheme. We also propose to require Aurora to disclose whether (and if so how) Aurora has improved its consumers awareness of the charter and scheme.

X85 We have published a draft Information Disclosure reasons paper explaining these proposals in further detail. This paper, and the draft determination, can be found on our website.⁶

⁶ <https://comcom.govt.nz/regulated-industries/electricity-lines/projects/our-assessment-of-aurora-energys-investment-plan>.

Key changes to the draft decision

This table presents the key changes made to our November 2020 draft decision on Aurora’s CPP. We identify where a fuller description of the change can be found in the paper.

Decision matter	Draft decision	Final decision	Explanation for change (relative to draft decision)
Capex	\$315.5 million	\$327.4 million	<ul style="list-style-type: none"> Asset renewals expenditure category increased by \$4.1 million because we agreed with Aurora that deferring sub-transmission cable expenditure is not prudent. Network growth and security category increased by \$7.7 million because increased demand confirmed the need for the Arrowtown growth and security projects. See Attachment D for further details.
Opex	\$207.7 million	\$236.0 million	<ul style="list-style-type: none"> Corrective maintenance opex increased by \$0.3 million because we agreed with Aurora that preventive maintenance would identify defects and require more corrective maintenance. Vegetation management category increased by \$5.1 million because Aurora provided further information that indicated unit rates were efficient (See Attachment E; paragraphs xx – xx) Governance and administration category increased by \$1.1 million because Aurora provided further supporting information about the base year amount. SONS and People costs increased by \$21.9 million due to accepting Aurora’s forecast SONS and people costs for RY22 (to allow needed investment in capability) and assuming a 6% reduction in subsequent years so as to gradually bring these costs more into line with comparable EDBs. See Attachment E for further details.
Price path	Annual 10% nominal revenue cap	Annual 10% cap with an annual adjustment in years 2 to 5 for changes in forecast inflation and increases in transmission costs	<ul style="list-style-type: none"> Changed to ensure that Aurora is not exposed to unforeseen inflation in respect of the timing of recovery of its allowable revenues and transmission price risk which could both otherwise undermine Aurora’s ability to undertake the necessary spend to repair and upgrade its network. See Attachments G and K for further details.

Chapter 1 Introduction

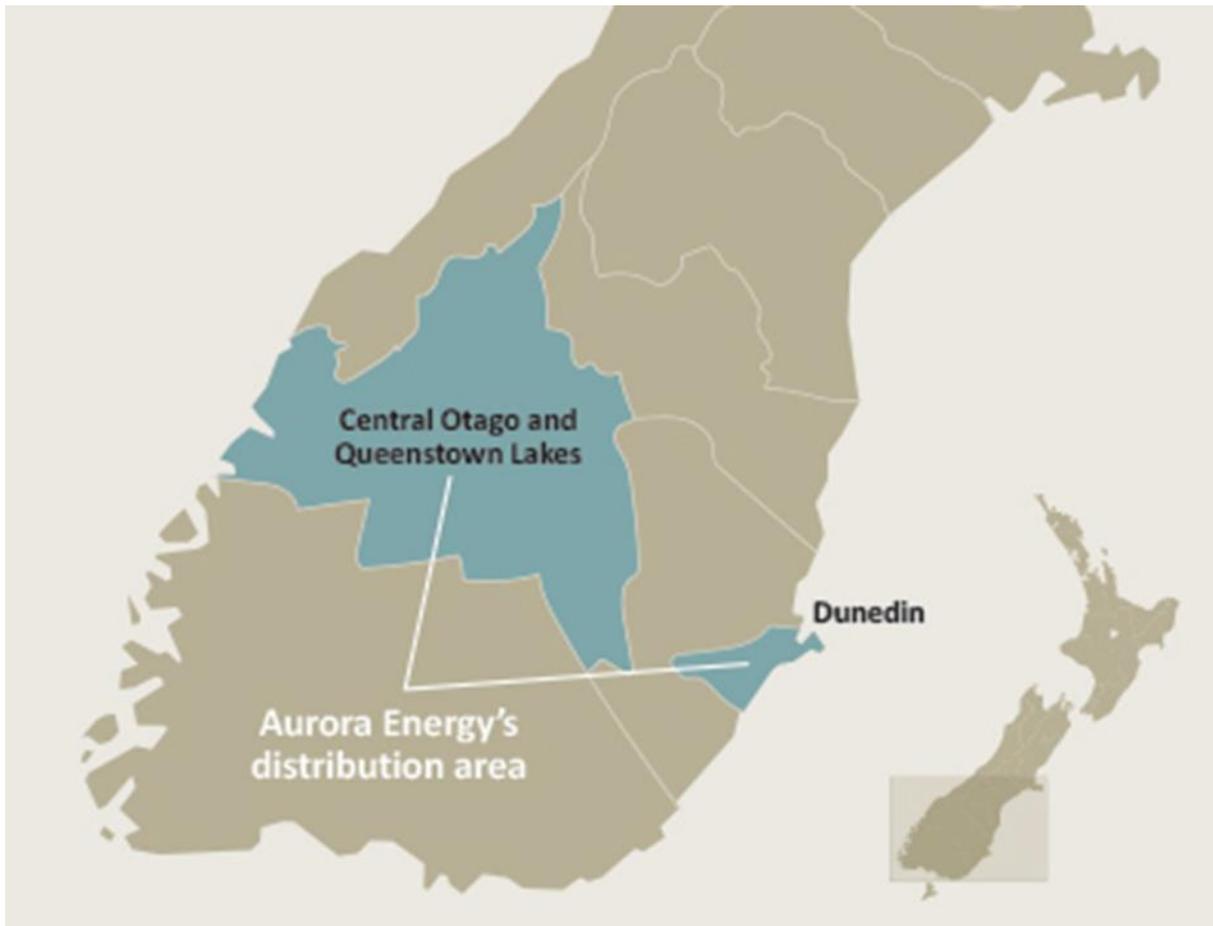
Purpose of this paper

- 1.1 This paper sets out our decision on the customised price-quality path (CPP) to apply to Aurora Energy Limited (Aurora) from 1 April 2021 to 31 March 2026.
- 1.2 We have also released a draft decision on the proposed additional information disclosure measures Aurora will be subject to. These are explained in the information disclosure reasons paper which we have released, and only briefly explained in this document. Together the CPP and information disclosure proposals provide for a package of measures to improve the service Aurora's consumers receive.

Aurora is subject to price-quality regulation set by the Commission

- 1.3 Aurora owns and operates New Zealand's seventh largest electricity lines company by consumer connection numbers. Its network provides electricity lines services to about 90,000 consumers in Dunedin, Central Otago and the Queenstown Lakes District.

Figure 1.1 Aurora's distribution area



- 1.4 As the monopoly provider of electricity lines services in these regions, Aurora is regulated by the Commission under Part 4 of the Commerce Act (Part 4).
- 1.5 Part 4 requires us to set a price-quality path for Aurora to set the revenues it can earn and the minimum standards for the quality of the services it supplies.
- 1.6 We last set a price-quality path for Aurora in 2019 as part of the regular default price quality path (DPP) which we set for electricity distributors across the industry.⁷

⁷ Default/customised price-quality regulation is a type of regulation under Part 4 of the Commerce Act 1986 that applies to 17 electricity lines companies across New Zealand. The remaining 12 electricity lines companies across the country are exempt from default/customised price-quality regulation as they meet the 'consumer-owned' exemption criteria under the Act. All 29 electricity lines companies are subject to information disclosure regulation.

- 1.7 Part 4 allows for suppliers on the DPP to apply for a CPP to better meet the particular circumstances of their businesses.⁸ Where an applicant proposes a CPP, we must determine the appropriate CPP for the supplier.

Aurora proposed to increase its revenue and change its quality standards

- 1.8 On 12 June 2020, Aurora submitted its application for a CPP.⁹ The CPP application sought to increase Aurora's allowable revenue to enable it to improve its network safety and stabilise its reliability.¹⁰ The application also sought to alter its minimum quality standards.
- 1.9 Aurora applied for a three-year CPP as opposed to the five-year default period, although it provided forecasts for five years in its application. It considered that the three-year period was preferable because it said its forecasts that underpinned the CPP were materially more robust for the initial three years compared with years four and five.

⁸ Section 53K Commerce Act.

⁹ Aurora Energy "Customised Price-Quality Path - Application" (12 June 2020) and supporting documents can be found at the following link. [Aurora Energy's CPP application published.](#)

¹⁰ These were the main drivers which Aurora cited in its proposal. We note that their proposal also includes spend in other important areas such as data and systems to improve their asset management capability. A full breakdown of Aurora's reasons for its CPP and expenditure plans is available in Aurora's CPP proposal. [Aurora Energy's CPP application published.](#)

Table 1.1 Key features of Aurora's proposal**Key features of Aurora's proposal¹¹**

Aurora forecast to spend \$383.3 million over the three -year CPP period from 1 April 2021 until 31 March 2024, compared with \$336.9 million for the previous three years.¹²

In order to fund the proposal, Aurora proposed that we allow it to recover this expenditure from its consumers, which it modelled would result in changes to power bills of:

- 11.9% increase for Dunedin consumers, or approximately \$20 more a month;¹³
- 16.7% increase for Central Otago and Wanaka consumers, or approximately \$30 more a month;
- 10.6% increase for Queenstown consumers, or approximately \$24 more a month.

Aurora also proposed that its quality standards for planned and unplanned interruptions should be relaxed relative to the current standards that apply. Aurora requested the relaxation in the planned interruption quality standards because it needs to undertake more planned outages than it has in the past to repair and upgrade its network. Aurora requested the relaxation in unplanned interruption quality standards because, based on feedback from its consumers, it wants to limit its spending in the CPP to addressing safety issues and retain reliability at its current actual levels, which is at a lower level of reliability than the current unplanned quality standards in the Default Price Path (DPP) provide.

- 1.10 Aurora also signalled it would make a second separate CPP application after the first CPP period, once it had better asset data allowing it to forecast its expenditure more accurately.
- 1.11 On 7 August 2020, we accepted Aurora's CCP application as complete and were then required to set a CPP for Aurora within 150 working days from that date (by 31 March 2021).^{14,15}

Our decision follows a comprehensive process to review Aurora's proposal and seek views from stakeholders

- 1.12 Aurora proposed a significant uplift in expenditure as part of its CPP proposal, the costs of which are recovered from its consumers. To ensure these costs are justified and the expenditure is in the long-term interests of consumers, we have set requirements for Aurora to test its proposal with its consumers and have it verified by an independent expert (the Verifier) appointed with our agreement.

¹¹ In some of the text, tables and graphs in this paper there may be small discrepancies between the numbers and the equivalent number presented and described in the text, or elsewhere, due to rounding.

¹² The previous three years expenditure figure of \$336.9 million includes Aurora's expenditure forecast estimate for the 1 April 2020 to 31 March 2021 period.

¹³ These exclude expected increases in inflation, exclude GST and are for year 3 of the CPP.

¹⁴ Commerce Act 1986, Section 53T(2).

¹⁵ The completeness relates to all information required to be submit a CPP application being present and compliant with the rules.

- 1.13 We have reviewed Aurora’s proposal, and also engaged an expert consultant to provide additional advice as required. We consulted with stakeholders on an Issues Paper and subsequently on our 12 November 2020 draft decision on Aurora’s CPP. The consultation process we ran for both the Issues Paper and draft decision included holding stakeholder engagement sessions in Dunedin, Queenstown and locations in Central Otago, and seeking written comments from stakeholders.
- 1.14 We thank submitters for their views – they have tested our thinking throughout the CPP process and helped inform the decision set out in this paper.

Table 1.2 Key steps in our decision

Key steps in our determination of our decision on Aurora’s CPP	
We released an introductory paper which included an outline of the process we intended to follow.	May 2020
Aurora submitted its CPP proposal to us.	June 2020
We accepted Aurora's CCP application as complete.	August 2020
We released an Issues Paper package outlining key areas of focus for us on the CPP and calling for submissions.¹⁶ As part of the consultation on the Issues Paper we held stakeholder engagement sessions in Dunedin and several locations in Central Otago.	July 2020
Submissions (including cross-submissions) were received on the Issues Paper.	September 2020
We published our draft decision on the CPP to apply to Aurora.¹⁷ The paper also contained our proposed policy position on a set of information disclosure measures to provide for accountability and monitoring of Aurora’s delivery of its CPP. As part of the consultation on the draft decision we held stakeholder engagement sessions in Dunedin and several locations in Central Otago.	November 2020
Submissions (including cross-submissions) were received on the draft decision.	January 2021
We published our decision on the CPP to apply to Aurora.	March 2021
We published our draft decision on the additional information disclosure measures to apply to Aurora.	March 2021

¹⁶ [Our assessment of Aurora Energy's Investment Plan.](#)

¹⁷ Commerce Commission "Aurora Energy's proposal to customise its prices and quality standards - Draft decision" (12 November 2020).

- 1.15 Aurora has already announced its prices for the 1 April 2021 to 31 March 2022 year. It based its prices on the expenditure provided for in our draft decision.¹⁸ Separately, Aurora has already made a change to its pricing structure to make it more cost reflective and has indicated that it intends to consult on more substantial changes at a later date. We support any moves by Aurora to make its pricing more cost-reflective.

Other materials published alongside this decision paper

- 1.16 Alongside this decision paper we have also published:
- 1.16.1 A determination setting out how we intend to give effect to our decision;
 - 1.16.2 the core models which we have used to reach our decision;
 - 1.16.3 key supporting materials we have relied on in reaching our decision including further analysis from Strata Energy Limited (Strata), our expert consultants who assisted us with some analysis;
 - 1.16.4 consumer facing documents summarising key aspects of our decision and the feedback we received; and
 - 1.16.5 a draft decision and a draft determination in respect of the proposed additional ID requirements to apply to Aurora.

¹⁸ Aurora, as with other distributors, sets its prices in advance of the upcoming 1 April to 31 March pricing year. This is to allow retailers on the network to incorporate those price changes and advise consumers. For the pricing year commencing on 1 April 2021 Aurora was not able to wait until the CPP decision was made because that would have given it insufficient time to advise retailers. Hence, it set its prices on the basis of the expenditure provided for in the draft decision, which was published in November 2020.

Structure of this paper

The structure of the remainder of this paper is shown below.

Table 1.3 Structure of this paper

Title	Description
Chapter 1: Introduction	An introduction to the decision.
Chapter 2 – Aurora’s circumstances and its need for a CPP	Details the legal framework covering CPPs and the background to Aurora’s CPP application.
Chapter 3: Our decision on Aurora’s CPP	Our decision on Aurora’s CPP. It also acts as a ‘road map’ pointing to where in the chapters and attachments to the paper, more detailed reasons for each of the decisions can be found.
Chapter 4: Accountability for CPP performance and delivery	Provides an overview of the measures we plan to introduce to enhance Aurora’s accountability to its consumers for the effective delivery of its CPP. Additional information disclosure measures are provided for in a separate draft decision that we are currently consulting on.
Chapter 5: Our evaluation approach	Explains the evaluation approach we took to making the decision.
Chapter 6: Community and stakeholder engagement	Details the consultation with Aurora’s consumers, Aurora and other stakeholders that we have undertaken. While we have taken all submissions into account when reaching our decisions, for practicality purposes, we have identified and discussed the major themes raised by stakeholders throughout our assessment process.
Attachments A- K	Provide detailed descriptions of the key components of our decision. The attachments also provide the detailed analysis underpinning our decision.

Next steps

- 1.17 Aurora’s CPP applies from 1 April 2021 for a period of five years. From that date, Aurora will be able to recover from its consumers the extra revenue this CPP decision allows it to.
- 1.18 The additional information disclosure requirements that will apply to Aurora are expected to be in place by August 2021.

Chapter 2 Aurora's circumstances and its needs for a CPP

Purpose of this chapter

- 2.1 This chapter covers Aurora's circumstances including the Commerce Act price-quality regulatory framework that applies to Aurora and the background to Aurora's application for a CPP.

Background to price-quality regulation set by the Commission

- 2.2 Aurora, as a provider of monopoly electricity line services, is regulated by the Commission under Part 4 of the Commerce Act 1986 (Part 4).¹⁹
- 2.3 Part 4 requires us to set a price-quality path for those 17 lines companies (including Aurora) that are subject to price-quality regulation.²⁰ Part 4 provides that we:^{21,22}
- 2.3.1 must set the maximum revenue that a lines company can recover or the maximum prices that a lines company can charge;
 - 2.3.2 must set quality standards which set the minimum standards for the quality of a lines company's services; and
 - 2.3.3 may include incentives for lines companies to maintain or improve quality.
- 2.4 We can apply price quality-regulation to electricity lines companies in two ways – a default price-quality path (DPP) or a customised price-quality path (CPP).²³ However, in applying the DPP or the CPP we must apply a common set of rules and processes that are set out in our input methodologies (IMs).²⁴

¹⁹ Commerce Act 1986, s 54E.

²⁰ Commerce Act 1986, s 54G.

²¹ Default/customised price-quality regulation is a type of regulation under Part 4 that applies to 17 electricity lines companies across New Zealand. The remaining 12 electricity lines companies across the country are exempt from default/customised price-quality regulation as they meet the 'consumer-owned' exemption criteria under the Act. All 29 electricity lines companies are subject to information disclosure regulation which is also provided for by Part 4.

²² Commerce Act 1986, s53M.

²³ Electricity lines companies need to apply to the Commission to be placed on a CPP.

²⁴ Commerce Act 1986, s52S.

DPP

- 2.5 The Part 4 regime anticipates that electricity lines companies subject to price-quality regulation will usually be regulated by the relatively low-cost DPP framework, in which we collectively set price paths for lines companies for successive regulatory periods using a common framework. We last set a DPP (DPP3) in 2019 for the 2020-2025 period (inclusive).
- 2.6 The DPP framework has drawn on electricity lines company forecasts of capital (capex) and operating (opex) expenditure, set out in their asset management plans (AMPs). The quality standards are based on ten-year historic quality performance and a principle of no material deterioration. Because the DPP framework is an intentionally relatively low-cost framework, there are limits to the amount of scrutiny that we can apply to individual electricity lines companies.

CPP

- 2.7 The Part 4 regime acknowledges that the DPP will not always be suitable for all electricity lines companies for a variety of reasons. Therefore, an electricity lines company can apply to the Commission for a CPP to better meet the particular circumstances of its business.²⁵
- 2.8 Even with a CPP, there are limits on the level of scrutiny we can apply, as we must publish our decision within 150 working days of accepting a proposal for a CPP from an electricity lines company. This timeframe includes consultation on our draft decision and having regard to the submissions received.

The criteria we must use to assess Aurora's proposal

- 2.9 Whether we are setting a DPP or a CPP, Part 4 directs us to promote the Part 4 purpose – the long-term benefit of consumers, so that outcomes are promoted that are consistent with those produced in competitive markets such that electricity lines companies:²⁶
- 2.9.1 have incentives to innovate and to invest, including in replacement, upgraded, and new assets;
 - 2.9.2 have incentives to improve efficiency and provide services at a quality that reflects consumer demands;
 - 2.9.3 share with consumers the benefits of efficiency gains in the supply of the regulated goods or services, including through lower prices; and

²⁵ Section 53K Commerce Act.

²⁶ Section 52A Commerce Act.

- 2.9.4 are limited in their ability to extract excessive profits.
- 2.10 The IMs relating to CPPs set out the requirements that must be met by the applicant for information, verification, audit and consumer consultation, as well as the evaluation criteria that we must use to evaluate a CPP proposal.^{27, 28}
- 2.11 These evaluation criteria are intended to ensure that our determination of a CPP promotes the purpose of Part 4. There are six evaluation criteria.²⁹
- 2.12 Aurora’s proposed capital and operating expenditure is assessed against Criteria (d) - whether the proposed capital and operating expenditure meet the expenditure objective. In turn, this expenditure objective requires us to assess Aurora's proposed capital expenditure and operating expenditure to determine whether it reflects the efficient costs that a prudent supplier subject to price-quality regulation would require to:³⁰
- 2.12.1 meet or manage the expected demand for electricity distribution services, at appropriate service standards, during the customised price-quality path regulatory period and over the longer term; and
 - 2.12.2 comply with applicable regulatory obligations associated with those services.³¹
- 2.13 The assessment of forecast expenditure is not a mechanistic process – it requires the exercise of judgment by us, potentially supported by expert advice.
- 2.14 Criteria (e) - requires us to assess the extent to which a proposed change to quality standards reflects the realistically achievable performance of Aurora in the CPP period.³²
- 2.15 While we set revenue limits based on expenditure forecasts, we have no power to direct what, how or when a lines company invests. These are matters for each individual electricity lines company.

²⁷ Electricity Distribution Services Input Methodologies Determination 2012 [2012] NZCC 26, Part 5.

²⁸ As required by the Commerce Act 1986, s 52T.

²⁹ Chapter 5 of this decision paper describes our approach to the evaluation of Aurora’s CPP proposal against the criteria. Attachment A of this paper discussed the framework in which we made our decision further.

³⁰ We consider that a ‘prudent supplier’ is a supplier whose planning and performance standards reflect good electricity industry practice (GEIP), and we note that the Verifier took this approach.

³¹ Electricity Distribution Services Input Methodologies Determination 2012 [2012] NZCC 26, clause 1.1.4.

³² Separate to the CPP, Aurora also applied to us for a Quality Standard Variation in respect of the first regulatory year of DPP3 (regulatory year ending 31 March 2021), prior to the CPP taking effect. We approved this Quality Standard Variation on 22 December 2020.

- 2.16 Our statutory powers are limited in terms of what they allow us to do. We are not able to undertake the repair of Aurora's network ourselves. That responsibility rests with Aurora's management and ultimately its Board.
- 2.17 Our role under the CPP regime is to ensure that Aurora has sufficient money to undertake the necessary efficient investment and that the incentives are such that Aurora is strongly incentivised to deliver its CPP for the long-term benefit of consumers.
- 2.18 Importantly, under the Part 4 regime we only regulate overall revenues and not how this is recovered from individual consumers through prices set by the lines company.

Our other powers

- 2.19 In addition to our power to set price-quality paths, we have other tools available to us under Part 4. Our primary additional tool is our power to set information disclosure requirements. These require lines companies to publish information on matters related to their performance so that interested persons can assess their performance.³³

The context for Aurora's CPP application

- 2.20 As a result of historic under-investment, the reliability and safety of Aurora's network has deteriorated significantly over recent years. Aurora's reliability and safety incidents have been well-publicised since 2017. They have involved an increasing number of unplanned power cuts as well as safety incidents (eg, poles falling over) in Aurora's network.
- 2.21 Aurora first breached its regulated quality standards in 2012. In 2014, following an investigation by the Commerce Commission, Aurora received a warning letter for its 2012 breach. Aurora met its quality standards between 2013 to 2015, although it exceeded the reliability limit in 2015. Its reliability continued to deteriorate resulting in breaches each year for the period 2016-2019. For the 2016-2019 breaches it was fined \$5 million.³⁴

³³ The information disclosure requirements that apply to electricity lines companies originally came into force in 2012 and were updated in 2018. They can be found at: https://comcom.govt.nz/_data/assets/pdf_file/0025/78703/Electricity-distribution-information-disclosure-determination-2012-consolidated-3-April-2018.pdf.

³⁴ Actual 2020 dollars.

- 2.22 Aurora's underinvestment also resulted in safety problems. Between 2015 and 2018 there were numerous safety incidents related to network assets and defective equipment, including:³⁵
- 2.22.1 225 public hazard incidents relating to overhead conductor (lines) failures, with 27 of these classed as serious hazard events;
 - 2.22.2 88 public hazard incidents relating to pole failures, with six of these classed as serious hazard events; and
 - 2.22.3 16 public hazard incidents relating to crossarm failures, with two of these classed as serious hazard events.
- 2.23 The 2018 independent WSP report (which we encouraged Aurora to commission) on the state of the Aurora network provided detailed insight into the reliability and safety issues present.³⁶ WSP identified that parts of Aurora's network were in poor condition due to asset deterioration, which posed reliability concerns and safety risks to the public and Aurora's workforce.
- 2.24 As Aurora has recognised in its proposal for a CPP, the deterioration in its network predominantly reflected underinvestment in its network, which had occurred over many years.³⁷ Aurora notes that the underinvestment meant that the level of spending on repairs and maintenance was not sufficient to offset the ongoing deterioration in the condition of its network, the core of which was built predominantly in the 1950s and 1960s. Simply put, ageing assets that had not been properly maintained were failing.
- 2.25 Aurora's levels of investment in its network reflected its own expenditure forecasts. While the DPP limits the revenues Aurora could earn, we set the DPP allowances with reference to Aurora's own forecasts of its expenditure needs. Aurora's forecasts, which are set out in its annual asset management plans, were largely in line with the DPP until 2018 when it began to spend above the DPP forecasts to fix urgent issues on the network and begin preparations for a CPP.³⁸

³⁵ [WSP "Independent review of electricity networks - Final report - Aurora Energy" \(21 November 2018\).](#)

³⁶ [WSP "Independent review of electricity networks - Final report - Aurora Energy" \(21 November 2018\).](#)

³⁷ [Aurora's "customised price-quality path \(CPP\): Application. \(12 June 2020\),](#) para 25 and 26, p.5.

³⁸ The word 'largely' reflects that Aurora failed to spend \$36.7 million of its forecast expenditure for replacement and renewal of network assets between 2010 and 2017. From the agreed statement of facts from the court case for Aurora's quality standard contraventions on p.18-19:
https://comcom.govt.nz/_data/assets/pdf_file/0024/223467/Commerce-Commission-v-Aurora-Energy-Limited-Agreed-Summary-of-Facts-18-December-2019.pdf.

Chapter 3 Our decision on Aurora's CPP

Purpose of this chapter

- 3.1 This chapter sets out our decision on Aurora's CPP which will apply to Aurora from 1 April 2021 to 31 March 2026.
- 3.2 The matters provided for in this CPP decision along with the additional information disclosure (ID) requirements contained in our draft decision on ID form a package of measures that will improve Aurora's performance.

Structure of this Chapter

- 3.3 This Chapter describes:
 - 3.3.1 A summary of the key features of our decision;
 - 3.3.2 Our decision – overview;
 - 3.3.3 Our decision on the length of the CPP period;
 - 3.3.4 Our decision on quality standards and incentives;
 - 3.3.5 Our decision on the overall expenditure;
 - 3.3.6 Our decision on capex;
 - 3.3.7 Our decision on opex;
 - 3.3.8 Our decision to cap revenues to limit price shock;
 - 3.3.9 Indicative price impacts on consumers of our decision; and
 - 3.3.10 Our determination to give effect to these decisions.

A summary of the key features of our decision

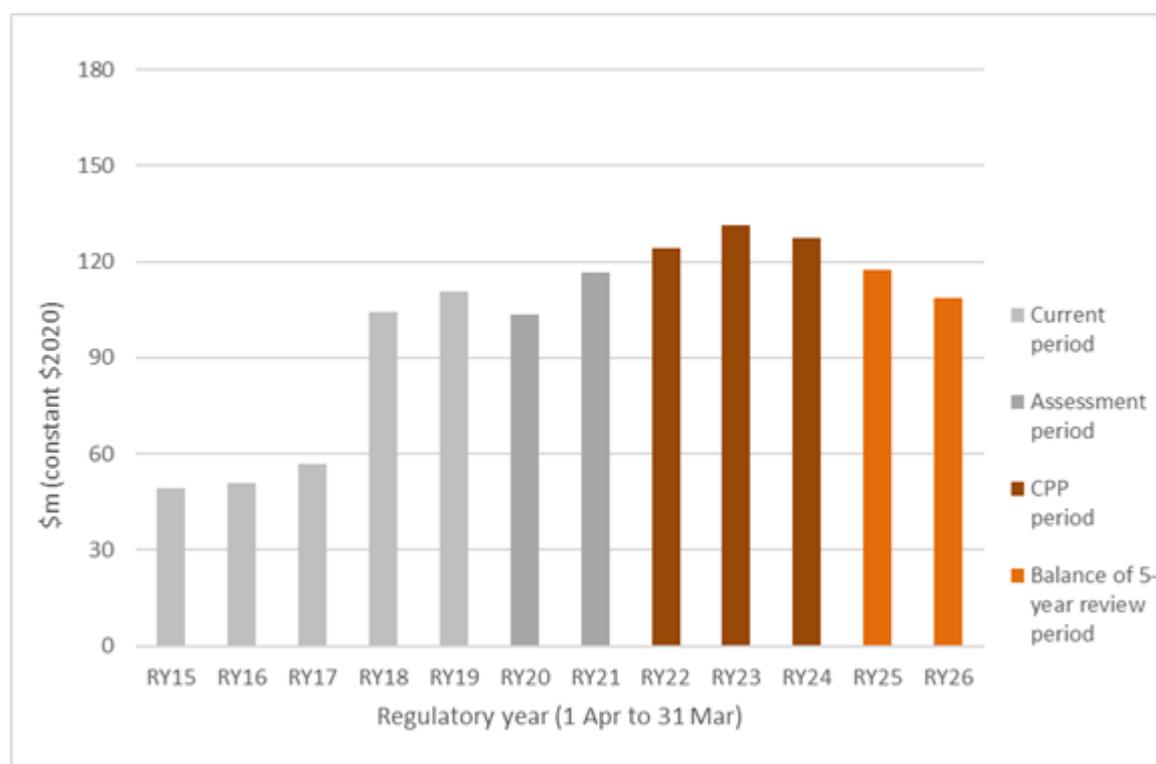
Table 3.1 Key features of our decision.

Key features of our CPP decisions
<ul style="list-style-type: none"> • A five-year CPP period, running from 1 April 2021 to 31 March 2026. • Aurora will be subject to separate quality standards for planned and unplanned interruptions. • For unplanned interruptions, we have set quality limits that are less stringent than what Aurora’s consumers currently experience but more stringent than what Aurora proposed. We set: <ul style="list-style-type: none"> ○ 124.94 for unplanned System Average Interruption Duration Index (SAIDI) compared to 142.01 proposed by Aurora; ○ 2.07 for unplanned System Average Interruptions Frequency Index (SAIFI) compared to 2.26 proposed by Aurora. • For planned interruptions we have set quality limits based on Aurora’s own forecasts which means that consumers will experience an increase in planned interruptions as Aurora delivers the investment. • We have provided for total expenditure of \$563.4 million for the period 1 April 2021 to 31 March 2026: <ul style="list-style-type: none"> ○ \$327.4 million total capital expenditure (capex) compared to \$356.3 million proposed by Aurora. ○ \$236.0 million total operating expenditure (opex) compared to \$252.9 million proposed by Aurora. • An annual 10% cap in years 2-5 of the CPP on the nominal increases in its forecast revenue from prices. In years 2-5 the cap will reflect: <ul style="list-style-type: none"> ○ increases between the latest forecasted year-ahead transmission charges and the initial forecast transmission charges used in initially setting the price path; and ○ changes in the forecast of inflation.

Our decision - overview

- 3.4 Aurora's network has deteriorated substantially leading to poor safety and reliability outcomes. The network is in urgent need of repair.
- 3.5 Aurora begun in 2017/2018 to substantially increase its expenditure on its network to improve its performance. It has continued to spend more over the last three years and forecasts further additional expenditure in upcoming years to improve the safety of its network and stabilise its reliability. Figure 3.1 illustrates Aurora's expenditure and forecast expenditure.

Figure 3.1 Aurora's total historical and forecast expenditure



- 3.6 Aurora applied for a CPP to increase investment, renew assets, and in so doing, to improve safety and eventually reliability.
- 3.7 We are satisfied that Aurora has made the case for an elevated level of investment and operating expenditure over the next five years. Further investment will be needed beyond that, which may require further increases in revenue.
- 3.8 We have thoroughly scrutinised Aurora's proposed CPP focusing particularly on its proposed increase in expenditure allowances, for the next five years. We took account of:
- 3.8.1 Aurora's proposal and the additional information it provided us;
 - 3.8.2 the Verifier's assessment;

- 3.8.3 our analysis of the proposal and the supporting analysis of our expert consultant, Strata; and
 - 3.8.4 the views of stakeholders expressed through multiple rounds of consultation.
- 3.9 Our decision is that the majority of Aurora’s proposed increase in expenditure is justified. It is the prudent and efficient amount to meet the safety and reliability outcomes that Aurora has established are necessary. In total we have approved:
- 3.9.1 \$327.4 million of the \$356.3 million proposed capex by Aurora which represents 91.9% of the capital expenditure sought; and
 - 3.9.2 \$236.0 million of the \$252.9 million proposed by Aurora which represents 93.3% of the operational expenditure sought.
- 3.10 We recognise that the extra expenditure will have a significant “bill impact” on Aurora’s consumers, but the overarching objective is to ensure Aurora has sufficient revenue to prudently and efficiently manage its network so as to ensure that safety and, over time, the reliability of its services to its consumers improve, while meeting its regulatory requirements.
- 3.11 This level of approved expenditure will ensure that Aurora has sufficient revenue to undertake the investment it needs to improve safety and stabilise reliability. If we had opted for less expenditure there would be a risk that Aurora would have insufficient funds to carry out the necessary investment. This could lead to adverse safety and reliability outcomes for Aurora’s staff and consumers in the long-term and have meant that we were not meeting our statutory objective. This level of revenue should enable Aurora to improve its asset management capabilities, and to meet some of the additional information disclosure requirements we have proposed to impose on Aurora.
- 3.12 We did not approve all of Aurora’s proposed CPP expenditure because we decided that, after our further analysis and investigation (including further requests for information from Aurora), it was above what a prudent and efficient operator would need. For example, for Non-network Opex we only approved 89.9% of the \$161.4 million proposed. We have also made some expenditure contingent on certain conditions materialising, such as increased demand on Aurora’s network and risks relating to the condition of the network.

- 3.13 Aurora started making a step change in the investment prior to making its application. While we accept urgent expenditure was necessary to meet emerging safety issues, consistent with the rules we established in DPP2 to encourage EDBs to spend efficiently, Aurora will not be able to recover all the additional expenditure it has undertaken in the period up to April 2021.
- 3.14 Aurora says that this expenditure was made to address urgent safety risks which had become apparent on its network, including those highlighted in the 2018 'state of the network report' from WSP. We consider that this expenditure was necessary and will benefit consumers in the long-term compared with Aurora postponing that expenditure to when the CPP commences.
- 3.15 This expenditure was greater than Aurora's own AMP forecasts of the expenditure required by its network at the beginning of DPP2. As we based the DPP3 expenditure allowances on Aurora's 2014 AMP, this additional expenditure was not subject to our scrutiny before Aurora undertook the work.
- 3.16 The expenditure we have approved for the coming five-year period will enable Aurora to reduce its level of outages relative to what it proposed. This is reflected in our decision to set more stringent standards for unplanned interruptions than Aurora proposed.
- 3.17 We have set a five-year period for the CPP rather than the three-year period proposed because the certainty this provides is of greater benefit than any disbenefit that arises because of difficulties in forecasting expenditure in years four and five of the CPP.
- 3.18 We have been very mindful of the effect that Aurora's increased revenue allowance will have on its consumers, especially as the region is adversely affected economically by the impact of COVID-19. We have capped increases in Aurora's forecast revenue prices to 10% per annum (nominal) to minimise the price shock on its consumers.
- 3.19 Finally, Aurora needs to deliver on its CPP and, as part of this process, rebuild the confidence of its consumers. To help achieve these ends we have proposed a set of additional information disclosure requirements to apply to Aurora over the CPP period, which are described in a separate draft decision.
- 3.20 The CPP and additional information disclosure requirements form a package of measures that provides long-term benefits to consumers as described in the following table.

Table 3.2 Benefits of our decision

Benefit to consumers	Decision delivering the benefit
Safety issues addressed	<ul style="list-style-type: none"> Aurora has sufficient revenues to address known network safety issues by the end of the CPP period.
Reliability performance stabilised with incentives to improve, and sanctions if performance deteriorates	<ul style="list-style-type: none"> We have set the unplanned outage standard at a more demanding level than Aurora proposed. Planned outages standard is set at the same level Aurora currently faces. Aurora faces financial penalties and rewards for delivering reliability that is different from these standards. If Aurora breaches these standards it will face possible enforcement action from us, including the possibility of further court prosecution.
Improved notification of outages	<ul style="list-style-type: none"> Aurora has sufficient revenues to upgrade its outage management systems. We have set financial incentives that encourage Aurora to undertake planned work efficiently and provide consumers with timely and accurate notification of planned outages and minimise late cancellations of planned work.
Ensuring Aurora spends the right amount at the right time	<ul style="list-style-type: none"> We have closely reviewed and then reduced, where appropriate, Aurora's proposed expenditure allowances to ensure prices reflect prudent and efficient investment only. We propose mechanisms to provide flexibility to address changes in circumstances. Aurora can apply for additional capex to fund growth projects if demand for electricity increases faster than expected. If new risk events are identified, Aurora can apply for additional funding to urgently address those risks.
Aurora has incentives to improve efficiency over time	<ul style="list-style-type: none"> Aurora faces a financial incentive to become more efficient over time. We have proposed to retain the existing expenditure incentive scheme applying to all electricity lines companies that are subject to price regulation.
Smaller price increases than Aurora proposed	<ul style="list-style-type: none"> As a result of our CPP decision, indicative price increases would be around half the size of those inherent in Aurora's proposal for a 3-year CPP. However, the revenue that must be recovered in the future, after this CPP period, is higher.
Innovation encouraged	<ul style="list-style-type: none"> New innovative integrated distributed generation and demand response programme in the Upper Clutha region which will defer major capex. Improvements will be made to understanding and monitoring of the network which will facilitate the deployment of new technologies.
Incentives to improve performance over time. Proposed new ID requirements	<ul style="list-style-type: none"> The expenditure allowances we propose will enable Aurora to improve the services its network provides over time from enhanced asset management systems. We have separately proposed a package of measures to improve the transparency around Aurora's delivery of its CPP to improve Aurora's accountability to its consumers. These include proposals that Aurora: <ul style="list-style-type: none"> publish an annual delivery report; present that report and seek stakeholder feedback at annual regional meetings; publish an expert report on its progress in delivering the CPP; and disclose further information on how prices are set for individual consumers, and Aurora's cost to supply model, so consumers can engage with Aurora on those prices.

Our decision on the length of the CPP period

- 3.21 Aurora submitted its CPP proposal for a three-year period, as opposed to the standard five-year period. It explained that further out in time, its forecast information becomes more uncertain and that this creates a challenge in being able to correctly identify necessary work required on its network and accurately forecast the required spend in years four and five.
- 3.22 Our decision is for a term of five years commencing on 1 April 2021 instead of the three-year period. We consider that the benefits from the revenue and quality certainty associated with a five-year CPP outweigh the risk and effect of revenue over-recovery or under-recovery. We have dealt with some of the uncertainty in years four and five of the CPP, by providing for limited reopeners of the price path. More detailed reasons for our decision on the length of the CPP period are set out in Attachment B.

Our decision on quality standards and incentives

Our decision on unplanned interruption standards and incentives

- 3.23 Aurora asked us to set more relaxed targets and standards for unplanned power interruptions during the CPP period than they currently faced under DPP3. Aurora considered this was necessary to reflect the deteriorating reliability of its network, and because Aurora expects further deterioration in reliability before its investment programme can stabilise and then improve reliability.
- 3.24 Our view is that Aurora's plans to fund major network investment should enable it to perform better than it proposed.
- 3.25 Our decision is to set annual unplanned interruption standards that are above (more lenient than) the current standards Aurora faces under DPP3, but below (not as lenient as) Aurora's proposed standards. This is shown in Table 3.3. QIS means Quality Incentives Scheme. The unplanned interruption targets we have set for Aurora broadly reflects Aurora's recent performance over the last five years.

Table 3.3 **Unplanned interruption standards**

	SAIDI (Minutes)			SAIFI (Interruptions)		
	QIS Target	Buffer	Limit	QIS Target	Buffer	Limit
Current standard (DPP3)	63.44	18.45	81.89	1.17	0.30	1.47
Aurora's proposal	110.02	31.99	142.01	1.80	0.46	2.26
Our draft decision	88.08	36.86	124.94	1.57	0.50	2.07
Our decision	88.08	36.86	124.94	1.57	0.50	2.07

- 3.26 The limits we have set for unplanned interruptions for Aurora are realistically achievable. Aurora will face financial penalties and rewards when its performance deviates from this target.
- 3.27 We decided to retain the revenue-linked quality incentive scheme for unplanned interruptions that Aurora currently faces under DPP3. The scheme incentivises Aurora to prevent further deterioration of reliability and improve it where it is cost effective to do so, including restoring outages efficiently.
- 3.28 We consider that Aurora is unlikely to breach the standards (limits) we have set, and that if it does exceed these limits, it would be appropriate for us to investigate its performance. In our view, Aurora's planned expenditure on its network should allow its unplanned interruption performance to be better than what it has proposed at no additional cost to its consumers.

Our decision on planned interruption standards and incentives

- 3.29 Our decision on the quality standard and incentive scheme for planned interruptions is to accept Aurora's proposal, which keeps the standard the same as the DPP3, and with the same incentives but with a higher target (more lenient) for planned interruption duration due to the large amount of asset replacement intended.

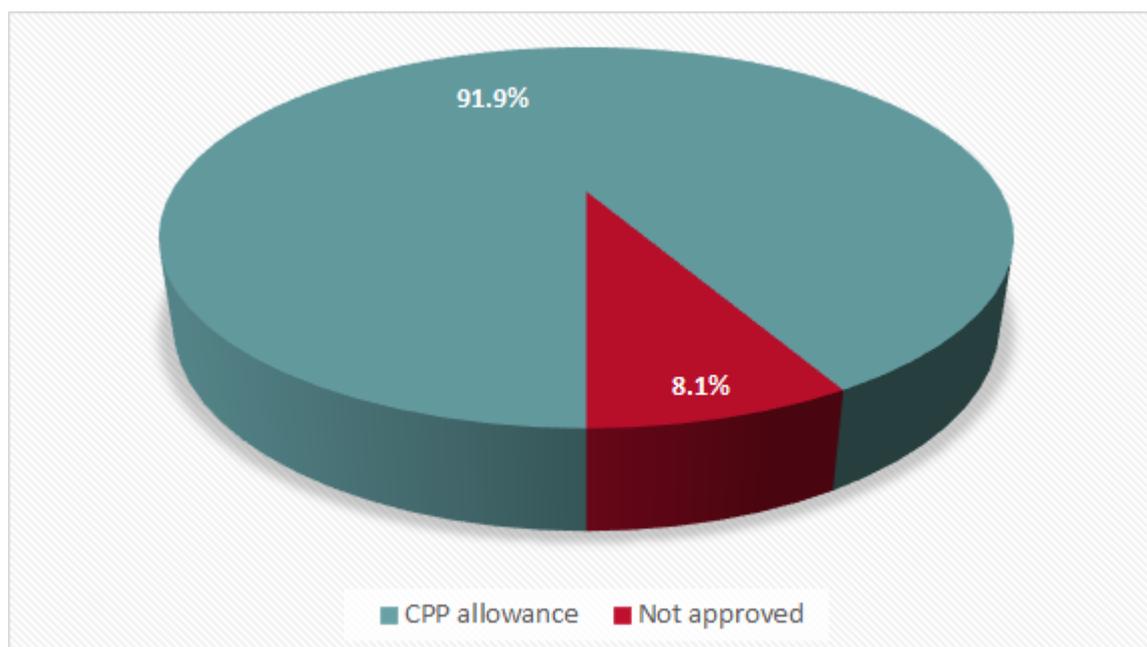
*Planned outage standards and incentives***Table 3.4 Planned outage standards**

	SAIDI (Minutes)			SAIFI (Interruptions)		
	QIS Target	Buffer	Limit	QIS Target	Buffer	Limit
Current standard (DPP3)	65.32	130.64	195.96	N/A	N/A	1.11
Aurora's proposal	72.16	123.80	195.96	N/A	N/A	1.11
Our draft decision	72.16	123.80	195.96	N/A	N/A	1.11
Our decision	72.16	123.80	195.96	N/A	N/A	1.11

- 3.30 Our decision to apply the incentive scheme to Aurora's planned interruptions provides Aurora with a financial incentive to improve its notification of interruptions and undertake work efficiently within a set notification window. It also encourages Aurora to minimise planned interruption cancellations at short notice.
- 3.31 Further detail on our planned and unplanned interruptions' decision and underlying reasoning is contained in Attachment C.

Our decision on capex

- 3.32 Capital expenditure is recovered over the life of the asset, so while only a proportion of it will be recoverable through the price path during the five-year CPP period, its impact on prices will extend beyond the CPP period, with the full impact on pricing becoming apparent when we set prices for the subsequent regulatory period.
- 3.33 Aurora proposed a total of \$356.3 million of capex (real \$2020) over the five-year CPP period. Our decision is to provide for \$327.4 million (real \$2020) of capex over the five-year CPP period which is a proposed reduction of 8.1% on what Aurora proposed. Figure 3.2 illustrates this.

Figure 3.2 Decision breakdown of capex

3.34 The 8.1% reduction, relative to Aurora's proposal comprises:

- 3.34.1 \$3.3 million of unverified poles capex because pole reinforcement may be viable economically from RY24;
- 3.34.2 \$2.5 million in distribution and LV cables, pole-mounted switches, pole-mounted fuses, and distribution transformer capex due to a modification of Aurora's repex modelling assumptions;
- 3.34.3 \$5.2 million of growth and security capex due to the need for Aurora to support the change in Dunedin CBD 33 kV cable architecture with a business case;
- 3.34.4 \$1.7 million deferral of pole mounted distribution transformer capex to reflect change in strategy requiring a business case;
- 3.34.5 \$2.1 million of consumer connection capex due to demand uncertainty; and
- 3.34.6 \$14.1 million based on a 5% top-down efficiency adjustment to reflect improved asset management systems and processes, new Field Service Agreements increasing competition and better works delivery processes.

3.35 To address expenditure due to uncertainty of network capacity need as well as future expenditure required beyond the first three-years of the CPP period related to risk, we are proposing two reconsideration mechanisms. Aurora may apply to us

after the CPP is set and during the CPP period to include approval of expenditure for:

3.35.1 work that is dependent on a capacity requirement, caused by a change in security of supply, or an increase in demand or generation on Aurora's network; and

3.35.2 work that may be required due to risk events relating to the condition of the network.

3.36 Table 3.5 below details at a category level, the capex expenditure approved by us, that proposed in our draft decision and that proposed by Aurora in its application.

Table 3.5 Capex by category (real \$2020)

Expenditure category	Aurora proposal \$m	Draft decision \$m	Decision \$m ³⁹
Asset renewals	281.8	258.6	262.9
Network growth and security	30.3	16.2	23.8
Other network capex	29.1	25.7	25.7
Non-network capex	15.2	15.0	15.0
TOTAL	356.3	315.5	327.4

3.37 Further detail on the capex decision and reasoning is contained in Attachment D. This includes a discussion at a category level of the changes to capex relative to Aurora's proposal and our draft decision.

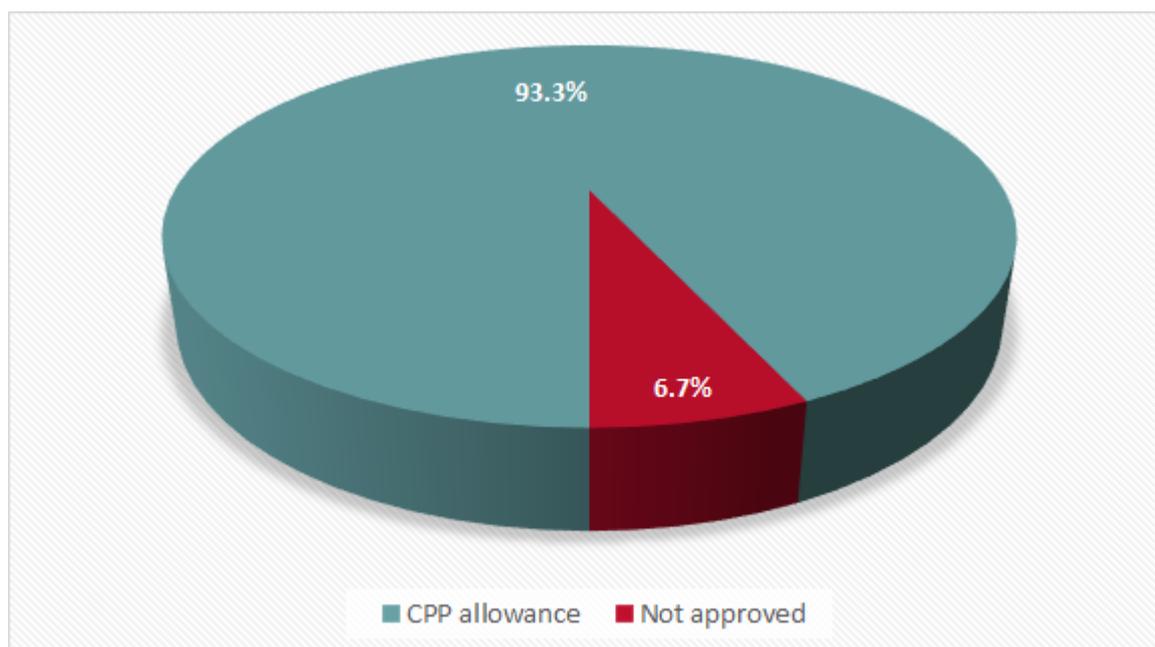
Our decision on opex

3.38 The opex forecast that we use for Aurora's CPP directly affects the price path, as Aurora will be able to fully recover this amount during the CPP period.

3.39 Aurora proposed a total of \$252.9 million of opex (real \$2020) over the five-year CPP period. Our decision is to provide for \$236.0 million (real \$2020) of opex over the five-year CPP period which is a proposed reduction of 6.7% on what Aurora proposed. Figure 3.3 illustrates this.⁴⁰

³⁹ Excludes capital contributions and any capex associated with Right of Use assets.

⁴⁰ All opex figures include operating leases.

Figure 3.3 Decision breakdown of opex

3.40 The 6.7% reduction, relative to Aurora's proposal comprises:

3.40.1 A \$16.2 million reduction in SONS and people expenditure due to the proposed amounts not reflecting the expenditure objective. This reduction over the CPP period reflects our view that while Aurora needs to spend more than other EDBs in the short term to build capability and meet additional unique requirements after a sustained period of under investment, the expenditure uplift should not be permanent or maintained for a lengthy period. We have reduced the SONS and People cost allowance over the CPP period to reflect one-off set-up costs coming to an end and efficiencies taking effect.

3.40.2 A \$0.7 million reduction in maintenance opex due to network growth trend multiplier removal from corrective maintenance and a reduction in reactive maintenance opex forecast.

3.41 Table 3.6 below details at a category level the opex expenditure approved by us, that proposed in our draft decision and that proposed by Aurora in its application.

Table 3.6 Opex by category (real \$2020)

Expenditure category	Aurora proposal \$m	Draft decision \$m	Decision \$m ⁴¹
Preventive, Corrective & Reactive Maintenance	70.3	69.4	69.7
Vegetation Management	21.2	16.1	21.2
System Operations and Network Support (SONS) and People Costs	120.7	82.5	104.4
Information Technology (IT) Opex	17.0	17.0	17.0
Premises, Plant and Insurance	5.1	5.1	5.1
Governance and Administration	15.6	14.5	15.6
Distributed Energy Resource (DER) Upper Clutha	3.0	3.0	3.0
TOTAL	252.9	207.7	236.0

3.42 We received a number of submissions, predominantly from industry submitters, on the opex allowances proposed in our draft decision. We have carefully considered these submissions and undertaken further analysis.

3.43 As a result, in some opex categories we have increased, relative to our draft decision, the amounts allowed for. Further detail on these changes, and the reasoning behind our decision on opex, is contained in Attachment E.

Our decision to cap revenues to limit price shock

3.44 As part of our CPP decision, we have sought to reduce the shock of large price increases to Aurora's consumers by capping the amount of revenue Aurora is allowed to recover over time. Various methods were considered to smooth or cap the revenue increase including adjusting the starting point of Aurora's total revenue in the first year of its CPP, adjusting the annual rate of change in revenues over the duration of the CPP, and spreading the revenue changes across more than one regulatory period.

⁴¹ Excludes operating lease costs.

- 3.45 Our draft decision considered two options to cap revenue. The first and preferred option was to cap increases in Aurora's forecast revenue from prices by 10% in each year of the CPP period, including the first year.⁴² The second option was to cap the revenue increase in the first year to 5%, with a cap of 10% revenue increases thereafter for each remaining year of the CPP. The revenue increases for both options were inclusive of inflation.
- 3.46 After considering submissions on the two options, and after analysing the effects of the revised uplift in approved expenditure provided for in the decision relative to the draft decision, we have decided on approach that is variant of the first option.
- 3.47 Our decision to cap Aurora's revenues is based on an annual 10% cap on the nominal increases in its forecast revenue from prices over the five-year CPP period. However, in any particular year the actual increase in revenue may differ to the 10% cap depending on adjustments each year. Our decision will allow Aurora to recover increases in the latest forecast annual transmission charges compared to our initial forecast transmission charges used in initially setting the price path. The revenue cap is to be adjusted for any variation between the initial forecast of inflation and the most recent Reserve Bank forecasts of inflation. Attachment K describes how Aurora will make adjustments to the cap.
- 3.48 The initial 10% revenue cap moderates the price shock while limiting the amount of unrecovered revenue that is deferred beyond the five-year CPP period. The revenue cap preserves Aurora's incentives to invest by ensuring it can expect to recover the efficient costs of making a proposed additional investment within a reasonable timeframe.
- 3.49 The adjustments that will be incorporated each year into the revenue cap will prevent Aurora from being exposed to unforeseen cost increases arising from inflation and transmission charges which if not otherwise accounted for could impede Aurora from undertaking the necessary upgrade and repair of its network.
- 3.50 Further detail on the price path and revenue capping decision and reasoning is contained in Attachment G.

⁴² Note that the increase applies to only the lines charge component of the electricity bill. The overall increase in electricity bills will be lower than this.

- 3.51 Table 3.7 shows the resulting revenue profile over the CPP period as a result of our decision compared with Aurora’s proposal and our draft decision. The main reasons for the variances are the effect of the differences between the level of expenditure approved relative to that in Aurora’s proposal and in the draft decision combined with the effect of the 10% revenue cap mechanism.

Table 3.7 Aurora forecast revenue compared with Aurora’s proposal and our draft decision (nominal)

	2021/2022 \$m	2022/2023 \$m	2023/2024 \$m	2024/2025 \$m	2025/2026 \$m
Aurora’s proposal	100.8	138.8	156.9	173.6	186.7
Draft decision	107.1	117.8	129.6	142.6	156.8
Decision	107.1	117.8	129.6	142.6	156.8

The indicative price impacts of our decision on Aurora’s consumers

- 3.52 A fundamental concern for many of Aurora’s consumers that met with us and provided written submissions was the potential size of the price increases and, especially for consumers from Cromwell and Alexandra, the large differences in Aurora’s prices, and in the size of proposed price increases, between its three pricing regions. These themes are outlined in Chapter 6.
- 3.53 Under the Part 4 legislative regime, we do not set the prices for individual consumers or for the pricing regions on Aurora’s network. Setting all those prices is a matter for the company to determine through the application of its pricing methodology.
- 3.54 The Electricity Authority sets distribution pricing principles, publishes guidance material and assesses distributors’ pricing methodologies against those principles. We note that Aurora’s pricing methodology seeks to reflect differences in its cost of supplying electricity to the various consumers and parts of its network. The Electricity Authority released its Distribution Pricing Scorecards 2020 on 23 February 2021. This details electricity lines companies, including Aurora’s average score and ranking in relation to a set of distribution pricing criteria.⁴³

⁴³ Electricity Authority, Distribution Pricing Scorecards: 11 January 2021. <https://www.ea.govt.nz/assets/dms-assets/27/Distribution-Pricing-Scorecards-2020-Summary-of-findings-and-key-themes.pdf>.

- 3.55 The Authority also released, on the same day, its independent review of Aurora's regional pricing.⁴⁴ The review finds that there are changes that should be made to improve Aurora's regional cost allocation. The changes would likely benefit Aurora's consumers in Central Otago and possibly those in Queenstown. The review goes on to note that regardless of improvements to regional cost allocations, regional differences in distribution costs per connection will persist because of the large differences in population density across Aurora's three pricing regions.
- 3.56 Aurora has already made a change to its pricing structure to make it more cost reflective, and has indicated that it intends to consult on further changes at a later date.⁴⁵
- 3.57 Based on our understanding of Aurora's *current* pricing methodology we have estimated the indicative price impacts as a result of the CPP for residential consumers in Aurora's three pricing regions.
- 3.58 In Table 3.8 below we compare our estimates of the indicative price increases with restated estimates of the indicative price increases Aurora released with its CPP application. Aurora's estimate of price increases was based on Aurora's proposed levels of expenditure but used different assumptions to us to estimate the price impact. For example, Aurora's estimates excluded GST and inflation, and stated the impact of its proposed increases on consumers' bills in a way that many of its consumers may not be familiar with. In our draft decision, we restated Aurora's estimates to include GST and expected inflation since these are always part of the electricity price consumers pay.
- 3.59 Our modelled indicative monthly electricity bill impacts have not changed since our draft decision, despite the fact that our decision allows Aurora an increased expenditure allowance and thus revenue relative to our draft decision. This is because the yearly 10% revenue cap we have put in place means that the additional revenue that Aurora has been provided with in our decision relative to our draft decision is not recovered in the CPP period but deferred to the period after the CPP. The total amount of revenue being deferred into the period after the CPP is \$69 million.

⁴⁴ Sense Partners: Aurora's regional pricing. 12 February 2021. <https://www.ea.govt.nz/assets/Aurora-regional-pricing-report-February-2021.pdf>.

⁴⁵ Aurora news and updates: [Customer feedback prompts changes to regional pricing](https://yoursay.auroraenergy.co.nz/news-and-updates/news_feed/customer-feedback-prompts-changes-to-regional-pricing). 19 January 2021. https://yoursay.auroraenergy.co.nz/news-and-updates/news_feed/customer-feedback-prompts-changes-to-regional-pricing.

- 3.60 Furthermore, we have not adjusted the modelling to account for our decision on the cap because changes to the annual allowable revenue will only depart from the 10% cap when inflation and transmission charge forecasts do not transpire. It is not clear if, and to what extent, this will occur over the CPP period.

Table 3.8 Indicative monthly electricity bill impacts RY24 based on our decision

Indicative increase in residential electricity bill for the average residential consumers ⁴⁶	Dunedin	Central Otago and Wanaka	Queenstown
Aurora's original proposal	\$20.30	\$30.90	\$24.10
Based on Aurora's proposal (restated to include GST and inflation)	\$32.70	\$47.30	\$39.80
Based on our decision	\$22.20	\$31.50	\$22.70
Estimated reduction in price increase due to our scrutiny	\$10.50	\$15.80	\$17.10

- 3.61 We estimate average price increases for residential consumers of \$22 per month in Dunedin, \$32 in Central Otago and Wanaka, and \$23 in the Queenstown region. These are average price increases, but the increase to individual consumers will be different, and quite possibly very different, due to differences in their usage profiles, among other factors. There is also a significant difference in monthly electricity bills in Otago between, for example, summer and winter.
- 3.62 Our estimates of the price increases are around 30% to 40% less than the price increases which were inherent in Aurora's proposal, when expressed on a comparable basis to include GST and inflation. This lower level of price increase reflects the benefits from the close scrutiny we have placed on Aurora's investment plans and our revenue cap.
- 3.63 Nevertheless, further price increases are forecast to occur beyond the third year of this CPP shown in the table above. The total cost of electricity for a residential consumer is forecast to increase by between an extra \$9.30 and \$14.60 per month across the three pricing regions in both 2024-2025 and in 2025-2026.
- 3.64 The indicative price increases are among the largest we have seen in the electricity lines sector. This reflects the extended period of underinvestment by Aurora, and the large size of the remedial work programme Aurora's network now requires as well as expenditure prior to the CPP period. Aurora's investment programme commenced in RY18 and will need to continue through the CPP period (and likely beyond).

⁴⁶ These increases are for a three-year period, as per Aurora's CPP application.

- 3.65 It should also be noted, as discussed above, that Aurora has signalled it is changing its regional pricing approach. Changes to Aurora's regional pricing approach will very likely rebalance charges amongst Aurora's consumers and result in residential price changes being different to our indicative estimates.
- 3.66 More detail on the assumptions and limitations of our price impact modelling is contained in Attachment H.
- 3.67 Aurora recently announced its prices for the 2021-2022 pricing year. For a standard residential electricity user, it estimates the lines component of monthly bills will rise by \$4.94 for Dunedin consumers; \$9.19 for Central Otago and Wanaka consumers; and \$6.20 for Queenstown consumers. These price changes, which include GST, were based on the expenditure, and revenue cap, we provided for in our draft decision.
- 3.68 Based on our final decision, there will be no change to these prices for the 2021-22 year.

The burden of higher prices on consumers

- 3.69 We are very aware of the significant impact COVID-19 has had on the Otago region. The reduction in tourism has had a significant impact on the Otago economy. The price increases required to fund Aurora's additional expenditure will come at what will be a challenging time for many Otago electricity consumers.
- 3.70 We note that other parties can alter this burden on consumers (including Aurora itself):
- 3.70.1 Aurora can set its prices to recover less revenue than we determine, to further internalise some of the cost within Aurora, and relieve consumers of some of this burden.⁴⁷
- 3.70.2 Aurora could establish a hardship fund to assist more vulnerable consumers.

Our determination to give effect to these decisions

- 3.71 We have published a CPP determination alongside this reasons paper. The CPP determination largely carries over compliance and reporting features from the Powerco CPP determination and the DPP3 determination. In particular, we note the following features of the CPP determination:

⁴⁷ Aurora has options itself to relieve the extent of the price shock by pricing under the cap (which will defer delivery into the future). To ensure that Aurora is not constrained in its ability to do so, our decision is to remove the cap on voluntary undercharging that currently applies to Aurora under DPP3.

- 3.71.1 the requirements necessary to comply with, and report on, the price path, including an annual revenue wash-up calculation;
- 3.71.2 the requirements necessary to comply with, and report on, the quality standards for planned interruptions, unplanned interruptions and extreme events, including director certifications of the reporting;
- 3.71.3 the IMs are subject to the IM variations, as discussed in Attachment I;
- 3.71.4 we have simplified the treatment of voluntary undercharging amounts foregone;
- 3.71.5 specification of a starting price for the first year of the CPP regulatory period;
- 3.71.6 set out how to calculate the forecast revenue from prices and to show demonstrably reasonable forecasts;
- 3.71.7 specification of a 10% annual rate of change in revenue allowed in the CPP regulatory period;
- 3.71.8 specification of the WACC rate for the CPP regulatory period, including the final year which does not overlap DPP3;
- 3.71.9 set out how to calculate the revenue wash-up amount;
- 3.71.10 specification of the forecast capex and forecast opex amounts for the purposes of the capex IRIS and opex IRIS incentive schemes;
- 3.71.11 set out how to calculate the quality incentive amount;
- 3.71.12 the compliance requirements on price-setting and for the Annual Compliance Statement, including various auditor assurance and director certification requirements; and
- 3.71.13 two technical matters which we consulted on separately to the draft decision. Discussed in Attachment J.

Chapter 4 Accountability for CPP performance and delivery

Purpose of this chapter

- 4.1 This chapter sets out the CPP measures that we have put in place, and the information disclosure (ID) measures we propose to put in place, to address key risks inherent in Aurora’s performance and delivery of its CPP. These measures include proposed additional ID requirements which are an integral part of the overall package of measures. They will provide Aurora’s consumers and other stakeholders (including us) with information that will enable them to assess if Aurora is effectively delivering its CPP.

Background

- 4.2 In our November 2020 draft decision on Aurora’s CPP, we explained that the accountability measures will not be dealt with in the core CPP itself, but through a complementary package of additional ID requirements to apply to Aurora. This is a separate related form of regulation.
- 4.3 We explained that the process for setting the ID requirements is not bound to the same statutory timeframes as our CPP decision and, as such, we have specified them in a draft ID decision which is separate from the CPP.
- 4.4 Our November 2020 CPP draft decision paper included a high-level overview of the scope of the proposed ID requirements (as draft policy decisions only) to make it easier for Aurora’s consumers and stakeholders to provide feedback. This scope is summarised in Table 4.1.

Table 4.1 Scope of draft decisions package as published in November 2020

Draft decisions on Aurora’s CPP	<p>The length of the CPP period</p> <p>Aurora’s expenditure allowances over the CPP period</p> <p>The quality standards and quality incentives to apply to Aurora over the CPP period</p> <p>The revenue path/cap to apply to Aurora over the CPP period, which caps the recovery of Aurora’s revenue</p>
Draft policy decisions on additional ID requirements for Aurora	<p>What information Aurora will be required to publicly disclose over the CPP period and beyond</p> <p>The manner and form in which this information is disclosed</p>

- 4.5 Our draft ID decisions are detailed in a separate paper, published alongside our CPP final decision.⁴⁸
- 4.6 In Chapter 5 of our November 2020 CPP draft decision on Aurora's CPP we outlined our view of the key risks and issues in connection with Aurora's delivery and performance of its CPP and the challenges associated with Aurora delivering on its plan. We covered how those risks and challenges are being addressed through our package of measures - our CPP draft decision, our proposed ID requirements, the future use of our influence, and ongoing liaison with other agencies.
- 4.7 In our November 2020 CPP draft decision, we explained that the proposed ID measures are a complementary set of measures to those contained in the CPP and they are designed to provide Aurora's consumers with information that will enable them and us to assess Aurora's performance, including how it is delivering its CPP.

Structure of this Chapter

- 4.8 In this chapter we summarise:
- 4.8.1 our draft ID decisions to provide information that will allow Aurora's consumers and other stakeholders to assess its performance and encourage it to achieve better performance over time;
 - 4.8.2 the relevant steps that Aurora has already taken, or has proposed to take, to improve its ability to deliver against its plan, and our assessment of those steps;
 - 4.8.3 our view of the key risks and issues in connection with Aurora's delivery and performance of its CPP, the challenges associated with it delivering on its plan and how these are being addressed through a mix of our CPP decision, our proposed ID requirements and ongoing liaison with other agencies; and
 - 4.8.4 our reasons for why we considered certain measures and decided not to implement them (ie, these are excluded from the CPP final decision and from the draft ID decisions).

⁴⁸ Commerce Commission "Aurora Energy Limited Proposed Additional Information Disclosure Requirements - Draft reasons paper" (31 March 2021).

Summary of our draft ID decisions

4.9 The details of our draft ID decisions are set out in our Aurora ID Draft Decision Paper published on 31 March 2021 along with the draft ID Determination.⁴⁹

4.10 Our draft ID decisions propose requiring Aurora to:

4.10.1 annually disclose the following categories of information, to ensure that sufficient information is readily available to interested persons to assess whether the purpose of Part 4 of the Act is being met:

4.10.1.1 Delivery of the CPP;

4.10.1.2 Quality of services;

4.10.1.3 Pricing information;

4.10.1.4 Asset management;

4.10.1.5 Project quality assurance;

4.10.1.6 Cost estimation; and

4.10.1.7 Data collection and data quality processes.

4.10.2 in the first disclosure year within its CPP period, disclose its plans that detail:

4.10.2.1 how it will continue to develop and improve its processes and practices for seven specific qualitative information initiatives (voltage quality, customer charter and compensation scheme, management and planning of planned outages, asset management, project quality assurance, cost estimation and data quality);

4.10.2.2 how it plans to deliver safety-related projects and programmes to mitigate safety risks; and

4.10.2.3 what capital expenditure and operational expenditure projects and programmes outlined in its CPP proposal it plans to deliver over the CPP period.

⁴⁹ Commerce Commission "Aurora Energy Limited Proposed Additional Information Disclosure Requirements - draft reasons paper" (31 March 2021).

- 4.10.3 in subsequent years, provide an annual update on its performance against those plans; and
- 4.10.1 in the third disclosure year, engage an appropriate expert or experts for five topic areas (delivery of capex and opex under the CPP, voltage quality monitoring practices, consumer engagement practices⁵⁰, asset management practices, and practices for identifying and mitigating safety risks) to provide their opinions for public disclosure by 1 December 2023 on Aurora's progress in developing or delivering these areas, and their recommendations for improvement for Aurora to consider.

We want to hear from you on our draft ID decisions

- 4.11 We want to hear and consider your views on our draft ID decisions contained in our Aurora ID Draft Decision Paper. This will assist us to make a final decision on a package of measures that promotes the long-term benefits of consumers.
- 4.12 To give us time to consider your submission leading up to our Aurora ID final decision, we ask that we receive your emailed submission by 10 May 2021, and cross submissions following publication of all submission responses on our website, by 24 May 2021. We will consider all submissions and cross-submissions received by these dates in reaching our final decision on ID.
- 4.13 Please email your submission (or cross-submission, if applicable) to feedbackauroraplan@comcom.govt.nz with 'Aurora ID Draft Decision' in the subject line of your e-mail. All submissions will be published on our website, unless you indicate to us that your submission, or parts of it, are confidential.

Aurora has taken steps to improve its ability to deliver

- 4.14 Aurora has taken several steps to improve its capability to deliver against its CPP plan. These are detailed in its CPP proposal and the Verifier's report.^{51,52} Some of these include:
- 4.14.1 Aurora has carried out its own risk assessment of its ability to deliver its work programme. The risks it has identified include resource availability, access to specialist technical services and procurement. Aurora has mitigation measures already underway to address these risks.

⁵⁰ Consumer engagement practices covers both general and specific consultations by Aurora on proposed changes to Aurora's charter and compensation scheme and its pricing methodology.

⁵¹ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#).

⁵² [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#).

- 4.14.2 It has reviewed its contracting approach and set up agreements with two additional providers, Unison and Connetics. It can also draw labour resources from other approved contractors for tendered and other work. Aurora's field service agreements include elements to improve service delivery and efficiency over time.
- 4.14.3 Aurora has focused on ensuring that internally it is well set up with the appropriate roles required to manage delivery of the work programme via its new contracting model. It had also set up a Planning and Work Delivery design team for a 12-month period which was focused on creating and implementing the right processes to support project delivery. It has invested in Sentient, a project and programme management software tool to enable tracking of projects and programmes.
- 4.15 Aurora's delivery capability was tested by the Verifier, which concluded that Aurora's approach to deliverability appears well considered, that discussions with service providers are well advanced with resources largely secured, and that it had the ability to source any additional resources required. Although there are delivery risks, it expected that Aurora can, and will, manage them.
- 4.16 The Verifier suggested we consider discussing with Aurora some performance measures it could meaningfully use, and the reporting we would like to see on project costs, risks and deliverables associated with individual programmes and projects, utilising the Sentient tool.⁵³
- 4.17 We questioned the Verifier on its assessment approach and conclusions in the Verifier debrief workshop. We requested, and obtained, further information from Aurora to better understand how it will manage quality assurance of delivered work through the delivery processes it had set up, and we sought to understand what level of reporting it was already doing to assist with our thinking on the monitoring requirements.
- 4.18 We agree with the Verifier's findings on Aurora's ability to deliver, provided there are also appropriate mechanisms in place to enable stakeholders and consumers to hold Aurora accountable for delivering against its plan, and improving performance in the longer term. We detail these further in this chapter.

⁵³ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Section 7 "Matters for the Commission to consider".

Submitters' views on our proposed ID accountability measures

- 4.19 In the Consumer Feedback Form which formed part of our CPP Draft Decision suite of documents, we included a specific question on accountability measures. We asked consumers and stakeholders if our proposed accountability measures would provide enough information for them to know whether Aurora is delivering its plan and improving its performance.
- 4.20 We also canvassed for feedback on whether consumers and stakeholders thought there was further or alternative information that we should consider.
- 4.21 Several submitters expressed doubts about ID being effective as a tool to hold Aurora to account, specifically mentioning a lack of consequences for underperformance as a concern.^{54,55} The idea of a consumer watchdog group or a committee representing consumers was suggested to hold Aurora to account.^{56,57}
- 4.22 Submitters also felt that Aurora's reporting may be inaccurate, late and too complex for consumers to understand and engage with.⁵⁸ Some encouraged us to ensure Aurora provided the information in an accessible and digestible manner.
- 4.23 Submitters provided feedback on the breadth and granularity of reporting measures and provided suggestions on how these measures could be enhanced.^{59,60}
- 4.24 Some submitters said that there should be more reporting on safety, given this is one of the key drivers of Aurora's CPP proposal.⁶¹ Submitters would like to see better information on planned outage performance, in light of Aurora's recent management of planned outages, expressing specifically that planned outages need to be better planned, timed and notified.

⁵⁴ [Trevor Tinworth – Submission on draft decision for Aurora's CPP – 17 December 2020.](#)

⁵⁵ [CC0055 –Submission on draft decision for Aurora's CPP – 8 December 2020.](#)

⁵⁶ [James Dicey – Submission on draft decision for Aurora's CPP – 18 December 2020.](#)

⁵⁷ [Robin Dicey – Submission on draft decision for Aurora's CPP – 9 December 2020.](#)

⁵⁸ [CC0023 – Submission on draft decision for Aurora's CPP – 29 November 2020.](#)

⁵⁹ [James Dicey – Submission on draft decision for Aurora's CPP – 18 December 2020.](#)

⁶⁰ [Richard Healey – Submission on draft decision for Aurora's CPP – 17 December 2020.](#)

⁶¹ [Richard Healey – Submission on draft decision for Aurora's CPP – 17 December 2020.](#)

- 4.25 Concern was expressed that without us mandating the customer charter and compensation, there was a risk that Aurora could withdraw or downgrade them to the detriment of consumers.^{62,63}
- 4.26 Submitters were concerned about the efficiency of spend, with several suggesting that reporting measures must include visibility of actual costs of delivering projects compared against Aurora’s planned costs.⁶⁴ Submitters explained that they are worried about having to pay twice, or too much, for the work delivered by Aurora.
- 4.27 We recognise that some submitters, especially consumers, have concerns that ID will not be a strong enough measure alone to hold Aurora accountable to its consumers and other stakeholders for the effective delivery of its CPP. However, our view is that the measures inherent in the CPP that we have implemented for Aurora (ie quality standards) along with our proposed additional ID requirements together create sufficient incentive for Aurora to deliver its CPP effectively, for the following reasons:
- 4.27.1 Improved transparency: The improved transparency brought about by the proposed additional ID requirements will enable Aurora’s consumers and other stakeholders to identify and report situations where it departs from its commitments. This in turn will put pressure on Aurora, especially its senior management and Board who have strong interests in the success of its CPP, to address those departures from plan. In relation to other lines companies, and in other areas we regulate, we have observed suppliers taking action to address any matter that has been “brought to light” through ID and our analysis of that information; and
- 4.27.2 Concern over the likelihood of additional regulation in the future: Aurora has indicated that it intends to seek an additional CPP in the future to undertake expenditure to improve its reliability. If, in the future, when it makes such an application Aurora has a record of underdelivering on its current CPP commitments, we would be more inclined to consider imposing additional measures, such as a mandated consumer compensation scheme.⁶⁵

⁶² [James Dicey – Submission on draft decision for Aurora's CPP – 18 December 2020.](#)

⁶³ [Trevor Tinworth – Submission on draft decision for Aurora's CPP – 17 December 2020.](#)

⁶⁴ [Richard Healey – Submission on draft decision for Aurora's CPP – 17 December 2020.](#)

⁶⁵ Commerce Act 1986, section 53M(2)(c).

4.28 The detailed views of submitters and how we have considered that feedback in our draft ID decisions, are explained further in our ID Draft Decision Paper.⁶⁶

Key issues and risks

4.29 In Table 4.2 we:

- 4.29.1 summarise our view of the key issues and risks;
- 4.29.2 describe the implications of the risks materialising;
- 4.29.3 discuss the measures we have decided on, which includes categorising the implementation of these measures under three groups (CPP final decision, ID draft decision and liaison with other agencies); and
- 4.29.4 provide details of where further discussion on each measure or proposed measure can be found.

⁶⁶ Commerce Commission "Aurora Energy Limited Proposed Additional Information Disclosure Requirements - Draft reasons paper" (31 March 2021).

Table 4.2 Key issues, risks and measures

Key risk/issue	Implication	How it is addressed	Category of mechanism – CPP final decision, ID draft decision or liaison with other agencies	Location of further detailed discussion in our paper
Aurora may have proposed work that could turn out to be unnecessary or can be delayed	Consumers pay too much for Aurora's services because prices reflect work that is not needed or not needed yet	We undertook a thorough review of Aurora's proposed work	CPP evaluation	Attachment D (Capex), Attachment E (Opex)
Aurora may not have identified all the work that its network needs and may need some flexibility to include newly-identified or uncertain work	Necessary work on Aurora's network is not carried out when it is needed. The quality of service to consumers may suffer as a result	Aurora may be able to reprioritise its work. We also propose two reconsideration mechanisms that will allow for Aurora to propose new and uncertain work	CPP implementation	Attachment I (IM variations)
		Requiring Aurora to report on ongoing improvements in its data quality processes	Proposed ID requirement	Chapter 11 in our ID Draft Decision Paper
Aurora may have overestimated the costs for the required work, resulting in us allowing higher than necessary revenue increases. Aurora might carry out its work inefficiently	Consumers pay too much for Aurora's services	We reviewed Aurora's costs for the proposed work	CPP evaluation	Attachment D (Capex), Attachment E (Opex)
		Requiring Aurora to report on cost efficiencies	Proposed ID requirement	Chapter 10 in our ID Draft Decision Paper
Aurora might not deliver all of the planned work it has proposed	Consumers pay too much and necessary work on Aurora's network is not carried out when required	Requiring Aurora to produce an Annual Delivery Report	Proposed ID requirement	This Chapter and Chapter 5 in our ID Draft Decision Paper
		Requiring Aurora to present a summary of its ADR to its consumers in its three regions	Proposed ID requirement	This Chapter and Chapter 5 in our ID Draft Decision Paper

Key risk/issue	Implication	How it is addressed	Category of mechanism – CPP final decision, ID draft decision or liaison with other agencies	Location of further detailed discussion in our paper
		We will perform our own analysis on each ADR to promote consumers' understanding of Aurora's performance	Proposed ID requirement	This Chapter and Chapter 5 in our ID Draft Decision Paper
		Requiring Aurora to produce mid-period expert opinions on its progress on selected areas of the proposed ID requirements	Proposed ID requirement	Chapter 5 in our ID Draft Decision Paper
		We will continue our engagement with WorkSafe NZ	Liaison with other agencies	This Chapter
Aurora is not as transparent with providing information or as responsive with its consumers as it could be	Consumers cannot assess Aurora's performance effectively and communicate their requirements to Aurora. Consumer trust and confidence in Aurora is eroded	Requiring Aurora to disclose whether (and if so how) it has engaged with its consumers on its charter and compensation scheme and future developments of its charter	Proposed ID requirement	Chapter 6 in our ID Draft Decision Paper
		Requiring Aurora to provide information on the quality of its service	Proposed ID requirement	Chapter 6 in our ID Draft Decision Paper

Key risk/issue	Implication	How it is addressed	Category of mechanism – CPP final decision, ID draft decision or liaison with other agencies	Location of further detailed discussion in our paper
Consumers might not understand the full impact of Aurora's planned works programme on the prices they will pay	Consumers' comments on the Aurora's proposal and our draft decision are not informed by an accurate understanding of the price impact. Consumers make poorly informed decisions on how they can change their use of electricity given the size of price increases	We undertook our own modelling of the residential price impact of our CPP revenue settings	CPP evaluation	Attachment H (Price impact)
		Requiring Aurora to disclose more information on regional pricing to make it easier for consumers to understand its pricing methodology	Proposed ID requirement	Chapter 7 in our ID Draft Decision Paper
		We will engage with MBIE and the Electricity Authority on consumer concerns	Liaison with other agencies	This Chapter

- 4.30 In the rest of this chapter we discuss each of these areas and describe in further detail how the key issues and risks are intended to be managed, so that:
- 4.30.1 Aurora completes necessary work on its network and applies for approval of expenditure for additional work, if this is required;
 - 4.30.2 Aurora's spend on the required work is right-sized, it is incentivised to complete its work efficiently, and it continues to work on cost efficiencies;
 - 4.30.3 Aurora delivers on the planned work it has committed to;
 - 4.30.4 Aurora improves transparency and responsiveness towards consumers; and
 - 4.30.5 Aurora enables its consumers to better understand the impact of our CPP decision on their prices.

Aurora completes necessary work on its network and applies for approval of expenditure for additional work if this is required

We undertook a thorough review of Aurora's proposed work in its CPP application

- 4.31 As part of our expenditure assessment as set out in Attachments D and E, we scrutinised Aurora's proposed CPP work plan to determine that the work was necessary, well-justified and aligned with the key drivers of the CPP.
- 4.32 As outlined in Attachments D and E, we did not approve work which we considered unnecessary or work that did not meet the expenditure objective. We also did not approve work which met the expenditure objective, but for which the need was not yet clear and for which Aurora could seek approval in the future. This is discussed below.

We have implemented two CPP reconsideration mechanisms to apply for work not provided for in our CPP final decision

- 4.33 Aurora highlighted uncertainty over the level of spend required in the medium term, including in RY25 and RY26.⁶⁷ We agree there is always uncertainty over medium term expenditure needs, but there is less uncertainty than Aurora contends.
- 4.34 To give Aurora more flexibility to adjust to changes during the CPP period, we have introduced two new reconsideration mechanisms. These allow Aurora to apply to us for approval of expenditure during the CPP period. The eligible work includes:

⁶⁷ See Attachment B.

- 4.34.1 work that is dependent on the need for further supply capacity, caused by a change in security of supply, or an increase in demand or generation on Aurora's network; and
 - 4.34.2 work that may be required due to risk events relating to the condition of the network that were unknown at the time of review of the CPP proposal.
- 4.35 These mechanisms, and the IM variations that give effect to them, are further explained in Attachments D and I respectively.

We propose requiring Aurora to report on ongoing improvements in its data quality processes

- 4.36 One of the reasons that Aurora applied for a three-year CPP period rather than for five years, is that it is working on improving its asset data and asset management maturity in order to support future network planning and expenditure forecasting.
- 4.37 We propose requiring Aurora to disclose information each year that describes its plan for developing and improving its processes for asset data collection and data quality. This will help consumers assess whether Aurora is making progress in these key areas and help them determine whether or not poor data collection and data quality practices is resulting in Aurora forecasting costs poorly, which could result in consumers paying too much. The disclosed information on Aurora's progress should incentivise Aurora to do what it says it will on data quality, as any deviation will be apparent to its consumers. Further information on this ID requirement is contained in Chapter 11 in our ID Draft Decision Paper.

We considered other measures and excluded them

Mid-period price path re-opener of approved revenue in year three of the CPP period

- 4.38 Regulators in other jurisdictions have sometimes allowed a mid-period review of a suppliers' performance, with the potential to reopen the price-quality path to reflect a change in circumstances during the regulatory period.⁶⁸
- 4.39 We note that when such mid-period reviews are allowed, a regulator will typically first consider how the regulated supplier has taken into account the pool of earlier approved expenditure and any reprioritisation of that pool made by the supplier to deal with emerging uncertainties on individual projects and programmes, before considering acting on re-opening the price path.

⁶⁸ <https://www.ofgem.gov.uk/ofgem-publications/51871/riiohandbookpdf> at para 11.13 and <https://www.ofgem.gov.uk/publications-and-updates/decision-mid-period-review-riio-ed1>.

- 4.40 If we adopted a similar approach for Aurora, this could allow for projects to be reconsidered (both added to the list and removed from the list, with revenue adjustments) via a review halfway through the CPP period (circa year three).
- 4.41 We excluded this as an option, as it may result in material uncertainty for Aurora and potentially deter needed investment on the Aurora network. Furthermore, a reopener of this type would impose additional uncertainty on consumers, especially in relation to the price adjustments that would result from projects being added or removed.

A shorter regulatory period of three years

- 4.42 To address any uncertainty over medium term expenditure needs discussed above, Aurora proposed a three-year CPP period in its CPP application. Aurora submitted that this would give it more time to correctly identify necessary work required on its network and for it to accurately forecast the required spend in years four and five of the CPP period. It explained that this was the primary reason for proposing a three-year CPP period.⁶⁹
- 4.43 We consider that any information uncertainty in years four and five of a five-year CPP period is instead able to be addressed through the reconsideration mechanisms described above for unforeseen and uncertain work. Our detailed reasons for a five-year term over a three-year term for the CPP period are set out in Attachment B.

Ensuring Aurora's spend on the required work is right-sized, it is incentivised to complete its work efficiently and continues to work on cost efficiencies

We propose requiring Aurora to report on improvements in cost estimation

- 4.44 Our evaluation of Aurora's proposed capex and opex spend for the required work included a review of its unit costs and contracting arrangements. Our assessment was that for the most part, the unit rates had been adequately tested and found to be consistent with industry unit costs.
- 4.45 However, the review of costs that we performed is only a snapshot in time, ie, it is based on where Aurora is currently at.

⁶⁹ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), para 187-190.

- 4.46 We propose to require Aurora to disclose information each year that describes its plan for developing and improving its project cost estimation processes. This will help consumers assess whether Aurora is making progress in this area and help them assess if poor cost estimation practices are resulting in Aurora overestimating costs, resulting in consumers paying too much.
- 4.47 The disclosed information on Aurora’s progress should in turn incentivise Aurora to enhance its processes, as any deviation will be apparent to its consumers. Further information on this ID requirement is contained in Chapter 10 in the ID Draft Decision Paper.

We considered changing incentive rates and excluded this change

- 4.48 Under our Part 4 regulation, setting the price path in advance provides Aurora with incentives to focus on improving cost efficiencies over time. Aurora benefits from any improved efficiencies during the CPP period because it is permitted to earn the allowed revenue and keep the benefits of any cost reductions as increased profit. At the end of the CPP period, the benefits of any efficiency gains will be shared with consumers through lower prices in future periods. This incentive arrangement ensures that the proportionate sharing of benefits remains constant over time.
- 4.49 The sharing of cost efficiencies between Aurora and consumers under that incentive mechanism is determined by the incentive rates.⁷⁰ For DPP3, these are 23.5% for capex and 23.5% for opex.⁷¹ This means for every dollar of savings; Aurora will receive 23.5 cents and consumers receive 76.5 cents of the savings in lower prices. Conversely, if Aurora overspends its approved expenditure allowances, Aurora will bear 23.5% of this and consumers will bear 76.5%.
- 4.50 We have the option of altering these incentive rates for a CPP. We considered whether we should have tailored incentive rates for Aurora for opex and capex or should alter the rates for overspends (reducing these for consumers).

⁷⁰ For more information on the expenditure incentives applying to EDBs during DPP3, see Attachment E of our DPP3 final reasons paper. See Commerce Commission “Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision – Reasons paper” (27 November 2019), Attachment E.

⁷¹ Note that these are the incentive rates if Aurora transitions from its CPP back to a DPP. If Aurora transitions from its CPP to another CPP the opex incentive rate will decrease due to the IRIS adjustment terms necessary when an EDB moves to a CPP. For more information on this see Attachment F.

- 4.51 We have not seen any evidence that would justify changing the incentive rates for opex and/or capex relative to those applying for the DPP. We consider that the current setting of the rates is appropriate for Aurora and is generally consistent with the incentives facing lines companies under the DPP.⁷²

Aurora delivers on the planned work that it has committed to

We propose requiring Aurora to produce an Annual Delivery Report

- 4.52 There is a benefit in ensuring Aurora is active and transparent about how it is delivering its proposed investment during the CPP period. We are proposing that Aurora will prepare an Annual Delivery Report (ADR) for publication to consumers and other stakeholders that will compare what Aurora has delivered against what it said it would deliver.
- 4.53 We propose that the ADR would include a combination of objective volumetric information (ie, numbers) and more subjective qualitative measures (ie, more commentary) that clearly demonstrate how Aurora, through the CPP regime, is delivering for consumers.
- 4.54 Broadly, the proposed reporting measures in the ADR will cover how Aurora is:
- 4.54.1 tracking in delivering the investment required on its network;
 - 4.54.2 tracking with its outage performance (length and frequency of power outages);
 - 4.54.3 engaging with its consumers and stakeholders;
 - 4.54.4 addressing improvements to its charter and compensation scheme;
 - 4.54.5 addressing voltage quality issues on its network; and
 - 4.54.6 improving its processes and practices in managing its assets, collecting and maintaining data, estimating costs, ensuring quality of work done on its network.
- 4.55 We discuss the ADR in more detail in Chapter 5 of our ID Draft Decision Paper.

⁷² See Attachment F.

- 4.56 As part of our CPP consultation processes, we met with Aurora to gather information from it on the workability of the proposed content of the ADR. We sought to understand how an ADR could be produced each year in an efficient manner by utilising the information Aurora already has, and the reporting that it may be doing as part of its business as usual practices. Further information about the ADR is contained in Chapter 5 of our ID Draft Decision Paper.

We propose requiring Aurora to present a summary of its ADR to its consumers in its three regions

- 4.57 We are proposing requiring Aurora to disclose a summary of the key features of the ADR in an annual public forum with its consumers in each of its three regions.
- 4.58 Some submitters said that there should be more regions specified for this purpose. Our preliminary view is that expanding the number of regions is likely to be a costly and complex exercise as firstly it assumes that regional data is available. Further to this, it would involve significant changes to the way regional data is collected, reported and processed through Aurora's systems. We would need to be convinced of the benefits for consumers before considering passing the material costs of developing supporting information systems on to consumers.
- 4.59 During the CPP period we will publish our own analysis on the ADR. Interested persons will be able to consider the information disclosed by Aurora, along with any analysis we publish.

We propose requiring Aurora to report on any mid-period expert opinions obtained on its progress on some areas reported in the ADR to provide further assurance

- 4.60 We propose requiring Aurora to disclose a mid-period (disclosure year 3) expert opinion on the complex areas we consider are important to consumers and other stakeholders, but where performance is difficult for us and consumers and stakeholders to assess. Such a report should provide additional information and scrutiny of Aurora's progress against its CPP plan, and other key areas it needs to develop over the CPP period.
- 4.61 These key areas include delivery of CPP projects and programmes, voltage quality monitoring practices, asset management practices, practices for identifying and mitigating safety risks and consumer engagement practices both in general and specifically on proposed changes to Aurora's charter and compensation scheme and pricing methodology.

- 4.62 A considered expert opinion on a key topic reflecting up-to-date information should provide considerable benefit to all interested persons in testing Aurora's progress. Such an opinion will also provide a mechanism to surface any further issues or areas of concern to stakeholders, should they arise. We have implemented this previously in Transpower's Individual Price-Quality Path reset.
- 4.63 Given the benefits for Aurora's consumers from the expert opinion, our CPP decision enables Aurora to pass through the costs associated with an expert opinion. Further information about this is contained in Attachment G.

We will continue our engagement with WorkSafe NZ

- 4.64 WorkSafe NZ is the regulator for the safe supply and use of electricity and gas in NZ under the Electricity Act 1992. We have in place a regular working relationship with WorkSafe NZ.
- 4.65 Given that one of the three key drivers of Aurora's CPP application is to improve safety, we intend to continue sharing, at a high-level, Aurora's progress in delivering safety improvements with WorkSafe NZ. In the unlikely event that safety deficiencies or non-delivery of safety improvements becomes apparent to us, especially on critical safety work, an avenue then exists for potential intervention to be picked up by WorkSafe NZ.
- 4.66 Aurora has responsibilities on voltage quality under regulation 28 of the Electricity (Safety) Regulations 2010.⁷³ The safety aspects of voltage quality are under WorkSafe NZ's jurisdiction. While we are not responsible for monitoring compliance on voltage supply levels required under regulation 28, we are responsible for monitoring whether the purpose of Part 4 is being met, ie, whether Aurora is providing its regulated service at a quality that reflects consumer demands. We consider that voltage quality is part of providing a service that reflects consumer demands.

⁷³ [Electricity \(Safety\) Regulations 2010](#).

Other ADR-related measures that were considered and decided against*Additional quality standard linked to delivered outputs*

- 4.67 We have decided against implementing any additional quality standard linked to delivered outputs, such as poles replaced versus poles planned. Based on our previous experience with output measures, and upon examining our powers, we are aware it would be challenging to specify these outputs accurately. In addition, if Aurora's circumstances changed during the period or the outputs were too narrowly specified, then it could lead to an outcome that was not in the best interests of its consumers. Such an outcome could arise because Aurora would be incentivised to comply with the output measure, regardless of the overall outcome, to avoid a breach.

Aurora improves transparency and responsiveness towards consumers**We propose requiring Aurora to provide information on its charter and compensation scheme**

- 4.68 In its CPP proposal, Aurora noted its commitment towards the retention and improvement of its customer charter and compensation scheme. We understand Aurora plans to undertake consultation targeting improvement of its charter, compensation scheme and service level commitments.
- 4.69 We commend Aurora for having a compensation scheme and we are proposing to use our ID powers to monitor whether it consults with consumers and other stakeholders, and potentially improves it over the CPP period.
- 4.70 We propose requiring Aurora to disclose information on whether, and if so how, it has improved consumer awareness of its charter and compensation scheme, and its plan for developing and improving its engagement with consumers on its charter and compensation scheme.
- 4.71 We are proposing requiring Aurora to disclose its charter and compensation scheme each year, including disclosing any changes, and disclosing whether it consulted with consumers on those changes. We are also proposing that Aurora describes in the ADR each year whether it has met its commitments under its customer charter, with reasons for any variance.

We propose requiring Aurora to provide information on quality of services

- 4.72 We propose requiring Aurora to provide information each year through an ID requirement to help consumers understand how it is progressing with improving its quality of services. The proposed reporting is focussed on causes of outages, outage-related communication, network reliability and safety improvements, voltage quality monitoring, the extent to which Aurora is meeting its customer charter commitments, and its consumer engagement initiatives. Further detail on this is contained in Chapter 6 in the ID Draft Decision Paper.
- 4.73 The ADR would summarise how Aurora is progressing against this requirement.

There are other quality measures which we considered but decided against*Additional quality standard on voltage quality*

- 4.74 Power quality featured strongly in some submissions to us. It appears that many of the power quality issues raised with us in submissions may be voltage regulation problems or loose or poor connections on the LV network, causing voltage reference changes, for example. Both issues can affect the end user significantly.
- 4.75 We have decided not to set a voltage quality standard in this CPP. We consider that it would be unreasonable for us to expect Aurora to carry out a network-wide monitoring programme amid its focus on replacing and renewing a significant proportion of its primary asset fleet for reliability and safety reasons.
- 4.76 However, our draft ID decision is that we would require Aurora to provide a plan in the first half year of the CPP period that details how it plans to develop and improve its practices for monitoring voltage quality and compliance with the applicable voltage requirements of the Electricity (Safety) Regulations 2010 on its LV network and how it plans to communicate the results of that monitoring to consumers.
- 4.77 In disclosure years two through five of the CPP period, we will also require Aurora to provide an annual update against that plan on Aurora's performance in developing and improving those practices.

- 4.78 We also propose requiring Aurora to include, in the ADR, a report on voltage quality related complaints from consumers. We consider this would be a useful first step to better enable stakeholders to understand the extent of any voltage problems on Aurora's network, and for Aurora to describe actions taken to investigate and resolve these in accordance with its commitments relating to voltage quality in its customer charter.⁷⁴ This reporting requirement is similar in intent to the quality reporting mechanisms we set for Transpower in our RCP3 IPP decision in 2019.⁷⁵ We are also proposing to require a mid-period expert opinion to be disclosed by 1 December 2023 (Year 3) on Aurora's progress on developing and improving its voltage quality monitoring practices on its LV network.
- 4.79 We agree that much of the Future Networks capex programme that Aurora has applied for meets the expenditure objective. This is a programme that is focussed on monitoring LV networks in anticipation of EV and solar PV uptake. This programme contains funding to install LV network monitoring. We encourage Aurora to use some of this funding to address any existing voltage quality issues on its network before addressing future network issues.⁷⁶

Aurora enables consumers to better understand the impact of this CPP on their prices

- 4.80 We undertook our own modelling of the residential price impact of the CPP and have developed two initiatives intended to improve Aurora's consumers' understanding of the impact of Aurora's CPP on their electricity bills.

We undertook our own modelling of the residential price impact of our CPP revenue settings

- 4.81 To provide Aurora's consumers with a good indication of the price impacts that they could expect from our draft CPP decision we modelled the price impact of our draft decision for Aurora's residential consumers. We modelled price impacts for three residential profiles - small, medium and large residential users. We sought further assurance on those calculations by having the model reviewed by an independent reviewer.

⁷⁴ Aurora's voltage level commitments which it would report against are consistent with the voltage supply requirements in the Electricity (Safety) Regulations 2010. These regulations provide for offences if the voltage supply requirements are contravened.

⁷⁵ [Commerce Commission "Transpower Individual Price-Quality Path from 1 April 2020 - Companion paper to final RCP3 IPP determination and information gathering notices" \(14 November 2019\)](#).

⁷⁶ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Section G.1, p.150.

- 4.82 This price impact modelling remains valid for our decision because the 10% revenue cap has not materially changed since our draft. A full description of our modelling approach is described in Attachment H.
- 4.83 We note though, that Aurora changed its pricing methodology in setting new prices from April 2021, and has signalled it intends to review its pricing methodology further in the future, which could lead to changes in the prices charged to different consumers. However, at this stage the impacts of those possible changes are not sufficiently clear, so our modelling approach has not changed.

We propose requiring Aurora to disclose more information on regional pricing to make it easier for consumers to understand its pricing methodology

- 4.84 Aurora divides its network into three pricing regions for the purpose of determining and applying its network prices. We are not responsible for regulating the pricing approach for Aurora or other electricity lines companies. This is the responsibility of another regulator, the Electricity Authority. However, we do implement as part of our ID determination (original 2012, consolidated in April 2018), requirements on electricity lines companies to disclose their pricing methodologies, and the content of their pricing methodologies.⁷⁷
- 4.85 That pricing methodology disclosure requires, among other things, an electricity lines company to include sufficient information and commentary to enable interested persons to understand how prices were set for each consumer group, and to demonstrate how the prices are consistent with the Electricity Authority's pricing principles.
- 4.86 Aurora's current pricing methodology was published on 1 April 2020. We reviewed this methodology and identified areas where further information could be provided to allow an interested party to better understand Aurora's price setting approach.
- 4.87 We propose requiring Aurora to provide enhanced information on its regional pricing to enable consumers to better understand how prices are set. The enhanced information will help highlight aspects of Aurora's pricing that consumers either do not yet fully understand or have questions about. We expect that this in turn will motivate engagement around this issue. Further information on this ID requirement is contained in Chapter 7 of our ID Draft Decision Paper.⁷⁸

⁷⁷ https://comcom.govt.nz/_data/assets/pdf_file/0025/78703/Electricity-distribution-information-disclosure-determination-2012-consolidated-3-April-2018.pdf. Refer to clauses 2.4.1 to 2.4.3 for the prescribed disclosures relating to the pricing methodology.

⁷⁸ Commerce Commission "Aurora Energy Limited Proposed Additional Information Disclosure Requirements - draft reasons paper" (31 March 2021).

We are engaging with MBIE and the Electricity Authority over some other consumer concerns that were raised

How the Electricity Authority is responding to concerns about regional pricing

- 4.88 A number of consumers expressed concern in submissions to us about regional pricing and questioned the fairness of Aurora's practices. As noted above, those regional pricing concerns relate more closely to the mandate of the Electricity Authority than ours. A representative from the Electricity Authority attended some of our stakeholder engagement sessions.
- 4.89 Also, on 23 February 2021 the Electricity Authority published its 2020 summary assessment of electricity distribution pricing and the individual scorecards for each distributor.⁷⁹ Aurora received a score of 2 out of 5, with 1 being poor and 5 being leading practice. Relative to the other EDBs, Aurora's score was 28th out of 29.⁸⁰ The Electricity Authority notes:

There are 29 distribution companies in New Zealand providing and maintaining the local power networks that carry electricity via power poles and lines from the national transmission grid to homes and businesses.

The Commerce Commission sets and enforces minimum network reliability standards and determines the maximum amount of money each distributor can charge consumers in its region through distribution charges. The Electricity Authority oversees how each distributor can charge customers to recover this money.

The Authority published updated [distribution pricing principles](#) for distributors in 2019, expects them to update their prices to be more efficient (consistent with these pricing principles) and runs regular reviews of whether distributors' pricing aligns with those principles.

We want distribution pricing to send the right signals about the cost of the electricity that's being fed to your home or business. When these signals are right, we should see better use of the electricity network, which over time, helps keep overall distribution costs lower for consumers. We call pricing that results in these outcomes, "efficient distribution pricing".

To push for faster change and hold distributors to account, the Authority has started to publish scorecards on how well each distributor is progressing towards making its pricing more efficient.

The scorecards assess distributors' published pricing methodology and roadmaps at a point in time. These scorecards refer to distributors' 2020 pricing methodologies.

⁷⁹ <https://www.ea.govt.nz/operations/distribution/pricing/distribution-scorecards-2020/>

⁸⁰ Note that the rating/ranking relates to all aspects of Aurora's pricing against the Electricity Authority's efficient pricing principles, and not just to criterion that relate to Aurora's approach to the regional allocation of costs.

- 4.90 With respect to the particular concerns raised by Aurora consumers about how Aurora's prices balance between its regions, on 23 February 2021 the Electricity Authority published an in-depth review of Aurora's regional pricing by Sense Partners on whether its approach is appropriate with respect to the Electricity Authority distribution pricing principles.⁸¹ It noted:

Aurora's scorecard is measured against its pricing methodology published on 1 April 2020. It does not reflect the recent announcement about the changes Aurora plans to make to its distribution pricing this year. Having previously heavily focussed on preparing its Customised Price-Quality Path application to the Commerce Commission, Aurora is aware of the need to now urgently focus on network pricing reform and has committed to doing so in 2021. The Authority welcomes this commitment.

Additionally, the Authority has listened to the concerns of households, families and businesses in Aurora's network about substantial price increases coming, and how those prices will balance between its regions.

The Authority commissioned an independent review of Aurora's approach to setting regional prices and whether it is consistent with the distribution pricing principles. We can assure consumers we have checked Aurora's regional pricing to make sure that the way the pricing is balanced across the regions is appropriate.

The review found Aurora's overall approach to regional distribution pricing is sound and largely reflects the differing costs across its three regions. However, the Authority did find some areas where Aurora can make improvements, which will see future costs shared in a way that more closely reflects the cost of providing services to each of the regions.

The Authority is pleased to see Aurora has already committed to making immediate changes to its regional distribution pricing to start to fix up the main concerns we raised with them by 1 April 2021, with further changes to come by April 2022. The Authority will work closely with Aurora as they make these important changes, will check they are tested and encourage Aurora to keep its community regularly updated about the changes.

MBIE advised of consumer concerns about the structure of the electricity market

- 4.91 We also heard the concerns from consumers about the structure of the electricity market not serving them well, and in particular the risks to consumers in some regions when the electricity lines company is effectively owned by consumers from another area. We have advised MBIE of those concerns that were raised on the structure of the electricity market.

⁸¹ <https://www.ea.govt.nz/assets/Aurora-regional-pricing-report-February-2021.pdf>.

We considered other measures and excluded them*Price impact modelling for commercial consumers*

4.92 Our modelling of the CPP bill impact has been limited to residential consumers only, which we have categorised as low, medium and high usage users. We decided not to extend this analysis to commercial consumers, as it would be difficult to identify and estimate price impacts for representative commercial users. However, we are proposing that the requirement for enhanced ID information on regional pricing would extend to both residential and commercial consumers.

Regional price paths

4.93 Some stakeholder submissions asked that we set regional price paths for various parts of the Aurora network. Aurora's distribution pricing methodology is the primary tool used to allocate costs to each of its three pricing regions. Setting regional revenue paths is complex and there is no certainty around whether it might result in a more accurate or beneficial allocation of costs to regional consumers. We did not do this, as we consider that the difficulties and complexities in doing so outweigh the potential benefits.

Chapter 5 Our evaluation approach for Aurora's CPP

Purpose of this chapter

- 5.1 This chapter explains our approach to evaluating Aurora's CPP proposal. The chapter also discusses the work of the Verifier and how we have used that work, and it responds to submissions on our draft decision that we ought to have more closely followed the Verifier's findings and placed lesser reliance on comparative benchmarking.

Structure of this chapter

- 5.2 The structure of this chapter is as follows:
- 5.2.1 we set out the evaluation criteria we must follow;
 - 5.2.2 we explain how we evaluated Aurora's CPP proposal against each of the evaluation criteria;
 - 5.2.3 we explain how we dealt with the Verifier's findings in our assessment of Aurora's CPP;
 - 5.2.4 we set out our response to submissions that in our draft decision we placed too little reliance on the Verifier's findings and too much weight on our additional analysis including comparative benchmarking in particular;
 - 5.2.5 our assessment of the duration of Aurora's CPP; and
 - 5.2.6 energy efficiency, demand side management and reducing energy losses.

The CPP evaluation criteria

5.3 The criteria that we must use to evaluate a CPP are detailed below.⁸²

Evaluation criteria for customised price-quality path proposals	
The Commission will use the following evaluation criteria to assess each CPP proposal:	
a)	whether the proposal is consistent with the input methodologies;
b)	the extent to which the proposal promotes the purpose of Part 4 of the Act;
c)	whether data, analysis, and assumptions underpinning the proposal are fit for the purpose of determining a CPP;
d)	whether the proposed capital and operating expenditure meet the expenditure objective;
e)	the extent to which any proposed changes to quality standards reflect what the applicant can realistically achieve taking into account statistical analysis of past SAIDI and SAIFI performance; and/or (ii) the level of investment provided for in the proposal; and
f)	the extent to which the CPP applicant has consulted with consumers on its CPP proposal; and the proposal is supported by consumers, where relevant.

5.4 These criteria are intended to ensure that our determination of a CPP promotes the purpose of Part 4 of the Commerce Act. The rationale for the criteria and an explanation of our interpretation of the criteria are provided in Attachment A of this paper – our regulatory framework and evaluation approach for setting Aurora’s CPP.

Duration of CPP

5.5 Additionally, we are required to consider the term of Aurora’s CPP. The default term for a CPP is five years.⁸³ However, we may set a CPP of a shorter duration (to a minimum of three years) if we consider that the shorter duration will better meet the purpose of Part 4 of the Act.⁸⁴

5.6 It is our decision whether to depart from a five-year term or not, and we can consider whether this better meets the purpose of Part 4 at our own initiative, or if it is sought by a CPP applicant.

⁸² Electricity Distribution Services Input Methodologies Determination 2012 [2012] NZCC, Clause 5.2.

⁸³ Commerce Act 1986, Section 53W(1).

⁸⁴ Commerce Act 1986, Section 53W(2).

We must set a CPP that satisfies the evaluation criteria

- 5.7 If, having considered all submissions, we conclude that a CPP proposal fully satisfies the evaluation criteria and meets the statutory requirements, then we would generally reach a decision, based on the proposal. If, however, we conclude that the CPP proposal, in part or in full, does not satisfy the evaluation criteria and/or does not meet the statutory requirements, then we undertake further work to determine a draft and final CPP decision.
- 5.8 The depth and extent of our analysis for this second step will vary for different customised price-quality path proposals, depending on the robustness and quality of the proposal (as reflected in our evaluation conclusions from step one). Other factors, such as the size and complexity of the proposal will also affect the amount of analysis that is appropriate.

How we evaluated Aurora's CPP proposal against the criteria

- 5.9 This section provides an explanation of how we applied each of the six evaluation criteria in assessing Aurora's proposal, and in setting the CPP.
- 5.10 When assessing the CPP proposal against the criteria we generally had regard to the following factors as applicable:
- 5.10.1 the content of the CPP proposal itself;
 - 5.10.2 the Verifier's report (and our own discussions with the Verifier);
 - 5.10.3 our own review, undertaken with assistance from our expert consultant Strata Consulting (Strata);
 - 5.10.4 further material provided by Aurora on our request; and
 - 5.10.5 submissions from stakeholders (including Aurora itself) to us on Aurora's proposal, on our Issues Paper package and on our draft decision.
- 5.11 When applying the evaluation criteria, we first considered the extent to which the proposal met the criteria. To the extent that we did not consider that the proposal met the criteria we then reached a view as to an alternative CPP that did meet the criteria. This approach has meant that our decision includes aspects of the proposal mixed with aspects that we have determined.
- 5.12 Our evaluation against the six criteria is outlined below.

Criteria A - Whether the proposal is consistent with the relevant input methodologies

- 5.13 We were required to assess whether Aurora's CPP proposal was consistent with the relevant input methodologies that relate to the process for, and content of, a CPP proposal.
- 5.14 After assessing the proposal against the input methodologies on 7 August 2020, we determined that Aurora's CPP proposal was consistent with the relevant IMs. This was prior to us accepting the CPP proposal.

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

- 5.15 Our overarching purpose is to determine a CPP for Aurora that will promote the long-term benefits of consumers by promoting outcomes that are consistent with those produced in competitive markets such that Aurora:
- 5.15.1 has incentives to innovate and to invest, including in replacement, upgraded, and new assets;
 - 5.15.2 has incentives to improve efficiency and provide services at a quality that reflects consumer demands;
 - 5.15.3 shares with consumers the benefits of efficiency gains in the supply of the regulated goods or services, including through lower prices; and
 - 5.15.4 is limited in its ability to extract excessive profits.
- 5.16 This Part 4 purpose has guided all of our thinking and analysis on Aurora's CPP. The assessment of the five other CPP criteria has been undertaken within a lens of promoting the statutory purpose. Accordingly, our approach to assessing these other five criteria, intrinsically covers the approach for assessing our statutory purpose.
- 5.17 This is illustrated in our assessment of the proposed expenditure on major capex projects. The expenditure objective requires that Aurora's proposed expenditure reflects the efficient costs that a prudent supplier would require to provide services at the appropriate standards and in compliance with applicable regulatory obligations. How we have done this is discussed in detail in Attachment D. However, in short, we have looked at the cost of delivering investment at the right time and level of output to meet consumers' needs in the long-term.

- 5.18 The assessment of Aurora's CPP involves the exercise of regulatory judgement in setting an appropriate price-quality path that, as a whole and in conjunction with the other aspects of the regulatory regime, will provide incentives for Aurora to act in a manner consistent with the Part 4 purpose.⁸⁵ We are not required to promote every limb of the Part 4 purpose in every aspect of the individual decisions we have made. As a whole the decision must satisfy the Part 4 purpose.
- 5.19 Our evaluation is that the proposal as amended in this decision meets the purpose of Part 4.

Criteria C - Whether the information in the proposal is fit for purpose

- 5.20 The information in a proposal must be sufficient in detail and quality to allow us to undertake our assessment.⁸⁶ The assumptions used must also be robust.
- 5.21 We assessed whether the information was fit for purpose with respect to the proposed quality standards, each category of expenditure (capex and opex) and in terms of the price and quality incentives and price impacts.
- 5.22 Aurora acknowledged in various parts of its proposal that insufficient and/or unreliable data impacted on its ability to provide certain information. This was especially in relation to its forecasting. Aurora accommodated its data deficiencies by relying on other methods. Our assessment considered the robustness of those other methods, and whether they reasonably filled the gaps left by the data deficiencies.
- 5.23 Where we considered the information relating to parts of the proposal was not fit for purpose, we requested further information from Aurora. Similarly, where we had doubts about the appropriateness or robustness of an assumption, we sought further explanation for the assumption, or used a more appropriate assumption.
- 5.24 The assessment is contained in the attachments as described below:
- 5.24.1 Attachment C: Setting the quality standards for reliability
 - 5.24.2 Attachment D: Capex analysis
 - 5.24.3 Attachment E: Opex analysis.

⁸⁵ For a more extensive discussion of our approach to the purpose of Part 4 see the Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), paras 2.4.1-2.6.33.

⁸⁶ Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), para 9.4.8.

Criteria D - Whether the proposed expenditure reflects the expenditure objective

- 5.25 The expenditure objective requires us to assess Aurora's proposed capital expenditure and operating expenditure on the basis that it reflects the efficient costs that a prudent supplier, subject to price-quality regulation, would require to:
- 5.25.1 meet or manage the expected demand for electricity distribution services, at appropriate service standards, during the customised price-quality path regulatory period and over the longer term; and
 - 5.25.2 comply with applicable regulatory obligations associated with those services.⁸⁷
- 5.26 The Verifier's report was particularly relevant to our assessment of the CPP proposal against the expenditure objective. We also carried out our own analysis, assisted in some respects by an expert consultant we instructed (Strata).
- 5.27 We focussed on those projects and programmes that the Verifier had not reviewed or suggested that we look at more closely. We tested expenditure in a top-down, bottom-up manner.
- 5.28 The top-down review focussed on the requirements that affect all aspects of the capital and operational expenditure forecast in a CPP proposal. This includes the policy and planning standards used, and the approach to prioritisation, demand forecasts, cost estimation methods (including contingencies), procurement efficiency and deliverability.
- 5.29 The bottom-up review focussed at an individual project and programme level for each of the verified identified programmes. It assessed whether the top-down frameworks had been applied in practice. The bottom-up review included additional project and programme specific requirements such as replacement modelling and model inputs, forecast reasonableness testing and expenditure relationships with operational spending and other capital projects.

⁸⁷ Electricity Distribution Services Input Methodologies Determination 2012 [2012] NZCC 26, clause 1.1.4.

- 5.30 In line with the proportionate scrutiny principle, the level of detail of our assessment varied depending on our concerns and any concerns expressed by the independent Verifier, as well as the materiality of any proposed expenditure. Our assessment of whether Aurora's CPP proposal reflected the expenditure objective is contained within two attachments to this paper:
- 5.30.1 Attachment D: Capex analysis; and
- 5.30.2 Attachment E: Opex analysis.
- 5.31 A number of submissions commented on how we interpreted this criterion including the analytical techniques we used and how we used the verifier's findings, as well as submissions specific to particular aspects of opex and capex. We comment on these submissions in this chapter (from paragraph 5.71 onwards) and in the Capex and Opex Attachments (Attachments D and E).

Criteria E - Whether the proposed quality standard is realistically achievable

- 5.32 In considering Aurora's proposed quality standard variation, we must assess whether it better meets the realistically achievable performance of Aurora.⁸⁸
- 5.33 Our evaluation of whether the quality standard was realistically achievable was informed by the Verifier's report. We also carried out our own analysis, assisted in some respects by an expert consultant we instructed (Strata).
- 5.34 In line with the proportionate scrutiny principle, the level of detail of our assessment varied depending on our concerns and any concerns expressed by the independent Verifier, as well as the materiality of any proposed expenditure.
- 5.35 Our assessment of whether the proposed quality standard is realistically achievable is contained within Attachment C: Setting the quality standards for reliability. That attachment also addresses submissions on this evaluation criteria.

⁸⁸ We evaluated Aurora's proposed quality standards and incentives against criteria b and f as well as e.

Criteria F - The extent of Aurora's consultation with consumers and the support from consumers

- 5.36 One of our criteria is considering the extent of Aurora's consultation. There are two limbs to assessing this criterion:
- 5.36.1 the extent to which Aurora has consulted with consumers on its proposal; and
 - 5.36.2 the extent to which the proposal is supported by consumers, where relevant.
- 5.37 The first limb informs the second. The greater the extent to which Aurora has consulted with consumers, the more we can rely on it in terms of the extent to which it indicates support of the proposal.
- 5.38 We acknowledge that the supplier may have a better understanding of the need for network investment than consumers, which is why consumer support is not required. Instead, it is something we will take into account.
- 5.39 We consider that the extent to which Aurora has consulted with its consumers was mixed. On the one hand, it took steps to consult which have not been taken by previous CPP applicants, and the Verifier commented positively on Aurora's consultation. On the other hand, some consumers expressed negative views on Aurora's consultation to us, and we noted some issues were expressed in a way that may not have been easily understood by consumers.
- 5.40 The extent to which consumers supported the proposal was also mixed. Several consumers supported aspects of the proposal. For example, in submissions on the Issues Paper included:

There is no doubt that extra investment is needed to bring the Aurora network up to a modern, secure and reliable utility service.⁸⁹

Don't think any further projects should be deferred. We are in this state now because things have been deferred. We need to finally invest.⁹⁰

Get it done quickly. They have failed to invest since they bought out the Central Otago electric power board lines. They have chosen to give dividends to Dunedin City instead of investing in the lines. There is a risk of other outages like Clyde had in cold months. Now is a good time to invest as workers are available due to downturn. Getting the job done properly instead of half pie is important.⁹¹

⁸⁹ [Phill Hunt "Submission on Aurora Energy's CPP Issues paper" \(22 August 2020\).](#)

⁹⁰ [Item 33 1-50 "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\).](#)

⁹¹ [Item 12 1-50 "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\).](#)

- 5.41 Several consumers did not support the proposal or disagreed with aspects of it. For example:

Allowing this process to proceed while, effectively, no consumers are aware that the projected price rises are open ended and volumetric in nature is unconscionable.⁹²

Allowing the CPP is sending all of the wrong signals to other council owned utilities.⁹³

- 5.42 We assess in the attachments the extent to which consumers support the proposal as it relates to particular decisions we made. Chapter six includes an overview of submissions including from consumers.

How we dealt with the Verifier's findings in our assessment of Aurora's CPP

- 5.43 This section explains how we used the Verifier's findings in our evaluation of Aurora's CPP proposal. It also responds to submissions on the draft decision asserting that we placed too little weight on the Verifier's work and too much weight on comparative benchmarking.

We have had regard to the findings of the Verifier

- 5.44 The review undertaken by the independent Verifier was the starting point for our assessment of whether the proposal meets the evaluation criteria.
- 5.45 The CPP process required Aurora to have its CPP proposal reviewed by an independent Verifier.⁹⁴
- 5.46 We have regard to the findings of the Verifier but are not bound by them in making our decisions.

⁹² [Richard Healey "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\).](#)

⁹³ [0479 "Submission on Aurora Energy's CPP Issues paper" \(19 August 2020\).](#)

⁹⁴ 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>.

The Verifier's role and obligations

5.47 The Verifier's role, purpose and obligations are provided for in Schedule G2 of the Input Methodologies.⁹⁵

Schedule G2 of the input methodologies

The Verifier's role, purpose and obligations include-

- a. engaging with the CPP applicant in an independent manner in accordance with this Terms of Reference;
- b. assessing the extent to which the CPP applicant's policies allow the CPP applicant to meet the expenditure objective;
- c. assessing the extent to which the CPP applicant's policies have been implemented;
- d. prior to the Commission's assessment of the CPP proposal, assessing whether the CPP applicant has provided the verifier with the information specified in clause 5.5.2(3);
- e. prior to the Commission's assessment of the CPP proposal, providing an opinion to the CPP applicant on whether the CPP applicant's capex forecasts, opex forecasts and key assumptions meet the expenditure objective;
- f. prior to the Commission's assessment of the CPP proposal, assessing the extent to which the CPP applicant is able to deliver its capex forecast and opex forecast during the CPP regulatory period;
- g. prior to the Commission's assessment of the CPP proposal, providing an opinion on the extent and effectiveness of the CPP applicant's consultation with its consumers; and
- h. providing a list of the key issues which it considers we should focus on when assessing the CPP proposal.

5.48 G2 (b), G2 (c,) G2 (e) and G2 (f) relate closely to our CPP evaluation criteria (e) - whether the proposed capital and operating expenditure meet the expenditure objective.

5.49 G2 (g) relates closely to our CPP evaluation criteria (f) - the extent to which the CPP applicant has consulted with consumers on its CPP proposal; and the proposal is supported by consumers, where relevant.

5.50 G2 (d) relates to our CPP evaluation criteria (c) as they are both concerned with the provision of necessary information.

5.51 G2 (h) relates to our CPP criteria (c,) (d), (e) and (f) as the Verifier could provide a list of matters in relation to the areas we should focus on. Criterion G2 (h) is particularly relevant because it influences how much scrutiny we apply to the assessment.

⁹⁵ 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>.

Farrier Swier Consulting acted as the Verifier for Aurora's CPP

- 5.52 In April 2019, we agreed with Aurora to appoint Farrier Swier Consulting (Farrier Swier) as the independent Verifier for Aurora's CPP proposal. This followed a request for proposal process undertaken by Aurora to identify a suitable Verifier. We reviewed Farrier Swier's proposal for the work and we were satisfied that Farrier Swier's experience (in New Zealand and abroad) including being the Verifier for the 2016 Powerco CPP proposal, suitably qualified it to verify Aurora's CPP proposal. We were also satisfied that Farrier Swier was independent and could provide an impartial view on Aurora's CPP. Farrier Swier was supported in its work by GHD (an engineering consultancy).
- 5.53 Farrier Swier signed a deed with us and Aurora requiring it to verify Aurora's proposal in line with the rules set out in the Part 4 Input Methodologies. The deed provided that Farrier Swier had an overriding duty to assist the Commission as an independent expert with relevant matters within Farrier Swier's areas of expertise.
- 5.54 Farrier Swier produced a verification report, which drew on a nine-month (July 2019 to May 2020) period of information review and iterative analysis.⁹⁶
- 5.55 During this time, Farrier Swier and GHD:
- 5.55.1 attended a number of tripartite workshops with Aurora and our staff;
 - 5.55.2 conducted visits to Aurora's Dunedin offices including network site visits;
 - 5.55.3 attended a weeklong series of workshops by teleconference hosted by Aurora staff; and
 - 5.55.4 formally submitted questions to Aurora, resulting in over 450 responses.

⁹⁶ The report can be found at this link. https://comcom.govt.nz/_data/assets/pdf_file/0028/218593/Farrier-Swier-Consulting-Pty-Ltd-and-GHD-Pty-Ltd-Aurora-Energys-CPP-application-Verification-report-8-June-2020.pdf.

The Verifier's findings

- 5.56 The Verifier's assessment of Aurora's CPP proposal against the schedule G2 IM requirements was provided on page 15 of its report.⁹⁷ In summary the Verifier found that:
- 5.56.1 Aurora's policies generally appear to be of the nature and quality required to meet the expenditure objective. The Verifier identified some areas where policies did not yet exist.
 - 5.56.2 On the whole Aurora's capex and opex forecasts are consistent with its policies.
 - 5.56.3 There are many aspects of Aurora capex and opex forecasts and supporting assumptions that support the expenditure objective. However, it was not possible to conclude that the total proposed expenditure over the CPP period fully meets the expenditure objective.
 - 5.56.4 Aurora undertook substantial consumer consultation and has prepared and made available a significant amount of material, consistent with requirements of the input methodologies. Given that Aurora's proposals have changed somewhat since consultation occurred, the Commission's public consultation will provide consumers with an opportunity to engage with those changes.
 - 5.56.5 The core material and models provided by Aurora are of an appropriate standard.
 - 5.56.6 A set of matters were identified for further consideration by the Commission.
- 5.57 We consider that the Verifier has, in many instances in its review, provided us with a positive and unqualified level of assurance that the proposed expenditure has met the expenditure objective. In other instances, particularly in its review of the opex portfolio, it has provided us with qualified levels of assurance that, subject to us performing our own investigation, expenditure has met the expenditure objective. We discuss the reasons for, and the implications of this, point below from paragraph 5.66.

⁹⁷ [Verification Report: Aurora Energy CPP Application. Farrier Swier, 8 June 2020.](#)

- 5.58 As a result of the verification process, we examined many of the qualifications recorded by the Verifier to assure ourselves that expenditure met the expenditure objective. In some instances, this has resulted in us deciding that reductions in proposed expenditure amounts were necessary.
- 5.59 The intent of verification is to 'frontload' as much CPP evaluation work as possible, and to assist us in making the most effective use of the limited statutory timeframe to evaluate a proposal and determine a CPP. This includes the Verifier highlighting areas of a proposal that it considers we should focus on in our own assessment of proposal material.

Our consideration of the Verifier's findings

- 5.60 Following Aurora's submission of its CPP proposal, we have critically reviewed the verification report and the techniques and methods the Verifier used to test Aurora's proposal. This included a two-day workshop with the Verifier in June 2020 to test the Verifier's findings.
- 5.61 We engaged Strata to assist us with our review of the verification report, including further analysis of parts of the CPP proposal the Verifier had identified as needing more scrutiny, or that it had not assessed. For example, the Verifier only assessed approximately 66% of the total capex programme proposed in Aurora's CPP.
- 5.62 The detail of our assessments and reviews of the Verifier's findings are contained in the relevant attachments to this paper:
- 5.62.1 Attachment C: Setting the quality standards for reliability
 - 5.62.2 Attachment D: Allowance for Capex
 - 5.62.3 Attachment E: Allowance for Opex
 - 5.62.4 Attachment F: Regulatory expenditure incentives
 - 5.62.5 Attachment G: The CPP price path
 - 5.62.6 Attachment H: Illustrative price impacts
- 5.63 As a result of our assessment, our decision materially differs in parts from that verified. This difference mainly arises because:
- 5.63.1 we investigated matters the Verifier had not verified;
 - 5.63.2 we investigated further matters that the Verifier had verified but had suggested we scrutinise further; and

- 5.63.3 we also undertook further investigations into matters that the Verifier had verified.
- 5.64 Some submissions commented on matters falling within the third limb in particular. For example, Aurora considered “the Commission has ignored the Verifier’s findings and has instead appointed Strata to re-evaluate Aurora’s proposed expenditure”.⁹⁸
- 5.65 Most of the additional investigation was prompted by the matters the Verifier had not verified or matters which the Verifier suggested required further scrutiny (ie, most investigation work falls under the first two limbs). In relation to non-network opex (which includes SONS and People costs), where we did undertake further work on an area addressed by the Verifier, this was prompted by a mix of reasons including the unresolved questions posed by the Verifier, and the size of the increase in that category of expenditure both in absolute terms and relative to Aurora’s previous expenditure levels.
- 5.66 Part of this further investigation included using benchmarking to inform our assessment of what might be an appropriate allowance of non-network opex. Our approach to and use of benchmarking prompted a number of submissions, possibly in part because we have not used benchmarking previously in this manner to inform the setting of expenditure allowances for a CPP.
- 5.67 Submitters also raised concerns over us undertaking further analysis even where the Verifier had stated that it had “verified” the expenditure. The Verifier’s report did state that expenditure in certain categories was verified but the Verifier also identified, in relation to those cost categories, some “matters that the Commission may want to consider when undertaking its own assessment of the information provided by Aurora Energy”. The SONS and people cost categories provides a good example of this.
- 5.67.1 The Verifier considered that only \$5.9m of the expenditure of the \$120.7m in the SONS and people costs categories was unverified, so over 95% of the SONS and people costs expenditure was verified.⁹⁹
- 5.67.2 However, the Verifier also raised more than a dozen matters relating to SONS and people costs for us to consider further. These matters included:¹⁰⁰

⁹⁸ Aurora Energy “Customised Price-Quality Path Application – Submission on the Commerce Commission’s Draft Decision” (18 December 2020) para 87.

⁹⁹ Farrierswier “Verification Report Aurora Energy CPP Application” (8 June 2020) at 92-94.

¹⁰⁰ Farrierswier “Verification Report Aurora Energy CPP Application” (8 June 2020) at 136-137.

- 5.67.2.1 Whether it is appropriate to rely on management and Board oversight to ensure that the step up in actual costs is prudent and efficient;
 - 5.67.2.2 Whether a base, step and trend approach is appropriate to forecast SONS and people costs given that Aurora is effectively standing up a new team, where historical costs are less relevant;
 - 5.67.2.3 Consider what level of staffing is efficient for a network like Aurora Energy's; and
 - 5.67.2.4 Consider whether the modest efficiency improvements proposed for the CPP period is reasonable, considering the increased expenditure in business support systems through the ICT capex portfolio.
- 5.68 Given the nature and materiality of the issues raised in these matters to consider, we concluded that we should do further work on SONS and people costs.
- 5.69 The Verifier's conclusion that most SONS and people costs was verified whilst simultaneously identifying matters, some of which were significant, to consider further appears contradictory and is potentially confusing. We will consider whether the guidance or requirements to a future verifier can be clarified to avoid expenditure categories being labelled as verified when the verifier is also identifying material matters to consider further.
- 5.70 Overall, however, the Verifier's report was very helpful and, as the graph below shows, we ultimately adopted the Verifier's conclusion on what proportion of the expenditure was verified in all of the major cost categories, except SONS and people costs and an efficiency adjustment across capex.

Figure 5.1 % of expenditure verified by the Verifier that we approved in our decision



Our use of the Verifiers' findings and our use of comparative benchmarking

5.71 Submissions from Aurora, other regulated suppliers and the ENA on our draft decision considered we had placed too little weight on the Verifier's findings and too much weight on top-down benchmarking. Some submitters thought the use of benchmarking was unnecessary given the Verifier's findings, that it introduced uncertainty, and was less persuasive evidence than provided by the Verifier's report. For example, Aurora submitted that:¹⁰¹

Effectively the Commission is proposing to substitute for the detailed and evidence-based conclusions of the independent verifier a desktop-based, top-down benchmarking analysis. This calls into question the very reason for appointing an independent verifier and means that regulated suppliers will not have any certainty as to how their expenditure is likely to be assessed.

5.72 Similarly, ENA submitted that:¹⁰²

The introduction of top-down benchmarking muddies the CPP IM process, calls the use of the verifier into question, and weakens the viability of CPPs as regulatory options for EDBs.

¹⁰¹ Aurora Energy "Customised Price-Quality Path Application – Submission on the Commerce Commission's Draft Decision" (18 December 2020) para 87.

¹⁰² ENA "Consultation on Aurora CPP Draft Decision" (18 December 2020) p 2.

5.73 Our full response to these points is set out below and can be briefly summarised as follows:

- 5.73.1 The supplier is best placed to provide the substantive justification for significant levels of higher expenditure (or materially lower quality), and this should be included in its formal proposal;
- 5.73.2 The robustness of the justification should be proportionate with the size and materiality of the proposed increase;
- 5.73.3 The verifier's role is important and valuable and is the starting point for our evaluation;
- 5.73.4 Our role is to assess the expenditure proposal and consider what further analysis to undertake. Where the proposed increase in expenditure is material, and the justification is weak and/or the verifier has left a number of unresolved questions, we will likely undertake additional analysis including seeking further information from the supplier;
- 5.73.5 In the absence of better information and justification from the supplier for the proposed increase in expenditure, we will use the best information we have and can get to inform the setting of an appropriate expenditure allowance;
- 5.73.6 Comparative benchmarking can provide insights into what is a prudent and efficient level of expenditure allowance; and
- 5.73.7 Our final decision is not determined by the benchmarking analysis but rather reflects the application of our judgement after consideration of all of the information available to us, including Aurora's proposal, the views of the verifier and the benchmarking analysis.

The supplier is best placed to provide the substantive justification for increased expenditure

5.74 The supplier is best placed to develop the detailed, bottom-up justification for its proposed expenditure levels. It has the best information on condition of assets, staff productivity and staffing gaps, energy load and growth and changes in profiles. It should also have the closest and best understanding of the demands and preferences of its consumers. Its proposal should align with its assessment of the gaps in its existing skills and capabilities, and the level of additional investment required to prudently and efficiently manage its network. The supplier is also best placed to assess how higher expenditure may impact on the quality of supply to consumers.

- 5.75 The supplier also chooses when to seek a CPP, and the depth and quality of analysis and documentation it presents to support its expenditure proposal.

The robustness of the justification should be proportionate with the size and materiality of proposed increase

- 5.76 Aurora's non-network opex has increased very significantly from \$12.0m (real 2020\$) in FY2017 to \$31.9m (real 2020\$) in RY2020 yet there were significant gaps in Aurora's proposal and documentation, and in particular there were no formal business cases nor external expert reviews for most of this increased level of expenditure (and in particular, for the increase in SONS and people costs). Given the absolute and relative size of the additional level of expenditure we would have expected the case for additional expenditure to be well developed and well documented.

The Verifier's role is important and the starting point for our evaluation

- 5.77 The Verifier's review sets the starting point for our analysis. The statutory timeframes in the Act limit our evaluation to 150 working days from the date the Application is accepted as complete.¹⁰³ The Verifier's report is a valuable part of the CPP regime to enabling us to set a price-quality path within those statutory timeframes.
- 5.78 The Verifier's review can also assist the applicant to improve its proposal before it submits that to us.
- 5.79 Where the Verifier concludes the expenditure meets the expenditure objective, and there are no outstanding questions or issues, we may not need to do any further substantive work before issuing our draft decision.
- 5.80 Some parts of Aurora's expenditure proposals were well developed and satisfied the expenditure objective, for example in relation to Aurora's ICT capex and opex spend. In these areas of expenditure, we reviewed the Verifier's report and accepted the proposed and verified expenditure levels without any further detailed scrutiny or analysis by us (or Strata).
- 5.81 In other areas, especially SONS and people costs and vegetation management, the proposal was less developed. While the Verifier reviewed much of Aurora's proposal, that review was still subject to a number of matters for further consideration.

¹⁰³ Section 53S and 53T of the Act.

- 5.82 At the start of our evaluation of Aurora's proposal we met with the Verifier in a two-day workshop to discuss the Verifier's report and to gain further insight into the findings and conclusions of the Verifier, and the reasons behind them. One of the issues we explored with the Verifier was why, given there was a nine-month timeframe for the Verifier to undertake its work, it had raised so many matters for further consideration by us rather than addressing them in its report.
- 5.83 From our discussions, it was clear that the Verifier was not able to undertake all of the analysis it wanted to do in order to answer these questions itself. This was due to several factors including:
- 5.83.1 Aurora was not able to supply all of the information required by the Verifier, or could only do so late in the process (and we acknowledge that Aurora's ability to supply all the information which the Verifier (and we) sought was constrained by its existing information systems);
 - 5.83.2 parts of Aurora's proposal changed sometimes several times during the verification process, including as a result of questions from, or discussions with, the Verifier; and
 - 5.83.3 as a result, much of the Verifier's analysis and final report had to be completed under severe time pressure late in the nine-month window for verification.
- 5.84 Given the Verifier's role, which can assist both the applicant and us, we may need to consider whether the current requirements strike the appropriate balance between:
- 5.84.1 the supplier being able to incorporate feedback from an expert reviewer in order to improve its proposal;
 - 5.84.2 the Commission getting a Verifier's report which is as complete and comprehensive as possible; and
 - 5.84.3 the Verifier having enough time to undertake an effective verification of the final proposal before it is submitted to us.
- 5.85 IM changes may be required to enable achievement of a better balance between these objectives, and we could consider this as part of a future IM review.

Our role in assessing the expenditure proposal and the additional analysis we took

- 5.86 Our assessment of the expenditure proposal focuses first on the detailed bottom-up justification provided by the supplier and reviewed by the Verifier. We are not as well placed as Aurora to understand the detail of its network, its needs, and consumers' preferences. So we focus on the material provided to us by the applicant and use the Verifier's review as the starting point for our assessment.
- 5.87 The Verifier's report is a valuable input but ultimately the decision on appropriate expenditure allowances is one we must make.
- 5.88 We sought additional information from Aurora on SONS and people costs (and other areas). That additional information from Aurora led to us increasing the expenditure allowances from those included in the draft decision for vegetation management and some areas of maintenance expenditure, but the information from Aurora did not establish that the full level of proposed non-network opex was prudent and efficient. This is for the reasons we summarise below, and describe further in Attachment E:
- 5.88.1 There was a very large step change in expenditure with inadequate justification;
- 5.88.2 Despite the large absolute and relative size of the increase there was no formal business case nor external expert review; and
- 5.88.3 Although the Verifier's opinion indicated Aurora had gone through a rigorous internal review and moderation process, and its Board and senior management appeared to have applied significant top-down challenge to certain aspects of its plan, it was not clear to us or Strata following our further investigations that the proposed expenditure levels had been robustly challenged by Aurora's Board.

Comparative benchmarking can help inform what is a prudent and efficient level of expenditure allowance

- 5.89 Given the information from Aurora, and the gaps in the information, we looked at other techniques to test the prudence and efficiency of Aurora's expenditure proposals for non-network opex (and SONS and people costs in particular). We sought assistance from Strata and they undertook further analysis including:
- 5.89.1 a high-level review of Aurora's proposal staffing levels; and
- 5.89.2 comparative benchmarking to help inform the level of allowance for non-network opex.

- 5.90 Comparative benchmarking is useful in that it looks at the level of expenditure other EDBs with similar characteristics are incurring to manage their networks.
- 5.91 We acknowledge that there are limitations to comparative benchmarking which would need to be considered before relying on comparative benchmarking for setting an EDB's opex allowance in the context of CPPs because:
- 5.91.1 All benchmarking contains a degree of uncertainty and error;
 - 5.91.2 The robustness of benchmarking results depends on the inputs and how it is implemented;
 - 5.91.3 Benchmarking is unable to take into account an EDB's unique circumstances; and
 - 5.91.4 Relying on benchmarking results may underestimate the costs an EDB like Aurora needs to build capability or transition into a stand-alone entity.
- 5.92 However, benchmarking results are still useful – the results can provide insights into what a reasonable level of costs should be once Aurora reaches a steady state.
- 5.93 For the draft decision Strata used unit cost analysis (a partial performance indicator). We note that other parties also used that approach including Aurora and the Verifier.¹⁰⁴
- 5.94 Submissions on the draft decision raised a number of criticisms of Strata's analysis at the draft stage. Strata has addressed these in its revised final report which we have released with this paper.

Our final decision reflects our consideration of all of the information available to us

- 5.95 Our final decision is not determined by the benchmarking analysis but rather reflects the application of our judgement after considering all of the information available to us. This includes:
- 5.95.1 Aurora's proposal and the additional information Aurora provided;
 - 5.95.2 The findings of the Verifier;

¹⁰⁴ Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" (8 June 2020), see for example, at 322-324 and 334-336. Aurora CPP "Aurora Energy Industry benchmarking Non-network operational expenditure".

- 5.95.3 The view that Aurora has, due to low levels of expenditure for a sustained period of time, relatively low levels of network management capability and maturity and additional investment is needed to remedy this;
- 5.95.4 Strata's analysis, including the revised benchmarking analysis, provided additional surety for our decision with additional econometric analysis being undertaken in response to the submissions that the earlier benchmarking was too simplistic; and
- 5.95.5 Commission staff's analysis.
- 5.96 Our consideration of that information and analysis has led us to set an allowance for SONS and people costs which is \$16.2 million below that which Aurora proposed but \$21.9 million above our draft decision.
- 5.97 We are confident that our final expenditure allowance represents a prudent and efficient level of non-network opex for Aurora at this time. In particular, we expect that it will allow Aurora to:
- 5.97.1 efficiently and prudently manage its network at this time; and
- 5.97.2 undertake the initiatives set out in its proposal (with the exception of seeking accreditation under ISO55000 as our allowance does not reflect fully the significant cost of securing accreditation in the CPP period).
- 5.98 However, we expect that the level of non-network opex we have allowed is greater than Aurora will require on an enduring basis, and we expect that Aurora should make significant reductions in this level of expenditure during, and after, the CPP period.
- 5.99 Our reasons are more fully set out in Attachment E.

Suppliers can take steps to increase certainty

- 5.100 In response to the submissions that our approach to evaluating Aurora's expenditure proposals has undermined suppliers' certainty, we note that:
- 5.100.1 Suppliers can only have relative certainty as to the outcome of any CPP application as the CPP price-quality path will not be based solely on the Verifier's findings. The Verifier's findings are the starting point for our evaluation and we need to satisfy ourselves that the expenditure allowances satisfy the evaluation criteria;

- 5.100.2 Comparative benchmarking was undertaken for Aurora's non-network opex as we were not satisfied with the detailed bottom-up analysis that was available given its materiality. We may also look to use it in other areas of expenditure when evaluating other future CPP proposals;¹⁰⁵
- 5.100.3 Suppliers should consider whether or not to undertake their own robust benchmarking analysis to support their own proposals, and if that shows that expenditure allowances are outside the typical range for other similar EDBs, having regard to some of the key differences between them, then the supplier should consider what additional information and/or analysis it can include in its proposal to support the proposed expenditure levels;
- 5.100.4 Similarly, the supplier can consider including additional information and/or analysis in its proposal if the Verifier has unresolved questions (the need for further information and analysis may vary depending on the extent and nature of those questions);
- 5.100.5 Suppliers seeking a CPP should apply proportionality principles with greater time and effort going to support expenditure categories where the level of proposed expenditure is largest and/or shows the greatest change (in absolute or relative terms); and
- 5.100.6 We publish a draft decision including our analysis so stakeholders can review and comment on our draft analysis and decisions and we can consider how to address the points raised by submitters.

Our assessment of the duration of Aurora's CPP

- 5.101 Separate to our assessment on the evaluation criteria for a customised price-quality path proposal is a requirement to assess the term of a CPP.
- 5.102 The default term for a CPP is five years. However, we may set a CPP of a shorter duration (to a minimum of three years) if we consider that the shorter duration will better meet the purpose of Part 4 of the Act.
- 5.103 It is our decision whether to depart from a five-year period or not, and we can consider whether this better meets the purpose of Part 4 at our own initiative or if it is sought by a CPP applicant.

¹⁰⁵ We note that both the Verifier and Aurora used benchmarking too.

- 5.104 Aurora sought a three-year CPP period because it considered that a three-year period would better meet the purposes of the Act. The basis of their reasoning for a three-year period was that there was greater than normal uncertainty in forecasting of expenditure and the resulting reliability impacts for years four and five of a five-year CPP period.¹⁰⁶
- 5.105 We assessed whether we should approve a three-year CPP period in Attachment B of this paper. Our approach to the assessment was to consider the following matters:
- 5.105.1 The conceptual benefits of a shorter period versus a longer period—there are advantages and disadvantages of each approach: A shorter CPP period reduces the risk of Aurora not having sufficient funding where issues are identified mid-period but which cannot be taken account of in the CPP revenue allowances until the next period. However, a shorter CPP period would also require Aurora to begin work on its next investment application earlier, which could place strain on resources available to undertake the work required to fix its network. A longer CPP provides certainty of prices and quality for both consumers and Aurora for a longer period of time.
- 5.105.2 The quality of Aurora’s forecasts that underpin its CPP: While Aurora faces challenges in its asset condition data and systems, the Verifier had confidence in Aurora’s forecasting approaches and did not think data for years four and five of Aurora’s data involved a significantly greater degree of uncertainty than the first three years of the CPP proposal.
- 5.105.3 The type of regulation that would apply to Aurora in years four and five if it were not on a CPP: If Aurora’s CPP expired after three years it may potentially revert back to the default price-quality path that did not suit its needs previously. Aurora has signalled its intention to apply for a second CPP. However, the Commerce Act appears not to allow it to do this until 2026, so if we determined a three-year CPP there would be a gap.

¹⁰⁶ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), p. 1, Executive Summary, 1.1 Introduction and the CPP Process, 1.1.1 Introduction, para. 3-4.

5.105.4 Whether a five-year CPP can be adapted to address the uncertainty Aurora faces—Aurora’s concern is that the better data that becomes available during the CPP period may identify further investments that are required which its CPP does not allow for. Our input methodologies can allow for additional expenditure mid-period. However, these methodologies have specific triggers which may or may not apply to Aurora’s circumstances. With Aurora’s agreement we have made adjustments to the input methodologies to accommodate future uncertainty.

5.106 Following our assessment, our decision is that a five-year CPP period better meets the Part 4 purpose.

Energy efficiency, demand side management, and reducing energy losses

5.107 We are required by section 54Q of the Commerce Act to promote incentives, and avoid imposing disincentives, for suppliers of electricity lines services to invest in energy efficiency, demand side management, and to reduce energy losses.

5.108 We consider that the CPP we have set is consistent with s 54Q of the Act. In particular, we have retained the DPP3 alignment of capex and opex incentives rates in the IRIS mechanism, which means that traditional network investments (ie, poles and wires) that are capex are not encouraged more than alternative opex investments, which could provide a similar network service such as demand management. Likewise, as for DPP3, the IMs require that Aurora’s CPP must be a revenue cap (as opposed to price cap), which removes disincentives for Aurora to encourage energy efficiency and demand side management. Finally, part of the expenditure we have approved for Aurora’s CPP includes allowance for expenditure on future networks capex to investigate the impact of electric vehicles, solar panels, and on distributed energy resources to defer network capex.

Chapter 6 Stakeholder and community engagement

Purpose of this chapter

- 6.1 This chapter outlines the stakeholder engagement and consultation we have undertaken throughout our deliberation on Aurora's CPP and the core issues stakeholders raised with us. We also discuss those aspects of the decision that relate to issues raised and how we are managing concerns that are outside the scope of this process.

Structure of this chapter

- 6.2 This chapter outlines:
- 6.2.1 the role of stakeholder consultation and engagement in our CPP decision-making;
 - 6.2.2 the approach we have taken to stakeholder consultation and engagement throughout our deliberation on Aurora's CPP; and
 - 6.2.3 the key issues raised by stakeholders during our consultation and engagement processes.

The role of stakeholder consultation and engagement in our CPP decision-making

- 6.3 As we outlined in Chapter 5, our role is to determine a CPP against the regulatory evaluation criteria and to do so in accordance with the statutory framework having regard to the purpose of Part 4 of the Act.
- 6.4 Feedback that we received from our consultation and engagement processes has informed our application of the evaluation criteria, and our decision on Aurora's CPP. Stakeholders presented us with a mix of views about Aurora and its proposal. This feedback is only one aspect of what we considered in assessing Aurora's proposal against the evaluation criteria, as discussed in the previous chapter.
- 6.5 Ultimately determining a CPP is our decision, so we rely on our own informed judgement in applying the evaluation criteria. We are not bound by what we hear from consultation (which can itself be contradictory), so it will sometimes be the case that we make decisions contrary to submissions.

Our approach to stakeholder consultation and engagement

- 6.6 The scale of Aurora's proposed investment and related price increases, along with the known community concern over network safety and power outages, meant that public engagement with this process has been particularly vital.

- 6.7 We undertook to carry out a consultation and engagement programme that maximised the opportunities for stakeholders to provide their views. This had to be balanced with the need to deliver a decision within the required 150 working days after we assessed Aurora's proposal as complete – a timeframe set by the Commerce Act.
- 6.8 Despite some challenges, including dealing with COVID-19 lockdowns, we consider the stakeholder engagement undertaken throughout this process to have been a valuable and important process.
- 6.9 We have seen higher individual consumer engagement on this energy regulatory process than any other we have overseen, and the feedback from this engagement process informed our deliberations and has contributed to a more informed and robust decision.
- 6.10 We received feedback on Aurora's proposal through a number of avenues, the main ones being:
- 6.10.1 written feedback on the Aurora CPP proposal we published;
 - 6.10.2 written feedback on the Issues Paper package and accompanying documents we published;
 - 6.10.3 written feedback on the draft decision and accompanying documents we published;
 - 6.10.4 written feedback on the proposed technical changes to the draft determination; and
 - 6.10.5 oral feedback at the public meetings and stakeholder engagement sessions we held for the Issues Paper and draft decision, as well as our meeting with Aurora's Customer Advisory Panel (CAP).¹⁰⁷
- 6.11 We placed significant effort into ensuring that every submission that was received during each phase of consultation was considered during our deliberations.
- 6.12 We appreciate the effort stakeholders made to provide submissions and attend the public events. The willingness to take part in this process reflects the importance of Aurora's service to local communities and the depth of feeling and concern they hold. We welcome the engagement and thank everyone that participated.

¹⁰⁷ This written feedback is available on our website, including written summaries of the public meetings and stakeholder engagement sessions – <https://comcom.govt.nz/regulated-industries/electricity-lines/projects/our-assessment-of-aurora-energy-investment-plan>.

Summary of our consultation process

- 6.13 We received Aurora's CPP proposal on 12 June 2020 and published its full proposal on our website on 16 June.
- 6.14 On 30 July we released an Issues Paper package that set out the key issues we had identified from our initial assessment of Aurora's proposal that we wanted to hear from stakeholders about. This was supported by factsheets on Aurora's investment plan and the process we would be following in assessing its CPP.
- 6.15 On 12 November we released our draft decision on Aurora's CPP that proposed a package of measures relating to Aurora's spending plans, allowable revenue, quality standards, and accountability measures. This was supported by a consumer summary document and fact sheets on key draft decisions and themes from feedback we had received from our engagement programmes to date.
- 6.16 On 26 November 2020 we published a report by our consultant Strata, which included analysis that informed our draft decision. To acknowledge this delay, we extended the due date for submissions and cross submissions on our draft decision.
- 6.17 After the release of both the Issues Paper and the draft decision, the Commission opened consultation programmes to hear feedback and receive submissions from stakeholders.
- 6.18 To help facilitate feedback on each of these documents, we provided optional template submission forms that stakeholders could fill out to provide us with their views on several key topics.
- 6.19 Shortly after releasing our Issues Paper package we held a series of stakeholder engagement sessions to discuss Aurora's CPP proposal and our role as the decision-maker with local residents in Dunedin, Alexandra and Cromwell. Planned meetings in Queenstown and Wanaka unfortunately needed to be cancelled due to the change in COVID-19 alert levels and were instead held online.
- 6.20 In addition to the stakeholder engagement sessions, on 6, 10 and 11 August (physical) and 20 and 21 August (online) we also met with Aurora Energy's CAP. The CAP panel was made up of community representatives from a range of business, council and public advocacy groups who were tasked with providing a consumer voice for Aurora as it developed and consulted on its proposed CPP.

- 6.21 A larger round of meetings was held later between 23 November and 1 December, after the release of our draft decision, to gather feedback on key aspects of this draft decision. Separate stakeholder meetings and public meetings were held in Alexandra, Queenstown, and Dunedin, with additional public meetings held in Cromwell and Wanaka.
- 6.22 The feedback we received when talking with stakeholders and residents in Dunedin, Central Otago and Queenstown Lakes broadly covered the same themes and issues addressed in the written submissions we received.
- 6.23 A summary of the high-level points raised at each public meeting was written and published on the Commission's website alongside the written submissions.
- 6.24 The stakeholder engagement sessions we hosted were less formal by design and as such the feedback was wide ranging, reflecting attendees' personal experiences with Aurora, its service levels and communication. Many attendees at these sessions outlined negative experiences they have had with Aurora over many years, which they explained had resulted in them having little, if any, trust in its ability to deliver a safe and reliable network or manage the financial impacts of this work.
- 6.25 At the end of each of these submission windows we published the written submissions we received, together with a summary of the themes from the public and stakeholder engagement sessions. We notified interested parties that we would accept and consider any comments on those materials as cross submissions.
- 6.26 On 4 February 2021, the Commission proposed to make two technical changes to its draft determination on Aurora's CPP. These changes related to aspects of how the CPP will operate in the instance where Aurora buys or sells network assets, and how it would set prices in the 2021/22 financial year. It did not impact the key features of the CPP, such as Aurora's allowable revenue or quality standards. Submissions on these proposed changes closed on 18 February.
- 6.27 In total, we have received close to 250 written submissions throughout our deliberations on Aurora's CPP proposal.

Feedback on our consultation process

- 6.28 Some community stakeholders raised concerns that the consultation process did not provide stakeholders enough of an opportunity to meaningfully consider the issues and engage in a substantive way. These submissions point to the technical nature of the proposal, the length of submission periods and the time of year in which they were held, and the manner in which submissions were published on the Commission’s website.^{108,109,110,111}
- 6.29 There were also concerns raised that the delayed release of Strata’s analysis reduced stakeholder’s ability to meaningfully submit on the draft decision within the required timeframe.¹¹²
- 6.30 The Commission also received correspondence from Aurora that contained feedback on the second round of public meetings held in late November and early December 2020, in relation to the draft decision. Aurora took issue with aspects such as the conduct of participants and the themes of discussion that emerged and also noted that some of the matters that were discussed were not relevant to our consideration of its CPP proposal.¹¹³

Our response

- 6.31 We recognise that a CPP proposal is a technical document and that members of the public are generally not familiar with, or have experience navigating, such a document. We published supporting material that used plain language to increase the ease with which consumers could engage with the process.
- 6.32 The timeframes we operate in are dictated by statute. We are required to issue a decision on a CPP proposal within 150 days of accepting it as compliant, and therefore we had to balance this with providing stakeholders with enough opportunity to engage, and when those opportunities best occur.
- 6.33 Our intention was to provide Strata’s report to all parties as quickly as possible following publication of our draft decision on Aurora’s CPP proposal. 20 November 2020 was the earliest date that Strata was able to provide us with a consolidated report suitable for publishing.

¹⁰⁸ Russell Garbutt “Submission on draft decision for Aurora’s CPP” (26 November 2020).

¹⁰⁹ Nick Loughnan “Submission on draft decision for Aurora’s CPP” (8 December 2020).

¹¹⁰ Queenstown Lakes District Council “Cross submission on draft decision for Aurora’s CPP” (18 January 2021).

¹¹¹ James Dicey “Submission on draft decision for Aurora’s CPP” (18 November 2020) p. 1.

¹¹² Electricity Networks Association “Submission on draft decision for Aurora’s CPP” (18 December 2020).

¹¹³ Aurora Energy “Feedback on Commerce Commission consultation program” (7 December 2020).

- 6.34 Given the Strata report analysed and referred to a significant amount of information supplied by Aurora, part of our necessary confidentiality process involved giving Aurora the opportunity to flag any confidentiality concerns before the report was published.
- 6.35 We published Strata's report on 26 November 2020. To acknowledge this delay, we extended the due date for submissions and cross submissions on our draft decisions, including the analysis we drew from the Strata report.
- 6.36 The Commission has a different perspective on the effectiveness of the public meetings and provided a detailed response to Aurora. In our view, it was important for consumers to express to us in person the issues they had with Aurora and its proposed plan. Overall, the series of meetings provided valuable feedback from attendees on issues within the Commission's remit. Commentary on issues not relevant to our regulatory functions has not been considered during our deliberations.
- 6.37 The correspondence between Aurora and the Commission regarding Aurora's feedback on these meetings has been published on the Commissions website.
- 6.38 Overall, we consider the stakeholder engagement undertaken throughout this process was a valuable and important process. We have seen greater individual consumer engagement on this energy regulatory process than any other we have overseen, and the feedback from this engagement has informed our deliberations and contributed to a more informed and robust decision.
- 6.39 We do acknowledge that there are always improvements that can be made to our engagement processes. We are committed to using the experience and feedback from this project to inform our future engagement programmes with a view to increase effectiveness and accessibility.

Key issues raised by stakeholders

6.40 This section discusses the key issues raised by stakeholders throughout the process. We have grouped them into three broad categories:

6.40.1 issues we can deal with and that we consider are best dealt with using the mechanisms and tools that are provided for under the CPP regime;

6.40.2 issues within our responsibility that either cannot be dealt with using the mechanisms and tools available to us in setting the CPP regime, or are best managed using our other statutory tools (such as information disclosure); and

6.40.3 issues outside our statutory mandate.

Issues we can deal with in setting the CPP

6.41 The core issues raised by stakeholders that we can deal with under the CPP regime include:

6.41.1 the price impact of recovering higher revenues from consumers;

6.41.2 service quality and reliability;

6.41.3 capital expenditure;

6.41.4 operational expenditure;

6.41.5 Aurora's consultation on its CPP; and

6.41.6 length of the CPP period.

6.42 Some submissions also raised concerns with aspects of our deliberation or the process that was followed. Each of these issues is discussed below.

The price impact of recovering higher revenues from consumers

6.43 In its proposal, Aurora estimated for its three-year CPP that its residential consumers could expect a monthly increase in lines charges of between \$20.30 to \$30.90 from April 2021, with residential consumers in Central Otago facing the largest increases. For small businesses the price increase was estimated to be between \$40 to \$53 with business consumers in Dunedin facing the largest increase.¹¹⁴

¹¹⁴ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), p. 30. These price increases exclude GST, expected increases in inflation and are for year 3 of the CPP.

- 6.44 Aurora indicated in submissions that it had been clear from the outset that its CPP investment plan would impact on its prices. It indicated that price increases could not be avoided and that its revenue had to increase to cover the additional expenditure needed to repair its network. It went on to detail the steps it took to reduce the price shock to consumers.¹¹⁵ Aurora in its submission, and cross submission, repeated the point that prices needed to be raised in line with the increased investment under its proposed CPP to keep its business viable.^{116,117}
- 6.45 While the estimated bill impact of our draft decision was substantially lower than Aurora's original proposal, the price impact was still a significant concern for many stakeholders.
- 6.46 Some stakeholders told us the proposed price increases would impose financial stress on many of Aurora's consumers and would be especially problematic for those on fixed incomes.^{118,119,120,121} It was noted that many of these people were already struggling due to the impacts of COVID-19 (notably superannuitants and those in receipt of welfare benefits).
- 6.47 Some stakeholders told us that price rises would also create difficulties for a region that has cold winters and is increasingly reliant on electric heating for air-quality reasons.¹²² In addition, we heard price rises would hurt the competitiveness and viability of some business consumers who feared they would face large price rises at a time of reduced demand in the economy.¹²³
- 6.48 A submission responding to the proposed technical changes to the draft CPP determination disagreed with the change that would allow Aurora to amend its prices shortly after setting a new price level on 1 April 2021, and was concerned it could result in consumers experiencing two price changes in quick succession.¹²⁴

¹¹⁵ [Aurora Energy "Submission on Aurora Energy's Issues paper" \(20 August 2020\)](#), p. 2-3.

¹¹⁶ [Aurora Energy "Submission on Aurora Energy's Issues paper" \(20 August 2020\)](#), p. 1 and p. 3.

¹¹⁷ [Aurora Energy "Cross-submission on Aurora Energy's CPP Issues paper" \(18 September 2020\)](#), p. 4.

¹¹⁸ CC.016 "Submission on draft decision for Aurora's CPP" (20 November 2020) p. 1.

¹¹⁹ CC.021 "Submission on draft decision for Aurora's CPP" (27 November 2020) p. 1.

¹²⁰ Central Otago Grey Power "Submission on draft decision for Aurora's CPP" (6 December 2020) p. 1.

¹²¹ Queenstown Grey Power "Submission on draft decision for Aurora's CPP" (6 December 2020) p. 1.

¹²² Arrowtown Village Association "Submission on draft decision for Aurora's CPP" (18 December 2020) p. 3.

¹²³ [Dairy Creek Limited Partnership "Submission on Aurora Energy's CPP Issues paper" \(20 August 2020\)](#).

¹²⁴ Queenstown Lakes District Council - Submission on targeted consultation on changes to draft determination for Aurora's CPP" (15 February 2021) p. 1.

- 6.49 There were also mixed views on the revenue cap scenarios proposed in the draft decision – spreading the cost over a longer period to help reduce the bill shock of an otherwise sizeable immediate price increase. Scenario 1 proposed an annual 10% cap on the increase in forecast allowable revenue throughout the entire CPP period, while Scenario 2 proposed a 5% cap on increases in forecast allowable revenue in the first year of the CPP, with a 10% cap in subsequent years.
- 6.50 Some stakeholders preferred Scenario 1 as it would result in lower costs to consumers over the lifetime of the CPP.^{125,126} Others favoured Scenario 2 as it would be more affordable in the short term, especially given the economic impacts to the region caused by COVID-19.^{127,128}
- 6.51 Aurora did not support any changes to the revenue and price projections that were included in Aurora’s original CPP proposal. It was concerned that the revenue cap proposals would have adverse financing impacts, put unsustainable pressure on its balance sheet and expose it to future cost increases.¹²⁹

Our response

- 6.52 We accept the communities' concerns about the potential financial impact of price rises on individuals and businesses. While the Commission has limited power to address energy poverty concerns in terms of consumers’ ability to pay their electricity bills, we have been conscious of this impact.
- 6.53 We have been mindful that any increases above Aurora’s current level of approved expenditure will produce higher prices for consumers. Our decision allows Aurora to invest at the level required to make its network safe and maintain reliability, but means that consumers on its network will need to pay a higher price to cover the cost of this work.
- 6.54 We have carefully scrutinised Aurora’s proposed expenditure, and made reductions to Aurora’s proposed capex and opex allowances as set out in Chapter 3.

¹²⁵ [Hawea Community Association “Submission on draft decision for Aurora’s CPP” \(8 December 2020\).](#)

¹²⁶ Queenstown Lakes District Council “Submission on draft decision for Aurora’s CPP (14 December 2020).

¹²⁷ Central Otago District Council “Submission on draft decision for Aurora’s CPP” (18 December 2020) p. 2.

¹²⁸ Grey Power NZ Federation “Submission on draft decision for Aurora’s CPP” (14 December 2020) p. 2.

¹²⁹ Aurora Energy letter “Submission in repose to Commerce Commission’s Draft Decisions on Aurora’s CPP proposal” (18 December 2020) p. 2.

- 6.55 We did not implement the proposed technical change that would allow Aurora to change its price shortly after 1 April. This is because Aurora set their prices for the year beginning 1 April based on our draft decision on their maximum allowable revenue for that year.¹³⁰
- 6.56 To limit the price shocks faced by consumers on Aurora's network, we have decided to limit yearly increases in Aurora's forecast revenue from prices (ie, the revenue it gets to cover the distribution and transmission costs) over the five-year CPP period. Increases will be limited to approximately 10% per year, based on current forecasts of inflation and transmission costs. We address Aurora's submission regarding the impact of this on Aurora's financial position in Attachment G.
- 6.57 The reductions to Aurora's proposed expenditure allowances, combined with the revenue cap, will smooth the price impacts of Aurora's CPP over a longer time period.¹³¹ Detail of the indicative price impacts of our decision is set in Attachment H.

Service quality and reliability

- 6.58 In its proposal, Aurora acknowledged the poor state of its network, citing the 2018 independent WSP report, which found many reliability and safety concerns. Aurora outlined that the need to address deteriorating safety and reliability were the underlying reasons for the extra expenditure it needed under a CPP.¹³²
- 6.59 Aurora applied to relax the regulatory quality standards that it would be subject to. It noted that its CPP period commenced at a time of deteriorating asset performance and that reversing this trend could be expected to take some years.¹³³

¹³⁰ Our decision is explained in Attachment J.

¹³¹ The original Aurora price estimates were prepared using different assumptions to ours. For example, Aurora's estimates excluded GST and backed-out the effects of inflation. We have restated Aurora's estimates to include GST and the likely impact of inflation since these are always part of the electricity price consumers pay. We also adopt a different assumption to Aurora in spreading some historic costs and have restated its estimates accordingly. There are also a number of factors outside of the scope of the Commission's decision that mean the price consumers' experience in reality will differ from our estimates. For example, wholesale or generation costs may fluctuate due to market conditions, and we only control the network revenues Aurora may recover from its consumers.

¹³² [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), p.5.

¹³³ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), p.13.

- 6.60 Many stakeholders expressed concerns about the reliability and quality of Aurora's lines services.^{134,135} Reliability was considered particularly vital in one of the coldest regions of the country, where heat pumps and electric heating are the only source of heating for many people due to tightening air-quality regulations.
- 6.61 Aurora's request to relax the reliability standards it must meet while repairing its network was similarly opposed by some stakeholders as they feared it would 'lock in' poor performance and provide a disincentive to improve network reliability.
- 6.62 Aurora's submission on the draft decision was supportive of the proposed planned outages standards. It was, however, concerned that that the unplanned outage targets were too low, increasing the risk of future breaches and making the incentive scheme ineffective. It also cautioned that Aurora's ability to make the network improvements required to meet these standards would be dependent on sufficient operating expenditure allowances being set.¹³⁶
- 6.63 There was some concern raised that Aurora's CPP was focussed on only improving the safety of its network. Some stakeholders questioned whether this would flow-on to improve the reliability of the network, or instead would require a second round of investment at consumers' expense.¹³⁷
- 6.64 There were a number of other concerns from community stakeholders relating to quality of service and network reliability that we consider are better addressed using other our regulatory tools. These are discussed later in this chapter.

Our response

- 6.65 Aurora had a poor performance record over the past decade, breaching its quality standards multiple times, which ultimately led to us taking it to court where it was fined \$5 million.
- 6.66 Its consumers generally accept that it is appropriate for Aurora to prioritise safety expenditure. However, they are concerned that this CPP may impose significant costs but do little to improve the reliability of its electricity supply.

¹³⁴ Central Otago Grey Power "Submission on draft decision for Aurora's CPP" (6 December 2020) p. 1.

¹³⁵ Summary of stakeholder meetings held in November and December in support of our draft decision on Aurora's CPP (22 December 2020).

¹³⁶ Aurora Energy "Submission on draft decision for Aurora's CPP" (18 December 2020) p. 61.

¹³⁷ [Richard Healey "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\).](#)

- 6.67 We broadly consider that there is a link between safety and reliability improvements and therefore we expect to see some benefits flow through to the reliability and quality of Aurora's services under this CPP. For example, replacing older power poles and lines will improve both safety and reduce the risk of outages caused by the failure, or essential maintenance, of that equipment.
- 6.68 We heard that many consumers were not willing to pay more for improved reliability. However, most feedback we received did not engage on whether there was support for Aurora's proposed reliability outcomes, given it is proposing worse reliability at a higher cost.
- 6.69 Our decision is to set more stringent unplanned outage targets and standards than Aurora proposed, and we are confident Aurora can work within the standards. We expand on our specific reasons for setting targets and limits at the levels we have, and address Aurora's concerns with these levels, in Attachment C.
- 6.70 As a result of further analysis undertaken since the draft decision our decision (as explained in Attachment E) is to increase the allowances for vegetation management and preventative maintenance expenditure. The result of those increases in expenditure allowances increase Aurora's ability to address the causes of unplanned outages. Given the approach to setting, and the level at which we have set, the standards on unplanned outages, we are confident that the reliability targets are practically feasible given the expenditure allowances we have set.

Capital expenditure

- 6.71 Aurora's forecast was to spend \$356.3 million on capex over five years. Aurora outlined that most of its capex was catch-up renewal expenditure that was needed because its historical capex was low. It went on to explain in its proposal that it had moderated its CPP capex forecasts through a robust challenge and review process including consumer feedback, independent verification and updates to take into account potential COVID-19 impacts.¹³⁸
- 6.72 Our draft decision was to reduce Aurora's proposed capital allowance by \$40.9 million, from \$356.3 million to \$315.5 million.
- 6.73 Many stakeholders recognised and accepted that a significant amount of capital expenditure was needed to improve the safety and maintain (at least) the reliability of Aurora's network.¹³⁹

¹³⁸ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), p.17.

¹³⁹ CC.0005 "Submission on Aurora Energy's CPP Issues paper (12 November 2020).

- 6.74 Submitters also wanted to be assured that Aurora was taking into account the effect of emerging technologies, such as solar panels and electric vehicles, when planning or making decisions on capital expenditure.
- 6.75 There were concerns amongst some stakeholders that the investment package originally proposed by Aurora would not be enough to meet the needs of the region, particularly those areas with high growth rates. These concerns were heightened by the reduced capital allowances proposed in our draft decision.¹⁴⁰
- 6.76 Aurora's submission disagreed with the draft decision's proposed reduction of capital expenditure and was critical of the modelling and analyses used to reach that draft decision.¹⁴¹
- 6.77 There were some stakeholders that appeared to assume that their line charges represented direct capital investment.¹⁴² Aurora noted this in its cross submission and requested we provide some clarity around the funding of capital expenditure. The capital expenditure that we have approved for Aurora's CPP is not fully recovered over the five-year CPP period. Rather, the majority of it is recovered over a much longer period related to the lifetime of the assets, through a return on that spend (through the weighted average cost of capital component of the building blocks allowable revenue), and a return of that spend (through depreciation allowances).

Our response

- 6.78 We have approved most of the capex proposed by Aurora and its approach to completing this work. Our decision allows \$327.4 million compared to \$356.3 million over five years. The major reductions we have identified largely relate to reductions proposed by the Verifier that we agree with, reductions due to forecast modelling issues, and a five percent top-down efficiency adjustment being applied consistently across the expenditure programme.
- 6.79 We have allowed \$12.0 million more than what we proposed in our draft decision. This is based on our review of submissions and supporting information material, and our analysis of Aurora's updated information.

¹⁴⁰ Queenstown Lakes District Council "Submission on draft decision for Aurora's CPP" (14 December 2020) p.2-3.

¹⁴¹ Aurora Energy "Submission on draft decision for Aurora's CPP" (18 December 2020).

¹⁴² [Cromwell Electrical Trust Action Group "Submission on Aurora Energy's CPP Issues paper" \(20 August 2020\)](#).

- 6.80 We do not consider that our CPP decision will limit the ability of new technologies to be used on Aurora’s network. Aurora has an incentive to look for less expensive ways to meet its quality standards, which might be through substitution of capex for opex or vice versa, or a substitution of more traditional network solutions with alternatives (including emerging technologies). Aurora has been innovative in its use of emerging technology and alternatives as evidenced by the Upper Clutha Distributed Energy Resource (DER) project to defer major network investment.
- 6.81 Submissions on our draft decision led us to undertake further analysis, and we subsequently decided to approve spending to accommodate a number of additional projects, particularly in the Queenstown Lakes region. We are confident the capital expenditure allowances we have approved in this decision are sufficient to meet the needs of the region within the CPP period. Aurora may also apply for additional expenditure during the CPP period for additional work that is dependent on the growth of Aurora’s network.
- 6.82 We provide further details on our analysis and expand on our specific reasons for setting capital expenditure limits at the levels we have in Attachment D.
- 6.83 A key area of focus for us has been to ensure Aurora delivers this work efficiently and on time. In this regard we propose introducing a number of initiatives that are outlined below under governance, accountability and delivery.

Operational expenditure

- 6.84 Aurora forecast to spend \$252.9 million over a 5-year CPP period on opex. Aurora noted that its proposed increase in opex was to address a number of matters including defect backlogs and improve its inspection and condition regimes, improve its asset management and develop some non-network alternatives.¹⁴³
- 6.85 Many stakeholders accepted Aurora would need to increase its operational expenditure, especially to catch-up on maintenance needs.^{144,145} However, they questioned whether all of Aurora’s proposed spending was prudent, citing concerns with how much it pays its staff and contractors, the contract it has with its related entity Delta Utility Services, and vegetation management costs.^{146,147}

¹⁴³ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), p. 19.

¹⁴⁴ [Infrastructure NZ "Submission on Aurora Energy's CPP Issues paper" \(19 August 2020\)](#).

¹⁴⁵ Andrea Johnston “Submission on draft decision for Aurora’s CPP” (18 December 2020).

¹⁴⁶ [NZ Chamber of Commerce Queenstown "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\)](#).

¹⁴⁷ Richard Healey “Submission on draft decision for Aurora’s CPP” (17 December 2020) p. 10.

- 6.86 Following our assessment of Aurora’s proposed opex, our draft decision considered that some of the spend proposed by Aurora was inefficient and unjustified. In total our draft decision included a \$45.3 million reduction in operating expenditure relative to Aurora’s proposal.
- 6.87 A number of submissions, particularly from Aurora and other electricity distributors, were critical of aspects of the analysis that we had used to inform our deliberations and stated that if this proposed operating expenditure allowance was left unchanged it would restrict Aurora’s ability to deliver the CPP and associated accountability measures.^{148,149}
- 6.88 These submissions took issue with top down approach taken by Strata, the use of benchmarking, and the re-evaluation of expenditure that had already been assessed by the Verifier.

Our response

- 6.89 We have approved most of the operating expenditure proposed by Aurora and its approach to completing this work. Our decision allows \$236.0 million compared to \$252.9 million over five years.
- 6.90 We have allowed \$28.3 million more than what we proposed in our draft decision. As already outlined, in making this decision, we have drawn upon a wide range of information and analysis, including work done by the Independent Verifier, Strata, and Commission staff.
- 6.91 However, to acknowledge these concerns and ensure the final decision was robust, the Commission reviewed the analysis that had been undertaken and requested additional information from Aurora. A number of updates were made to the models to address these criticisms where appropriate.
- 6.92 Based on these revisions, we decided to approve more spending than what was included in our draft decision to ensure Aurora Energy has the capacity to undertake the extensive investment programme necessary to fix the network.
- 6.93 We believe this investment is necessary, and ultimately in the best interest of consumers.
- 6.94 We provide further details on our analysis and expand on our specific reasons for setting operational expenditure at the levels we have in Attachment E.

¹⁴⁸ Aurora Energy “Submission on draft decision for Aurora’s CPP” (18 December 2020) p. 29.

¹⁴⁹ Vector “Submission on draft decision for Aurora’s CPP” (18 December 2020).

The effectiveness of Aurora's consultation in developing its CPP

- 6.95 In developing its investment plan, Aurora undertook its own community consultation. This included a series of public meetings, consumer surveys and the publication of a consultation document that its consumers could provide written submissions on. It also established a CAP to provide an independent consumer voice to help inform its plan.¹⁵⁰
- 6.96 Many stakeholders had views on the effectiveness of Aurora's consultation in the development of its CPP proposal.^{151,152,153} Most expressed concern with the consultation process Aurora had run. There were a range of concerns expressed including that Aurora had handpicked its CAP members; and that not many stakeholders had participated in some of its consultation initiatives.
- 6.97 There were some submissions on the Issues Paper package that complimented Aurora on its consultation process and considered it thorough.^{154,155}
- 6.98 Aurora responded to submitters' concerns about its consultation in its subsequent cross-submission. Aurora put forward its view that it had "lifted the bar" relative to previous CPP consultations, that its consultation was designed to meet the legislative requirements and that the Verifier thought that many aspects of Aurora's consultation were best practice.¹⁵⁶

We have engaged with consumers further to Aurora's engagement

- 6.99 The extent to which Aurora consulted with consumers on its CPP proposal and its proposal is supported by consumers, where relevant, is a specific evaluation criterion.
- 6.100 We consider that aspects of Aurora's consultation were very good, including its establishment of a CAP, the variety of communications channels it used and its consumer surveys. However, attendance at its drop-in sessions was extremely low.

¹⁵⁰ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), p.10-11.

¹⁵¹ [Richard Healey "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\)](#).

¹⁵² [Central Otago District Mayor and Councillors "Submission on Aurora Energy's Issues paper" \(20 August 2020\)](#).

¹⁵³ Russell Garbutt "Submission on draft decision for Aurora's CPP" (26 November 2020).

¹⁵⁴ [Mercury "Submission on Aurora Energy's CPP Issues paper" \(20 August 2020\)](#).

¹⁵⁵ [Wellington Electricity "Submission on Aurora Energy's Issues paper" \(20 August 2020\)](#).

¹⁵⁶ Aurora Energy "Cross-submission on Aurora Energy's CPP Issues Paper" (18 September 2020) p. 5.

6.101 We also consider that some of the information Aurora provided to consumers during its consultation was inadequate. In particular, the stated price impacts of Aurora's CPP proposal were difficult to understand and not necessarily representative of the actual price impacts that were likely to result. In addition, in its consultation material, Aurora indicated that quality performance would improve rather than stabilise or decline (as was indicated in its proposal).

The length of the CPP

6.102 Aurora sought a three-year CPP period because it considered this would better meet the purposes of the Act. The basis of its reasoning was that there was greater than normal uncertainty in forecasting of expenditure and the resulting reliability impacts for years four and five of a normal five-year CPP period.¹⁵⁷

6.103 There were mixed views on the appropriate term of the CPP. Some stakeholders wanted a shorter period for the reasons Aurora provided, and other reasons such as accountability. Others wanted a longer five-year period because they wanted to see continuity of Aurora's renewal programme and a sense of greater predictability of outcomes from that longer period.^{158,159,160}

6.104 There appeared to be a level of misunderstanding by some stakeholders that if a shorter period is applied, then the price impact would be for a shorter duration and the necessary work by Aurora would be completed in a shorter time period.

Our response

6.105 Our decision is that a shorter three-year CPP period does not better meet the Part 4 objective, primarily because of the increased length of certainty a five-year CPP provides. We expand on this decision in Attachment B.

The CPP process

6.106 A number of stakeholders raised concerns with aspects of the process that was followed during our deliberations.

¹⁵⁷ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), p.1.

¹⁵⁸ [Item 48 1-50 "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\)](#).

¹⁵⁹ [Item 2 1-50 "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\)](#).

¹⁶⁰ [Item 8 1-50 "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\)](#).

- 6.107 As mentioned previously, a common concern amongst stakeholders, particularly those within the electricity sector, was the Commission's approach to the work done by the Independent Verifier. They considered that the Commission should not have re-assessed aspects of Aurora's expenditure that had already been approved by the Verifier, and that our decision to do so was in conflict with the intent of the verification process.^{161,162}
- 6.108 There were also concerns that the Commission's approach increased the risk of uncertainty as to the likely outcome of a CPP proposal, which meant that electricity distributors would be hesitant to consider a CPP as a future option. These submissions pointed to the expenditure reductions that were proposed in the draft decision as examples.¹⁶³

Our response

- 6.109 We expand on how the work of the independent Verifier has been used during our assessment in Chapter 5. It is important to note that Commission is not bound by the work of the Verifier, and it would be inappropriate for us to delegate our decision making to them.
- 6.110 Overall, the Verifier's work was very helpful to our assessment, and we ultimately adopted most of the Verifier's conclusions. An exception was its conclusions on SONS and people costs, where it raised multiple and potentially significant matters that in our view needed further consideration.
- 6.111 Our use of comparative benchmarking is discussed more fully in Chapter 5. Importantly, our decision is not determined by the benchmarking analysis but rather reflects the application of our judgement after consideration of all of the information available to us, including Aurora's proposal and the benchmarking analysis.
- 6.112 We are open to having a discussion regarding the CPP regime and the rules and processes that govern price-quality paths. There is an opportunity to do so as part of the upcoming review of Input Methodologies which will begin later in 2021.

¹⁶¹ Aurora Energy "Submission on draft decision for Aurora's CPP" (18 December 2020).

¹⁶² Electricity Networks Association "Submission on draft decision for Aurora's CPP" (18 December 2020).

¹⁶³ Electricity Networks Association "Submission on draft decision for Aurora's CPP" (18 December 2020).

Issues that can be addressed with other tools we have

6.113 Several concerns were raised about Aurora’s performance (past, present and future) that are within our areas of responsibility but cannot be or are not best addressed within the CPP process. They can, however, be addressed, in some part, by different tools we have at our disposal. There are three issues that we discuss in turn below:

6.113.1 Governance, accountability, quality of service and delivery;

6.113.2 asset management practices; and

6.113.3 our past monitoring of Aurora.

Governance, accountability, quality of service and delivery

6.114 Aurora outlined in its proposal that it had undergone a significant restructure and a fundamental shift in its asset management approach.¹⁶⁴ It detailed a number of actions that had been taken in this regard including establishing a new Board, executive and the team to operate as a standalone business.

6.115 Aurora also outlined in its proposal in a section on deliverability, that it had significantly enhanced its capacity to deliver an increased work programme by implementing a major reform of its contracting model. It went on to say that it was confident that the CPP could be delivered efficiently.

6.116 In its submission, Aurora reaffirmed its view that it could efficiently deliver its CPP, noting that the verifier thought that the work proposed in the capex and opex forecasts appeared deliverable.¹⁶⁵

6.117 One of the major themes raised in submissions from consumers was the lack of trust in Aurora's ability to deliver its CPP and that it needed to be held accountable for delivering it. This loss of trust appeared to be the result of Aurora's past poor performance and its perceived lack of engagement and ineffective communication with its consumers over many years.^{166,167,168}

¹⁶⁴ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), p.3.

¹⁶⁵ Aurora Energy “Submission on Aurora Energy’s CPP Issues paper” (20 August 2020).

¹⁶⁶ Kevin O’Hara “Submission on draft decision for Aurora’s CPP” (12 November 2020).

¹⁶⁷ Summary of stakeholder meetings held in November and December in support of our draft decision on Aurora’s CPP (22 December 2020).

¹⁶⁸ KD McGraw “Submission on draft decision for Aurora’s CPP” (8 December 2020).

- 6.118 This sentiment was particularly strong in Central Otago, where many consumers said they distrusted Aurora's Board and believed that it lacked representation independent of Dunedin City Council.
- 6.119 Despite recent changes to Aurora's Board and senior management, many stakeholders have little confidence that Aurora can deliver what it says it will, report accurately on its work programme or listen to community concerns in a meaningful way. Because of these views, stakeholders recommended that independent oversight should be put in place to monitor and report on Aurora's progress. Suggestions put forward included:
- 6.119.1 appointing an Independent Verifier to assess and report on Aurora's delivery;¹⁶⁹
 - 6.119.2 enabling communities to hold Aurora to account through mandatory reporting requirements and/or public meetings;¹⁷⁰
 - 6.119.3 continuing with the CAP but in an oversight role; and
 - 6.119.4 linking Aurora's revenue to its delivery.¹⁷¹
- 6.120 Some submitters had a contrary view to concerns with Aurora's ability to deliver. They noted the organisational changes, the focus Aurora had put on delivery in developing its proposal and the verifier's findings that Aurora's programme for work appeared deliverable.¹⁷²
- 6.121 Some consumers noted they had been badly affected by lengthy power outages, both planned and unplanned, and criticised Aurora's communication (or lack of) when these issues arose.^{173,174,175}

¹⁶⁹ CC.023 "Submission on draft decision for Aurora's CPP" (29 November 2020).

¹⁷⁰ James Dicey "Submission on draft decision for Aurora's CPP" (18 December 2020).

¹⁷¹ KD McGraw "Submission on draft decision for Aurora's CPP" (8 December 2020).

¹⁷² Northpower "Cross-submission on draft decision for Aurora's CPP" (18 January 2021).

¹⁷³ ["Summary of Cromwell stakeholder meeting on Aurora's CPP" \(11 August 2020\)](#).

¹⁷⁴ CC.050 "Submission on draft decision for Aurora's CPP" (7 December 2020).

¹⁷⁵ CC.023 "Submission on draft decision for Aurora's CPP" (29 November 2020).

- 6.122 We heard that, on occasion, business consumers had been warned of a planned outage and organised themselves accordingly, only for the work not to proceed.¹⁷⁶
^{177,178} We also heard from stakeholders that, in other instances, contractors had arrived on a job only to find residents had not been informed the power would need to be turned off while they worked.
- 6.123 Stakeholders also questioned the purpose and value of Aurora's voluntary consumer compensation scheme, whereby it pays \$50 to consumers affected by a long-duration power cut.¹⁷⁹ There was limited awareness of the scheme and a general concern about how difficult it was to access and whether it provided any real incentive for Aurora to improve its performance.

Our response

- 6.124 We recognise that the organisational changes that Aurora has made, and its ongoing development of its asset management capabilities, put it in a good position to deliver its CPP. We thoroughly tested the efficiency of its proposed capex and opex and considered whether it could deliver programmes of work in these expenditure areas. We do not consider it necessary to establish additional independent monitoring of Aurora's delivery of the CPP.
- 6.125 We experienced first-hand, during our visits to Aurora's region, that many consumers have little trust or confidence in Aurora's work. A key challenge for Aurora will be improving the confidence and trust of its consumers in its work.
- 6.126 We are proposing additional information disclosure measures that will increase transparency around Aurora's performance. These proposed measures are discussed in Chapter 4.
- 6.127 Further details can be found in our Aurora ID draft decision paper on our website. We will be receiving submissions on this proposed package of measures until 10 May 2021.

¹⁷⁶ For example: [NZ Chamber of Commerce Queenstown "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\)](#).

¹⁷⁷ CC.023 "Submission on draft decision for Aurora's CPP" (29 November 2020).

¹⁷⁸ Steve Tilleyshort "Submission on draft decision for Aurora's CPP" (16 December 2020).

¹⁷⁹ [0481 "Submission on Aurora Energy's CPP Issues paper" \(18 August 2020\)](#).

Asset management practices

- 6.128 A report by Strata in 2013 found that Aurora's asset management practices were a major contributing factor to Aurora breaching its quality standards for the 2012 assessment period. Aurora acknowledged in the December 2019 agreed summary of facts that accompanied the High Court's decision on Aurora's later quality breaches, that it had failed to act in accordance with good industry practice in not having a planned response to Strata's earlier findings on its asset management practices.
- 6.129 Aurora indicated in its proposal that it has shifted its asset management approach towards good industry practice. A key focus for Aurora is making ongoing improvements in asset management practices. It proposed to achieve the internationally recognised ISO 55000 asset management standard by 2023.¹⁸⁰
- 6.130 A number of stakeholders identified Aurora's poor asset management practices as one of the major reasons for its current predicament.¹⁸¹
- 6.131 Some stakeholders suggested that we should undertake further work to more aggressively scrutinise lines companies' actual asset management practices to ensure that they were discharging their practices effectively.¹⁸²

Our response

- 6.132 We agree with stakeholders that many of the safety and reliability issues with Aurora's network are due to shortcomings in its asset management practices over many years.
- 6.133 We are required to set Aurora's CPP on a forward-looking basis, and the CPP mechanism does not provide for retrospective action. We can, however, put measures in place that look to mitigate the risk of past failings being repeated. That said, as noted below, we can (and have) addressed Aurora's previous reliability issues through court proceedings.
- 6.134 Sound asset management by electricity lines companies is integral to delivering services at a price and quality that reflects the demands of electricity consumers. We will continue to maintain a strong focus on these practices especially improving the disclosure of asset management practices.

¹⁸⁰ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), p.33.

¹⁸¹ [0491 "Submission on Aurora Energy's CPP Issues paper" \(20 August 2020\)](#).

¹⁸² [Item 22 1-50 "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\)](#).

Our past monitoring of Aurora

6.135 Several stakeholders expressed the view that we had not effectively monitored Aurora’s past performance and should have done more to prevent the deterioration in its service levels. This perceived lack of action on our part raised concerns in some stakeholders’ minds that we will not effectively monitor or hold Aurora to account for delivering its CPP effectively.^{183,184}

Our response

6.136 In March 2020, our successful proceedings against Aurora for breaching our network quality standards, regarding the duration and frequency of power cuts in the 2016-2019 years, concluded in the High Court. This action followed the warning we issued Aurora in 2014 for breaches in 2012 and 2013.

6.137 Fundamentally Aurora’s senior management and Board are responsible for managing Aurora and ensuring that its network delivers safe and reliable services. Aurora was regulated under the low-cost DPP regime, which is premised on applicants, in this case Aurora, taking the initiative and applying for a CPP which provides for expenditure and quality outcomes that better meets the particular needs of the electricity lines company.

6.138 Our role in assessing Aurora’s CPP proposal has been forward-looking and focussed on doing what is right for the network now for the long-term benefit of consumers. We understand that some stakeholders remain concerned about our ability to monitor Aurora. We consider we have the necessary tools to hold Aurora publicly accountable on its delivery and are consulting on proposed accountability and transparency mechanisms (highlighted above) that should help address stakeholders’ concerns.

Issues outside our statutory mandate

6.139 A number of issues were raised that, although important and relevant to Aurora’s business activities, sit outside our statutory mandate. In this section we discuss five of these issues namely:

6.139.1 Aurora’s pricing methodology;

6.139.2 price increases for distributed generation;

6.139.3 ownership contribution to network rebuild;

¹⁸³ Russell Garbutt “Submission on draft decision for Aurora’s CPP” (26 November 2020).

¹⁸⁴ John Lister “Submission on draft decision for Aurora’s CPP (30 November 2020).

6.139.4 electricity market structure; and

6.139.5 health and safety practices.

6.140 In Table 6.1 we state for each of these issues the entity that is responsible for considering that matter.

Table 6.1 Entity responsible for issues raised that are outside our responsibilities

Issue	Responsible
Regional pricing differences	Electricity Authority and Aurora
Price increase for distributed generation	Electricity Authority
Whether Aurora's owners should contribute more to the network rebuild	Dunedin City Holdings and Dunedin City Council
The overall structure of the electricity market	The Government (via MBIE)
Aurora's health and safety practices	Worksafe

Aurora's pricing methodology

6.141 As mentioned above, Aurora divides its network into three regions for the purposes of charging its consumers: Dunedin, Central Otago and Queenstown Lakes.

6.142 We heard several concerns with aspects of this regional pricing, notably:

6.142.1 Consumers in Central Otago and Queenstown believe they are paying too much and subsidising Dunedin consumers. They are concerned this will get worse with the uplift in expenditure from Aurora's CPP.^{185,186}

6.142.2 Pricing is not service based in the sense that consumers in some areas pay more (i.e. Central Otago) even though their reliability is less than other regions.

6.142.3 Prices are being driven down by competition in the Queenstown pricing region, which has led Aurora to under-price for commercial consumers in this area with the 'difference' being covered by consumers in other regions.

¹⁸⁵ Norman & Lunda Chamberlain "Submission on draft decision for Aurora's CPP" (2 December 2020).

¹⁸⁶ Summary of stakeholder meetings held in November and December in support of our draft decision on Aurora's CPP (22 December 2020).

6.143 In February 2021 Aurora announced it was reforming how it allocates its costs across these three regions, with modest changes in the first year of the CPP period and that it would engage with its stakeholders on potentially more substantive changes.

Our response

6.144 The Electricity Authority is aware of these concerns from its participation in the public forums and has recently released an independent report on Aurora's regional pricing.¹⁸⁷

6.145 We are proposing that Aurora disclose more information in a more transparent manner so that its consumers better understand its pricing approach. This would include its regional cost allocation, which flows through to the regional prices it charges.

Price increases for distributed generation

6.146 Aurora has a number of electricity generators that are connected directly to its network. These are called embedded or distributed generators (DG). Owners of DG submitted that the prices they pay to use Aurora's network (ie, inject electricity) would increase under its proposed CPP.¹⁸⁸

Our response

6.147 We do not have a role in setting the charges that a DG pays to use its local lines network.

6.148 Part 6 of the Electricity Industry Participation Code (Code) sets the regulatory arrangements for DG, including the pricing principles that apply. The Electricity Authority administers this Code and is therefore responsible for determining if the charges fall within the allowable "no more than incremental cost" range prescribed in the Code.

¹⁸⁷ [Electricity Authority, "Distribution pricing scorecards 2020" \(23 February 2021\)](#).

¹⁸⁸ [Southern Generation Limited Partnership "Submission on Aurora Energy's CPP Issues paper" \(20 August 2020\)](#).

Ownership contribution to network rebuild

6.149 Several stakeholders suggested the view that Aurora’s owners should bear most of, or all, the cost of fixing Aurora’s network. Some stakeholders further argued that as Dunedin consumers owned the network, via Dunedin City Council, they should pay.^{189,190,191,192}

Our response

6.150 Our statutory mandate limits our powers to setting an incentives-based revenue path and associated quality standards. We do not have the power or ability to decide who owns a lines company, or direct the owners on how to manage their business. These matters are ultimately for the owners, in this case Dunedin City Holdings and Dunedin City Council, to respond to.

The structure of the electricity market does not benefit Aurora's consumers

6.151 We heard concerns about the current structure of the electricity market with some wanting to see it changed. They pointed to the increase in electricity prices since the market was reformed in the 1990s and the lack of accountability that they perceive exists between suppliers and consumers. They attributed, to a greater or lesser extent, the problems that had beset Aurora to these past reforms of the electricity market.^{193,194}

Our response

6.152 The structure of the electricity market is an issue for central Government to consider. We are engaging with the Ministry of Business, Innovation and Employment (MBIE), the government agency responsible for advising the Minister of Energy and Resources on electricity market issues, to inform it of consumers’ concerns about this issue.

Health and Safety

6.153 Some stakeholders were concerned with Aurora's health and safety practices and highlighted specific incidents where they considered there had been serious breaches of safety standards.

¹⁸⁹ [Item 14 1-50 "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\)](#).

¹⁹⁰ Nick Loughnan “Submission on draft decision for Aurora’s CPP” (8 December 2020).

¹⁹¹ CC.023 “Submission on draft decision for Aurora’s CPP” (29 November 2020).

¹⁹² Terry Wilson “Cross-submission on draft decision for Aurora’s CPP” (18 January 2021).

¹⁹³ [Item 46 1-50 "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\)](#).

¹⁹⁴ [0429 "Submission on Aurora Energy's CPP Issues paper" \(25 July 2020\)](#).

Our response

- 6.154 Worksafe NZ is responsible for setting health and safety standards in the electricity sector and investigating any potential breaches or serious incidents. Where individuals brought specific concerns to our attention, we advised them to contact Worksafe directly.

Attachment A Our regulatory framework and evaluation approach

Purpose of this attachment

A1 This attachment explains the approach we have taken to evaluate Aurora's CPP proposal and make our decision. It starts by explaining the framework that we have applied in order to make a decision that delivers long-term benefits to consumers. The latter part of the attachment sets out the process we have used to apply this framework.

The Commerce Act guides our determination of Aurora's CPP

A2 Part 4 of the Commerce Act 1986 provides for the regulation of the price and quality of goods or services in markets where there is little or no competition, and little or no likelihood of a substantial increase in competition.¹⁹⁵ For electricity distributors, it sets out that regulation should apply in two forms:

A2.1 ID regulation, under which regulated suppliers are required to publicly disclose information relevant to their performance.¹⁹⁶

A2.2 Price-quality regulation, under which price-quality paths set the maximum average price or maximum revenues that the regulated supplier can charge. They also set standards for the quality of the services that each regulated supplier must meet. This ensures that businesses do not have incentives to reduce quality to maximise profits under their price-quality path.¹⁹⁷

A3 Section 53M of the Act sets out the content of price-quality paths. Price-quality paths must specify:

A3.1 either the maximum prices that may be charged, or the maximum revenue it may recover;¹⁹⁸

A3.2 any quality standards that must be met;¹⁹⁹ and

A3.3 the regulatory period to which the price-quality path relates.²⁰⁰

¹⁹⁵ Commerce Act 1986, Section 52.

¹⁹⁶ Commerce Act 1986, Section 52B and 54F. As per Section 54, information disclosure applies to all electricity lines companies subject to Part 4.

¹⁹⁷ Commerce Act 1986, Section 52B and 54G.

¹⁹⁸ Commerce Act 1986, Section 53M(1)(a).

¹⁹⁹ Commerce Act 1986, Section 53M(1)(b).

²⁰⁰ Commerce Act 1986, Section 53M(1)(c).

- A4 Additionally, price-quality paths may include incentives (including penalties) for individual suppliers to maintain or improve their quality of supply.²⁰¹
- A5 By default, Aurora is subject to the default price-quality path.²⁰²
- A6 Electricity lines companies subject to a default price-quality path have the option of applying for a customised price-quality path (CPP) to better meet their particular circumstances. To do this, an electricity lines company must make a CPP proposal to us,²⁰³ which applies the applicable input methodologies.²⁰⁴ This is what Aurora has done.
- A7 Once we have decided that a proposal complies with the input methodologies, we must determine a CPP within 150 working days.²⁰⁵ In determining a CPP we are not constrained to what was proposed, but may set a price-quality path that we consider appropriate (within what is contemplated in Section 53M).²⁰⁶ When deciding what CPP is appropriate, we apply the Evaluation Criteria.²⁰⁷
- A8 We must also consider the purpose of Part 4 of the Commerce Act – to promote the long-term benefit of consumers by promoting outcomes that are consistent with outcomes produced in workably competitive markets.²⁰⁸

The purpose of Part 4 of the Commerce Act

Section 52A purpose of Part 4

- (1) The purpose of Part 4 is to promote the long-term benefit of consumers in markets referred to in section 52 by promoting outcomes that are consistent with outcomes produced in competitive markets such that suppliers of regulated goods or services—
- a. have incentives to innovate and to invest, including in replacement, upgraded, and new assets; and
 - b. have incentives to improve efficiency and provide services at a quality that reflects consumer demands; and
 - c. share with consumers the benefits of efficiency gains in the supply of the regulated goods or services, including through lower prices; and
 - d. are limited in their ability to extract excessive profits.

²⁰¹ Commerce Act 1986, Section 53M(2).

²⁰² Electricity Distribution Services Default Price-Quality Path Determination 2020.

²⁰³ Commerce Act 1986, Section 53Q.

²⁰⁴ The input methodologies applicable to CPP proposals are Electricity Distribution Services Input Methodologies Determination 2012 [2012] NZCC 26, Part 5.

²⁰⁵ Commerce Act 1986, Section 53T(2).

²⁰⁶ Commerce Act 1986, Section 53V.

²⁰⁷ Discussed from para A12.

²⁰⁸ Commerce Act 1986, Section 52A.

- A9 We must also promote incentives, and avoid imposing disincentives, for suppliers of electricity lines services to invest in energy efficiency and demand side management, and to reduce energy losses.²⁰⁹
- A10 The Act also requires us to set rules and processes for CPPs – these rules and processes are referred to as input methodologies.
- A11 The extant input methodologies relating to CPPs include the requirements that must be met by the applicant for information, verification, audit and consumer consultation, as well as the criteria that we must use to evaluate a CPP proposal.^{210,211}

The CPP evaluation criteria

- A12 The criteria that we must use to evaluate a CPP are set out in the electricity lines company input methodologies.²¹² These criteria are intended to ensure that our determination of a CPP promotes the long-term benefit of consumers.

Evaluation criteria for customised price-quality path proposals

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

- e. whether the proposal is consistent with the input methodologies;
- f. the extent to which the proposal promotes the purpose of Part 4 of the Act;
- g. whether data, analysis, and assumptions underpinning the proposal are fit for the purpose of determining a CPP;
- h. whether the proposed capital and operating expenditure meet the expenditure objective;
- i. the extent to which any proposed changes to quality standards reflect what the applicant can realistically achieve, taking into account statistical analysis of past SAIDI and SAIFI performance; and/or (ii) the level of investment provided for in the proposal; and
- j. the extent to which the CPP applicant has consulted with consumers on its CPP proposal; and the proposal is supported by consumers, where relevant.

- A13 We briefly explain each of the evaluation criteria below.

Whether the proposal is consistent with the relevant input methodologies

- A14 Aurora's proposal must apply or adopt all relevant input methodologies (IMs).²¹³ The IMs establish the key rules, requirements and processes of regulation.

²⁰⁹ Commerce Act 1986, section 54Q

²¹⁰ *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, Part 5.

²¹¹ As required by the Commerce Act 1986, Section 52T.

²¹² *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 5.2.

²¹³ Commerce Act 1986, Section 53Q(2)(d).

A15 Our evaluation of Aurora's proposal included assessing whether the proposal was consistent with the IMs. This included an assessment, prior to accepting the proposal, of whether the proposal met the CPP process and content IM requirements; as well as an assessment of whether the proposal met the substantive IMs for determining a CPP.

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

A16 To satisfy the evaluation criteria the proposal must promote the purpose of Part 4 of the Act, outlined above. The Act's purpose is to promote the long-term benefit of consumers by promoting outcomes that would occur in competitive markets in the manner set out in Section 52A(1)(a)-(d).

Whether the information in the proposal is fit for purpose

A17 The information in a proposal must be sufficient in detail and quality to allow us to undertake our assessment.²¹⁴ The assumptions used must also be robust. Where we considered further information was necessary to establish it was fit for purpose, we requested this from Aurora. Where we had doubts about the appropriateness or robustness of an assumption, we sought further explanation for the assumption or used a more appropriate assumption.

Whether the proposed expenditure reflects the expenditure objective

A18 The expenditure objective was included in the IMs as a specific evaluation criterion for the assessment of capital expenditure and operating expenditure.²¹⁵

A19 The expenditure objective requires us to assess Aurora's proposed capital expenditure and operating expenditure on the basis that it reflects the efficient costs that a prudent supplier, subject to price-quality regulation, would require to:

A19.1 meet or manage the expected demand for electricity distribution services, at appropriate service standards, during the customised price-quality path regulatory period and over the longer term; and

A19.2 comply with applicable regulatory obligations associated with those services.²¹⁶

A20 The assessment of forecast expenditure is not a mechanistic process – it requires the exercise of judgement by us, potentially supported by expert advice.

²¹⁴ Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), para 9.4.8.

²¹⁵ Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), para 9.4.10.

²¹⁶ *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26, clause 1.1.4.

- A21 In considering whether the expenditure objective is satisfied, it is also relevant to recognise that much of Aurora's proposed expenditure is primarily directed at making its network safer. Keeping its network safe is an applicable regulatory obligation on Aurora pursuant to the Health and Safety at Work Act 2015 and regulations or other subordinate legislation under it. As such, network safety is an element of the expenditure objective.
- A22 The assessment of forecast expenditure focusses on the CPP regulatory period. However, the expenditure objective provides that we may also consider meeting the demand for services at appropriate service standards over the longer term as well.

Whether the proposed quality standard variation is realistically achievable

- A23 The evaluation criteria require us to assess the extent to which the proposed quality standard variation²¹⁷ better reflects the realistically achievable performance of Aurora over the customised price-quality path regulatory period than Aurora's quality standards under its existing DPP.
- A24 In assessing Aurora's realistically achievable performance we take into account either or both of:
- A24.1 a statistical analysis of past SAIDI or SAIFI performance;
 - A24.2 the level of investment provided for in the revenue we allow Aurora to recover from consumers.

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

- A25 We consider the extent to which Aurora has consulted with its consumers and the consumers support to the proposal.
- A26 Although consumer agreement to the proposed customised price-quality path is not required, we have regard to the extent of support (or opposition) for the matters that were raised by Aurora in its consultation with consumers on its proposal.²¹⁸ We also have regard to feedback we received from customers on the issues we raised in our Issues Paper package, in public stakeholder engagement sessions we convened, and on our draft decision.

²¹⁷ A quality standard variation means a variation to the metrics of an existing quality standard, but not the quality standard itself. We are not precluded from setting standards other than those proposed by the supplier.

²¹⁸ Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), para 9.4.16.

If a CPP proposal does not satisfy the evaluation criteria then we must set a CPP that does

- A27 Where we conclude that Aurora’s proposal fully satisfies the evaluation criteria, then we are likely to set a CPP based on that proposal.
- A28 However, where we consider that Aurora’s proposal does not satisfy the evaluation criteria, we must still set a CPP. In that case, we set a CPP that better satisfies the evaluation criteria.
- A29 The depth and extent of our analysis for considering a CPP that better meets the evaluation criteria will vary for different customised price-quality path proposals, depending on the robustness and quality of the proposal.

Revenue cap

- A30 As noted above, when determining a proposal, we may set any customised price path we consider appropriate²¹⁹, although this must be done in a way that promotes the purpose of the Act. Also as noted above, in doing so we must specify the maximum prices Aurora may charge or the maximum revenue it may recover.²²⁰
- A31 In setting the maximum revenue that Aurora may recover, we may cap the annual percentage increase in revenue that it may recover.²²¹ This may result in the recovery of some revenue being deferred outside the regulatory period.
- A32 We can impose a revenue cap to minimise price shocks to consumers or price volatility. In deciding whether to do so we consider whether including a revenue cap is consistent with promoting outcomes that are produced in competitive markets, and in particular providing incentives to invest and innovate, and incentives to improve efficiency and provide services at a quality demanded by consumers.

Our determination of the duration of the CPP

- A33 The default term for a CPP is five years. However, we can set a CPP of a shorter duration (to a minimum of three years) if we consider that the shorter duration better meets the purpose of Part 4 of the Act.
- A34 It is our decision whether to depart from a five-year duration or not, and we can consider whether this better meets the purpose of Part 4 at our own initiative or if it is sought by a CPP applicant.

²¹⁹ Commerce Act 1986, Section 53V(1).

²²⁰ Commerce Act 1986, Section 53M(1)(a).

²²¹ Commerce Commission "Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper" (22 December 2010), para 3.1.1(1).

- A35 If a CPP applicant seeks to have us depart from the five-year period, the CPP proposal must contain an explanation of why the shorter duration better meets the purpose of Part 4 of the Act than five years.
- A36 Aurora has sought a three-year CPP and provided reasons why it says that duration better meets the purpose of Part 4 of the Act. Given that Aurora has sought a shorter term we determine whether the three-year duration would better meet the purpose of Part 4 of the Act than a five-year term. When considering the duration of a CPP, there will generally be a tension between the greater flexibility offered by a shorter term and the greater certainty offered by a longer term:
- A36.1 A shorter term will offer greater flexibility because it allows for the price-quality path to be re-examined sooner. A shorter CPP may mean earlier corrections of expenditure allowances if they prove inadequate or excessive, and/or to amend quality standards (potentially due to a change in circumstances or incorrect forecasts).
- A36.2 A longer term will promote greater certainty because the electricity lines company, consumers and other interested persons will know what regulation applies to the electricity lines company for a longer period. This may better promote investment because the electricity lines company has greater certainty as to its revenue allowances and quality restrictions, so is better able to plan for them. It may also promote efficiency improvements because, the electricity lines company has a longer period to profit from any efficiency improvements.
- A37 In the face of this tension the default term is set at five years, meaning that the certainty of a five-year term will generally prevail over the flexibility of a shorter term. Accordingly, in determining the duration of Aurora's CPP we have considered:
- A37.1 whether the need for the flexibility offered by a shorter term is heightened in the case of Aurora's CPP;
- A37.2 whether the need for the certainty offered by a term of five years is lessened in the case of Aurora's CPP; and
- A37.3 whether there is any other reason why a CPP of a particular duration would better meet the purpose of Part 4 in the circumstances of Aurora's CPP.²²²

²²² For example, where we decided that three years was sufficient to complete the additional expenditure provided for by the CPP.

- A38 Having regard to the above factors we determine whether a shorter duration for Aurora's CPP would better meet the purpose of Part 4. Because five years is the default, where we are unable to determine that the purpose of Part 4 is better met by either a three year or five-year CPP, then we set a five-year CPP.
- A39 In making our decision we have also had regard to Aurora's indication that it is likely to seek a successive CPP. Aurora is not permitted to apply for a further CPP during the present DPP regulatory period, and therefore would not be able to apply for a successive CPP to follow a three-year CPP.

Attachment B The term of Aurora's CPP period

Purpose of this attachment

B1 This attachment outlines our decision on the length of the CPP period.

Summary of our decision on Aurora's CPP period

B2 The Act states that the term of a CPP is five years, but we may set a shorter period if we consider this would better meet the purpose of Part 4, but in any event may not set a term of less than three years.²²³

B3 Our decision is for a term of five years for the Aurora CPP period, commencing on 1 April 2021. Our decision differs from the three-year period proposed in Aurora's CPP application.

B4 Our view on the optimal term for the CPP is based on:

B4.1 A default five-year CPP period is specified in section 53W(1) of the Act;

B4.2 Having reviewed Aurora's application and its subsequent submissions on our Issues Paper package and our CPP draft decision, we do not think a shorter period better meets the purpose of Part 4;

B4.3 Our expenditure analysis indicates that any Aurora project uncertainty, which forms the basis of Aurora's request for a shorter CPP period, is likely to be primarily related to the capex forecasts (refer Attachment D);

B4.4 Any additional timing uncertainty or uncertainty regarding the project amounts for capex projects in a five-year CPP period are able to be addressed through existing regulatory tools already available to us in the DPP or in the IMs; and

B4.5 Whilst Aurora has signalled the potential for an application for a second CPP following this current CPP application, Aurora may not apply for a second CPP within DPP3 (ie, if we set a three-year CPP period that sits wholly within DPP3).²²⁴ Aurora would need to wait until DPP4 to make its next CPP application, meaning greater complexity of the processes for setting and applying future price-quality paths.

²²³ Section 53W of the Act.

²²⁴ Section 53Q(3) of the Act.

- B5 In summary, we consider the risk and effect of revenue over-recovery or under-recovery under a five-year CPP period to be small. Our view is that the benefits from the price and quality certainty associated with a five-year CPP outweigh the risk and effect of revenue over-recovery or under-recovery.
- B6 We acknowledge Aurora's forecasting for year four and year five of a five-year CPP period has a greater potential for annual revenue uncertainty than otherwise could be possible if better asset condition data was available. However, the forecasting approach taken is reasonable, and the potential bias towards over-forecasting is not considered overly material.
- B7 Furthermore, we have agreed IM variations with Aurora that introduce uncertainty mechanisms that enable us to defer some expenditure decisions now.²²⁵

Structure of this Attachment B

- B8 This attachment covers:
- B8.1 Aurora's proposal for a three-year term for the CPP period;
 - B8.2 Our approach to setting of the CPP period, as described in our Issues Paper Package;
 - B8.3 Our draft assessment of a three-year vs five-year CPP period, as described in our CPP draft decision to set a five-year CPP period;
 - B8.4 Our review of submissions on our CPP draft decision; and
 - B8.5 Our decision to set a five-year CPP period for Aurora.

Aurora's proposed three-year term for the CPP period

- B9 Aurora submitted its CPP application for a three-year period, as opposed to the standard five-year period.
- B10 In its CPP application, Aurora raised the following key points regarding the application for approval of a three-year CPP period:²²⁶

64. The long-term implications of the Covid-19 pandemic are still emerging as this report is being written, but are expected to affect the community and the local economy, with the hospitality and tourism sectors especially hard hit. We consider that our proposal for a 3-year CPP period helps manage the uncertainty arising from Covid-19 impacts.

²²⁵ Attachment I, CPP reconsideration mechanisms, para I23-I35.

²²⁶ Aurora Energy "Customised Price-Quality Path - Application" (12 June 2020), p. 1, Executive Summary, 1.3 What changed as a result of customer feedback and independent review, 1.3.5 The impact of Covid-19 pandemic, para 4.

189. Aurora Energy considers that a CPP Regulatory Period of three years better meets the purpose of Part 4 of the Act than five-years, for the following reasons:

189.1. Aurora Energy's expenditure has increased significantly in advance of our CPP proposal. This has been largely in response to Aurora Energy's historic under-investment in the network, which has resulted in deterioration of network assets that now requires remediation (as set out in detail in our 2018 AMP and 2019 AMP update). Our current focus is on investing to reduce the level of risk on the network. This will need to be facilitated by improvements in our delivery capability and supporting processes. In due course we expect our expenditure requirements to revert to a long-term sustainable steady state. However, the exact timing is uncertain.

189.2. In parallel, we are working on improving our asset data and asset management maturity in order to support network planning and expenditure forecasting. As the Commission knows, we are on an asset management maturity journey starting from a comparatively low base.

189.3. As with other EDBs, the accuracy and granularity of our forecasts will vary over time. However, we consider that Aurora's current circumstances mean that accurately forecasting medium- to long-term future expenditure is particularly challenging. The combination of the step change in our investment requirements in the past several years and our relative lack of asset management maturity presents a challenge for forecasting expenditure over a 5-year regulatory period.

189.4. We have put in place comprehensive plans for the next three years primarily focussed on prudent asset renewal and stabilising network performance and have a high degree of confidence in our forecasts for the first three years of the CPP period (RY2022 – RY2024). However, we do not have the same level of confidence in our forecasts beyond RY2024. We believe a three-year period will ensure better outcomes for customers over the medium term by reducing the potential for less than optimal investments.

189.5. We therefore consider that, under a five-year CPP, there would be a significant risk of over or under-recovery in RY2025 and RY2026. If Aurora were to over-recover its costs in RY2025 and RY2026 this would clearly be disadvantageous to consumers as Aurora would be overcompensated in those years. This is clearly contrary to section 52A(1)(d). But, equally, there is a risk that Aurora could under-recover its costs in RY2025 and RY2026. This also represents a risk for both Aurora and consumers. If Aurora is prevented or unable to recover its expenditure, Aurora will not maintain financial stability. This weakens incentives to invest in network assets, contrary to section 52A(1)(a). Cost recovery is a particularly acute issue for Aurora given the funding constraints it is currently operating under.

190. Accordingly, Aurora considers that in these circumstances a three-year CPP period is for the long-term benefit of consumers and better meets the Part 4 purpose, and the Commission should therefore exercise its discretion to grant a three-year CPP period.²²⁷

B11 In summary, Aurora's arguments that a three-year CPP period better meets the Part 4 purpose are that:

²²⁷ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), p. 42 and 43, IM requirements: Part 5, subpart 4, 4.1 Duration of regulatory period, para 187 to 190.

- B11.1 historic under-investment in the network has resulted in a deterioration of network assets that now requires remediation – the current focus is on investing to reduce the level of risk on the network (para 189.1);
- B11.2 Aurora is working to improve asset data and asset management maturity to support network planning and expenditure forecasting – Aurora is starting from a comparatively low base (para 189.2);
- B11.3 accurately forecasting medium to long-term future expenditure is particularly challenging for Aurora – the lack of asset management maturity and the step-change in investment presents a challenge for forecasting expenditure over a five-year period (para 189.3);
- B11.4 Aurora has a high degree of confidence in forecasts for the first three years of the Aurora CPP period (year one to year three), but does not have the same level of confidence in forecasts beyond year three (para 189.4); and
- B11.5 Aurora considers that a five-year CPP period would pose a risk of over-recovery or under-recovery in year four and year five, with over-recovery disadvantaging consumers and under-recovery disadvantaging Aurora and consumers. Under the latter scenario, Aurora may not maintain financial stability, and this weakens incentives to invest in network assets (para 189.5).
- B12 As noted above, the default term for a CPP is five years, section 53W(2) of the Act allows us to set a CPP period for Aurora that is shorter than five years (and not less than three years) if that shorter term better meets the Part 4 purpose in section 52A of the Act, ie, the shorter term better promotes outcomes that are consistent with outcomes produced in competitive markets such that Aurora:
- B12.1 has better incentives to innovate and to invest (section 52A(1)(a));
- B12.2 has better incentives to improve efficiency and provide services at a quality that reflects consumer demands (section 52A(1)(b));
- B12.3 better shares the benefits of efficiency gains, including through lower prices (section 52A(1)(c)); and
- B12.4 is limited in its ability to extract excessive profits (section 52A(1)(d)).
- B13 Although not explicitly referenced to those limbs of the Part 4 purpose in the Act, Aurora's request for a shorter CPP period appears to be most closely linked to sections 52A(1)(a) (incentive to innovate and to invest) and 52A(1)(b) (incentive to improve efficiency).

Our approach as described in our Issues Paper Package

B14 In our July 2020 Issues Paper package, we described the factors that we would weigh-up in making our decision on the length of the CPP period. These factors are.²²⁸

2.5.1 The conceptual benefits of a shorter period versus a longer period—there are advantages and disadvantages of each approach. A shorter CPP period reduces the risk of Aurora not having the sufficient funding where issues are identified mid-period but unable to be taken account of in the CPP revenue allowances until the next period. However, it would also require Aurora to begin work on its investment application earlier, which could place strain on resources available to undertake the work required to fix its network. A longer CPP provides certainty of prices and quality for both consumers and Aurora for a longer period of time.

2.5.2 The quality of Aurora’s forecasts that underpin its CPP—while Aurora faces challenges in its asset condition data and systems, the Verifier had confidence in Aurora’s forecasting approaches and did not think years four and five of Aurora’s data significantly greater degree of uncertainty than the first three years of the proposal.

2.5.3 The type of regulation that would apply to Aurora in years four and five if it were not on a CPP—if Aurora’s CPP expires after three years it may potentially revert back to the default price-quality path that did not suit its needs previously. Aurora has signalled its intention to apply for a second CPP. However, the Commerce Act appears not to allow them to do this until 2026, so if we determined a three-year CPP there would be a gap.

2.5.4 Whether a five-year CPP can be adapted to address the uncertainty Aurora faces—Aurora’s concern is that the better data that becomes available during the CPP period may identify further investments that are required which its CPP does not allow for. Our input methodologies can allow for additional expenditure mid-period.² However, these methodologies have specific triggers which may or may not apply to Aurora’s circumstances. We are considering whether any adjustments to the methodologies are required and are appropriate. To make adjustments we would do so by varying the input methodologies that apply to Aurora with Aurora’s agreement. We would consult on any input methodologies variations as part of our draft decision.

²²⁸ [Commerce Commission “Have your say on Aurora Energy’s proposal to change its prices and quality standards to fund major network investment, discussion of key issues and questions for consumers and stakeholders” \(30 July 2020\), p. 9.](#)

Responses in stakeholder submissions and cross submissions on our Issues Paper package

- B15 The issue of the term of Aurora's CPP period was touched on in approximately 20% of the submissions received on our Issues Paper package. The responses were mixed. Slightly more submitters that addressed this issue supported a five-year CPP period than a three-year CPP period. However, there was a clear preference for a longer CPP period than that proposed by Aurora amongst those submitters that discussed this issue more fully.
- B16 We received verbal comments from members of Aurora's CAP group who spoke with us. Their view was unanimously in favour of a five-year period, based on a desire to see continuity of Aurora's renewal programme over a longer period and a sense of greater predictability of outcomes from that longer period.
- B17 The following are excerpts from a selection of submissions on our Issues Paper package:

B17.1 Queenstown Lakes District Council (QLDC):

QLDC recommends that:

5.1 Aurora increases its Customised Price Path (CPP) from a three year, to a five-year plan.

5.1.1 While it is understood that Aurora may be challenged by lack of data for years four and five, on balance QLDC seek a five-year CPP. There is a known 'true' investment cost that does not deliver a complete picture to our communities if the plan is confined to three years. The district's communities deserve to understand the price rises more fully.

5.1.2 The challenge will remain beyond years one to three. A longer range CPP gives certainty to any investment decisions e.g. insulation, efficiency or self-generation (solar). Given the relatively long payback on some of these investments, consumers need to be able to invest with confidence.

B17.2 Major Electricity Users' Group (MEUG):

Length of the investment period

6. MEUG is wary of agreeing to a 3-year CPP as it could in effect bind the Commission (and hence consumers) into having to agree a follow-on 5-year CPP. We agree a longer CPP period has a tail with greater uncertainty and that creates challenges.

7. However, we are not sure Aurora would have sufficient time to gather new information and resources to apply for a new 5-year CPP starting 1st April 2024 following an initial 3-year CPP starting 1st April 2021. For this to occur Aurora would have to apply for a CPP around mid-2023 after first starting consultation with interested parties end of 2022. The information and preparatory work before that date would probably start no later than mid-2022 meaning only around 15 months of new data from 1st April 2021 would be available. It is debateable if the additional 15 months data would materially improve, relative to the current application, Aurora's understanding of the price-quality preferences of its customers and the capex and opex plans for the years starting 1st April 2024 and 2025.

8. If Aurora could demonstrate that it would by mid-2022 have new material to consult on for a further 5-year CPP then MEUG agrees an initial 3-year CPP may be worthwhile. However, as explained later in paragraph [14], Aurora's intention not to consult on new regional pricing until 2023 reinforces our view no material new information and the important price-quality trade-off perspectives of consumers will be available by mid-2022.²²⁹

...

14. While the regime framework is a problem and needs to be fixed by the Commission, MEUG is disappointed that Aurora did not take leadership by committing to improving pricing signals early on to enable more granular price-quality information for consumers in the future. The key issues paper notes [p5] "... Aurora has signalled it intends to review its regional pricing and consult with its customers in 2023." That date would be after an application for a further 5-year CPP could be formulated and consulted on if the Commission agrees an initial 3-year CPP.²³⁰

B17.3 Pioneer Energy:

Length of investment period

We note the Commission's concerns about Aurora's two-stage CPP applications. From Pioneer's perspective, we support a process that ensures efficient and timely investment that takes into account quality information about assets and the dynamic of changes in consumer demand and technology over time. This could mean that expenditure that has been approved is no longer required and consumers face lower charges / are compensated for the difference between forecasts and reality.²³¹

It would also ease the likely pressure on securing the necessary skilled labour force to undertake this work. The industry already suffers from a tight labour market and any excess pressure will increase labour costs across the sector.²³²

²²⁹ [MEUG "Submission on Aurora Energy's CPP Issues paper" \(20 August 2020\)](#), p.2, para 6 to 8.

²³⁰ [MEUG "Submission on Aurora Energy's CPP Issues paper" \(20 August 2020\)](#), p.3, para 14.

²³¹ [Pioneer Energy "Submission on Aurora Energy's CPP Issues paper" \(20 August 2020\)](#), p.2.

²³² [Southern Generation Limited Partnership "Submission on Aurora Energy's CPP Issues paper" \(20 August 2020\)](#), p. 2.

B17.4 Queenstown Chamber of Commerce:

The Chamber communicates with local and central government to achieve effective outcomes for its members. Its' key services include the provision of current and relevant information to the membership, advocacy on behalf of the members, recognising and rewarding achievement and generally contributing to the vibrancy of the business community.²³³

While not discussed in the proposal, the Commission should consider a 4-year CPP period to bring the timing into line with the default regulatory periods. This also offers a compromise of the advantages and disadvantages of a 3-year or 5-year period as described in the discussion document.²³⁴

Aurora Energy's responses to our Issues Paper Package

B18 On the issue of length of the CPP period Aurora responded to our Issues Paper package as follows:

17 We proposed a three-year CPP period (followed by a second five-year CPP) recognising the current maturity of the business (post separation from Delta in 2017), and in the knowledge that our elevated levels of investment will extend out at least over the next 8 years. As such, the company would be under enhanced regulatory and stakeholder scrutiny for a number of years.²³⁵

19 We foresaw two main risks associated with asking the Commission, at this stage, to lock-in and fix a five-year CPP, noting that these risks flow through to customers, the Commission, and the company:

- Firstly, as is generally the case with other EDBs, the accuracy and granularity of investment forecasts become less certain the further out in the period the forecasts are considering. In Aurora's case, this was perceived to be a particular risk given the maturity of the business and the journey we are on to lift asset management maturity over the next few years. Our view was that meeting the Commission's rigorous expenditure objective via the verification process in the later years of a five-year CPP would be less certain and run the risk of allowances being set either too high or too low; neither case being in the long-term interests of customers nor the company.
- Secondly, and again related to the current state of the company's maturity, we have concerns around the setting of quality path targets for a full five years. As part of a CPP determination, the Commission is required to set both a price and quality path for the duration of the regulatory period. Given the company's history with breaches of the quality (reliability) path, we have considerable concern and see some significant risks with locking into a fixed reliability target for a full five-year period.

²³³ [NZ Chamber of Commerce Queenstown "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\)](#), p. 1.

²³⁴ [NZ Chamber of Commerce Queenstown "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\)](#), p. 2.

²³⁵ [Aurora Energy "Submission on Aurora Energy's Issues paper" \(20 August 2020\)](#), p. 3, para 17.

Over the past few years, we have made considerable progress in developing our understanding of the drivers of network reliability but despite this, the maturity of the company's quality modelling, particularly in the context of the later years of a five-year regulatory period, would remain a major concern. Our view is that quality standards must be reasonably capable of compliance, and that it would be inappropriate to set limits that could essentially 'force' a future breach of the price-quality path. Further, given the ongoing scrutiny of the \$5 million fine levied on the company for previous breaches, as well as consultation feedback, a further quality path breach resulting in a similar outcome would be detrimental to both the reputation and credibility of Aurora and the Commission.

If a five-year CPP was to be determined by the Commission, some way of mitigating the quality breach risks for the company in the later years would be required. This may, in fact, be possible given the safety (as opposed to reliability) focus of the CPP investment, and it is an area we can give further thought to depending on the feedback from the Commission's consultation.²³⁶

- B19 In response to feedback that it may have received directly, Aurora noted the following points which related to points raised in other submissions about some of the perceived benefits of a five-year CPP period:

A five-year CPP does not drive lower prices

20. It is perhaps worth clarifying that were the CPP period to be extended from three to five years, this will not necessarily result in lower prices; for example, by spreading three years' investment over five years. Our recently published asset management plan signals the need for annual investment to continue broadly at current levels for the next 8 years or so, and therefore moving to a five-year CPP period would lock an additional 2 years of investment into the CPP period.

21. It is acknowledged that a five-year CPP period would provide more certainty for customers, and potentially result in lower transaction costs, were a second CPP application to be avoided.²³⁷

- B20 From comparing arguments in its CPP application with its submission on the Issues Paper package it was apparent that Aurora had introduced a new argument against a CPP with a five-year duration. That is, concern at potentially breaching the quality standards under a five-year CPP period.

²³⁶ [Aurora Energy "Submission on Aurora Energy's Issues paper" \(20 August 2020\)](#), p. 3 and 4, para 19.

²³⁷ [Aurora Energy "Submission on Aurora Energy's Issues paper" \(20 August 2020\)](#), p. 4, para 20 and 21.

- B21 Aurora's cross submission expanded on many of its previous arguments for a three-year CPP period and addressed what it perceived to be a misunderstanding of some submitters who thought that a longer CPP period would suppress prices.²³⁸

Impact of five-year versus three-year regulatory period

73 Some submitters have suggested that a five-year CPP regulatory period would deliver superior affordability outcomes than the three-year period that we have sought in our proposal.

74 We are concerned that those submitters have not understood the rationale for seeking a three-year regulatory period, which is to manage the risk of expenditure being inappropriately disallowed or approved, because of uncertainty in our later forecasts. That risk falls asymmetrically upon consumers – approval of greater expenditure than necessary results in higher prices, while disallowed expenditure that is actually needed means that network improvements are deferred as we curtail our work programmes to match the allowed expenditure.

75 It appears that submitters consider that a five-year regulatory period will suppress prices, as three years of work will be spread over five years. This is not the case, as elevated levels of investment will be required for some years beyond a five-year CPP period, before falling to a new steady state. A five-year regulatory period may allow better smoothing of the revenue path, but it will not necessarily result in material reductions to forecast charges.

Our draft assessment of a three-year vs five-year period for Aurora's CPP

- B22 We discuss below the key elements that are relevant for assessing whether a three-year CPP period for Aurora better meets the long-term benefits of consumers and the purpose of Part 4, than a five-year CPP period.

Forecasting uncertainty

- B23 Aurora's forecasting uncertainty is likely to be more related to its capital investment workstream than to the operational investment workstream. This is because capex and opex are forecasted using different methodologies. Capex is forecasted based on an assessment of the current asset condition, whereas opex is forecasted using the base step and trend type of methodology. In its CPP application, Aurora said:

We have used a 'base-step-trend' approach to forecast expenditure that is recurring, including maintenance, system operations and network support (SONS) and portions of our non-network Opex.

²³⁸ Aurora Energy "Feedback on Consumer Submissions to the CPP Issues Paper" (18 September 2020), p. 12, para 73 to 75.

- B24 Aurora has mainly based its three-year CPP period argument on the basis that its lack of asset management maturity presents a challenge for forecasting expenditure over a five-year period. However, in many of its asset renewals programmes, Aurora has demonstrated that it understands the safety, asset health and asset end-of-life issues that underpin the forecast asset replacements.
- B25 Despite this, Aurora does not have suitable asset condition data for many of its asset classes. This is reflected in its capital expenditure proposal where asset condition data is lacking for the following asset classes: crossarms, HV and LV conductors, LV enclosures, indoor switchboards and outdoor circuit breakers.
- B26 As a result, Aurora has forecast its replacement volumes (after dealing with the known safety and type issues) using a replacement capital expenditure (repex) approach. Repex modelling is a standard industry expenditure forecasting approach that uses asset age and a probability distribution curve of asset failure to predict asset replacement volumes. It is applicable in a situation where the fleet asset age and expected asset life information is available, but asset conditions are not well known.
- B27 As we noted in our Issues Paper package, the Verifier had confidence in Aurora's forecasting approach. The Verifier informed us when we had a two-day debrief workshop on the final verification report that the level of uncertainty for years four and five is not considered materially different for Aurora in comparison with the uncertainty that exists in the last two years of a five-year DPP period for any other electricity lines business.
- B28 Although the Verifier considered that Aurora's repex forecast models were reasonable, it noted that the models tend to over-forecast the investment need. For example, in its review of the low-voltage conductor asset class the Verifier concluded that:²³⁹

The asset health assessment used by Aurora Energy to forecast asset replacements has not factored in failure consequences (i.e. criticality) to determine risk nor to establish an optimum level of forecast volumes. Instead, Aurora Energy intends to assess criticality once forecast expenditure is set and only then to prioritise the delivery of work.

²³⁹ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Appendix D.6.7 p. 371.

We consider that this methodology does not yield an optimum forecast and some replacement projects may proceed within the CPP or review periods that could have been deferred beyond the period if risk was factored in. However, at present there appears to be insufficient information available to Aurora Energy to refine its forecasts to do this. Given this, the volumes forecast are not unreasonable based on the circumstances and the overall safety risk associated with LV conductors.

- B29 Over-forecasting would mean that Aurora could over-recover revenue. However, the revenue effects of any over-recovery of revenue from us allowing too much capital expenditure in year 4 and year 5 of the CPP period would be moderated because the return on, and return of, capital on this capital expenditure will be spread over the long life of the assets.
- B30 The forecasting uncertainty would only manifest in prices through forecast depreciation and forecast return on the RAB value for the impacted years, and due to the relatively long lives of these assets, the portion of the forecast spend that could come through into revenue in that way would in theory be a low proportion of the forecast expenditure.
- B31 Linking this back to the Part 4 purpose, this means that the purpose under section 52A(1)(d) [limitation on Aurora to extract excessive profits] would not be undermined by a five-year CPP period.

We proposed expenditure uncertainty mechanisms to deal with uncertainty

- B32 In our draft decision we proposed IM variations to introduce uncertainty mechanisms that enable us to defer some of Aurora's expenditure. These IM variations address demand uncertainty affecting growth and security, and consumer connection capital expenditure.
- B33 The 'capacity event' and 'risk event' uncertainty mechanisms, which are discussed further in Attachment I, will enable Aurora to seek approval for projects later in the CPP period when demand becomes more certain or risks become apparent.
- B34 A risk event is an event where additional investment cannot be delayed until a future regulatory period without compromising safety or adversely affecting Aurora's ability to meet its quality standards. It is where Aurora is able to demonstrate that, at the time we made our CPP decision, the need for remediation or the most suitable remediation investment solution were not sufficiently certain.
- B35 The flexibility provided by these uncertainty mechanisms will reduce the potential for over-recovery or under-recovery relative to a counterfactual where all of the investment was approved at the start of the CPP period.

Regulatory period

- B36 Aurora has indicated that it intends to apply for a second CPP (CPP2) to follow its first CPP (CPP1). However, Aurora may not apply in DPP3, which runs from 2020-2025, for CPP2. It must wait until DPP4 to apply. This means that if it was on a three-year CPP, it must transition back to DPP3 before it can commence another CPP.
- B37 Assuming a five-year CPP period for CPP2, a three-year CPP period for CPP1 would lead to a “3+1+1+5” pattern of regulatory periods. Specifically, this would entail:
- B37.1 three-year CPP period for CPP1;
 - B37.2 year five of DPP3, preceded by consultation on the transition step from CPP1;
 - B37.3 year one of DPP4, preceded by the usual consultation for a DPP reset; and
 - B37.4 five-year CPP period (or less) of CPP2, preceded by consultation on the setting of the CPP.
- B38 If Aurora did not apply for CPP2, it would give rise to a 3+1+5 pattern of regulatory periods:
- B38.1 three-year CPP period for CPP1;
 - B38.2 year five of DPP3, preceded by consultation on the transition step from CPP1; and
 - B38.3 DPP4, preceded by the consultation on a DPP reset.
- B39 We considered whether there would be benefits in adopting a four-year CPP period, but we concluded this would only mildly simplify things. It would still likely result in a 4+1+5 pattern of regulatory periods.
- B40 We consider these relatively complex combinations of years within regulatory periods, combined with anticipated one-year regulatory periods, raise a reason under section 52A for preferring a five-year CPP period for CPP1. Under the Part 4 regime, price paths are set and then left alone for four to five years under a DPP and three to five years under a CPP to provide certainty for a number of years in advance, conducive to incentives for investment and efficiency (sections 52A(1)(a) and (b)). The potential combinations noted above would be at odds with that approach.

B41 Furthermore, the patterns of regulatory periods detailed above would impose extra costs on us and Aurora. There is also a risk that the level of stakeholder engagement would drop away under such regulatory patterns because of "consultation fatigue". If this occurred, we may find it more difficult to obtain stakeholder input on our analysis and decisions.

A five-year CPP should not impact on Aurora's planned update of its pricing methodology

B42 There is a practical question about whether a five-year CPP period would have any adverse impact on Aurora's plan to restructure its pricing methodology, which was set out in its CPP application.²⁴⁰ Aurora is aiming to be in a position to consult with its customers and stakeholders on its pricing methodology options in 2023.

B43 Our view is that there does not appear to be any adverse impact of extending the proposed three-year CPP period by a further two years. It may in fact end up being beneficial in providing Aurora with more time in CPP1 to socialise its new distribution pricing reform it is planning to undertake before CPP2 (or the step back to DPP4, whichever is applicable).

Quality

B44 The quality standards that we have proposed are more relaxed than the current standards applying to Aurora under DPP3, better reflecting the realistically achievable performance of Aurora over a five-year CPP period.

B45 A five-year CPP period provides greater certainty against further deterioration in the reliability of Aurora's network which is an outcome that Aurora's consumers strongly value.

A five-year CPP period should not impact safety

B46 Aurora's CPP application did not raise increased safety risks from a five-year CPP period as an argument for a three-year CPP period. However, we considered it relevant for us to assess whether a five-year CPP period may raise greater safety risks in year four and year five.

B47 Aurora has stated that the first three years of its CPP period are focused on investing in assets to mitigate safety risks. This is not the only driver, but it is the key driver that comes through in the assessment of Aurora's proposed capital expenditure portfolio and, to an extent, the operational expenditure portfolio (eg vegetation management expenditure).

²⁴⁰ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), p. 216, para 826 and 827.

- B48 The network safety issue is backed up by the 2018 WSP report. WSP assessed most of Aurora's primary and secondary asset classes and through sampling and modelling techniques determined the likely condition of Aurora's asset fleet. Through this process, WSP identified that many of Aurora's assets posed a safety risk.
- B49 Since the WSP report was published, Aurora has been systematically renewing or replacing the assets with safety exposures. For some asset classes with known safety issues that will require a coordinated approach, such as Aurora's zone substation protection, Aurora has plans to have these replaced before or during the three-year period.
- B50 Therefore, given the work that Aurora has undertaken to date, and will undertake in the next three years to address safety, our assessment is that the possibility that a new asset related safety issue would present in year four or year five that has not been addressed in the CPP application, is low.

Our review of submissions on our CPP draft decision

- B51 We received a number of submissions on our CPP draft decision which referred to a five-year investment programme and, as above, appeared again to equate the length of the investment programme with the CPP period over which Aurora would recover its costs.
- B52 As for the earlier submissions noted above, those submissions appear to have read the three-year CPP period proposed by Aurora as indicating only a three-year commitment to further investment in capital expenditure and they essentially express a desire to see Aurora commit to at least a five-year investment programme.
- B53 However, the assessment we have made in this Attachment B is about the length of the price path rather than the length of Aurora's investment programme. In that regard we received three contrasting submissions:
- B53.1 Queenstown Grey Power²⁴¹ and Grey Power Otago²⁴² supported a five-year CPP period; and
- B53.2 In its submission Aurora sought to reinforce its arguments for a three-year CPP period as set out above in its CPP proposal and its submission in respect of our July 2020 Issues Paper package.²⁴³

²⁴¹ Queenstown Grey Power – Submission on draft decision for Aurora's CPP – 6 December 2020, p.1.

²⁴² Grey Power Otago Inc. – Submission on draft decision for Aurora's CPP – 14 December 2020, p.1.

²⁴³ Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020, p.67-68.

B54 Briefly, in its submission Aurora reiterates the following arguments for a three-year CPP period:

327. Our CPP proposal was submitted on the basis of a three-year regulatory period. Our reasons for proposing three years, instead of the default five years, were set out in our application document and included:

327.1. Uncertain timing as to when Aurora's expenditure needs would revert to long-term sustainable levels, over the short-to-medium term need for elevated expenditure to reduce the level of risk on the network;

327.2. The need to improve our asset data and asset management maturity, starting from a comparatively low base, to support network planning and expenditure forecasting;

327.3. The combination of the step change in our investment requirements in the past several years and our relative lack of asset management maturity presented a challenge for forecasting expenditure over a five-year regulatory period;

327.4. That we did not have the same level of confidence in our forecasts beyond RY2024 and that a three-year period would ensure better outcomes for customers over the medium term by reducing the potential for less than optimal investments; and

327.5. That there was an increased risk of over-under recovery of costs beyond RY2024, with those costs falling asymmetrically on consumers and, potentially, weakening incentives to invest in network assets, contrary to section 52A(1)(a) of the Act...

333. As previously noted by the Commission when setting the WACC percentile, the risks to consumers of under-investment versus over-compensation are asymmetric. As the Draft Decision stands, the only mechanism that would offer some protection to consumers, in this context, would be to set a three-year regulatory period for Aurora's CPP.

B55 In response to our analysis of the regulatory period in paragraphs B33 to B38 above, Aurora responded to our views on proposals for consecutive CPPs and what that means for the term of Aurora's CPP period:

329. On 17 July 2020, the Commission wrote to us outlining its position that EDBs are prohibited from proposing a second consecutive CPP within the same DPP regulatory period. On the basis of the Commission's reasoning, a CPP of three years would mean that Aurora would likely need to transition back on to the final year of DPP3, then onto the first year of DPP4 before it could commence a second CPP period.

330. This position leads to the perverse result whereby the availability of consecutive CPPs that include a three or four year CPP period (permitted under s 53Q(2) of the Act) depends on the date on which the supplier submitted its first CPP proposal. There is nothing in the Act itself, or in the background policy discussions, that suggests this outcome was intended by Parliament. It cannot be correct that Aurora would be permitted to submit proposals for consecutive CPPs only if either; (1) its CPP broke across two DPP regulatory periods, or (2) it applied for the CPP during DPP2.

Our decision to set a five-year CPP period for Aurora

- B56 After taking account of the submissions, in summary we consider the risk and effect of revenue over-recovery or under-recovery under a five-year CPP period to be small. Our view is that the benefits from the price and quality certainty associated with a five-year CPP are not outweighed by the risk and effect of revenue over-recovery or under-recovery.
- B57 We acknowledge Aurora's forecasting for year four and year five of a five-year CPP period has a greater potential for annual revenue uncertainty than otherwise could be possible if better asset condition data was available. However, the forecasting approach taken is reasonable, and the potential bias towards over-forecasting is not considered overly material.
- B58 Furthermore, we have agreed IM variations with Aurora to introduce mechanisms that have enabled us to defer some capital expenditure decisions now. These are set out in Attachment I.²⁴⁴
- B59 Those IM variations address demand uncertainty related to growth and security and consumer connection capital expenditure, which we refer to in the mechanisms as a 'capacity event'.
- B60 The similar 'risk event' reconsideration mechanism will allow us to reconsider the CPP if Aurora establishes that part of its network is deteriorating to the extent that not further investing in the network beyond the five-year investment provided for in the CPP would demonstrably adversely affect its ability to meet its quality standards or compromise safety for any person, equipment, the network or an embedded network.
- B61 Our decision is therefore to determine a five-year CPP period commencing on 1 April 2021.

²⁴⁴ Attachment I, CPP reconsideration mechanisms, para I23-I35.

Attachment C Quality standards and incentives

Purpose of this attachment

- C1 This attachment sets out our decisions on the quality standards that Aurora must comply with and quality incentives that Aurora will face over the CPP period.

Summary of our decisions

- C2 Our decision on quality standards, incentives, and additional information disclosure requirements influence the quality of services that Aurora provides its consumers, particularly the reliability of electricity supply—power interruptions are harmful to households and businesses, and can prevent adequate heating and result in lost business revenue and productivity.
- C3 Our decision includes the same types of requirements and incentives as we included in DPP3, but with mostly different parameters. The limit for planned interruptions and extreme events is the same as was set for DPP3, as proposed by Aurora. However, other parameters are more lenient than was set for DPP3. This is due to the greater uncertainty as to the reasonably achievable levels of quality as Aurora improves its network resilience and asset data management. They are, however, less lenient than those proposed by Aurora for the CPP to reflect our view that Aurora's plans to fund major network investment should enable it to perform better than it has proposed over the CCP period.
- C4 We considered submissions on our draft decision and have not changed our decision on setting quality standards and quality incentive schemes. Our reasons for the decisions, including consideration of submissions, are explained in more detail in this attachment.
- C5 As there are significant differences in the requirements and incentives between planned and unplanned interruptions, we address these separately in this attachment, starting with unplanned (paragraphs C30 to C90.4) then planned (paragraphs C91 to C147).

We have set quality standards

- C6 Our decision on setting quality standards for Aurora is:
- C6.1 Annual limit for average duration (SAIDI) of unplanned interruptions—124.94 minutes per customer;
- C6.2 Annual limit for average frequency (SAIFI) of unplanned interruptions—2.07 per customer;

- C6.3 Five-year limit for average duration (SAIDI) of planned interruptions—979.80 minutes per customer;
- C6.4 Five-year limit for average frequency (SAIFI) of planned interruptions—5.5385 per customer; and
- C6.5 Extreme event limit— set at the lower of 120 SAIDI minutes or 6,000,000 customer minutes.

We have set a quality incentive scheme

- C7 Our decision is to include a quality incentive scheme for planned and unplanned SAIDI, with the following targets:
 - C7.1 Annual target for average duration (SAIDI) of unplanned interruptions, which Aurora receives financial rewards or penalties for achieving better or worse than—88.08 minutes per customer; and
 - C7.2 Annual target for average duration (SAIDI) of planned interruptions, which Aurora receives financial rewards or penalties for achieving better or worse than —72.16 minutes per customer.
- C8 The other parameters for the quality incentive scheme (such as the incentive rate) are given in paragraphs C86 to C90.4 and C136 to C147.

We are consulting on information disclosure requirements relating to quality

- C9 Our draft decision on additional information disclosure requirements for Aurora, which has been published with this decision, propose other measures that we expect to influence quality outcomes that Aurora's consumers value, including its management of planned interruptions. Our draft decisions on information disclosure are summarised in Chapter 4 and detailed in the proposed additional information disclosure requirements.²⁴⁵

We set quality parameters set to be realistic and reflective of stakeholder feedback

- C10 Feedback we received from consumers suggests consumers did not necessarily want to pay more for improved reliability, but they also did not accept it should be allowed to deteriorate further.

²⁴⁵ Commerce Commission "Aurora Energy Limited Proposed Additional Information Disclosure Requirements: Draft Reasons Paper", Chapter 6.

- C11 Overall, our decision would mean that Aurora’s consumers could expect the reliability and quality of their electricity supply to stabilise at today’s levels, before gradually improving over time. A submitter suggested that the level of quality should substantially improve over the period of the CPP, but we consider that this is unrealistic.²⁴⁶
- C12 We expect Aurora will have considerable headroom to work within our unplanned interruptions standards. Aurora's historical performance, including recent deterioration, would not breach our standards. We consider such headroom appropriate due to the greater uncertainty as to the reasonably achievable levels of quality as Aurora improves its network resilience and asset data management.
- C13 Consistent with Aurora's proposal, our decision is to maintain the planned interruption standards that Aurora currently faces, but to set more lenient targets to reflect the scale of work required to be undertaken on its network. Our decision to apply the incentive scheme to Aurora's planned interruptions provides Aurora with a financial incentive to improve its notification of interruptions and undertake work efficiently within a set notification window. It also encourages Aurora to minimise the cancellations of planned interruptions at short notice.

Structure of this attachment

- C14 This attachment discusses:
- C14.1 Introduction - Our approach to setting quality standards and incentives.
 - C14.2 Unplanned interruptions - In this section we set out our decision, summarise submissions, and provide our response to submissions.
 - C14.3 Planned interruptions - In this section we set out our decision, summarise submissions, and provide our response to submissions.
 - C14.4 Service level commitments and compensation - In this section we discuss Aurora’s commitment to provide specified levels of service to its consumers, and its compensation scheme when it does not do so.

²⁴⁶ [Trevor Tinworth – Submission on draft decision for Aurora's CPP – 17 December 2020.](#)

Our statutory powers relating to quality

C15 The Act requires us to set quality standards as part of Aurora's CPP and allows us to set quality incentives.²⁴⁷ Aurora could face court penalties if it does not meet quality standards.²⁴⁸

C16 The Act provides us with a broad discretion to set quality standards and place incentives on Aurora to achieve those standards under a CPP:²⁴⁹

- (2) A price-quality path may include incentives for an individual supplier to maintain or improve its quality of supply, and those incentives may include (without limitation) any of the following:
- (a) penalties by way of a reduction in the supplier's maximum prices or revenues based on whether, or by what amount, the supplier fails to meet the required quality standards:
 - (b) rewards by way of an increase in the supplier's maximum prices or revenue based on whether, or by what amount, the supplier meets or exceeds the required quality standards:
 - (c) consumer compensation schemes that set minimum standards of performance and require the supplier to pay prescribed amounts of compensation to consumers if it fails to meet those standards:
 - (d) reporting requirements, including special reporting requirements in asset management plans, if the supplier fails to meet the quality standards.
- (3) Quality standards may be prescribed in any way the Commission considers appropriate (such as targets, bands, or formulae) and may include (without limitation)—
- (a) responsiveness to consumers; and
 - (b) in relation to electricity lines services, reliability of supply, reduction in energy losses, and voltage stability or other technical requirements.

Introduction - Our approach to setting quality standards and incentives

C17 Our quality standards and incentives seek to influence quality outcomes that Aurora's consumers value, including Aurora providing:

C17.1 reliable electricity supply (minimal interruptions) that does not materially deteriorate from consumers' recent experience. Consumer feedback suggests most consumers do not want to pay more for reliability improvements or pay less and in exchange experience more interruptions,²⁵⁰

²⁴⁷ Section 53M(1) and section 53M(2) of the Act.

²⁴⁸ Remedies we may seek in Court against a distributor for contravening a quality standard include pecuniary penalties or an order that compensation be paid to parties that experienced loss or damage (Part 6 of the Act refers). We may also bring secondary liability proceedings against directors, shareholders, or other entities associated with the business if they were closely involved in, the quality standard contraventions.

²⁴⁹ Section 53M(2) and (3) of the Act.

²⁵⁰ UMR Quantitative Research Report: Households and Businesses (on behalf of Aurora Energy), February 2020.

- C17.2 efficient completion of planned work that is in consumers' interests – such as necessary improvements in network safety and reliability improvements where it is cost effective;
- C17.3 efficient management and restoration of unplanned interruptions; and
- C17.4 effective communication about interruptions and about the quality of its network so that consumers can make informed decisions, for example, whether to invest in mobile generation.
- C18 For the DPP3 we separated planned and unplanned interruptions for the purposes of quality standards and for the revenue-linked quality incentive scheme. At the time, we explained the reasons for this as follows.
- Separation eliminates the ability of distributors to avoid contravening their unplanned reliability standard by deferring planned work when it forecasts that it is otherwise likely to contravene. Separation better promotes the purpose of Part 4 because it does not create an incentive against investment at the most appropriate and efficient time and better reveals deterioration of network performance to be assessed against the quality standards.²⁵¹
- C19 We consider that separation is also appropriate for Aurora's CPP, and it is what Aurora has applied for, for the same reasons as we explained for DPP3. This is particularly important for Aurora's CPP because of the large focus on substantial network investment, which will require planned interruptions.

Evaluating Aurora's proposal on quality standards and incentives

- C20 Our assessment of Aurora's CPP proposal and its submission on our Issues Paper package and draft decision, including its proposed quality standards and incentives, must apply the evaluation criteria prescribed in our IMs. These criteria are described in Attachment A.
- C21 Our evaluation of Aurora's proposal of the quality standards and incentives discussed in this attachment focusses on:
- C21.1 the extent to which Aurora's proposed changes to existing quality standards and incentives:
- C21.1.1 promotes the long-term benefit of consumers consistent with the purpose of Part 4 of the Act;²⁵²
- C21.1.2 better reflects its realistically achievable performance over the CPP period, taking account of either or both: statistical analysis of

²⁵¹ Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision – Reasons paper" (27 November 2019) para 7.30.

²⁵² Clause 5.2.1(b) of our IMs.

its past SAIDI and SAIFI performance, and the level of its proposed investment;²⁵³

C21.1.3 has been consulted on with Aurora's consumers and is supported by consumers, where relevant;²⁵⁴ and

C21.2 whether data, analysis, and assumptions underpinning Aurora's proposed quality standards and incentives are fit for purpose, including sufficiently accurate, reliable and reasonable.²⁵⁵

C22 When we apply these evaluation criteria, we have regard to relevant views reached by the Verifier.

The quality standards and incentives in Aurora's proposal

C23 In its proposal, Aurora suggested slight reliability improvements may arise as a by-product of its safety related investments after 2024. However, it forecast considerably worse reliability over the CPP period (2022-2026) compared to recent years. Specifically, Aurora forecast that, in aggregate, consumers can expect to experience interruptions that are 19% longer and 10% more frequent than recent years.²⁵⁶

C24 Aurora's proposal was to retain the broad structure of the quality standards and incentives it currently faces under DPP3. This included:

C24.1 standards that set the maximum number and duration of planned and unplanned interruptions experienced by consumers on its network in aggregate. These are measured by 'SAIFI' and 'SAIDI' respectively. SAIDI refers to the average total duration of interrupted power supply in a year per consumer in minutes. SAIFI refers to the average number of interruptions to power supply per consumer in a year.²⁵⁷

C24.2 an extreme event standard that obliges Aurora to minimise and respond appropriately to significantly disruptive interruptions that were not caused by adverse weather or other external impacts.

C24.3 a revenue-linked quality incentive scheme that allows Aurora to recover additional revenue from consumers if it outperforms a specified duration target of unplanned power interruptions and recover less revenue from consumers if it fails to meet this target. The incentive scheme is also applied

²⁵³ Clause 5.2.1(e) of our IMs.

²⁵⁴ Clause 5.2.1(f) of our IMs.

²⁵⁵ Clause 5.2.1(c) of our IMs.

²⁵⁶ This compares Aurora's average forecast SAIDI and SAIFI over the 2022-2026 period to the average SAIDI and SAIFI on its network over the most recent five-year period (2016-2020).

²⁵⁷ Both SAIDI and SAIFI exclude interruptions originating on the low voltage portion of the network.

to planned power interruptions but with a lower incentive rate (ie, Aurora faces a higher financial penalty from an additional unplanned interruption minute than it faces from an additional planned interruption minute).

- C25 Aurora's proposal included changes to the values within the quality standards and incentives it currently faces. Aurora said this is to better reflect its circumstances, avoid further quality breaches and better reflect its consumers' preferences and willingness to pay for reliability.²⁵⁸ At a high-level, Aurora's CPP proposal sought:
- C25.1 more lenient unplanned SAIDI and SAIFI standards allowing it to have more frequent and longer unplanned interruptions before contravening the unplanned standard.
- C25.2 more lenient (higher) interruption duration targets under the incentive schemes applying to planned and unplanned interruptions so that, compared to current settings, Aurora is less likely to accrue financial penalties and more likely to accrue financial rewards.²⁵⁹
- C26 Aurora's proposal did not change the planned interruption standard it currently faces and did not propose any new quality standards or incentives.
- C27 Following Aurora's CPP proposal which sought to retain the broad structure of the quality incentive scheme for unplanned interruptions, Aurora submitted its revised view that the interruption limits provide sufficient reliability performance protection for consumers and the quality incentive scheme is not appropriate for its CPP as a submission on our Issues Paper package.
- C28 Specifically, Aurora noted that:²⁶⁰

In our view, an unplanned reliability QIS could be seen as inconsistent with customers' short-term preferences to reduce expenditure where possible. Furthermore, given the uncertainty in forecasting reliability at the present time, there is a high likelihood that any incentive or penalty would include a component that was directly related to the accuracy band around forecasting, rather than underlying improvements which would be mainly as a consequence of safety-related asset renewals.

- C29 We address the importance of the quality incentive and the reason for our decision in paragraph C94.

²⁵⁸ For example, Aurora Energy "Customised Price-Quality Path - Application" (12 June 2020) at para 35, para 103, para 928, para 935.

²⁵⁹ Changes to the revenue-linked incentive scheme were a feature of Aurora's CPP proposal. However, in response to our Issues paper package, Aurora suggested removing the revenue-linked incentive scheme. We consider this further in this attachment.

²⁶⁰ Aurora Energy "Submission in response to the Commission's CPP Issues Paper" (20 August 2020), p. 16.

Unplanned interruptions

- C30 This section discusses unplanned interruptions including reasons for our decision. Our approach to determining the unplanned quality standards and incentive targets was to ensure we set realistically achievable limits and targets for Aurora that also ensure we have the best outcomes for the consumers. We recognise that because they are unplanned or not notified beforehand to consumers, they can cause greater disruption and harm to consumers.
- C31 In this section we set out our draft decision, summarise submissions, and provide our response to submissions and our final decision. This section is structured as follows:
- C31.1 Decisions on unplanned interruption standards and incentives.
 - C31.2 Our view that current DPP3 standards do not reflect Aurora's realistically achievable performance.
 - C31.3 Our decision, to set more stringent targets for the quality incentive scheme, departing from Aurora's proposal.
 - C31.4 Our decision is to accept Aurora's proposal to retain other DPP3 unplanned interruption parameters.
 - C31.5 Our decision, to retain the incentive scheme for unplanned interruptions.

Decisions on unplanned interruption standards and incentives

- C32 Our decision was to set unplanned interruption standards and quality incentive scheme targets that are more lenient than the current standards and targets Aurora faces under DPP3, but are not as lenient as Aurora's proposed standards. This is shown in Table C1.
- C33 We have considered submissions on the draft decision and have not changed our decision on unplanned interruptions. This was supported by submissions from consumers who agreed with the unplanned interruptions target levels in the draft decision.²⁶¹ Our reasons for the decisions, including consideration of submissions, are explained in more detail in the sections that follow.

²⁶¹ [CC0005 – Submission on draft decision for Aurora's CPP – 12 November 2020, p. 1](#), [CC0055 – Submission on draft decision for Aurora's CPP – 8 December 2020, p.1](#) and [Queenstown Lakes District Council – Submission on draft decision for Aurora's CPP – 14 December 2020, p.4](#).

Table C1 Unplanned quality incentive scheme (QIS) targets and limits over the 2022-2026 period (annual)

	SAIDI (Minutes)			SAIFI (Interruptions)		
	QIS Target	Buffer	Limit	QIS Target	Buffer	Limit
Current standard (DPP3)	63.44	18.45	81.89	1.17	0.30	1.47
Our draft decision	88.08	36.86	124.94	1.57	0.50	2.07
Our decision	88.08	36.86	124.94	1.57	0.50	2.07
Aurora's proposal	110.02	31.99	142.01	1.80	0.46	2.26

- C34 The quality standards in Table C1 include built in tolerances before they are contravened. These tolerances are based on a 'buffer' between:
- C34.1.1 the SAIDI incentive target that we expect Aurora to achieve on average during the CPP; and
 - C34.1.2 the standards that Aurora is expected to meet (ie, the proposed 'limits' in Table C1).
- C35 Table C1 shows that our decision is to set lower targets and limits (deviating from Aurora's proposal). However, we have included a relatively large buffer between our proposed targets and limits (deviating from DPP3) that is akin to Aurora's proposal.
- C36 We are not satisfied that Aurora's proposed unplanned reliability targets and limits shown in Table C1 promote the long-term benefit of consumers. In our view, Aurora's proposal does not provide sufficient deterrence against further deterioration of its network or place sufficient incentives on Aurora to provide services at a quality that reflects consumer demands.
- C37 We accept that the current DPP3 targets and limits Aurora faces do not reflect Aurora's realistically achievable performance. We also accept that many consumers have said they are not willing to pay more for improved reliability. However, this does not tell us much about whether consumers support Aurora's proposed reliability outcomes, given it is proposing significantly worse reliability at a higher cost.

We have set quality standards and quality incentive scheme targets for unplanned interruptions

- C38 Unplanned SAIDI and SAIFI limits in Table C1 represent the maximum number and frequency of unplanned interruptions that Aurora's consumers could experience on average before we may apply to the court to impose pecuniary penalties on Aurora for contravening the standard.

- C39 These standards, which measure both the duration of interruptions and their frequency, recognise that interruptions harm Aurora's consumers in a variety of ways. For businesses, power interruptions can result in staff downtime and a loss of revenue, and for households, power interruptions can result in loss of perishable items, heating, hot water, and revenue for people who work from home.
- C40 Submissions received on our draft decision, expressed frustrations with the communications from Aurora on interruptions and concerns about the frequency of interruptions.²⁶² Our view has been informed by these submissions.
- C41 We agree with Aurora and the Verifier that the DPP3 standards are too stringent and do not reflect Aurora's realistically achievable performance. However, our decision is to not accept Aurora's proposed standards and instead impose standards that allow for fewer interruptions and fewer interruption minutes on Aurora's network. This is consistent with the Verifier's opinion that Aurora's proposed standards appear overstated based on the modelling assessed and the information provided.²⁶³
- C42 We are confident Aurora can work within our standards. Aurora's historical reliability performance (including its recent deterioration in performance) is a sufficient margin below, and would not have breached our standards. We consider it unlikely that Aurora's performance should materially worsen from this recent experience.
- C43 We note the submissions highlighted that some notified planned interruptions were being postponed, becoming unnotified which are then recategorised as unplanned because notification was not given properly, contributing to the increase in unplanned interruptions.²⁶⁴ This will have added to the unplanned interruptions, resulting in inflated reported unplanned interruptions by Aurora.

²⁶² [Queenstown Lakes District Council – Submission on draft decision for Aurora's CPP – 14 December 2020, p.2.](#)

²⁶³ Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" (8 June 2020), p. 38 and 438.

²⁶⁴ [Steve Tilleyshort – Submission on the draft decision for Aurora's CPP – 16 December 2020. p.2](#) and [Richard Healey – Submission on draft decision for Aurora's CPP – 17 December 2020, p. 5.](#)

- C44 We expect Aurora to carry out planned interruptions in accordance with the planned work and adhere to the minimum notification requirements to avoid the further recategorisation of planned to unplanned interruptions. It is important that Aurora provides notification of planned interruptions to reduce the harm to consumers. For example, consumers may be able to schedule activities requiring power around the planned interruption time or hire temporary generation. We are proposing to address reporting of interruptions in the proposed additional information disclosure requirements.²⁶⁵
- C45 Aurora's reliability forecasts build in a 19% SAIDI and 10% SAIFI deterioration over the CPP period relative to the 2016-2020 period.²⁶⁶ We do not consider that this level of further deterioration is acceptable, especially given the level of expenditure we are approving. In addition, Aurora has not consulted consumers on this level of deterioration; its consultation signalled consumers could expect some improvements in reliability based on earlier reliability modelling and expenditure forecasts.²⁶⁷ Feedback we received from consumers suggests consumers are concerned about deteriorating reliability as well as price increases.
- C46 In our view, Aurora's plans to fund major network investment should enable it to perform better than it has proposed. This position takes account of Aurora's historical performance, its investment plans, consumer feedback, and our view that some of Aurora's data, analysis, and assumptions underpinning its proposal are not sufficiently robust. We expand on our specific reasons for adopting targets and limits at the levels we have proposed in the next sections. As such, we consider that our targets and standards reflect what is reasonably achievable for Aurora.

²⁶⁵ Commerce Commission "Aurora Energy Limited Proposed Additional Information Disclosure Requirements: Draft Reasons Paper", Chapter 6.

²⁶⁶ Aurora's unplanned SAIDI target and notional SAIFI target are 22% and 13% above its recent five-year average performance. This is because Aurora uses its maximum forecast over the period to set its targets.

²⁶⁷ For example, Aurora indicated to customers that its proposed investment would see the average duration of unplanned power cuts reduce by about 7% to 10% a year by 2024. UMR Quantitative Research Report: Households and Businesses (on behalf of Aurora Energy), February 2020 at p. 23. For example, Aurora Energy "Your Network, Your Say - Consultation document" (24 January 2020) at p. 23-25.

- C47 There were submissions on our draft decision, including from Aurora which raised concerns that the unplanned incentive targets were too stringent and will inevitably incentivise investment which will divert some focus from its safety led plan.²⁶⁸ The targets set are intended to incentivise Aurora to have regard to the value to consumers of it managing its reliability when making decisions which may lead to outages. While we expect that Aurora will prioritise the safety of its employees and the public, our view is that reliability is an additional factor that it should consider.
- C48 In Aurora's submission on our draft decision it raised concerns that the quality limits and targets had not been adjusted to take into account reductions in expenditure allowances proposed in our draft decision.²⁶⁹ We have departed from our draft decision on expenditure allowances and have allowed all the vegetation management opex and 99.0% of network maintenance opex that Aurora requested in its proposal. We retained the 5% capex efficiency adjustment as we believe this is achievable over the CPP period and will not detract from the Aurora's focus on safety and reliability, for the reason that follow.
- C49 Our SAIDI target is similar to Aurora's recent experience over the last five years. We consider this reflects a realistic benchmark that provides Aurora with the *opportunity*—but not a guarantee—to earn a 'normal return' on efficient investment. Aurora will face financial penalties and rewards when its performance deviates from the SAIDI target.
- C50 In our view, our decision on unplanned reliability standard limits includes considerable headroom for Aurora to work within. We consider the relatively large buffer between what is expected for a typical year and the limit is appropriate and reflects the greater range of SAIDI and SAIFI outcomes that could be expected from Aurora over coming years given its relatively low understanding of the health of its network assets, some of which are failing. We expect Aurora's planned improvements in asset data management to support effective decision making in its network investment and over time enable Aurora to revert back to a long-term sustainable steady-state. We agree with Aurora that the exact timing of this is uncertain.²⁷⁰ When this happens, DPP3 principles (including how the buffer is set) will be more applicable to Aurora.

²⁶⁸ [Arrowtown Village Association – Submission on draft decision for Aurora's CPP – 18 December 2020, p.5 and Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020, para 298.](#)

²⁶⁹ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020, para 314-318.](#)

²⁷⁰ Aurora Energy "Customised Price-Quality Path - Application" (12 June 2020) at para 189.1.

- C51 We have complemented the reliability standards with other measures that we expect to incentivise Aurora to provide services at a quality reflective of consumer demands. This includes financial incentives attached to interruption targets that expect Aurora to maintain its recent performance, consistent with its consumers' sentiment.
- C52 Separately to the CPP we are proposing to require Aurora to provide and publish information that would inform consumers of its performance and enable us to monitor its performance. This will be set out in the proposed additional Information Disclosure requirements²⁷¹, a draft of which we have issued alongside this paper.
- C53 We are encouraged that Aurora has committed to retaining and improving its charter and compensation scheme.²⁷² We understand Aurora may consult its consumers on proposed changes to its charter and compensation policies, though we lack clarity on the speed and substance of these changes. We support Aurora publicly reporting on how it has consulted with consumers on changes to its charter commitments and associated compensation. We discuss Aurora's compensation scheme further from paragraph C148 and in our proposed additional information disclosure reasons paper.

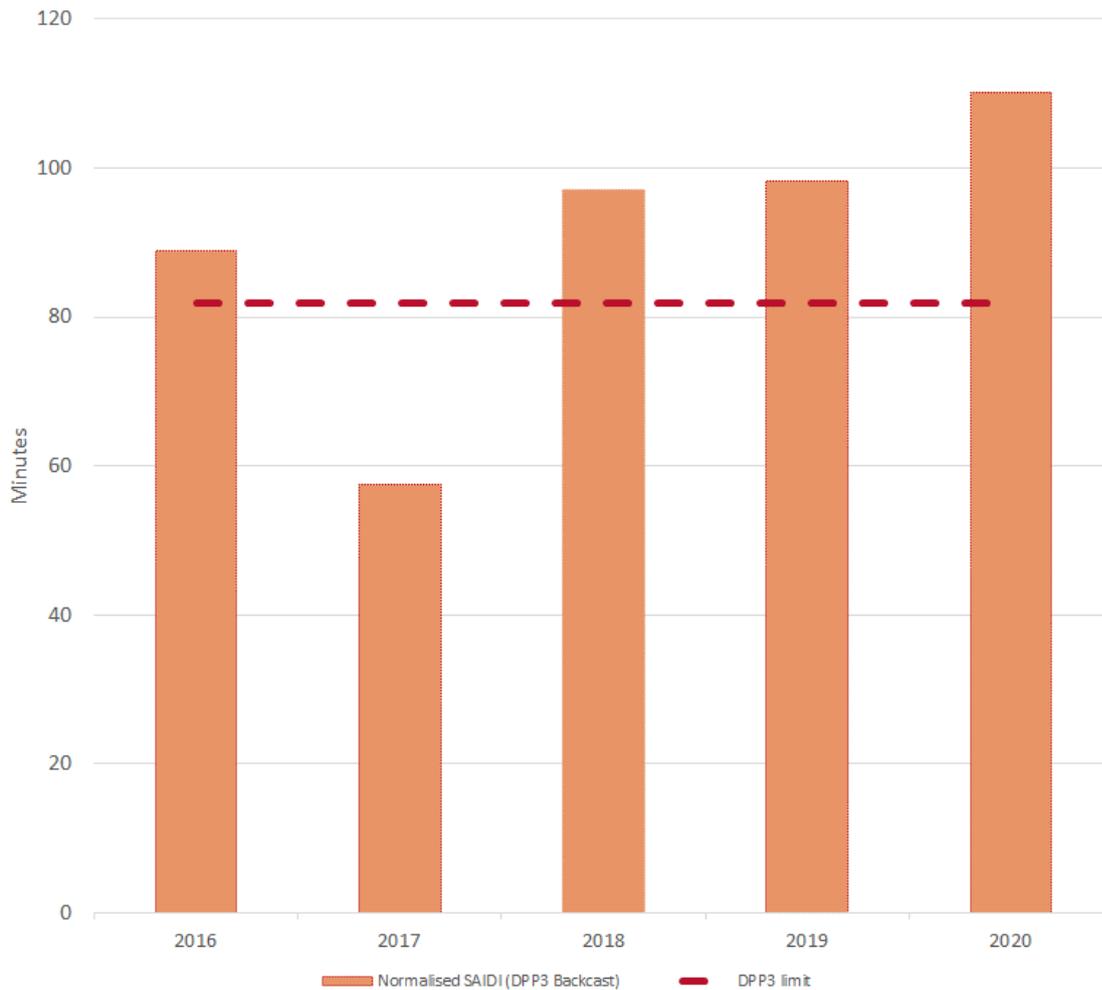
Current DPP3 standards do not reflect Aurora's realistically achievable performance

- C54 Our decision is to accept Aurora's and Verifier's view that the current DPP3 targets and limits that Aurora faces are too stringent and do not reflect Aurora's realistically achievable performance. Aurora's recent reliability performance, and likely future performance, is worse than the DPP3 standard. The main reason for this is that the DPP3 quality standards were capped to allow for 5% worse reliability than the quality standards that Aurora previously faced (ie, the DPP2 standards).²⁷³
- C55 Figure C1 below shows that Aurora would need to achieve a step change improvement in its reliability performance over the next few years to adhere to the DPP3 standard. We do not think this is a reasonable expectation over the CPP period.

²⁷¹ Commerce Commission "Aurora Energy Limited Proposed Additional Information Disclosure Requirements: Draft Reasons Paper", Chapter 6

²⁷² Aurora Energy "Customised Price-Quality Path - Application" (12 June 2020) at para 115.

²⁷³ Without the cap, Aurora's DPP3 unplanned standards would be higher at 92.78 SAIDI minutes (compared to 81.89 minutes) and 1.65 SAIFI interruptions (compared to 1.47 interruptions. These uncapped values are still substantially below the standards we are proposing for Aurora's CPP. This is because an uncapped DPP3 standard would reflect the average of Aurora's historical SAIDI and SAIFI performance over the 2010 - 2019 period, over which Aurora's reliability performance has deteriorated materially.

Figure C1 Aurora's recent SAIDI performance against DPP3 standard

Our decision is to not accept Aurora's proposed deterioration in reliability

C56 Aurora's proposed unplanned interruption targets are higher than its recent SAIDI and SAIFI performance in all historical years, with the exception of one year.²⁷⁴ Its reliability forecasts build in a 19% SAIDI and 10% SAIFI deterioration over the CPP period relative to the 2016-2020 period. Our view is that this level of further deterioration is not acceptable, especially given the level of expenditure we are approving. For these reasons, we disagree with Aurora's statement that:²⁷⁵

[t]he [proposed] SAIDI and SAIFI targets and limits are consistent with historical performance during DPP2 but also provide incentive to arrest the historical deteriorating reliability performance. The forecast reliability targets and limits also reflect consumer preference to ensure network safety and maintain reliability to minimise any price impacts.

²⁷⁴ The only exception is Aurora's SAIFI performance in 2018, which was significantly above all other years.

²⁷⁵ Aurora Energy "Customised Price-Quality Path - Application" (12 June 2020) at para 943.

C57 Figure C2 and Figure C3 show that Aurora's proposed unplanned SAIDI target, notional SAIFI target, and SAIFI limits are worse than its normalised historical experience, reflecting an expectation of more frequent and longer interruptions. We accepted Aurora's proposal to exclude unplanned SAIFI from the quality incentive scheme, therefore the notional SAIFI target is derived solely to calculate the SAIFI limit.

Figure C2 Aurora's proposed unplanned SAIDI targets and limits

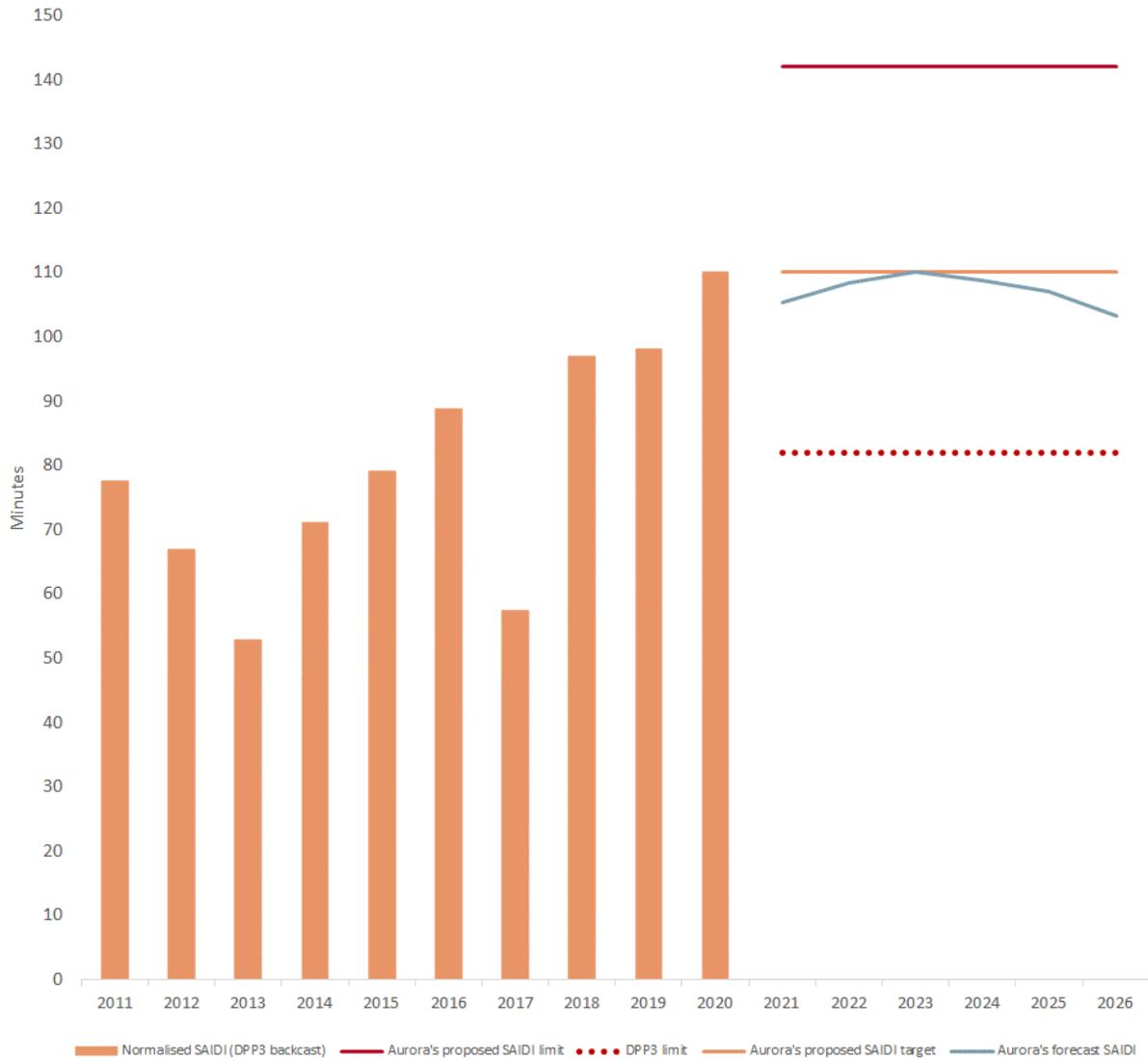
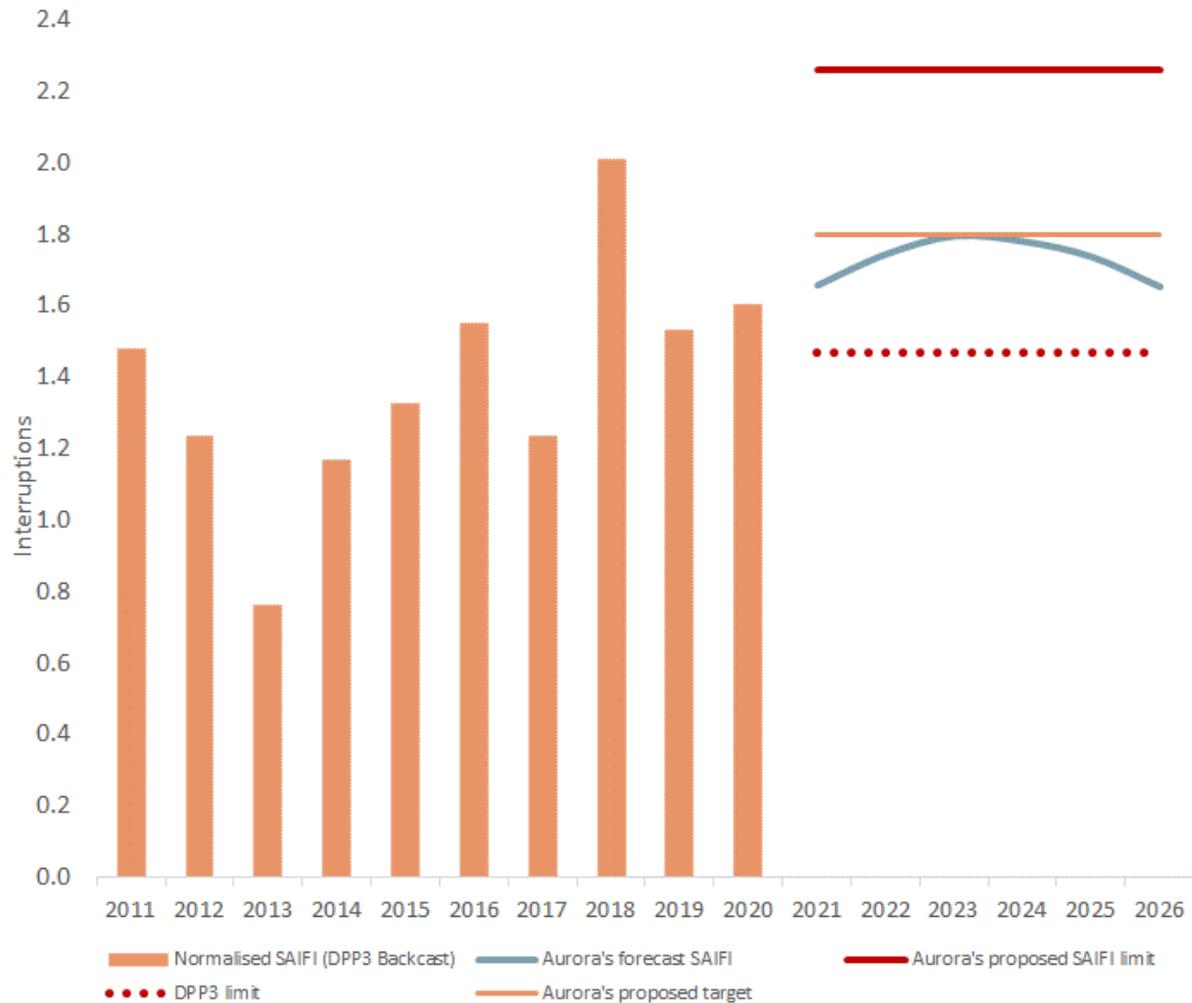


Figure C3 Aurora's proposed unplanned SAIFI limits and notional target

C58 Figure C2 and Figure C3 compare Aurora's historical and forecast unplanned SAIDI and SAIFI in a like-for-like way by applying the DPP3 normalisation method consistently over time. 'Normalisation' is a process that excludes the full impact of major interruption events for assessment purposes, such as the impact of severe weather events, which can be volatile and beyond Aurora's direct control. The DPP3 normalisation methodology reduces the impact of major events significantly more than past normalisation methods (which were applied over earlier regulatory periods - DPP1 and DPP2).²⁷⁶ For a meaningful comparison between forecasts and actuals, the DPP3 normalisation methodology should be applied consistently.

²⁷⁶ See Attachment K of Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision – Reasons paper" (27 November 2019).

- C59 Aurora's CPP proposal did not apply the DPP3 normalisation approach consistently. In our view, it presented a less meaningful comparison, which suggested its reliability deterioration was less than the 19% SAIDI and 10% SAIFI deterioration included in Figure C2 and Figure C3.²⁷⁷ This is because in its CPP submission:
- C59.1 Aurora's presentation of its SAIDI and SAIFI forecasts compared to its historical experience relied on different normalisation methods (a mixture of DPP2 and DPP1 methodologies). This comparison was repeated in our Issues Paper package.²⁷⁸
- C59.2 Aurora did not correctly apply the DPP3 normalisation method to its SAIDI and SAIFI forecasts.²⁷⁹ Aurora later corrected for this in an updated forecast it provided for our consideration (shown in Figure C2 and Figure C3). Aurora's updated forecasts include lower unplanned targets and limits than its submitted proposal. These differences are small for SAIDI (about 2%) and more substantial for SAIFI (about 10%).²⁸⁰ For simplicity, we refer to Aurora's updated forecasts as its proposal throughout this attachment.

Our decision to set more stringent targets for the quality incentive scheme, departing from Aurora's proposal

- C60 Our unplanned interruption targets in Table C1 reflect our view of a realistic level of reliability performance that Aurora can achieve while also having the opportunity—but not a guarantee—to earn a 'normal return' on its efficient investment. We have departed from Aurora's unplanned interruption targets to reflect the following views we have reached.
- C61 The most material departures from Aurora's proposal on incentive targets are based on the following views:
- C61.1 Four year reference period: Our view that Aurora's recent four-year SAIDI and SAIFI performance (over 2017-2020) is an appropriate historical reference period to inform the majority of Aurora's SAIDI and SAIFI forecasts

²⁷⁷ Aurora Energy "Customised Price-Quality Path - Application" (12 June 2020) at Figure 114 and Figure 115 show Aurora's proposed SAIDI forecasts targets as about four percent worse than its 2016-2020 performance using a different normalisation method (6% for SAIFI).

²⁷⁸ Commerce Commission "Have your say on Aurora Energy's investment plan - Consumer summary - Key issues paper" (30 July 2020) at para 4.13 and Figure 4.1 and Figure 4.2.

²⁷⁹ Specifically, in its CPP proposal Aurora incorrectly converted its 'raw' unplanned SAIDI and SAIFI forecasts to 'normalised' forecasts using a scaling factor that did not appropriately reflect the DPP3 methodology. This was identified by the Verifier as the most material reason for differences between Aurora's proposed forecasts and the Verifier's alternative forecasts. Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" (8 June 2020) at p.39 and Table E.6.

²⁸⁰ In addition to the correction applied to the normalisation method provided by Aurora, we have also corrected for an error we found in Aurora's model outputs. This only affects SAIDI and reduces the SAIDI target by an additional 1.05 minutes, or about 1%.

that does not rely on asset health modelling (reflecting about 87%).²⁸¹ This is consistent with Strata's advice and departs from Aurora's proposal, which was largely informed by its recent three-year SAIDI and SAIFI performance (over 2018-2020). The Verifier suggested we consider the appropriateness of the relatively short three-year reference period proposed by Aurora, which differed to Aurora's earlier modelling that placed more weight on its performance over six years (specifically the 2014-2019 years).²⁸² This is discussed further in paragraphs C64 to C69.

C61.2 Normalisation scaling factor: Our view that Aurora's forecasts should be normalised with reference to the historical experience that is used to inform Aurora's SAIDI and SAIFI forecasts. Consistent with our decision above, this is Aurora's four-year SAIDI and SAIFI performance (2017-2020). We disagree with Aurora's reliance on its 10-year historical performance to calculate a scaling factor to normalise its forecasts that were largely based on its three-year historical performance. This departure impacts the unplanned SAIDI target, unplanned SAIDI limit, and unplanned SAIFI limits. This is discussed further in paragraphs C71 to C77.

C62 The impact of these two decisions on SAIDI are bolded in Table C2 below.

Table C2 Isolated impact of applying the four-year reference period

	SAIDI Target (Minutes)
Aurora's proposal (three-year reference period and 10-year normalisation scaling factor)	110.02
Four-year reference period decision	102.29
Four-year reference period and four-year normalisation scaling factor decision	93.93
<i>less other adjustments</i>	5.85
Our decision (including other adjustments)	88.08

C63 Table C2 shows that the 'other adjustments' we have made in setting our decision for the target in the quality incentive scheme account for only 5.85 SAIDI minutes.²⁸³ Individually, each of these are relatively immaterial and include:

C63.1 Our view that Aurora's age-based asset health index is likely to overstate asset deterioration. This affects only about 13% of Aurora's SAIDI and SAIFI

²⁸¹ Specifically, Aurora applied a simple three-year average of its 2018-2020 interruption performance to forecast interruptions for five asset categories where it considered sufficient asset health data was not available and for interruptions primarily attributed to non-asset failures (eg, bad weather).

²⁸² Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" (8 June 2020) p.134 and 428.

²⁸³ We have not made these other adjustments to our calculations of the quality standard limits to reduce the risk of quality standard breaches that do not represent a material problem.

predictions, as most of its forecasts rely on a simple average of its performance over the last three years. Specifically, we propose a modest 5% reduction to the affected 13% of Aurora's SAIDI and SAIFI forecasts, as recommended by Strata. This adjustment reflects our view that it is reasonable to expect Aurora to prioritise asset replacements on the condition actually observed as the programme is rolled out, rather than simply replacing assets based on the asset's age (as is implicitly assumed by some of its asset health modelling). Doing so can be expected to lift Aurora's post investment asset health to a higher overall condition than indicated by its age-based health index. Consistent with this position, both the Verifier and Strata concluded that Aurora's asset replacement modelling was likely to overpredict asset deterioration and overpredict the need to replace assets.²⁸⁴

- C63.2 Aurora's submission disagreed with the 5% adjustment to reduce the unplanned targets, stating "there are complex factors to consider, and to apply an arbitrary 5% improvement factor to the modelled results has not been justified"²⁸⁵. It is our view that an adjustment is necessary to reflect improved asset health attributable to increased investment in asset replacement and network operational expenditure is warranted. Strata provided its professional opinion that 5% is the appropriate level of adjustment²⁸⁶, and we agree. The 5% reduction makes up 11% of the 5.85 SAIDI minutes of adjustments to Aurora's proposed target.
- C63.3 We agree with Aurora's submission that better targeting of assets with poorest condition may lead to better than forecast reliability but could also result in reduced reliability if an asset replacement is deferred because it has a lower safety risk. However, it is our view that improvements to the network and corrective maintenance as part of the planned investment will have an overriding benefit to reliability even if they are safety driven choices.

²⁸⁴ Specifically, the Verifier noted that for some assets, Aurora only considered the age-based asset health assessment as a proxy for the asset's failure and did not factor in failure consequences (i.e, criticality) to determine risk. The Verifier considered that this approach can result in higher expenditure forecasts, with some forecast asset replacements that could be deferred. For example, Farrier Swier "Verification Report – Aurora Energy CPP Application" (8 June 2020), p.168 and 471.

²⁸⁵ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), para 311- 313.

²⁸⁶ Strata Energy "Report on specific submission topics related to Aurora Energy's CPP application" (12 March 2021, p.66-67.

C63.4 Our view that conservative downward adjustments to Aurora's SAIDI and SAIFI forecasts are appropriate to account for reliability benefits that Aurora expects to arise from specific expenditure proposals but has not captured in its reliability modelling. Specifically, we propose an incremental 1% annual improvement on Aurora's proposed SAIDI and SAIFI forecasts, as recommended by Strata. We consider these proposed adjustments are relatively conservative, reflecting the uncertainty in reliably estimating the benefits associated with individual expenditure proposals. Our proposed adjustments assume the following.²⁸⁷

C63.4.1 1% annual improvement in Aurora's proposed SAIFI to account for Aurora's strategy to increase corrective and preventive maintenance. The Verifier noted that Aurora did not quantify the benefits of corrective and preventive maintenance and was of the view that Aurora's strategy of identifying and rectifying defects, even when not priority defects, will avoid many of them becoming reliability issues.²⁸⁸

C63.5 Our view that Aurora's approach of setting the baseline SAIDI and SAIFI (ie, targets) on the maximum forecast year is inappropriate. We have instead adopted an average of the expected reliability profile over the period.

C63.6 Our view that Aurora's linear regression used to determine SAIDI by asset class, based on SAIFI outcomes is not appropriate. This approach is based on seven datapoints and produced some anomalous outcomes.²⁸⁹ We consider that the observed SAIDI to SAIFI ratio, or the average interruption length, over the period for which data is available at this level of disaggregation (seven years) is more appropriate for forecasting this relationship. This change reduces the SAIDI target by 0.66 minutes.

Relying on Aurora's recent four-year historical performance

C64 We consider that setting targets with reference to Aurora's most recent four-year unplanned SAIDI and SAIFI performance is appropriate, and on balance more appropriate than reference to Aurora's three-year performance.²⁹⁰ This is the most material change we have made to Aurora's proposed targets in our decision, as shown in C62.

²⁸⁷ These proposed downward adjustments do not apply to around 13% of Aurora's SAIDI and SAIFI predictions that relied on its asset health modelling.

²⁸⁸ Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" (8 June 2020), p. 39.

²⁸⁹ For example, some regressions by asset class produced negative SAIDI outcomes (which Aurora set to zero) for a given SAIFI, very low marginal SAIDI outcomes for a change in SAIFI, or SAIDI outcomes that significantly differed from zero with a SAIFI of zero (the intercept).

²⁹⁰ Specifically, this decision affects the portion of Aurora's forecasts that do not rely on asset health modelling (about 87%).

- C65 Compared to Aurora's proposal which heavily relies on its reliability performance over the 2018-2020 period, our inclusion of 2017 in the reference period provides a wider range of relatively high, medium, and low interruption years to predict Aurora's future performance. This is shown in Figure C2 and Figure C3 above.
- C66 Overall, we think the greater range of reliability outcomes provided for over the 2017-2020 period is more consistent with the Verifier's view that Aurora's proposed expenditure will lead to arresting the recent increases in unplanned SAIDI and SAIFI, partly driven by Aurora taking a more proactive than reactive approach to managing faults.²⁹¹
- C67 We also think the inclusion of the lower 2017 interruption year better captures the range of outcomes we would expect, especially from non-asset events that are somewhat beyond Aurora's control (eg, adverse weather, wildlife, and third-party impacts). Non-asset events represent about two thirds of Aurora's forecast (excluding the forecasts based on asset health modelling). The resilience of Aurora's network, which we do not expect to deteriorate over the CPP period, may influence the occurrence of non-asset events. We agree with the Verifier that Aurora's proposed expenditure to improve its asset health, maintenance and vegetation management practices can be expected to improve the resilience of its network to weather and other events outside of Aurora's direct control and Aurora's responsiveness to any interruptions caused by these events.²⁹² As such, we consider our targets reflect reliability performance that is realistically achievable by Aurora.
- C68 We accept that there is uncertainty in forecasting unplanned interruptions, particularly without sufficient asset health and criticality data as is the case for Aurora. Unlike our decision on Aurora's unplanned targets, our limits, which Aurora must comply with, are based on Aurora's previous three-year historical performance, not its performance over the previous four years. This provides Aurora with greater headroom to work within (discussed further below).
- C69 We note that a five-year reference period (ie the DPP2 period over 2016-2020) does not result in materially different forecasts relative to our proposed four-year reference period.

²⁹¹ Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" (8 June 2020), p.39.

²⁹² Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" (8 June 2020), p.51.

C70 In its submission on our draft decision Aurora's view remains that a shorter (three-year) reference period (2018-2020) for setting the unplanned targets better reflects recent asset performance and also current operational practice rather than the four-year average we proposed in the draft decision.²⁹³ We disagree with Aurora's view that a three-year average is more appropriate than a four-year average. We believe a four-year average is better as it captures a sample of varied performance. It includes the most recent periods of asset performance under current operational practice. The three-year period would capture the worst periods of reliability performance which would result in a higher target making it easier for Aurora to stay below the target and receive a financial reward under the Quality Incentive Scheme. The target set in the decision is intended to incentivise Aurora to improve network reliability where it is cost effective to do so and restore interruptions efficiently.

Normalisation scaling factor

C71 Our decision reduces the 10-year scaling period that Aurora used to normalise its raw forecasts, to the most recent four-years for setting the unplanned target. This is consistent with the four-year reference period that we have applied to Aurora's forecasts. As C62 shows, this reduces SAIDI by about 8 minutes while the change in SAIFI is insignificant.²⁹⁴

C72 Aurora's unplanned SAIDI and SAIFI forecasts are largely based on its historical interruption experience over 2018-2020. To convert its forecasts to normalised forecasts, it applies a "normalisation scaling factor" based on the level of normalisation over the 2011-2020 period, using the DPP3 methodology. In the absence of using a simple average of the historical normalised values, we consider that Aurora's general approach for converting 'raw' forecasts to normalised forecasts is satisfactory. However, we consider that the inconsistency in the reference periods applied in this conversion (10 years compared to three years) is inappropriate for the reasons given in the next paragraph. This is consistent with the position reached by the Verifier.²⁹⁵ Our independent consultant, Strata, was comfortable with the approach Aurora had taken.

²⁹³ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020, para 308-309.](#)

²⁹⁴ Adjusting for this issue has relatively immaterial impacts on both SAIDI and SAIFI if applying a three-year reference period as Aurora proposed.

²⁹⁵ The Verifier noted that the period used to estimate the normalisation scaling factor should be the same as the period used to estimate its forecasts to ensure consistency. Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" (8 June 2020), p.39.

- C73 Aurora reasoned that it had a relatively high level of normalisation in recent years, which should be addressed by using a longer time-series of 10 years. It referenced extreme weather events in 2016 and 2019 and a fire in 2017 and considered these events outliers.²⁹⁶ Aurora's approach removes less of the raw interruption data than occurred over the recent years that forms the basis of its forecasts. This results in a higher normalised forecast. We disagree with this approach and consider it contrary to the purpose of normalisation, which is to remove the impact of major events that occurred. Removing more or less normalisation than actually occurred is not appropriate, especially given a substantial proportion of Aurora's forecasts are based on its average pre-normalised experience over 2018-2020.
- C74 We have some reservations about forecasting using pre-normalised data as Aurora has done. It adds a further degree of uncertainty. Ideally, normalised forecasts would be based on normalised historical data. This is the approach taken in DPP3 to derive distributors' SAIDI and SAIFI targets and limits. It would have been possible for Aurora to take this approach for the significant portion of its forecasts that relied on its three-year historical experience.
- C75 However, we accept that it may have been challenging for Aurora to use normalised forecasts in its asset-health modelling because of the way it assigns asset classes to individual interruption events. Despite these reservations, we are comforted that Aurora's historical *normalised* experience over both a four-year and five-year period is immaterially different to our target, which is based on Aurora's pre-normalised performance over a four-year period. As expected, our target is noticeably lower than Aurora's three-year historical normalised experience. This is shown in Table C3.
- C76 In its submission on our draft decision Aurora's view remains that a 10-year normalisation period is more effective in removing the variability of major event days in the four-year period assessment period for setting the unplanned targets.²⁹⁷ 'Normalisation' is a process that excludes the full impact of major interruption events in order to determine the quality standards. Such events include the impact of severe weather, which can be volatile and beyond Aurora's direct control.

²⁹⁶ RFI Q019 - Reliability, service measures and quality standards (2).

²⁹⁷ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), para 310.

- C77 We disagree with Aurora's submission that reliance on a ten-year period better removes the variability of major event days given that its forecasts are largely based on the last three-years of major event days. In determining our draft decision, we reviewed the ten-year period (2011-2020) of raw interruption data and we observed that there were considerably more major event days in the most recent four years (2017-2020) than in the years prior, and this contributed to Aurora's recent worsening performance on quality. Using a 10-year normalisation period would not remove the major event days in the forecast period resulting in a higher target. This would make it easier for Aurora to financially benefit under the incentive scheme. This would not reflect Aurora's most recent performance, which we consider the best indicator of what is reasonably achievable for it in the coming CPP period.
- C78 Accordingly, we believe using a four-year normalisation period is most appropriate to remove variability from major event days, in order to reflect Aurora's recent performance most relevant to determining expected performance under the CPP. We consider that is the most appropriate way to address the volatility caused by major event days.

Table C3 Our proposed targets compared to a simplified approach

	SAIDI Target (Minutes)	
Aurora's proposal	110.02	
Aurora's historical normalised experience	Three-year normalised experience	101.8
	Four-year normalised experience	90.7
	Five-year normalised experience	90.3
Our decision	88.08	

Departing from Aurora's proposed limits

- C79 Our decision to set unplanned limits in Table C1 is largely based on setting a reasonable buffer above Aurora's proposed targets, rather than to our lower targets. We have done this to provide greater headroom in recognition of the greater uncertainty as to the reasonably achievable levels of quality as Aurora improves its network resilience and asset data management.
- C80 The exception to applying Aurora's targets as a basis for deriving our limits is that we have adjusted the normalisation scaling factor and applied the observed SAIDI to SAIFI ratio rather than Aurora's linear regression, as described at paragraphs C58 and C59. The reasoning for our change to the normalisation scaling factor is the same as that described for the SAIDI target (paragraphs C71 to C77).

- C81 These departures are relatively immaterial when applied to Aurora's three-year reference period, reducing Aurora's notional SAIDI target by 3% and its notional SAIFI target by 1%. We refer to this as a notional target because it is not the same as the targets set for the quality incentive scheme.
- C82 Our decision has added two standard deviations, consistent with the DPP3 approach, to these notional targets to obtain standard limits at 124.94 SAIDI minutes and 2.07 SAIFI interruptions. These standards are about 12% and 8% below Aurora's proposed standards.²⁹⁸ This is because Aurora's proposed SAIDI and SAIFI limits are more than three standard deviations above its proposed targets. Aurora described its proposed limits as its target plus two standard deviations, with a scaling factor to account for its higher target. Aurora considered this will allow for annual volatility in accordance with our DPP3 decision.²⁹⁹ In our view, this approach is not reasonable; a higher standard deviation indicates greater variation in the data, but Aurora has simply assumed variation is proportional to the change in the target, which we do not consider to be statistically robust. Nonetheless, as Table C1 shows, the notional buffer between our targets and standards is broadly in line with Aurora's proposal.
- C83 In its submission on our draft decision Aurora considers the unplanned limits set creates a high risk of future breaches and will inevitably incentivise investment on reliability to avoid breaches.³⁰⁰ While we accept there might be a risk of breaching the standards, we think they are reasonably achievable for Aurora and that Aurora has the opportunity to achieve them if it appropriately manages the reliability of its network.
- C84 If there was no risk of breaching quality standards, even if the steps taken to ensure reliability were substandard, then quality standards would serve no purpose. We do not consider that the standards we have set mean the risk of breach is too high, because we have based the limits on Aurora's actual performance in the last three years, then applied two standard deviations to account for further annual volatility.

²⁹⁸ The DPP3 standard deviation of 9.22 for SAIDI and 0.15 for SAIFI reflect Aurora's historical unplanned SAIDI and SAIFI experience over the 2009-2019 period. For completeness, we note that the SAIDI and SAIFI standard deviations relating to the three-year and four-year historical period is insignificantly different from those we have applied, at 10.72 and 9.14 for SAIDI over the three- and four-year period, and 0.17 and 0.15 for SAIFI over the three- and four-year period.

²⁹⁹ Aurora Energy "Customised Price-Quality Path - Application" (12 June 2020), para 899.

³⁰⁰ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), para 298.

Our decision is to accept Aurora’s proposal to retain other DPP3 unplanned interruption parameters

C85 Aurora has proposed retaining the approach taken in DPP3 on remaining unplanned interruption parameters. Our decision is to agree with Aurora and retain the following DPP3 parameters for Aurora’s CPP, as proposed by Aurora.

C85.1 retaining the major event threshold (boundary value) and treatment of major events (normalisation) set in DPP3. In DPP3, the SAIDI boundary value is 5.69 minutes and the SAIFI boundary value is 0.0737. The relevant reference period used is 2009-2019 interruption data. The boundary value will impact the extent to which future interruptions are normalised. Most of Aurora’s proposed reliability over the CPP period is based on its experience over the most recent few years. Given this, we likewise considered shortening the reference period for determining the boundary value. However, we agree with Aurora that the frequency of major events can be quite volatile and intermittent, and a larger sample is appropriate.

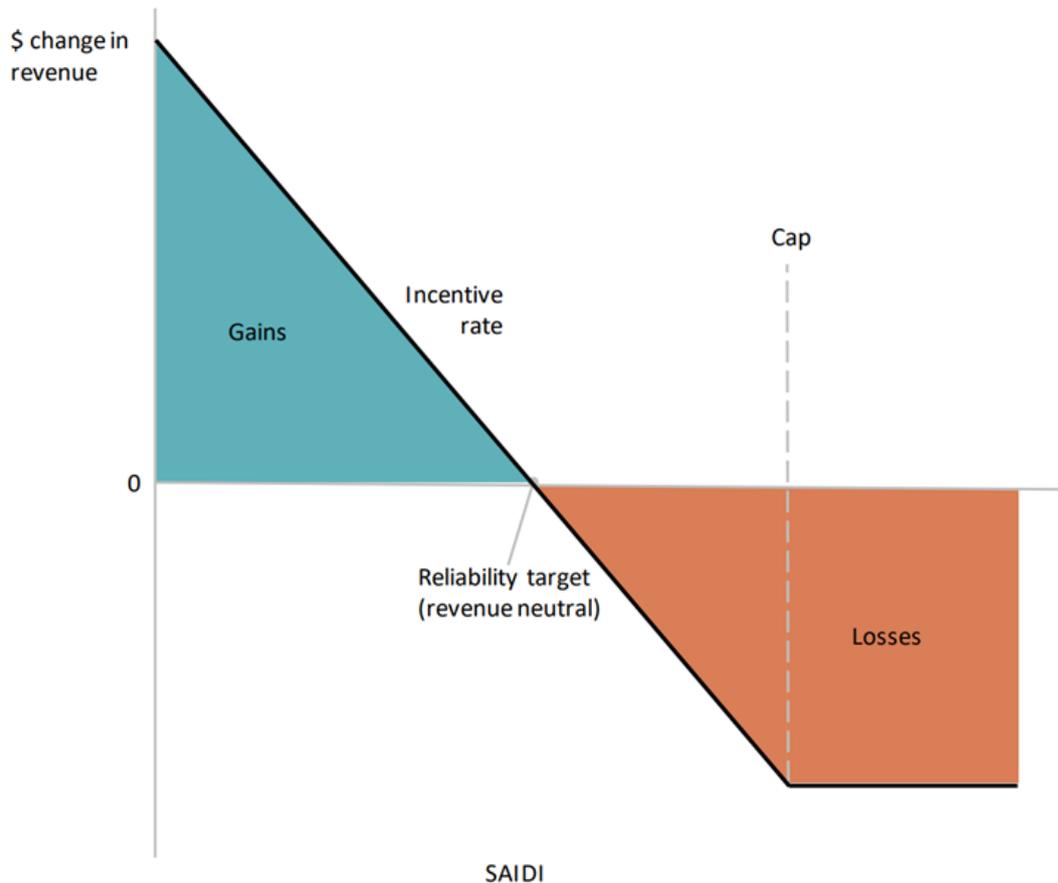
C85.2 retaining the extreme event standard set in DPP3. The extreme event standard deals with extreme one-off events that may cause serious inconvenience for consumers and is set at the lower of 120 SAIDI minutes or 6,000,000 customer minutes for interruptions predominantly caused by specified external factors.

Retaining the incentive scheme for unplanned interruptions

C86 Our decision is to retain the revenue-linked quality incentive scheme for unplanned interruptions that Aurora currently faces under the current default price-quality path. Together with the expenditure incentives, which are discussed further in Attachment F, the quality incentive scheme provides Aurora with incentives to improve network reliability at the margin where it is cost effective to do so. This includes restoring interruptions efficiently.

C87 The general relationship between the incentive scheme parameters is shown in Figure C4 below.

Figure C4 Relationship between parameters of the quality incentive scheme



C88 Our decision is to maintain the incentive scheme, with an unplanned SAIDI target of 88.08 minutes, which broadly reflects its performance over recent years. We are comfortable that linking financial penalties and rewards to Aurora’s recent performance is appropriate and best incentivises Aurora to provide reliability of service at levels consistent with consumer preferences, compared to feasible alternatives. We are mindful that a less stringent target would allow Aurora to be financially rewarded, and recover more revenue from consumers in future, despite consumers likely receiving worse reliability than they had experienced in recent years. This underscores the importance of setting the target at a level that is not too easy for Aurora to achieve, while also being realistically achievable—providing Aurora with an opportunity to earn a 'normal return' on efficient investment.³⁰¹ We consider our proposed target balances these objectives.

³⁰¹ We considered, and rejected, maintaining the lower DPP3 target of 63.44 SAIDI minutes. This would not reflect Aurora’s realistically achievable performance, reflecting reliability levels that are significantly more stringent than Aurora’s recent experience. It is also likely inconsistent the principle of providing regulated suppliers with an opportunity of earning a ‘normal return’ on efficient investment.

- C89 We disagree with Aurora's suggestion that applying an incentive scheme to unplanned interruptions could be seen as inconsistent with consumers' short-term preferences to reduce expenditure where possible. Aurora makes this statement while emphasising that consumers said they do not want to pay more for improved reliability at this time.³⁰² As we have noted, Aurora is proposing significantly worse reliability at a higher cost. Feedback we received on our Issues Paper and Draft Determination suggests consumers are concerned about deteriorating reliability as well as rising prices. Our decision to incentivise marginal improvements in reliability, at an incentive rate that is aligned with consumer preferences (as proxied by the value of lost load, or VoLL),³⁰³ and where it is cost-effective to do so, is consistent with this feedback.
- C90 The other incentive scheme parameters our decision adopts are:
- C90.1 Aurora's proposed VoLL of \$27,136 per MWh, which proxies the value consumers place on electricity and compares to the \$25,000 per MWh applicable under the DPP3. We are comfortable adopting Aurora's slightly higher VoLL because it relies on the same Transpower VoLL study that informed the VoLL we applied in the DPP3. The difference is that Aurora only relies on the study's results for each point of supply to its network, rather than the points of supply across all networks.³⁰⁴ This directly increases the level of financial exposure that Aurora faces for a marginal change in reliability to \$14,279 per SAIDI minute, compared to the \$13,155 per SAIDI minute under DPP3.
- C90.2 an unplanned SAIDI cap of 124.94 minutes, consistent with our proposed unplanned SAIDI limit (against which Aurora's compliance is assessed). This means that marginal incentives for unplanned SAIDI minutes only apply up to a contravention of the unplanned SAIDI compliance standard, at which point Aurora would face a maximum revenue loss of about \$0.53m or 0.58% of its maximum allowable revenue before tax.
- C90.3 Aurora's proposed unplanned SAIDI collar of 0 minutes. Consistent with DPP3, this means that Aurora will always face financial incentives for unplanned interruptions below the SAIDI limits. We do not expect Aurora to have zero unplanned SAIDI minutes. If it did, the associated maximum revenue Aurora would gain is about \$1.3m or 1.39% of its maximum allowable revenue before tax.

³⁰² Aurora Energy "Submission in response to the Commission's CPP Issues Paper" (20 August 2020), p. 15.

³⁰³ VoLL is an estimate of the economic value, in dollars per MWh, that a consumer places on electricity they plan to consume but do not receive because of an interruption.

³⁰⁴ Aurora Energy "Customised Price-Quality Path - Application" (12 June 2020), para 932-935 refers.

C90.4 consistent with the current DPP, Aurora's proposed incentive rate for planned and unplanned interruptions involves discounting the incentive rate to 23.5% of the value of lost load to acknowledge the sharing of costs through the IRIS mechanism. It also involves a further 10% discount to account for the other incentives created by the quality standards. The two discounts combined make the incentive rate 21.2% of the value of lost load. Our decision is to carry this over to the CPP because the same factors (benefit and cost sharing and quality standards) are proposed to be in place in the CPP.

Planned interruptions

C91 In this section we discuss planned interruptions and the reasons for our decision. Our approach to determining the planned quality standards and incentive targets was to ensure we set realistically achievable limits and targets for Aurora that also ensure we promote the best outcomes for the consumers. We recognise that planned interruptions are typically less harmful to consumers than unplanned interruptions as they can take steps to limit the impact of the planned interruption. The structure of this section is as follows:

C91.1 Decisions on planned interruption standards and incentives.

C91.2 Setting a single planned interruption standard over the CPP period.

C91.3 The proposed planned interruption standard level is appropriate and achievable.

C91.4 Specifications of the incentive scheme.

Decisions on planned interruption standards and incentives

C92 Our decision on the quality standard and incentive scheme for planned interruptions is to accept Aurora's proposal, which keeps the standard the same as the DPP3 and the incentives in the same form, but with different parameters. This is shown in Table C4.

Table C4 Planned quality targets and limits over the 2022-2026 period (annual)

	SAIDI (Minutes)			SAIFI (Interruptions)		
	QIS Target	Buffer	Limit	QIS Target	Buffer	Limit
Current standard (DPP3)	65.32	130.64	195.96	n/a	n/a	1.11
Our draft decision	72.16	123.80	195.96	n/a	n/a	1.11
Our decision	72.16	123.80	195.96*	n/a	n/a	1.11*
Aurora's proposal	72.16	123.80	195.96	n/a	n/a	1.11

*The annualised limits are indicative as we have set a single quality standard for planned interruptions that spans the CPP period in accordance with DPP3.

- C93 We have considered submissions in response to our draft decision and have not changed our decision on planned interruptions. Our reasons for the decisions, including consideration of submissions, are explained in more detail in the sections that follow.
- C94 Aurora supported our draft decision on the quality standard for planned interruptions in its submission on our draft decision.³⁰⁵ However, Aurora submitted that a quality incentive scheme should not be applied to it during the CPP as it will be less effective³⁰⁶, reiterating the point raised in its submission on the Issues Paper as described in paragraph C132. We believe that the quality incentive scheme is an effective method for ensuring Aurora will prioritise improvements to network reliability where it is cost effective to do so and restore interruptions efficiently whilst still maintaining a safety focus. By not having the incentive scheme, we would remove the financial incentive for Aurora to improve its notification of interruptions and undertake work efficiently within a specified notified window and without cancellations.
- C95 Consumer submissions on our draft decision, highlighted concerns about poor communication of planned interruptions from Aurora.³⁰⁷ For example, submissions such as such as that by Central Otago Grey Power highlighted the impact of the interruptions on high risk people with medical problems:

³⁰⁵ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), para 297.

³⁰⁶ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), para 323-326.

³⁰⁷ [Nick Loughnan – Submission on draft decision for Aurora's CPP – 8 December 2020](#), p.1 and [CC0004 – Submission on draft decision for Aurora's CPP – 12 November 2020](#), p.1 and [CC0021 – Submission on draft decision for Aurora's CPP – 27 November 2020](#) and [CC0023 – Submission on draft decision for Aurora's CPP – 29 November 2020](#).

“People with medical problems need an uninterrupted power supply to keep machines working. When interruptions are planned and consumers notified, arrangements can be made for the hiring of generators. However, these interruptions don’t always happen as notified so the expensive generators are not needed. Later, when we have unexpected interruptions, back-up generators are not available. More planning and accountability is needed”.³⁰⁸

- C96 Other examples highlighted the impact of the interruptions on people’s health due to heating needs in winter and the impacts on businesses that need to close without power.³⁰⁹
- C97 We have quality incentive targets and financial incentives to encourage Aurora to keep interruptions to acceptable levels and to better notify consumers of the planned interruptions and any changes. In addition, we propose to address the management of planned interruptions in the proposed additional information disclosure requirements.³¹⁰ In particular, the publication of information to all stakeholders will allow them to monitor Aurora’s performance and hold them to account for weak performance.
- C98 Our decision is to accept Aurora's proposed quality standard for planned interruptions, which is the same as was set for the DPP3. This is a five-year limit of 979.80 minutes for SAIDI and 5.5385 for SAIFI. We set this in DPP3 with a large buffer because of the long-term benefits to consumers of the network investment and maintenance that is associated with planned interruptions.
- C99 For DPP3 we considered that the revenue-linked incentive scheme would be a better mechanism than quality standards to ensure that planned interruptions are managed appropriately. We consider that this reasoning still holds for Aurora under its proposed CPP.

³⁰⁸ [Central Otago Grey Power – Submission on draft decision for Aurora's CPP – 6 December 2020](#), p.1

³⁰⁹ [CC0057 – Submission on draft decision for Aurora's CPP – 9 December 2020](#) and [Queenstown Lakes District Council – Submission on draft decision for Aurora's CPP – 14 December 2020](#), p.2.

³¹⁰ Commerce Commission "Aurora Energy Limited Proposed Additional Information Disclosure Requirements: Draft Reasons Paper", Chapter 6.

Setting a single planned interruption standard over the CPP period

C100 Our decision accepts Aurora's proposal to have a single quality standard for planned interruptions that spans the entire CPP period rather than having annual quality standards. This is consistent with our decision for the DPP3 quality standards, in which we said the following.³¹¹

Our decision to set the planned reliability standard over the full regulatory period will allow distributors to schedule planned works in a way that works best for their business and consumers, rather than to comply with an annual planned reliability standard. For example, previous settings may have incentivised distributors to inefficiently defer or bring forward work to avoid contravention. We consider that revenue-linked incentives are a better mechanism to encourage each distributor to manage its planned interruptions appropriately, allowing distributors to undertake planned interruptions for investment like replacement of aged assets where it is in the interests of consumers to do so.

C101 We consider that this reasoning remains appropriate for Aurora's CPP. It is perhaps even more important than for the DPPs because of the substantial volume of network investment planned for the CPP, which may not occur evenly in each year of the CPP.

C102 Aurora's own forecast of planned SAIDI and SAIFI varies across the five-year CPP period. For example, Aurora's forecast of planned SAIDI (when de-weighted for meeting certain interruption notification criteria) ranges from 101 minutes in the first year of the CPP to 45 minutes in the last (fifth) year of the CPP.

C103 Aurora forecast its planned SAIDI and SAIFI for the proposed CPP period using two models, and the forecast for its proposal is the average of the results of the two models. One of the models is driven by planned volume of work, and the other by planned expenditure.

C104 The Verifier's forecast of planned SAIFI and SAIDI also varies by year across the CPP period and is above Aurora's forecasts. The Verifier's forecast of SAIFI (when accepting Aurora's expected coordination efficiency gains) ranges from 1.10 SAIFI interruptions in the first year of the CPP to 0.64 SAIFI interruptions in the last (fifth) year of the CPP. This compares to Aurora's planned SAIFI forecasts which range from 0.69 down to 0.37 SAIFI interruptions over the CPP period.

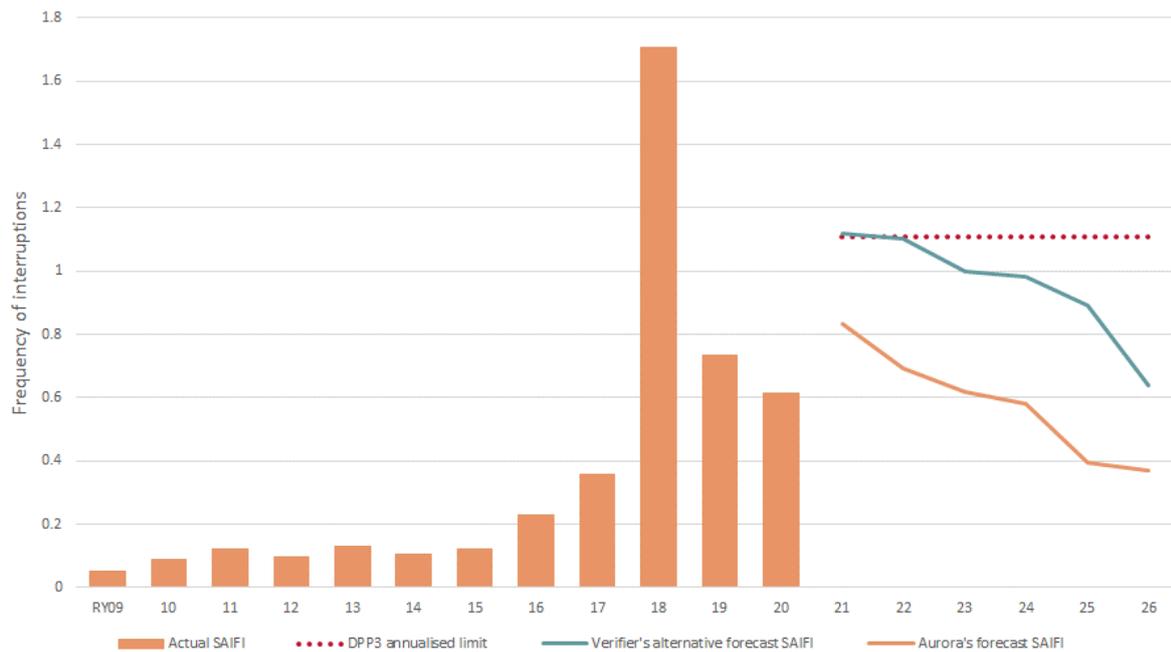
³¹¹ Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision – Reasons paper" (27 November 2019), para 7.38.

- C105 We note that the Verifier's forecasts were based on its review of Aurora's penultimate planned interruption model, where the Verifier had outstanding concerns. The Verifier considered Aurora's two modelling approaches were reasonable. However, it suggested the size of the forecast variation between the two approaches (with one model producing forecasts about 40% greater than the other) may be indicative of issues with the inputs to Aurora's modelling.³¹²
- C106 We are satisfied with Aurora's responses to the Verifier's outstanding queries and, in particular, its confirmation that it had not included pole reinforcement expenditure or volumes data as the Verifier had suspected.³¹³ This discrepancy of view was a key factor driving the Verifier's higher SAIFI forecasts.³¹⁴ More generally, we consider that Aurora's responses highlighted differences of view between the Verifier and Aurora on detailed modelling points and/or highlighted shortcomings in Aurora's data and uncertainty in its modelling. We do not consider that resolving any of the differences of view would materially influence our decision to set planned interruption limits or other incentives and so we do not discuss this further.
- C107 If the planned interruption standard were annualised rather than spanning the entire CPP period, it would be about 1.11 SAIFI interruptions each year. Figure C5 below shows that if Aurora's planned interruptions followed the Verifier's forecasts, there would be a clear risk that Aurora would need to adjust its timing of network investment works across the CPP period to meet an annualised planned interruption standard. This could be inefficient.

³¹² Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" (8 June 2020), p.456.

³¹³ RFI Q018 - Reliability, service measures and quality standards (1).

³¹⁴ Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" (8 June 2020), p.38 and Table E:19.

Figure C5 Annual SAIFI forecasts - by Aurora and the Verifier

C108 We consider that in practice, the annual variation in planned SAIDI and SAIFI may be even greater than forecast for such a large programme of network investment. We note that there was substantial annual variation in planned interruptions in the five previous years, as shown above in Figure C5. Aurora's significant increase in planned interruptions since 2018 is when it started addressing its historic underinvestment. Annual planned interruption quality standards could inadvertently constrain Aurora's implementation of the CPP's network investment.

C109 Aurora also noted that its own forecasting was not carried out with the purpose of accurately forecasting year-by-year levels of planned SAIDI and SAIFI, but to get a general forecast of the total period to test the achievability of the existing DPP3 quality standard.³¹⁵

The proposed planned interruption standard level is appropriate and achievable

C110 As described above, our decision is to set the standard over the five years of the CPP3, so it is only the five-year total SAIDI and SAIFI that matters, not the individual years. This means that a large buffer is not required to allow for annual variability.

³¹⁵ RFI Q018 - Reliability, service measures and quality standards (1).

- C111 However, we noted in our DPP3 decision that it is important to have a buffer above the historical average level of planned SAIDI and SAIFI to allow for increases in network investment. Network investment typically requires planned interruptions to allow for additional vegetation management work and the replacement of ageing assets.
- C112 Given the substantial network investment planned by Aurora under the CPP, our decision is to not make the quality standard for planned interruptions more stringent because this would risk constraining Aurora's ability to undertake the planned network investment work. The standard should be realistically achievable for the level of Aurora's planned investment. This prevents the standard from constraining Aurora from being able to undertake the planned network investment.
- C113 Planned interruptions often have less impact on consumers than unplanned interruptions because consumers are notified in advance so can make alternate plans if necessary. Consumers value advance notice and clear communications about planned interruptions as highlighted in the consumer submissions in C95.
- C114 The DPP3 planned interruption standard included a large buffer for SAIDI and SAIFI - by setting the limit at triple the average of the ten-year reference period - to allow for increases in network investment.
- C115 A large buffer over the ten-year reference period is important for Aurora because the purpose its CPP application is to allow for a large programme of network investment, which will require an increase in planned interruptions above the past levels. Further, Aurora was undertaking less network investment than necessary during the earlier part of the ten-year reference period, so some of the reference data may be particularly low.
- C116 To assess whether the proposed quality standard for planned SAIDI and SAIFI is achievable, we have compared the standard against the level of planned SAIDI and SAIFI forecast by Aurora and the Verifier.

Incentivising notification of interruptions

- C117 We are encouraged that Aurora expects to steadily improve its compliance with the DPP3 notification criteria, from 20% of total planned interruptions in 2021, to 50% at the start of the CPP period in 2022, and then steadily increasing to 80% by 2026. Aurora said it is developing improved interruption management systems and processes with its contractors to ensure that planned interruptions are communicated correctly and managed to plan.³¹⁶ We commend Aurora for including this expectation in its planned SAIDI forecast. Under the incentive scheme, Aurora is financially penalised for not improving its notification of interruptions and financially benefits by outperforming its forecast notification improvements. We discuss this further from paragraph C130.
- C118 Aurora's planned SAIDI forecast includes an expectation of receiving a 50% discount or "de-weighting" for planned interruptions that meet certain notification requirements, introduced in DPP3. To qualify for this beneficial incentive rate, Aurora must, among other things, directly notify all power companies at least ten working days in advance, work within a specific interruption window and not cancel planned interruptions at short notice. This is stronger criteria than Aurora's own voluntary charter commitment of providing 10 working days' notice, via the power company, and paying affected consumers \$20 when it fails to do so. Under this voluntary commitment, Aurora faces no incentive to minimise cancellations or accurately estimate, and inform consumers, of the window of time that the planned interruption will be occurring. Some submitters on our Issues Paper package raised frustration about Aurora cancelling notified planned interruptions at short notice. Certainty, and the ability to plan, is valued by consumers.
- C119 We understand Aurora notifies consumers using a range of methods and is investigating further options for planned interruption communications, including working with power companies on improved interruption update processes, improving its social media platforms, and trialling new channels (for example; text alerts, Interactive Voice Response for inbound calls to our freephone service).³¹⁷ Submissions we received on the Issues Paper package and Draft Decision suggest consumers have a range of preferences for the timing and length of planned interruptions, though there was a general consensus to avoid winter (though we note that some interruptions including planned interruptions are inevitable including in winter). There are also a range of notification preferences from consumers, including social media, text alerts, emails.

³¹⁶ Aurora Energy "Asset Management Plan - April 2020 - March 2030" (12 June 2020), p. xiv.

³¹⁷ Aurora Energy "Submission in response to the Commission's CPP Issues Paper" (20 August 2020), p. 14-15.

- C120 Aurora raised several concerns about the administration of the incentives for additional notice.³¹⁸ We consider that these concerns can be alleviated through the guidance below and so our decision on the incentives for additional notice is the same as it was for our draft decision.
- C121 The incentive for additional notice for planned interruptions is an opt-in incentive for each interruption. It is important that the decision by Aurora whether to opt-in is made and recorded when the interruption is planned so that incentives (rewards and penalties) are only applied to those interruptions that Aurora intended to be exposed to the incentives. If it was assumed that all are under the additional incentives as suggested by Aurora, then Aurora would be subject to penalties even to those interruptions it may not have intended to be under the incentives for additional notice.
- C122 Like all financial incentives, it is important that they can be calculated and audited. For this, the decision whether to opt-in needs to be clearly recorded, which we consider should be done through Aurora's internal records as well as the notifications to consumers or retailers. The notifications also provide transparency to retailers and consumers.
- C123 One of the issues that Aurora raised about additional notification is inconsistency between the requirements and the EIEP5A tool for standardised reporting of planned interruptions to retailers. We have made a minor change to the drafting of the requirements in the determination to allow the format of times to be consistent with the EIEP5A requirements (ie, 24-hour time).
- C124 We consider that provision of an appropriate URL website link in the format of the EIEP5A tool is sufficient for the requirement for providing a website link for additional information and updates.³¹⁹ We also consider that an abbreviated form of notice or a code in an EIEP5A notice is appropriate for notifying a retailers that a planned interruption will be undertaken under the additional notice incentives given the relatively small number of characters allowed in the open text fields, if the retailers have been advised of the meaning of the abbreviation or code.

³¹⁸ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), para 378-383.

³¹⁹ Commerce Commission "Aurora Energy Limited Electricity Distribution Customised Price-Quality Path Determination [2021] NZCC 3", (4)(b) of Schedule 3.1.

C125 We note that Aurora has requested further additional guidance on the notified interruption mechanism,³²⁰ which applies to EDBs under a DPP as well. We will consider providing guidance on these issues separately to the CPP decision paper as it also applies to the EDBs under a DPP.

Planned efficiency gains from improved coordination and bundled work

C126 We are encouraged to see that Aurora's forecasts also include an increasing level of planned efficiency gains for SAIFI gained from coordination of multiple pieces of work. This reflects anticipated efficiencies from more coordination and bundled work during the CPP compared to recent years, which increase over the CPP period (reaching a 15% SAIFI reduction by 2026). This contrasts to Aurora's recent renewals, which Aurora said prioritised the highest risk assets, leading to relatively low levels of coordinated work. Aurora suggested this change in practice makes planned interruption forecasting more challenging than operating in a "steady state", where forecasts based on linear regressions are better suited.³²¹

Aurora's different forecasts for planned interruptions

C127 The different forecasts of planned SAIDI and SAIFI over five-years are provided in Table C5. These are compared to the proposed five-year quality standard limit. Aurora's proposed forecasts, which include its proposed notification compliance and efficiency gains, are bolded.

Table C5 Comparison of planned interruption forecasts against proposed five-year standard

	SAIDI (minutes)	SAIFI (interruptions)
Aurora model 1	631	3.48
Aurora model 2	446	2.45
Model 1 and 2 average	539	2.97
Aurora model average with notification compliance	361	N/A
Aurora model average with efficiency gains	N/A	2.66
Verifier model	760	5.16
Verifier model with efficiency gains	N/A	4.61
Quality standard limit	980	5.54

C128 Table C5 shows that all forecasts fall within the proposed standard, suggesting that the proposed standard is expected to be achievable without constraining the

³²⁰ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), para 384.

³²¹ RFI Q018 - Reliability, service measures and quality standards (1).

planned network investment. This is consistent with Aurora's view that it expressed in its CPP proposal:

“in general, we do not have a comprehensive dataset of historic planned outage work to support a model with accurate forecasts ... our planned outage model was built in the context that it would provide a ‘guide’ to the level of planned outages required to deliver our works programme. A key objective was to test whether the DPP3 level of planned outages would be sufficient to support the work required to manage network risks. That is, in absence of an historic dataset to support a robust/accurate model we sought to test whether defaulting to a DPP3 level of planned outages would create works delivery risks. To test the sensitivity of our forecast to the modelling technique we developed a hybrid model (expenditure and volume). In addition, the Verifier tested our approach with variants on our approach. In all cases the results indicated that the work programme could be delivered within the DPP3 planned outage limit, noting that the Verifier alternative forecast was close to the DPP3 limit. We therefore concluded that the DPP3 limit provided a useful planned outage limit, protecting customers from excessive outages but also enabling Aurora to better manage safety risks on the network and to prepare the foundations for future improvements in unplanned outage performance.”³²²

C129 Aurora's reference to the Verifier's forecast being close to the limit is in reference to the three-year total because Aurora's preference was for a three-year CPP. However, the Verifier's forecast is not particularly close to the limit over a five-year CPP because Aurora's proposed level of planned interruptions is significant lower in the fourth and fifth year of the CPP, predominantly due to a much lower number of pole replacements being forecasted for those latter years. If we had accepted Aurora's proposal of a three-year CPP, we would have needed to reconsider whether its proposed quality standard for planned interruptions was achievable.

Retaining the incentive scheme for planned interruptions

C130 The revenue-linked incentive scheme for planned and unplanned interruptions is designed to provide Aurora with incentives to consider cost-quality trade-offs in its decision making. This is particularly important for planned interruptions because of the expected large number of planned interruptions and because of the quality standard for planned interruptions being set at a level that is intentionally unlikely to constrain Aurora's decision-making on planned interruptions.

³²² RFI Q018 - Reliability, service measures and quality standards (1).

C131 Our decision is to accept Aurora's proposed revenue-linked quality incentive scheme for planned interruptions, which is proposed to take the same form of incentive scheme as was set for DPP3. However, the target level proposed for SAIDI is slightly higher (at 72.16 minutes compared to 65.32 minutes).³²³ The higher target level aligns with our expectations that the level of planned interruptions will be higher than during the ten-year reference period used for setting DPP3 because of the large amount of asset replacement intended for the CPP period.

Aurora no longer supports inclusion of a revenue-linked quality incentive scheme for planned interruptions

C132 Aurora's CPP proposal includes a proposal for a revenue-linked quality incentive scheme. Aurora proposed a scheme with the same form as the scheme that we set for DPP3, but with some different parameters to take into account the specific circumstances of Aurora during the CPP period. However, Aurora also later explained in a submission on our Issues Paper package that it no longer thought that applying an incentive scheme to planned interruptions was appropriate as it may lead to a reprioritisation of safety related work and deferral of interruption intensive work.³²⁴

C133 We still consider that a revenue-linked quality incentive scheme for planned interruptions should be in place for Aurora's CPP. Despite there being some uncertainty in the level of SAIDI that will be achieved, it is valuable for consumers that Aurora has marginal incentives in place to incentivise Aurora's decision-making to consider the negative impacts interruptions have on consumers and cost-quality trade-off in the long-run. By not applying the incentive scheme to planned interruptions, we remove the financial incentive for Aurora to improve its notification of interruptions and undertake work efficiently within a specified notified window and without cancellations.

Aurora's proposed parameters for the incentive scheme for planned SAIDI

C134 In line with the revenue-linked quality incentive scheme that we set for all non-exempt Electricity lines companies for DPP3, Aurora's proposed incentive scheme only includes SAIDI, and does not include SAIFI. For planned interruptions, our decision is to accept Aurora's proposed parameters for the scheme, which are shown in Table C6 below against the parameters that were set for Aurora under DPP3.

³²³ We note that Aurora proposed a SAIDI target of 87.52 minutes, reflecting its average forecast over the 2022-2024 year period consistent with its three-year CPP proposal. The 72.16 minutes reflects Aurora's average forecast over the 2022-2026 period.

³²⁴ Aurora Energy "Submission in response to the Commission's CPP Issues Paper" (20 August 2020) at p.16.

Table C6 Proposed incentive scheme parameters for planned interruptions (annual)

	Aurora's CPP proposal	DPP3 settings
SAIDI target (revenue-neutral point)	72.16 mins	65.32 mins
SAIDI cap	195.96 mins	195.96 mins
SAIDI collar	0 mins	0 mins
Incentive rate	\$7,140 per min	\$6,578 per min

C135 Based on the proposed parameters that we have accepted in our decision, the incentive scheme for planned interruptions has a maximum level of reward of 0.57% of allowable revenue; and maximum penalty of 0.98% of allowable revenue. This differs from Aurora's proposal.

Specifications of the incentive scheme

Planned SAIDI target for incentive scheme

C136 The target for the incentive scheme is the level at which Aurora would not receive any reward or penalty. If Aurora's planned SAIDI is actually above (worse than) the target, then it would receive a penalty. If it were below the target, then Aurora would receive a reward. We consider that the target should be set at the level that we expect to be reasonably achieved in the absence of the incentive scheme so that the scheme is expected to be revenue neutral. This is consistent with providing regulated suppliers like Aurora an opportunity — but not a guarantee— of earning a 'normal return' on efficient investment.

C137 Aurora's proposed target over a five-year period is 72.16 SAIDI minutes, which represents the average of its planned SAIDI forecasts over the five years of the CPP.

C138 We commend Aurora for including its expectation of improving its notification compliance in its target. This provides Aurora with a financial incentive to improve its notification compliance and undertake work efficiently within a specified notified window and without cancellations. This is more stringent than our process for setting the targets for the DPPs because we did not take into account the prospect of the notification requirements being met. However, we consider that this is appropriate for a CPP, which has a greater level of scrutiny of such parameters. If notification de-weighting was not included, the target would be 107.72 minutes instead of 72.16 minutes.

- C139 The variation in the forecasts presented by the three modelling approaches (Aurora's two models plus the Verifier's model) highlights some risk in applying the revenue-linked quality incentive scheme to planned interruptions during the CPP. The substantial amount of network investment planned for the period makes it more difficult than usual to forecast the level of planned interruptions.
- C140 Applying the incentive scheme to planned interruptions provides Aurora with a financial incentive to reduce planned interruptions. Fewer planned interruptions may be due to efficiencies, or perversely, due to delays in the work programme at the margin, including work prioritised to remove safety risks.
- C141 There are two factors that may help mitigate the risk that Aurora delays work:
- C141.1 the possibility of deliverability reporting (requiring Aurora to track progress on its work programme); and
 - C141.2 unplanned incentives and standard contraventions (higher risk of future unplanned interruptions if planned work is delayed).
- C142 Overall, our decision is to accept Aurora's original proposal to apply the incentive scheme to planned interruptions to ensure that there is an incentive to consider the cost-quality trade-off in managing the planned interruptions for network investment projects. Further, the incentive scheme has an important role in positively influencing Aurora's notification of planned interruptions.

Cap and collar for revenue-linked quality incentive scheme for planned interruptions

- C143 Our decision is to accept Aurora's proposal for the cap and collar parameters for the revenue-linked quality incentive scheme of 195.96 SAIDI minutes and 0 SAIDI minutes respectively. This is the same as was set for the current DPP and we agree that this is still appropriate for the CPP.
- C144 The cap is set at 195.96 minutes in the DPP and in our CPP decision to be equal to the annual average of the quality standard for planned interruptions. We consider that this is appropriate because interruption levels consistently above the cap would contravene the standard and so additional penalties are not required.
- C145 The collar is set to 0 minutes in the DPP and in our CPP decision so that the marginal incentives apply to any level of interruptions below the cap. We do not consider that there is any robust reason for a higher cut-off, below which Aurora should not consider the cost-quality trade-off.

Incentive rate

- C146 Our decision is to accept Aurora's proposal for an incentive rate for planned interruptions of \$7,140 per SAIDI minute, which is higher than the DPP3 incentive rate for Aurora of \$6,578. Consistent with the DPP, a 50% de-weighting is applied to the incentive rate for planned interruptions, making it half the incentive rate for unplanned interruptions (which is \$14,279 per SAIDI minute in this decision). Aurora's proposed incentive rate is calculated with the same approach as we used for the DPP, except that it has a more targeted value of lost load. We accept Aurora's proposed higher VoLL, as explained earlier at paragraph C90.1.
- C147 We consider that a de-weighting for planned interruptions is appropriate because planned interruptions may impact consumers less, particularly if they receive reasonable notification. It is also appropriate to de-weight planned interruptions in the incentive scheme because of the importance of planned interruptions in achieving necessary network investment.

Service level commitments and compensation

- C148 In this section we discuss Aurora's commitment to provide specified levels of service to its consumers, and its compensation scheme when it does not do so. This section is structured as follows:

C148.1 Considerations given to Aurora's compensation scheme to benefit consumers.

C148.2 We see value for consumers in Aurora's compensation scheme.

Considerations given to Aurora's compensation scheme to benefit consumers

- C149 Aurora noted its CPP proposal included areas of quality beyond the quality standards and revenue-linked-quality scheme:

In addition to reliability standards, our final proposal includes retention and improvement of:

- Communication of planned and unplanned interruptions, continue to provide call centre and interruption notification service with further enhancements to real-time updates for unplanned interruptions with cause and restoration times
- New connections process, continue improvements to the process for new connections and establish service level targets
- Customer Charter credit scheme, continue compensation scheme for unmet service levels and review complaints process and compensation policy.³²⁵

³²⁵ Aurora Energy "Customised Price-Quality Path - Application" (12 June 2020), p 227.

- C150 We are encouraged by Aurora's commitment to these areas. We are proposing introducing additional information disclosure requirements that will provide transparency of whether Aurora is meeting these commitments. We have accepted the level of opex proposed by Aurora (\$231,000 per year) in its opex forecast to fund its expected level of payments to be made under its compensation scheme.
- C151 We also considered mandating compensation Aurora would be required to pay affected individuals for not meeting certain standards. This would rely on our powers under s 53M(2)(c) of the Commerce Act 1986. However, our decision is to not do so because we consider Aurora will have significant incentives in place to meet its commitments to keep and improve its compensation scheme and service level commitments. We consider that there is a significant risk that setting a compensation scheme now could limit Aurora's ability to improve the compensation scheme and respond to the consumer consultation that it intends to undertake. We consider that we have insufficient information of what consumers value, or the appropriate specifications, for such a scheme at this stage.
- C152 We propose to address the necessary improvements to Aurora's compensation scheme in the additional information disclosure requirements³²⁶, with the aim to provide transparency around performance and promote better understanding of compensation entitlements for its consumers.

We see value for consumers in Aurora's compensation scheme

- C153 Compensation schemes are appealing because they provide additional financial and reputational incentives for the electricity lines companies as well as providing some direct redress to consumers affected by poor service.
- C154 We consider that it is beneficial for consumers that Aurora has a compensation scheme in place and improves this over the course of the CPP. This is particularly because of the decrease in quality provided by Aurora to its consumers over recent years and our draft decision to set the quality standard for unplanned interruptions at a lower level than was in place under the DPP.

³²⁶ Commerce Commission "Aurora Energy Limited Proposed Additional Information Disclosure Requirements: Draft Reasons Paper", Chapter 6.

- C155 Aurora's current compensation scheme consists of:
- C155.1 any unplanned interruptions longer than four hours in urban areas and six hours in rural areas (which are not the result of transmission, weather or third-party interference) results in compensation of \$50 (residential pricing) or one month's line charge (general pricing);
 - C155.2 any planned interruptions not notified to power companies ten days prior results in compensation of \$20; and
 - C155.3 any power quality complaints that are not investigated in a reasonable timeframe results in compensation of \$50.³²⁷
- C156 In addition to the quality measures that have compensation attached to them, Aurora has committed to certain levels of service in other areas. The additional service levels committed to in the charter cover:
- C156.1 response time for phone or email enquiries;
 - C156.2 number of unplanned interruptions experienced by a consumer;
 - C156.3 time to restore service to a consumer after an unplanned interruption; and
 - C156.4 consistent voltage (within 6% of 230 volts).³²⁸
- C157 Aurora's minimum service levels and associated redress go beyond SAIDI and SAIFI and reflect actual experience faced by consumers. This may improve visibility of the actual level of service experienced by consumers and incentivise Aurora to take targeted steps to improve poor service levels that are important to consumers, such as response time to enquiries.
- C158 Aurora's CPP proposal commits to retaining and improving its consumer charter and compensation scheme and Aurora has told us it may consult consumers on its proposed charter. This may lead to an improved agreement between Aurora and its consumers on the expected levels of service that are important to consumers. We are in favour of Aurora consulting its consumers on its compensation scheme and service level commitments and expect Aurora to also take into account issues raised by stakeholders in the consultation on the CPP undertaken by Aurora and us.

³²⁷ The full detail of the compensation scheme is available in [Aurora, Aurora Customer Charter, 1 July 2017, Section 7.](#)

³²⁸ The full detail of Aurora's service level commitments is available in [Aurora, Aurora customer charter, 1 July 2017.](#)

- C159 For example, current and future consultation could lead to an extension of the scope of the compensation scheme to other areas, such as voltage stability, large number of interruptions for individual consumers, or cancellation of planned interruptions.
- C160 Additionally, we consider that reporting on the minimum service levels and compensation payments (both internal and public reporting) may be a further method of highlighting any areas Aurora can improve on. This includes commitments with no compensation attached, such as Aurora's current commitment to limit the number of interruptions for individual consumers and consistent voltage.³²⁹
- C161 We are proposing to provide additional transparency around Aurora's retention and potential improvement of its compensation scheme by requiring it to report on its scheme over the CPP period.

³²⁹ We envisage that Aurora's quality of supply commitments, such as consistent voltage would be measured by customer complaints about quality of supply and Aurora's response to those complaints (eg, upon investigation, did Aurora determine that it had not met its quality of service commitments and did it remedy that).

Attachment D Overview of capex analysis

Purpose of this attachment

D1 This attachment outlines our decisions on the capex that Aurora will be able to recover from its consumers over the CPP period.³³⁰

Summary of our final decision

D2 We have decided to accept \$327.4 million of the \$356.3 million Aurora proposed in its CPP application. We consider that \$327.4 million of capex meets the expenditure objective. A summary of our decision is provided in Table D1.

Table D1 Summary of CPP capex proposal, draft and final decision amounts, and change from draft to final decision

Capex Portfolio	Proposal (\$m)	Draft Decision (\$m)	Final Decision (\$m)	Change (\$m)
Renewals capex	\$281.8	\$269.7	\$274.2	\$4.5
Other network capex	\$29.1	\$27.0	\$27.0	\$0.0
Non-network capex	\$15.2	\$15.2	\$15.2	\$0.0
Growth and security capex	\$30.3	\$17.0	\$25.1	\$8.1
Top-down 5% efficiency adjustment	-	-\$13.5	-\$14.1	-\$0.6
Total	\$356.3	\$315.5	\$327.4	\$12.0

D3 We have decided to reject \$28.9 million of Aurora's proposed capex as we are not satisfied this expenditure meets the expenditure objective.

D4 We have changed our draft decision on several capex projects and programmes following additional information provided by Aurora, and a review of that information. We have concluded that:

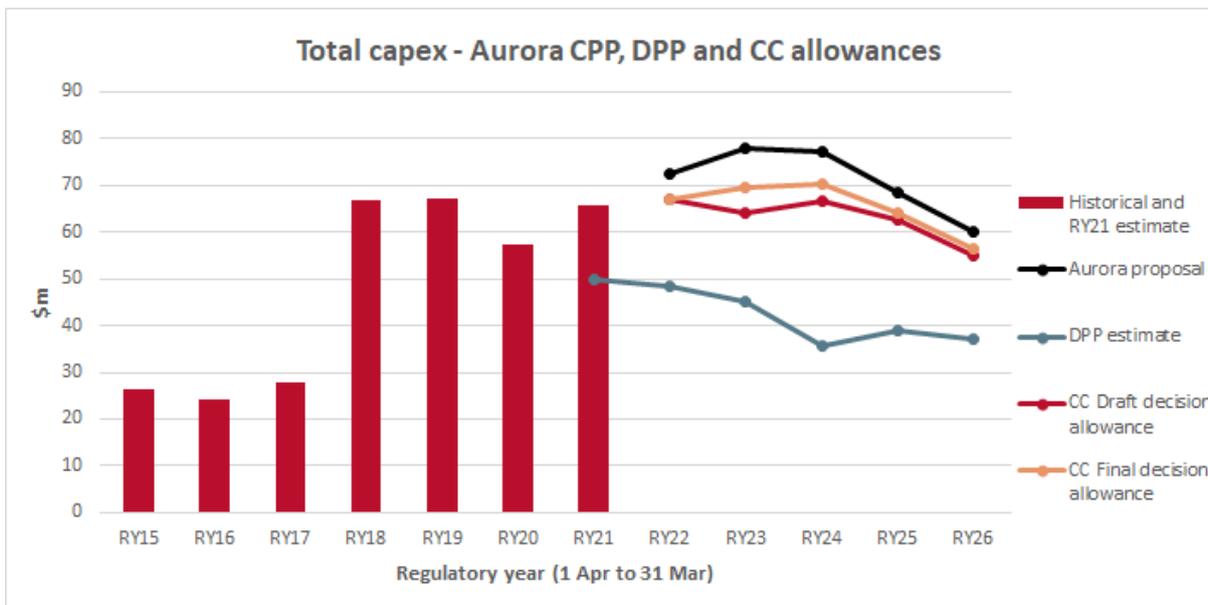
D4.1 updated demand information has confirmed the Arrowtown projects need date. These projects also contain a significant renewals driver, and given there are noted reliability concerns in the region, \$7.7 million for these projects is prudent and efficient;

³³⁰ All expenditure references in this attachment are in real \$2020 terms unless stated otherwise.

- D4.2 based on a reconsideration of fault rate data and condition information deferral of sub-transmission cable expenditure by one year is not prudent and efficient so we have included this expenditure in the capex allowance;
- D4.3 our draft decision recommendation that Aurora bring forward \$0.2 million of RTU expenditure into RY21 was not reasonable because the RY21 work programme cannot be reasonably modified by Aurora; and
- D4.4 we have retained the 5% top-down efficiency adjustment we made in our draft decision.

D5 Figure D1 illustrates the final decision capex allowance over the CPP period (RY22- RY26) compared with the estimated DPP allowances, capex between RY15 and RY21, and Aurora’s CPP proposal.

Figure D1 Capex proposal and final decision allowance compared with DPP allowance estimates and historical expenditure



Structure of this attachment

- D6 This attachment contains our analysis and decisions following our review of Aurora’s CPP capex proposal.
- D7 This attachment contains the following:
 - D7.1 **Summary of our capex assessment** – we summarise our decision and discuss the Verifier’s key findings, key recommendations from Strata, and provide a short summary of expenditure where we have proposed reductions.

- D7.2 **The review framework of Aurora's capex proposal** – we summarise how we went about reviewing the CPP proposal including our Issues Paper and draft decision consultation steps. We also discuss the review framework we must follow in reaching our conclusions, how the Verifier carried out its assessment, and how we tested that assessment.
- D7.3 **Key areas of investigation following the draft decision** – we summarise the key issues raised in draft decision submissions that were relevant to the expenditure decisions we have made.
- D7.4 **Analysis of capex programmes and projects** – we provide an in-depth analysis of the various capex projects and programmes and how we reached our expenditure decisions.

Summary of our capex assessment

- D8 We have adopted a thorough analysis approach in determining appropriate capex allowances for Aurora over the CPP period. This analysis has included:
 - D8.1 Reviewing Aurora's proposal and the verification report to identify the key issues for us to consider, including issues highlighted for our attention by the Verifier.
 - D8.2 Assessing the extent to which we could rely on the analysis and conclusions of the Verifier. This included a two-day workshop with the Verifier to probe the approach and conclusions of the verification process, and to discuss the issues identified by the Verifier and ourselves.
 - D8.3 Engaging our engineering consultants Strata to assist us in investigating, to varying degrees of scrutiny, the 34% of the capex programme that the Verifier did not review.
 - D8.4 Publishing an Issues Paper and our draft decisions that provided an opportunity for interested persons to express their views on Aurora's proposed capex and the Verifier's conclusions.
 - D8.5 Posing additional questions to Aurora about material issues with its proposal and questions arising out of the Strata analysis. In these questions and discussions, we particularly focussed on understanding some aspects of Aurora's renewals programme modelling and assumptions, and demand assumptions for the growth and security projects.
 - D8.6 Deciding on the appropriate levels of capex to be included in Aurora's proposed price path.
- D9 The specific analysis we have undertaken for each category of Aurora's proposed capex is explained in detail in the Project and Programme analysis section which includes how we have addressed relevant information from draft decision submissions.

- D10 The Verifier reviewed 11 projects and programmes in the capex portfolio out of a total of 37, with one of the Growth and Security projects being subsequently withdrawn by Aurora in its application.
- D11 The Verifier applied materiality criteria to choose its project and programme selections which resulted in it reviewing 66% of the total capex programme.
- D12 The high-level conclusions made by the Verifier included that:
- D12.1 Aurora's asset management practices are on a path to improvement; there is generally a lack of asset condition data and data systems in place;
 - D12.2 Aurora's policies, procedures, and planning standards are generally not well-developed, and the proposal has heavily relied on the AMP and staff experience to develop expenditure forecasts;
 - D12.3 models used to support some expenditure forecasts are not inappropriate and consistent with industry practice, although these will tend to over-forecast investment need;
 - D12.4 methods to levelise work appear reasonable with criticality analysis being used to prioritise some work programmes;
 - D12.5 Aurora's development in its Field Services Agreements (FSAs) and procurement strategy is appropriate and should result in efficiencies over the CPP period;
 - D12.6 COVID-19 effects have been incorporated although there was demand uncertainty with some Growth and Security projects and consumer connections;
 - D12.7 Aurora should develop more mature project cost estimation processes by improving the accuracy of its unit rate and building block processes;
 - D12.8 while Aurora's stated aim is to invest to remove safety exposures it was unable to demonstrate the safety risk/mitigation cost trade-offs and express an understanding of post-investment residual safety risk; and
 - D12.9 Aurora has not included factors in its models to account fully for potential efficiencies gained during the CPP.
- D13 The Verifier concluded that \$3.3m of poles expenditure was unverified, and that \$7.5 million of Growth and Security and consumer connection capex could be considered contingent (\$5.4 million for the Arrowsmith 33 kV ring upgrade and \$2.1 million of consumer connection capex associated with the upgrade for a tourism related connection).

- D14 Subsequent to the CPP proposal being submitted the Verifier commented to us that a large proportion of project and programme documentation, expenditure justifications and modelling had to be produced on request during the verification process. This meant we were less confident of accepting the unreviewed capex without some level of scrutiny.
- D15 Additionally, due to the lack of asset management maturity, poor data and asset condition information, we decided, with varying degrees of scrutiny, to review the remaining 34% of the capex projects and programmes, rather than just accept this for approval.
- D16 We utilised the November 2018 WSP report throughout our capex renewals programme analysis because this is the most comprehensive recent reporting on the state of Aurora's network. The WSP report provided significant insight into the actual and forecast safety issues in Aurora's network from a bottom-up asset class perspective.
- D17 As part of our investigation we sought additional information from Aurora using a formal Request for Information (RFI) process and Aurora provided most information we sought.
- D18 We engaged Strata to help us review the majority of the 34% unreviewed capex and agreed with many of Strata's recommendations. Following our draft decision, and after a review of draft decision submissions, including additional supporting information from Aurora, our decision is to reduce the proposed capex in the following areas:
- D18.1 the Smith St – Willowbank intertie CBD cable project, should be deferred pending Aurora developing an integrated CBD cable strategic plan for Dunedin;
 - D18.2 adjustments have been made due to some of Aurora's repex modelling assumptions which have likely over-forecast investment need; and
 - D18.3 the pole to ground distribution transformer replacement programme needed to be supported by a business case. Some expenditure is assumed to be deferred until this is carried out.
- D19 We have also applied a 5% top-down efficiency adjustment to reflect expected improvements in Aurora's business improvements which is consistent with an adjustment Aurora had applied in its expenditure forecast modelling in two renewals capex programmes. We could find no credible reason why Aurora's proposed adjustment with respect to capex programme efficiencies were applied to only two capex programmes.

- D20 We have included submitter feedback where appropriate throughout this attachment. This feedback has been gathered from Issues Paper submissions, feedback from the stakeholder engagement sessions in August, and submissions on our draft decision.
- D21 Table D2 summarises the capex proposed amounts, unverified amounts and the reductions following our analysis by capex project and programme, including the proposed 5% top-down efficiency adjustment. The main capex reductions in our decision are:
- D21.1 \$3.3 million of unverified poles capex because pole reinforcement may be viable economically from RY24;
 - D21.2 \$2.5 million in distribution and LV cables, pole-mounted switches, pole-mounted fuses, and distribution transformer capex due to a modification of Aurora's repex modelling assumptions;
 - D21.3 \$5.2 million of growth and security capex due to the need for Aurora to support the change in Dunedin CBD 33 kV cable architecture with a business case;
 - D21.4 \$1.7 million deferral of pole mounted distribution transformer capex to reflect change in strategy requiring a business case;
 - D21.5 \$2.1 million of consumer connection capex due to demand uncertainty;
 - D21.6 \$14.1 million based on a 5% top-down efficiency adjustment to reflect improved asset management systems and business processes.

Table D2 Capex project and programme approval amounts (5-year step change refers to the previous 5-year period)

CAPEX	RY22-RY26 \$m	% of total capex	Previous 5-year total \$m	5-year step change %	Verified \$m	CC/Strata review \$m	Post analysis (\$m)	5% Eff adjustment	Our decision (\$m)
RENEWALS									
Poles	\$47.9	13%	\$104.9	-54%	\$44.6	-	\$44.6	\$2.2	\$42.3
Crossarms	\$38.3	11%	\$4.8	698%	\$38.3	-	\$38.3	-	\$38.3
OH Subtransmission conductor	\$16.3	5%	\$7.7	111%	-	-	\$16.3	\$0.8	\$15.4
OH Distribution conductor	\$28.1	8%	\$8.4	236%	\$28.1	-	\$28.1	\$1.4	\$26.7
OH Low voltage conductor	\$19.6	6%	\$0.3	7684%	\$19.6	-	\$19.6	\$1.0	\$18.6
Subtransmission cables	\$12.1	3%	\$6.6	83%	-	\$12.1	\$12.1	\$0.6	\$11.5
Distribution cables	\$9.4	3%	\$2.8	237%	-	\$8.5	\$8.5	\$0.4	\$8.1
Low voltage cables	\$2.8	1%	\$1.6	78%	-	\$1.5	\$1.5	\$0.1	\$1.4
Ground mounted switchgear	\$14.5	4%	\$4.7	206%	-	\$14.5	\$14.5	\$0.7	\$13.7
Pole mounted switches	\$2.8	1%	\$0.7	305%	-	\$2.7	\$2.7	\$0.1	\$2.6
Low voltage enclosures	\$9.0	3%	\$2.0	354%	\$9.0	-	\$9.0	-	\$9.0
Ancillary distribution substation equipment	\$5.3	1%	\$1.6	223%	-	\$5.3	\$5.3	\$0.3	\$5.1
Ground mounted distribution transformers	\$1.7	<1%	\$1.3	26%	-	\$1.7	\$1.7	\$0.1	\$1.6
Pole mounted distribution transformers	\$16.7	5%	\$3.0	448%	-	\$14.9	\$14.9	\$0.7	\$14.2
Protection	\$9.3	3%	\$6.6	41%	\$9.3	-	\$9.3	\$0.5	\$8.8
DC systems	\$3.8	1%	\$1.2	233%	-	\$3.8	\$3.8	\$0.2	\$3.6
Remote terminal units	\$1.0	<1%	\$12.3	-92%	-	\$1.0	\$1.0	\$0.1	\$1.0
Pole mounted fuses	\$1.4	<1%	\$1.5	-13%	-	\$1.1	\$1.1	\$0.1	\$1.0
Zone substations (ZSS)	\$41.9	12%	\$26.3	59%	\$41.9	-	\$41.9	\$2.1	\$39.9
OTHER NETWORK CAPEX									
Consumer connection (net)	\$22.6	6%	\$32.2	-30%	\$22.6	\$20.5	\$20.5	\$1.0	\$19.4
Asset relocations (net)	\$3.8	1%	\$5.1	-25%	-	\$3.8	\$3.8	\$0.2	\$3.6
Reliability Safety and Environment	\$1.4	<1%	\$7.0	-81%	-	\$1.4	\$1.4	\$0.1	\$1.3
Future Networks	\$1.4	<1%	\$0.2	478%	-	\$1.4	\$1.4	\$0.1	\$1.3
NON-NETWORK CAPEX									
IT Capex	\$12.2	3%	\$8.6	43%	\$12.2	-	\$12.2	-	\$12.2
Facilities	\$2.9	1%	\$2.9	3%	-	\$2.9	\$2.9	\$0.1	\$2.8
GROWTH and SECURITY									
Arrowtown 33kV Ring Upgrade	\$5.4	2%	\$0.6	-	\$5.4	\$5.4	\$5.4	\$0.3	\$5.2
Arrowtown Zone Substation 33kV Indoor Switchboard	\$2.6	1%	\$0.0	-	-	\$2.6	\$2.6	\$0.1	\$2.5
Omakau New Zone Substation	\$3.0	1%	\$0.1	-	-	\$3.0	\$3.0	\$0.2	\$2.9
Distribution and LV Reinforcement	\$14.0	4%	\$9.7	-	-	\$14.0	\$14.0	\$0.7	\$13.3
Smith Street to Willowbank Inter-tie	\$5.2	1%	\$0.5	-	-	-	-	-	-
TOTAL CAPEX	\$356.3				\$231.0	\$122.2	\$341.5	\$14.1	\$327.4

The review framework of Aurora's capex proposal

D22 This section explains how we reviewed Aurora's capex including the evaluation criteria, the Verifier's work and our review of the Verifier's work.

CPP evaluation criteria

D23 The criteria that we must use to evaluate a CPP are set out in electricity lines company input methodologies.³³¹ These criteria are intended to ensure that our determination of a CPP meets the long-term benefit of consumers.

Evaluation criteria for customised price-quality path proposals

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

- a) whether the proposal is consistent with the input methodologies;
- b) the extent to which the proposal promotes the purpose of Part 4 of the Act;
- c) whether data, analysis, and assumptions underpinning the proposal are fit for the purpose of determining a CPP;
- d) whether the proposed capital and operating expenditure meet the expenditure objective;
- e) the extent to which any proposed changes to quality standards reflect what the applicant can realistically achieve taking into account statistical analysis of past SAIDI and SAIFI performance; and/or (ii) the level of investment provided for in proposed; and
- f) the extent to which the CPP applicant has consulted with consumers on its CPP proposal; and the proposal is supported by consumers, where relevant.

D24 Of the evaluation criteria, Criteria d) is the most relevant to assessing capex.

D25 Whether Criteria c) data and assumptions are fit for purpose, and Criteria f) consumer consultation will also sometimes be relevant, and it is noted in this attachment where this is the case.

³³¹ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), clause 5.2.

Whether the proposed capital expenditure reflects the expenditure objective

- D26 The expenditure objective requires us to assess Aurora's proposed capital expenditure to determine whether it reflects the efficient costs that a prudent supplier subject to price-quality regulation would require to:
- D26.1 meet or manage the expected demand for electricity distribution services, at appropriate service standards, during the customised price-quality path regulatory period and over the longer term; and
 - D26.2 comply with applicable regulatory obligations associated with those services.³³²
- D27 The assessment of forecast expenditure is not a mechanistic process – it necessarily involves the exercise of judgement supported by expert advice. We consider that a ‘prudent supplier’ is a supplier whose planning and performance standards reflect good electricity industry practice (GEIP), and we note that the Verifier took this approach.³³³
- D28 We assess the prudence and efficiency of expenditure over regulatory periods and over the longer term. As such, in this review our assessment of Aurora’s forecast expenditure focusses on the CPP regulatory period, but also considers longer term impacts.

The Verifier selection of identified programmes for review

- D29 The IMs require that for purposes of the capital and operating expenditure reviews set out in Schedule G5(1)(d) and G6(1)(g), the Verifier must select no more than 20 projects and programmes. These are called the Identified Programmes.³³⁴
- D30 In selecting the identified programmes, the Verifier must consider:³³⁵
- D30.1 the long-term interests of consumers;
 - D30.2 our ability to effectively review the capex and opex forecasts against the expenditure objective;
 - D30.3 the rationale for the CPP;

³³² [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), clause 1.1.4.

³³³ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), p. 25-26.

³³⁴ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Schedule G4(1).

³³⁵ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Schedule G4(2) and G4(3).

- D30.4 whether the identified programmes selected are enough to provide an opinion on whether the proposal is prepared in accordance with the applicant's planning standards and policies, at an aggregate level, and for each of the capex and opex categories;
- D30.5 the materiality of the programmes and projects in the CPP proposal; and
- D30.6 address the key risks the applicant is exposed to, a key driver of the need to submit the proposal, or any obligation that has a significant impact on the applicant's business.
- D31 The selection methodology the Verifier used to choose the identified programmes is set out in Appendix C of the Verification report. The Verifier qualified its identified programme selections against the criteria set out in Schedule G4(2) and G4(3) stating that:
- D31.1 it was restricted to a maximum of 20 projects and programmes out of a total of 47 so its review of the full capex portfolio especially was limited;
- D31.2 safety was a key driver for much of the proposal, so it was important to focus on those fleets that were directly relevant to safety such as the poles, crossarms, conductors, protection, LV enclosures and zone substation equipment;
- D31.3 the major growth projects only contribute 5% to the combined total capex and opex expenditure over the CPP period so the two largest growth capex projects were selected;
- D31.4 Aurora's move from a reactive to preventative maintenance approach indicated that these programmes should be reviewed along with vegetation management opex; and
- D31.5 Aurora was proposing a significant uplift in systems and staff to improve its asset management, so programmes such as ICT capex, SONS opex and people costs were reviewed.
- D32 Following its identified programme selection process, the Verifier reviewed the following capex projects and programmes:³³⁶
- D32.1 poles (\$47.9 million);
- D32.2 crossarms (\$38.3 million);
- D32.3 overhead distribution conductors (\$28.1 million);

³³⁶ The Verifier also reviewed the Riverbank zone substation upgrade project, but this was withdrawn from the CPP proposal by Aurora and deferred until RY27.

- D32.4 overhead low-voltage conductors (\$19.6 million);
 - D32.5 low-voltage enclosures (\$9.0 million);
 - D32.6 protection (\$9.3 million);
 - D32.7 zone substations, which included transformers, indoor and outdoor switchgear (\$41.9 million);
 - D32.8 consumer connection capex (\$22.6 million);
 - D32.9 IT capex (\$12.2 million); and
 - D32.10 Arrowtown 33 kV ring upgrade (\$5.4 million).
- D33 Given the 20 identified project and programme restrictions in our IMs, the Verifier only reviewed 66% of the capex portfolio and 91% of the opex portfolio.
- D34 One submitter considered that, given the Verifier’s limited review of the capex programme and conclusion that only 63% of total capex met the expenditure objective, it was not confident in the extent of the review.³³⁷
- D35 In its draft decision submission TLC noted that the Verifier’s findings should be relied on unless there were “exceptional circumstances to deviate”.³³⁸ We note that in our review of the capex projects and programmes we followed the Verifier’s recommendations and only reviewed the 34% of the capex portfolio that the Verifier had not reviewed.
- D36 Following submission of the CPP proposal we considered that, for a variety of reasons, the remaining projects and programmes in the capex proposal (34% of the total capex) needed to be reviewed to some extent rather than just accept this project and programme expenditure as meeting the expenditure objective. These reasons included that:³³⁹
- D36.1 at the time the CPP was submitted Aurora was at a low level of asset management maturity, had poor asset data systems and limited understanding of the condition of its assets;

³³⁷ [1-50 "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\).](#)

³³⁸ [The Lines Company – Submission on draft decision for Aurora's CPP – 18 December 2020.](#)

³³⁹ In our consideration of the Powerco CPP proposal in 2017, only 11% of the capex proposal remained unverified (a combination of reviewed capex not meeting the expenditure objective and unreviewed capex) mainly because Powerco definition of its capex programmes allowed greater Verifier review coverage.

D36.2 the material price impact this CPP will have on Aurora's customers and the significant consumer concerns about this meant a greater level of scrutiny was warranted; and

D36.3 the Verifier's comment that during the verification process a large proportion of Aurora's project and programme documentation, expenditure justifications and modelling had to be produced on request so there was likely be value in scrutinising the remaining unreviewed capex.

D37 For these reasons we decided to test the remaining unreviewed capex in the proposal, which amounted to 34% (\$122.3 million) of the total capex portfolio.

We tested the Verifier report against the requirements of Schedule G – Terms of Reference for verifiers when we reviewed the proposed capex programme

D38 We relied on many aspects of the Verifier's findings in reaching our decisions about whether expenditure in the capex programme has met the expenditure objective.

D39 The Verifier's report contained a comprehensive assessment of each of the 10 capex projects and programmes (identified programmes), and the Verifier's views of compliance with Schedule G requirements were consolidated within its written review material.^{340,341}

D40 We carried out a review of the Verifier's report to test the verification findings against the clause by clause requirements of Schedule G, where this was relevant to the Identified Programmes.

D41 We tested the verification report in a top-down bottom-up manner. The top-down review focussed on those aspects of the Schedule G requirements that affect all aspects of the capex forecast in a CPP proposal, such as the policies and planning standards used by Aurora and the approach to prioritisation, demand forecasts, cost estimation methods including contingencies, procurement efficiency and deliverability.

D42 The bottom-up review focussed on, at an individual project and programme level for each of the verified identified programmes, whether the top-down frameworks had been applied in practice. Accordingly, the bottom-up review includes additional project and programme specific requirements such as replacement modelling and model inputs, forecast reasonableness testing and expenditure relationships with opex and other capex projects.

³⁴⁰ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Schedule G – Terms of Reference for Verifier's.

³⁴¹ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Appendix B.4 p.149.

- D43 In our top-down review of the Verifier's report we tested to what extent the Verifier had:
- D43.1 provided an opinion on whether the policies and planning standards relied upon by Aurora were of a nature and quality required for the capex forecast to meet the expenditure objective;³⁴²
 - D43.2 provided an opinion on whether the capex forecasts were prepared in accordance with the policies and planning standards at an aggregate level and for each capex category;³⁴³
 - D43.3 provided an opinion on the reasonableness of the key assumptions relied on by the CPP applicant, how these were developed and applied and their impact on the actual and forecast capex;³⁴⁴
 - D43.4 provided an opinion on the approach used to prioritise capex projects over time including the application of that approach for the next period;³⁴⁵
 - D43.5 reported findings on the project and programme capital costing methodology and formulation, including unit rate sources, the method used to test the efficiency of unit rates and the level of contingencies included for projects;³⁴⁶
 - D43.6 reported conclusions on cost control and delivery performance for actual capex, including overall deliverability of work covered by the capex categories in the next period;³⁴⁷
 - D43.7 reported conclusions on the efficiency of the proposed approach to procurement;³⁴⁸
 - D43.8 tested whether the forecast of capital contributions was reasonable and consistent with other aspects of the CPP proposal, in particular, the capex

³⁴² [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), s G5(1)(a)(i) and (ii).

³⁴³ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), s G5(1)(b).

³⁴⁴ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G5(1)(a)(iii) and G5(1)(c).

³⁴⁵ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G5(1)(d)(iv).

³⁴⁶ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G5(1)(d)(v).

³⁴⁷ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G5(1)(d)(viii) and G5(1)(e).

³⁴⁸ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G5(1)(d)(ix).

forecast, and the forecast demand data provided in accordance with clause D6;³⁴⁹

- D43.9 provided an opinion on whether the key assumptions, key input data and forecasting methods used in determining demand forecasts were reasonable; and whether it was appropriate to use the demand forecasts resulting from these methods and assumptions to determine the capex forecast;³⁵⁰
- D43.10 provided an opinion as to the key assumptions, input data and forecasting methods used in determining demand forecasts were reasonable; and whether it was appropriate to use these to determine the capex and opex forecasts;³⁵¹
- D43.11 used several assessment techniques to test the CPP proposal material and explain why particular techniques were used and why others were not;³⁵²
- D43.12 listed the information that was relied on in the verification process;³⁵³
- D43.13 identified information that was omitted or incomplete and the impact this had on the Verifier's review;³⁵⁴
- D43.14 identified what additional information may be necessary to complete the review of the proposal;³⁵⁵
- D43.15 explained why it has selected the identified programmes in accordance with clause G4(1);³⁵⁶

³⁴⁹ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G7.

³⁵⁰ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G8(1).

³⁵¹ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G8.

³⁵² [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G9(1) and G9(2).

³⁵³ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G11(a).

³⁵⁴ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G11(b) and (d).

³⁵⁵ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G11(c).

³⁵⁶ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G11(e).

- D43.16 provided a list of key issues that it considers we should focus on and specified information that would assist us in our assessment of the proposal;³⁵⁷ and
- D43.17 identified any other information held by the CPP applicant that would assist us in our assessment of the proposal.³⁵⁸
- D44 Finally, the Verifier in its review must conclude with an opinion on whether the capex portfolio meets the expenditure objective.³⁵⁹ If not, it must identify:
- D44.1 if further information was required and, if so, what type of information is required;
- D44.2 which of the forecast capex programmes might warrant further investigation by us; and
- D44.3 what type of assessment might be most effective.
- D45 In our bottom-up review of the Verifier's report we scrutinised several of the Identified Projects and Programmes and tested to what extent the Verifier had:
- D45.1 tested that the policies and planning standards were applied appropriately, and if policies regarding the need for, and prioritisation of, the project or programme were reasonable and had been applied appropriately;³⁶⁰
- D45.2 tested the process undertaken by the CPP applicant to determine the reasonableness and cost-effectiveness of the chosen solution, including the use of cost-benefit analyses to target efficient solutions;³⁶¹
- D45.3 provided an opinion on the approach used to prioritise capex projects over time including the application of that approach for the next period;³⁶²

³⁵⁷ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G12(a) and (b).

³⁵⁸ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G12(c).

³⁵⁹ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G5(2).

³⁶⁰ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G5(1)(d)(i) and G5(1)(d)(ii).

³⁶¹ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G5(1)(d)(iii).

³⁶² [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G5(1)(d)(iv).

- D45.4 tested the impact on other cost categories including the relationship with opex, and links with other projects;³⁶³
- D45.5 identified if the project or programme should be included as a contingent project or part of a contingent project;³⁶⁴
- D45.6 provided an opinion as to overall deliverability of work covered by the capex categories in the next period;³⁶⁵ and
- D45.7 provided an opinion on the reasonableness and adequacy of any asset replacement models used to prepare the capex forecast including an assessment of the inputs used within the model, and the methods the CPP applicant used to check the reasonableness of the forecasts and related expenditure.³⁶⁶

We consider the Verifier's capex review findings are robust

- D46 Following Aurora's submission of its CPP proposal on 12 June 2020, we critically reviewed the verification report and the techniques and methods the Verifier had used to test Aurora's proposal against the requirements of Schedule G. This review included a two-day workshop with the Verifier on 25-26 June 2020 to test the Verifier's findings and to seek clarification of report material.
- D47 We are pleased with the rigour of the Verifier's analysis of Aurora's capex programme and consider its review to be thorough and undertaken to a high standard. The Verifier identified several areas for us to investigate and also made some key observations which we have summarised in our bottom-up capex project and programme review in this attachment.

Key areas of investigation following the draft decision that support the final decision

- D48 We received numerous draft decision submissions that commented generally about our capex draft decision and Aurora's asset management. Many of these did not necessarily provide information that required us to carry out additional analysis that would result in a reconsideration of the draft decision allowances.

³⁶³ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G5(1)(d)(vi) and G5(1)(d)(vii).

³⁶⁴ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G5(1)(d)(x).

³⁶⁵ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G5(1)(e).

³⁶⁶ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Section G5(1)(f).

- D49 Submitters provided comment about Aurora’s work practices, network build costs, lack of competition, resource planning issues and work delivery efficiency.³⁶⁷ We are intending to address many of these concerns using our targeted Information Disclosure requirements where Aurora will be required to disclose on a range of new measures. These measures are intended to demonstrate its improvements in these and in other areas.³⁶⁸
- D50 One submitter, Richard Healey, commented that Aurora does not have adequate data on the condition of its assets or the processes to gather and analyse that data, and infers Aurora’s forecasts may be flawed as a consequence.³⁶⁹ As we have demonstrated in our review of Aurora’s CPP proposal projects and programmes, this may be true in some asset classes, but in others Aurora has very good understanding of its asset condition (eg zone substations) or understands the specific asset condition issues (eg sub-transmission overhead conductor). In other programmes Aurora has used repex modelling where it does not have asset condition data, and this is the first step in developing asset health-based survivor curve models. We have discussed forecasting model maturity where appropriate in our project and programme analysis section.
- D51 Another submitter, Trevor Tinworth, noted that there are well documented safety failings on Aurora’s network and that the CPP should be declined until these are resolved and that by allowing a degradation in reliability, we are logically allowing a degradation in safety.³⁷⁰

³⁶⁷ [Richard Healey – Submission on draft decision for Aurora's CPP – 17 December 2020](#) pages 5-11, [John Rowley – Submission on draft decision for Aurora's CPP – 27 November 2020](#), [Steve Tilleyshort – Submission on the draft decision for Aurora's CPP – 16 December 2020](#) page 2, [CC0005 – Submission on draft decision for Aurora's CPP – 12 November 2020](#), [CC0050 – Submission on draft decision for Aurora's CPP – 7 December 2020](#) and [CC0023 – Submission on draft decision for Aurora's CPP – 29 November 2020](#).

³⁶⁸ These are set out in our draft Information Disclosure requirements for Aurora which are published at the same time as this final decision.

³⁶⁹ [Richard Healey – Submission on draft decision for Aurora's CPP – 17 December 2020](#) pages 2-3.

³⁷⁰ [Trevor Tinworth – Submission on draft decision for Aurora's CPP – 17 December 2020](#) page 2.

- D52 However, Northpower’s submission noted that “network operators and regulators should take a cautious and prudent approach to future network investment. Given the implications for public and worker safety – we should work hard to avoid an environment where underinvestment is tolerated or is an unintended outcome of regulatory processes”. Northpower and others considered that Aurora’s CPP is necessary to correct historical asset management practices.³⁷¹ We agree with this view and note that Aurora has made significant progress in resolving many of the safety issues identified by WSP in its review of Aurora’s network in 2018.
- D53 Submitter Stephen France, who provided significant draft decision submission material about Aurora’s proposed sub-transmission overhead conductor line rationalisation project, commented that the majority of specific cost components had not been afforded the same level of scrutiny and that “at best a broad overview rather than a finer grained technical analysis of the risk, costs and benefits of each individual proposal, as should be the case for this level of CAPEX”.³⁷²
- D54 Because the Verifier only reviewed 66% of the capex portfolio, we engaged Strata to assist us, to varying degrees of scrutiny, to review the remaining 34% mainly because Aurora’s asset management practices were at a low level of maturity. In its draft decision submission Grey Power NZ Federation stated that it fully supported our approach but was concerned we did not review some capex.³⁷³
- D55 The review process we have taken is in line the Verifier’s own process which is to carry out a top-down assessment of business policies, procedures and planning standards, and then use a selected bottom-up test of projects and programmes to see if those policies procedures and planning standards have been applied in practice. It is infeasible to carry out in-depth scrutiny of every project and programme, but this process is designed to identify gaps in Aurora’s planning and forecasting but also to give consumers confidence that the CPP has been rigorously tested by us.
- D56 One draft decision submitter commented that there were “no public benchmarking exercises of cost metrics preventing clarity of the valuation results. This reduces accountability and clarity of the outcomes of the methodology employed”.³⁷⁴ It is true that there is no industry wide publication of electricity sector costs for assets and associated asset installation costs.

³⁷¹ [Northpower - Cross submission on draft decision for Aurora's CPP - 18 January 2021](#) page 1, [Terry Wilson - Cross submission on draft decision for Aurora's CPP - 18 January 20201](#).

³⁷² [Stephen France - Cross submission on draft decision for Aurora's CPP - 17 January 2021](#).

³⁷³ [Grey Power NZ Federation – Submission on draft decision for Aurora's CPP – 14 December 2020](#) para 7.1.

³⁷⁴ [James Dicey – Submission on draft decision for Aurora's CPP – 18 December 2020](#) page 3.

- D57 However, we note that in preparing its CPP, Aurora sought external expert advice about its estimates for asset, asset installation and associated labour costs. This review by Jacobs demonstrated that, in many cases, Aurora costs estimates compared favourably with recent industry average costs. Additionally, one of our new Information Disclosure requirements will require Aurora to report on how it is improving its cost estimation processes and updating its estimation database regularly based on current industry prices.³⁷⁵
- D58 Many submissions did trigger further analyses that assisted us in forming our views that have supported this decision and we have noted these where this is the case.
- D59 Substantive submission material and additional information, that has resulted in us reconsidering aspects of the draft decision and carrying out additional further investigations is discussed in each relevant project and programme review section. We have also provided clarifications about key aspects of the capex draft decision to support the reasoning in this decision
- D60 The additional topic areas we have investigated further following draft decision submissions include the:
- D60.1 Arrowtown growth and security projects;
 - D60.2 Smith St – Willowbank cable intertie project;
 - D60.3 Strata conclusions surrounding the repex modelling assumptions related to some renewal's programmes, and some conclusions that Strata made in general, in support of our draft decision;
 - D60.4 key assumptions supporting the deferral of sub-transmission cable expenditure; and
 - D60.5 the basis of the capex project and programme 5% top-down efficiency adjustment we made in our draft decision.
- D61 The remainder of this attachment summarises our analysis and review of the CPP capex proposal projects and programmes.

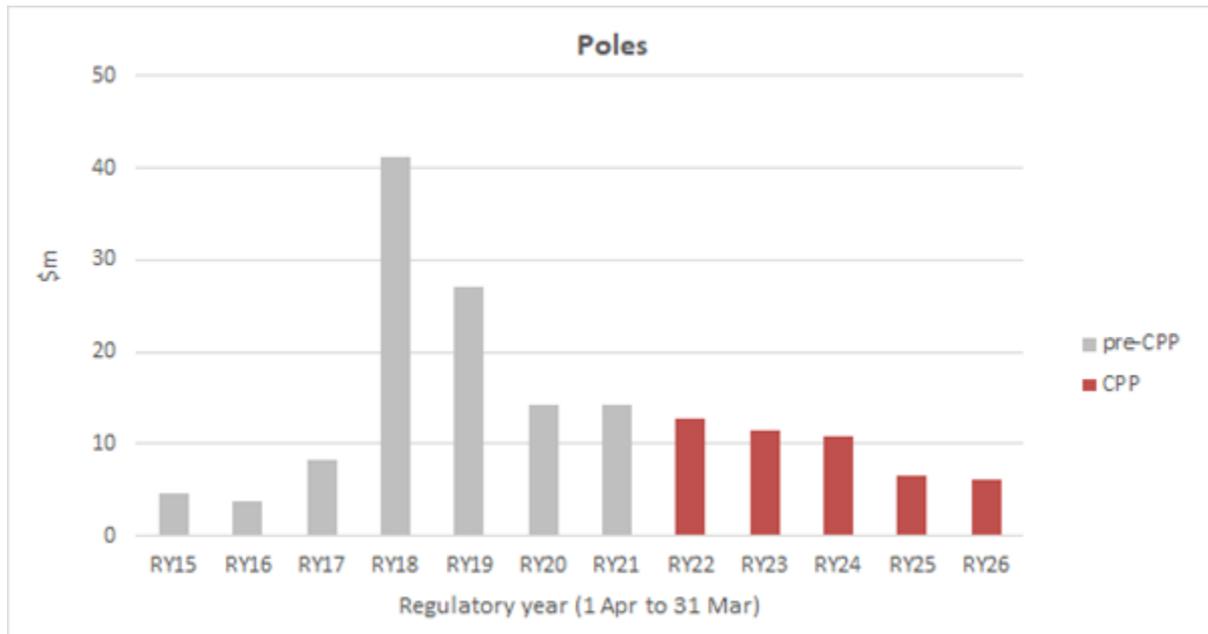
³⁷⁵ These are set out in our draft Information Disclosure requirements for Aurora which are published at the same time as this final decision.

Analysis of capex programmes and projects

Poles renewals

D62 Aurora proposed to invest \$47.9 million over the CPP period (see Figure D2) in its pole replacement and renewals programme. Aurora considers that this expenditure is necessary to address a prolonged period of under-investment in this asset class.

Figure D2 Pole renewals capex between RY15 and RY26



D63 Prior to the CPP application the WSP network review identified that while the pole replacement programme had slowed declining performance that started in 2013, the pole fleet in general was still in poor condition and that there was still an elevated level of safety risk.³⁷⁶

D64 WSP identified that between 2015 and 2018 there was a total of 88 public hazard incidents relating to pole failures in Aurora's network, with 6 of these classed as serious hazards.³⁷⁷

³⁷⁶ [WSP "Independent review of electricity networks - Final report - Aurora Energy" \(21 November 2018\)](#), Report Executive Summary.

³⁷⁷ [WSP "Independent review of electricity networks - Final report - Aurora Energy" \(21 November 2018\)](#), Table 7.2 p.48. WSP classified serious hazards as those where "there was an elevated risk to the public such as conductors remaining live on the ground or starting a fire (protection failed to trip or was delayed) or poles falling on roads or footpaths".

D65 Aurora state in its application that 20% of the pole fleet (about 12,000) has been replaced or reinforced since 2017 and that pole inspections have risen to about 1,000 poles a month to address safety concerns. However, since the pole inspection and testing programme was initiated, it has identified end-of-life poles at a faster rate than it has been able to remediate.

Verifier review

D66 In its review the Verifier identified that forecast replacement volumes were determined using survivor curve modelling informed by known pole replacement issues following the inspections programme. At the time of the CPP application submission, Aurora state that it had a backlog of 2,100 poles that required intervention.³⁷⁸

D67 Aurora's unit rates are based on recent historical costs, that reflect the costs of actual pole replacements undertaken since the Field Service Agreements (FSAs) were established in RY19.

D68 The Verifier concluded that Aurora's forecast volume modelling approach using asset age-based survivor curve analysis with intervention prioritisation using a network risk framework was a reasonable one, and that Aurora had satisfactorily established the need for the pole renewals in order to complete the current backlog of replacements.

D69 The Verifier also concluded that, while the Aurora forecast modelling approach would tend to over-forecast replacement volumes, the timing of the investment need was consistent with the imperative to mitigate the safety risks associated with the ageing wood pole population.

Our decision

D70 We reviewed the CPP application material, the Verifier's analysis of the pole renewals programme, as well as the network report that was carried out by WSP prior to the CPP.^{379,380,381}

³⁷⁸ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Appendix C.3 p.158-164 and Appendix D.3 p.342-355.

³⁷⁹ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Executive Summary and Section E.4 p.86.

³⁸⁰ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Appendix C.3 p.158-164 and Appendix D.3 p.342-355.

³⁸¹ [WSP "Independent review of electricity networks - Final report - Aurora Energy" \(21 November 2018\)](#), Section 8 p.50.

- D71 We consider that the Verifier's analysis of the pole programme is robust and has sufficiently tested this programme of expenditure against the requirements of the IMs and can be relied upon. We agree with the Verifier that Aurora has established the need for the quantum of pole renewals interventions and work to address the backlog of replacements.
- D72 An Issues Paper submission suggested that Aurora's pole replacement costs may be higher than the industry average, but the Jacobs review which tested Aurora's cost estimates with the most recent industry costs, that was submitted in support of the CPP Proposal, concluded that this was not the case. We have seen no evidence that Aurora's pole asset costs are excessive.³⁸²
- D73 Another Issues Paper submitter questioned pole reinforcement efficacy, and in their draft decision submission stated that there was no proof 'pole-nailing' returned a pole to a safe and compliant condition.³⁸³ At the time of CPP submission, Aurora had already halted this technique pending an independent engineering review.³⁸⁴
- D74 We agreed with the Verifier that pole reinforcement may be a viable alternative to replacement from RY25 onwards in our draft decision, unless Aurora's engineering review concluded otherwise. In its submission to our draft decision, Aurora did not provide further information about the results of this engineering review, so we have not amended our draft decision on this point. This has resulted in a reduction in the allowance of \$3.3 million.
- D75 Based on our analysis of CPP proposal material, the Verifier's review of the proposal, supporting information from Aurora, Issues Paper and draft decision submissions, we are satisfied that \$44.6 million of proposed \$47.9 million poles renewals capex is prudent and efficient and meets the expenditure objective, subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$42.3 million.

Crossarms renewals

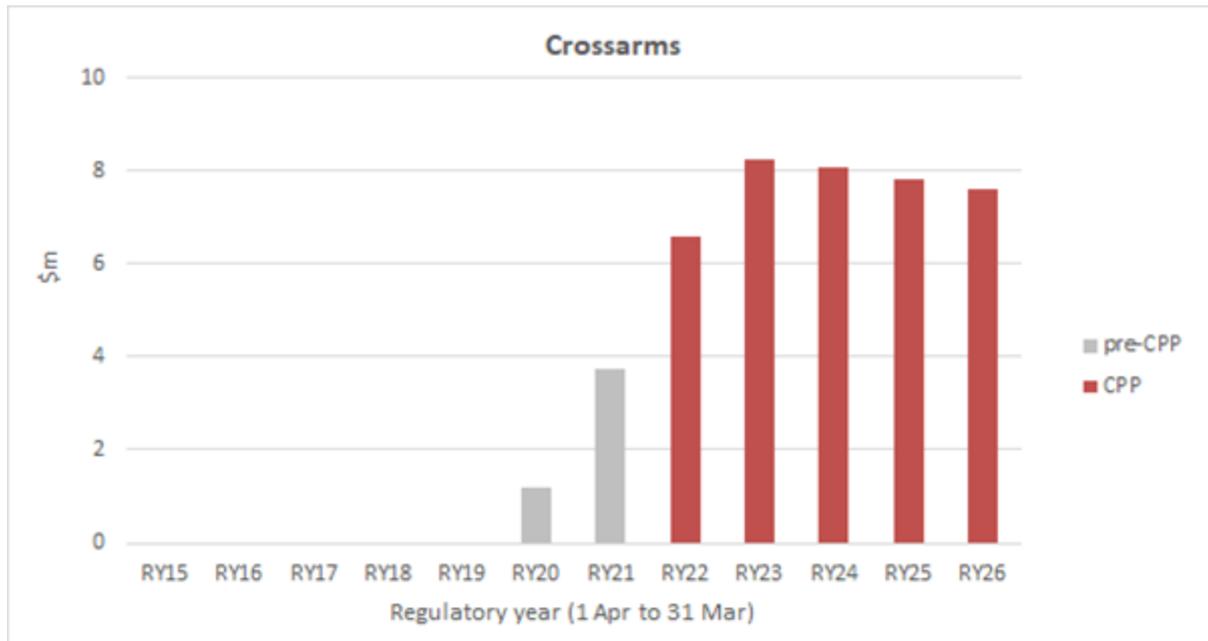
- D76 Aurora proposed to invest \$38.3 million over the CPP period (see Figure D3) in its crossarm replacement programme. Aurora considers that this expenditure is necessary because many of its 95,000 crossarms are in poor condition, have exceeded their useful life, and failures may result in safety risks.

³⁸² [0464 "Submission on Aurora Energy's CPP Issues paper" \(13 August 2020\).](#)

³⁸³ [Richard Healey – Submission on draft decision for Aurora's CPP – 17 December 2020](#) page 3 para 7.

³⁸⁴ [Richard Healey "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\).](#)

Figure D3 Crossarms renewals capex between RY15 and RY26



- D77 The WSP network review identified crossarms as a key risk in Aurora’s network. Crossarms had not been inspected historically and many were categorised as high risk due to their location, relative to the public, and the probability of failure.
- D78 WSP identified that between 2015 and 2018 there were 16 public hazard incidents relating to crossarm failures in Aurora’s network, with two of these classed as serious hazards.³⁸⁵
- D79 Aurora in its proposal noted that the majority of its crossarms had not been inspected historically and that analysis indicated 10% of the crossarm fleet is presently at end-of-life, with 40% of the population predicted to require replacement over the next 10 years.³⁸⁶

³⁸⁵ [WSP "Independent review of electricity networks - Final report - Aurora Energy" \(21 November 2018\)](#), Table 7.2 p.48.

³⁸⁶ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Executive Summary and Section E.5 p.91.

Verifier review

- D80 In its review the Verifier identified that forecast replacement volumes were determined using repex modelling based on an expected asset life of 55 years and information from pole inspections carried out to date, rather than using survivor curves. There was no reliable fleet-wide asset condition information available at the time these forecasts were developed.³⁸⁷
- D81 Aurora's unit rates have been based on recent historical costs, reduced by a small percentage from RY22 to reflect efficiency gains from asset management improvements, increased competition amongst its service providers and better works delivery processes.
- D82 The Verifier review confirmed the limited asset condition data and accepted the repex modelling approach as being appropriate, but that it may over-forecast investment need. However, the modelling logic, assumptions used and statistical replacement profile that underpin replacement volumes were accepted as being reasonable.
- D83 The Verifier concluded that Aurora had satisfactorily established the need for crossarms renewals, and that this aligned with its risk management framework. The timing of the need appeared to be consistent with the imperative to mitigate safety risks associated with the ageing population of crossarms, with a criticality assessment used to prioritise the work programme.
- D84 The Verifier also confirmed unit costs were reasonable by comparing unit costs from other electricity lines companies, an independent consultant review of the bottom-up estimates, and contractor rates to support Aurora's unit costs.
- D85 The Verifier identified some key areas of improvement such as capturing asset attribute, condition, and performance information to enable accurate health and criticality assessments to be carried and the development of business cases for safety risk driven expenditure.

Our decision

- D86 We have reviewed the CPP application material and the Verifier's analysis of the crossarms renewals programme, as well as the independent report that was carried by WSP prior to the CPP.

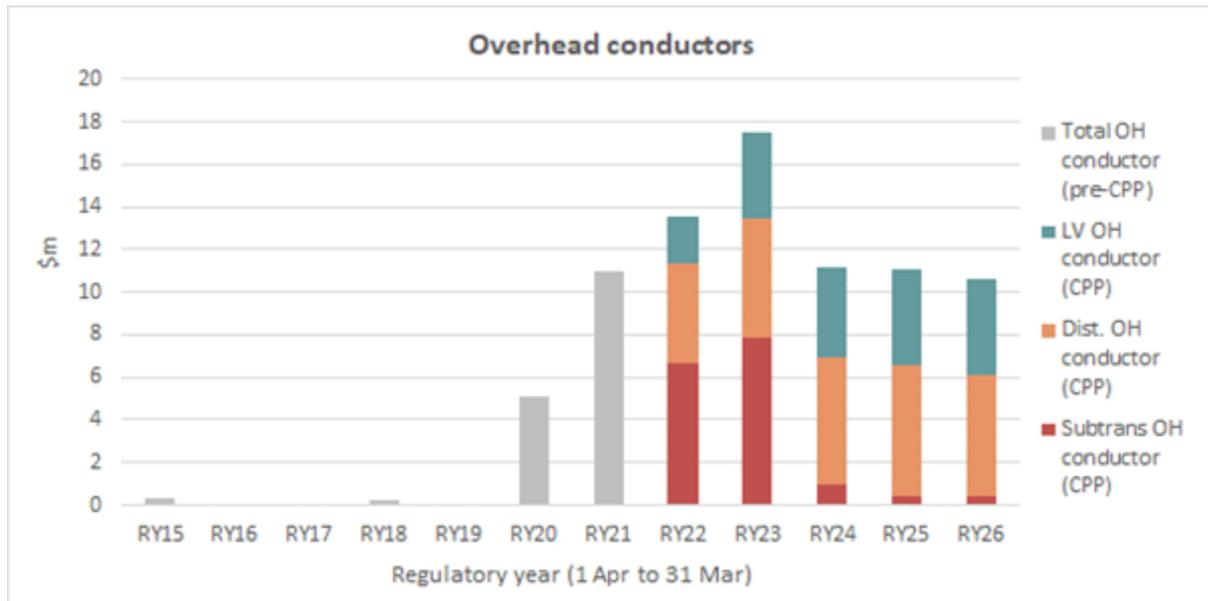
³⁸⁷ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Appendix C.4 p.165-170 and Appendix D.4 p.356-361.

- D87 We consider that the Verifier's analysis was robust and sufficiently tested this programme of expenditure against the requirements of the IMs and can be relied upon.
- D88 Aurora has taken a repex modelling approach due to the lack of asset condition data, in addition to inspections carried out during replacements to refine expected life estimates. We consider that this is a reasonable approach to take to forecast investment need.
- D89 While the repex modelling approach would tend to over-forecast replacement volumes, the Verifier noted that the timing of the need is consistent with the imperative to mitigate the safety risks, associated with the ageing crossarm population. We agree with this conclusion given the safety risks associated with crossarm failure and the state of Aurora's asset condition knowledge at present.
- D90 We agree with the Verifier that Aurora has reasonably established the need for the quantum of crossarms renewals, that the underpinning drivers are appropriately identified, and that asset condition data limitations have been adequately described. Unit costs have been tested by the Verifier and appear consistent with industry averages.
- D91 We did not receive any further information in draft decision submissions about the crossarms renewals programme.
- D92 Based on our analysis of CPP proposal material, the Verifier's review of the proposal, and supporting information from Aurora, we are satisfied that \$38.3 million of crossarms renewals capex is prudent and efficient and meets the expenditure objective.³⁸⁸

Overhead conductor renewals

- D93 Aurora proposed to invest \$64.0 million over the CPP period (see Figure D4) in its overhead (OH) conductor replacement programme, after a period of negligible investment. This programme comprises \$16.3 million for overhead sub-transmission conductor, \$28.1 million for overhead distribution conductor; and \$19.6 million for overhead low-voltage conductor.

³⁸⁸ Note that Aurora has modelled and included a top-down capex efficiency adjustment for the crossarms renewals programme that it expects to achieve over the CPP period.

Figure D4 Overhead conductor renewals capex between RY15 and RY26

- D94 Prior to the CPP application, the WSP report identified overhead conductor condition as a key risk in Aurora’s network. WSP noted that there was no dedicated inspection and testing programme for overhead conductors, but that Aurora were aware of conductor attribute information (such as asset age, conductor type and installation location).³⁸⁹
- D95 WSP also reported that the three 33 kV sub-transmission lines between Berwick and Halfway Bush were in poor condition, and that there was a higher probability of failure on some sections. Additionally, selected inspections identified that some spans of the overhead sub-transmission network did not comply with statutory minimum height requirements.
- D96 Following its review WSP concluded that, between 2015 and 2018, there was a total of 225 public hazard incidents relating to overhead conductor failures in Aurora’s network, with 27 of these classed as serious hazards.³⁹⁰

³⁸⁹ [WSP "Independent review of electricity networks - Final report - Aurora Energy" \(21 November 2018\)](#), Section 11 and 12 p. 96-117.

³⁹⁰ [WSP "Independent review of electricity networks - Final report - Aurora Energy" \(21 November 2018\)](#), Table 7.2 p. 48.

- D97 Aurora stated in its application that most of the \$16.3 million overhead sub-transmission conductor renewals programme involves replacement of the copper conductor on the Berwick to Halfway Bush circuits. Aurora plans to re-conductor and replace the three-existing overhead 33 kV lines with two higher capacity lines with modern conductor. This replacement is planned for RY24 and is based on a known condition issue.
- D98 In the overhead distribution conductor renewals programme, the copper and No 8-wire type conductors are the predominant asset types with poor asset health, while in the low-voltage conductor asset class, copper conductor ageing is the main driver of poor asset health. Forecast replacement volumes, in these renewals' programmes, are based on repex modelling, that factor considerations of conductor life expectancy based on conductor type and installation location.
- D99 Aurora's overhead conductor unit rates are based on average costs from recent distribution conductor replacement works, with low-voltage overhead conductor replacement unit rates reduced to reflect efficiencies since more live line work can be undertaken at this voltage level. Both unit rates have been reviewed by an external party.

Overhead sub-transmission conductor programme – our analysis and decision

- D100 For the Berwick to Halfway Bush 33 kV line re-conductoring project Aurora considered a wide range of options and determined that the most cost-effective solution is to rationalise the three lines to two higher capacity lines with longer span lengths. Aurora has estimated likely project costs and the project will be competitively tendered.
- D101 Aurora states that the main investment driver is conductor condition, and that the existing copper conductor is over 100 years old and has known industry reliability issues. The copper conductor has an expected life of approximately 70 years, and Aurora considers it would be prudent to replace this now.
- D102 When this project is completed it is predicted to reduce the volume of overhead sub-transmission conductor in the H1 asset health indicator category to an estimated 1% of the overhead sub-transmission conductor fleet.³⁹¹

³⁹¹ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Executive Summary and Section E.6 and E.7 p. 95-103.

- D103 In response to our Issues Paper we received an enquiry about the options Aurora had considered when it decided on its two-circuit rationalisation strategy for renewal of the Berwick and Halfway Bush lines.³⁹²
- D104 The confidential submission provided us with a publicly available Electronet report, prepared for Trustpower Limited to test alternative connection arrangements to embed the Waipori Hydro Power Station into the Halfway Bush GXP.³⁹³
- D105 To inform our draft decision we sought additional information from Aurora about this project. We were interested to test how Aurora had arrived at the decision to rationalise the existing three lines between Berwick and Halfway Bush to two. We also wanted to understand whether it had considered a staged approach to replacement, how Trustpower was consulted about the project, the impact it may have on Waipori hydro operation, and if there was any advantage to Trustpower in having alternative connection arrangements into Halfway Bush.
- D106 On the matter of Trustpower's involvement, Aurora indicated to us that it had been engaging with Trustpower for the last two years on this project, and we did not receive any submission information from Trustpower that it disagreed with Aurora's approach or proposed solution.
- D107 Aurora considered that rationalising to a two-line solution was the least cost option that simultaneously accommodated conductor replacement needs and the fact that most of existing poles required renewal on the existing lines. The staged like-for-like renewals and replacement approaches were not favoured due to efficiency and asset condition considerations.
- D108 We tested how Aurora had arrived at its decision to rationalise from three circuits to two and why the renewals programme could not be staged over time. The risk cost trade-off was whether Aurora should take a staged approach and manage the safety risk over a longer period or invest now.
- D109 We discussed in our draft decision that we could defer our approval of this project and direct Aurora to utilise the reconsideration mechanism for risk events when it could provide more explicit cost-benefit analysis of the options.

³⁹² [0483 "Submission on Aurora Energy's CPP Issues paper" \(20 August 2020\).](#)

³⁹³ [0483 attachment "Submission on Aurora Energy's CPP Issues paper" \(20 August 2020\)](#), also publicly available at https://www.transpower.co.nz/sites/default/files/uncontrolled_docs/Waipori-PDA-External-Report.pdf.

- D110 However, we concluded that while Aurora could have been more explicit about the alternatives it considered and how these compared economically, a comparative cost analysis for a two-line versus a three-line solution was a reasonable approach to take.
- D111 We considered that the line rationalisation option was likely to be prudent and efficient based on asset condition considerations and heightened safety risk due to conductor, pole and crossarm failures on the existing 33 kV lines.
- D112 Given that the majority of the overhead sub-transmission conductor proposed expenditure is to replace ageing copper conductor, that the need for copper conductor replacement was tested by the Verifier, and based on our own analysis of the CPP proposal material, in our draft decision we were satisfied that Aurora had sufficiently justified the Berwick to Halfway Bush 33 kV reconductoring and rationalisation as the most economical solution.
- D113 We did not receive any further information in draft decision submissions about the overhead sub-transmission conductor renewals programme.
- D114 Based upon the analysis we have undertaken we are satisfied that the proposed \$16.3 million overhead sub-transmission conductor renewals programme is prudent and efficient and meets the expenditure objective, subject to a 5% top-down efficiency adjustment.³⁹⁴ This has resulted in a final allowance of \$15.4 million.

Overhead distribution and low-voltage conductor renewals programme – Verifier analysis and decision

- D115 The Verifier reviewed the overhead distribution and low-voltage conductor renewals programmes and concluded that, while there were asset data and modelling limitations, specifically asset health data and understanding of criticality impact, Aurora had satisfactorily established the need for this renewal's expenditure in its modelling.³⁹⁵
- D116 The key assumptions in the need's analysis were asset age information and expected life of the different conductors under different corrosion conditions, and a statistical distribution around an expected life, using the remaining age as the proxy for asset health or probability of failure.

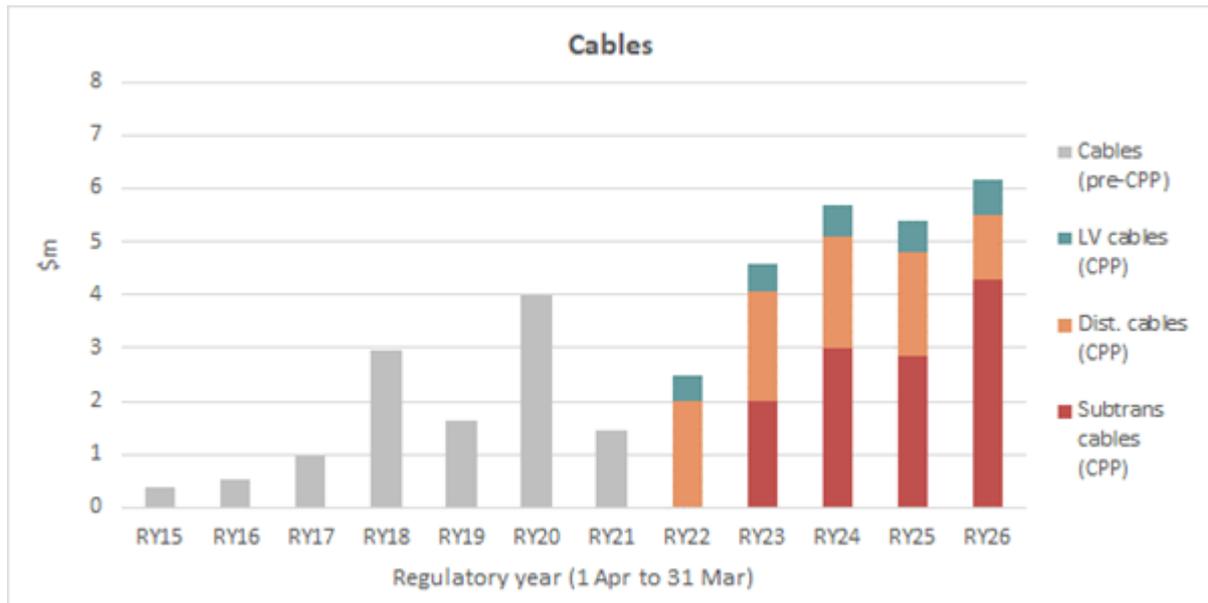
³⁹⁴ The 5% efficiency adjustment is discussed below from para D432.

³⁹⁵ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Appendix C.4 p.165-170 and Appendix D.4 p.356-361.

- D117 The Verifier agreed that this was a reasonable approach to take for these fleets given the inherent safety and reliability risk of overhead conductor assets, particularly older copper conductor.
- D118 The Verifier also noted that the unit costs and expected asset life assumptions, used by Aurora for forecasting likely asset failure, were benchmarked against industry peers, which was considered reasonable.
- D119 The Verifier concluded that it fully verified the proposed overhead distribution and low-voltage conductor renewals expenditure.
- D120 We consider that the Verifier's analysis has been robust and has sufficiently tested this programme of expenditure against the requirements of the IMs and can be relied on. We reviewed the Verifier's analysis and agreed with its conclusions in our draft decision.
- D121 We did not receive any further information in draft decision submissions about the overhead sub-transmission conductor renewals programme overhead distribution and low-voltage conductor renewals programmes.
- D122 Based on the findings of the Verifier and our review of those findings, we are satisfied that:
- D122.1 \$16.3 million of overhead sub-transmission conductor renewals capex is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$15.4 million;
 - D122.2 \$28.1 million of overhead distribution conductor renewals capex is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$26.7 million; and
 - D122.3 \$19.6 million of overhead low-voltage conductor renewals capex is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$18.6 million.

Cables renewals

- D123 Aurora proposed to invest \$24.3 million over the CPP period (see Figure D5) in its cable replacement programme that comprises \$12.1 million for sub-transmission cables, \$9.4 million for distribution cables, and \$2.8 million for low-voltage cables.

Figure D5 Cable renewals capex between 2014-2015 and 2025-2026

D124 Aurora's sub-transmission cable fleet includes 93 km of cables operated at 33 kV and 66 kV and includes four cable technology types; oil insulated cables, gas insulated cables, Paper Insulated Lead Covered cable (PILC), and Cross-Linked Polyethylene (XLPE).

D125 The distribution and low-voltage cable fleets include 1,046 km of high-voltage (11 kV and 6.6 kV) cables and 956km of low-voltage (400 V) cables and includes three cable technology types; PILC, XLPE, Polyvinyl Chloride (PVC), and also 1.4 km of submarine cable where the cable type is not stated.

D126 The WSP network review made some key observations about Aurora's cable fleet including that there were no cable testing records for the XLPE and PILC sub-transmission cables and no regular testing regime in place for distribution cables. There was also no sub-transmission cable outage and fault records available, and no inspection or issue investigation records available for faults. WSP concluded that Aurora's cable fleet asset management was dependent on staff knowledge, rather than a systematised process.³⁹⁶

³⁹⁶ [WSP "Independent review of electricity networks - Final report - Aurora Energy" \(21 November 2018\)](#), Section 13 p.118-128 and Section 14 p.129-135.

- D127 WSP did identify that the cast iron pot-head distribution cable terminations on poles in the Dunedin network were a public safety risk. Since the WSP report was published in November 2018, Aurora has been systematically replacing these cast iron pot-heads and this will continue until RY25, with the high safety risk assets removed from service by RY21.³⁹⁷
- D128 Aurora considers that an uplift in sub-transmission cable expenditure is necessary due to the poor asset health of the gas-filled cable fleet, and that intervention is necessary to ensure that this situation does not deteriorate. Most of the sub-transmission cable expenditure is being driven by known issues with specific cables.³⁹⁸
- D129 Aurora states that there is an unusually high failure rate for all types of sub-transmission cables, with incidents occurring almost annually. Further, the failure of the older gas and oil cables is challenging due to gas leaks being difficult and costly to locate, and joints and termination parts becoming difficult to source.
- D130 Aurora also notes that there is a diminishing qualified gas/oil sub-transmission cable workforce, with insufficient ongoing industry training occurring. In future it may become more difficult to find competent jointers to repair the oil and gas cables.
- D131 Aurora is not anticipating a significant increase in expenditure in the distribution and low-voltage cable asset classes as these fleets are in relatively good condition. Low replacement volumes are anticipated in the LV cable fleet.
- D132 Aurora has taken a volumetric repex approach to forecast distribution and LV cable asset renewal replacement, which involves multiplying a unit rate with the forecast replacement quantity. This approach is used due to the lack of condition data to construct asset survivor curves.
- D133 A condition-based forecasting approach has been used to forecast sub-transmission cable replacements, with costs for each sub-transmission cable replacement project derived individually after a tender process.

³⁹⁷ [WSP Action Plan – Annual Progress Report](#).

³⁹⁸ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Executive Summary and Sections E.8 p. 104-109.

D134 The sub-transmission, distribution and low-voltage cable renewal programmes were not reviewed by the Verifier. Given that these programmes constitute about 7% of the total capex portfolio, and that sub-transmission cable replacement is a key strategic programme for Aurora, we wanted to test how Aurora had justified this level of expenditure in greater detail. We engaged Strata for this purpose.

Sub-transmission cable renewals – Strata analysis

D135 In its analysis that supported our draft decision, Strata concluded that the recent low fault rates observed for sub-transmission cables had not been sufficiently explained by Aurora. Strata noted that if these low fault rates persist in 2020 and beyond, particularly on the Kaikorai Valley and Corstorphine 33 kV cables, then these proposed replacements could be deferred by one year or more by Aurora.³⁹⁹

D136 In our draft decision, we agreed with Strata's deferral recommendation and proposed that \$4.3 million of sub-transmission cable expenditure was not prudent or efficient. We encouraged Aurora to review its sub-transmission cable replacement programme based on the most up-to-date fault information.

D137 In its draft decision submission Aurora disagreed with our decision that sub-transmission cable expenditure could be deferred by a year based on observed faults not supporting replacement timing.

D138 Aurora state that "Lower fault numbers were seen in 2015 and 2016 and were immediately followed by two years of poor performance. Reflecting this reality, our approach has been to focus on the underlying risk given the importance of these subtransmission cables. Since 2016, the cables are now older and can be expected to have worsening performance".

D139 Following Aurora's submission, we sought the most up-to-date sub-transmission cable fault rate information for faults that may have occurred since the CPP application was submitted, and asked Strata to respond to Aurora's submission material on this point.⁴⁰⁰

³⁹⁹ [Strata Energy "Report on Aurora Energy's CPP application" \(November 2020\)](#) page 34.

⁴⁰⁰ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#) Section B.2 pages 119-120.

- D140 We engaged Strata to consider Aurora’s updated information and Strata reconsidered its deferral conclusion based on the following information:⁴⁰¹
- D140.1 repair times for oil, gas and PILC cable faults are not insignificant and, at least for oil cable faults, show an increasing trend (i.e. across the years 2016, 2017 and 2018). This is exacerbated by the fact that obtaining oil and gas cable jointers has become increasingly difficult;
- D140.2 one of the Kaikorai Valley circuits has 8 joints along one 286 metre section and the other has 10 joints across 337 metres. Joints themselves are potential points of future failure and repairing damage can invariably create a weakness in the circuit; and
- D140.3 cable sheath integrity testing on the Corstorphine cables indicates potential sheath failure risk. This is known to lead to moisture ingress and will materially reduce cable life. Such sheath defects are difficult or impossible to locate.
- D141 Strata stated that these considerations lead to an overall impression of a necessary and prudent replacement programme of Aurora’s oil, gas and PILC sub-transmission cables. Aurora’s Dunedin network has many of these cables and “deliverability is likely to be most efficiently achieved within a rolling programme progressively implemented over many years”.
- D142 Strata concluded that in taking these points into consideration, and the importance of these cable for maintaining reliable supplies to consumers, it reconsidered its draft decision recommendation to defer the sub-transmission programme by at least one year.
- D143 We reviewed the Aurora submission material, and Strata analysis of that submission material and CPP application material supporting the sub-transmission cable renewals programme. We agree with Aurora’s view that the sub-transmission cable renewals expenditure is necessary as proposed and agree with Strata’s reasons to re-consider its deferral recommendation.

Distribution and low-voltage cable renewals – Strata analysis

- D144 In its analysis of the distribution cable renewals programme that supported our draft decision, Strata concluded that it agreed with the WSP opinion regarding replacement of cast iron pot-heads due to the safety risk these assets pose.⁴⁰²

⁴⁰¹ Strata Energy Consulting “Report on Submission Topics - Assessment and opinions on specific submission topics related to Aurora Energy’s June 2020 Customised Price Path application” (24 March 2021) page 21.

⁴⁰² [Strata Energy "Report on Aurora Energy's CPP application" \(November 2020\)](#) page 38-46.

- D145 However, Strata considered that while it was difficult to carry out regular condition inspections, and that age was an acceptable trigger for replacement, the repex modelling approach taken by Aurora was not been sufficiently evidenced and was likely to overestimate replacement need. Strata noted that it is standard repex modelling practice to modify model assumptions so that modelled replacement volumes align with known asset failure rates.
- D146 Strata observed that Aurora’s modelling predicted replacement of about 2.1 km of distribution cable between RY22 and RY26 was consistent with recent replacement rates plus an uplift to reflect cable end of life estimates. However, the increase in replacement volumes driven by the cumulative failure rates in the repex model, was not correlated with actual failure rates.
- D147 In the low-voltage cable renewals programme, Strata agreed with Aurora’s low-voltage cable replace on fault or failure strategy, and that forecast replacement volumes should be consistent with historical replacement volumes. However, Strata concluded that it could not see how a modelled forecast expenditure increase above historical replacement volumes was warranted.
- D148 In its analysis that supported our draft decision, Strata concluded that the distribution and low-voltage cable forecast replacement volumes should be based on recent cable replacement rates and amended the proposal forecasts accordingly. We agreed with Strata’s reasoning and agreed that the amended forecasts were prudent and efficient.
- D149 In its draft decision submission, Aurora disagreed with our distribution and low-voltage cable expenditure decisions and the Strata analysis that these were based on.⁴⁰³
- D150 Aurora states that its distribution cable repex model was based on “a standard repex methodology, as endorsed by the AER and consistent with those used by Australian utilities” and that “This modelling approach is identical to those reviewed by the independent verifier, who concluded they were reasonable”. Aurora asserted that Strata had an “apparent lack of understanding of these models, their inputs, and how they derive expected future replacement needs” and that this was a serious concern.

⁴⁰³ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#) Sections B.3 and B.4 pages 122-126.

- D151 Aurora also disagreed with the Strata conclusion about its apparent expenditure smoothing adjustment, stating that it was the result of a re-prioritisation of resources towards cast-iron pot-head renewals. Aurora explain that the cast-iron pot-head renewals programme had created “a shortfall of technicians” and that “This inevitably creates a backlog of cabling work that need to be addressed at a later date”.
- D152 We asked Strata to respond to Aurora’s draft decision submission on the distribution cable renewals expenditure, particularly how it had interpreted Aurora’s distribution cable repex model and whether the reduction in distribution cable renewals expenditure was still recommended.⁴⁰⁴
- D153 Strata responded that the AER does not endorse specific repex models used by electricity utilities. The asset age only modelling approach is sometimes used by utilities to estimate asset replacement volumes in the absence of asset condition data. However, the outputs from these models are expected to be tested and subjected to review and challenge.
- D154 Strata noted that while the Verifier did review some of Aurora’s repex models it also concluded that age-based models alone are not generally aligned with GEIP and that a lack of asset condition data limited Aurora’s use of more sophisticated modelling for some asset categories.⁴⁰⁵
- D155 Strata defended its review of Aurora’s distribution cable repex model by re-iterating its understanding of how the model has been implemented. Strata state that:
- “Aurora’s repex model applies input assumptions for expected asset life and standard deviation, to determine a cumulative failure distribution from which it produces a survivor curve using the reciprocal of the cumulative failure distribution. The model then calculates a failure rate from the cumulative failure rate distribution.
- Whilst Aurora is correct in saying that replacement volumes are calculated from the failure rates, the failure rates are derived from cumulative failure rates. So it is not appropriate for Aurora to claim that replacement volumes are not derived from cumulative failure rates”
- D156 Strata conclude that Aurora did not present further evidence to suggest that Strata’s initial recommendations, that supported our draft decision in the distribution cables renewals programme, should be amended.

⁴⁰⁴ Strata Energy Consulting “Report on Submission Topics - Assessment and opinions on specific submission topics related to Aurora Energy’s June 2020 Customised Price Path application” (24 March 2021) page 94.

⁴⁰⁵ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Section 4.6 p.74.

- D157 We also asked Strata to respond to Aurora's draft decision submission on the low-voltage cable renewals expenditure, particularly the conclusion that Aurora appeared to be taking a proactive approach rather than a replace on fault or failure strategy, and that forecast replacement volumes should be consistent with historical replacement volumes.
- D158 Strata concluded that Aurora did not provide any evidence to suggest that its initial recommendations, that supported our draft decision, in the low-voltage cables renewals programme should be amended. We agree with Strata's analysis conclusions.

Our decision

- D159 We have reviewed the CPP application material and Strata's analysis of the cable renewals programmes, as well as the network report that was carried out by WSP prior to the CPP application.
- D160 While the investment drivers for the cable renewals fleet are largely consistent with industry practice, Aurora's policies and planning standards are still at a developmental stage.
- D161 Drivers for investment include specific asset replacement need, age-based replacement, and the use of historical failures to forecast replacement expenditure. Cast iron pot-head termination replacement in the distribution cable fleet is planned to be completed by RY25 and this is fully supported due to safety considerations.
- D162 Aurora has used repex modelling to forecast distribution and low-voltage cable replacement volumes beyond the need to address known issues. This is a reasonable approach in the absence of asset condition data but may over-forecast investment need.
- D163 In our draft decision we agreed with Strata that some sub-transmission cable renewals expenditure may be deferred because recent fault rate data did not support early replacement of some cables. However, additional information provided by Aurora in its draft decision submission, and a review of that information by Strata, changed the deferral recommendations.
- D164 We asked Strata to respond to Aurora's draft decision submission on the distribution and low-voltage cable renewals expenditure programmes. Strata concluded that, in both instances, Aurora had not provided any evidence to suggest that Strata's initial recommendations, that supported our draft decision, should be amended.

D165 We agree with Strata’s analysis and accordingly our decision is that:

D165.1 \$12.1 million sub-transmission cable renewals capex is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$11.5 million;

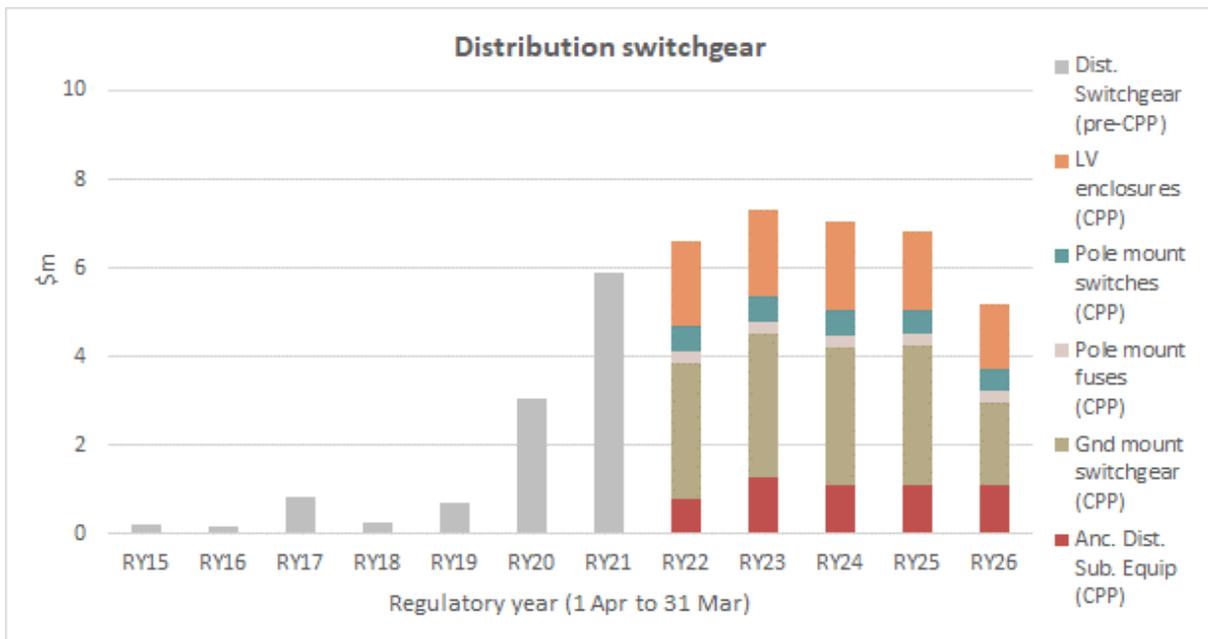
D165.2 \$8.5 million of the proposed \$9.4 million distribution cable renewals capex is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$8.1 million; and

D165.3 \$1.5 million of the proposed \$2.8 million low-voltage cable renewals capex is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$1.4 million.

Distribution switchgear renewals

D166 Aurora proposed to invest \$32.9 million over the CPP period (see Figure D6) in its distribution switchgear renewals programme due to asset condition, safety, reliability, and obsolescence reasons.

Figure D6 Distribution switchgear renewal capex between RY15 and RY26



D167 The distribution switchgear renewals programme includes \$5.3 million for ancillary distribution substation equipment, \$9.0 million for low-voltage enclosures, \$2.8 million for pole-mounted switches, \$1.4 million for pole-mounted fuses, and \$14.5 million for switchgear, which includes circuit breakers, Ring Main Units (RMUs), reclosers and sectionalisers.

D168 The Verifier reviewed the low-voltage enclosures renewals programme in the distribution switchgear renewals portfolio, and we carried out a limited review of the switchgear and ancillary distribution substation equipment in our own analysis. We also reviewed the Aurora CPP material and WSP report for this purpose.

Distribution switchgear – WSP report

D169 The WSP report identified significant issues in its review of Aurora's distribution switchgear. In general, asset data was incomplete and, at the time of writing, there had not been a regular dedicated inspection and testing program. Aurora testing during the WSP analysis process uncovered that many switchgear assets were not operating correctly.⁴⁰⁶

D170 There was also evidence of auto-reclosers detecting faults, tripping lines and auto-reclosing, but then failing to re-trip when the fault remained, which is a severe hazard. WSP identified this as a high impedance fault scenario that can be difficult for protection devices to detect.

D171 A significant number of ground-mounted switchgear units were found to be defective and inhibited normal operation of the network. This would lengthen outages experienced by consumers or expand the number of consumers affected as an upstream switch had to be operated instead.

D172 The Long & Crawford type switchgear was found to be at or approaching end of life and a high probability of failure. These switchgear types are known to have an explosive failure mode and pose a safety risk. WSP also noted similar issues with the Statter switchgear asset types.

D173 WSP concluded that the distribution switchgear assets posed a low to moderate but increasing risk to network reliability, with specific assets posing a high risk to worker safety. The severe hazard associated with auto-reclosers detecting faults was also a considerable concern.

Distribution switchgear – CPP application

D174 Aurora noted in its CPP application that most of the ground-mounted switchgear fleet is oil type, is aged, and in poor condition. Aurora agreed that there are identified explosive failure modes and a risk to work safety for some assets in this fleet.

⁴⁰⁶ [WSP "Independent review of electricity networks - Final report - Aurora Energy" \(21 November 2018\), Section 9 p.74-86.](#)

- D175 Some of the switchgear assets are in areas of high network fault currents and are being operated without the modern arc flash safety ratings and barriers. This is considered a high safety risk for workers.
- D176 Aurora also proposes to renew its underground substation assets (Ancillary Distribution Substation Equipment) in the Dunedin area. This renewals programme involves either replacing existing underground equipment to make it safety compliant or moving it above ground. Aurora plans to have these underground substation assets fully replaced or relocated by RY30.
- D177 An AECOM review of Aurora's underground substation sites concluded that these assets were in good or reasonable condition. However, Aurora's view is that some sites pose a worker safety risk and there is flood risk at others. Aurora state that relocation of underground substations above ground is in line with NZ electricity distribution business practice.
- D178 Aurora states that asset condition and safety issues are the main drivers for oil filled RMUs, low-voltage enclosures and underground substation replacements. Aurora analysis suggests that, in many cases, it is more cost effective to replace these assets than to repair or refurbish them.
- D179 Apart from the replacement due to safety considerations, obsolescence, or for non-operability reasons, distribution switchgear forecasting has been based on a replex approach when there is insufficient asset condition data to construct survivor curve models.
- D180 Asset unit costs have been tested against industry standard costs using the Jacobs price review and where appropriate, historical costs where these are known, particularly for the low-voltage enclosures due to recent replacements.

Ancillary substation equipment and ground-mounted switchgear – our analysis

- D181 WSP identified a range of reliability and safety issues in these asset classes such as a large percentage of the switchgear assets exceeding expected life (21%), auto-reclosers not operating which is a clear safety risk, and explosive failure modes for some switchgear types.⁴⁰⁷
- D182 Given these known safety issues and the fact that network protection is both an asset integrity and public safety issue we have accepted Aurora's forecast expenditure in the switchgear asset class likely meets the expenditure objective.

⁴⁰⁷ [WSP "Independent review of electricity networks - Final report - Aurora Energy" \(21 November 2018\), Section 10.4 p.91.](#)

- D183 We did not review the ancillary distribution substation equipment proposed expenditure in depth. Aurora has stated that these underground substations pose a safety risk to staff and have proposed to relocate the worst of these above ground or replace non-compliant equipment.
- D184 The WSP review of the underground substations concluded that while they appeared to be in good or reasonable condition, Aurora's plan to replace equipment and remove some to "remove the field crew risk caused by confined spaces which is in line with actions being undertaken by other electricity lines companies in New Zealand".
- D185 Based on the Aurora CPP application and WSP report conclusions we have accepted that the proposed ancillary distribution substation equipment expenditure is prudent and efficient and meets the expenditure objective.

Low-voltage enclosures - Verifier review

- D186 The Verifier identified that Aurora presently operates approximately 21,000 low-voltage enclosures. The underground link boxes (265) are in poor condition and most are more than 45 years of age and are no longer operated live due to safety risks.⁴⁰⁸
- D187 The Verifier agreed that the driver to mitigate safety risks are appropriately identified, but that unknown asset condition had previously limited Aurora's ability to support the proposed replacements.
- D188 Aurora's early forecast replacements were adjusted following information from recent inspection data from half the fleet, and after factoring in known safety risks with certain enclosure types. The Verifier was initially not satisfied with Aurora's unit rate cost estimates after cost benchmarking, and this was revised.
- D189 The Verifier concluded that, following its review, it fully verified Aurora's revised low-voltage enclosures renewals expenditure forecast. After our review of the Verifier's report, and CPP proposal material, we agree with the Verifier's conclusions that the low-voltage enclosures expenditure is prudent and efficient.

⁴⁰⁸ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Appendix C.4 p. 165-170 and Appendix C.11 p. 209-214.

Pole-mounted fuses and switches - the CPP application

- D190 Pole-mounted fuses are distribution switchgear assets that perform a rudimentary but essential protection and isolation function in the distribution network by protecting distribution transformers and HV cables from high fault currents.⁴⁰⁹
- D191 A small number of pole-mounted fuses have been issued with a 'do not operate' (DNO) constraint for workers when undertaking urgent maintenance or prudent renewals. Apart from known specific asset condition issues, Aurora has forecast replacement volumes using a volumetric repex modelling approach.
- D192 Aurora states that the asset health analysis of pole-mounted fuses is based on expected asset life or following inspections when other work is being carried out. There are presently 2% of pole-mounted fuses in the H1 asset health indicator category and about 12% in the H1 to H3 categories which indicates replacement is needed by the end of the 2020 AMP 10-year planning horizon.⁴¹⁰
- D193 Pole-mounted fuse unit rate costs, and how these are derived, are not specifically discussed but Aurora has been carrying out a type replacement programme of pole-mounted fuses between 2014-2015 and 2018-2019 so it should have an up to date understanding of the costs in this programme.
- D194 Pole-mounted switches are used to isolate sections of a distribution feeder so that planned or unplanned work can be carried out. Aurora states it has had issues in the field where switches are corroded and inoperable.
- D195 Aurora states that its pole-mounted switch fleet is in poor health and that failure to invest would result in 30% with H1 asset health by 2023-2024. Aurora states that this would limit its ability to adequately manage the network during outages.
- D196 In practice, Aurora has had to isolate larger sections of the feeder than would otherwise be required due to switch corrosion and a failure to operate. This has, in many instances, resulted in outages affecting more consumers than necessary.
- D197 Aurora identified that it needs to increase inspections and maintenance to address issues and gather information to support the pole-mounted switch renewal programme, with an initial focus on aged assets located in severe corrosion zones.

⁴⁰⁹ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Section E.8.8 to E.8.11 p. 118-122.

⁴¹⁰ Asset Health Indicator H1 indicates asset where replacement is recommended, H2 means there are end of life drivers for replacement present, and high asset related risk, and H3 means end of life drivers for replacement are present, with increasing asset related risk. From Schedule 15 [Electricity Distribution Information Disclosure Determination 2012 \(consolidated April 2018\)](#).

Pole-mounted fuses and switches – Strata analysis

- D198 In support of our draft decision we engaged Strata to review Aurora’s pole-mounted fuse and pole-mounted switch renewals programmes. Strata reviewed Aurora’s repex modelling approach and concluded it had not factored in actual asset failure rates, or historical replacement rates, to modify model outputs in both cases.⁴¹¹
- D199 Strata also noted that the Aurora’s pole-mounted fuse repex model output was extremely sensitive to the expected life assumption and that predicted replacement volumes did not reflect historical replacements. The pole-mounted switch repex model was found to be less sensitive to the expected asset-life assumption.
- D200 Strata modified Aurora’s repex model assumptions to align forecast replacements with historical failure rates rather than just using asset age. As noted previously, this approach is standard practice when using repex modelling in the absence of asset condition data.
- D201 Strata recommended that the proposed pole-mounted fuse expenditure should be reduced by 20% and that an approval amount of \$1.1 million was more appropriate. Strata also recommended that the proposed pole-mounted switches expenditure should be reduced to \$2.7 million.
- D202 In our draft decision we agreed with Strata’s conclusions regarding Aurora’s repex modelling assumptions and the approach Strata had taken to modify these assumptions.
- D203 Aurora in its draft decision submission noted that many of its pole-mounted switches and fuses are materially older than those at other electricity lines businesses and disagreed with the Strata conclusions and understanding of its repex modelling approach.⁴¹²
- D204 We asked Strata to respond to Aurora’s draft decision submission. Strata noted that, regardless of expected life assumptions, both the pole mounted fuse and switch models should have been considered and adjusted against historical failure rate data (or historical replacement rate data if failure rate data is unavailable) and that the information provided by Aurora had not changed its draft decision recommendations.⁴¹³

⁴¹¹ [Strata Energy "Report on Aurora Energy's CPP application" \(November 2020\)](#) page 62.

⁴¹² [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#) Section B.1 page 113.

⁴¹³ Strata Energy Consulting “Report on Submission Topics - Assessment and opinions on specific submission topics related to Aurora Energy’s June 2020 Customised Price Path application” (24 March 2021) page 26.

D205 We have assessed the Aurora draft decision submission material and agree with the Strata response to that information. We agree that Aurora's age-based repex models without failure rate data adjustment may tend to over-forecast investment need.

Our decision

D206 We have reviewed the proposed expenditure for distribution switchgear renewals in the CPP application material, the Verifier's analysis of the low-voltage enclosures renewals programme, as well as the network report that was carried by WSP in anticipation of a CPP.

D207 We consider that the Verifier's analysis of the low-voltage enclosures renewals programme has been robust and has sufficiently tested this programme of expenditure against the requirements of the IMs and can be relied on.

D208 We engaged Strata to review the proposed pole-mounted switches and pole-mounted fuses expenditure, and Strata proposed allowance reductions after modifying repex modelling assumptions to better reflect likely asset failure rates. We agree with these conclusions and the recommendations made by Strata.

D209 We also tested the ancillary substation equipment and ground-mounted switchgear renewals programmes by reviewing the WSP report material and CPP application. We consider that Aurora has justified the prudent need for the forecast replacements of ancillary substation equipment and ground-mounted switchgear based on safety, reliability, protection and technology obsolescence considerations.

D210 Asset replacement costs are likely to be current and reflective of industry based on the Jacobs price-book review carried out in support of the proposal. Given Aurora's move towards engaging multiple service providers with its new FSA contracting model, competitive prices for asset replacement and refurbishment should also result.

D211 Based upon the analysis we have undertaken, the Strata review, and the findings of the Verifier, our decision is that:

D211.1 \$5.3 million of the proposed \$5.3 million ancillary substation equipment renewals is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$5.1 million;

D211.2 \$14.5 million of the proposed \$14.5 million switchgear renewals which includes circuit breakers, RMUs, reclosers and sectionalisers is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$13.7 million;

D211.3 \$9.0 million of the proposed \$9.0 million low-voltage enclosures renewals is prudent and efficient and meets the expenditure objective;⁴¹⁴

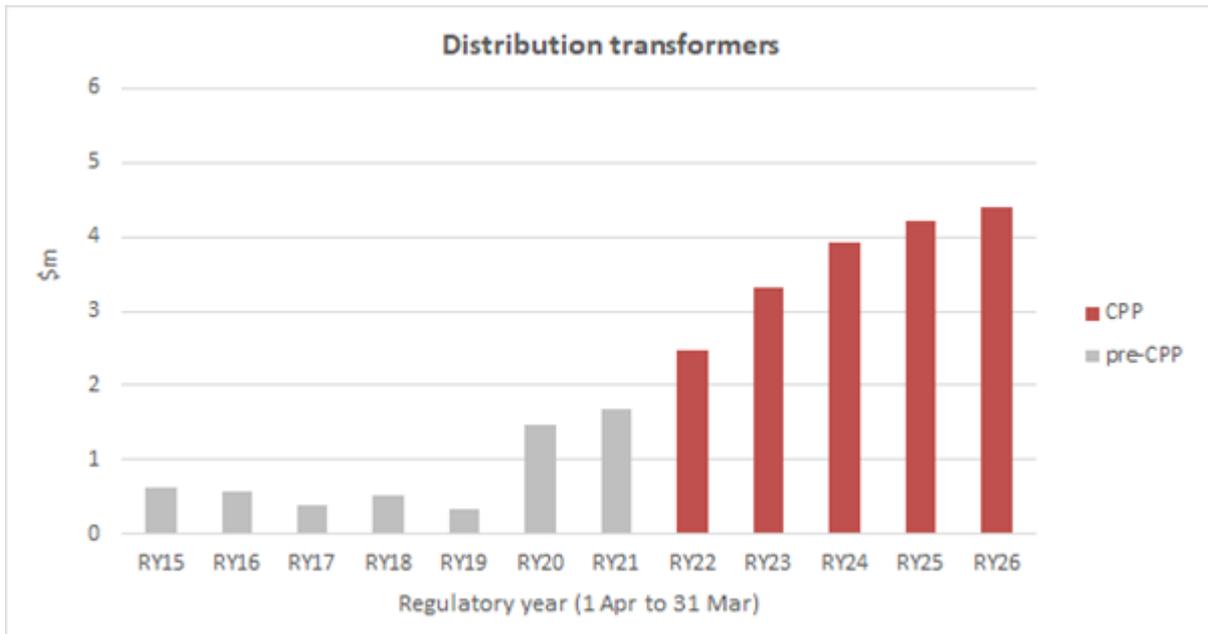
D211.4 \$1.1 million of the proposed \$1.4 million in the pole-mounted fuses renewals programme is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$1.0 million; and

D211.5 \$2.7 million of the proposed \$2.8 million in the pole-mounted switches renewals programme is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$2.6 million.

Distribution transformer renewals

D212 Aurora proposed to invest \$18.3 million over the CPP period (see Figure D7) in its ground-mounted and pole-mounted distribution transformer renewals programme due to asset health and condition considerations. This renewals programme includes \$16.7 million for pole-mounted distribution transformers and \$1.7 million for ground-mounted distribution transformers.

Figure D7 Distribution transformer renewals capex between RY15 and RY26



D213 The Verifier did not review this renewals programme.

⁴¹⁴ Note that Aurora already models an approximate 5% capex efficiency adjustment over the CPP period (RY22-RY26) in the LV enclosures asset class.

- D214 As part of our review of the CPP proposal, and in support of our draft decision, we engaged Strata to review the proposed distribution transformer expenditure in some detail given the uplift in expenditure when compared to historical levels. We also used the WSP report to understand issues with these assets that would support the application.
- D215 WSP noted in its review that pole-mounted transformer types are usually replaced after failure, which is the industry approach, unless the asset location poses a safety risk. Aurora failure rate data suggested that 10 distribution transformer units a year on average are failing.⁴¹⁵
- D216 WSP concluded, based on its modelling, that 34 ground-mounted and 25 pole-mounted distribution transformers were likely to pose a high safety risk, and 168 ground-mounted and 160 pole-mounted distribution transformers were a medium safety risk, due to their age and proximity to the public.
- D217 In its CPP proposal Aurora noted that the main investment drivers for this asset class are asset health and performance, stating that without investment intervention, 16% of distribution transformer assets will be in the H1 asset health indicator category by 2023-2024.
- D218 Aurora's forecasting approach is based on replex modelling using asset age and condition as proactive investment triggers, and unit rates are based on the average costs of historical distribution transformer replacement works.

Distribution transformers – Strata analysis

- D219 In its review of Aurora's ground-mounted transformer forecast that supported our draft decision Strata did not identify any material issues and noted forecast replacement volumes were generally consistent with the low failure rates being experienced.⁴¹⁶
- D220 Aurora had applied market-based rates to estimate costs referenced against the Jacobs industry cost benchmarking review. Strata concluded that this provided some assurance that unit costs were competitive and aligned with industry peers.

⁴¹⁵ [WSP "Independent review of electricity networks - Final report - Aurora Energy" \(21 November 2018\), Section 10 p. 87-95.](#)

⁴¹⁶ [Strata Energy "Report on Aurora Energy's CPP application" \(November 2020\) page 59.](#)

- D221 Strata's review concluded that the ground-mounted distribution transformer renewals expenditure was prudent and efficient. We agreed with the Strata analysis and conclusions in our draft decision. There were no draft decision submissions or supporting information that changed this view.
- D222 The primary driver of Aurora's proposed expenditure uplift in the pole-mounted transformer renewals programme, above historical replacement rates, is a major \$21.4 million pole to ground conversion programme over ten years for transformers rated above 200 kVA.⁴¹⁷
- D223 Strata noted that, while Aurora's investment drivers of public safety and asset condition are appropriate for this programme, it had not fully justified the expenditure uplift and change in strategy.
- D224 Strata concluded that forecasting replacement need using a volumetric age-based repex modelling may not be appropriate in this case. In situations where there is a clear change in investment strategy that results in an expenditure uplift, a separate business case should have been developed to support the accelerated replacement volumes, investment timing and priority. Strata proposed that some expenditure should be deferred until a business case was developed to justify it.
- D225 Strata estimated a suitable business case would not be available until the commencement of the CPP (RY22) and, consequently, replacements would not start until the second year of the CPP (RY23). A deferral of some expenditure was recommended to reflect the likely timing of business case development and Aurora internal approval. This resulted in recommended deferral of \$1.7 million of pole mounted transformer expenditure in the draft decision.
- D226 The Strata review did not identify an issue with Aurora's analysis and modelling that justified the proposed investment for pole mounted transformers rated lower than 200 kVA.
- D227 In our draft decision we agreed with Strata's analysis and recommendations. We agreed that a renewals programme with a change in strategy and expenditure uplift of this nature, should have been accompanied by a suitable business case, and expressed the view that the programme was likely to be economic.

⁴¹⁷ [Strata Energy "Report on Aurora Energy's CPP application" \(November 2020\)](#) page 47.

Distribution transformers – Aurora draft decision submission

- D228 In its draft decision submission Aurora disagreed with many aspects of the Strata distribution transformer analysis that supported our draft decision.⁴¹⁸
- D229 On the key issue of what impact the proposed expenditure deferral would have, Aurora stated that it was concerned the Strata recommendation increased safety risk and disputed the conclusion that a pro-active replacement approach was not supported by failure rates.
- D230 Aurora further stated that it had “undertaken inspections and have identified low-mounted unsafe transformers and seismic compliance issues” and that this had been set out in its 2020 AMP.
- D231 Aurora’s key point regarding Strata’s deferral recommendation is that deferral creates safety risk, but it did not quantify the safety risk or demonstrate how it reached this conclusion. Aurora’s submission also did not address the key point made in the draft decision, that the ten-year pole to ground replacement programme should have been underpinned by a suitable business case to justify the change in strategy.
- D232 In its draft decision submission Aurora did not indicate that it was planning to develop a business case, nor did it demonstrate or quantify the safety or seismic risks it stated are investment strategy drivers.
- D233 We asked Strata to review the Aurora draft decision submission material. Strata concluded that no new information had been provided by Aurora that would change its conclusions that supported our draft decision. Strata re-iterated that, in its experience, “major capital programmes should be subjected to business case level assessments” and that it did not accept Aurora’s argument that “such programmes should be considered as “business as usual” and with expenditure approved against a basic repex model output”.⁴¹⁹
- D234 Strata concluded that “the application of a basic age based repex model is insufficient to support the forecast expenditure for the large pole to ground conversion component of the forecast”.

⁴¹⁸ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#) Section B5 pages 126-135.

⁴¹⁹ Strata Energy Consulting “Report on Submission Topics - Assessment and opinions on specific submission topics related to Aurora Energy’s June 2020 Customised Price Path application” (24 March 2021) page 25 and pages 105-118.

D235 In summary, we agree with the Strata conclusions in response to Aurora's CPP application and draft decision submission information. We are surprised Aurora has not developed business cases for renewals programmes like this and the CBD cable architecture upgrade as these are projects that involve significant changes in investment strategy and expenditure uplift. Robust developed business cases would provide considerable comfort to consumers that expenditure being incurred is well justified, safety issues are being addressed systematically, and investments are prudent and efficient.

Our decision

D236 We have reviewed the CPP application material and Strata's analysis of the distribution transformer renewals programme, as well as the network report that was carried by WSP in anticipation of a CPP.

D237 The primary driver of pole-mounted distribution transformer programme expenditure uplift above historical replacement levels, which are supported, is the pole to ground conversion programme for higher rated transformers (larger than 200kVA).

D238 While we agree that safety and seismic considerations are not unreasonable investment drivers, Strata recommended that \$1.7 million of the pole-mounted transformer expenditure is deferred until the second year of the CPP (2022-2023). This will give Aurora time to develop the business case to support the proposed investment uplift strategy above historical levels of investment. We agree with this recommendation.

D239 Strata found no material issues in its review of the ground-mounted distribution transformer renewals programme.

D240 We received extensive draft decision submission material from Aurora about Strata's review of the distribution transformer renewals programme. On the material issue of the Strata deferral recommendation, Aurora stated only that this risk had increased but did not quantify this risk or commit to development of a business case to demonstrate the strategy was prudent and efficient.

D241 Based upon the analysis we have undertaken, and the Strata review, our decision is that:

D241.1 \$14.9 million of the proposed \$16.7 million pole mounted distribution transformer renewals capex is prudent and efficient and meets the

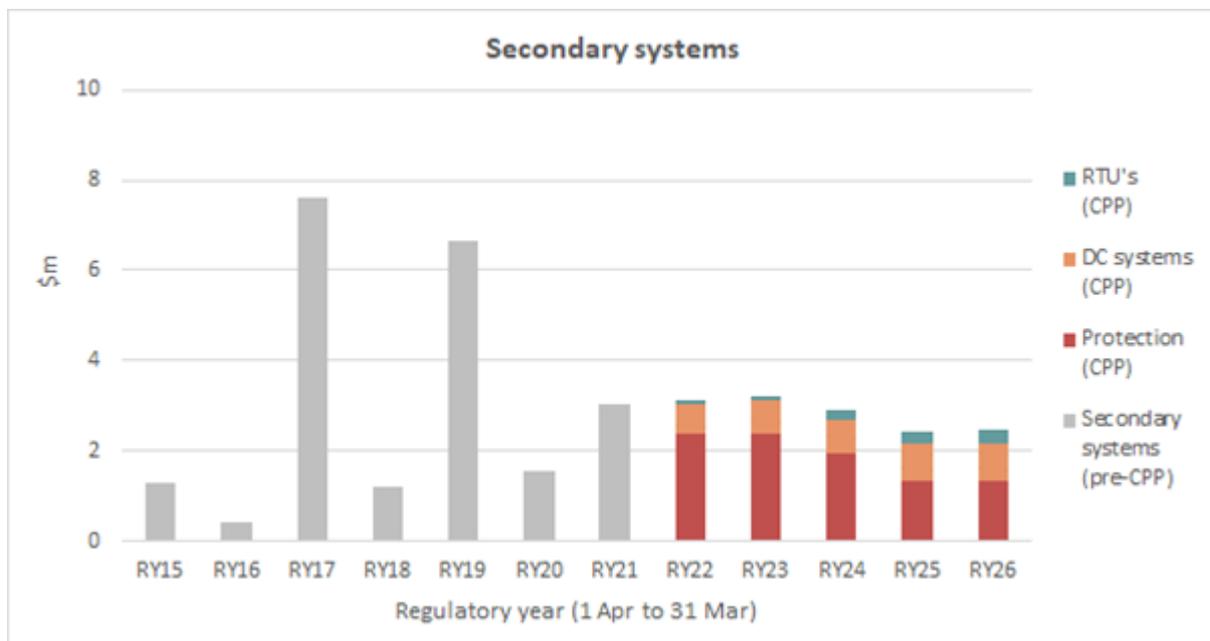
expenditure objective subject to a 5% top-down efficiency adjustment.⁴²⁰ This has resulted in a final allowance of \$14.2 million; and

D241.2 \$1.7 million ground-mounted distribution transformer renewals capex is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$1.6 million

Secondary systems renewals

D242 Aurora proposed to invest \$14.1 million (see Figure D8) over the CPP period in its secondary systems renewals capex programme, which comprises \$9.3 million for protection systems renewals, \$3.8 million for DC systems, and \$1.0 million for remote terminal units (RTU's).

Figure D8 Secondary systems renewals capex between RY15 and RY26



D243 Aurora considers that the secondary systems protection and DC systems expenditure is necessary due to protection relay obsolescence and limited functionality, poor performance of the existing protection relays, and end-of-life issues with the DC systems assets.

⁴²⁰ See below from para D432.

- D244 The WSP review of Aurora's network identified protection as a key safety risk. Over a four-year period 20 faults on the HV network were not cleared by the immediately up-stream protection assets which is a risk to Aurora staff and the public.⁴²¹
- D245 WSP identified that many protection assets had exceeded expected life, with nearly 400 electromechanical relays (36% of the relay fleet) still in operation. Five types of the electromechanical relay fleet are considered obsolete technology and it was found that they were consistently losing calibrations between maintenance cycles.
- D246 Aurora's instrument transformers, which provide network voltage and current measurements to protection devices, have historically not been tested during maintenance periods. In 2018 an instrument transformer testing programme was implemented, and found that many were not operating correctly, which would affect protection integrity.
- D247 WSP found that most of Aurora's zone substation protection system power supplies comprised a single battery bank and charger configuration. This is considered a single point of failure risk. Additionally, approximately half of these power supplies do not have a SCADA alarm to alert the Aurora control room of a battery charger failure.
- D248 WSP concluded that the protection system assets posed a significant safety risk and their remediation should be assigned a high priority.⁴²² Since the WSP report was published in November 2018, Aurora has been addressing the protection safety risk issues and providing us with quarterly progress updates.⁴²³

Secondary systems - CPP application

- D249 In its CPP proposal Aurora notes that the protection fleet comprises a significant number of legacy type electromechanical relays that provide basic protection functionality and there are concerns about relay reliability. There are protection relay obsolescence issues and a reduced number of staff that can maintain them.⁴²⁴

⁴²¹ [WSP "Independent review of electricity networks - Final report - Aurora Energy" \(21 November 2018\)](#), Section 17 p.165-180.

⁴²² [WSP "Independent review of electricity networks - Final report - Aurora Energy" \(21 November 2018\)](#), Table 17.9 p.180. WSP also listed in detail each protection system safety risk at each Aurora zone substation site in its report.

⁴²³ [WSP Action Plan – Annual Progress Report](#).

⁴²⁴ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Executive Summary and Section E.9.4 pages 126-129.

- D250 Aurora acknowledges that there have been significant protection mal-operation incidents with the older electromechanical relays and the WSP report summary is referenced to reinforce the investment need. Apart from known issues driving the replacement plan, an age-based volumetric forecasting approach has been used with estimated unit costs externally reviewed.
- D251 Aurora state that the main replacement driver for the DC systems expenditure is to replace batteries that have reached end-of-life. These battery systems are not redundant and, in line with the WSP report, redundancy is required to meet good industry practice.
- D252 Aurora has taken a volumetric planning approach to DC system expenditure although it has not stated how its DC system unit rates were derived or whether these had been reviewed.

Verifier review of protection renewals

- D253 The Verifier reviewed the secondary systems protection renewals programme and concluded that Aurora's replacement strategy, based on asset obsolescence and age, was appropriate. Asset replacement prioritisation is based on failure consequence and the need to coordinate with zone substation projects, which was considered a reasonable approach.⁴²⁵
- D254 The Verifier noted the risk assessment carried out in the WSP report and observed that Aurora intends to use criticality to refine the priority of protection scheme replacements not directly associated with zone substation projects, which was supported.
- D255 The Verifier carried out benchmarking with two other Australian industry distributors and this supported the reasonableness of the forecast replacement volumes and agreed that the proposed annual relay replacement rate of 6%, over the CPP period, was necessary to meet safety objectives.
- D256 The Verifier was satisfied that the proposed unit cost estimates, based on the assessment of cost data benchmarking, were reasonable, and concluded that Aurora's proposed protection system renewals expenditure was fully verified.

⁴²⁵ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Appendix C.12 p. 215-220.

D257 Given the present and potential safety issues related to the ageing protection relay fleet, identified by WSP and discussed by Aurora in its application, we agreed with the Verifier that the proposed protection relay renewals capex was prudent and efficient and met the expenditure objective. We received no draft decision submissions on this decision.

DC systems and RTU's – Strata analysis

D258 To support our draft decision, we asked Strata to review Aurora's proposed DC system and Remote Terminal Unit (RTU) expenditure because this was not reviewed by the Verifier.^{426,427}

D259 Strata recommended that Aurora should take the opportunity to replace one large and one small RTU in 2021 as part of its RTU repex strategy. Bringing forward RTU expenditure like this would have the effect of reducing the proposed expenditure by \$231,000 over the CPP period.

D260 In our draft decision we agreed with Strata that there was no reason why the RTU expenditure in 2020 and 2021 should be deferred and that Strata's recommendation of bringing forward some of this expenditure was reasonable.⁴²⁸ On this basis we agreed that the draft decision allowance for RTU expenditure should be reduced from \$1.0 million to \$0.8 million.

D261 In its draft decision submission Aurora disagreed with Strata that some RTU expenditure should be brought forward stating that there are only 3 months remaining in RY21 and that it cannot change its pre-CPP work programme.⁴²⁹

D262 Strata in its review of the additional information in the draft decision submission, accepted that it is unreasonable for Aurora to modify its work programme at this stage. Strata recommended that we agree with the proposed amount in this renewals programme. We agree with this conclusion.⁴³⁰

⁴²⁶ [Strata Energy "Report on Aurora Energy's CPP application" \(November 2020\)](#) page 62.

⁴²⁷ Remote Terminal Units (RTU's) are electronic devices that provide interfaces for control and signalling between zone substation primary equipment and the SCADA (supervisory control and data acquisition) system.

⁴²⁸ Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision – Reasons paper" (27 November 2019), para D337.

⁴²⁹ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#) Section B.7 page 138.

⁴³⁰ Strata Energy Consulting "Report on Submission Topics - Assessment and opinions on specific submission topics related to Aurora Energy's June 2020 Customised Price Path application" (24 March 2021) page 123.

- D263 In its review of the proposed RTU expenditure that supported our draft decision Strata noted that Aurora's strategy to replace redundant battery systems at 8 years and non-redundant battery systems at 5 years appeared to be conservative.⁴³¹
- D264 Strata concluded that, while it accepted that the risks associated with the N-security DC systems must be managed and reduced, it could not fully conclude that the current replacement strategy was prudent and efficient and whether it had considered the risk/cost trade-offs adequately.
- D265 Strata further stated that while the DC system expenditure will be required and could probably be justified against a more appropriate risk strategy, it made no recommendation to reduce the proposed amount of \$3.8 million.
- D266 In our draft decision we stated that we understood that, in many asset classes, Aurora is operating at a low level of asset management maturity and has, in many cases, a poor understanding of asset condition. DC systems appears to be one such asset class, where risk-based decision-making using asset health models as an input have not been fully developed.
- D267 We are mindful that protection systems and the associated secondary equipment that supports protection operation, were identified by WSP as a key safety risk in the Aurora network. Given that background, we were willing to accept that there may be an absence of 'optimality' about some forecasts when a key safety issue is apparent, such as network protection.
- D268 In summary, given that there is such a backlog of replacements needed, we accept the proposed DC systems expenditure is needed. We agree that it is unlikely Aurora is able to change its RY21 work programme and that some RTU expenditure can be reasonably brought forward.

Our decision

- D269 We have reviewed the CPP application material and the Verifier's analysis of the protection relay renewals programme, as well as the WSP network report.
- D270 We consider that the Verifier's analysis has been robust and has sufficiently tested the protection relay renewals capex programme against the requirements of the IMs and can be relied on.

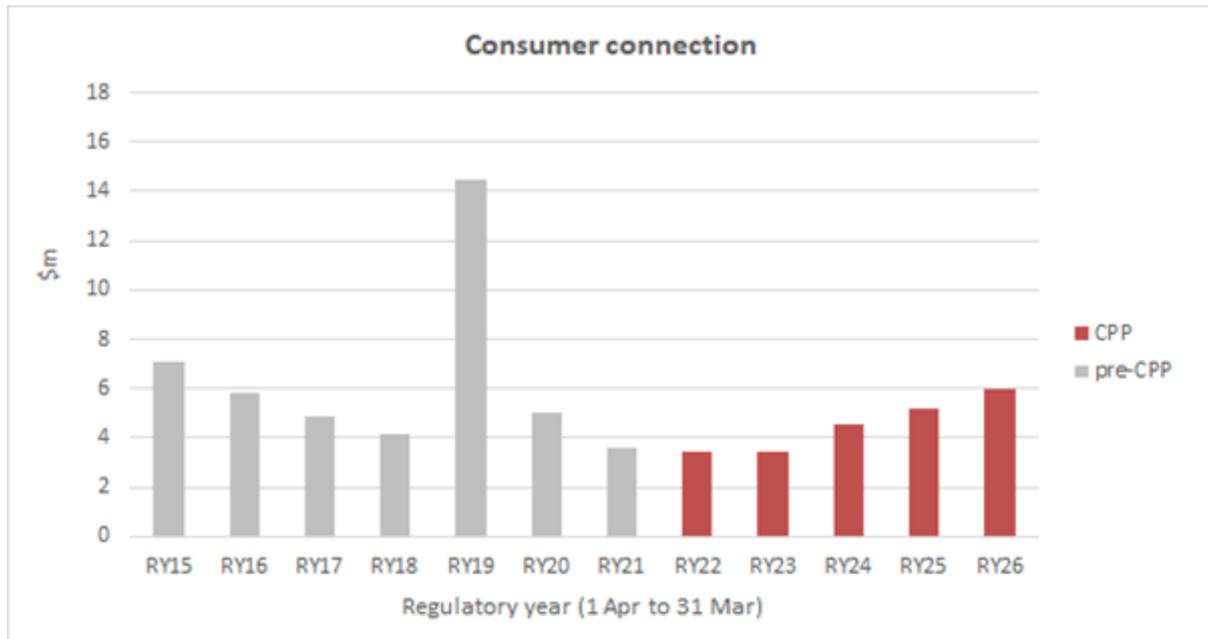
⁴³¹ [Strata Energy "Report on Aurora Energy's CPP application" \(November 2020\)](#) page 62.

- D271 We tested Aurora about its ongoing work to address the safety issues identified by WSP and were satisfied that Aurora is taking steps to ensure that it has adequate protection coverage of its network prior to the CPP taking effect. This is a key safety risk for Aurora, and it is aware of its existing protection portfolio issues and is taking steps to address these.
- D272 We have agreed with Aurora that bringing forward RTU expenditure into RY21 is not feasible and agree with Aurora's view. Strata made no recommendation about a reduction of the proposed \$3.8 million DC systems expenditure. Strata was not convinced that the DC systems replacement strategy was prudent and efficient. However, given the backlog of expenditure required and that this expenditure supports the protection systems, a key safety risk identified by WSP, we have accepted that the proposed DC systems expenditure is likely to be needed.
- D273 In summary we have amended our draft decision and agree with Aurora's proposed expenditure in the RTU, DC systems and protection renewals programmes and propose that:
- D273.1 \$9.3 million protection relay renewals capex is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$8.8 million;
- D273.2 \$1.0 million of RTU renewals capex is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment.⁴³² This has resulted in a final allowance of \$1.0 million; and
- D273.3 \$3.8 million of DC systems expenditure is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$3.6 million.

Consumer connections and asset relocations capex

- D274 Aurora proposed to invest \$22.6 million (see Figure D9) over the CPP period in its consumer connections capex programme and \$3.8 million for asset relocations.

⁴³² See below from para D432.

Figure D9 Consumer connections capex between RY15 and RY26

- D275 Aurora considers that the proposed consumer connection expenditure is necessary to establish new connections or to alter existing connections and excludes the consumer contribution. Aurora's policy is to require all new consumer connections to contribute to the cost of the new connection.⁴³³
- D276 Consumer connections are driven largely by population growth and increased economic activity with forecast growth based on historical spend, with the forward projection based on an average of the previous five-year expenditure, and any identified step change loads. In its proposal Aurora factored in COVID-19 effects with a 20% reduction in forecast expenditure in RY21, rising to a reduction of 25% in RY22 and RY23.
- D277 Aurora has assumed a consumer capital contribution rate of 60% for new connections which it states is in line with other electricity lines companies.
- D278 The Verifier reviewed the consumer connection capex and considered that Aurora's general forecasting approach was reasonable and that its modelling of COVID-19 effects was not unreasonable.⁴³⁴

⁴³³ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Section G.4 p.151-153.

⁴³⁴ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Appendix C.15 p.239-245.

- D279 The Verifier concluded that due to COVID-19 considerations, a major tourism operator driven connection should be considered contingent, and that it could not verify that \$2.1 million of expenditure was prudent and efficient.
- D280 In our draft decision we agreed with the Verifier that \$2.1 million of consumer connection capex should be considered contingent and proposed that \$20.5 million of the proposed \$22.6 million met the expenditure objective.
- D281 We also tested the asset relocations capex at a high level. This expenditure seemed reasonable and consistent with historical expenditure, being 25% less than the previous five-year period, a reduction that was due to the change in Aurora's capital contributions policy.
- D282 The Verifier also noted that, while Aurora's revised consumer capital contribution rate of 60% was not unreasonable, we should investigate whether this was realistic in the longer term.
- D283 In support of our draft decision we sought further information from Aurora to test the process it had used in determining a 60% consumer connection contribution rate assumption, and whether it had consulted with its wider consumer base.
- D284 We were also interested to understand how this 60% contribution compared with other electricity lines companies, and whether its existing consumers agreed with the 40% Aurora subsidy for new connections.
- D285 Aurora responded that the electricity lines companies that subsidise consumer connections and/or asset relocations, do so at rates between 3% (Top Energy) and 100% (The Lines Company and Westpower). The average subsidy rate is 53% and the median is 50%.
- D286 Aurora provided some background information on its contribution practices stating that it needed to contribute to new connections in response to:
- D286.1 "aggressive" incursions by Electricity Southland Limited/PowerNet (both as a grid-connected and embedded competitor); and
- D286.2 larger developments in the Queenstown/Wanaka areas qualifying as 'economic' under its large connection capital contribution calculation methodology, with no capital contribution.
- D287 Aurora noted that there are benefits of encouraging new connections, even if these are subsidised, such as common costs being spread amongst a larger consumer base, but that competition with Electricity Southland Limited/PowerNet has a "deleterious" effect mainly because there is duplicated effort and assets, and potential safety issues for staff and network being mis-identified.

D288 Aurora confirmed that it had not consulted with its consumers about the present contribution rate for consumer connections and asset relocations.

D289 We did not receive any submissions on our consumer connection and asset relocation capex draft decision.

Our decision

D290 We reviewed the CPP application material and the Verifier's analysis of the consumer connection capex programme. We consider that the Verifier's analysis has been robust and has sufficiently tested the consumer connection capex programme against the requirements of the IMs and can be relied on.

D291 The information provided by Aurora, highlighted also by electricity lines company Information Disclosure data, demonstrates that there are a range of consumer contribution rates from 0% to 100% across industry, and their application seems entirely discretionary.

D292 We also tested the asset relocations capex at a high level. This expenditure seems reasonable and is consistent with historical expenditure, being 25% less than the previous five-year period, mainly due to the change in Aurora's contributions policy.

D293 The Verifier concluded that due to COVID-19 considerations, a major tourism operator driven connection should be treated as contingent, affecting \$2.1 million of consumer connection capex. We agree with this conclusion. If this tourism connection becomes more certain, Aurora can utilise our reconsideration mechanism and seek approval for additional funding.

D294 We received no submissions about our draft decisions in these expenditure categories. Based on the findings of the Verifier and the analysis we have undertaken, we are satisfied that:

D294.1 \$20.5 million of the proposed \$22.6 million consumer connection capex is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$19.4 million; and

D294.2 \$3.8 million asset relocation capex is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$3.6 million.

Minor capex

- D295 Aurora's proposal contains several minor capex programmes that we reviewed at a high level of detail. These minor capex programmes include \$1.4 million for reliability, safety, and environment (RS+E) capex, and \$1.4 million for future networks capex.
- D296 In support of our draft decision we engaged Strata to review the \$2.9 million Facilities capex programme at a high-level.

Reliability, Safety, and Environment (RS+E)

- D297 Aurora states that the key drivers for RS+E investments are to improve performance and quality of service received by consumers. Typically, these investments reduce the impact of outages, increase network controllability, address poor performance issues, and facilitate cost reduction through automation.⁴³⁵
- D298 Between 2015 and 2020 Aurora has been spending about \$1.9 million on average per annum in this category and has not forecast expenditure over the CPP period until RY25. Its states its plan is "focused on mitigating safety risk and meeting required growth needs of the network rather than investing to directly improve reliability".
- D299 Beyond 2023-2024 Aurora plans to install auto-reclosers to reduce the number of consumers affected by planned/unplanned interruptions, remote controlled switches on feeders to reduce the average time that consumers are affected by unplanned interruptions; and fault passage indicators to reduce the time taken to find faults, reducing the average time consumers are affected by unplanned interruptions.
- D300 There is no explanation in Aurora's CPP application about the significant historic expenditure in RS+E and the decline over the CPP period, although in its 2020 Asset Management Plan Aurora states that the CPP is focussed on mitigating safety risk and meeting required growth rather than investing to improve reliability and that Aurora's general renewals investments target all the drivers within the RS+E category.⁴³⁶

⁴³⁵ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Section G.6 p.155-157.

⁴³⁶ [Aurora Energy "Asset Management Plan - April 2020 - March 2030" \(12 June 2020\)](#), Section 6.7 p.122.

D301 Given the significant reduction in the forecast expenditure when compared to the RY15-RY20 period, we accepted in our draft decision that the proposed expenditure was likely to be reasonable. We received no draft decision submission material about this decision.

Future Networks

D302 Aurora sought approval for approximately \$1.4 million for a range of investments to increase visibility of its low-voltage (LV) network in preparation in anticipation of the expected growth in small scale distributed connection of electric vehicles (EVs), storage batteries and solar power panels (PVs) for example.⁴³⁷

D303 Most electricity lines companies have limited monitoring of their low-voltage networks, which can comprise approximately 40% of the network total circuit length. The connection of the distributed EV and PV devices can significantly change existing power flow patterns in the LV network, so improving monitoring is likely to be a prudent investment for the future.

D304 Additionally, the network monitoring capability that a future networks portfolio adds, can also be used to monitor possible consumer voltage regulation issues and incipient faults in a network, so this expenditure programme has the potential for multiple beneficial uses.

D305 Based on our limited review of the CPP application material, we accepted in our draft decision that the proposed expenditure was likely to be reasonable. We received no draft decision submission material about this decision.

Facilities

D306 Aurora classes facilities capex as asset management enabling expenditure that:⁴³⁸

“aims to ensure that our offices and stores are safe and secure for our employees and contractors, are functional and fit for purpose, support improved productivity and efficiency, and are cost effective to procure and operate. They must also be sized to support future staff growth and materials storage requirements.”

D307 A key driver for the expenditure is to house equipment and to accommodate staff required to implement the work programme. Aurora states that it will need to invest during the CPP period.

⁴³⁷ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Section G.7 p.157-158.

⁴³⁸ [Aurora Energy "Asset Management Plan - April 2020 - March 2030" \(12 June 2020\)](#) and [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Section 9.4 p. 364.

- D308 The forecasting is based on base, step and trend modelling with the base amount calculated as an average expenditure over prior years, and the step largely due to office refurbishment cost estimates. There was no trend effect included in the forecast modelling.
- D309 The ongoing facilities capex costs of about \$0.6 million per annum contrasts with the fact that prior to RY18 there was no explicit historical facilities capex costs. This may be due to the previous arrangement with Delta. A review of the 2016 AMP confirms that when Delta was the single provider for Aurora, there were no explicit historical facilities capex expressed that could be used as a reference.
- D310 In support of our draft decision we engaged Strata to review this expenditure programme as part of our high-level review of the CPP proposal minor capex programmes. Strata observed that it expected a forecast of facility equipment could be achieved by Aurora by comparing the historical expenditure with the asset values and projected depreciation but that this had not been carried out.⁴³⁹
- D311 Aurora had not provided any detail about its use of a historical average expenditure nor any explanation of an upward adjustment, apart from increased staff numbers, which is likely to be a reasonable driver.
- D312 Strata concluded that based on the absence of supporting information it was unable to fully conclude the expenditure was reasonable and prudent but did not recommend an adjustment.
- D313 We noted in our draft decision that the proposed expenditure in this category was consistent with the expenditure in RY18 and that the forecast was based on the average between RY18 and RY20.
- D314 Given the new business model, as Aurora separates from Delta, is still settling, it is probably reasonable to assume that there is still some uncertainty about what a business-as-usual level of facilities capex is.
- D315 In its draft decision submission Aurora stated that Strata's conclusion not to adjust this expenditure programme due to its low value, while other low-value capex programmes were adjusted demonstrated Strata's inconsistent approach.⁴⁴⁰ However we consider, given the absence of any historical cost information, Strata's conclusions were reasonable.

⁴³⁹ [Strata Energy "Report on Aurora Energy's CPP application" \(November 2020\)](#) page 62.

⁴⁴⁰ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#) Section B.7 page 139.

D316 In our draft decision we agreed that the proposed expenditure was likely to be prudent and efficient and no submission material has changed that view.

Our decision

D317 Based on the findings of the Verifier, the analysis we have undertaken and the Strata review, we are satisfied that:

D317.1 \$1.4 million for reliability, safety, and environment capex is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$1.3 million;

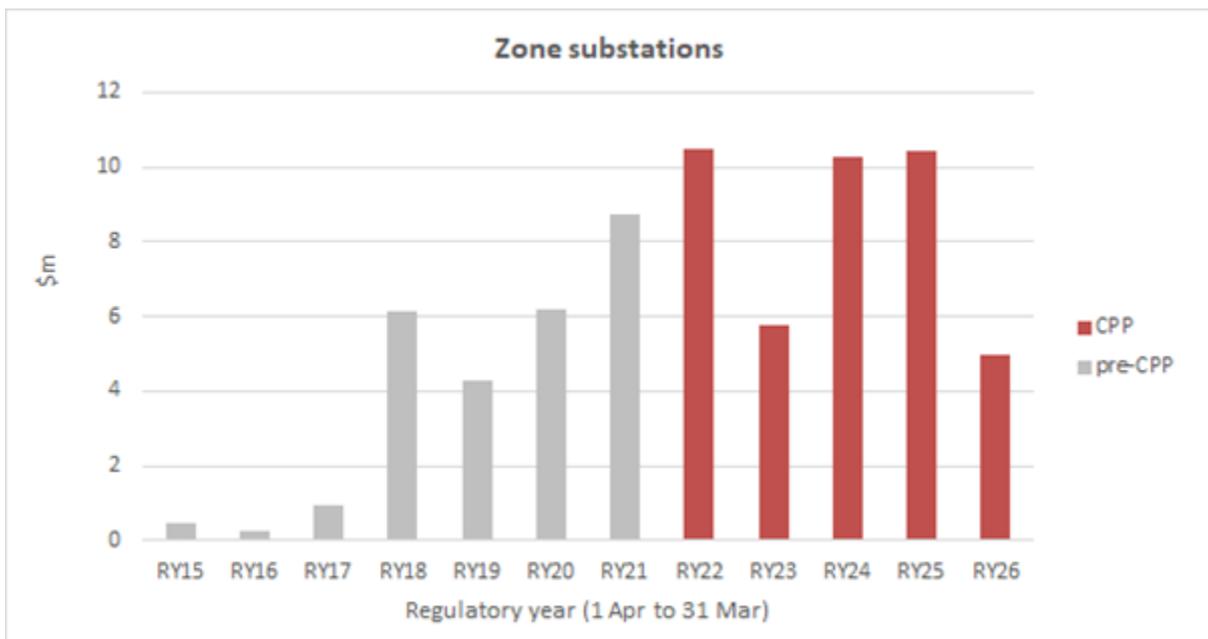
D317.2 \$1.4 million for future networks capex is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$1.3 million; and

D317.3 \$2.9 million for facilities capex is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$2.8 million.

Zone substations renewals

D318 Aurora proposed to invest \$41.9 million over the CPP period (see Figure D10) in its zone substations renewals programme due to asset condition, safety, and reliability reasons. The proposed expenditure is 59% higher than the previous five-year period in this portfolio.

Figure D10 Zone substations renewals capex between RY15 and RY26



- D319 The zone substations (ZSS) renewals programme is proposed to replace and refurbish transformers, and indoor and outdoor switchgear, buildings and grounds, and ancillary zone substation equipment. The Verifier assessed all these assets in its review.
- D320 The buildings and grounds expenditure is to maintain and upgrade housing for zone substation and network protection, communications, zone substation indoor switchgear and network ripple injection plant. It also includes zone substation fences, security and access ways to substation sites. Ancillary equipment includes equipment load management equipment, outdoor structures, and mobile zone substations.
- D321 Aurora states in its CPP application that the power transformer replacement need is based on asset condition, with an ageing transformer fleet that has poor condition tap changers and limited spares. There are reliability considerations due to equipment failures that are costly to repair and result in prolonged outages.⁴⁴¹
- D322 Indoor and outdoor switchgear replacement need is based on asset condition with an ageing fleet of oil circuit breakers, with many that have exceeded life expectancy. Notwithstanding reliability considerations, there is a considerable staff safety exposure due to some switchboards not rated to contain an arc fault.
- D323 Aurora has taken an asset health/asset criticality risk-based approach to prioritise interventions in the power transformers and indoor switchgear asset renewals programmes and an asset health-based prioritisation for the outdoor switchgear asset renewals programme. This asset health/asset criticality risk-based approach has informed the expenditure forecast. Asset cost estimates are based on the updated unit cost price book, with multi-asset projects coordinated where appropriate.

Verifier review

- D324 In its review the Verifier noted that Aurora had spent very little capital in renewing and maintaining its buildings and grounds between RY15 and RY17. Regarding the expenditure need for buildings and grounds, the Verifier concluded that Aurora's coordination model was a good method to consider works into zone substation 'projects', which would enable efficiencies to be gained by bundling work into specific site projects.⁴⁴²

⁴⁴¹ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Section E.8.7 p. 117.

⁴⁴² [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Appendix C.7 p.183-190.

- D325 In the power transformer and indoor switchgear asset classes, the Verifier identified that Aurora's risk assessments, that were used to define expenditure need and timing, simultaneously considered both asset health and criticality. Various inputs to these risk assessments (i.e. age profile, inspection results, measurements, security, loads type, transfer capability etc.) were considered reasonable, which resulted in a more precise and optimised expenditure forecast.⁴⁴³
- D326 In both the power transformer and indoor switchgear asset classes, the Verifier concluded that investment need was aligned with Aurora's risk management framework and asset management principles. The timing of the investment need was consistent with prudent forecast work planning that considered bundling of discrete scope of works separately identified in the same site, resourcing and risk.
- D327 The Verifier concluded that the underpinning drivers of the power transformer replacements were appropriately identified and explained. In the indoor switchgear asset class, the Verifier concluded that Aurora had satisfactorily established the need for the six indoor switchgear replacement projects over the CPP period. The underpinning drivers of the specific indoor switchboard replacements were appropriately identified and explained.
- D328 The Verifier review noted that Aurora's zone substation outdoor switchgear assets risk assessment only modelled asset health based on remaining asset life, and that asset condition data was not available for this fleet. There was also no criticality assessment although, as a proxy, Aurora had aligned criticality with the associated power transformers in lieu of a stand-alone criticality framework.
- D329 The Verifier concluded that Aurora's modelling approach would tend to over-forecast investment need in the outdoor switchgear asset class. However, it was satisfied that outdoor switchgear replacement investment need was closely interlinked with the zone substation criticality profile and coordinated with other discrete zone substation works, that considered risk and resourcing synergies. On this basis the Verifier concluded that both forecast replacements and timing were likely to be prudent.⁴⁴⁴

⁴⁴³ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Appendix C.8.5.2 p.193 and Appendix C.9.5.2 p. 199.

⁴⁴⁴ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Appendix C.10.5.2 p. 206.

- D330 The Verifier benchmarked the unit costs for zone substation transformer, indoor and outdoor switchgear against industry peers and concluded these costs were reasonable. Unit cost information across each zone substation project customised estimate was checked for consistency against the Aurora updated pricebook. The Verifier concluded that these unit cost estimates were reasonable.⁴⁴⁵
- D331 The Verifier concluded that for the expenditure forecasts for the zone substation, indoor switchgear and outdoor switchgear replacements over the CPP periods appeared to be consistent with the expenditure objective.
- D332 We considered that the Verifier's analysis has been robust and has sufficiently tested the zone substation renewals capex programme against the requirements of the IMs and can be relied on.
- D333 In our draft decision we agreed with the Verifier that the proposed expenditure was prudent and efficient. We received no draft decision submissions about zone substations renewals capex.

Our decision

- D334 We have reviewed the CPP application material, the Verifier's analysis of the zone substations renewals programme, as well as the network report that was carried by WSP in anticipation of a CPP.
- D335 Aurora identified the need for asset replacement or refurbishment based on asset condition, safety, lack of spares, and reliability considerations. Aurora has taken an asset health/asset criticality risk-based approach to prioritise interventions in the power transformers and indoor switchgear asset renewals programmes, and an age-based asset health-based prioritisation for the outdoor switchgear asset renewals programme.
- D336 This asset health/asset criticality approach demonstrates a high degree of asset management maturity and provides confidence that the investment need and timing can be relied on.
- D337 Asset replacement costs are likely to be current and reflective of industry costs based on the Jacobs price-book review carried out in support of the proposal and Verifier scrutiny.

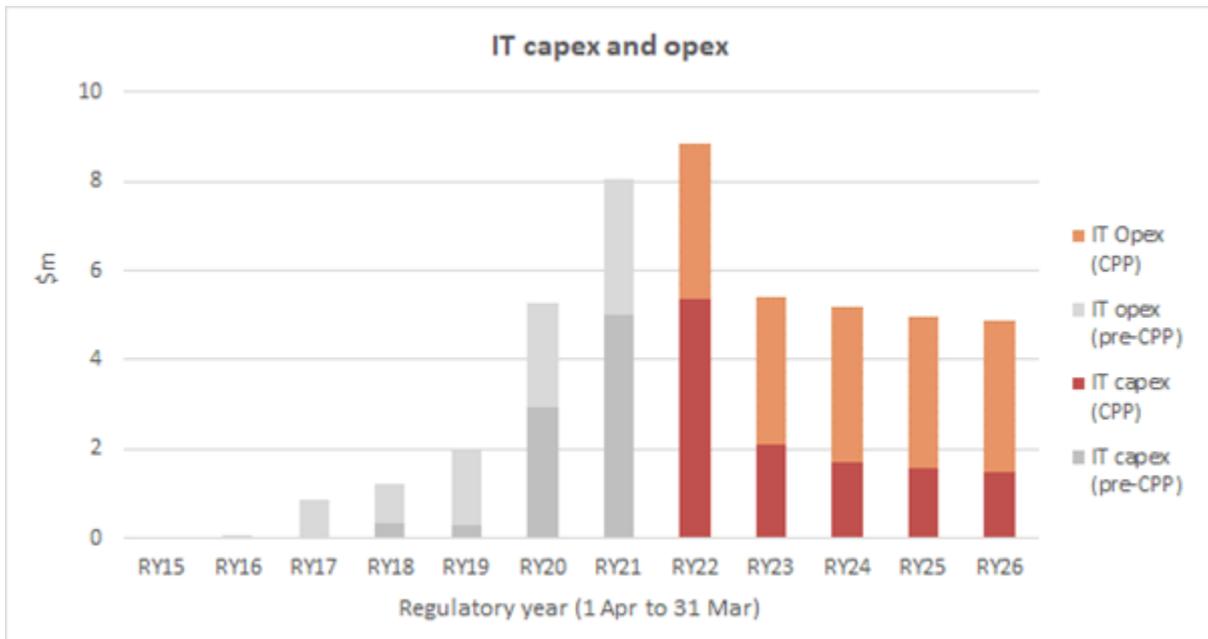
⁴⁴⁵ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Appendix C.8.5.4 p.195, Appendix C.9.5.4 p. 201 and Appendix C.10.5.4 p. 207.

D338 Based on the findings of the Verifier, our review of proposal material and the Verifier’s report, we are satisfied that \$41.9 million of expenditure in the zone substations renewals capex programme is prudent and efficient and meets the expenditure objective, subject to a 5% top-down efficiency adjustment.⁴⁴⁶ This has resulted in a final allowance of \$39.9 million.

IT capex and opex

D339 Aurora proposed to invest \$29.2 million over the CPP period (see Figure D11) in its IT capex and opex programme to support and enhance the infrastructure, information services and applications that support the electricity business.

Figure D11 IT capex and opex between RY15 and RY26



D340 Aurora states in its CPP application that prior to July 2017, Aurora’s IT services were subcontracted to Delta as a management charge, and while this minimised costs in the short-term, it has left Aurora with a backlog of lifecycle expenditure as it sets up its business as a stand-alone entity.⁴⁴⁷

D341 Aurora notes that there are higher costs in the near term (as seen from Figure D11 with the expenditures in RY21 and RY22) but that total IT expenditures will return to RY20 levels in RY24, once new tools and technologies required to support the asset management strategy have been deployed.

⁴⁴⁶ See below from para D432.

⁴⁴⁷ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Section J.1 p. 191-196.

- D342 Aurora also proposes to manage its new and existing IT infrastructure into cloud-based hosting, which it states will provide greater scalability, lower infrastructure costs, and will be timed and sequenced to balance risks, costs, and benefits.
- D343 The IT priority over the CPP period is to deliver the information and process automation required to implement the asset management strategy and to establish an Enterprise Asset Management system capability. Aurora states its priority IT gaps are in data integrity and asset management tool development.
- D344 Base step and trend to forecast IT opex was not used due to lack of suitable historical data, so a bottom-up approach was taken to identify investment need. This was subject to peer review and internal management challenge, which resulted in an amendment to the initial expenditure estimate for a six-year IT plan (RY20 to RY25) from \$51 million to \$37 million.
- D345 Aurora states that its benchmarking analysis undertaken at the request of management and the Board shows its non-network operating expenditure is forecast to remain below industry average during the CPP period.

Verifier review

- D346 The Verifier reviewed both the IT capex and opex starting with the various external independent reviews Aurora had commissioned to identify a suitable IT programme for its business. These reviews were used as the basis for the Aurora IT strategy in its CPP application.⁴⁴⁸
- D347 The Verifier noted that Aurora's IT capex strategy is focussed on software platforms to improve data and asset management systems, while the opex strategy is focussed on improving the data integrity, the integration of systems to support business decisions, and the move to cloud-based solutions.
- D348 The bottom-up expenditure forecasting approach was considered reasonable by the Verifier given the lack of historical data and the maturity of the IT system at the time the CPP application was being developed. A four-stage peer review process was used to refine forecasts namely assess the current state of IT capability, discuss future requirements, develop bottom-up plans to address need; and carry out challenge by Board, GM and CPP Governance Group.

⁴⁴⁸ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\), Appendix C.16 p.246-261.](#)

- D349 Aurora's early IT capex and opex forecasts were high-level estimates based on market research that Aurora had carried out, with internal challenges of unit rates. Benchmarking was carried out with other businesses who recently implemented upgraded asset management frameworks, and this revised down Aurora's estimates.
- D350 The Verifier was convinced that the proposed IT expenditure would have benefits in work scheduling, cost control and delivery performance monitoring that will interact with all the capex and opex programs. It is likely to also achieve cost efficiencies and improve works delivery.
- D351 While Aurora's cost-benefit analysis of the IT programme showed a negative NPV in the first five years from RY21, there was a predicted large positive NPV once the subsequent five-year period was included.
- D352 The Verifier also noted that Aurora's IT cost-benefit analysis assumed only minor business efficiency improvements. Verifier industry experience suggested that where there is development or enhancement of asset management systems coupled with improved asset condition data from improved inspection programmes, annual efficiency benefits of greater than 1–5% were evident.
- D353 In our draft decision we agreed with the Verifier that the proposed IT opex and capex expenditure was likely to be prudent and efficient. We received no draft decision submissions about the IT capex and opex.

Our decision

- D354 We have reviewed the CPP application material and the Verifier's analysis of the IT capex and opex programmes. We consider that the Verifier's analysis has been robust and has sufficiently tested the IT capex and opex programme against the requirements of the IMs and can be relied on.
- D355 Aurora has justified the prudent need for the forecast replacements based on several considerations such as a need to develop asset management systems, improve data systems and a move to a cloud-based solution rather than an asset centric one.
- D356 Numerous external reviews carried out by Aurora have supported its IT strategy and a robust internal top-down challenge process was evident to finalise forecasts including benchmarking against peers for key projects within the programme.

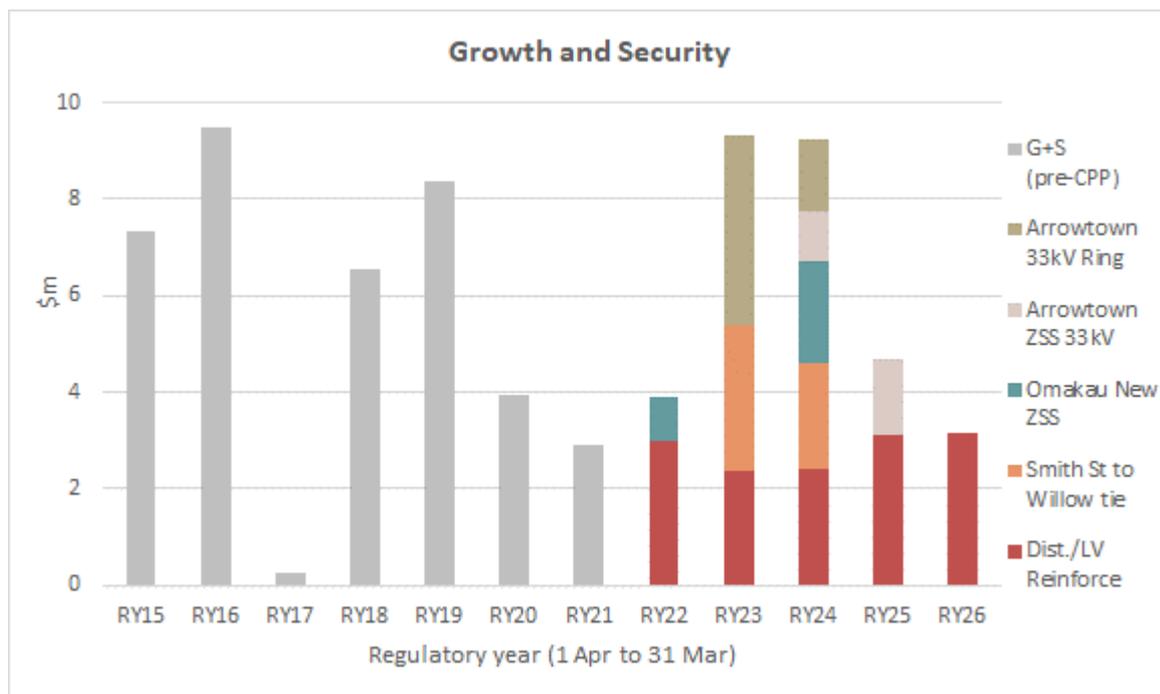
D357 While the Verifier considered the IT programme expenditure was fully verified it expected that these IT investments and expenditure would typically result in greater levels of efficiency in other expenditure programmes. We have reflected this observation in our decision to apply a 5% top-down efficiency adjustment more consistently across the capex portfolio.⁴⁴⁹

D358 Based on the findings of the Verifier, our review of proposal material and the Verifier’s report, we are satisfied that \$29.2 million of expenditure in the IT capex and opex programmes is prudent and efficient and meets the expenditure objective.

Growth and Security capex

D359 Aurora proposed to invest \$30.3 million over the CPP period (see Figure D12) in its Growth and Security capex programme to “ensure the capacity of our network is adequate to meet the peak demand of our customers, with appropriate supply security, now and into the future”.

Figure D12 Growth and Security capex between RY15 and RY26



D360 The Growth and Security capex programme comprises:

D360.1 \$5.4 million for the Arrowtown 33 kV ring upgrade;⁴⁵⁰

⁴⁴⁹ See below from para D432.

⁴⁵⁰ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Section F.1 p. 132-136.

D360.2 \$2.6 million for the Arrowtown zone substation 33 kV indoor switchboard upgrade;⁴⁵¹

D360.3 \$3.0 million for a new zone substation at Omakau;⁴⁵²

D360.4 \$5.2 million for the Smith St – Willowbank cable intertie;⁴⁵³ and

D360.5 \$14.0 million for distribution and LV network reinforcement.⁴⁵⁴

D361 We have also discussed the \$3 million Upper Clutha Distributed Energy Resources (DER) in this capex attachment. This is an opex project that has been proposed to defer network capex investment, so is logically discussed in this capex attachment.⁴⁵⁵

CPP application - Growth and Security projects

D362 In its CPP proposal Aurora notes that demand growth is the key driver for its proposed growth and security investments. While Dunedin has relatively low levels of demand growth there have been higher levels of demand growth in Central Otago and Queenstown.

D363 To decide which project meets the investment need, Aurora follows a formal needs assessment process, based on its security of supply guidelines and network analysis, that identifies long and short list options, and applies economic analysis to the short list to decide the preferred solution.

D364 The Arrowtown 33 kV ring upgrade project is proposed because demand on the Arrowtown ring has exceeded its firm capacity and security levels over the last six years. This project includes installation of a new 33 kV underground cable circuit from Frankton GXP to increase the capacity of the ring.

D365 The Arrowtown zone substation 33 kV indoor switchboard project is closely tied to the Arrowtown 33 kV ring upgrade. It includes investment to replace the existing outdoor switchgear with indoor switchgear and reconfigure the existing three transformers to increase the zone substation capacity.

⁴⁵¹ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Section F.4 p. 139-141.

⁴⁵² [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Section F.5 p. 141-143.

⁴⁵³ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Section F.7 p. 143-145.

⁴⁵⁴ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Section F.8 p. 145-148.

⁴⁵⁵ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Section I.5 p. 180-182.

- D366 The Arrowtown 33 kV ring is currently operated as an open ring with the open point located at the Arrowtown zone substation. The open point is a manually controlled by a manually operated air-break switch. The ring is categorised as having a Z1 security level according to the Aurora's security of supply guidelines, which means that consumers should have no interruption for a single cable, line, or transformer fault. However, under certain demand levels the current security levels are not being met.
- D367 The Omakau substation project is a proposal to construct a new zone substation at Omakau. The existing Omakau zone substation site is located on a road reserve with no space for expansion, and close to a river deemed to pose a flood risk. Presently, the peak load supplied from the Omakau and Lauder Flat zone substations is forecast to exceed firm capacity.
- D368 The Omakau project will include a new transformer re-located from Cromwell zone substation, a mobile substation parking bay and a 33 kV outdoor bus with circuit breaker. The substation presently has a single transformer with limited backfeed capability to other sites. There is also no space to park Aurora's mobile substation. Aurora uses and plans to use its mobile substation to offload smaller zone substation sites during maintenance, and to provide support during unplanned outages.
- D369 At present the sub-transmission cable circuits in Dunedin are all radial, with two cables in the same trench feeding the zone substations. Aurora consider that the present network architecture is not resilient and there is no ability to transfer load between Transpower's GXPs.
- D370 Additionally, the two 33 kV gas-filled sub-transmission cables to Willowbank zone substation are 57 years old and in relatively poor condition. Aurora propose to simultaneously address cable condition issues and increase zone substation supply resilience by changing the CBD cable network architecture.
- D371 The Smith St – Willowbank cable intertie project is Stage 1 of a proposed architecture change. Aurora states this project will delay the timing of other 33 kV cable replacements and address a common-mode failure issue associated with the Willowbank 33 kV cables being in the same trench.
- D372 The distribution and low-voltage network reinforcement portfolio contains smaller capacity and voltage improvement related projects in the distribution and low-voltage networks, to ensure the network is adequate to meet the current and future demand.

- D373 These projects are categorised as either scheduled or non-scheduled. The scheduled projects are known after needs identification and options analysis process and make up approximately 50% of the programme. The non-scheduled projects are unknown in scope and timing so have been forecast based on historical trends.
- D374 The distribution and low-voltage network reinforcement programme has not existed previously as a stand-alone programme, so best endeavours have underpinned the historical project estimates in the CPP application.
- D375 To decide which project meets the investment need in this capex programme, Aurora followed a similar process for the larger network growth and security projects. The stated security of supply guidelines is followed to identify the need, and a long and short list options process is used to identify the best solutions for economic analysis. Least cost solutions are determined using NPV analysis.

Review of the Growth and Security projects

- D376 The Verifier reviewed two Growth and Security capex projects, namely the Riverbank upgrade and the Arrowtown 33 kV ring upgrade. Aurora, in its proposal, deferred the Riverbank upgrade to 2026-2027, which is beyond the five-year CPP period.⁴⁵⁶
- D377 The Verifier's review of the Arrowtown 33 kV ring upgrade concluded that the project need appeared to be justified based on historical and forecast demand relative to firm capacity, subject to the forecast demand being realised. The Verifier also concluded that the economic net benefit test applied by Aurora, which included assumptions of VoLL, forecast demand, and discount rate, to decide the preferred solution, did not appear inappropriate.
- D378 However, while the Verifier considered that this project was fully verified for the demand assumptions made, because the project net benefits depended on forecast demand, it stated that this project could be treated as contingent until the demand effects of COVID-19 were better understood.
- D379 In our draft decision we agreed that the Arrowtown 33 kV ring upgrade project approval could be deferred due to the COVID-19 effects, and we were also interested in the alignment with the Arrowtown zone substation 33 kV indoor switchboard upgrade as well as the other Growth and Security projects not reviewed by the Verifier.

⁴⁵⁶ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Appendix C.13 p.221-229.

Strata review

D380 In support of our draft decision we engaged Strata to review the Growth and Security projects not reviewed by the Verifier, namely the:⁴⁵⁷

D380.1 Arrowtown zone substation 33 kV indoor switchboard upgrade;

D380.2 new zone substation at Omakau;

D380.3 Smith St – Willowbank cable intertie project; and

D380.4 Upper Clutha Distributed Energy Resources (DER).

D381 We asked Strata to review the general investigation approach taken by Aurora for these projects, to test whether Aurora’s stated network security standards had been appropriately applied, whether the demand forecasting was reasonable, how alternatives were considered, how cost-benefit analysis was framed, and the Value of Lost Load (VoLL) estimates amongst other things. We asked Strata to provide an opinion on any adjustments we should consider.

D382 We also carried out our own high-level review of the distribution and low-voltage network reinforcement capex portfolio. We summarised Strata’s analysis and used this advice, and the Verifier’s conclusions about the Arrowtown 33 kV ring upgrade project, to support our draft decision.

Arrowtown projects

D383 In relation to the Arrowtown zone substation 33 kV indoor switchboard upgrade, Strata concluded that Aurora’s consideration of alternative solution options was reasonable. Cost-benefit analysis was appropriately applied, and two short-listed options were tested to determine the least cost solution.

D384 In its analysis that supported our draft decision, Strata identified that the Arrowtown 33 kV switchboard upgrade project was closely linked with the Arrowtown 33 kV ring upgrade project and should have been considered as two project stages to address interrelated issues with local growth and security.

D385 Strata analysed demand in the Queenstown region to decide whether both Arrowtown projects could be deferred. It was found that COVID-19 demand effects were unclear, and what the medium and long-term effects would be based on regional peak demand trends. Strata noted a slight peak demand reduction at Frankton in its analysis, but this was only a single data point and was inconclusive.

⁴⁵⁷ Strata Energy Consulting “Report on Submission Topics - Assessment and opinions on specific submission topics related to Aurora Energy’s June 2020 Customised Price Path application” (24 March 2021) page 6.

- D386 In our draft decision, and based on the Strata analysis, we agreed that the Arrowtown 33 kV switchboard upgrade project should logically be packaged with the Arrowtown 33 kV ring upgrade project, and agreed with the Verifier that the Arrowtown 33 kV ring upgrade project could be considered as contingent until demand becomes more certain. We included the Arrowtown 33 kV switchboard upgrade project in this decision because of the projects being so closely linked.
- D387 In our draft decision we also decided that when COVID-19 demand effects become clear, and if demand increased, Aurora could utilise our capex project reconsideration mechanism and seek additional funding for the Arrowtown projects.
- D388 In response to our draft decision we received several submissions about the Arrowtown projects. The Queenstown Lakes District Council (QLDC) expressed the view that it was not confident the investment programme proposed by Aurora would meet the needs of its district even before the reductions in the draft decision, and that there was no evidence that COVID-19 had slowed demand in the region.⁴⁵⁸ Selwyn Steedman stated, that in his opinion, the end of COVID-19 would result in a large spike in electricity demand in the region.⁴⁵⁹
- D389 QLDC was also concerned that it did not have “clarity or confidence regarding the extent to which the revisiting mechanism can be adequately responsive to changes in predicted demand growth” and that it had committed to a Climate Action plan that will see “electricity relied on more heavily, given its lower emissions footprint.” QLDC also expects to see more electric vehicles reducing transport emissions.⁴⁶⁰
- D390 The Arrowtown Village Association (AVA) submitted that the Arrowtown projects were ‘essential’ and that it was frustrating that these were now 4-5 years away. AVA further stated that people in Arrowtown wanted to see both projects completed "at the same time and at the earliest possible date" stating that:⁴⁶¹

⁴⁵⁸ [Queenstown Lakes District Council – Submission on draft decision for Aurora's CPP – 14 December 2020](#) page 1

⁴⁵⁹ [Selwyn Steedman – Submission on draft decision for Aurora's CPP – 7 December 2020](#).

⁴⁶⁰ [Queenstown Lakes District Council – Submission on draft decision for Aurora's CPP – 14 December 2020](#) page 2.

⁴⁶¹ [Arrowtown Village Association – Submission on draft decision for Aurora's CPP – 18 December 2020](#) page 3.

The reason for this is that the Arrowtown power supply is unreliable. There are problems with vehicles hitting poles, wind blowing down trees on lines and snow on lines. These issues are not captured in the reliability targets for the supply to Arrowtown, which a [sic] weighted towards equipment failure. However, they are common and are central in the minds of people thinking about switching away from the 950 logburners currently in use to improve air quality. Until we have a demonstrated reliable power system to meet an increasing demand in Arrowtown we will continue to have the worst air quality in Australasia during winter with no practical means of doing anything about it in the medium to long term.

- D391 AVA also commented on the present High Impact Low Probability (HILP) event exposure due to earthquakes and wildfire, leading to the loss of supply between Frankton and Cromwell. AVA propose that a mitigation for this could be stand-by generation at Arrowtown substation.⁴⁶²
- D392 Many submitters commented on the increased reliance on electricity at Arrowtown for heating and the air quality issues that have resulted because of logburner use. AVA state that people are intending to switch away from logburners due to poor air quality, which was noted also Central Otago Grey Power, Grey Power NZ Federation, Queenstown Grey Power and QLDC.⁴⁶³
- D393 While mitigating HILP event exposures is a consideration when planning and managing electricity networks, attending to asset related safety and reliability issues will be a priority for Aurora. We note that Aurora's Risk Control and Management standard presents a high-level economic framework for the quantification of HILP event risks which could be used to justify mitigations. While these HILP risks have not been addressed specifically in this CPP, Aurora has created a starting point for their economic justification in the future.
- D394 Aurora submitted that while it agreed with the decision to include a network growth and security contingent event reconsideration mechanism, it disagreed that the Arrowtown 33 kV bus upgrade project should be deferred due to the large renewals' component inherent in the project. The Arrowtown 33 kV bus upgrade would also allow the Arrowtown ring supply to be aligned with Aurora's stated supply standards and improve fault discrimination due to the Arrowtown 33 kV bus not having dedicated fault protection at present.⁴⁶⁴

⁴⁶² [Arrowtown Village Association – Submission on draft decision for Aurora's CPP – 18 December 2020](#) page 4.

⁴⁶³ [Arrowtown Village Association – Submission on draft decision for Aurora's CPP – 18 December 2020](#) page 4, [Central Otago Grey Power – Submission on draft decision for Aurora's CPP – 6 December 2020](#) page 1, [Grey Power NZ Federation – Submission on draft decision for Aurora's CPP – 14 December 2020](#) para 3.1, [Queenstown Grey Power – Submission on draft decision for Aurora's CPP – 6 December 2020](#) para 3.

⁴⁶⁴ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#) pages 58-59.

- D395 We engaged Strata to review the additional information provided by Aurora in its draft decision submission and we considered other submitter views. We also sought the most up to date demand information from Aurora for selected zone substations that feed Arrowtown to test the COVID-19 impact on Arrowtown's demand.⁴⁶⁵
- D396 Strata reviewed the updated demand information from Aurora and confirmed that demand in the region had not slowed since the CPP application was submitted. Strata concluded that the Aurora demand information confirmed the demand-driven need for these projects during the CPP period and that there is also a large asset renewals aspect to them. Strata recommended that the Arrowtown projects should be approved now and included in the CPP capex allowance.⁴⁶⁶
- D397 Based on the additional demand information confirming project need date, the fact that the Arrowtown projects have a large renewals component, and the noted reliability concerns in the region, we agree that both Arrowtown projects are prudent and efficient and should be included in the CPP capex allowance.

New zone substation at Omakau

- D398 In relation to the new zone substation at Omakau, which includes an upgraded transformer, Strata concluded that unless a significant demand reduction is forecast for the coming summer, the project should proceed to the timeframe as proposed.
- D399 Strata noted that the existing Omakau transformer had previously reached its full summer capacity, and that while Aurora had installed fans to keep the transformer cool while operating at capacity, and had offloaded some demand to Lauder Flat, there was limited additional load transfer capability available.
- D400 The existing Omakau transformer is 52 years old and was due for replacement in RY29 according to Aurora's age-based replacement criterion. While Aurora made no comment about the transformer condition, a lot of other equipment at Omakau is due for replacement.
- D401 In its investigations, Aurora had compiled and considered an extensive list of alternative options and applied cost-benefit analysis to four short-list options, which was supported.

⁴⁶⁵ RFI Q081 – Zone substation demand supporting growth 29 January 2021

⁴⁶⁶ Strata Energy Consulting "Report on Submission Topics - Assessment and opinions on specific submission topics related to Aurora Energy's June 2020 Customised Price Path application" (24 March 2021) page 11.

D402 Based on Strata's analysis, and our own review of CPP proposal material, we agreed in our draft decision that the Omakau new substation project expenditure was prudent and efficient in meeting the expenditure objective. We did not receive any draft decision submission information that changed this view.

Smith St – Willowbank cable intertie project

D403 In our draft decision we decided that the proposed \$5.2 million Smith St to Willowbank cable intertie project was "likely to be prudent if the proposed 33 kV meshed cable architecture is the best long-term economic strategy for the CBD".⁴⁶⁷

D404 However, we were concerned that Aurora intended to commit to this project without presenting any economic analysis demonstrating that a change in cable network architecture was the most economical solution and in the best interests of consumers.

D405 In its review, that supported our draft decision, Strata identified that the Smith St – Willowbank cable intertie project was the first step in a \$35 million+ broader programme of work involving the Dunedin central business district (CBD) 33 kV sub-transmission network. Aurora has stated that it needs to replace the aged and/or poor condition oil, gas and PILC 33 kV cables in the Dunedin CBD area over the next 10+ years.

D406 Strata stated that changing from a radial to a meshed architecture is possibly more beneficial than straight like-for-like replacement in a CBD area, and that a meshed sub-transmission cable architecture can provide improved security, operational flexibility, and capacity sharing benefits between zone substations. However, Strata concluded that Aurora should have provided a more coordinated justification for the cable replacement programme, such as comprehensive cost-benefit analysis, with full probabilistic energy at risk planning, to justify the change in architecture.

D407 Additionally, Strata noted that it appeared the proposed CBD cable architecture would provide N-2 supply security, which is a greater level of supply security than Aurora's own security of supply guidelines.

D408 In our draft decision we encouraged Aurora to develop a full strategic plan for the proposed meshed cable architecture in the Dunedin CBD, carry out economic analysis demonstrating that it provided a greater benefit than the present arrangement, and engage with consumers on the plan, particularly if the proposed meshed network was a change to its stated security standards.

⁴⁶⁷ [Commerce Commission "Aurora Energy's proposal to customise its prices and quality standards - Draft decision" \(12 November 2020\)](#) page 341 para D431.

- D409 In its draft decision submission Aurora provided additional information about the Smith St – Willowbank cable intertie project stating that the Willowbank subtransmission cables were forecast for replacement in RY22, and that while the main driver for this project was renewals, it was “categorised as a growth project due to the fact that it is enhancing security-of-supply in the Dunedin 33 kV network”.⁴⁶⁸
- D410 Aurora assert that it had “assessed the Dunedin 33 kV architecture network as a whole, which found that an efficient security-of-supply enhancement was available through installation of an intertie between Smith Street and Willowbank zone substations, which would defer the renewal project out to RY27”.
- D411 We engaged Strata to review the additional information provided by Aurora in its draft decision submission. Strata confirmed that while it “conceptually endorsed at a high level” Aurora’s proposed meshed CBD cable architecture, Aurora had yet to provide a “sufficiently detailed justification” for a wider \$35 million programme. Strata’s point was that once Aurora had taken the first step with the Smith St – Willowbank intertie it would represent a “no turning back option” given the change in architecture.⁴⁶⁹
- D412 Strata concluded that it had seen no new analysis or information that changed its view that supported our draft decision. We agree with Strata’s advice and have decided that the \$5.2 million Smith St to Willowbank intertie project expenditure does not meet the expenditure objective.
- D413 In our draft decision we encouraged Aurora to carry out a full strategic plan for the proposed meshed cable architecture for the Dunedin CBD and provide economic analysis demonstrating that it provides a greater benefit than the present arrangement, and encourage consumer engagement in this process if it results in a higher supply security standard than the existing arrangement.

⁴⁶⁸ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#) pages 59-60.

⁴⁶⁹ Strata Energy Consulting “Report on Submission Topics - Assessment and opinions on specific submission topics related to Aurora Energy’s June 2020 Customised Price Path application” (24 March 2021) page 9.

- D414 Once Aurora has carried out this economic analysis it can utilise our capex project or programme reconsideration mechanism, a process supported by some draft decision submitters.⁴⁷⁰ If it transpires that Aurora's business case concludes the present CBD cable architecture is more economic than the proposed CBD cable architecture change, then Aurora can seek a risk-event reconsideration mechanism path. Otherwise it can utilise the capacity event reconsideration. In either case there is an option for Aurora to seek additional funds to implement the more cost-efficient solution for the need that the Smith St – Willowbank cable project intends to resolve.
- D415 We consider that the process for obtaining this additional funding should not be onerous. If Aurora provides a robust business case, that demonstrates how the change in network architecture integrates with cable replacements at other CBD zone substations, is economic over the next decade when compared to the like-for-like cable replacement strategy, and includes robust cost estimates for new and existing cable routes, then a streamlined approval process is likely.⁴⁷¹

Upper Clutha DER project

- D416 The Upper Clutha DER project is part of a suite of projects Aurora has proposed to provide firm (N-1) capacity for the two Cromwell – Riverbank 66 kV circuits to meet forecast demand growth. This solution involves Aurora making payments for use of third party owned small scale distributed generation and battery systems to defer investment in its network.
- D417 As part of an integrated plan Aurora intends to install a total of 10 MVAR of static capacitors at Lindis Crossing, Cardrona and Wanaka zone substations. These projects will be completed in 2020 to improve voltages in the region, reduce losses and provide increased circuit capacity under N-1 circuit outage conditions. The Clutha DER project is the second stage of this suite of projects to meet increasing demand in the region.

⁴⁷⁰ [CC0011 – Submission on draft decision for Aurora's CPP – 15 November 2020](#), [CC0016 – Submission on draft decision for Aurora's CPP – 20 November 2020](#), and [CC0055 – Submission on draft decision for Aurora's CPP – 8 December 2020](#).

⁴⁷¹ The Commission reconsideration mechanism process will likely include a short consultation period when an application is lodged.

- D418 Some Issues Paper and draft decision submissions suggested that Aurora should consider the use of emerging renewable technologies and distributed generation and other alternatives to network investment.⁴⁷² This project is one such alternative, which intends to aggregate embedded small-scale distributed generation and battery systems.⁴⁷³
- D419 In its review that supported our draft decision Strata noted Aurora had considered a wide range of network and non-network options in its long list of alternatives and short-listed seven options for a focussed cost-benefit analysis.⁴⁷⁴
- D420 Strata agreed that Aurora’s proposed coordinated solution will provide improved voltage support in the region, reduce losses and increase circuit transfer capacity under Cromwell – Riverbank – Wanaka circuit outage conditions. The proposal extends the capacity of the network and appears to be the most economical solution if third parties can be found to provide DER solutions.⁴⁷⁵
- D421 Strata concluded that the DER solution appeared to afford advantages if it could be implemented cost-effectively and sustainably. Strata noted that Aurora had already completed an RFP process, and progressed discussions with potential DER aggregators to the point where it was considered a viable, cost-effective option.
- D422 In our draft decision we considered that this was an innovative solution proposed by Aurora to defer major capital investment in its sub-transmission network and should be supported. In conjunction with capacitors to improve network voltages and improve power transfer capability the DER alternative should provide benefits to consumers. We did not receive any draft decision submission information that changed this view.

⁴⁷² [1-50 "Submission on Aurora Energy's CPP Issues paper" \(27 August 2020\)](#), [Stan Randle \(1\) - Cross submission on draft decision for Aurora's CPP - 15 January 2021](#), [Stan Randle \(2\) - Cross submission on draft decision for Aurora's CPP - 16 January 2021](#), [CC0021 – Submission on draft decision for Aurora's CPP – 27 November 2020](#), and [CC0025– Submission on draft decision for Aurora's CPP – 30 November 2020](#).

⁴⁷³ Note that Aurora has also included the effects of solar panel and electric vehicle uptake in its demand forecasting.

⁴⁷⁴ [Strata Energy "Report on Aurora Energy's CPP application" \(November 2020\)](#) page 6.

⁴⁷⁵ On 12 January 2021 Aurora announced that it had partnered with solarZero to “solar panels and battery storage on customers properties so they can switch to non-network alternatives when the load on the network increases” as part of the Upper Clutha DER solution. More details of the arrangement are available at <https://www.auroraenergy.co.nz/news/2021/aurora-energy-and-solarzero-partner-to-meet-future-growth-in-upper-clutha/>

Our decision

- D423 We have reviewed the CPP proposal Growth and Security projects and the Verifier review of the Arrowtown 33 kV ring upgrade project. In support of our draft decision we engaged Strata to review the major capex projects not reviewed by the Verifier, namely the Arrowtown zone substation 33 kV indoor switchboard upgrade, the new zone substation at Omakau, the Smith St to Willowbank cable intertie, and the Clutha DER solution.
- D424 In our draft decision, we agreed that the new zone substation at Omakau and Clutha DER project expenditure was prudent and efficient. Aurora had demonstrated the need and the benefits of these projects. We did not receive any draft decision submission information that changed this view.
- D425 In our draft decision we considered that the Arrowtown substation upgrade projects should be considered together, and that their timing was dependent on uncertain demand growth. We considered at the time that these projects did not meet the expenditure objective and that Aurora could apply for approval later when demand became more certain.
- D426 We have considered the additional information provided by Aurora in support of the Arrowtown projects and other draft decision submissions regarding these projects. We engaged Strata to review this information. Strata concluded that the Aurora demand information confirmed the demand-driven need for these projects during the CPP period and that there is also a large asset renewals aspect to them. Strata recommended that these projects be approved now and included in the CPP.
- D427 We now agree that Aurora has justified both Arrowtown projects for growth and security reasons based on the latest demand information and a Strata review of that information. We agree that both Arrowtown projects are prudent and efficient.
- D428 In our draft decision we also considered that the Smith St - Willowbank cable intertie project did not meet the expenditure objective. We concluded that Aurora needed to demonstrate the proposed meshed Dunedin CBD cable architecture was economic and provided a greater benefit than the present arrangement.
- D429 We assessed the additional information provided by Aurora in support of the Smith St - Willowbank cable intertie project. The Strata review of this information concluded that Aurora had not presented a strategic plan that demonstrated its commitment to the longer term ≈\$35 million meshed cable architecture programme was an economic option. On this basis we decided that the Smith St – Willowbank cable intertie project was not prudent and efficient and did not meet the expenditure objective.

D430 We did not fully review the \$14.0 million distribution and low-voltage network reinforcement projects in detail from a bottom-up perspective. We tested the process and planning approach Aurora uses to forecast need, whether it investigates options to meet the need, and if it used economic analysis to find the least cost solution. We are satisfied that Aurora takes a prudent approach to forecasting the distribution and low-voltage reinforcement capex and consider that this expenditure is prudent and efficient.

D431 In summary our decision is that:

D431.1 \$25.1 million of proposed capex in the growth and security programme is prudent and efficient and meets the expenditure objective subject to a 5% top-down efficiency adjustment. This has resulted in a final allowance of \$23.8 million; and

D431.2 \$3.0 million of proposed opex for the Clutha DER solution is prudent and efficient and meets the expenditure objective.

The 5% top-down efficiency adjustment

D432 In our draft decision we proposed that a 5% top-down efficiency adjustment be applied to the capex projects and programmes to reflect improvements in Aurora's asset management systems and processes and works delivery efficiency amongst other things.

D433 Aurora's CPP proposal modelled a top-down efficiency adjustment in two of its capex programmes (low-voltage enclosures and crossarms) for the following reasons:⁴⁷⁶

D433.1 contractor productivity. Efficiencies are expected from increased competitive tension and scale efficiencies that could be realised by the uplift in work and increased competitive tension due to Field Service Agreements (FSAs);

D433.2 works coordination. Efficiencies are expected in the medium term as Aurora moves from addressing spot risks to fleet risks;

D433.3 improved decision-making. Efficiencies are expected from improvements in asset management, including expanded network analytics using better data, investment optimisation and condition-based risk management; and

D433.4 improving capability. Efficiency gains are expected as systems and processes mature, and systems and processes are aligned with plans for ISO 55000

⁴⁷⁶ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), Section D.5.8 p.78.

accreditation. IT investments will better optimise expenditure on renewals through improved information.

- D434 At the time, we could see no logical reason why the effect of these asset management and business process improvements would not apply to all of Aurora's capex projects and programmes (apart from IT capex which was assisting in driving the efficiencies).
- D435 Accordingly, we proposed to apply the 5% top-down efficiency adjustment to all the renewals programmes not already subject Aurora's efficiency adjustment, and to the consumer connection, asset relocations, minor capex and network growth capex programme.
- D436 Aurora's proposed modelled efficiency adjustments over the CPP period (RY22-RY26) are shown in Figure D13 below for the capex renewals expenditure programmes demonstrating that Aurora has only modelled an efficiency adjustment in two renewals programmes (crossarms and LV enclosures).
- D437 It was unclear why Aurora's graduated efficiency adjustments between RY22 and RY26 apply to these two renewals programmes and not others, and why all other renewals programmes incur a step-change 10% efficiency improvement adjustment from RY27 but not before.

Figure D13 Aurora's expenditure forecast modelled efficiency adjustments

Expenditure tracker	RY22	RY23	RY24	RY25	RY26	RY27	RY28	RY29	RY30
Capex									
Poles						10.0%	10.0%	10.0%	10.0%
Crossarms	1.0%	2.0%	4.0%	7.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Subtransmission Conductors						10.0%	10.0%	10.0%	10.0%
Distribution Conductors						10.0%	10.0%	10.0%	10.0%
Low Voltage Conductors						10.0%	10.0%	10.0%	10.0%
Subtransmission Cables						10.0%	10.0%	10.0%	10.0%
Distribution Cables						10.0%	10.0%	10.0%	10.0%
Low Voltage Cables						10.0%	10.0%	10.0%	10.0%
Zone Substations						10.0%	10.0%	10.0%	10.0%
Ground Mount Switchgear						10.0%	10.0%	10.0%	10.0%
Pole Mounted Fuses						10.0%	10.0%	10.0%	10.0%
Pole Mounted Switches						10.0%	10.0%	10.0%	10.0%
Reclosers and Sectionalisers						10.0%	10.0%	10.0%	10.0%
Low Voltage Enclosures	1.0%	2.0%	4.0%	7.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Ancillary Distribution Substation Equipment						10.0%	10.0%	10.0%	10.0%
Ground Mounted Distribution Transformers						10.0%	10.0%	10.0%	10.0%
Pole Mounted Distribution Transformers						10.0%	10.0%	10.0%	10.0%
Voltage Regulators						10.0%	10.0%	10.0%	10.0%
Mobile Distribution Substations and Generators						10.0%	10.0%	10.0%	10.0%
Protection						10.0%	10.0%	10.0%	10.0%
DC Systems						10.0%	10.0%	10.0%	10.0%
Remote Terminal Units						10.0%	10.0%	10.0%	10.0%
Metering						10.0%	10.0%	10.0%	10.0%

- D438 We explained in our draft decision that the proposed application of the efficiency adjustment to other capex programmes would apply on the same incremental basis as the efficiency adjustments Aurora had modelled, starting from a 1% efficiency adjustment in RY22 rising to a 10% adjustment in RY26. This equated to an approximate 5% adjustment over the period. In our draft decision we modelled the same effect of this adjustment.
- D439 We also reasoned in our draft decision that a 5% top-down efficiency adjustment for capex programmes was consistent with efficiency adjustments identified by other lines businesses that have been on similar asset management and business process improvement paths.⁴⁷⁷
- D440 In its draft decision submission QLDC “cautiously supported” the expectation that Aurora would be expected to achieve efficiencies but noted that its “experience as a major infrastructure provider shows that these efficiencies occur through having the appropriate systems and processes in place”,⁴⁷⁸ while The Lines Company considered Aurora should be “given time to realise efficiency gains over the medium to long term - focusing on safety and reliability”.⁴⁷⁹ We consider that our draft decision to apply Aurora’s graduated adjustment across the capex portfolio, is consistent with these views.
- D441 In its draft decision submission Aurora disagreed with our proposal to impose the top-down efficiency adjustment across the capex portfolio and stated that it appeared to be based on a Strata recommendation. While it is correct that Strata recommended that a top-down efficiency adjustment be applied, we implemented this adjustment in Aurora’s expenditure forecast model after we could see no reason why Aurora’s efficiency adjustment would only apply in the crossarm and LV enclosures renewals programmes.
- D442 Aurora disagreed with the ‘one-size-fits-all’ adjustment because activities and portfolios “vary significantly”. However, Aurora did not qualify this view or present reasons why improvements in asset management and business processes are selective by asset programmes, stating that “consumer connections, volumetric renewals, and large projects are all fundamentally different activities”.⁴⁸⁰

⁴⁷⁷ [Commerce Commission "Aurora Energy's proposal to customise its prices and quality standards - Draft decision" \(12 November 2020\)](#) page 265 para D152.

⁴⁷⁸ [Queenstown Lakes District Council – Submission on draft decision for Aurora's CPP – 14 December 2020](#) page 3.

⁴⁷⁹ [The Lines Company – Submission on draft decision for Aurora's CPP – 18 December 2020](#) para 2.6.

⁴⁸⁰ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#) Section 6.1.1 page 49.

- D443 Aurora stated in its draft decision submission that it made its own efficiency adjustments to the crossarms and LV enclosures after discussion with the Verifier but did not explain why only these asset classes are affected by efficiency improvements and not others.
- D444 Aurora also questioned why the Commission's draft decision efficiency adjustment was not applied to the crossarms and LV enclosures renewals programmes. In our draft decision we did not apply a further top-down efficiency adjustment to the crossarms and LV enclosures renewals programmes because Aurora had already modelled this adjustment in its expenditure forecasts.
- D445 Finally, Aurora also raised deliverability concerns as another possible reason for the efficiency adjustment not being applied consistently across the capex portfolio stating that "forecasting approaches and potential delivery risks vary across the more than 20 portfolios with different drivers and delivery risks". However, Aurora does not elaborate on how deliverability issues are different in each capex project or programme.
- D446 In summary our final decision is to retain the top-down 5% efficiency adjustment for all of Aurora's capex programmes (except IT capex) as we proposed in our draft decision. While Aurora disagreed with this adjustment, we can see no reason why Aurora's recent and forthcoming business improvements should result in efficiencies in only the crossarms and LV enclosures renewals programmes.⁴⁸¹

⁴⁸¹ The adjustment is consistent with Aurora's incremental efficiency adjustment in the crossarms and LV enclosures renewals programmes; a 1% efficiency adjustment in RY22 rising to 10% by RY26.

Attachment E Overview of opex analysis

Purpose of this attachment

E1 This attachment outlines our decisions on the opex that Aurora will be able to recover from its consumers over the CPP period.⁴⁸²

Summary of our final decision

E2 We have decided to accept \$236.0 million of the \$252.9 million Aurora has proposed in its CPP application. We consider that \$236.0 million of opex meets the expenditure objective as being the prudent costs of an efficient supplier managing the Aurora network. A summary of our decision is provided in Table E1.⁴⁸³

Table E1 Summary of CPP opex proposal, draft and final decision amounts

Opex portfolio	Proposal (\$m)	% of total opex	Draft decision (\$m)	Final decision (\$m)
NETWORK OPEX				
Preventive Maintenance	\$30.5	12%	\$30.5	\$30.5
Corrective Maintenance	\$17.1	7%	\$16.4	\$16.6
Reactive Maintenance	\$22.8	9%	\$22.5	\$22.5
Vegetation	\$21.2	8%	\$16.1	\$21.2
NON-NETWORK OPEX				
SONS and People Costs	\$120.7	48%	\$82.5	\$104.4
IT Opex	\$17.0	7%	\$17.0	\$17.0
Premises and Plant	\$5.1	2%	\$5.1	\$5.1
Administration and Governance	\$15.6	6%	\$14.5	\$15.6
Upper Clutha DER Solution	\$3.0	1%	\$3.0	\$3.0
TOTAL OPEX	\$252.9		\$207.7	\$236.0

E3 We have decided to reject \$16.9 million of Aurora's proposed opex as we do not consider that this expenditure meets the expenditure objective.

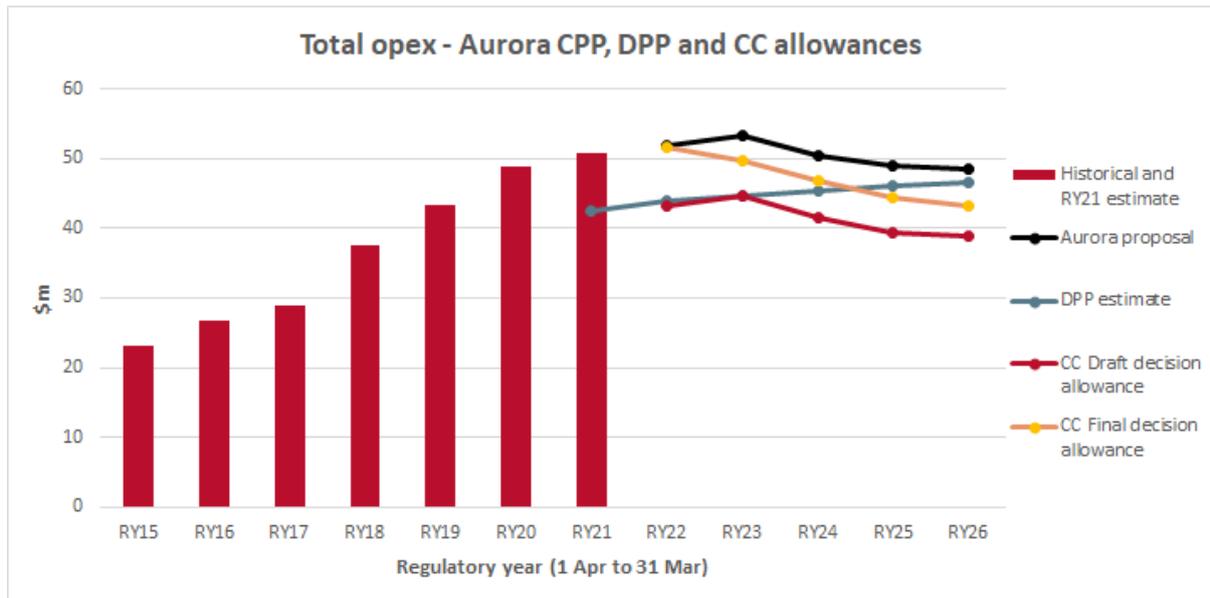
E4 The final opex allowance of \$236.0 million is \$28.2 million more than the draft decision. The change in allowance reflects consideration of a range of new information in submissions from Aurora. Relative to the draft decision, we have made the following decisions:

⁴⁸² All expenditure references in this attachment are in real \$2020 terms unless stated otherwise.

⁴⁸³ All tables, figures and references to opex in this attachment include operating leases. \$2.2m of SONS and \$3.2m of Plants and Premises over the CPP period include operating leases. Note that for the purposes of the financial modelling operating leases are not part of the opex allowance in the price path model as they are now treated as capex. This is due to the implementation of a new financial reporting standard – NZ IFRS 16.

- E4.1 We have agreed with Aurora’s proposed \$21.2 million vegetation management expenditure after Aurora provided further confidential information that market tested unit rates for the work that are charged by its contractor;
 - E4.2 We have agreed with Aurora’s view that additional preventive maintenance will identify additional defects and have adjusted the corrective maintenance allowance accordingly;
 - E4.3 We have agreed with Aurora’s proposed expenditure in Administration and Governance of \$15.6 million after Aurora submitted that the proposed reductions in the base step and trend model assumptions were not sufficiently supported;
 - E4.4 We have increased the allowance for Systems Operation and Network Support (SONS) and people costs after considering a range of new information, including submissions and revised analysis by Strata and the Commission (which arose from submissions). We set Aurora’s allowance equal to its proposal in RY22 and applied an annual real reduction of 6% from RY23 onwards.
- E5 Figure E1 illustrates the final decision opex allowance over the CPP period (RY22- RY26) compared with the estimated DPP allowances, opex between RY15 and RY21, and Aurora’s CPP proposal.

Figure E1 Opex allowance comparisons, Aurora CPP, DPP and historical opex (real \$2020 million)



Structure of this attachment

- E6 This attachment contains our analysis and decisions following our review of Aurora’s CPP opex proposal and review of submissions on our draft decision. This attachment contains the following:
- E6.1 **Our approach to reviewing Aurora’s opex proposal** – we summarise how we went about reviewing the CPP proposal;
 - E6.2 A brief summary of **Aurora’s opex proposal**;
 - E6.3 **The Verifier review of Aurora’s opex proposal** – we discuss how the Verifier carried out its assessment and our assessment of that work against our Terms of Reference with the Verifier.⁴⁸⁴ We highlight that the Verifier’s review of opex has provided us with qualified levels of assurance that, subject to us performing our own investigation, expenditure has met the expenditure objective;
 - E6.4 A brief **summary of our draft decision**;
 - E6.5 **Key areas of investigation following submissions on our draft decision** – we identify the key areas of opex that were the subject of submissions on our draft decision;
 - E6.6 **Analysis of opex programmes and projects** – we provide an in-depth analysis of the various opex projects and programmes, which references the key points raised in submissions, and explains how we reached our expenditure decisions. This is in five sections covering:
 - E6.6.1 Total opex
 - E6.6.2 SONS and people;
 - E6.6.3 Vegetation management;
 - E6.6.4 Maintenance; and
 - E6.6.5 Administration and Governance, and Premises, Plant and Insurance.

Our approach to reviewing Aurora’s opex proposal

- E7 This section sets out our approach to assessing opex, and references the evaluation criteria, in particular the expenditure objective.

⁴⁸⁴ Discussed from paragraph E20, below.

- E8 We have undertaken a thorough approach to determining our opex allowances for Aurora over the CPP period. This analysis has included:
- E8.1 Reviewing Aurora's proposal which identifies the opex Aurora considers it required to manage its network;
 - E8.2 Assessing the extent to which we could rely on the analysis and conclusions of the Verifier. This included a two-day workshop with the Verifier to probe the approach and conclusions of the verification process, and to discuss the issues identified by the Verifier and ourselves;
 - E8.3 Publishing an Issues Paper so interested persons could express their views on Aurora's proposed opex and the Verifier's conclusions;
 - E8.4 Reviewing submissions on the Issues Paper and the Verification report to identify the key issues for us to consider, including issues highlighted for our attention by the Verifier;
 - E8.5 Engaging Strata to investigate, to varying degrees of scrutiny, areas of the opex programme;
 - E8.6 Posing additional questions to Aurora about material issues with its proposal and questions arising out of the Strata analysis. In these questions and discussions, we particularly focussed on understanding some aspects of Aurora's vegetation management costs, and SONS and people costs forecasts;
 - E8.7 Analysing the evidence before us to reach a view on the appropriate levels of opex allowances to be included in the draft price path;
 - E8.8 Issuing a draft decision on the opex allowances, supported by our reasons, for consultation;
 - E8.9 Considering submissions in response to our draft decision and seeking further information (especially in relation to vegetation management from Aurora); and
 - E8.10 Obtaining and considering further analysis, including from Strata, and reaching our final decision on the opex allowances for Aurora over the CPP period.
- E9 The specific analysis we have undertaken for each category of Aurora's proposed opex is explained in detail in the opex programme analysis section which includes how we have addressed relevant information from submissions on the draft decision.

CPP evaluation criteria

E10 The criteria that we must use to evaluate a CPP are set out in the electricity distribution services input methodologies, and are discussed in detail in Chapter 5.⁴⁸⁵ These criteria are intended to ensure that our determination of a CPP meets the long-term benefit of consumers. The evaluation criteria are set out again below for ease of reference.

Evaluation criteria for customised price-quality path proposals

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

- a) whether the proposal is consistent with the input methodologies;
- b) the extent to which the proposal promotes the purpose of Part 4 of the Act;
- c) whether data, analysis, and assumptions underpinning the proposal are fit for the purpose of determining a CPP;
- d) whether the proposed capital and operating expenditure meet the expenditure objective;
- e) the extent to which any proposed changes to quality standards reflect what the applicant can realistically achieve taking into account statistical analysis of past SAIDI and SAIFI performance; and/or (ii) the level of investment provided for in proposed; and
- f) the extent to which the CPP applicant has consulted with consumers on its CPP proposal; and the proposal is supported by consumers, where relevant.

E11 Of the evaluation criteria, it is the expenditure objective (criteria d) that is most relevant to assessing opex. Whether c) data and assumptions are fit for purpose, and f) consumer consultation will also sometimes be relevant, is noted in this attachment where this is the case.

⁴⁸⁵ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), clause 5.2.

Whether the proposed expenditure reflects the expenditure objective

- E12 The expenditure objective requires us to assess Aurora's proposed operating expenditure on the basis that it reflects the efficient costs that a prudent supplier subject to price-quality regulation would require to:
- E12.1 meet or manage the expected demand for electricity distribution services, at appropriate service standards, during the customised price-quality path regulatory period and over the longer term; and
 - E12.2 comply with applicable regulatory obligations associated with those services.⁴⁸⁶
- E13 The assessment of forecast expenditure is not a mechanistic process. It necessarily involves the exercise of judgement, sometimes supported by expert advice. We consider that a 'prudent supplier' is a supplier whose planning and performance standards reflect good electricity industry practice (GEIP), and we note that the Verifier took this approach.⁴⁸⁷
- E14 We assess the prudence and efficiency of expenditure during the regulatory period and over the longer term. As such, while our assessment of forecast expenditure focusses on the CPP regulatory period it does also consider longer term impacts.

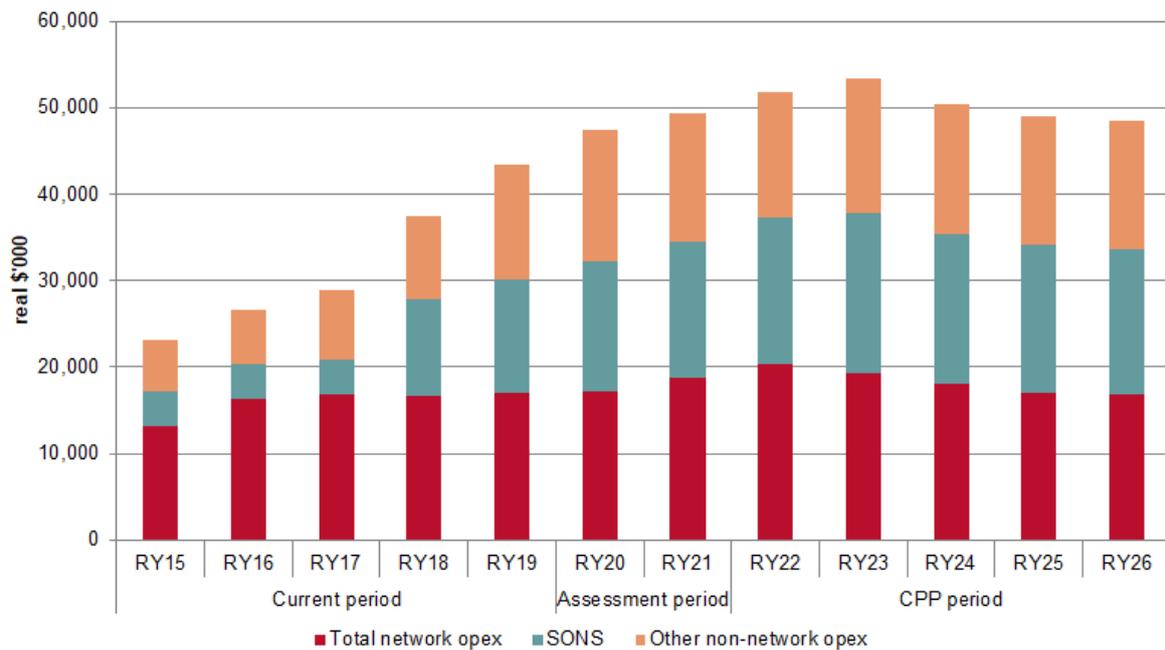
Aurora's opex proposal

- E15 Aurora forecasted a total of \$252.9 million over 5 years for opex. That includes proposed expenditure to undertake improvements in maintenance, vegetation management and works planning and delivery, and the support frameworks for people and ICT to enable these improvements.
- E16 This represents a 20.7% increase of \$43.5 million for opex when compared to the five years leading up to the CPP period (RY17 to RY21).
- E17 Aurora's opex proposals include the following:
- E17.1 Maintenance - \$70.3 million for preventative, corrective and reactive maintenance to enable Aurora to reduce its asset defect backlog, improve its testing, inspection and asset condition assessment processes, and to respond to asset related faults and other network incidents.

⁴⁸⁶ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), clause 1.1.4.

⁴⁸⁷ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), p. 25-26.

- E17.2 Vegetation management - \$21.2 million for the monitoring and clearing of vegetation near overhead lines, monitoring vegetation growth and liaising with landowners.
 - E17.3 System Operations and Network Support (SONS) - \$80.4 million for costs relating to the operations and performance of the electricity network, which includes costs for asset management and planning, works programming and service delivery.
 - E17.4 People Costs - \$40.3 million for the costs of employing business support and external service provider costs, and includes human resources and communications, accounting, finance and risk assurance, regulatory and commercial and information technology (IT) costs.
 - E17.5 IT opex - \$17.0 million for the operating costs to support and enhance the infrastructure, information services and business applications, and includes tools to improve asset management capability, finance, cyber security, maintaining an Advanced Distribution Management System and a strategic move to cloud-based solutions.
 - E17.6 Premises, Plant and Insurance - \$5.1 million for costs associated with office operating costs, leasing costs of plant and motor vehicles, insurance costs of selected network assets, general liability and indemnity cover.
 - E17.7 Administration and Governance - \$15.6 million for general administration costs associated with operating and supporting the business, and includes costs relating to the board of directors, audit and assurance programmes, legal fees and consumables.
 - E17.8 Upper Clutha DER - \$3.0 million for costs associated with the payments for use of third party owned small scale distributed generation and battery systems to defer distribution network capacity investment.
- E18 Aurora's proposed opex during the CPP period is illustrated in Figure E2 below.

Figure E2 Overview of Aurora's opex proposal

E19 A detailed description of each opex category, including what Aurora proposes to spend within each opex category, and the reasons for our draft decision, are included in the draft decision document.⁴⁸⁸

The Verifier review of Aurora's opex proposal

E20 As described in Chapter 5, the Verifier is a necessary and important part of the process for evaluating a CPP proposal. It forms the starting point for our analysis.

E21 In this section we discuss:

E21.1 The programmes of opex selected for review by the Verifier;

E21.2 How we tested the Verifier's report against the requirements;

E21.3 The Verifier's key conclusions on opex; and

E21.4 How the Verifier provided us with a heavily qualified verification report due to the large number of matters relating to opex identified by the Verifier for us to consider further.

⁴⁸⁸ [Commerce Commission "Aurora Energy's proposal to customise its prices and quality standards - Draft decision" \(12 November 2020\), Attachment E.](#)

The Verifier selected Identified Programmes for review

- E22 The IMs require that for the purposes of the capital and operating expenditure reviews set out in Schedule G5(1)(d) and G6(1)(g), the Verifier must select no more than 20 projects and programmes for its review. These are called the Identified Programmes.⁴⁸⁹
- E23 In selecting the Identified Programmes, the Verifier must consider:⁴⁹⁰
- E23.1 the long-term interests of consumers;
 - E23.2 our ability to effectively review the capex and opex forecasts against the expenditure objective;
 - E23.3 the rationale for seeking the CPP;
 - E23.4 whether the Identified Programmes selected are enough to provide an opinion on whether the proposal is prepared in accordance with the applicant's planning standards and policies, at an aggregate level, and for each of the capex and opex categories;
 - E23.5 the materiality of the programmes and projects in the CPP proposal; and
 - E23.6 the key risks the applicant is exposed to, a key driver of the need to submit the proposal, or any obligation that has a significant impact on the applicant's business.
- E24 The selection methodology the Verifier used to choose the Identified Programmes is set out in Appendix B of the Verification report. The Verifier qualified its Identified Programme selections against the criteria set out in Schedule G4(2) and G4(3) stating that:
- E24.1 it was restricted to a maximum of 20 projects and programmes out of a total of 48 so its review of the full capex portfolio especially was limited;
 - E24.2 safety was a key driver for much of the proposal, so it was important to focus on those fleets that were directly relevant to safety such as the poles, crossarms, conductors, protection, LV enclosures and zone substation equipment;

⁴⁸⁹ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Schedule G4(1).

⁴⁹⁰ [Electricity Distribution Services Input Methodologies Determination 2012 \(Consolidated as of 20 May 2020\)](#), Schedule G4(2) and G4(3).

- E24.3 the major growth projects only contribute 4% to the combined total capex and opex expenditure over the CPP period so the two largest growth capex projects were selected;
 - E24.4 Aurora's move from a reactive to a preventive maintenance approach indicated that these programmes should be reviewed along with vegetation management opex; and
 - E24.5 Aurora was proposing a significant uplift in systems and staff to improve its asset management, so programmes such as ICT capex, SONS opex and people costs were reviewed.
- E25 The Verifier reviewed the following opex projects and programmes:
- E25.1 Vegetation management (\$21.2 million);
 - E25.2 Preventive maintenance (\$30.5 million);
 - E25.3 Corrective maintenance (\$17.1 million);
 - E25.4 Reactive maintenance (\$22.8 million);
 - E25.5 SONS (\$80.4 million);
 - E25.6 People costs (\$40.3 million); and
 - E25.7 IT opex (\$17.0 million).
- E26 The Verifier did not review \$23.7 million (9%) of the total opex programme. The unreviewed opex included expenditure on Plant and Premises, Administration and Governance and the Upper Clutha DER solution.

We tested the Verifier report against the requirements of Schedule G – Terms of Reference for Verifiers when we reviewed the proposed opex programme

- E27 We have relied on many aspects of the Verifier's findings in reaching our conclusions about whether expenditure in the opex programme has met the expenditure objective.

- E28 The Terms of Reference for Verifiers is set out in Schedule G of the relevant Input Methodologies.⁴⁹¹ The Verifier did not fully report, on a clause by clause basis, whether Aurora’s proposal was consistent with Schedule G. While the Verifier’s report contained a comprehensive assessment in each of the 20 projects and programmes (Identified Programmes), the Verifier’s views of compliance with Schedule G were instead generally consolidated within its written review material.
- E29 We carried out our own review of the Verifier’s report to test the verification findings against the clause by clause requirements of Schedule G, where this was relevant to the Identified Programmes.
- E30 We tested the Verification report in a top-down and a bottom-up manner for both the capex and opex forecasts. The top-down review focussed on those aspects of the Schedule G requirements that affect all aspects of the opex forecast in a CPP proposal, such as the policies and planning standards used by the electricity lines company, key assumptions used and how opex forecasts were developed, cost estimation methods including procurement efficiency and deliverability.
- E31 The bottom-up review focussed on, at an individual project and programme level, each of the verified Identified Programmes. This included analysis as to whether the top-down frameworks had been applied in practice and included additional project and programme specific requirements such as opex project prioritisation, unit rate sources used, links with other projects and programmes including capex, and individual opex model inputs.
- E32 In our top-down review of the Verifier’s report we tested to what extent the Verifier had:
- E32.1 provided an opinion on whether the policies and planning standards relied upon by Aurora were of a nature and quality required for the opex forecast to meet the expenditure objective;⁴⁹²
 - E32.2 provided an opinion on whether the opex forecasts were prepared in accordance with the policies and planning standards at an aggregate level and for each opex category;⁴⁹³

⁴⁹¹ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020.](#)

⁴⁹² [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, Schedule G6\(1\)\(a\)\(i\) and \(ii\).](#)

⁴⁹³ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, Schedule G6\(1\)\(b\).](#)

- E32.3 provided an opinion on the reasonableness of the key assumptions relied on by the CPP applicant, how these were developed, applied and their impact on the actual and forecast opex;⁴⁹⁴
- E32.4 provided an opinion on any other opex drivers not covered by the key assumptions that have led to an increase in the opex forecast including whether the quantum of such an increase is required to meet the expenditure objective;⁴⁹⁵
- E32.5 provided an opinion on the reasonableness of the methodology used in forecasting opex (such as cost benchmarking or internal historic cost trending), including the relationship between the opex forecast and capex forecast;⁴⁹⁶
- E32.6 provided an opinion on the reasonableness of any opex reduction initiatives undertaken or planned during the current period or the next period;⁴⁹⁷
- E32.7 reported conclusions on the project and programme capital costing methodology and formulation, including unit rate sources, the method used to test the efficiency of unit rates and the level of contingencies included for projects;⁴⁹⁸
- E32.8 reported conclusions on cost control and delivery performance for actual opex, and deliverability of work covered by the opex categories in the next period;⁴⁹⁹
- E32.9 reported conclusions on the efficiency of the proposed approach to procurement;⁵⁰⁰
- E32.10 provided an opinion as to whether the key assumptions, input data and forecasting methods used in determining demand forecasts were

⁴⁹⁴ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020](#), Schedule G6(1)(a)(iii) and G6(1)(c).

⁴⁹⁵ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020](#), s G6(1)(d).

⁴⁹⁶ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020](#), s G6(1)(e).

⁴⁹⁷ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020](#), s G6(1)(f).

⁴⁹⁸ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020](#), s G6(1)(v).

⁴⁹⁹ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020](#), G6(1)(g)(viii) and s G6(1)(h).

⁵⁰⁰ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020](#), G6(1)(g)(ix).

reasonable; and whether it was appropriate to use these to determine the capex and opex forecasts;⁵⁰¹

- E32.11 used a number of assessment techniques to test the CPP proposal material and explained why particular techniques were used and why others were not;⁵⁰²
 - E32.12 listed the information that was relied on in the verification process.⁵⁰³
 - E32.13 identified information that was omitted or incomplete and the impact this had on the Verifier's review;⁵⁰⁴
 - E32.14 identified what additional information may be necessary to complete the review of the proposal;⁵⁰⁵
 - E32.15 explained why it has selected the Identified Programmes in accordance with clause G4(1);⁵⁰⁶
 - E32.16 provided a list of key issues that it considers we should focus on and specify information that would assist us in our assessment of the proposal;⁵⁰⁷ and
 - E32.17 identified any other information held by the CPP applicant that would assist us in our assessment of the proposal.⁵⁰⁸
- E33 Finally, the Verifier in its review must conclude with an opinion on whether the opex programme of work meets the expenditure objective. If not, it must identify:⁵⁰⁹
- E33.1 if further information is required and, if so, what type of information is required;

⁵⁰¹ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, G8.](#)

⁵⁰² [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, G9\(1\) and G9\(2\).](#)

⁵⁰³ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, G11\(a\).](#)

⁵⁰⁴ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, G11\(b\) and \(d\).](#)

⁵⁰⁵ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, G11\(c\).](#)

⁵⁰⁶ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, G11\(e\)](#)

⁵⁰⁷ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, G12\(a\) and \(b\).](#)

⁵⁰⁸ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, G12\(c\).](#)

⁵⁰⁹ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, G6\(2\).](#)

- E33.2 which of the forecast opex programmes might warrant further investigation by us; and
- E33.3 what type of assessment might be most effective.
- E34 In our bottom-up review of the Verifier’s report we scrutinised several of the Identified Programmes and tested to what extent the Verifier had:
- E34.1 considered whether the policies and planning standards were applied appropriately, and whether policies regarding the need for, and prioritisation of, the project or programme were reasonable and had been applied appropriately;⁵¹⁰
- E34.2 assessed the process undertaken by the CPP applicant to determine the reasonableness and cost-effectiveness of the chosen solution, including the use of cost-benefit analyses to target efficient solutions;⁵¹¹
- E34.3 reported conclusions on the approach used to prioritise opex projects over time including the application of that approach for the next period;⁵¹²
- E34.4 considered the impact on other cost categories including the relationship with opex, and links with other projects;⁵¹³
- E34.5 considered whether the opex project or programme should be included as a contingent project or part of a contingent project; and⁵¹⁴
- E34.6 provided an opinion on the reasonableness and adequacy of any asset replacement models used to prepare the opex forecast including an assessment of the inputs used within the model, and the methods the CPP applicant used to check the reasonableness of the forecasts and related expenditure.⁵¹⁵

The Verifier’s conclusions

- E35 This section summarises at a high-level, the Verifier’s conclusions relating to opex.

⁵¹⁰ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, G6\(1\)\(g\)\(i\) and G6\(1\)\(g\)\(ii\).](#)

⁵¹¹ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, G6\(1\)\(g\)\(iii\).](#)

⁵¹² [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, G6\(1\)\(g\)\(iv\).](#)

⁵¹³ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, G6\(1\)\(g\)\(vi\) and G6\(1\)\(g\)\(vii\).](#)

⁵¹⁴ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, G6\(1\)\(g\)\(x\).](#)

⁵¹⁵ [Electricity Distribution Services Input Methodologies Determination 2012 \[2012\] NZCC 26 consolidated 20 May 2020, G6\(1\)\(g\)\(i\).](#)

- E36 The Verifier reviewed seven opex programmes of work from a total of 10 which were included in Aurora's proposal.⁵¹⁶ The Verifier applied materiality criteria to choose its programme selections which resulted in it reviewing 91% of the total opex programme proposed by Aurora (\$252.9 million).
- E37 Following the verification process, the Verifier concluded that \$9.2 million of the \$229.2 million of opex expenditure it had reviewed was unverified.⁵¹⁷
- E38 However, the Verifier also identified some additional matters for us to consider further across many aspects of Aurora's proposed opex programme, even in respect of expenditure which the Verifier had concluded was largely verified. For example, the matters for further consideration in relation to opex included:⁵¹⁸
- E38.1 considering how Aurora is making decisions about appropriate levels of full-time equivalent (FTE) staff for a business of its size;
 - E38.2 whether RY18 vegetation expenditure - which was used to determine the unit rate - is efficient and whether it is appropriate to use the information disclosure data to benchmark that expenditure against other electricity lines companies;
 - E38.3 whether it is appropriate for the remediation costs of the consumer pole population to be included within the regulated cost base;
 - E38.4 whether the proposed increase in corrective maintenance expenditure to address defects is appropriate;
 - E38.5 work with Aurora to understand the efficiency of its RY19 base year expenditure;
 - E38.6 whether it is appropriate to apply a network growth factor to corrective and reactive maintenance and SONS and people expenditure;
 - E38.7 whether additional year on year productivity improvements should be factored into the opex categories;
 - E38.8 assess the consistency between capitalised and expensed SONS and people expenditure; and
 - E38.9 whether Aurora's proposed step change for insurance may be too high.

⁵¹⁶ See paras E25-26.

⁵¹⁷ For clarity, the Verifier did not review all opex programmes (for example, the Verifier did not review premises and plant, administration and governance, or the Upper Clutha DER solution expenditure). The Verifier reviewed \$229.2 million of Aurora's proposed \$252.9 million opex proposal.

⁵¹⁸ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\), summarised at Section 7.1, pages 136-139.](#)

- E39 We considered that these were fundamental issues raised by the Verifier despite it concluding that it had verified 87% of the opex proposal.

The Verifier provided us with a heavily qualified verification of opex

- E40 The Verifier's report was submitted with Aurora's submission of its CPP proposal on 12 June 2020. We have critically reviewed the verification report and the techniques and methods the Verifier has used to test Aurora's proposal against the requirements of Schedule G. This review included a two-day workshop with the Verifier in June 2020 to test the Verifier's findings, to seek clarification of report material and to gain a better understanding both of the Verifier's work and of the thinking which lead to the Verifier's final report.
- E41 In relation to opex, while the Verifier stated it had reviewed 91% of Aurora's opex proposal and verified 87% of it, it concluded that many aspects of the opex proposal needed to be considered further by us. We consider that there is a disconnect between the Verifier's very high verification approval rate (96%) and its identification of issues needing further analysis.
- E42 As discussed in Chapter 5 this disconnect is unhelpful and potentially confusing, and we will consider whether we can make changes to the IMs to avoid that situation occurring in future.
- E43 Although the Verifier's conclusions were subject to significant qualifications, the Verifier's findings were useful, in particular:
- E43.1 in identifying areas where, after reviewing the Verifier's work, we considered we did not need to do further work as we could rely on the Verifier's review;
 - E43.2 in identifying areas needing further analysis, and
 - E43.3 in identifying the type of additional information which we might require, and the type of additional analysis which we should undertake.

Our draft decision on the overall opex allowance

- E44 This section briefly summarises our draft decision on the overall opex allowance.
- E45 In order to reach a draft decision on opex we sought further information and undertook further analysis.
- E46 We sought additional information from Aurora using a formal Request for Information (RFI) process. Throughout this attachment we refer to these RFIs and discuss how we have used the information we received from Aurora to evaluate the proposal and to reach our decision.

- E47 We engaged Strata to review seven of the nine issues identified above by the Verifier. After we reviewed the results of Strata's analysis, we made a draft decision to reduce the opex programme proposed by Aurora. The reductions were in the following areas:
- E47.1 SONS and people expenditures due to these not reflecting the efficient costs that would be required by a prudent electricity lines company;
 - E47.2 vegetation management unit rate due to unit rate not reflecting market rates;
 - E47.3 network growth trend multiplier removed from SONS, people, corrective maintenance and reduced for reactive maintenance;
 - E47.4 the proposed step change in corrective maintenance opex due to additional defects;
 - E47.5 SONS expenditure due to smaller increase allowed for insurance premia than proposed by Aurora;
 - E47.6 people costs due to smaller increase allowed to staff training costs; and
 - E47.7 Administration and Governance expenditure due to efficiency benefits from bringing some in-house legal work and removing one-off customer communication costs associated with Aurora's CPP application.
- E48 Table E1 below summarises the opex allowances in our draft decisions and what Aurora had proposed.

Table E1. Summary of CPP opex proposal and draft decision amounts (real \$2020 million)

Opex portfolio	Proposal (\$m)	% of total opex	Draft decision (\$m)
NETWORK OPEX			
Preventive Maintenance	\$30.5	12%	\$30.5
Corrective Maintenance	\$17.1	7%	\$16.4
Reactive Maintenance	\$22.8	9%	\$22.5
Vegetation	\$21.2	8%	\$16.1
NON-NETWORK OPEX			
SONS and People Costs	\$120.7	48%	\$82.5
IT Opex	\$17.0	7%	\$17.0
Premises and Plant	\$5.1	2%	\$5.1
Administration and Governance	\$15.6	6%	\$14.5
Upper Clutha DER Solution	\$3.0	1%	\$3.0
TOTAL OPEX	\$252.9		\$207.7

Key areas of investigation following submissions on the draft decision

- E49 We received numerous submissions on our draft decision regarding our opex allowances. Many of those submissions did trigger further analysis that assisted us in forming our views that supported the final decision and we have noted these where this is the case.
- E50 Submissions commented:
- E50.1 that the DPP3 allowance for opex was higher than the draft CPP allowance; and
- E50.2 on the allowance for the individual components of opex which make up the overall allowance.
- E51 Submissions commented on the approach we took to evaluating opex, including the amount of weight we placed on the Verifier's findings, and the use of comparative benchmarking. We have already discussed these issues in Chapter 5.

The DPP3 allowance was higher than the draft CPP allowance

- E52 We received submissions that it was surprising and counter intuitive that the DPP3 allowance for opex was higher than the draft allowance under the CPP.
- E53 In response, we make the following short points:
- E53.1 The Act is explicit that we may set a price quality path that is lower or otherwise less favourable to Aurora than the DPP,⁵¹⁹ and as such the DPP is not a floor on which we only ever build additional expenditure allowances.
- E53.2 We are able to apply a greater degree of scrutiny and more extensive analysis to the expenditure of a particular EDB when setting a CPP than when setting the DPP. This analysis may identify that the DPP allowance is too high.
- E53.3 It will often be the case that on closer examination of what expenditure an EDB requires in light of its investment needs we determine that more expenditure is prudent and efficient. However, that might not always be the case in total or for individual expenditure categories.
- E53.4 Our final decision at the non-network opex level provides for more opex by Aurora than the DPP did, but that should not be taken as a signal that we would not set a CPP with a lower opex or capex allowance than the DPP in the future.

⁵¹⁹ Commerce Act 1986, Section 53V.

E53.5 The total opex allowance for Aurora's CPP is a function of our decisions on the individual components of opex. Our decisions on these individual components is set out in the remainder of this attachment.

The allowance for the individual components of opex

E54 The submissions which focused on the individual components of opex covered a number of topics including:

E54.1 SONS and people costs;

E54.2 Vegetation management unit rates;

E54.3 Maintenance opex - removal of trend factors; and

E54.4 Insurance premia; Staff training allowances; and Legal fees and customer communication.

E55 The rest of this Attachment is structured into the following four sections:

E55.1 SONS and people;

E55.2 Vegetation management;

E55.3 Maintenance; and

E55.4 Administration and Governance, and Premises, Plant and Insurance.

E56 Substantive submission material and additional information that has resulted in us reconsidering aspects of the draft decision and carrying out additional further investigations is discussed in each section. We have also provided clarifications about key aspects of the opex draft decision to support the reasoning in our final decision.

Opex Project and Programme Analysis

E57 In the following sections we have reviewed Aurora proposed spending across the each of the opex categories. Within each category we have explored issues that were raised by the Verifier and submissions.

Systems Operations and Network Support (SONS) and people costs

Summary of final decision for SONS and people costs

E58 The final allowance for Aurora's SONS and people costs is \$104.4 million (constant RY2020 dollars). This is 87% of the level of SONS and people costs proposed by Aurora, a reduction of \$16.2 million.

- E59 The final allowance for SONS and people costs is 72% of our final allowance for non-network opex. The other sub-categories within non-network opex (IT opex, premises and plant, administration and governance and Upper Clutha DER) make up the remaining 28%.

Table E2 Summary of SONS and people cost allowances

	\$million in RY2020 dollars	% of Aurora's proposal
Aurora's proposal	120.7	100%
Draft decision	82.5	68%
Final decision	104.4	87%

- E60 We consider Aurora needs to invest in its SONS and people capability after an extended period of underspending, but we do not consider that the level of expenditure proposed by Aurora is prudent or efficient over the CPP period. In particular, Aurora proposed an expenditure profile for SONS and people costs that was high across the period and did not account for some costs being transitional or one-off in nature, or for the effect of improvements to efficiency. Aurora's proposal would have resulted in its SONS and people costs significantly exceeding a wide range of estimates of the same type of costs for other EDBs for the entire duration of the CPP period (and potentially beyond), even when adjusting for some of the different characteristics of each of the networks.
- E61 In our view, Aurora's SONS and people costs should, after a period of higher expenditure, move progressively into line with those of other EDBs over time.
- E62 Our decision is to:
- E62.1 set Aurora's SONS and people costs allowance at the start of the CPP (ie, in RY22) equal to its proposed expenditure in RY22. This will allow Aurora to continue to invest strongly in its capability and management and give it time to plan and achieve reductions in SONS and people costs in subsequent years.
 - E62.2 set expenditure allowances in subsequent years of the CPP (ie, from RY23 onwards) at progressively lower levels based on a downwards glide path in SONS and people costs reflecting a 6% annual reduction in SONS and people costs (constant RY20 dollars). We expect Aurora to continue reducing its costs at this rate until it reaches a level more consistent with business as usual expenditure. Our glidepath assumes this steady state may only be reached after this CPP ends.

E63 The final SONS and people cost allowance is \$21.9 million more over the CPP period than the draft decision. The change in allowance reflects consideration of a range of new information, including information in submissions and revised analysis by Strata and the Commission (prompted by submissions) and the impact of the approach to estimating SONS and people costs over the CPP period described in the previous paragraph.

Structure of this section

E64 The rest of this section on SONS and people costs is structured as follows:

E64.1 **Aurora's proposed SONS and people costs** - we summarise the SONS and people costs which Aurora included in its proposal;

E64.2 The **Verifier's findings on SONS and people costs**;

E64.3 Our **draft decision on SONS and people costs** – we summarise our draft decision and analysis including the advice at the draft decision stage from Strata;

E64.4 An **overview of submissions on our draft decision** for SONS and people and our response to those submissions:

E64.4.1 submissions on the use of benchmarking SONS and people costs and the weight placed on the Verifier's report; and

E64.4.2 technical submissions regarding Strata's benchmarking.

E64.5 Strata's response to the technical submissions regarding its analysis at the draft decision stage;

E64.6 Final decisions on SONS and people costs; and

E64.7 Reasons for our decision for SONS and people.

Aurora's proposed SONS and people costs

E65 Aurora forecast \$120.7 million (constant 2020 dollars) for SONS and people over the CPP period.

E66 For SONS costs, the key drivers for Aurora's proposed expenditure are:⁵²⁰

E66.1 improving its asset management capability and Aurora aims to achieve ISO 55000 certification by 2023; and

⁵²⁰ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), p.177.

- E66.2 delivering its increased work programme which requires additional support in terms of planning, works programming, customer engagement and delivery.
- E67 For People costs, the key drivers for Aurora’s proposed expenditure are:⁵²¹
- E67.1 investment in staff and staff support costs to meet business and regulatory requirements;
- E67.2 investment in customer engagement; and
- E67.3 investment in business improvement to transition to a standalone entity and increase capacity to meet Aurora’s increasing network investment activity.
- E68 Aurora’s executive management and the Board requested benchmarking of its non-network opex forecast. The purpose of the benchmarking was to provide additional validation to support the Board and management’s decision that Aurora’s forecast non-network opex is prudent and efficient.⁵²² We note that Aurora’s benchmarking at non-network opex level is relevant for SONS and People costs as 75% of Aurora’s forecast non-network opex related to SONS and people costs. Aurora concluded that its benchmarking showed that its non-network opex ratio to network spend in RY19 and over the CPP period looked low relative to other EDBs.⁵²³
- E69 We do not consider that Aurora’s benchmarking supports its non-network opex forecast. Aurora’s benchmarking analysis compares EDBs over a single year (RY19) and over the CPP period. However, Aurora is undertaking a major capex programme during these time periods, and so the elevated levels of capex may have a disproportionate influence on totex for Aurora, relative to other EDBs. We do not think it is appropriate to benchmark non-network opex with capex as we find there is only a small positive relationship between non-network opex and capex. Our reasons are explained under ‘further analysis undertaken’ below. Given our view that there is a small relationship between non-network opex and capex, there are likely to be factors unrelated to non-network opex which explain the differences between EDBs.

⁵²¹ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), p.183.

⁵²² Aurora CPP “Aurora Energy Industry benchmarking Non-network operational expenditure”.

⁵²³ Network spend relates to capex spent on network assets and network opex.

The Verifier's findings on SONS and people costs

- E70 SONS and people costs was reviewed by the Verifier. The Verifier concluded that Aurora's base SONS and people costs "does not appear inconsistent with the expenditure objective based on the information reviewed, except for applying a network scale trend and the proposed insurance step change."⁵²⁴
- E71 The Verifier concluded that \$77.1 million of the SONS costs were verified with the unverified amount of \$3.3 million. The \$3.3 million was due to the Verifier not accepting network growth effects and considering the step change in insurance as being too high. The Verifier concluded that \$37.7 million of people costs was verified with the unverified amount being \$2.6 million due to the removal of network growth effects and a step change in training costs being unsupported.
- E72 However, as discussed above, the Verifier identified matters for us to consider further that specifically related to SONS and people costs, including that we should consider:⁵²⁵
- E72.1 whether it is appropriate to rely on board and management oversight to ensure that the step up in SONS and people costs in recent years is prudent and efficient;
 - E72.2 whether it is appropriate to use a base, step and trend approach to forecast SONS and people costs given that Aurora is effectively standing up a new team, where historical costs are less relevant;
 - E72.3 the efficiency of the proposed step changes (eg, training costs);
 - E72.4 the consistency between capitalised and expensed people and SONS costs across the entire capital and operating programme, which the Verifier had not been able to verify;
 - E72.5 whether the modest efficiency improvements proposed for the CPP and review period were reasonable, considering the increased expenditure in business support systems through the ICT capex portfolio; and
 - E72.6 what level of staffing is efficient for a network like Aurora.

⁵²⁴ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#) Section 5.5.3 page 93.

⁵²⁵ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#) Section 7.1 pages 136-139.

Our draft decision on SONS and people costs

- E73 To inform our draft decision we engaged Strata to review the material issues raised by the Verifier with a focus on the step changes in the SONS category and the uplift in FTEs in the people costs. We also requested that Strata test the Verifier’s conclusions about staff training, insurance premia, and trend factors related to network growth⁵²⁶ applied to SONS and people costs. Finally, we sought further clarification about how Aurora was capitalising SONS and people costs.
- E74 Our draft decision on SONS and people costs drew heavily on the analysis and recommendations from Strata.
- E75 In our draft decision we agreed that the top-down bottom-up FTE analysis performed by Strata was a reasonable approach to testing the prudence and efficiency of Aurora’s SONS and people cost forecast.
- E76 We agreed with Strata that Aurora did not use a robust process in making its decisions about appropriate staffing levels. Aurora did not provide business cases to support the 52% increase in staffing roles proposed by Aurora in its CPP application. This is an increase relative to the staffing levels that used to exist in Delta. The increase in staffing roles resulted in a significant increase in SONS and people costs. A business case would have tested whether the increase in expenditure was justified relative to a measure of the expected benefits.
- E77 We also agreed with Strata that there appeared to be an absence of independent expert advice on the significant uplift in SONS and people cost expenditure that would ordinarily be expected from a prudent operator (particularly, given the absence of formal business cases). Aurora did not provide Strata with evidence that it obtained independent expert advice to assist it to assess an appropriate level of staffing.⁵²⁷
- E78 We also agreed with Strata that, following its analysis, Aurora appeared to employ approximately 20% more FTEs than required based on both Strata’s management challenge of the new FTE roles, and its peer EDB analysis.

⁵²⁶ Trend factors are part of the base, step and trend approach to forecasting opex. Trend factors related to network growth allow costs to increase as networks increase in size.

⁵²⁷ [Strata Energy Consulting – Report on Aurora Energy’s CPP Application - November 2020](#), p.130.

- E79 Finally, on a direct comparison that informed our view of whether Strata's analysis was reasonable, we noted that Aurora's proposed SONS expenditure was larger than what Powerco proposed in its CPP in 2017, despite Powerco requiring a major renewals and growth capex uplift, and managing four and a half times greater network length and three and a half times as many ICPs. In our view, this strongly supported Strata's conclusion that Aurora's proposed SONS and people costs expenditure was too high.
- E80 However, given Aurora's level of asset management maturity, we did not consider that it was reasonable to assume that Aurora would be able to reach an efficient level of expenditure in its SONS and people programmes of work at the start of the CPP period.
- E81 We were also mindful that, while the top-down cohort benchmarking and comparison with Powerco's CPP uplift may be reasonable approaches to take to judge FTE numbers, Aurora was not in a stable business-as-usual operating environment and faces considerable challenges in the near term.
- E82 However, we also expected that the SONS and people costs would decrease over the CPP period as the transitional set-up and one-off project and programme roles are completed, but Aurora's forecasts suggested that these costs would be sustained even out to RY30.
- E83 Taking all matters into consideration and including the adjustments for insurance, network growth and staff training, and using the upper bound FTE figure of 136 from Strata's senior management challenge, we adjusted the SONS and people costs allowances in the draft decision.
- E84 Based on the analysis performed, our draft decision was to amend the proposed amount in the SONS and people opex programme from \$120.7 million to \$82.5 million.

Overview of submissions on SONS and people costs

- E85 We received submissions on the draft decision for SONS and people costs from Aurora, consumers⁵²⁸, Dunedin City Holdings, Orion, Powerco, Vector, Unison and Wellington Electricity. The submission from Aurora included two reports from consultants, WSP and PwC. Submissions covered a wide variety of issues and made multiple points, which we have summarised and responded to under three main headings:

⁵²⁸ [CC0011 – Submission on draft decision for Aurora's CPP – 15 November 2020](#) and [CC0015 – Submission on draft decision for Aurora's CPP – 23 November 2020](#).

- E85.1 Submissions commenting on the level of the draft allowance, the appropriateness of using benchmarking to inform the setting of expenditure allowances, and the weight we placed on benchmarking vis-à-vis the findings of the Verifier.
- E85.2 Submissions critiquing technical aspects of the analysis undertaken by Strata in the draft report; and
- E85.3 Submissions on other aspects of our draft decision, or Strata's analysis for that decision.

Submissions on the use of benchmarking SONS and people costs and the weight placed on the Verifier's report for SONS and people costs

- E86 Submissions from Aurora, EDBs and Queenstown Lakes District Council thought the draft allowance for SONS and people costs may not allow Aurora to complete its programme of work. However, some consumers were concerned that Aurora's proposed expenditure for SONS and people costs was too high.
- E86.1 Aurora stated that the proposed reductions would compromise its ability to execute its network investment programme and eliminate its capacity and capability to make asset management and business process improvements. For example, Aurora commented that the draft decision may impact its ability to gain ISO 55000 accreditation and to upskill its staff.⁵²⁹
 - E86.2 Powerco and Wellington electricity agreed with Aurora. They thought using Strata's draft advice and using benchmarking and 'desktop' estimates to derive lower levels of opex spend than proposed by Aurora could hinder Aurora's ability to deliver its programme of work.⁵³⁰ Orion commented that the Commission may have underestimated the level of human resource required to complete the programme of work.⁵³¹
 - E86.3 Queenstown Lakes District Council supported a reduction in costs but not at the risk of reducing levels of service that does not meet the need of its district.⁵³²
 - E86.4 Consumers thought Aurora's proposal asked for an unreasonable amount when it has been assessed as unnecessary, its proposed overspending

⁵²⁹ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), p.29 and tables 2 and 3, page 8 and page 42.

⁵³⁰ [Wellington Electricity – Submission on draft decision for Aurora's CPP – 17 December 2020](#), p.1 and [Powerco – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p.2.

⁵³¹ [Orion – Submission on draft decision for Aurora's CPP – 10 December 2020](#), p.19.

⁵³² [Queenstown Lakes District Council – Submission on draft decision for Aurora's CPP – 14 December 2020](#), p.3.

reflects a failure of management and governance, and Aurora's high opex figures may be explained by its "money no object" approach.⁵³³

E87 Submissions from Aurora and other suppliers cautioned against our use of benchmarking to inform the setting of allowances for SONS and people costs in the draft decision and the weight we perceived to have placed on this analysis relative to the Verifier's report. However, Aurora, Powerco and Wellington Electricity considered it may be appropriate to use benchmarking for identifying where further investigation is required or testing the appropriateness of allowances.

E87.1 Aurora, Orion, Dunedin City Holdings, Vector and Unison cautioned against using benchmarking to set allowances.⁵³⁴ Aurora considered that the use of benchmarking to compare Aurora's proposed expenditure to other EDBs, operating different business models, is at odds with the CPP which is intended to be a bespoke and tailored price path to reflect an EDB's unique circumstances. It suggested that the Commission considered that the best indication of Aurora's expenditure requirements was the cost required by other EDBs.

E87.2 Aurora did not think it was appropriate to use Partial Performance Indicators (PPI) benchmarking to directly determine expenditure. Aurora supported its view with a working paper on benchmarking opex and capex in energy networks by the Australian energy regulators ACCC and Australian Energy Regulator AER in 2012.⁵³⁵ Orion also thought the Commission should be wary of desktop benchmarking assessments for CPPs as it can lead to simplistic outcomes.⁵³⁶

E87.3 Submissions from suppliers considered that more weight should have been placed on the Verifier's findings. The reason for suppliers' view is because the Verifier had found Aurora's proposal to be largely consistent with the expenditure objective. Submissions considered the Verifier's approach to be more robust and result in a more appropriate allowance than the draft decision.⁵³⁷

⁵³³ [CC0011 – Submission on draft decision for Aurora's CPP – 15 November 2020](#) and [CC0015 – Submission on draft decision for Aurora's CPP – 23 November 2020](#).

⁵³⁴ [Orion – Submission on draft decision for Aurora's CPP – 10 December 2020](#) and [Dunedin City Holdings – Submission on draft decision for Aurora's CPP – 18 December 2020](#), and [Unison – Submission on draft decision of Aurora's CPP – 18 December 2020](#) and [Vector Electricity – Submission on draft decision for Aurora's CPP – 18 December 2020](#).

⁵³⁵ [ACCC/AER "Working paper on benchmarking opex and capex energy networks" \(6 May 2012\)](#), Chapter 2.6.

⁵³⁶ [Orion – Submission on draft decision for Aurora's CPP – 10 December 2020](#).

⁵³⁷ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#) and [Orion – Submission on draft decision for Aurora's CPP – 10 December 2020](#) and [Wellington Electricity – Submission on draft decision for Aurora's CPP – 17 December 2020](#), and [Dunedin City Holdings – Submission on draft decision for Aurora's CPP – 18 December 2020](#) and [Vector Electricity – Submission on draft decision for](#)

- E87.4 Aurora, Powerco and Wellington Electricity considered that benchmarking could be useful for identifying areas for further investigation and testing the appropriateness of allowances.⁵³⁸ However, they submitted that care is required when applying the results of benchmarking, especially when it is a significant input into major decisions.⁵³⁹
- E88 We address submissions on the level of the draft allowance under our decision and reasons for our decision below.
- E89 We have set out in Chapter 5 our response to these submissions on the role of benchmarking and the Verifier. In relation to the Verifier, we discuss the matters the Verifier highlighted for us to consider regarding SONS and people costs and why we did not accept the Verifier's view of the level of verified SONS and people costs as the approved allowance. In summary, we noted:
- E89.1 the supplier is best placed to provide the substantive justification for significant levels of higher expenditure, and this should be included in its formal proposal;
- E89.2 the robustness of the justification should vary with the size and materiality of the proposed increase;
- E89.3 the Verifier's role is important and valuable and is the starting point for our evaluation;
- E89.4 our role is to assess the expenditure proposal and consider what further analysis to undertake. Where the proposed increase in expenditure is material, and the justification is weak and/or the Verifier has left a number of unresolved questions, we will likely undertake additional analysis including seeking further information from the supplier;
- E89.5 in the absence of better information and justification from the supplier for the proposed increase in expenditure, we will use the best information we have and can get to inform the setting of an appropriate expenditure allowance;
- E89.6 comparative benchmarking can provide insights into what is a prudent and efficient level of expenditure allowance; and

[Aurora's CPP – 18 December 2020](#) and [Unison – Submission on draft decision of Aurora's CPP – 18 December 2020](#).

⁵³⁸ [Wellington Electricity – Submission on draft decision for Aurora's CPP – 17 December 2020](#), and [Powerco – Submission on draft decision for Aurora's CPP – 18 December 2020](#) and [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#),

⁵³⁹ [Powerco – Submission on draft decision for Aurora's CPP – 18 December 2020](#) and [Vector Electricity – Submission on draft decision for Aurora's CPP – 18 December 2020](#).

- E89.7 our final decision reflects the application of our judgement after consideration of all of the information available to us, including Aurora’s proposal and the benchmarking analysis.
- E90 We also make the following additional brief responses on the points raised in submission as summarised in paragraph E87:
- E90.1 Aurora,⁵⁴⁰ the Verifier⁵⁴¹ and some submissions⁵⁴² also used benchmarking in this CPP. Aurora, Powerco and Wellington Electricity considered it may be useful to use benchmarking to test the appropriateness of allowances. We agree with this approach and have used the range of estimates in this way in the final decision.
- E90.2 Submitters generally, and in particular Aurora, did not provide new information in response to our draft decision that could support the level of SONS and people costs proposed by Aurora. Indeed, the scope and approach of WSP’s review covered the draft decision, the Verifier’s work and documentation on Powerco’s CPP but did not include a review of Aurora’s proposed SONS and people opex.
- E90.3 In the absence of better information which supports the case for investment we should look for whatever other information, including benchmarking analysis, which we can obtain to inform the setting of a prudent and efficient allowance.
- E90.4 We agree with Powerco and Vector⁵⁴³ that care is required when considering the results of benchmarking, especially when it is a significant input into major decisions. For this decision we asked Strata to update its advice to respond to the detailed technical criticisms raised in submissions and sought additional analysis from Strata of the prudent and efficient level of SONS and people costs. We undertook further analysis ourselves.

⁵⁴⁰ Aurora CPP “Aurora Energy Industry benchmarking Non-network operational expenditure”.

⁵⁴¹ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#) Appendix G, p.323 and 335.

⁵⁴² [WSP report \(on behalf of Aurora\) – Submission on draft decision for Aurora's CPP – 18 December 2020](#) and [PwC report \(on behalf of Aurora\) – Submission on draft decision for Aurora's CPP – 18 December 2020](#) and [Unison – Submission on draft decision of Aurora's CPP – 18 December 2020](#).

⁵⁴³ [Powerco – Submission on draft decision for Aurora's CPP – 18 December 2020](#) and [Vector Electricity – Submission on draft decision for Aurora's CPP – 18 December 2020](#).

Technical submissions regarding Strata’s benchmarking analysis in the draft decision for SONS and people costs

- E91 Submissions raised a number of technical criticisms of Strata’s benchmarking analysis which supported our draft decision on SONS and people costs. We summarise these points in this section. Strata has responded to these points in its final report, and we summarise Strata’s response in the subsequent section.
- E92 Those submissions on the draft decision are summarised under the following headings:
- E92.1 benchmarking technique;
 - E92.2 cost level benchmarked;
 - E92.3 cost drivers used in benchmarking;
 - E92.4 cohort used in benchmarking;
 - E92.5 time period used in benchmarking;
 - E92.6 the comparison of Aurora with Powerco to estimate a CPP uplift;
 - E92.7 the relationship between non-network opex and Aurora’s capex programme; and
 - E92.8 the estimate of FTEs.

Benchmarking technique

- E93 Submitters commented on Strata’s benchmarking techniques. We summarise the main concerns with benchmarking technique below.
- E93.1 WSP considered that a main limitation of the PPI benchmarking used in the draft decision is that it used a single normalisation factor e.g. \$/ICP or \$/km of line length. It is unlikely that a single normalisation factor is able to account for all of the differences within a comparator group. This means that known expenditure programmes which are not captured in PPI benchmarking may be observed as inefficiencies.⁵⁴⁴
 - E93.2 WSP thought using multiple normalisation factors leads to different outcomes and better accounts for differences between businesses. WSP provided the example of displaying expenditure as a percentage of total expenditure e.g. non-network opex/totex. Unison also suggested benchmarking non-network opex as a proportion of totex. It considered this to be a better indicator of relative expenditure given Aurora’s significant

⁵⁴⁴ [WSP report \(on behalf of Aurora\) – Submission on draft decision for Aurora’s CPP – 18 December 2020](#), p.3.

step up in expenditure and requirement to improve asset management maturity.⁵⁴⁵

- E93.3 PwC thought the benchmarking at the draft decision did not consider the relative activity levels of Aurora and the cohort group. It undertook alternative benchmarking to show that Aurora's situation is different to other EDBs. This is due to Aurora's network capex and network opex being above the group averages during the CPP period.⁵⁴⁶
- E93.4 PwC also responded to our view that totex benchmarking may not be appropriate because Aurora is undertaking a major capex programme and capex varies across distributors in any one year. It agreed that totex benchmarking is more appropriate over the long term but did not agree that only Powerco and Aurora are undertaking major capex programmes in the draft cohort.⁵⁴⁷

Cost level benchmarked

- E94 Strata's analysis supporting the draft decision benchmarked SONS and business support costs which are components of cost below the non-network opex level.⁵⁴⁸ We summarise submitters' main concerns with analysing this level of cost below the non-network opex level.
- E95 Submissions considered it was more appropriate to benchmark at the non-network opex level. Submissions did not support benchmarking sub-categories of non-network opex such as SONS and business support costs. PwC found differences in the allocation of people and costs between SONS and business support using information from five EDBs and Orion mentioned that the allocation of costs between business support and SONS involves some discretion and judgement around what category to place costs in because EDBs have different business models.⁵⁴⁹

Cost drivers used in benchmarking

- E96 Submitters also commented on the many differences between EDBs and questioned whether these were adequately captured in Strata's benchmarking analysis. Submitters' main concerns were as follows.

⁵⁴⁵ [WSP report \(on behalf of Aurora\) – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p.4.

⁵⁴⁶ [PwC report \(on behalf of Aurora\) – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p.9.

⁵⁴⁷ [PwC report \(on behalf of Aurora\) – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p.7.

⁵⁴⁸ Sub-categories of non-network opex include SONS, People costs, Upper Clutha DER solution, Premises Plant and Insurance, Admin and governance and ICT opex.

⁵⁴⁹ [PwC report \(on behalf of Aurora\) – Submission on draft decision for Aurora's CPP – 18 December 2020](#).

- E96.1 Some submissions⁵⁵⁰ did not consider that the benchmarking in the draft decision captured differences between EDBs. Aurora commented that the Verifier and Strata did not adjust for differences in operating environment which could distort benchmarking results, and Powerco thought it was unclear if differences between EDBs were captured in Strata's benchmarking.
- E96.2 Unison advised the Commission to place little weight on \$/ICP and \$/km of line length benchmarks as business support and SONS are weakly driven by scale. Unison suggested that if Aurora's network increased by 20%, there would not be the same proportionate increase in business support and SONS. Unison submitted that these are fixed costs which do not vary much with network size.

Cohort used in benchmarking

- E97 Submissions raised concerns with the size of the cohort used in the draft decision analysis, and the choice of comparators.
- E97.1 WSP commented⁵⁵¹ that a small comparator group increases the importance of similarities between the cohort as differences such as topology, terrain and accessibility can distort the results. In contrast, a large comparator group can help identify whether there is a real relationship for a benchmark.
- E97.2 WSP commented⁵⁵² that Strata did not indicate why \$/ICP and \$/km of line length parameters were used to select the comparator group. WSP considers that the choice should be based on an assessment of the appropriate drivers for the costs being benchmarked and in the absence of any known drivers, all comparators should be benchmarked.
- E97.3 WSP used k-means cluster analysis⁵⁵³ to test the similarity of EDBs. WSP found that Powerco and Vector were outliers and the remainder of EDBs were broadly similar. WSP and Aurora considered that Strata's choice of five EDBs gave a restricted view of the available data.
- E97.4 In contrast, Wellington Electricity thought only a handful of networks have similar characteristics and the cohort of five EDBs in the draft decision showed a range of differences. For example, the EDBs on a DPP in the draft cohort may not be a sensible benchmark for a CPP that includes a step

⁵⁵⁰ [Aurora Energy – Submission on draft decision for Aurora's CPP – 18 December 2020, p.10](#); [Powerco – Submission on draft decision for Aurora's CPP – 18 December 2020, p.10](#) and [Unison – Submission on draft decision for Aurora's CPP – 18 December 2020, p.3](#).

⁵⁵¹ [WSP report \(on behalf of Aurora Energy\) – Submission on draft decision for Aurora's CPP – 18 December 2020, p.9](#).

⁵⁵² [WSP report \(on behalf of Aurora Energy\) – Submission on draft decision for Aurora's CPP – 18 December 2020, p.9](#).

⁵⁵³ The analysis groups the businesses into a specified number of clusters based on the calculated 'distance' to each other. The 'distance' represents the similarity between each of the parameters included in the test.

change in future performance,⁵⁵⁴ and the draft cohort did not account for an EDB's maturity or scale of investment programme.⁵⁵⁵

- E97.5 Some submissions did not think Powerco should have been included in the cohort given it is much bigger, can potentially achieve more economies of scale than Aurora,⁵⁵⁶ and WSP identified Powerco as an outlier. WSP also noted that including Powerco in the benchmarking sample and using Powerco to estimate a 'CPP uplift' may have double counted the effect of Powerco's CPP uplift.⁵⁵⁷

Time period used in benchmarking

- E98 Submitters commented on the various time periods used by Strata in its analysis at the draft decision stage, as follows.

- E98.1 PwC commented that the adjustment ratios derived from forecast opex data extend to RY30 for Aurora but are limited to RY21 for the cohort group. PwC is unclear why data beyond the CPP period are used as the adjustments are applied for the CPP period only.
- E98.2 There is also no analysis to show why RY21 is a steady state for the cohort group. PwC mentions that using a single year contradicts Strata's criticism of using a single year metric when assessing relative expenditure performance.⁵⁵⁸

Comparison of Aurora with Powerco to estimate CPP uplift

- E99 There were also submissions from Aurora, Dunedin City Holdings, QLDC, Wellington Electricity and Unison on how Strata estimated an appropriate uplift for the CPP which primarily relied on comparisons between Aurora and Powerco. The main limitations noted by submitters with comparing Aurora to Powerco were due to differences between the two EDBs.⁵⁵⁹ For example:

- E99.1 Aurora and Powerco have different organisational structures;

⁵⁵⁴ [Wellington Electricity – Submission on draft decision for Aurora's CPP – 17 December 2020.](#)

⁵⁵⁵ [Dunedin City Holdings – Submission on draft decision for Aurora's CPP – 18 December 2020.](#)

⁵⁵⁶ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020.](#)

⁵⁵⁷ [WSP report \(on behalf of Aurora\) – Submission on draft decision for Aurora's CPP – 18 December 2020,](#) p.10.

⁵⁵⁸ [PwC report \(on behalf of Aurora\) – Submission on draft decision for Aurora's CPP – 18 December 2020,](#) p.7. and [Strata Energy "Report on specific submission topics related to Aurora Energy's CPP application" \(12 March 2021\),](#) report 6 - page 13 and 14.

⁵⁵⁹ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020;](#) [Dunedin City Holdings – Main submission on draft decision for Aurora's CPP – 18 December 2020;](#) [Queenstown Lakes District Council – Main submission on draft decision for Aurora's CPP – 18 December 2020;](#) [Wellington Electricity – Main submission on draft decision for Aurora's CPP – 18 December 2020](#) and; [Unison – Submission on draft decision of Aurora's CPP – 18 December 2020,](#) para 3.

- E99.2 Powerco is likely to experience economies of scale and scope due to its size and gas business;
- E99.3 the nature of Powerco and Aurora's CPPs are different;
- E99.4 Aurora is starting from a lower starting point than Aurora in terms of asset management maturity so it may require a larger percentage uplift than Powerco; and
- E99.5 Aurora is transitioning to a standalone entity.
- E100 Submissions also cited concerns with the method for estimating the CPP uplift. For example:
- E100.1 WSP and PwC did not consider estimating the CPP uplift using \$/ICP and \$/km of line length represented the drivers of the CPP uplift, as they do not explain the size of the activity proposed in CPPs and;
- E100.2 Wellington Electricity noted that Strata only compared Aurora to one network and this is a very small sample size.⁵⁶⁰

The relationship between non-network opex and Aurora's capex programme

- E101 Some submitters contended that Aurora may require an increase in SONS and people expenditure due to its large capex investment programme and network growth.⁵⁶¹ Submitters also considered that the benchmarking in the draft decision did not take into account the relative activity levels of Aurora and the cohort.⁵⁶²
- E102 For example, Aurora considered that Strata did not consider the scale of Aurora's capex programme⁵⁶³ and PwC commented that the network programme proposed by Aurora during the CPP is higher than the cohort group average during the CPP period and it follows that non-network opex is also higher. PwC considered that SONS is directly relevant to achieving the network reliability standards which have been proposed.⁵⁶⁴

⁵⁶⁰ [Wellington Electricity – Submission on draft decision for Aurora's CPP – 17 December 2020](#), p.2.

⁵⁶¹ [Orion – Submission on draft decision for Aurora's CPP – 10 December 2020](#) and [Unison – Submission on draft decision of Aurora's CPP – 18 December 2020](#) and [Wellington Electricity – Submission on draft decision for Aurora's CPP – 17 December 2020](#), and [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#).

⁵⁶² [WSP report \(on behalf of Aurora\) – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p.12 and [PwC report \(on behalf of Aurora\) – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p.8.

⁵⁶³ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), p.8.

⁵⁶⁴ [PwC report \(on behalf of Aurora\) – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p.9.

- E103 Aurora also submitted that the Commission did not provide enough justification to remove trend factors applied to SONS and people costs. Aurora commented that the trend factors reflect the increase in non-network opex when the network grows.⁵⁶⁵
- E104 Submissions presented examples of benchmarking which accounted for Aurora's proposed capex programme:
- E104.1 WSP⁵⁶⁶ suggested that PPI benchmarking using multiple normalisation factors would better account for differences between EDBs. WSP provided an example where it benchmarked non-network opex as a proportion of totex;
- E104.2 PwC⁵⁶⁷ presented benchmarks of average non-network opex, network totex, network capex and network opex per ICP during the CPP period (RY22 to 26) and in the longer term (RY22 to 30); and
- E104.3 Unison benchmarked SONS as a proportion of totex, and business support opex as a proportion of totex over time (RY13 to RY30). Unison preferred benchmarking non-network opex as a proportion of totex given Aurora's significant increase in network expenditure and requirement to improve asset management maturity.⁵⁶⁸

Estimate of FTEs

- E105 Submissions had concerns about Strata's approaches to estimating FTEs (the senior management challenge and Strata's comparison of Aurora with Powerco) and submissions considered the estimated number of FTEs was too low:
- E105.1 Aurora⁵⁶⁹ considered the senior management challenge was based more on opinion than fact and the analysis assumed more accuracy than was proven, and Strata's recommendations were inconsistent with industry practice;
- E105.2 Wellington Electricity⁵⁷⁰ stated that the senior management challenge could provide a high level approximation of resource requirements but may not be robust enough to be used as a replacement for Aurora's calculation;
- E105.3 Unison⁵⁷¹ also cautioned the Commission against accepting the results of the senior management challenge as the headcount suggested by Strata may

⁵⁶⁵ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), p.42 and p.45.

⁵⁶⁶ [WSP report \(on behalf of Aurora\) – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p.4.

⁵⁶⁷ [PwC report \(on behalf of Aurora\) – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p.11.

⁵⁶⁸ [Unison – Submission on draft decision of Aurora's CPP – 18 December 2020](#), p.4.

⁵⁶⁹ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), p.11.

⁵⁷⁰ [Wellington Electricity – Submission on draft decision for Aurora's CPP – 17 December 2020](#), p.2.

⁵⁷¹ [Unison – Submission on draft decision of Aurora's CPP – 18 December 2020](#), p.3.

not allow Aurora to deliver its work programme or improve its asset management capability;

E105.4 Unison commented that a 'genuine' senior management challenge would have involved Strata engaging with Aurora's senior management to undertake a detailed evaluation of Aurora's organisation structure;

E105.5 Powerco noted that Strata used historic data in its comparison of Aurora with Powerco, and suggested Strata use current organisational roles and structures;⁵⁷²

E105.6 PwC⁵⁷³ identified errors in Strata's models and provided new information on the actual split between staff and non-staff costs and average salaries (excluding capitalised labour);

E105.7 PwC⁵⁷⁴ found that Aurora's expenditure per FTE was low relative to the draft cohort of EDBs; and

E105.8 Unison⁵⁷⁵ looked at its own level of resourcing and was surprised that Aurora was not seeking a greater allowance.

Strata's response to the technical submissions regarding its analysis at the draft decision stage

E106 We asked Strata to respond to these submissions and Strata has updated its advice. This has included:

E106.1 setting out its response to the submissions; see in particular Table 3 of its final advice;⁵⁷⁶

E106.2 updating its analysis from the draft decision stage to correct errors, update data, update key assumptions and make methodological changes to its November 2020 analysis, namely to:

E106.2.1 Revise its cohort EDBs;

E106.2.2 Benchmark at the non-network opex level;

E106.2.3 Alter its assumptions about staff and non-staff costs and the capitalisation of salaries used in its estimate of FTEs; and

⁵⁷² [Powerco – Submission on draft decision of Aurora's CPP – 18 December 2020](#), p.2.

⁵⁷³ [PwC report \(on behalf of Aurora\) – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p.16.

⁵⁷⁴ [PwC report \(on behalf of Aurora\) – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p.15.

⁵⁷⁵ [Unison – Submission on draft decision of Aurora's CPP – 18 December 2020](#), p.3.

⁵⁷⁶ Strata Energy Consulting "Report on Submission Topics - Assessment and opinions on specific submission topics related to Aurora Energy's June 2020 Customised Price Path application" (24 March 2021) pp. 33-38.

E106.2.4 Alter its approach to treating Aurora's step change in costs.

E107 Strata also undertook additional empirical analysis using linear and non-linear econometric models of non-network opex for all EDBs. It used data from the 2010-2020 to predict Aurora's non-network opex expenditure. The purpose of this analysis was to:

E107.1 test the robustness of the updates to Strata's analysis at the draft decision stage by using additional modelling approaches and datasets; and to

E107.2 respond to various submissions including criticisms that could not be addressed simply by updating the analysis undertaken for the draft decision.

E108 The submissions that this additional analysis sought to address included:

E108.1 criticisms of the size and choice of the cohort used in Strata's benchmarking e.g. it was inappropriate to include Powerco;

E108.2 that the benchmarking did not account for the range of factors that influence variations in SONS and people costs across EDBs;

E108.3 that it was inappropriate to benchmark SONS and business support opex because data is unreliable below the non-network opex level, and EDBs categorise SONS and Business support costs in different ways as EDBs have different operating models; and

E108.4 That the benchmarking in the draft decision did not account for Aurora's capex programme.

E109 We discuss and present the results of all further analysis including Strata's analysis, and consider the benchmarking presented in submissions in 'further analysis undertaken since the draft in response to submissions' below.

Final decisions on the allowance for SONS and people costs

E110 In this section we explain our final decisions on the allowance for SONS and people costs. We do so under the following headings:

E110.1 **further analysis undertaken since the draft in response to submissions** – we explain what we learnt from the revised and additional analysis undertaken by Strata in response to submissions;

E110.2 **our view on Aurora's proposed level of expenditure** - why we continue to hold the view that Aurora's proposal materially overstates the level of SONS and people costs; and

E110.3 **our decision on SONS and people costs.**

Further analysis undertaken since the draft in response to submissions

Further analysis undertaken

E111 As discussed above, we engaged Strata to provide updated advice in response to submissions. In addition, and again as noted above, additional empirical analysis was undertaken using data on non-network costs from all EDBs to test Strata's updated analysis and to respond to various criticisms of Strata's approach including some that could not be addressed by updating its November 2020 analysis. This revised and new analysis is included in Strata's final report which we have released alongside this decision.

E112 The range of estimates we considered in making our final decisions are as follows:

E112.1 Strata provided four estimates of SONS and people costs, and non-network opex: its preferred estimate, comparison estimate one, comparison estimate two and comparison estimate three. These are updated estimates based on the approach Strata used in its report for the draft decision. Strata has made updates to its draft methodology in response to submissions, incorporated RY20 data and updated its assumptions to reflect new information on the split of staff to non-staff costs and average salaries in the SONS and people costs. Strata updated its methodology by using a different cohort of EDBs, benchmarking at the non-network opex level and estimating the CPP step change using Aurora's proposal and information from Orion's CPP. Strata's updated benchmarking estimates Aurora's non-network opex to range from \$128 million to \$135 million over the CPP period, and SONS and people costs to range from \$95 million to \$98 million over the CPP period. We refer to these estimates as Strata's updated benchmarking analysis.

E112.2 Strata's final report also includes econometric modelling using a linear panel model and a Generalised Additive Model (GAM). This analysis estimates Aurora's non-network opex based on analysis of comparable EDBs. This analysis provides an indication of Aurora's expected costs given the costs of other EDBs and factoring in key differences between the EDBs in terms of network characteristics such as scale, customer density and topology.⁵⁷⁷ Strata's econometric analysis estimates Aurora's non-network opex to range from \$100.5 million to \$110.6 million over the CPP period. We refer to this as Strata's econometric analysis.

E112.3 The Commission undertook its own analysis to estimate non-network opex using the econometric model used in DPP3.⁵⁷⁸ We updated the DPP3 econometric analysis to include RY2020 data. The DPP3 econometric

⁵⁷⁷ Scale is measured using circuit length in km, density is measured using ICPs per km of circuit length and topology is measured using the share of an EDBs circuit length that is in remote and rugged terrain.

⁵⁷⁸ The elasticities in the DPP3 econometric analysis were used to forecast the change in ICPs and circuit length for the network growth trend factor. [Page 105 final reasons paper.](#)

analysis estimates Aurora's non-network opex to be \$87.1 million over the CPP period. We refer to this as the DPP3 econometric analysis.

- E113 Strata's benchmarking analysis provides four estimates of non-network opex and its sub-categories which includes SONS and people costs. This is because Strata's methodology adjusts each sub-category of non-network opex. The econometric approaches (Strata's two econometric models and the DPP3 econometric analysis) estimate non-network opex as a whole. We believe we may make inferences about SONS and people costs from non-network opex estimates, as SONS and people costs are a significant proportion of non-network opex. SONS and people costs are 75% of Aurora's proposed non-network opex.
- E114 We present the range of non-network opex estimates below, and the range of SONS and people costs below.

Figure E3 Range of estimates for non-network opex and Aurora’s proposal (real \$2020 million)

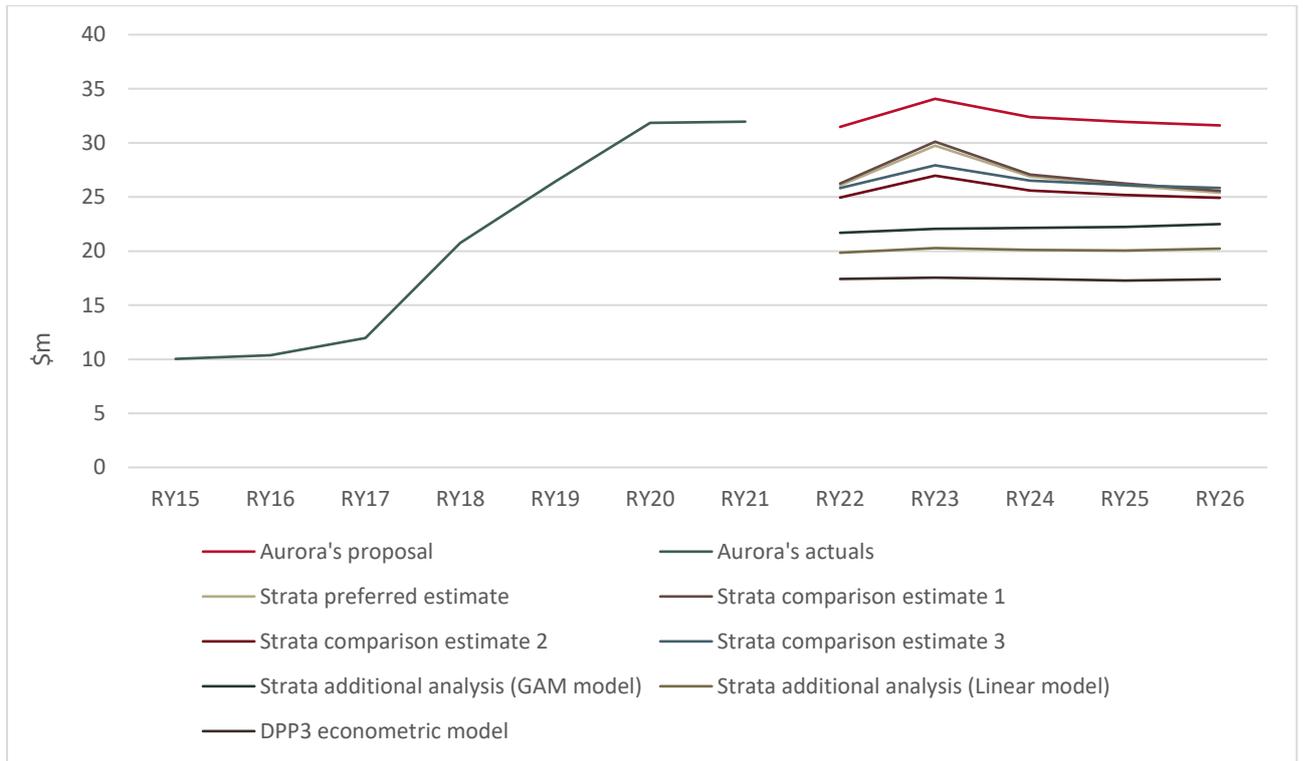
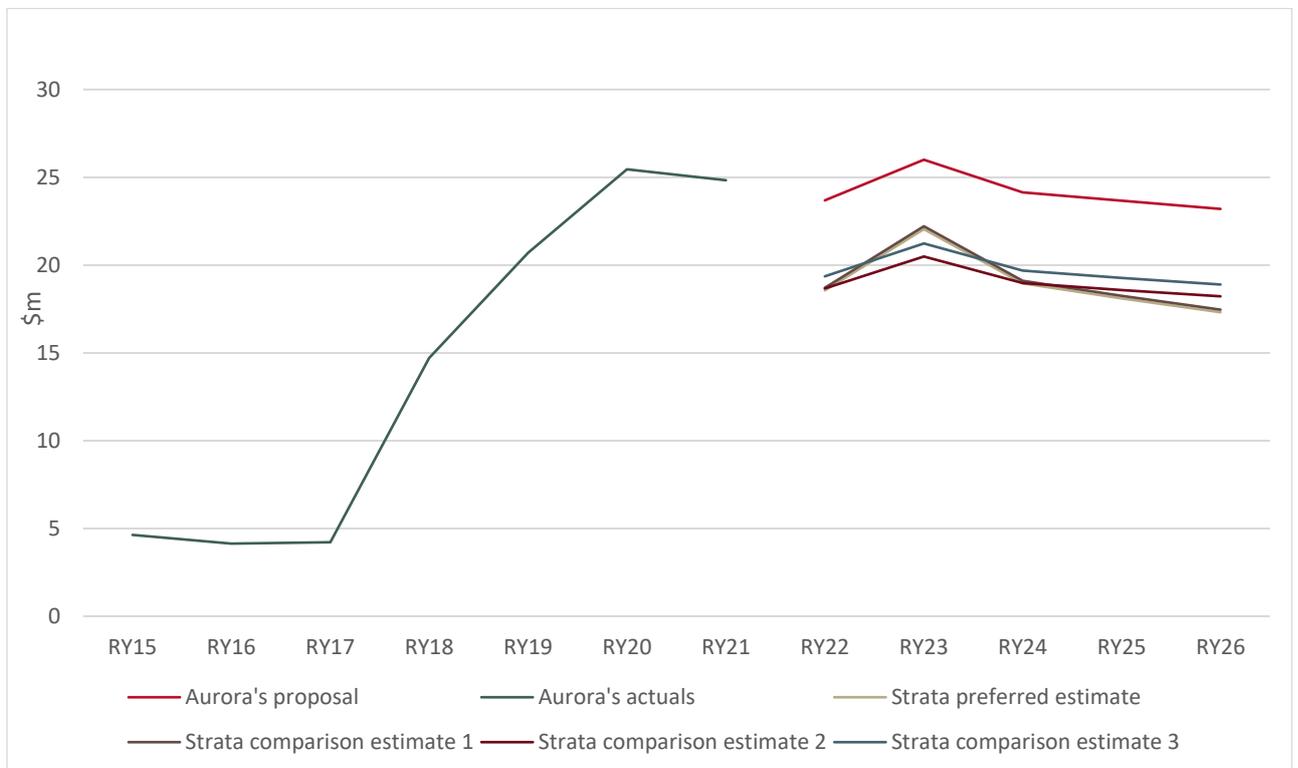


Figure E4 Range of estimates for SONS and people and Aurora’s proposal (real \$2020 million)



Why and how we have used the range of estimates in our further analysis

- E115 We consider that the results from Strata's updated benchmarking analysis are more robust than the draft decision after making adjustments in response to submissions. Its advice is useful as it advises on specific activities within SONS and people costs which is appropriate given Strata's engineering expertise and experience in the sector. Strata's updated benchmarking also accounts for Aurora's circumstances by applying a step change to reflect Aurora's CPP costs. However, much of Strata's analysis is based on benchmarking using PPI. PPI is limited in the number of cost drivers it can account for. We do not use Strata's updated benchmarking estimates to set the allowance, but they are useful datapoints (among others) to inform what an appropriate level of expenditure allowance may be.
- E116 The econometric models are also useful datapoints as they address some of the criticisms of benchmarking made in submissions. The econometric models account for multiple cost drivers, use a larger sample size than the benchmarking in the draft decision, and benchmark costs at the non-network opex level.
- E117 However, we recognise that the robustness of econometrics depends on the inputs and how it is implemented. For example, the choice of cost drivers and data quality can impact the robustness of results, and other regulators have been criticised for applying econometric results in a mechanistic way without incorporating the circumstances of EDBs. Moreover, the econometric approaches by Strata have not been tested with stakeholders through consultation. Accordingly, we do not use the econometric modelling to set the allowance.
- E118 We did not use examples of benchmarking presented by submitters in our further analysis. Submitters presented examples of benchmarking which they considered accounted for Aurora's proposed investment programme. The examples included benchmarking non-network opex as a proportion of totex, SONS and business support costs as a proportion of totex, and benchmarking average non-network opex, network totex, network capex and network opex per ICP. These submissions are discussed under the technical submissions regarding Strata's benchmarking analysis in the draft decision for SONS and people costs above.
- E119 We do not consider that the benchmarking presented in submissions is appropriate because Aurora is undertaking a large capex programme relative to other EDBs which may have a disproportionate influence on its benchmarking results. In addition, we consider that non-network opex and capex are only weakly related and so the costs are likely to be largely driven by different cost drivers. We provide more detail below.

- E119.1 We find a small positive relationship between non-network opex and capex from 2013 to 2020 across a range of EDBs. Our observations aligned with the additional empirical analysis in Strata's final report which found a small positive correlation of 0.181 between capex as a proportion of distribution transformer capacity and non-network opex.
- E119.2 Much of Aurora's proposed expenditure on new activities within SONS and People does not appear to have a strong link with Aurora's capex programme. Examples include Aurora's regulatory and commercial, customer and engagement, accounting and finance and risk assurance, and corporate business units. In addition, two out of three new activities by Aurora's technology and information business unit are largely unrelated to Aurora's network programme. These are implementing business intelligence and analytical tools, and establishing new processes for data, communications and information management.⁵⁷⁹
- E119.3 The Verifier also commented that although the size of the network may drive people costs indirectly in the future and the size of the network may drive SONS expenditure in the future, this is unlikely to be the case over the CPP and review periods where the key driver of that spend is ramping up Aurora Energy's business support capability to indirectly support delivery of significant renewal, maintenance and other programs – which largely factors in network growth already.⁵⁸⁰
- E119.4 Unison considered that business support and SONS are only weakly driven by the scale of the network. It commented that if Aurora's network was 20% bigger, there would not be the same proportionate change in business support and SONS costs. Unison commented that there are significant fixed costs in business support and SONS that will not vary materially with network size, perhaps only in steps.⁵⁸¹

⁵⁷⁹ Aurora Energy, 28 August 2020, Response to RFI No. Q059, pp. 2-3.

⁵⁸⁰ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), p.93 and 94.

⁵⁸¹ [Unison – Submission on draft decision of Aurora's CPP – 18 December 2020, p.3.](#)

How we used the further analysis in our final decision

E120 We use Strata's four estimates from its updated benchmarking analysis to help inform our view as to the appropriate allowance for SONS and people costs. We have used the econometric analysis as a sense check of the updated benchmarking analysis given the criticisms of the benchmarking analysis in responses to the draft decision. We look at the range of evidence instead of a point estimate from any one methodology as we consider each approach has its own merits and a range of evidence helps to address the potential impact of error and uncertainty in each.

Our view on Aurora's proposed level of expenditure

E121 In considering Aurora's proposal for the final decision, we have taken into account the information available at the draft decision from Aurora and the Verifier, new information from submissions and new estimates from Strata and prepared by the Commission.

E122 Based on the information before us, we are not satisfied that Aurora's proposed SONS and people costs meets the expenditure objective. We summarise our reasons and explain each point in more detail below.

E122.1 **Aurora needs to increase expenditure to rebuild capability and meet unique and greater requirements in the short term.** It is consistent with the expenditure objective for Aurora to spend more than other EDBs in the short term – it needs to spend to build capability after a sustained period of under-investment and meet additional and unique requirements.

E122.2 **Aurora has not justified its proposed increase in expenditure.** We do not consider that Aurora has justified a sustained increase in expenditure as it did not provide business cases to support the 52% increase in staffing roles proposed by Aurora in its CPP application. This is an increase relative to the staffing levels that used to exist in Delta and the increase in staffing roles resulted in a significant increase in SONS and people costs. A business case would have tested whether the increase in expenditure was justified relative to a measure of the expected benefits.

E122.3 **Aurora's proposed costs materially exceed the range of estimates of efficient costs.** It appears Aurora's proposed costs materially exceed the indications implied by the range of estimates for non-network opex and SONS and people costs. Figure E3 and Figure E4 show that Aurora's proposed expenditure for non-network opex is \$26 million higher than the highest estimate of \$135 million, and Aurora's proposed expenditure for SONS and people costs is \$22 million higher than the highest estimate of \$98 million.

E122.4 **Aurora's higher non-network opex should not be permanent or maintained for a lengthy period.** The ramp up in Aurora's expenditure should not be

permanent or maintained for a lengthy period. We expect cost reductions and cost efficiencies should be achievable commencing after its ramp up in expenditure. Aurora's forecast expenditure shows no sign of returning to more normal, sustainable levels of spending more in line with other EDBs.

Aurora needs to increase expenditure to rebuild capability and meet unique and greater requirements in the short term

E123 We accept that Aurora had been underinvesting in its capability for an extended period. Improving its capability, including its systems, operations, business support and human resources requires a period of reinvestment and it is appropriate that there is an upward step change in expenditure for a period of time.

E124 It is relevant too, that there are greater requirements on Aurora than other EDBs that are likely to justify elevated expenditure, at least in the short term, including the need to:

E124.1 rebuild and re-establish trust and confidence of its consumers in the network, and in the performance of Aurora itself;

E124.2 improve communications with its consumers, both in terms of day to day activities such as outage notification but also in more strategic and far-reaching matters such as its pricing strategy and methodology, and the transparency of these; and

E124.3 satisfy new ID requirements – a draft of which we have released with this decision – and which if implemented will be more onerous than for other EDBs.

E125 While these additional requirements will require some further time and effort by Aurora, including from its Board and senior management, we do not consider that satisfying these requirements will create material additional costs to Aurora in the medium or long term.

Aurora has not justified its proposed increase in expenditure

E126 We retain our view that Aurora has not justified the extent of its proposed increase in SONS and people expenditure. At the draft decision, we agreed with Strata that Aurora did not use a robust process in making its decisions about appropriate staffing levels. There appeared to be an absence of business cases to support a 52% increase in staffing which has resulted in a significant increase in SONS and people costs. We also agreed with Strata that Aurora did not provide independent expert advice that would usually be expected from a prudent operator.

- E127 There was a lack of new information in submissions which would address these concerns and justify Aurora's proposed increase in staff levels and associated expenditure. Strata's final report commented that Aurora did not provide additional information to support its staffing levels and so it has retained its advice from the draft decision that Aurora has not made the case for the magnitude of its proposed increase.⁵⁸²
- E128 We consider the supplier is best placed to justify increased expenditure, and the level of justification should be proportionate with the size and materiality of the proposed expenditure. We note that when a supplier provides information to justify its expenditure, we can reduce the level of scrutiny we apply to a supplier's proposal. For example, Aurora demonstrated to the Verifier that it had followed a rigorous needs analysis process, including seeking external expert advice and top-down management and Board challenges, in forecasting its investment need in the IT capex and opex programmes. As a consequence, we are comfortable that Aurora's proposed IT capex and opex is prudent and efficient.

Aurora's proposed costs materially exceed the range of estimates of efficient costs

- E129 Figure E3 shows that the estimates for Aurora's non-network opex based on Strata and our quantitative analysis range from \$87 million to \$135 million over the CPP period. Figure E4 shows that the estimates for Aurora's SONS and people costs the estimates range from \$95 million to \$98 million. However, Aurora's proposed expenditure is significantly higher than the estimated ranges of non-network opex and SONS and people costs during the CPP period. For example, Aurora's proposed expenditure for non-network opex is \$26 million higher than the highest estimate of \$135 million, and Aurora's proposed expenditure for SONS and people costs is \$22 million higher than the highest estimate of \$98 million.
- E130 The estimates produced by the econometric analysis are likely to be lower than a reasonable estimate of Aurora's needs during the CPP as they calculate what Aurora's costs should be based on other EDBs in a steady state. However, Strata's four estimates from its benchmarking analysis apply an uplift to account for Aurora's increase in costs due to the CPP. Even with the uplift, Aurora's proposed costs are significantly above Strata's estimates. As a result, the non-network opex estimates which include the econometric approaches and Strata's updated benchmarking show a wider range, and the SONS and people cost estimates show a narrower range as they only include Strata's updated benchmarking.

⁵⁸² Strata Energy Consulting "Report on Submission Topics - Assessment and opinions on specific submission topics related to Aurora Energy's June 2020 Customised Price Path application" (24 March 2021).

Aurora's higher SONS and people expenditure should not be permanent or maintained for a lengthy period

- E131 Aurora proposed an expenditure profile for SONS and people costs that was high across the CPP period and which made no allowance for some costs being transitional or one-off in nature or for ongoing efficiencies. It proposed that its SONS and people costs remain at the current elevated levels throughout the CPP period (and potentially beyond).
- E132 While we accept Aurora requires increased expenditure to rebuild capability after a period of underspending, we do not think that Aurora's ramp up in expenditure should be permanent because some of the costs involve one off expenditure which will drop off. Examples include hiring costs, change management, and the implementation of new initiatives and projects.
- E133 We also consider Aurora is likely to be able to achieve cost efficiencies during and after the CPP period. Indeed, given the size of the short term investment in higher non-network opex costs, and that its non-network opex costs will be materially above those of other EDBs, Aurora should be able to find material cost efficiencies as it improves its asset management capability, undertakes its proposed business improvements and completes its transition to becoming an efficient standalone entity. We recognise that Aurora proposed small efficiency adjustments. However, these appear to understate the potential efficiencies. We note that the Verifier commented that Aurora's proposed adjustments appeared modest. It considered that the benefits from improved systems and process like those proposed by Aurora can be significant and realised relatively soon after they are in place.⁵⁸³

Our decision on SONS and people costs

- E134 Our decision on the allowance for SONS and people costs is to:
- E134.1 set Aurora's SONS and people costs allowance at the start of the CPP (ie, in RY22) equal to its proposed expenditure in RY22. This will allow Aurora to continue to invest strongly in its capability and management and give it time to plan and achieve reductions in SONS and people costs in subsequent years; and
- E134.2 set expenditure allowances in subsequent years of the CPP (ie, from RY23 onwards) at progressively lower levels based on a downwards glide path in SONS and people costs reflecting a 6% annual reduction in SONS and people costs (constant RY20 dollars). We expect Aurora to continue reducing its

⁵⁸³ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), p.82.

costs at this rate until it reaches a level more consistent with business as usual expenditure. Our glidepath assumes this steady state may only be reached after this CPP ends.

E135 We explain this decision under the following headings:

E135.1 Our decision on SONS and people costs at the start of the CPP period;

E135.2 Our decision on SONS and people costs during the CPP period;

E135.3 What is the likely level of expenditure when Aurora reaches steady state?

E135.4 When do we expect Aurora's expenditure to reach a steady state?

E135.5 What is the realistic rate of change for a glide path from RY23 onwards? and

E135.6 Reasons for our decision.

Our decision on SONS and people costs at the start of the CPP period

E136 Our decision for the first year of Aurora's CPP is to set Aurora's SONS and people allowance equal to its proposed expenditure in RY22.

E137 We support Aurora rectifying past underspending and improving outcomes for consumers. Therefore, we want to set an allowance which is achievable, but we also consider that Aurora's ramp up in expenditure should not be permanent or maintained for a lengthy period of time, as explained above.

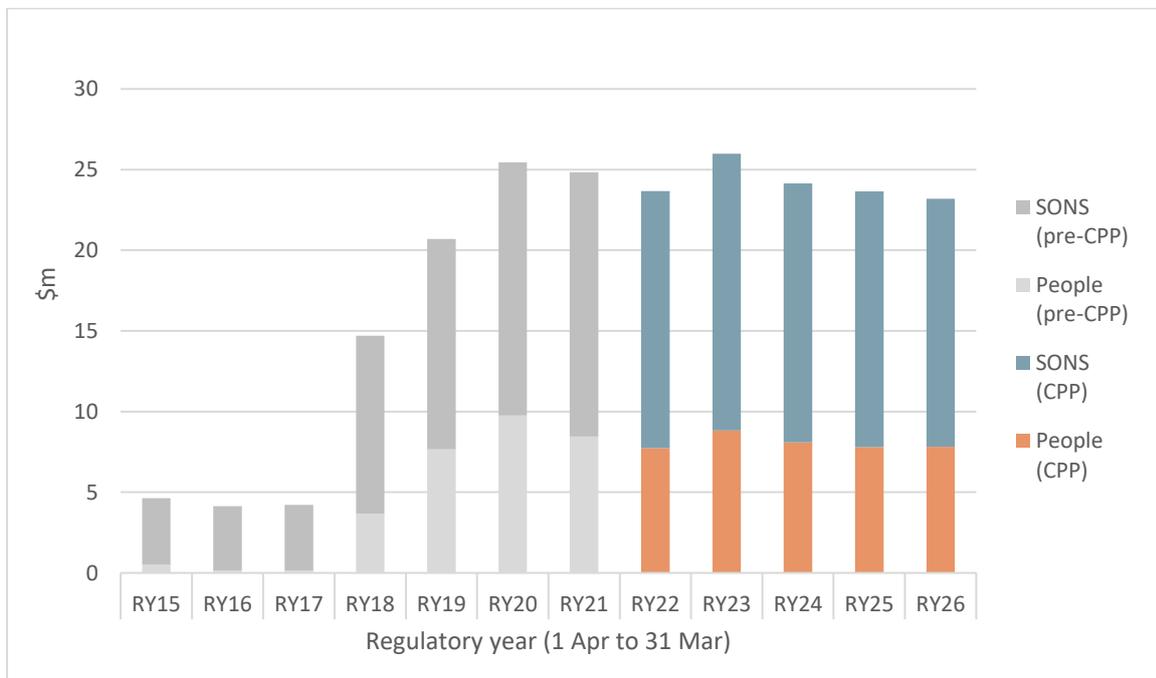
E138 We consider that Aurora's forecast of expenditure in RY22 is likely to be representative of what Aurora intends to spend to deliver its CPP. We see in Figure E5 below that Aurora's actual expenditure in recent years has been similar to its forecast expenditure and there is not a significant jump between historic and forecast costs.

E139 In addition, Aurora had to fund the step up in expenditure over RY19 and RY20 and its shareholder has to bear a share of this increased expenditure. This tends to support the view that this level of additional activity was required, but the very rapid ramp-up, apparently without business cases to inform the size of the increase or the delivery of the work, means there is likely to be some (potentially significant) inefficiency in the expenditure.

E140 We consider that Aurora’s costs should start to drop off and efficiencies may be achievable by RY22. We see in Figure E5 below that Aurora’s expenditure increases from RY18 and becomes more stable from RY20.⁵⁸⁴ By RY22 we consider that some initiatives should be finishing and Aurora should be able to start finding some efficiencies. For example, Aurora expects to have finished hiring its staff in RY20 which means it will not incur hiring costs after this point.

E141 We do not consider the range of estimates of SONS and people costs implied by our quantitative analysis to be appropriate for RY22. This is because they imply a significant reduction in costs in the first year of the CPP which is unlikely to be achievable in an efficient manner. Rather, we consider Aurora should manage those costs down over time to progressively converge on industry norms.

Figure E5 Aurora’s actual and forecast SONS and people costs (real \$2020 million)



Our decision on SONS and people costs during the CPP period

E142 As discussed in previous sections, we think an efficient and prudent allowance for Aurora’s SONS and people costs would assume a decline in costs after RY22. Our decision is to apply a downwards glide path as an annual reduction in Aurora’s allowed SONS and people costs from RY23 onwards.

⁵⁸⁴ The small increase in RY23 is due to forecast expenditure to support Aurora’s CPP proposal.

- E143 We would expect reductions in costs and efficiencies in SONS and people costs to relate to different activities in SONS and people costs. This means cost reductions and efficiencies are likely to occur at different times and be of different sizes. However, we do not have the information to precisely estimate efficiencies or reductions in costs. Therefore, we apply a glide path to Aurora's allowance which is an annual reduction in Aurora's allowed SONS and people costs.
- E144 We consider that Aurora may already be able to achieve efficiencies to complete some projects. This is because Aurora's ramp up in expenditure began in RY18 which is a significant period of time before the start of the CPP. Aurora's hiring costs may decline as its staffing aligns with its longer-term target levels of staff by the end of RY20.⁵⁸⁵
- E145 We recognise that it may be unrealistic to challenge Aurora to reduce its current expenditure significantly in RY22, so we apply a glide path from RY23 onwards.
- E146 In setting the glide path, we have considered the following questions below:
- E146.1 What is the level of SONS and people costs at Aurora's steady state?
- E146.2 When do we expect Aurora's expenditure should be able to reach a steady state?
- E146.3 What is a realistic rate of change for glide path from RY23 onwards?

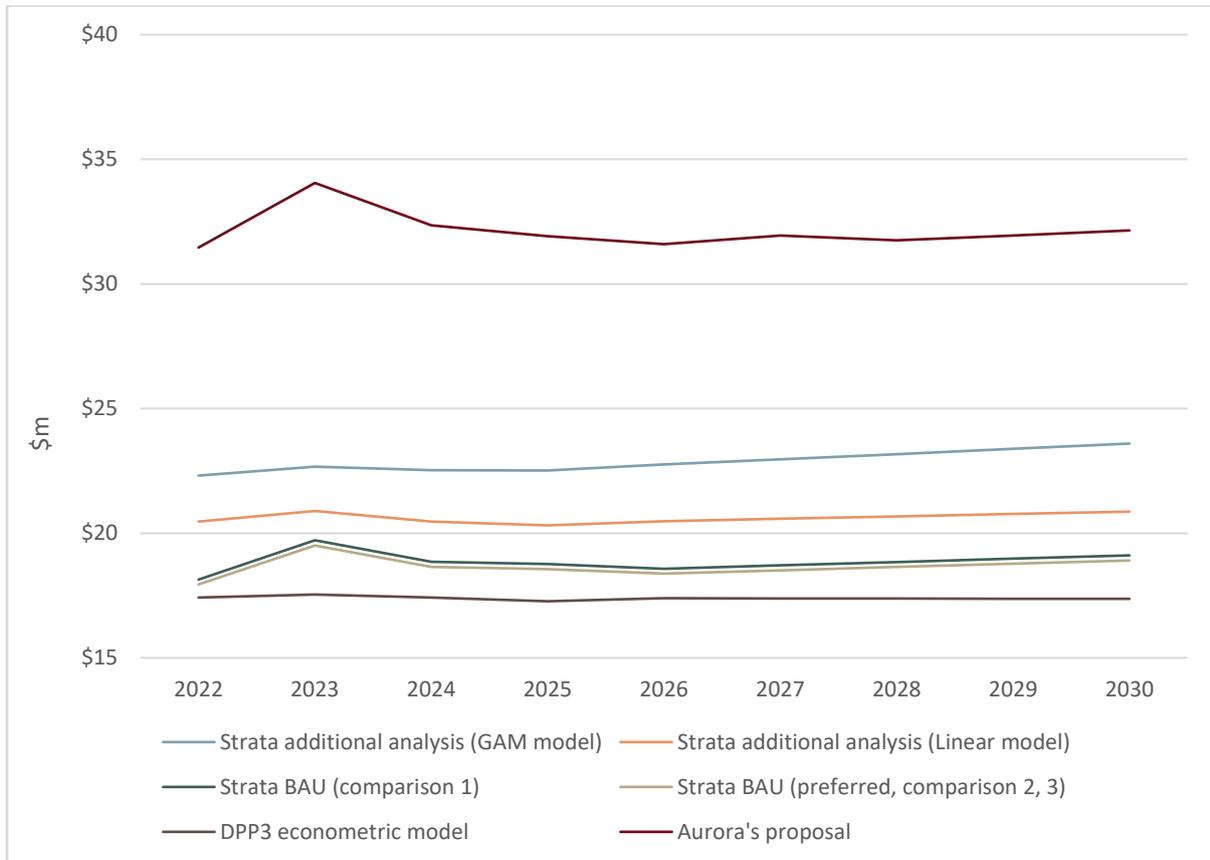
What is the likely level of expenditure when Aurora reaches steady state?

- E147 Our view of the level of expenditure at Aurora's steady state, was informed by the quantitative analysis undertaken by Strata and ourselves (discussed under Further analysis undertaken).
- E148 The further analysis used by Strata and the Commission provides insight into Aurora's costs once it is in a steady state as they predict what Aurora's costs would be based on the sample of EDBs and the network characteristics of Aurora. We consider that the costs of the majority of EDBs are likely to approximate steady state costs as we are not aware of any other EDBs undergoing significant investment like Aurora (although some may have short periods of lower or higher expenditure depending on their own circumstances prevailing during the time period subject to the analysis).

⁵⁸⁵ [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), para 655.

- E149 Strata's estimates of 'business as usual' (BAU) expenditure in the long run in its benchmarking analysis can be used as a proxy to show what Aurora's costs might be in a steady state. This is also one element of Strata's methodology for estimating SONS and people costs. Strata's analysis first calculates 'business as usual' expenditure in the long run and then applies a step change to reflect the additional costs of its CPP.
- E150 This analysis indicates an average reduction of around 30% to 46% to Aurora's proposed expenditure over the CPP period. We consider that this reduction may not be realistic for Aurora to achieve in this CPP period given its circumstances, but we expect Aurora to continue progressing towards a steady state beyond this CPP.
- E151 We show in Figure E6 below, the level of Aurora's annual non-network opex in a steady state implied by the range of estimates from the quantitative analysis. It is important to note that we do not directly use the level of expenditure implied by the range of estimates in our final decision given the degree of potential error and uncertainty in the range of estimates.

Figure E6 Estimates of Aurora’s annual non-network opex in a steady state (real \$2020 million)⁵⁸⁶



E152 The range of estimates are an indication of what Aurora’s costs could be in a steady state recognising the likely level of potential error and uncertainty discussed under ‘further analysis undertaken.’ We note that the estimates are at a non-network opex level but we can make inferences about SONS and people as these categories make up the majority of non-network opex. Aurora’s proposed SONS and people costs are 75% of its proposed non-network opex. We have separately examined the other components of non-network opex later in this attachment.

When do we expect Aurora’s expenditure should be able to reach a steady state?

E153 We consider Aurora should be able to reach a steady state around RY30.

E154 The reasons for our view are based on the following:

E154.1 Aurora’s expects that its asset health is likely to be in a steady state by RY30. Asset health is related to capex but some of Aurora’s proposed activities under SONS and people are related to the delivery of its capex programme. Aurora plans to use its forecast SONS and people expenditure for planning,

⁵⁸⁶ Strata’s BAU estimates reflect Aurora’s non-network opex in a steady state and exclude an uplift to reflect its CPP costs. Strata’s BAU estimates are lower than its non-network opex estimates shown in Figure E3. The estimates in Figure E3 include Aurora’s BAU costs and an uplift to reflect its CPP costs.

works programming, customer engagement and delivery⁵⁸⁷ and increasing its capacity to meet its increasing network investment activity.⁵⁸⁸ Activity of this sort should largely occur prior to the network investment, rather than simultaneously (or lag it), suggesting non-network opex should reach a steady state prior to the network investment programme achieving steady state.

E154.2 If Aurora reaches a steady state in RY30, it will have taken Aurora 12 years to do so, as Aurora's increase in SONS and people expenditure began in RY18. We consider that it should take less than 12 years for Aurora to reach a steady state in SONS and people costs given its proposed activities.

E154.3 Aurora will have been a standalone entity for five years at the start of the CPP period. Strata comments that allowing seven years (RY24) for Aurora to become a fully established standalone entity is generous and allowing nine years is excessive (RY26). Other electricity industry businesses in a similar situation to Aurora were established standalone businesses in much shorter timeframes. Examples identified by Strata include Contact Energy, Genesis Energy, Mercury Energy and Meridian Energy.⁵⁸⁹

What is a realistic rate of change for glide path from RY23 onwards?

E155 Our main consideration in setting a glide path is that the annual rate of change provides Aurora with a prudent and efficient expenditure allowance so Aurora can successfully deliver its CPP programme and improve outcomes for consumers. We summarise the range of evidence below:

E155.1 Aurora proposed no efficiency adjustments to SONS and people in RY22 and RY23, then 0.5% per annum in RY24, 1% in RY25 and 1.5% in RY26. These efficiency adjustments reflect the impact of other initiatives in capex and opex portfolios e.g. improvements in systems and processes and asset management.⁵⁹⁰

E155.2 The Verifier considered that Aurora's proposed efficiency adjustments appeared modest given the scope of Aurora's proposed expenditure and changes. The Verifier noted that in its experience, improved systems and processes can result in significant benefits and be realised relatively soon after they are in place.⁵⁹¹

⁵⁸⁷ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), p.177.

⁵⁸⁸ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), p.183.

⁵⁸⁹ Strata Energy Consulting "Report on Submission Topics - Assessment and opinions on specific submission topics related to Aurora Energy's June 2020 Customised Price Path application" (24 March 2021).

⁵⁹⁰ [Strata Energy "Assessment and opinions on specific topics related to Aurora energy's June 2020 CPP" \(November 2020\)](#) p.114.

⁵⁹¹ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), p.82.

- E155.3 Strata’s draft advice recommended adding additional efficiency adjustments to Aurora’s proposal. It added annual efficiency adjustments of 0.5% in RY22 and RY23. This is because Strata thought there were additional efficiency improvements in SONS and people costs arising from Aurora’s IT investment.⁵⁹²
- E155.4 In Orion’s CPP we applied an annual 5% efficiency adjustment to network maintenance which resulted in a \$1.5m reduction in scheduled maintenance each year.⁵⁹³ In Powerco’s CPP we agreed with Powerco’s proposed efficiency adjustments of 2.2% and 3.5% in years four and five of the CPP.⁵⁹⁴
- E155.5 Overseas evidence provided information on frontier shifts which were around 1% per annum.⁵⁹⁵ We do not consider that this evidence is relevant given Aurora’s circumstances. This is because frontier shifts relate to productivity improvements for the most productive firm in the sector (i.e. the ‘frontier firm’) and Aurora is not a frontier firm.
- E156 In addition, we also considered wider evidence that is available to us.
- E156.1 As noted in Figure E7 below, we have considered when we would expect Aurora’s non-network opex (mainly comprised of SONS and people expenditure) to revert back to the long term expected steady state (as implied by Strata’s econometric modelling and Strata’s business as usual costs in its updated benchmarking in identifying average expected expenditure based on a range of drivers). As Aurora has previously noted, it expects to reach a steady state level by around RY30 – our analysis suggests that, based on the 6% annual reduction in SONS and people and holding the remaining non-network expenditure constant, Aurora’s non-network opex will return to average levels after RY30. Overall this implies a 12-year uplift in non-network opex, which we consider is more than enough time for Aurora to address the issues on its network and return to more ‘business as usual’ level of non-network opex (and in particular, SONS and people costs).
- E156.2 Between RY17 and RY20 Aurora has increased SONS and people expenditure by an average of over 100% per annum. With such a significant increase in expenditure, we must consider how these levels should return to more normal expenditure over time. We would expect a number of activities to drop off and expenditure to begin to revert back to average levels after the

⁵⁹² [Strata Energy "Assessment and opinions on specific topics related to Aurora energy’s June 2020 CPP" \(November 2020\)](#) p.116.

⁵⁹³ ["Final decision for setting the CPP of Orion"](#) (29 November 2013), page 172 and Strata Energy Consulting ["Technical advisor report on Orion"](#) (19 November 2013) page 40.

⁵⁹⁴ Powerco CPP Application 12 June 2017 Executive Summary page xiv available at https://comcom.govt.nz/_data/assets/pdf_file/0023/61592/ CPP-application-Powerco-CPP-12-June-2017.pdf.

⁵⁹⁵ [A report prepared by the Energy Policy Research Group at the University of Cambridge for Ofgem "Productivity growth in electricity and gas networks since 1990"](#) (December 2018).

peak that we are currently seeing to address the necessary network issues. We considered that the 6% SONS and people reduction struck an appropriate balance between achievable reductions (through efficiency improvements as well as drop-offs in certain activities) and allowing Aurora to undertake the necessary spending.

E156.3 We consider that some of Aurora's near-term expenditure relates to transition and implementation costs which we would not expect to be incurred throughout the period and beyond. Strata noted this in its report on Aurora's CPP application:⁵⁹⁶

We also note that several of the tasks associated with the additional roles are transitional—for example, the preparation of standalone policies for Aurora. As a result, we would expect to see a forecast reduction in SONS and People costs opex over time. This reduction is not apparent from the opex forecasts we have seen for the CPP and review periods, or beyond for that matter.

E156.4 We note that with such a dramatic increase in SONS and people since RY17, it is unlikely that all of this expenditure was likely to be efficient with new systems being set up, people beginning new roles, allocating resources, for example. Over time we would naturally expect to see improvements in efficiency as people become accustomed to these processes and roles, and to establish more efficient resourcing levels, processes and patterns of work.

E157 We have considered all the available evidence before us and have used our judgement to settle on a 6% annual reduction in SONS and people expenditure as appropriate as Aurora begins its transition back to steady state expenditure. Both we and the Verifier consider Aurora's proposed efficiency levels are too low. We consider Aurora should be able to achieve greater efficiencies than overseas frontier firms, and Powerco and Orion.

E158 Further, we consider significant reductions should be made to SONS and people cost levels from the elevated RY22 starting point given:

E158.1 Aurora's large increase in non-network opex and the speed of that increase;

E158.2 that some of the Aurora's near-term expenditure relates to transition and implementation costs which should not continue to be incurred throughout the period; and

E158.3 that Aurora's non-network opex and SONS and people expenditure is well above the levels being incurred by other EDBs indicated by the further analysis.

⁵⁹⁶ [Strata Energy "Report on Aurora Energy's CPP application" \(November 2020\)](#), p. 130.

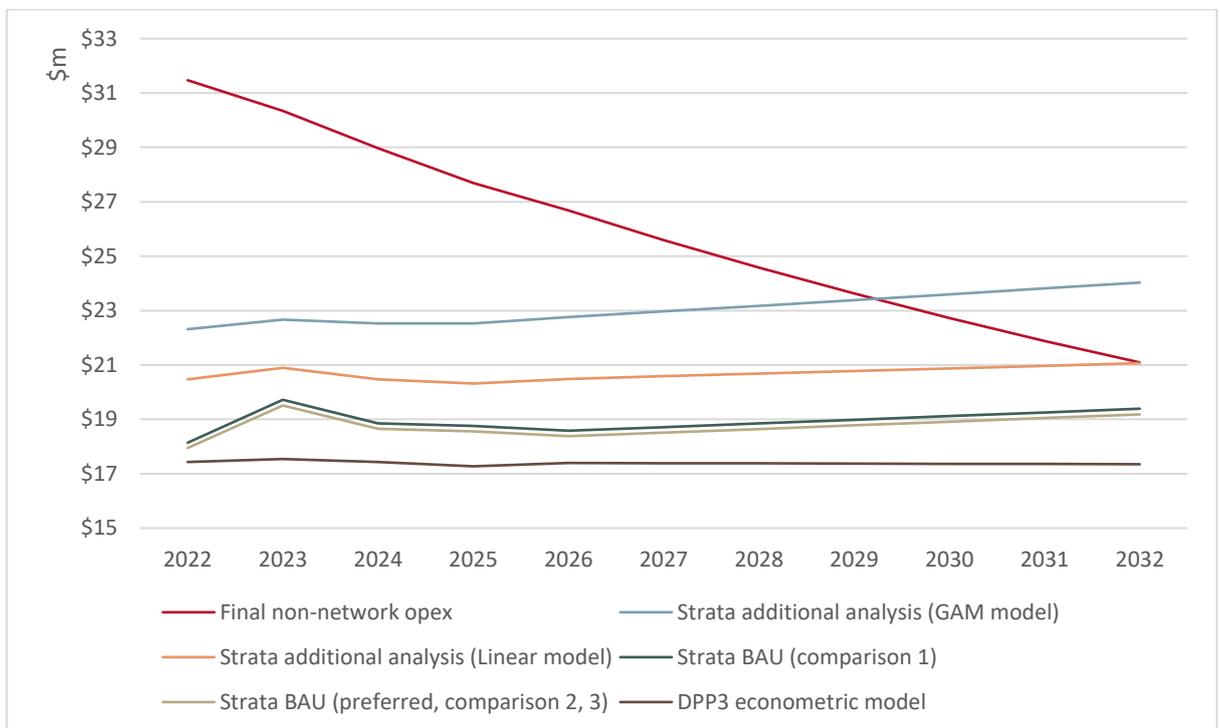
E159 The 6% reduction rate will bring Aurora’s expenditure towards a steady state after the CPP period. We consider this is at the end of a generous timeframe to achieve steady state levels of expenditure given the length of the period of elevated SONS and people expenditure and since Aurora was established as a stand-alone entity.

Reasons for our decision on SONS and people costs allowance

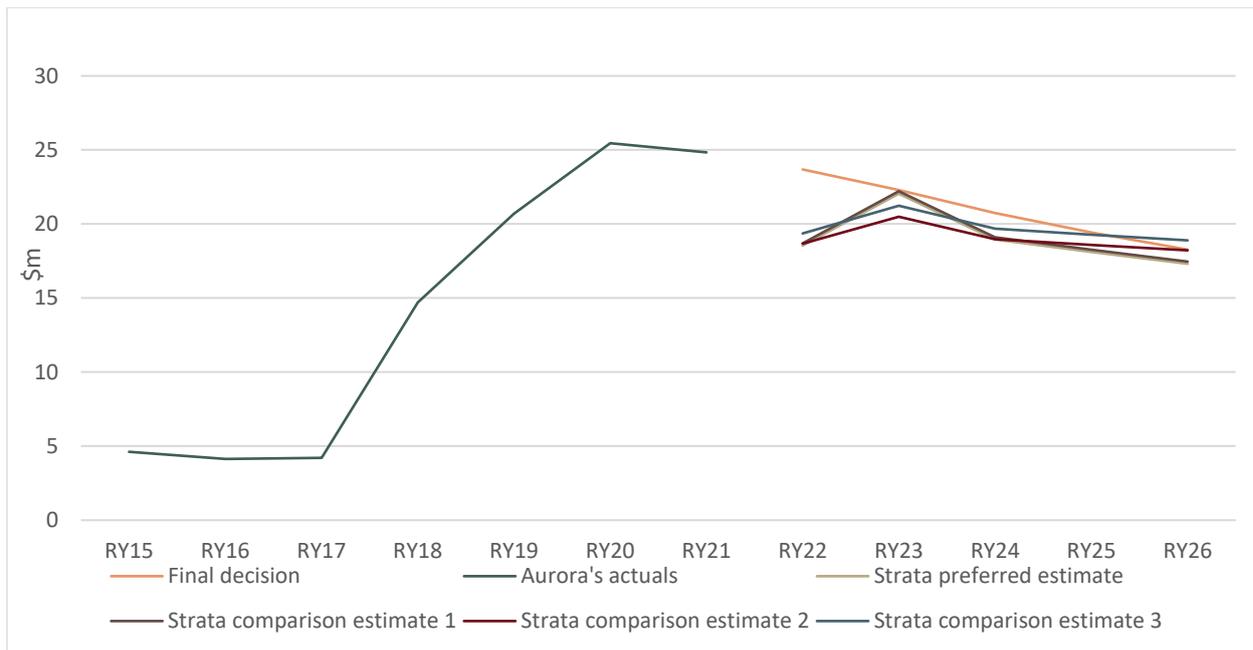
E160 Our final decision is to set a SONS and people allowance of \$104.4m (real RY20 dollars) which is 87% of Aurora's proposal. We have set Aurora’s SONS and people allowance for RY22 equal to its proposed expenditure in RY22 as we recognise there is a need for Aurora to invest in its capability. The allowance sets an annual real reduction of 6% per year from RY23 onwards and implies that Aurora may reach a steady state around RY29 to RY32.

E161 Figure E7 shows the implied steady state of non-network opex if SONS and people costs reduces by 6% per year from RY23 onwards and the allowances for other sub-categories of non-network opex are held constant from RY26 onwards. Figure E8 shows how our decision for SONS and people costs compares to the range of estimates.

Figure E7 Final non-network opex allowance and the implied steady state (real \$2020 million)⁵⁹⁷



⁵⁹⁷ Strata’s BAU estimates reflect Aurora’s non-network opex in a steady state and exclude an uplift to reflect its CPP costs. Strata’s BAU estimates are lower than its non-network opex estimates shown in Figure E3. The estimates in Figure E3 include Aurora’s BAU costs and an uplift to reflect its CPP costs.

Figure E8 Final SONS and people cost allowance (real \$2020 million)

- E162 The change in allowance from the draft decision reflects the consideration of a range of new information including submissions and further analysis by Strata and the Commission in response to submissions.
- E163 This allowance is significantly lower than what Aurora proposed, yet higher than our draft decision. We consider our allowance achieves an appropriate balance of allowing Aurora to rectify the impact of past underspending and limits the impact on consumers' bills.
- E164 Our decision to accept Aurora's proposed level of RY22 SONS and people costs and set a glidepath down from that level should allow Aurora to undertake all of its proposed activities (except achieving ISO 55000 accreditation in this CPP period), including to meet any additional costs Aurora may incur in complying with the additional information disclosure requirements we propose for Aurora, and staff training costs.
- E165 We support Aurora aiming to align with ISO 55000 in this CPP period rather than achieve accreditation, but we consider that it may be more appropriate for Aurora to aim for accreditation in the longer term given the size of its proposed work programme. We understand from Powerco's experience that reaching accreditation is ambitious and Aurora is likely to be starting from a lower starting point. Powerco's CPP application commented that it had set itself an ambitious goal to be fully compliant with ISO 55000 by RY20 but its latest AMP suggests it is still working towards accreditation.

- E166 Importantly, the annual reduction in the allowance includes our view that SONS and people costs should be falling both because the ramp-up of some activities naturally comes to an end (ie drop offs), and also due to efficiency improvements over time. We consider this rate is achievable and will ensure that consumers do not pay for a permanent increase in costs.
- E167 Crucially, we expect Aurora to continue gliding down towards a steady state beyond this CPP. Our range of estimates indicate this would be around RY29 to RY32. We intend to refer back to this decision in setting any future CPP or DPP for Aurora. This is supported by the expenditure objective which applies during the CPP period and over the longer term. It states that opex should reflect the efficient costs that a prudent EDB would require to meet the expected demand for EDB services, at appropriate service standards, during the CPP period and over the longer term.⁵⁹⁸

Vegetation Management

- E168 Our decision is that we consider an amount of \$21.2 million for vegetation management opex represents the prudent costs of an efficient supplier managing vegetation on the Aurora network, and so meets the expenditure objective.
- E169 This is the same as that proposed by Aurora and an increase of \$5.1 million compared to our draft decision. We have increased the allowance from that included in the draft decision following our consideration of confidential information supplied by Aurora after the draft decision.
- E170 A detailed explanation of the analysis and reasons for this decision are set out below. They are structured into the following sections:
- E170.1 What Aurora proposed for vegetation management opex;
 - E170.2 The Verifier's findings and it's finding that it could not verify Aurora's proposed unit rates;
 - E170.3 Our review of vegetation management;
 - E170.4 Strata's analysis of Aurora's proposed unit rates for vegetation management;
 - E170.5 Our draft decision;

⁵⁹⁸ See expenditure objective definition and IM reasons paper in 2010, para 9.4.12 available at <http://comcom.govt.nz/regulated-industries/input-methodologies/electricity-distribution-ims/other-past-amendments-and-clarifications2/input-methodologies-for-electricity-distribution-services>.

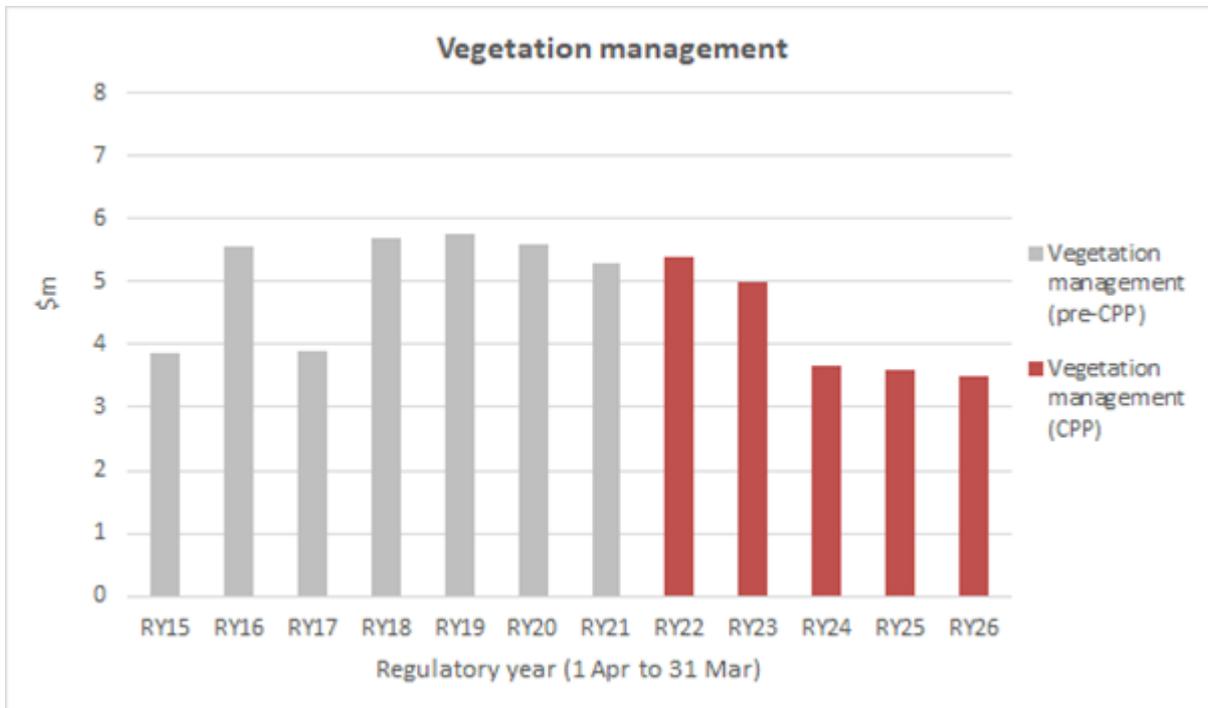
E170.6 the issues raised in submissions on our draft decision and our response to those points; and

E170.7 the reasons for our decision to accept Aurora’s proposed level of vegetation management opex.

Aurora proposed vegetation management opex of \$21.2m

E171 Aurora proposes spending \$21.2 million over the CPP period (see Figure E9) in its vegetation management opex programme. Aurora considers that this expenditure is necessary to address a vegetation maintenance backlog and move from a reactive to proactive and cyclical vegetation opex strategy.

Figure E9 Vegetation management expenditure between RY15 and RY26



E172 Aurora’s vegetation management expenditure has increased in recent years, as it has started to undertake catchup maintenance. All of Aurora’s vegetation management activities are currently performed by its contractor service provider Delta. Delta, like Aurora, is wholly owned by Dunedin City Holding Ltd.

- E173 In its CPP application Aurora notes that its planned expenditure, through until RY23, is in line with its historical expenditure, to cover its 'first cut' cycle of vegetation management and that it will transition to a steady state five-year management cycle in RY24. This coincides with a noted reduction in the forecast amounts from RY24.⁵⁹⁹
- E174 Aurora's vegetation management forecast is based on a bottom-up feeder by feeder analysis of vegetation that requires intervention per year and by unit length, multiplied by an estimate of a per kilometre unit cost of managing the vegetation. This unit cost is consolidated as a single value in Aurora's forecast model and does not discriminate between rural or urban work, and first cut and cyclical cut activity.
- E175 Aurora has applied specific efficiency adjustment factors to its expenditure forecast from RY21 and expects to see improvements in contractor productivity following the introduction of a competitive environment, improved works coordination processes, and better asset management tools.

The Verifier did not verify the unit rates used in Aurora's proposed vegetation management opex

- E176 The Verifier reviewed the vegetation management programme and observed that Aurora is transitioning to a five-year cyclical cut strategy, which is consistent with good industry practice.⁶⁰⁰ It concluded that Aurora had estimated its exposed vegetation by feeder to identify intervention need, and that this approach was not unreasonable.⁶⁰¹
- E177 Following our review of the Verifier's report and proposal material we were satisfied with the Verifier's conclusions about the vegetation management need. The Verifier had reviewed Aurora's vegetation modelling and considered that this was not unreasonable, including the first cut and cyclical cut needs analysis. On this basis we were satisfied that the vegetation management identified by Aurora was prudent.
- E178 However, the Verifier could not agree that the unit rates Aurora had used in its CPP application, based on RY18 costs, were efficient for several reasons namely that:
- E178.1 Delta was the sole provider of vegetation services to Aurora Energy in RY18 and unit rates had not been market tested;

⁵⁹⁹ Aurora Energy "Asset Management Plan April 2020 - March 2030 - [Aurora Energy "Customised Price-Quality Path - Application" \(12 June 2020\)](#), H.6.3.

⁶⁰⁰ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Section C20.

⁶⁰¹ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Appendix C.20 p.300-311.

- E178.2 Delta is a related party, so the Verifier could not presume that Delta's unit rates reflected the outcomes of arms' length negotiations;
- E178.3 Aurora was not implementing a proactive vegetation management strategy in RY18, meaning the mix of activities required over the CPP period is likely to be different and have different costs; and
- E178.4 Aurora's vegetation management expenditure appears noticeably higher than that of other New Zealand electricity distribution businesses on a unit rate basis.⁶⁰²
- E179 Regarding the comparison with other electricity lines businesses, the Verifier concluded following its vegetation management opex benchmarking exercise that Aurora's costs could be higher than other lines businesses by between 42% and 56% but noted that disclosed data did not include how much vegetation was cut each year, so the comparison may not be valid.
- E180 The Verifier considered its cost benchmarking was inconclusive and given the fact that Aurora was "not able to provide us with any other cost information, either from its own historical records or from its current service provider, Delta", it could not decide if the vegetation management unit rate was efficient.⁶⁰³
- E181 It suggested we may wish to consider whether the RY18 expenditure, which was used to determine the CPP application forecast unit rate, was efficient, and whether top-down efficiency improvements should be applied to reflect improvements and reduced costs from the start of the CPP, rather than gradual improvements over the CPP period.
- E182 The Verifier concluded that it could not fully verify the proposed vegetation management expenditure and that \$0.8 million remained unverified, based on the assumption that the efficiencies proposed by Aurora (of 8.5% per year by 2026) should apply from RY22.
- E183 Given the Verifier's analysis and recommendations, we considered that further analysis was required, particularly to test unit rate assumptions.

⁶⁰² Note that this analysis was based on vegetation managements costs per unit length of network overhead line and not the actual length of line on which vegetation was managed.

⁶⁰³ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Appendix C.20.5.3 p.304.

Vegetation management – our review

- E184 We received several Issues Paper submissions that supported our focus on scrutinising Aurora’s spending on tree trimming in our own review and we engaged Strata for this purpose.
- E185 To assist the Strata analysis, we sought a range of additional information from Aurora about how it determined that RY18 was an efficient base year, how external benchmarking was carried out and vegetation maintenance efficiencies due to new contracting arrangements, asking Aurora:
- E185.1 how the base year value was decided (including unit rates and volumes where applicable), along with any relevant information on how unit rate values were derived; and
- E185.2 why Aurora selected RY18 for its base year while it used RY19 as its maintenance opex base year.
- E186 Aurora responded that, based on staff experience at other NZ distributors, its internal review concluded that the vegetation, labour and plant rates included in the 2020 Field Services Agreement (FSA) with Delta were consistent with those seen in other like sized electricity distribution businesses.
- E187 Aurora also referred us to benchmarking carried out by KPMG which concluded that Aurora’s vegetation management expenditure ratio, compared with other networks in the South Island, was below the average of those businesses. We did not place weight on the KPMG analysis as the calculations were not provided at the draft decision stage, despite our requests at the time. We still have not received that analysis.
- E188 We were also interested to understand more about Aurora's new contracting arrangements and how this would impact future vegetation management costs. We understood contracting arrangements for vegetation management were due for renewal in the next 2 years and wanted to know what allowance had been factored into the forecasts to reflect this initiative.
- E189 Aurora responded by stating that it had not built in specific assumptions into its forecast to cover new contracting arrangements but had included an allowance for some efficiency improvements after considering opposing factors such as increased competition versus potential upward cost pressures.

- E190 In its Vegetation Management Strategy document Aurora confirm that at present Delta is the only provider of vegetation management services but that this is scheduled for review in RY23. Aurora stated that "it may prove beneficial to engage further vegetation management contractors across the network if it might improve performance and reduce overall expenditure".
- E191 In our draft decision we considered that Aurora's vegetation management opex forecast was problematic for three reasons, mainly that;
- E191.1 it was reliant solely on Delta costs to forecast its expenditure out to RY26;
 - E191.2 it hadn't adequately benchmarked with other NZ electricity lines companies; and
 - E191.3 we considered that the effect of market efficiencies from RY23 were evident in Aurora's expenditure forecast modelling but were not sufficiently captured by its proposed productivity improvements.

Strata's analysis of Aurora's proposed unit rates

- E192 Given the Verifier could not verify the unit rates, we engaged Strata to investigate Aurora's vegetation management unit rate efficiency.⁶⁰⁴
- E193 Strata noted that Aurora had implemented a cyclical cut prioritisation framework which prioritised higher impact sub-transmission assets first, then worst performing HV/LV feeders based on vegetation impact on reliability, long rural circuits, and finally, all other circuits. We consider that this approach will provide increasing benefits to consumers once the first cut issues are resolved and Aurora transitions to a cyclical cut strategy.
- E194 Strata's took several analysis approaches to ascertain what might be a reasonable unit rate for Aurora. It firstly defined an industry cohort of distributors from several different perspectives, such as ICP density, similar overhead line lengths, and similar urban/rural lengths.
- E195 On a straight cost per unit overhead line length basis Aurora costs appeared to be significantly above the cohort average over the past seven years and was forecast to remain so for the coming decade.⁶⁰⁵

⁶⁰⁴ [Strata Energy Consulting – Report on Aurora Energy's CPP Application - November 2020](#) p.84-94.

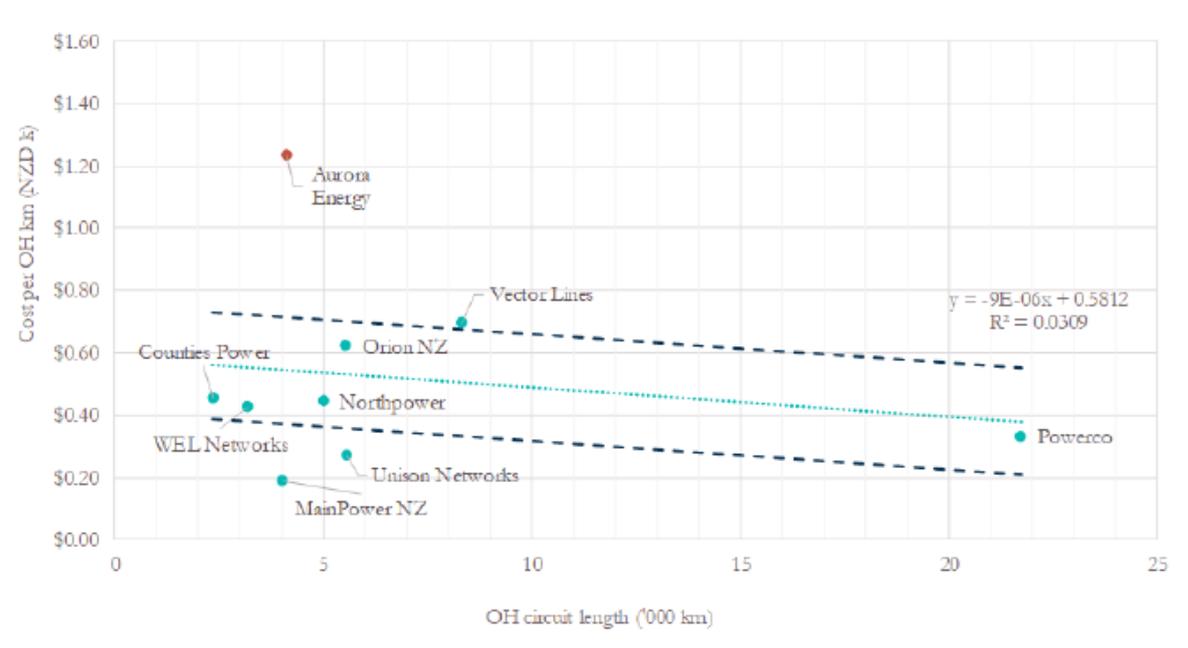
⁶⁰⁵ The exceptions were Nelson Electricity, Wellington Electricity and Vector. Strata noted that it was likely that these businesses faced higher costs associated with traffic management and possibly tree owner liaison due to having more trees in the urban environment.

- E196 Another approach Strata took was to calculate what quantum of overhead line could be trimmed using Aurora's unit rate at other businesses. Strata estimated that Wellington Electricity was the only distributor that would be able to trim a similar percentage of overhead lines as Aurora given its forecast vegetation management expenditure.
- E197 Finally, Strata compared Aurora's vegetation management resourcing costs against Mainpower's (scaled up for comparative purposes). The Mainpower comparison was useful because comparable labour resource data was available that allowed a direct comparison with Aurora.
- E198 Strata noted that Aurora spent \$5.59 million in RY20 for vegetation management which included costs for eight arborist crews, six vegetation liaison officers and administration. Mainpower reportedly spent \$713,000 in RY20 for an estimated two arborist crews. Mainpower's crew numbers and costs pro-rated to allow direct comparison with Aurora.
- E199 For its Mainpower direct comparison estimate Strata added additional margins for administration and Delta having a larger arborist crew to deal with urban issues, and concluded that Aurora vegetation management costs could be higher by between 22% and 45% if arborist crew productivity was similar.
- E200 Based on this labour resource comparison, and considering the other analysis approaches, Strata estimated that an annual vegetation management opex cost of \$3.5 million-\$4 million appeared reasonable for Aurora's network, compared to its proposed approximate annual cost of \$5.5 million. Strata concluded a 25% reduction to Aurora's unit rate could be appropriate.
- E201 In its analysis the Verifier did not suggest reductions to Aurora's vegetation management unit rate despite identifying that Aurora vegetation opex per overhead line length appeared to be noticeably higher than that of other NZ electricity lines companies (see Figure 7).^{606,607}

⁶⁰⁶ The Verifier considered that its benchmarking results were inconclusive because the scale of the difference between Aurora and the other electricity lines companies did not appear realistic.

⁶⁰⁷ The Verifier undertook a similar benchmarking analysis against Australian electricity lines companies and noted that in contrast to NZ results, Aurora's vegetation costs appeared consistent with these networks. However, the Verifier also noted care should be used in interpreting these results because the New Zealand comparison may be affected by factors not readily adjusted for using the data available from the Australian electricity lines companies such as different reporting obligations and different operating environments.

Figure E10 RY15-19 Vegetation management per overhead circuit km versus overhead line length⁶⁰⁸



Our draft decision on the opex allowance for vegetation management

- E202 In our Draft Decision we agreed with Strata's conclusion that Aurora's unit rates may be inefficient. Aurora had not tendered any of its vegetation management work and the base year it used to define its unit rate involved an undefined combination of first and cyclical cut activities.
- E203 In our Draft Decision, we considered that the Strata and Verifier benchmarking comparisons were informative but not definitive because it was not known how many network route kilometres of vegetation is trimmed each year by Aurora and other lines companies.
- E204 However, we believed that Strata's direct cost comparison analysis with Mainpower was the most compelling, because this bottom-up approach demonstrated that even with generous assumptions around crew size, administration and overhead costs, Aurora unit costs still appeared higher.

⁶⁰⁸ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Figure C.31 p.307.

E205 In our Draft Decision we agreed with Strata’s recommended unit rate reduction to \$75,000/per km and considered that \$16.1 million of the proposed \$21.2 million of vegetation management opex was prudent and efficient and met the expenditure objective.⁶⁰⁹ We also retained Aurora’s modelled efficiency adjustments when we modelled the allowance reduction.⁶¹⁰

Submissions on our draft decision on vegetation management opex

E206 We received several submissions about our vegetation management opex draft decision. Richard Healey submitted that Aurora’s vegetation expenditure was not well targeted at present and disputed the notion that Aurora tendering the work would lead to efficiencies. Healey further noted that there was effectively no competition for work on Aurora’s network because “there is more work available than all of the contractors combined can complete”.⁶¹¹

E207 We can only assume that when this vegetation management work is offered on the open market, that businesses will be incentivised to offer competitive rates for the work.

E208 Electra noted that our draft decision set a basis for the efficient costs but did not fully account for the real costs that included “community engagement, conflict management and ongoing education”.⁶¹² However, every electricity lines business will face these issues, and costs associated with these factors will be common and not restricted to Aurora.

E209 Wellington Electricity disagreed with the Strata analysis and considered that the top-down benchmarking approach was not sufficiently robust, because the sample size was too small and there appeared to be too much variability between networks. Wellington Electricity also made the point Aurora was implementing their first cut, so costs would be higher, but did not provide any information that distinguished first cut and cyclical cut cost differences.^{613,614}

⁶⁰⁹ This included the effect of Aurora’s modelled efficiency adjustments of 0.5% in RY22 rising to 8.5% in RY26 in due to works coordination improvements and contractor cost efficiencies – from Strata Energy Consulting “Report on Submission Topics - Assessment and opinions on specific submission topics related to Aurora Energy’s June 2020 Customised Price Path application” (24 March 2021), p. 6.

⁶¹⁰ We did not engage Strata to review the prudence of Aurora’s proposed vegetation management expenditure. The investment prudent need modelling had been reviewed by the Verifier and was deemed to be ‘not unreasonable’.

⁶¹¹ [Richard Healey – Submission on draft decision for Aurora's CPP – 17 December 2020](#), p.6.

⁶¹² [Electra - Cross submission on draft decision for Aurora's CPP - 18 January 2021](#), p.9.

⁶¹³ [Wellington Electricity – Submission on draft decision for Aurora's CPP – 17 December 2020](#), p.3.

⁶¹⁴ Note that we intend to revisit whether changes to information Disclosure are necessary to enable vegetation management unit rate cost comparisons to be made.

- E210 Wellington Electricity further stated that "Where the Commission cannot rely on a competitive tender to provide comfort that costs are efficient, Wellington Electricity believes that comparative unit rates and a comparison of underlining cost components provides a sensible alternative approach". Wellington Electricity did not provide any unit rate cost information we could use in our own analysis, but we agree that a unit rate comparison approach is a sensible one.
- E211 We also agree with Wellington Electricity that it is unusual that Aurora's unit rate costs do not reduce over the CPP period as it transitions from a first cut to cyclical cut strategy.
- E212 Aurora disagreed with our decision stating that our proposed reduction would "lead to a delay of first cut clearance and reduced effectiveness of our ongoing vegetation management programme, making compliance with the tree regulations a concern".⁶¹⁵
- E213 In support of its draft decision submission Aurora engaged WSP to carry out a review of the Strata analysis approach we relied on in our draft decision. WSP stated that:⁶¹⁶
- E213.1 Strata's benchmarking approach was flawed because it assumed the difference in costs between businesses were all attributable to the unit rate, as opposed to the type and complexity of the vegetation work undertaken;
 - E213.2 lines companies are interpreting the 'overhead line length subject to vegetation management' information disclosure (ID) reporting requirements differently;
 - E213.3 the benchmarking cohort selection did not factor in network terrain differences and urban/rural ratios;
 - E213.4 external factors such as different council regulations, the percentage of trees where owners have declared no interest, and the first cut percentages were not accounted for;
 - E213.5 the Mainpower comparison did not recognise differences in urban/rural ratios and terrain, and was only a single-point comparison;
 - E213.6 Strata's analysis assumes Mainpower's cost in RY20 reflected two fully manned fulltime arborist crews; and

⁶¹⁵ [Aurora Energy letter – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p.47.

⁶¹⁶ [Aurora Energy letter – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p.46-48, Appendix A.5 p.86-95, and [WSP report \(on behalf of Aurora\) – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p.19-22

- E213.7 the unit rate reduction may be double counting the potential efficiency benefits.
- E214 In our draft decision we understood the limitations of the top-down benchmarking approach Strata had taken, mainly because it was a direct cost comparison where the volume of tree trimming was unknown. We acknowledged that limitation, and this resulted in us placing more weight on the Mainpower comparative resource analysis which seemed more compelling.
- E215 In its report that supported the Aurora draft decision submission, WSP highlight differences between the Mainpower and Aurora networks that might result in higher costs for Aurora such as:
- E215.1 Mainpower has 51 km of urban lines compared to 1,637 km for Aurora and urban line tree trimming requires increased traffic management and involves higher costs; and
- E215.2 the Aurora network covers a larger area than Mainpower and the topology is more mountainous; this increases travel times and can make access more difficult, which impacts costs.
- E216 While no additional information was provided about the likely cost differences between urban and rural tree trimming traffic management, it will likely be higher in the urban environment. We acknowledge there will also be more topology issues for Aurora to deal with that will impact the time taken to manage trees in challenging access environments.
- E217 We agree with WSP that a direct unit rate comparison will not factor in urban/rural and topology differences but note that Aurora's own expenditure forecast model is premised on a single unit rate per kilometre, and does not discriminate urban/rural, topology and first cut/cyclical cut cost differences.
- E218 Aurora's vegetation management expenditure forecast modelling does include estimates of urban, rural and semi-rural vegetation densities and the first cut backlog which is used to estimate catch-up expenditure out to RY23. The cyclical cut strategy is modelled to start on RY22 for Central Otago and RY24 in Dunedin. But these factors only affect volumes and not unit costs.

- E219 Aurora has also included vegetation management expenditure forecast reductions over the CPP period to reflect contractor efficiencies from RY23 (when the vegetation is set to be competitively tendered) and incremental efficiency adjustments to account for improved works delivery processes.⁶¹⁷
- E220 Aurora, in its draft decision submission, states that “our vegetation contractor provides vegetation management services outside of Dunedin in a competitive environment and, in our view, we are achieving a competitive rate of vegetation management when taking account of the actual vegetated metres cut, the urban and rural network ratio, the need for traffic management and the level of first cut work to be undertaken”. We asked Aurora if it could qualify this statement.
- E221 In response to this request, Aurora provided confidential information of vegetation management rates charged by its vegetation management contractor.
- E222 Having reviewed this information, we consider that this information confirms that Aurora appears to be incurring market tested rates for its vegetation management. Given this is the case, and the fact that the Verifier agreed that the need was prudent, the only question remaining is one of productivity.
- E223 Finally, Aurora in its draft decision submission contends that the Commission’s decision to retain Aurora’s modelled efficiency adjustments and use a lower unit rate when setting allowances, has effectively double-counted an efficiency adjustment. We address this issue below.

Vegetation management – analysis summary and final decision

- E224 We have reviewed the CPP Application material, and the Verifier’s analysis of the vegetation management programme. The Verifier concluded that Aurora is transitioning to a five-year cyclical cut strategy, which is consistent with good industry practice. It concluded that Aurora had estimated its exposed vegetation by feeder to identify intervention need, and that this approach was not unreasonable.
- E225 However the Verifier could not decide if the unit rates Aurora had used, based on RY18 costs, were efficient for a number of reasons including the fact that the work had not been market tested, that there was a mix of activities involved, and its benchmarking suggested Aurora’s costs were noticeably higher than at other EDB’s.

⁶¹⁷ [Strata Energy Consulting – Report on Aurora Energy’s CPP Application - November 2020](#), p.6.

- E226 We engaged Strata to review the potential issues identified by the Verifier. After using several analysis approaches Strata decided that Aurora was likely to be inefficient, and recommended we set Aurora's modelled vegetation management unit rate to \$75,000 per km. This resulted in a recommended approval amount of \$16.1 million compared with the proposed amount of \$21.2 million. We agreed with the Verifier analysis and Strata recommended approval amount in our draft decision.
- E227 We received several submissions about our draft decision and Aurora provided further supporting analysis. This analysis suggested that Strata's Mainpower resource comparison analysis, which we placed more weight on, did not factor in urban/rural and network terrain cost differences. Aurora concluded that the direct unit rate comparison supporting our draft decision did not include these factors.
- E228 We agree that a direct unit rate comparison will not factor in urban/rural and topology differences but note that Aurora's own expenditure forecast model is premised on a single unit rate per kilometre, and does not discriminate urban/rural, topology and first cut/cyclical cut cost differences.
- E229 In the absence of a clear comparative modelling approach to setting efficient vegetation management opex, we sought additional information from Aurora to see if it could confirm that its unit rates were competitive. Aurora provided confidential information to us that confirmed this was the case.
- E230 We have reviewed our vegetation management opex draft decision and, based on the Aurora contractor information, have reconsidered our decision to amend Aurora's proposed vegetation management opex. We have retained Aurora's own modelled efficiency adjustments and have agreed with Aurora's proposed amount in this opex programme. This removes Aurora's concern that efficiency adjustments have been double counted.
- E231 Our decision is that we consider the proposed amount of \$21.2 million for vegetation management opex is prudent and efficient and meets the expenditure objective.

Maintenance opex

Decision on maintenance opex allowance

- E232 Our decision is to set opex allowances of:

E232.1 \$22.5 million for reactive maintenance;

E232.2 \$16.6 million for corrective maintenance; and

E232.3 \$30.5 million for preventive maintenance over the CPP period.

E233 Expenditure of this level is, based on the information before us, prudent and efficient and meets the expenditure objective. This represents:

E233.1 a reduction of \$0.7 million on that proposed by Aurora; and

E233.2 an increase of \$0.3 million on that in our draft decision.

E234 The rest of this section comprises:

E234.1 a summary of Aurora's maintenance opex proposal;

E234.2 a summary of the Verifier's view;

E234.3 discussion of the key issues identified by the Verifier namely:

E234.3.1 whether it is appropriate for the remediation costs of the consumer pole population to be included within the regulated cost base;

E234.3.2 the appropriateness of applying a network growth factor to corrective and reactive maintenance;

E234.3.3 whether the proposed increase in defects requiring corrective maintenance is appropriate;

E234.3.4 whether RY19 is an efficient base year and that RY20 actual costs to assess the impact of the new FSA on maintenance costs should be reviewed; and

E234.3.5 whether the proposed top down efficiency improvements proposed by Aurora Energy are appropriate.

Background - Aurora's maintenance opex proposal

E235 Aurora is proposing to invest \$70.3 million over the CPP period (see Figure 8) in its maintenance programme that comprises \$22.8 million for reactive maintenance, \$17.1 million for corrective maintenance and \$30.5 million for preventive maintenance.

Figure E11 Maintenance expenditure between RY15 and RY26

E236 Aurora considers that this expenditure is necessary to address historical shortfalls in corrective and preventive maintenance of some asset types, attend to defect backlogs, enhanced inspections, gather asset data, and to help it to meet service standards related to reactive maintenance activities

E237 Aurora notes that it has historically not completed enough preventive and corrective maintenance activities which has led to a need to increase expenditure in these programmes of work during the CPP period.

E238 Aurora's reactive maintenance expenditure is expected to decrease as overall asset condition begins to improve due to greater expenditure on renewals and other network opex areas.

Maintenance opex – Verifier review

E239 The Verifier considered that most of Aurora's forecast maintenance opex was prudent and efficient, stating that the use of base step and trend forecasting using a RY19 base year was appropriate and that most expenditure step changes were justified.⁶¹⁸

⁶¹⁸ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), Section C17, C18, and C19.

- E240 In the preventive maintenance opex programme the Verifier noted that the expenditure step changes are driven by an enhancement of inspection activities and that this aligns with GEIP. Aurora Energy needs to collect asset condition data to support its asset management planning and asset strategies.
- E241 In the corrective maintenance opex programme the Verifier noted that most of the expenditure step changes are driven by a need to rectify current and projected defect backlogs, and enhancement of corrective maintenance activities, and that this aligns with GEIP.
- E242 In the reactive maintenance opex programme the Verifier noted that the expenditure step changes are nominal only, and that reactive maintenance volumes are primarily driven by the number of faults on the network. These are noted to have been relatively consistent year-on-year.
- E243 While it agreed that most of Aurora's maintenance opex was verified it concluded that there may have scope for reductions due to base year efficiency questions and Aurora's proposed efficiency improvements which appeared modest. Additionally, cost reduction benefits from the new contractor arrangements will likely be realisable sooner than the top-down efficiency improvements modelled by Aurora.
- E244 The Verifier also noted that applying a network scale growth factor does not appear appropriate for reactive and corrective maintenance over the CPP period as such activities are driven more by fault rectification than growth in new assets.
- E245 The Verifier's analysis also concluded that, for corrective maintenance, it agrees there will be more defects identified due to an increase in inspections from enhanced preventive maintenance expenditure, but it was not able to verify the nominal 10% allowance proposed by Aurora for additional defects identified.
- E246 It identified several key issues for us to investigate further such as:⁶¹⁹
- E246.1 whether it is appropriate for the remediation costs of the consumer pole population to be included within the regulated cost base;
 - E246.2 the appropriateness of applying a network growth factor to corrective and reactive maintenance;
 - E246.3 whether the proposed increase in defects requiring corrective maintenance is appropriate;

⁶¹⁹ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), pp. 278, 290, 299.

E246.4 whether RY19 is an efficient base year and that RY20 actual costs to assess the impact of the new FSA on maintenance costs should be reviewed; and

E246.5 whether the proposed top down efficiency improvements proposed by Aurora Energy are appropriate.

E247 We engaged Strata to review the potential issues identified by the Verifier and carried out our own investigation of consumer-owned poles expenditure. We discuss each in turn below.

Aurora's consumer-owned pole maintenance expenditure

E248 The Verifier noted that Aurora had forecast inspecting and mitigating issues with approximately 4,000 consumer-owned poles by RY27, before handing ownership of these poles over to consumers as part of its Consumer Owned Poles Strategy.

E249 The need for and timing of this Aurora initiative was supported by the Verifier as it noted it was “driven by a higher than average unassisted failure rate of consumer owned poles when compared with Aurora’s pole population”.⁶²⁰

E250 The Verifier considered we may want to investigate whether it was appropriate for pole remediation costs to be included in the Regulated Asset Base (RAB). There is \$6.5 million of proposed corrective and preventive maintenance opex for this purpose included in the CPP application.

E251 We were interested to understand how Aurora had accounted for, and proposes to account for, the costs associated with remediating consumer-owned poles, described its cost recovery policy, and explained whether consumer-owned poles capex was included in the RAB.

E252 We also asked Aurora to provide us with its view of the statutory obligations surrounding the strategy to remediate consumer-owned poles.

E253 Aurora responded by providing a detailed legal analysis of its statutory obligations to remediate consumer-owned poles, the expenditure it will incur remediating consumer-owned poles, and its cost recovery policy.

E254 Aurora confirmed that it had capitalised a very small number of consumer owned pole replacements in the past three years. At the time it was uncertain whether its policy position would be to hand-over or bring service lines into the RAB.

⁶²⁰ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), p.487.

- E255 We reviewed the Aurora response to our question. In our draft decision we considered that it was appropriate for consumer pole remediation opex costs to be included within the RAB. We consider that Aurora has correctly interpreted and established its legal responsibility for the relevant poles under the Electricity Act 1992.
- E256 Aurora's proposed approach to bringing the poles up to "a reasonable standard of maintenance and repair" entails having regard to the age of a service line and poles and the regulations under which the service line and poles were constructed. Lines companies must ensure that service lines and poles are not unsafe. We consider that Aurora's approach is reasonable.
- E257 We consider that Aurora's general approach of incurring operational expenditure for inspecting, maintaining and handing over service lines, in accordance with the transitional provisions of s2(5) of the Act, is consistent with the intent of the transitional arrangements under section 2(4) and (5) of the Electricity Act. As such it is appropriate that maintenance and responsibility for service lines beyond the Point of Supply (PoS) shift to the consumer if the remedial and notification requirements under subsection (5) are met.
- E258 In summary we consider that Aurora has taken a prudent approach to remediating consumer-owned poles which pose a safety risk. Its approach is consistent with the Electricity Act 1992 and it is appropriate for remediation opex costs to be included in the regulated cost base.
- E259 We received no submissions about our draft decision consumer-owned poles analysis and conclusions.

Application of a network growth factor to corrective and reactive maintenance

- E260 In its analysis that supported our draft decision Strata agreed with the Verifier's view that applying a network growth factor to corrective maintenance over the CPP period may not be appropriate because defective network assets rather than network growth are the key drivers of corrective maintenance expenditure.⁶²¹
- E261 Strata noted that defects are typically related to asset age and/or condition. New assets installed for growth purposes should be defect-free when installed and certainly remain so for the duration of the CPP period.

⁶²¹ [Strata Energy Consulting – Report on Aurora Energy's CPP Application - November 2020](#), p.96-99.

- E262 Strata agreed with Aurora's view that applying a network growth factor to reactive maintenance over the CPP period was appropriate. More network assets will result in higher fault exposure from external causes such as vegetation, animals, third parties and storms.
- E263 Strata did not agree with the size of the network growth factor Aurora had applied in its reactive maintenance opex modelling. Strata considered it should be less than the network growth factor we applied in the DPP3 analysis, as asset age and condition defects are not related to growth.
- E264 Strata noted that defective equipment caused 36% of Aurora's unplanned outages over the previous three years and there had been an increasing trend since 2014. Aurora's asset renewals expenditure programmes will arrest this trend and begin to reverse it, but this will take time.
- E265 Strata estimates that at the start of the CPP period (i.e. RY22), 35% of unplanned outages could be caused by defective equipment, with this percentage falling to 25% by RY26. Based on an average of 30% for this estimate, Strata reasoned that the Aurora's modelled network growth factor should be scaled back to 70% of what was applied in DPP3.
- E266 In its draft decision submission Aurora disagreed with the Commission removing and amending the network growth factor effects from Aurora's corrective and reactive maintenance forecasts respectively, stating that this was inconsistent with our approach under DPP3.⁶²²
- E267 Aurora also stated that the Commission did not raise similar issues with DPP-based factors in its Powerco CPP decision, and that the onus is on the Commission to "explain/demonstrate why it should not apply to Aurora under a CPP".⁶²³
- E268 The Powerco CPP Verifier, Farrier Swier, did not raise this as an issue or consider the modelled effect to be material, stating in its review of the reactive, preventive and corrective maintenance opex forecasts that network scale effects had a "minor impact."⁶²⁴ However, Farrier Swier raised this as an issue after its review of the Aurora CPP and we decided to investigate that.

⁶²² [Aurora Energy letter – Submission on draft decision for Aurora's CPP – 18 December 2020](#), Section 5.2 p.45 and Appendix A.1 p.81.

⁶²³ [Aurora Energy letter – Submission on draft decision for Aurora's CPP – 18 December 2020](#), Appendix A.1 p.81.

⁶²⁴ Powerco CPP IV report p. 76, p. 180 and p.185 available at https://comcom.govt.nz/_data/assets/pdf_file/0026/61595/Farrier-Swier-final-verification-report-Powerco-CPP-12-June-2017-.pdf.

- E269 In modelling that supported our DPP3 decision, a network growth factor was applied to the maintenance opex programme in a top-down basis. The impact of network growth at a bottom-up maintenance opex category level was not considered but could have been.⁶²⁵
- E270 The purpose of DPP regulation is to provide a relatively low-cost way of setting price-quality paths for suppliers of regulated goods or services, while allowing the opportunity for individual regulated suppliers to have alternative price-quality paths that better meet their particular circumstances.
- E271 A CPP is one such circumstance that allows a more granular consideration of issues like this to be modelled. We disagree with Aurora that modelling issues addressed in a top-down manner in a DPP cannot be investigated in a CPP assessment in a tailored bottom-up way.
- E272 Aurora state in its submission state that "growth in the number of defective network assets is in proportion to the size of the network" and that "high growth and expansion of the Central network (for example) over the last 20+ years means that more aging assets are feeding into the defective asset pipeline".⁶²⁶
- E273 We disagree with Aurora and remain in agreement with the Strata draft decision recommendation that network growth is not correlated with the need for increased corrective maintenance, given that new assets are unlikely to require intervention over the CPP period and well-beyond.
- E274 We agree that more network assets will require more reactive maintenance in time. But the network growth adjustment Aurora has applied reflects new assets related to additional network capacity. New assets for additional network capacity will only require additional corrective maintenance if the associated assets are not installed consistent with GEIP, or they have type issues. Network growth will increase the loading of existing network assets and this may increase the need for reactive maintenance opex, but Aurora had not provided evidence that this was the case.

⁶²⁵ [Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 - Final decision - Reasons paper" \(27 November 2019\)](#), paras. 5.51 to 5.56.

⁶²⁶ [Aurora Energy letter – Submission on draft decision for Aurora's CPP – 18 December 2020](#), Appendix A.1 p.81.

- E275 Aurora disagreed with the Strata analysis that was used to estimate the 30% reduction stating that Strata had not factored in the negative step change Aurora had applied in its forecast that has “included reductions in corrective maintenance to reflect expected improvements”. Aurora also contend that Strata’s proposed reactive maintenance opex 30% reduction had been arbitrarily chosen.⁶²⁷
- E276 However, this 30% adjustment only applies to the impact network growth will have on Aurora’s reactive maintenance opex and the network growth trend it has modelled for this purpose. The Strata analysis and our draft decision did not question how Aurora had modelled the impact of improving network asset condition overall and the reductions it had modelled to reflect that.
- E277 In its analysis that supported our draft decision, Strata considered what might be a reasonable reduction based on an observed average of defective equipment unplanned outages, and a consideration of the extensive renewals programme Aurora is embarking on. Based on this analysis it estimated the 30% reduction in the network growth trend effect Aurora had modelled and we agreed with this reduction.
- E278 Following our consideration of Aurora’s draft decision submission material our decision is that no network growth factor be applied to the proposed corrective maintenance opex forecast, and a network growth factor that is 70% of the DPP3 growth factor be applied to the proposed reactive maintenance opex forecast.
- E279 This results in a corrective maintenance opex downward adjustment of \$0.42 million and a reactive maintenance opex downward adjustment of \$0.25 million over the CPP period.

Effect of top-down efficiency adjustment on Aurora’s corrective maintenance opex forecast

- E280 Aurora raised another issue in its draft decision submission related to our decision to apply top-down capex efficiency adjustment consistently across the capex portfolio and not restrict it to two asset renewals programmes as Aurora had done in its modelling.

⁶²⁷ [Aurora Energy letter – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p. 45 and Appendix A.1 p.81.

- E281 Aurora state that this adjustment decision now means that its modelled downward adjustment in the corrective maintenance opex forecast, to reflect improvements in asset condition, is “likely to be overstated” and that “the Commission has proposed reducing the increase in planned renewals by 30%” in the draft decision, which would “reduce the level of asset condition improvements and we would expect there to be a corresponding reduction in corrective maintenance benefits, leading to a shortfall”.⁶²⁸
- E282 The Commission’s decision to consistently apply Aurora’s modelled top-down capex efficiency adjustment across the capex portfolio is not a disagreement with the amount of planned capex renewals work Aurora must carry out. This adjustment has been applied to reflect the significant investment Aurora is making in its business to improve asset management and business processes which will improve efficiency.
- E283 We disagree that our top-down capex efficiency adjustment decision will logically result in less assets being replaced or renewed and disagree with the Aurora statement that this decision means it requires more corrective maintenance opex.⁶²⁹

Proposed increase in defects requiring corrective maintenance

- E284 In its CPP proposal Aurora expects annual expenditure on defects requiring corrective maintenance over the CPP period to be 10% higher than in RY19. This increase is expected due to a greater focus on preventive maintenance, leading to more defects being identified.
- E285 The Verifier identified in its review that, while it agreed that there will be more defects identified due to enhanced preventive maintenance inspections, it was not able to verify the nominal 10% allowance for this in the corrective maintenance opex forecast, noting that:⁶³⁰

Even if the 24% uplift in preventive maintenance were to occur, it does not necessarily follow that there would be a 10% uplift in defects needing corrective maintenance. Enhanced inspections might simply identify more assets that do not have defects. Moreover, opportunities to prioritise defects, deferring those that are considered less of a priority, could offset the uplift in new defects. Aurora Energy advised that at present there is no formal backlog of defects maintained, and, other than for poles, defects are not graded.

⁶²⁸ [Aurora Energy letter – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p. 45 and Appendix A.2.1 p.83.

⁶²⁹ We tested Aurora’s assertion that we had not approved 30% of the increase of planned renewals capex in our Draft Decision. This figure is approximately correct if the top-down efficiency adjustment is included as part of the reduction and the CPP period renewals capex is compared with the previous 5-year period. When the top-down efficiency adjustment is removed and the calculation updated with the final decision renewals amount, this reduction drops to 10.6%.

⁶³⁰ [Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" \(8 June 2020\)](#), p.284.

- E286 In its analysis that supported our draft decision we wanted Strata to test whether Aurora's 10% uplift in defects estimate was supported. Strata noted that, on a network with a relatively high proportion of older assets like Aurora's, it was logical that an increase in preventive maintenance would result in an increase in identified defects and a corresponding increase in corrective maintenance.⁶³¹ We agree with this conclusion.
- E287 To estimate whether the uplift was supported Strata reviewed Aurora's proposed additional preventive maintenance activities and which of these could potentially affect corrective maintenance expenditure.
- E288 Strata concluded that there was not a strong linkage for 'defects' related uplift in corrective maintenance opex resulting from the Lidar survey because Lidar surveys primarily provide data to prioritise vegetation management.
- E289 Strata also questioned whether consumer owned poles defects would also result in a 10% uplift. Aurora also plans to inspect all consumer poles installed prior to 1984. This preventive maintenance will determine the amount of work, and therefore the cost, associated with this corrective maintenance activity. Therefore, this preventive maintenance expense should be linked directly to the consumer-owned poles corrective opex.
- E290 Strata note that, given Aurora's significant programmes of renewals capex (repex) in relation to poles, crossarms, sub-transmission and distribution conductors, it is likely there will be much lower corrective maintenance expenditure required in these areas, and that some of the defects identified in the preventive programme will be addressed as capex renewals work progresses rather than corrective actions.
- E291 Strata concluded that, the remaining areas with the potential for increased corrective maintenance expenditure, related to the increased inspections of:
- E291.1 pole-mounted air-break switches;
 - E291.2 low voltage enclosures;
 - E291.3 distribution surge arrestors;
 - E291.4 indoor switchgear;
 - E291.5 management of sulphur hexafluoride (SF6);
 - E291.6 electromechanical relays; and

⁶³¹ [Strata Energy Consulting – Report on Aurora Energy's CPP Application - November 2020](#), p.101-105.

E291.7 pole-mounted distribution transformers

- E292 Strata recommended that Aurora's proposed 10% step change be reduced. It based this reduction on several factors such as:⁶³²
- E292.1 defects'-related corrective maintenance opex pertaining to crossarms and distribution conductors may be anywhere between 25% to 50% lower than Aurora has forecast, because the renewals programme will be targeted at the older, poorer condition and worst performing assets which will be replaced;
 - E292.2 it is unlikely that Aurora will substitute replex for 'defects'-related corrective maintenance opex on subtransmission lines other than the Waipori lines; and
 - E292.3 the remaining renewals asset categories with the potential for increased corrective maintenance expenditure are more likely to incur corrective maintenance expenditure as defects are discovered through routine inspections and testing, rather than being replaced via replex programmes (perhaps apart from indoor switchgear).
- E293 Following its analysis Strata was not convinced that Aurora's proposed step change in corrective maintenance opex, generated by additional defects identified by increased preventive maintenance, met the expenditure objective. Aurora had not provided any evidence about how it arrived at the figure of 10%.
- E294 Strata also concluded that the final percentage reduction should be based on the Commission's final decisions on Aurora's replex and quality standards. This is because of the relationship between Aurora's opex, replex and quality standards.
- E295 While we agreed with Strata's view on this, it is only possible if a lines company has a fully functional asset and network risk model, it will be unable to make these trade-offs analytically. Aurora does not have such a model, and this is an area that needs to be matured in the electricity sector in general, so is not restricted to Aurora.
- E296 Strata recommended the proposed step change be reduced by 40% based on the considerations above. It believed Aurora had overstated the preventive maintenance step-change activities (listed in Table 1 of the Strata report page 102) for consumer-owned poles and vegetation management.⁶³³

⁶³² [Strata Energy Consulting – Report on Aurora Energy's CPP Application - November 2020](#), p.101-105.

⁶³³ [Strata Energy Consulting – Report on Aurora Energy's CPP Application - November 2020](#), p.102.

- E297 In our draft decision we agreed with the Verifier that Aurora had not demonstrated how its increase in preventive maintenance expenditure would result in more defects requiring 10% more corrective maintenance. While we agreed that there is likely to be a step change, we considered that Aurora's 10% step-change had not been demonstrated.
- E298 We also agreed with the Strata that, for a network with a relatively high proportion of older assets, it was logical that an increase in preventive maintenance could result in an increase in corrective maintenance but that Aurora is embarking on a significant replacement capex programme so replacement rather than repair is probably more likely.
- E299 We considered that Strata's analysis which identified which preventive maintenance activities could potentially result in greater corrective maintenance expenditure, was a more refined and granular approach than taken by Aurora.
- E300 In our draft decision we considered that Strata's approach and reasoning was likely to result in a more accurate estimate than the arbitrary 10% figure proposed by Aurora, and we agreed with Strata's recommendation that 60% of the proposed 10% increase was more appropriate.
- E301 Aurora in its draft decision submission disagreed with this decision stating a range of analysis assumptions that:⁶³⁴
- E301.1 the primary driver for using Lidar is to monitor vegetation. It will also identify conductor clearance issues which are recorded as defects need to be rectified under corrective maintenance or renewals;
 - E301.2 regarding Strata's point in its report that "it may be more efficient for Aurora to expend more on repx and less on corrective maintenance" state that its capex allowances are constrained, which limit the ability to trade-off capex and opex. Further some defects relate to pole-top equipment that are not capex items (unless replacing the full crossarm assembly);
 - E301.3 there was no evidence to support Strata's assessment that 'defects'-related corrective maintenance opex pertaining to crossarms and distribution conductors may be anywhere between 25% to 50% lower than Aurora has forecast, because the renewals programme will be targeted at the older, poorer condition and worst performing assets;
 - E301.4 it will inspect all subtransmission conductors and this is likely to identify defects. For those not addressed by the Waipori renewals programme, these will most likely be addressed through corrective maintenance (i.e., opex).

⁶³⁴ [Aurora Energy letter – Submission on draft decision for Aurora's CPP – 18 December 2020](#), Appendix A.4.1-A.4.8 p.84-86.

The capex allowances have been constrained, limiting the ability to trade-off capex and opex;

- E301.5 notes that Strata's opinion that "'defects'-related corrective maintenance step change that is approximately 50-67% of that proposed by Aurora would better meet the expenditure objective" implies that "Strata has managed to link our expenditure programme to defects change that is approximately 50-67% of that proposed by quantitatively". Aurora further state that "preventive maintenance will identify new defects, once the inspections occur" in consumer poles, and that there is "no corrective maintenance included for vegetation management" activities; and
- E301.6 wants to know why the Commission has not adopted Strata's recommendation that "recommend the final percentage be determined based on the Commission's final decisions on Aurora's repex and quality standards. This is because of the inherent trade-off between Aurora's opex, repex and quality standards".
- E302 Strata in its analysis attempted to link preventive maintenance activities to likely defects and a corrective maintenance uplift and reasoned for a reduction. We agree with Aurora that the reductions noted by Strata may not be supported because increased corrective maintenance opex will be necessary due to:
- E302.1 its Lidar survey picking up conductor clearance issues;
- E302.2 preventive maintenance on consumer poles leading to increased corrective maintenance opex; and
- E302.3 subtransmission conductor inspections identifying defects;
- E303 We have considered Aurora's submission material and believe that its CPP proposed estimate that an increase in preventive maintenance may identify 10% more defects and require additional corrective maintenance, may be supported. Our decision is to agree with the 10% uplift Aurora has applied in its modelling.
- E304 Finally, in its report that supported our draft decision, Strata concluded that its estimate for a percentage reduction for the step change in corrective maintenance opex due to preventive maintenance should be based on the Commission's final decisions on Aurora's repex and quality standards. This is because of the relationship between Aurora's opex, repex and quality standards. Aurora questioned why we had not adopted this recommendation in our draft decision.

E305 While we agreed with Strata's view in principle, modelling this relationship analytically is only possible if a lines company has a fully functional asset and network risk model. If this is not the case, then it will be unable to make these trade-offs analytically and it will be difficult for us to judge the capex/opex trade-offs and the impact on risk. Aurora does not have such a model to enable us to judge these relationships, and it is an area that needs to be matured in the electricity sector in general, so is not restricted to Aurora.

Efficiency of RY19 maintenance opex base year

E306 The Verifier concluded that using RY19 expenditure for the base year in Aurora's base step and trend modelling may not be efficient. In our draft decision analysis, we sought further information from Aurora about the RY19 base year selection and engaged Strata to investigate whether it considered it was efficient.

E307 Aurora's provided benchmarking analysis results for network opex, in which it identified nine electricity lines companies as appropriate comparators and compared its RY19 and CPP forecast maintenance expenditure with these electricity lines company forecasts.⁶³⁵

E308 The key benchmarking results were that:

E308.1 Aurora's scheduled maintenance (corrective plus preventive) on a per ICP basis, was below the average of the lines companies tested, whereas on a per circuit length basis it was slightly above; in both cases Aurora benchmarked reasonably; and

E308.2 for reactive maintenance opex, benchmarking suggested Aurora's forecast was above the industry cohort both on a per ICP and circuit length basis but that it appeared to benchmark reasonably.

E309 We consider that the benchmarking results provided by Aurora demonstrate that it benchmarks reasonably against the electricity lines companies that it compared against although it is difficult to conclude that RY19 was an efficient base year for forecasting purposes.

E310 The Verifier recommended we review RY20 Information Disclosure data when it became available on 31 August 2020, to assess the impact of its new Field Services Agreements on maintenance costs.

⁶³⁵ These lines companies were Alpine Energy, Counties Power, Mainpower NZ, Northpower, Orion NZ, Powerco, Vector Lines, WEL Networks, Wellington Electricity – [Strata Energy Consulting – Report on Aurora Energy's CPP Application - November 2020](#), p.80.

- E311 The comparison between RY20 actuals versus forecast for maintenance opex revealed that actual maintenance opex in RY20 was higher across all three maintenance opex categories, particularly for preventive and corrective maintenance. The RY20 maintenance opex actuals totalled \$13.4 million compared with a forecast of \$11.5 million.
- E312 Aurora noted that the RY20 results suggested that its CPP forecast may in fact be too low to adequately deliver its preventive and corrective maintenance programme without further process improvements and productivity gains.
- E313 In support of our draft decision Strata examined whether Aurora's maintenance opex RY19 base year value used in the base step and trend should be adjusted or not, by reviewing Aurora's actual RY20 maintenance expenditure.⁶³⁶
- E314 Strata identified that Aurora's RY19 maintenance opex was consistent with its historical opex levels and could be considered an appropriate base year for base step and trend forecast modelling.
- E315 Strata undertook its own benchmarking analysis selecting a cohort based on customer density (ICP/km) and concluded that its results were consistent with Aurora's and the Verifier's. Strata noted that when all maintenance opex is combined, Aurora was above the average of its selected cohort but not materially so.
- E316 Strata considered that it is reasonable to expect Aurora's RY19 network maintenance expenditure would be slightly above the average of its industry peers because Aurora had, over a number of years, pulled back on its replacement and renewal capital expenditure (capex), despite the advanced age of large parts of Aurora's network, particularly in the Dunedin network.
- E317 Strata noted that Aurora's RY20 maintenance opex was a reasonably material (11.4%) increase over RY19, and that this increase, coupled with its view that Aurora's network maintenance will be slightly high, indicates that the RY19 network maintenance opex is more likely to be efficient than inefficient.
- E318 Strata considered that, on balance, RY19 maintenance opex provided an appropriate base year for base step and trend forecasting.

⁶³⁶ [Strata Energy Consulting – Report on Aurora Energy's CPP Application - November 2020](#), p.77-83.

- E319 In our draft decision we noted that the expenditure levels proposed by Aurora across its maintenance programmes of work were supported by both the Verifier and Strata.
- E320 We considered that Strata's and the Verifier's approaches to benchmarking the total maintenance opex, rather than at a category level, was appropriate because it removed the potential for results to be affected by variances in how electricity lines companies categorise different maintenance activities.
- E321 We agreed with the Strata's observations that:
- E321.1 it is reasonable to expect Aurora's maintenance expenditure would be above the average of its industry peers because of historic underinvestment in its network; and
- E321.2 that Aurora's proposed RY19 base year is consistent with Aurora's historical network maintenance opex levels.
- E322 We also noted that although the opex programme cost efficiencies are unlikely to have been fully realised, Aurora appears to have followed a robust process to select maintenance service providers and make an increasing share of its maintenance work contestable.
- E323 In our draft decision we considered that, based on these factors, the RY19 maintenance opex base year used in Aurora's base, step and trend forecast modelling should remain unchanged. We received no submissions regarding the RY19 base year, so our decision remains unchanged.

Appropriateness of Aurora's efficiency adjustment

- E324 During our draft decision analysis, we considered whether the top-down efficiency adjustments Aurora had applied in its maintenance opex proposal modelling were appropriate or whether further efficiencies should be expected.
- E325 We decided at the time that we would not impose further opex efficiencies that Aurora had identified and considered that we would expect the IRIS mechanism to reveal further opex efficiencies over the CPP period and beyond. We have retained this view in our final decision

Maintenance opex - Conclusions and decisions

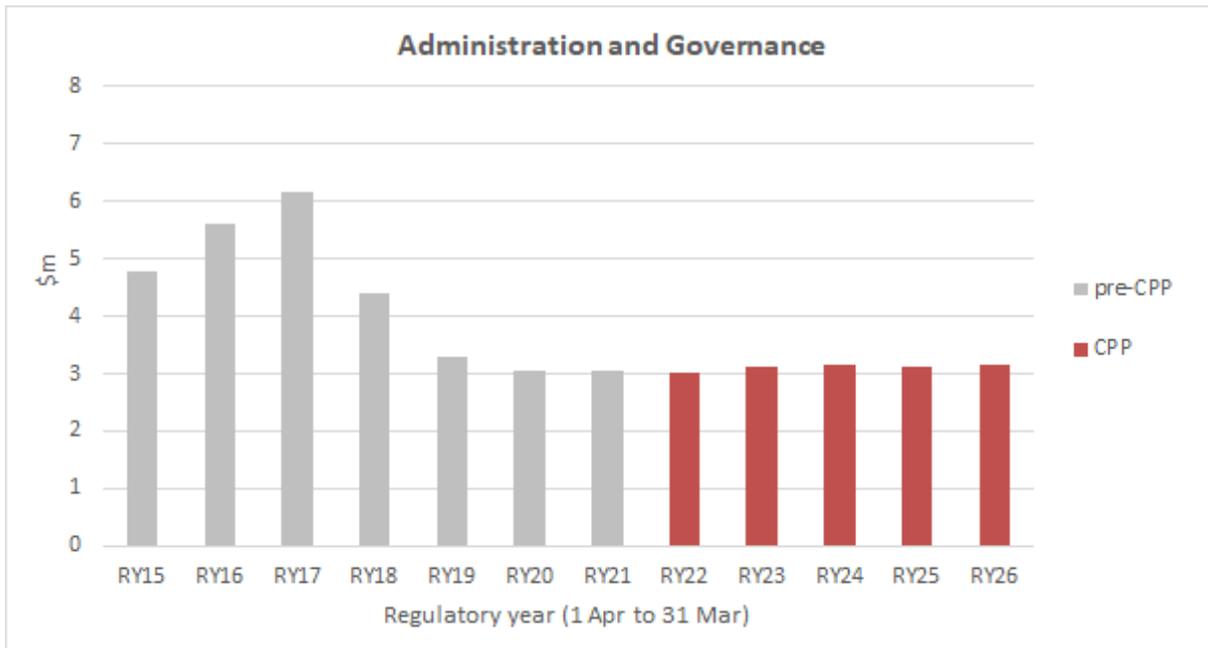
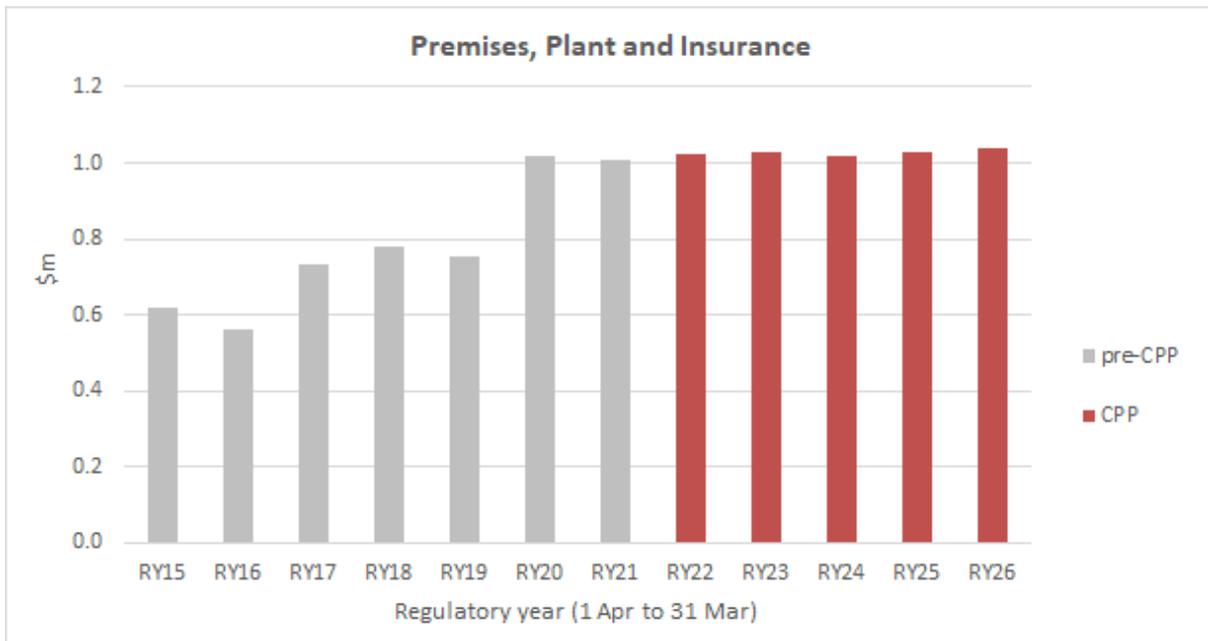
- E326 We have reviewed the CPP Application material, the Verifiers' analysis of the maintenance programmes of work, the Strata review of the issues identified by the Verifier, and the draft decision submission material, particularly the substantial material provided by Aurora.

- E327 In line with the Verifier's recommendation, we undertook further investigations of whether the remediation costs of the consumer pole population should be included within the regulated cost base, whether a network growth factor should be applied to maintenance opex, whether the proposed increase in defects requiring corrective maintenance was appropriate, and whether RY19 maintenance opex was a sufficiently efficient base year for base step and trend forecast modelling. We engaged Strata to carry out analysis of these issues and investigated the consumer poles issues ourselves.
- E328 Our decision is that we consider it is appropriate for the remediation opex costs of the consumer pole population to be included within the regulated cost base. This is based on our view that Aurora has correctly interpreted and established its legal responsibility to remediate consumer poles under the Electricity Act 1992.
- E329 We agree with the Strata conclusions that it is not appropriate to apply a network growth factor to corrective maintenance, but it is appropriate to apply to reactive maintenance at reduced levels. We reviewed the Aurora submission material and have decided that our draft decision remains unchanged for this issue.
- E330 We reviewed the additional information provided by Aurora and consider that the proposed step change in corrective maintenance opex generated by additional defects identified by increased preventive maintenance was reasonable.
- E331 Finally, we received no information that changed the view that the RY19 base year for preventive, corrective and reactive maintenance base step and trend forecast modelling is likely to be more efficient than inefficient and should remain unchanged. We have also retained Aurora's top-down maintenance opex efficiency adjustments.
- E332 Based upon the analysis undertaken, our decision is to accept that \$22.5 million of the proposed \$22.8 million for reactive maintenance, \$16.6 million of the proposed \$17.1 million for corrective maintenance; and \$30.5 million of the proposed \$30.5 million for preventive maintenance over the CPP period, is prudent and efficient and meets the expenditure objective.

Administration and Governance, and Premises, Plant and Insurance opex

Background

- E333 Over the CPP period Aurora is proposing to spend \$15.6 million for Administration and Governance opex (see Figure E12); and \$5.1 million for Premises, Plant and Insurance opex (see Figure E13).

Figure E12 Administration and Governance expenditure between RY15 and RY26**Figure E13 Premises, Plant and Insurance expenditure between RY15 and RY26**

E334 Aurora considers that the Administration and Governance expenditure is necessary to support the costs relating to its board of directors, audit and assurance programmes, legal fees and consumables. The Premises, Plant and Insurance expenditure is needed to support its (increasing) accommodation needs based on forecast staff levels, and insurance for some electricity network assets, general liability and indemnity cover.

- E335 Historically, Aurora paid an annual management fee to Delta for the provision of plant and premises services and the corporate services relating to administration and governance.
- E336 Aurora's Premises, Plant and Insurance forecast includes an increase in lease costs to accommodate increased staff levels and, while the forecast Administration and Governance expenditure is broadly consistent with its actual RY19 costs.
- E337 Aurora's notes that in reviewing its accommodation and equipment levels based on increased staff numbers, it identified a need for further investment, and in order for its staff to be accommodated, and to be able to work efficiently, it will need to invest in its premises fit out before the CPP period begins. Aurora expects plant and equipment investments will be consistent with historical levels and it will continue to replace and upgrade equipment on this basis.
- E338 The Verifier did not review these expenditure categories, so in support of our draft decision we engaged Strata. The Verifier considered that we might want to test how COVID-19 affected Aurora's insurance premia.⁶³⁷
- E339 We asked Strata to carry out a review of the Premises, Plant and Insurance, and Administration and Governance forecasts to test their reasonableness, the policies that underpinned them, whether these policies had been applied appropriately, test the models used to generate forecasts, and whether any prioritisation has been applied or should be applied. We also asked Strata to test the insurance premia issue raised by the Verifier.⁶³⁸
- E340 In its review Strata concluded that the policies supporting the Premises, Plant and Insurance opex programme, and models used to generate forecasts, were reasonable, but could not confirm if these policies had been appropriately applied.
- E341 Strata also concluded that the insurance premia related to this expenditure category should be reduced slightly because it believed the annual cost increase of premiums was overstated. On balance though Strata considered that Aurora's forecast for Premises, Plant and Insurance opex of \$5.1 million was reasonable.⁶³⁹

⁶³⁷ Strata noted in its report that Aurora includes insurance expenditure allocated to its business support function alongside its premises and plant expenditure. However, the Verifier and Strata have each considered insurance under the SONS portfolio, as this is where most of Aurora's insurance expenditure is allocated and discussed in this Reasons paper.

⁶³⁸ [Strata Energy Consulting – Report on Aurora Energy's CPP Application - November 2020](#), p.159-162.

⁶³⁹ In our draft decision we have discussed most of Aurora's insurance costs in the Systems Operations and Network Support and People Costs section.

- E342 We reviewed the CPP Application material and Strata's analysis of the Premises, Plant and Insurance opex programme. This programme expenditure is proposed to increase relative to historical costs, with the increase being driven by higher expenditure to accommodate a larger workforce, and bring staff located in Dunedin and Cromwell into the same office at each location. We consider these are reasonable drivers to justify higher expenditure levels.
- E343 We also note that the move to centralised and more functional premises will likely result in a more a productive work environment, with improved facilities for business continuity and emergency response. We therefore agree with Strata's recommendations to approve Aurora's proposed Premises, Plant and Insurance expenditure.
- E344 In our draft decision we agreed with the Strata analysis and recommended that \$5.1 million for Plant, Premises and Insurance was prudent and efficient and met the expenditure objective. We received no additional submission information about this expenditure.

Administration and Governance

- E345 In its review of the Administration and Governance expenditure forecast Strata considered that while Aurora's policies supporting the programme were reasonable, it could not confirm whether they had been applied appropriately due to insufficient information. Additionally, the models used to generate the forecast could not be fully confirmed as reasonable, based on the documentation available.
- E346 Aurora had used a base, step and trend approach to forecast its Governance and Administration expenditure and Strata tested whether the RY19 base year amount of \$2.9 million was efficient.
- E347 Following its analysis Strata concluded the RY19 base year amount could be reduced by up to 15% because it considered Aurora should not be charging consumers for service failure payments and questioned Aurora's estimation of its legal fees and whether it was more appropriate to engage in-house legal counsel than have this fully outsourced.

- E348 Strata further questioned the base year amount including a corporate communications budget of \$0.5 million and it was unclear if the RY19 base year expenditure included costs associated with Aurora’s CPP application which are not ongoing. Strata suggested that if its recommendation for an in-house legal counsel cannot generate the 15% savings then there “should be opportunity to realise savings in the \$500,000 forecast for customer communications costs”.⁶⁴⁰
- E349 We agreed with Strata that Aurora may be able to reduce its legal costs by bringing some legal work in-house. We also agreed Aurora may also be able to realise savings related to its customer communication costs where one-off costs associated with Aurora's CPP application have been included.
- E350 However, we did not agree with Strata that the expenditure related to service failure payments should be removed and allowed for these to continue under Aurora’s existing consumer compensation scheme.
- E351 We consider a compensation scheme provided by an efficient and prudent network operator will inevitably require payments for most types of measures because over-investment would be required to avoid any payments. We did not factor this recommended reduction in the RY19 base year estimate.
- E352 In our draft decision the net effect of the adjustments to the RY19 base year was an approximate 7% reduction in Aurora’s allowance for its Administration and Governance opex over the CPP period and reduced the allowance from \$15.6 million to \$14.5 million.
- E353 Aurora disagreed with our proposed reduction in this expenditure category, and that it presently has no legal advisor or corporate lawyer on its staff, stating that:⁶⁴¹

generalist in-house legal council [sic] would increase rather than reduce costs. A role of this nature normally engages and manages legal work across specialist external counsel that has the relevant expertise and depth in legal capability required. An FTE of this nature should only be employed if the scale of the organisation warrants it. This is not the case for Aurora.

- E354 Aurora also disagreed with Strata’s conclusion that the \$0.5 million budget for communications costs in RY19 included some one-off CPP costs. Aurora state that:

The majority of the mentioned \$500,000 communication costs included in governance and administration relates to telephones and other communication equipment, and newspaper adverts and other advertising for customer connection matters. The costs are not related to our CPP and are recurring.

⁶⁴⁰ [Strata Energy Consulting – Report on Aurora Energy’s CPP Application - November 2020](#), p.162.

⁶⁴¹ [Aurora Energy letter – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p.42, Appendix A7.3 p.106 and Appendix A7.4 p.107

- E355 After a reconsideration of electricity lines company legal requirements, we accept that not every electricity lines company can justify in-house counsel, in addition to the need for specialist advice when required, and that in this case it may prove to be a more expensive option than Aurora's proposal. Additionally, Aurora has confirmed that the RY19 base year estimate does not contain any costs related to the CPP.
- E356 Based on the analysis we have carried out and submission material our decision is we accept that \$5.1 million of Plant, Premises and Insurance, and \$15.6 million of Administration and Governance expenditure is prudent and efficient and meets the expenditure objective.

Attachment F Regulatory expenditure incentives

Purpose of this Attachment

- F1 The purpose of this Attachment is to outline the outcomes of applying the incremental rolling incentive scheme (or IRIS) for opex as well as the capex incentive mechanism for Aurora. We provide an overview of how the incentive mechanisms for opex and capex operate and are applied when transitioning onto a customised price-path (CPP), and the regulatory incentives that will apply to Aurora during its CPP.
- F2 We show how the opex and capex incentive amounts are carried forward into the CPP period, which feed into the revenue that Aurora can earn during its CPP period and also feed into our approach to smoothing revenue for Aurora as explained in Attachment G.
- F3 Note that the application of the expenditure incentive mechanisms is not part of our CPP decisions but rather the outcomes of applying the input methodologies (IMs) for Aurora's transition to a CPP. However, we may vary the rules of the incentive mechanism with Aurora's agreement. Aurora proposed that we vary how the opex IRIS amount are spread for consumers, but our decision is not to accept this proposal and instead smooth revenue in other ways as discussed in paragraphs F43 to F49.
- F4 Also note that all monetary amounts discussed in this Attachment are in 2020 present value terms unless stated otherwise.

Summary of key outcomes

- F5 The key outcomes relating to expenditure incentives explained in this Attachment include:⁶⁴²
- F5.1 for opex spend above its allowance during DPP2 and the one year of DPP3 prior to the CPP Aurora has a net incentive amount of approximately negative \$25 million (in 2020 present value terms) - this means Aurora retains approximately 33% of the overspend amount (this proportion would be lower if we assume that some of the overspends are permanent and recurring into the future);
 - F5.2 for capex spend against its allowance during DPP2 Aurora has a net incentive amount of approximately negative \$18.5 million - this means a retention rate of 15% of the overspend amount;
 - F5.3 our decision (as outlined in Attachment H) is to reject Aurora's suggestion to smooth the significant opex IRIS adjustment terms (applied from the second year of the CPP) in favour of an aggregate revenue smoothing mechanism to avoid price shocks for consumers; and
 - F5.4 the incentive rates applying during the CPP will be:
 - F5.4.1 for capex – 23.5% for the first four years of the CPP and the fifth year will be determined in line with our DPP4 decisions; and
 - F5.4.2 for opex – approximately 23.5% if Aurora transitions from its CPP onto a DPP (and likely lower if it transitions onto a subsequent CPP due to the adjustment terms applying when transitioning onto a CPP).

⁶⁴² We note that our opex and capex incentive mechanisms are fundamentally present value concepts where savings and overspends are recovered over time. This Attachment applies a present value approach to explain the regulatory incentive amounts that will accrue during the CPP regulatory period (without smoothing). The executive summary converts these to the estimated regulatory incentive amounts to be consistent with the nominal \$62m opex and \$112m capex overspends that accrued from the DPP2 regulatory period. This is done by reversing out Aurora's time value of money (its WACC) as well as excluding the wash-up component of the capex incentive mechanism. Opex incentive amounts in this attachment also include the first year opex in DPP3 as it is required to determine the incentives applicable to the CPP.

Incremental rolling incentive scheme (IRIS) for opex

Background

- F6 Our regulatory regime provides regulated suppliers with incentives to reduce costs which benefit consumers through lower prices when revenues are reset. This is done through the IRIS mechanism for opex spend. The purpose of the IRIS mechanism is to provide suppliers that are subject to price-quality regulation with a consistent incentive to make efficiency savings and retain the benefits of these savings (or bear the cost of overspends).
- F7 Implementing the IRIS scheme for opex spend has a number of benefits over a regulatory regime with no rolling incentive mechanism:
- F7.1 IRIS can provide a constant incentive rate for suppliers to make opex efficiency savings over time as opposed to facing the natural incentive under price-quality regulation;⁶⁴³
 - F7.2 IRIS removes the incentive to defer making cost savings arising from the differing natural incentive rates during a period;⁶⁴⁴
 - F7.3 the mechanism allows us to control the incentives faced by suppliers for making opex cost savings (and control the incentive for efficiency of opex in relation to the incentive to make cost savings for capex); and
 - F7.4 in the absence of a rolling mechanism there is an incentive to increase expenditure in the year that the forecast allowance for the following period will be based upon (the base year).⁶⁴⁵
- F8 These outcomes benefit consumers as the supplier does not have the incentive to time or defer potential cost savings into the future, or inflate expenditure in the base year, thereby benefiting consumers as this will flow through to lower prices sooner.

⁶⁴³ The 'natural incentive' for a price-quality regulated firm to make savings is greater at the start of the regulatory period than it is at the end of period. This is because as the regulatory period progresses there is less time to retain savings before a reset where the cost savings will be reflected in the allowance for the following period. This leads to a differing incentive for each year of a given regulatory period.

⁶⁴⁴ If suppliers face the natural incentive rate that reduces over the period, there may be incentives to defer cost savings until the following period where it can retain the savings for a longer period of time.

⁶⁴⁵ This is because we generally set future forecasts based on a 'base year' in the current period and project this amount forward with a trend - so if suppliers increase expenditure in this year it will receive a higher allowance for the following period.

- F9 The IRIS mechanism works by sharing a proportion of savings or overspends between the regulated supplier and consumers over time. Under a default price-path (DPP), the mechanism provides a constant incentive rate by ensuring the supplier retains savings or overspends for a consistent time period (five years) before being passed on to consumers.
- F10 However, when transitioning onto a CPP, the direct link between periods is broken and so the IRIS input methodologies (IMs) set out adjustments that must be made to ensure that there are no perverse incentives on the supplier.⁶⁴⁶
- F11 Aurora's transition from a DPP to a CPP results in IRIS adjustments that apply during the CPP period, resulting from expenditure relative to its opex allowance in the preceding DPP periods (DPP2 and one-year DPP3).⁶⁴⁷

Approach for opex incentives when transitioning from a DPP to a CPP

- F12 The general approach for calculating regulatory incentive recoverable costs is the same for the transition to a CPP as it is for distributors on the DPP. In particular:
- F12.1 the savings or overspends made during a given year of the DPP are carried forward for five years; and
- F12.2 the amounts carried forward into each year of the subsequent period (the CPP period) are added together to determine the recoverable cost term for a given disclosure year.⁶⁴⁸
- F13 In the second year of the CPP period, a number of one-off adjustments are made in addition to the carry forward amounts from savings/overspends made prior to the CPP. These 'adjustment terms' are discussed further in this Attachment.

⁶⁴⁶ We say that the link is broken because the expenditure that we allow for a CPP is not necessarily linked to the previous regulatory period like transitioning from one DPP to another.

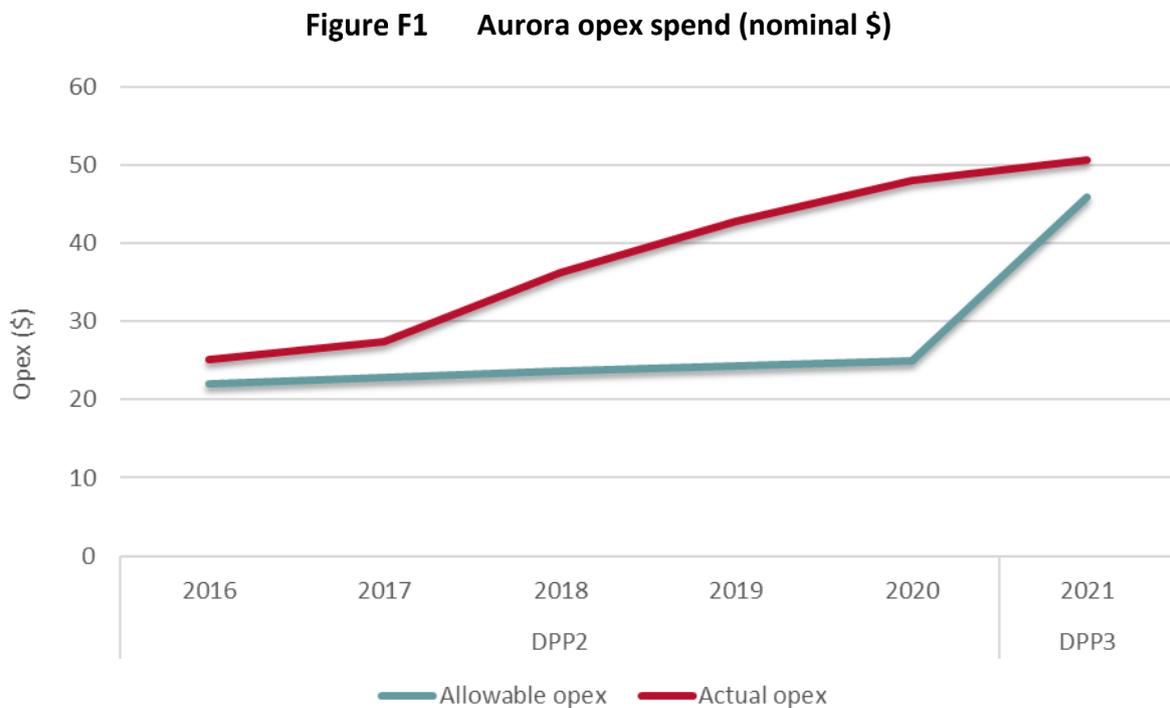
⁶⁴⁷ Note that guidance on how we treat IRIS for a CPP comes from our 'Further amendments to IRIS for electricity distributors' paper published in 2015. See Commerce Commission "Final reasons paper – Further amendments to IRIS for electricity distributors" (25 November 2015).

⁶⁴⁸ Note that the amounts carried forward into the CPP period are automatic based on the IMs and do not require judgement as to the amount to be carried forward.

F14 In our 2015 decision on setting expenditure incentives for suppliers on a CPP, we identified six generic scenarios that may occur based on the type of price-path transition (ie, is the supplier transitioning from a DPP/CPP to a CPP) and the length of the regulatory periods.⁶⁴⁹ Each of these scenarios has different adjustment terms to ensure the intended sharing of savings and overspends.

Outcomes of regulatory opex incentives

F15 Aurora has significantly overspent its opex allowance for DPP2 and the one year of DPP3 leading up to its CPP from 2021-2022 onwards. Note that the opex spend for the one year of DPP3 in 2020-2021 is still a forecast opex amount. The total amount Aurora has overspent compared to allowances over DPP2 and the one year of DPP3 is approximately \$74 million (in present value terms as at 2020). Figure F1 below displays Aurora's opex spend against its allowance during DPP2 and the one year of DPP3.



⁶⁴⁹ For the illustrative model that we published in 2015, see: <https://comcom.govt.nz/regulated-industries/input-methodologies/electricity-distribution-ims/other-past-amendments-and-clarifications2?target=documents&root=62637>.

F16 Overall, the total opex IRIS amount (present valued as at 2020) from Aurora's expenditure against its allowance during DPP2, and expected expenditure in the first year of DPP3, is approximately a \$25 million negative revenue adjustment for Aurora. We break this amount down into the different incentive components that make up the net incentive amount in Table F1 below.

Table F1 Opex IRIS outcomes (PV 2020)

Components	NPV (\$m)
Overspends during DPP2 and DPP3	-74.1
IRIS carry-forward amounts⁶⁵⁰	-49.7
IRIS adjustment terms	99.2
Net incentive amount retained by Aurora	-24.6

F17 The net opex incentive amount implies a retention rate of approximately 33% for Aurora's opex overspends during DPP2 and forecast spend for the one year of DPP3.⁶⁵¹ That is, Aurora bears approximately 33% of the amount of the overspend amount. This retention rate is based on the assumption that none of the overspends during DPP2 were permanent.⁶⁵² If we consider that there were permanent overspends during the period, the present value of these overspends over the long-term (beyond first year of DPP3) will be higher.⁶⁵³

⁶⁵⁰ The carry-forward amounts are the IRIS amounts that are carried forward from expenditure overspends in DPP2 (and the one year of DPP3) through the CPP period.

⁶⁵¹ The 33% can be attributed to the WACC values for DPP2 and DPP3 and therefore the derived retention rates for DPP2 and DPP3 being different. For DPP2 the opex retention factor is approximately 34% (based on a 67th percentile vanilla WACC of 7.19%) and for DPP3 the opex retention factor is approximately 24% (based on a 67th percentile vanilla WACC of 4.57%).

⁶⁵² If we assume that all overspends during DPP2 are permanent in nature, then the NPV of the overspends over time would be approximately \$400 million. To retain the intended retention factor of 33% (based on the mix of DPP2 and DPP3 retention factors), the baseline adjustment term required to produce this would need to be approximately \$8 million (as opposed to the current \$116 million through the baseline adjustment). This is simply intended to present a materiality range rather than any recommendations.

⁶⁵³ The IRIS mechanism treats cost under- or overspends as temporary or permanent depending on how long they are maintained. A temporary saving is assumed to last only in the year that it is incurred, while a permanent saving is assumed to continue into perpetuity. Permanent savings or overspends get retained for a longer period of time compared with temporary savings or overspends.

- F18 Consequently, with some level of permanent overspends continuing into the future, the actual retention of the overspend would be below the 33% (ie, Aurora bears less as a proportion). This is due to the adjustment terms when transitioning onto the CPP (the baseline adjustment term effectively reverses out some of the permanent overspends).⁶⁵⁴
- F19 The IRIS adjustment terms were introduced to ensure that any savings or overspends are appropriately shared between the supplier and consumers, consistent with the intention of the IRIS scheme.⁶⁵⁵ The multiple one-off adjustment terms are where the CPP approach differs from the DPP approach.⁶⁵⁶
- F20 For clarity, the relevant one-off IRIS adjustment terms applied in year two of Aurora’s CPP are outlined in Table F2 below.

Table F2 IRIS adjustment terms (PV 2020)

Adjustment term	NPV (\$m)
Base year adjustment term (cl 3.3.5)	-13.7
Baseline adjustment term (cl 3.3.7)	116.04
One-year adjustment term 1 (cl 3.3.8)	-3.1
One-year adjustment term 2 (cl 3.3.8)	-16.1
One-year adjustment term 3 (cl 3.3.8)	16.2
Total opex IRIS adjustment terms applied in Year two of the CPP	99.2

⁶⁵⁴ This is only the case when a distributor transitions to a CPP. Under a DPP the retention of both temporary and permanent savings/overspends remains constant over the period.

⁶⁵⁵ For further information on why these are required, see Commerce Commission “Final reasons paper – Further amendments to IRIS for electricity distributors” (25 November 2015).

⁶⁵⁶ In a DPP, only one of the adjustment terms is applied (the base year adjustment), none of the other terms are required.

The baseline adjustment term

- F21 The most significant adjustment to the opex incentive amount is the ‘baseline adjustment term’.⁶⁵⁷ The baseline adjustment term aims to remove potentially perverse incentives to avoid or delay applying for a CPP when the expenditure is needed for the network (which may be the case if there were no adjustment to the IRIS mechanism).⁶⁵⁸
- F22 In the absence of this adjustment any temporary savings/overspends in the penultimate year would be inaccurately rewarded or penalised as if they were permanent savings/overspends. Therefore, the supplier would be over-rewarded or over-penalised for the temporary savings/overspends incurred.⁶⁵⁹
- F23 We also previously considered that this approach keeps the incentive for temporary savings consistent across regulatory periods, so that there are not incentives for expenditure to be delayed in order to gain from diverse incentive rates.⁶⁶⁰
- F24 The baseline adjustment term results in a positive recoverable amount for Aurora during the CPP period. This may appear counterintuitive considering that Aurora has overspent its allowance during DPP2 and the one year of DPP3. As previously noted, this was decided to remove potentially perverse incentives when moving onto a CPP. During the DPP periods prior to the CPP, Aurora will have borne a greater proportion of overspends than was intended under our IMs,⁶⁶¹ and so is able to recover some of this expenditure back from consumers during the CPP period.

⁶⁵⁷ Note that the baseline adjustment term for the transition to a CPP is not calculated in the same way as for Transpower’s IPP which is subject to a degree of judgement and interpretation (the CPP baseline adjustment term has a set formula).

⁶⁵⁸ The approach for transitioning to a CPP ensures that temporary savings in the penultimate year are not excessively rewarded or penalised. If a supplier has been exposed to significant temporary costs (eg, a major storm) it will be expecting positive adjustments under the IRIS that applies under a DPP. If all IRIS adjustments were removed when a distributor moved onto a CPP, the distributor may be reluctant to apply for a CPP in the first place. This is because those positive adjustments would be removed, and the supplier would be exposed to the full costs of the temporary event.

⁶⁵⁹ For example, as Powerco noted in its submission to our 2015 IRIS approach decisions paper, a \$1 temporary efficiency results in a \$0.34 benefit to the distributor, whereas a \$1 permanent efficiency results in a benefit of \$5.08 (given a WACC of 7.19%). See Powerco Limited "Submission - Proposed approach to further amendments to incremental rolling incentive scheme (IRIS) for electricity distributors" (March 2015), p. 2-3. This demonstrates the potential level of materiality of treating temporary savings as permanent.

⁶⁶⁰ Commerce Commission “Final reasons paper – Further amendments to IRIS for electricity distributors” (25 November 2015), para 3.23.

⁶⁶¹ Both through the overspends actually accrued during the DPPs and the carry forward amounts rolled into the CPP period.

- F25 When a supplier is transitioning from a DPP to a CPP, it is likely to be incurring significant additional costs on its network. Therefore, in the DPP(s) prior to a CPP the supplier may also be ramping up expenditure in anticipation of the new baseline expenditure for the CPP.
- F26 Without a baseline adjustment term, suppliers may be incentivised to postpone necessary maintenance and network development until the CPP period where they will be able to recover these necessary costs. This concern around potentially deferring expenditure is especially important given the safety concerns and need for urgent significant investment on Aurora's network.
- F27 Aurora has deliberately overspent its allowance in advance of the CPP to address urgent spending required for the benefit of consumers despite knowing that it will not be able to recover all of these costs due to the incentive mechanism. Consumers will need to bear some of these costs over the CPP for this necessary spend.
- F28 Without regulation, all of those additional costs would have been passed back to consumers and likely sooner than in the current situation. There are ongoing incentives for Aurora to spend efficiently during the course of its CPP through the IRIS mechanism (and other features of our regime), where efficiencies will be shared with consumers.
- F29 We note, however, that even with a positive baseline adjustment term Aurora still bears an overall net negative revenue adjustment of approximately \$25 million through the IRIS mechanism from overspends during the preceding DPPs.
- F30 The main disadvantage of the transition provisions that we noted in our 2015 decision paper is the concern that any supplier applying for multiple consecutive CPPs will have low incentives to make permanent efficiency savings.⁶⁶² We also consider that this may extend to any years from when the supplier knows it will be coming in for a CPP.⁶⁶³
- F31 We also intend to evaluate whether the current IRIS mechanism when transitioning to a CPP, in particular the specification of the baseline adjustment term, can be improved for distributors and consumers as part of our review of the IMs.

⁶⁶² Commerce Commission "Final reasons paper – Further amendments to IRIS for electricity distributors" (25 November 2015), para 3.24.

⁶⁶³ Along with all of our other IMs we will have an opportunity to assess how significant these disadvantages might be and how we could mitigate these concerns.

Capex incentives

Background

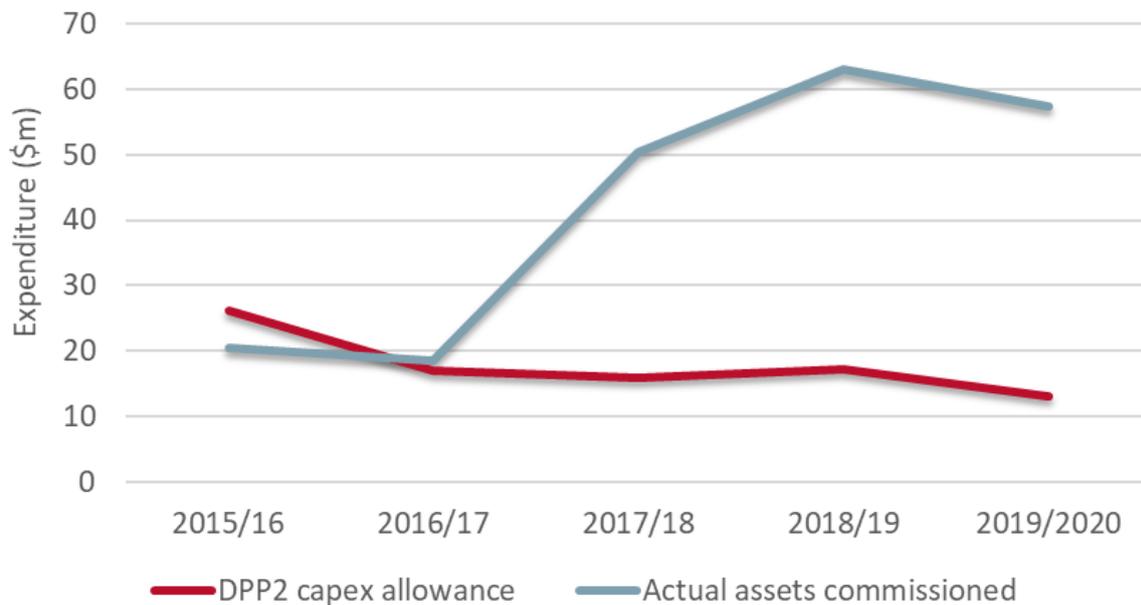
- F32 As well as having a mechanism for sharing opex savings and overspends, there is also a capex incentive mechanism applying to electricity lines companies. The capex incentive mechanism has a similar intention to the opex IRIS in that it shares a consistent proportion of savings and overspends between the supplier and consumers but does so in a different way to the opex IRIS.⁶⁶⁴
- F33 The capex incentive mechanism works based on the allowable revenue from the supplier's regulatory asset base (not rolling) whereas opex carries forward savings for a number of years (rolling) to ensure a consistent rate.⁶⁶⁵
- F34 Unlike the opex IRIS, the capex incentive mechanism is applied in the same way regardless of whether the supplier is transitioning to a DPP or a CPP. The mechanism is applied on a five-year cycle in line with the timing of the DPP, regardless of any mid-period CPP applications.

Outcomes of regulatory capex incentives

- F35 As explained above, the capex incentive mechanism applies to Aurora's capex spend during DPP2 (not including any years of DPP3) and the capex incentive amounts are applied in what would have been the second year of DPP3 (ie, the first year of the CPP).
- F36 Aurora has significantly overspent its capex allowance during DPP2 as demonstrated in Figure F2 below.

⁶⁶⁴ Capex spend is generally 'lumpier' and more discrete compared with opex that is generally made up of continuous, repeated costs over regulatory periods.

⁶⁶⁵ For more information on the capex mechanism, see [Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision – Reasons paper" \(27 November 2019\)](#), para E9 – E10.

Figure F2 Aurora capex spend during DPP2 (nominal \$)

F37 During the DPP2 regulatory period Aurora overspent its allowance by approximately \$123 million (in 2020 terms). The capex incentive amounts are made up of a number of factors as displayed in Table F3:

F37.1 Unlike opex, the capex allowance is recovered over time through the return on and of capital that can be charged to consumers.⁶⁶⁶ The amount of foregone revenue that Aurora loses out on through DPP2 based on its actual level of commissioned assets is approximately \$14 million.

F37.2 The retention adjustment is effectively the positive or negative revenue adjustment from capex savings or overspends. We set the retention adjustment incentive rate at 15% for DPP2, which is applied to the difference between the capex allowance and actual commissioned assets during DPP2. The retention adjustment results in a negative revenue adjustment of approximately \$18.5 million for Aurora.

F37.3 The capex wash-up reflects the foregone revenue that Aurora would have been able to earn had its actual commissioned assets been included in its allowance. This is calculated as the differences in building blocks allowable revenues between allowed revenue based on the allowance and allowed revenue based on actual commissioned assets, holding everything else constant. The wash-up amount is approximately \$14 million.

⁶⁶⁶ That is, Aurora bears a fixed proportion of capex overspends (15% for DPP2). However, it also factors in the missed revenue as a result of the increased RAB, as determined by the differences in the building blocks allowable revenues through the wash-up adjustment.

Table F3 Capex incentive outcomes (PV 2020)

Component	NPV (\$m)
Overspends during DPP2 (\$m)	-123.2
Foregone revenue based on actual commissioned assets during DPP2 (\$m)	-13.8
Capex retention adjustment (\$m)	-18.5
Capex wash-up (\$m)	13.8
Amount of overspends retained by Aurora (\$m)	-18.5

F38 Overall, of the \$123 million overspend during DPP2, Aurora bears a net incentive revenue adjustment of approximately negative \$18.5 million.

F39 Note that our DPP3 decision was to increase the capex incentive rate from 15% to 23.5% (to be consistent with the opex incentive rate for DPP3 based on the DPP3 WACC). This will apply to Aurora's capex savings/overspends during year one of DPP3 and the first four years of its CPP (the fifth year of the CPP will be set in line with our DPP4 decisions).

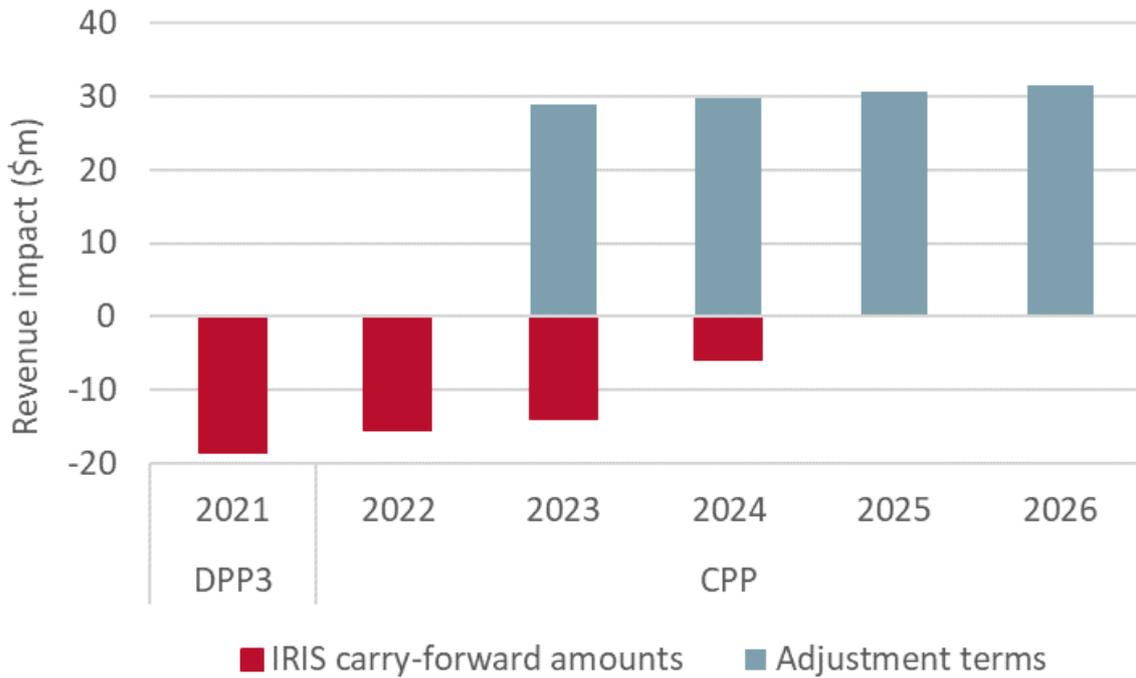
Impact on revenue

Revenue outcomes

F40 Note that these are the impacts on revenue before any aggregate revenue smoothing is applied (as explained later in this section).

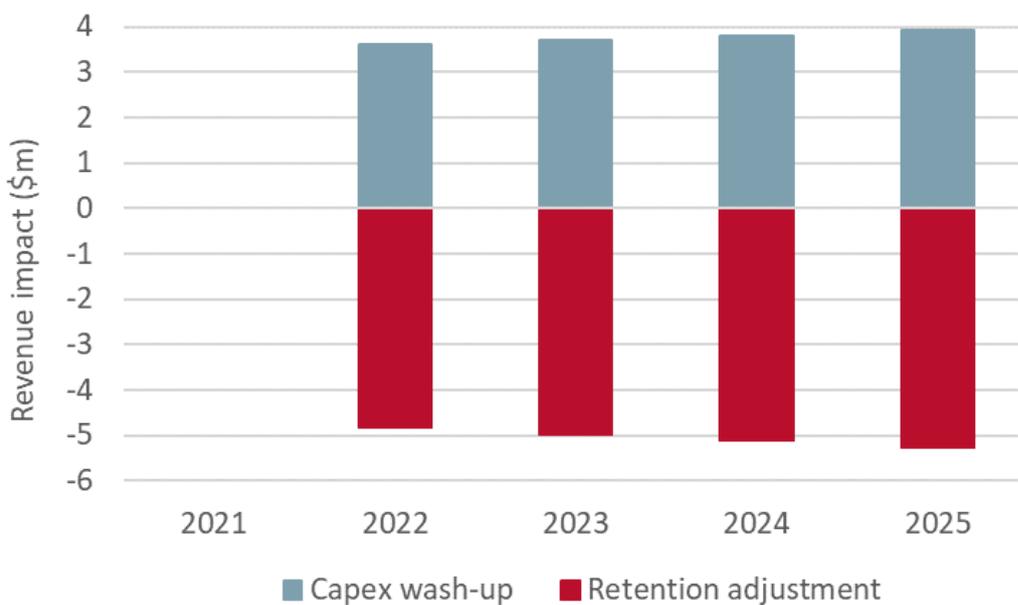
F41 Figure F3 below demonstrates the opex IRIS revenue impacts prior to and during the CPP period. The IRIS carry-forward amounts continue from overspends in DPP2 (as negative revenue amounts) into the CPP period. As discussed previously the adjustment terms take effect from year two of the CPP.

Figure F3 Opex IRIS revenue impacts (nominal \$)



F42 Figure 4 below demonstrates the capex incentive revenue impacts during the CPP period. Our IMs state that the capex incentive amounts apply to the same five-yearly timing cycle regardless of whether the distributor is on a DPP or CPP. Therefore, the negative net capex incentive amounts take effect from the first year of the CPP (and do not impact the final year of the five-year CPP).

Figure F4 Capex incentive revenue impacts (nominal \$)



Smoothing of the opex IRIS adjustment terms

- F43 The IMs include a smoothing mechanism to spread the opex IRIS adjustment terms from year two of a regulatory period (when the adjustment terms are applied) until the end of the period. The opex IRIS adjustments applicable to Aurora, given the five-year CPP period, will be spread over four years (year two to year five of the CPP).
- F44 Given its three-year CPP proposal and the magnitude of the opex adjustment amounts, Aurora proposed an IM variation to smooth the one-off IRIS adjustment terms over more than one regulatory period. The rationale for this proposed amendment was that with a three-year CPP the smoothing of the significant IRIS adjustment terms would only occur over two years.
- F45 We have set a five-year CPP period rather than the three-year period in Aurora’s proposal. While this proposal would spread the adjustment terms over a longer period of time it may not fully mitigate the risk of price shocks for consumers.
- F46 In response to our draft decision to smooth at an aggregate level (rather than specifically for the IRIS adjustment terms), Aurora Energy submitted:⁶⁶⁷
- We continue to prefer that any price smoothing be self-contained within the CPP regulatory period, with the opex IRIS incentive recovered over two regulatory periods. We are concerned about the potential for future price shocks if revenue recovery is delayed beyond the CPP regulatory period, as well as financing and debt implications.
- F47 We agree that there is a need to mitigate further price shocks for consumers during a time where prices will already be increasing. In addition to the IRIS adjustment terms, there may be other sources of cost increases over the CPP period that could raise concerns of price shocks to consumers. Therefore, our decision is to introduce smoothing of overall revenue at an aggregated level (rather than altering the IRIS adjustment smoothing mechanism in accordance with Aurora’s proposed IM variation).

⁶⁶⁷ Aurora Energy “Aurora Energy’s CPP Proposal – Submission on the Commerce Commission’s Draft Decision” (18 December 2020), para 105.

- F48 Smoothing at the aggregate revenue level will capture the different drivers of potential large price changes and cap the increase at a specified level for each year of the period. This will help reduce the 'spike' in prices early in the CPP period by smoothing over the remainder of the period and further if necessary. This will roll forward the amount above the capped revenue level into future years through the wash-up mechanism.⁶⁶⁸ The amounts will be carried forward into future years until the total amount has been passed through to consumers.
- F49 More information on this proposed smoothing mechanism can be found in the Attachment G.

Incentives rates during the CPP

- F50 In DPP2 the opex retention factor was approximately 34% based on the DPP2 WACC value and carry-forward of five years. This value is defined in the IMs but is a function of how the IRIS mechanism is applied (ie, based on the WACC and term of carry-forward). In the DPP2 reset we set the capex incentive rate at 15%. This is the retention factor applied to the difference from the allowance during DPP2.
- F51 The incentive rates that apply during the CPP are:
- F51.1 approximately 23.5% for the opex incentive rate based on the DPP3 WACC rate.⁶⁶⁹ However, this will be complicated by the IRIS adjustment terms assuming that Aurora transitions from this CPP to another;⁶⁷⁰ and
 - F51.2 the capex incentive rate will be specified as 23.5% in the CPP Determination consistent with that specified in the DPP3 Determination for the first four years of the CPP, and the incentive rate for year five of the CPP will be set in line with our DPP4 decisions in accordance with the IMs.

⁶⁶⁸ Note that smoothing of the opex IRIS adjustment terms are inflated at the cost of debt to reflect the time value of money while the wash-up account will be inflated at the post-tax WACC.

⁶⁶⁹ The DPP3 WACC value is significantly lower than the DPP2 WACC which results in a lower opex retention factor for DPP3.

⁶⁷⁰ The way that the baseline adjustment term is currently defined in the IMs, the retention factor for permanent savings will be very low compared with under a DPP. Therefore, the actual retention factor for opex will depend on the amounts of permanent and temporary savings achieved through the first CPP period.

Attachment G The CPP price path

Purpose of this attachment

- G1 This attachment sets out our approach to the capping of Aurora's allowable revenues across the five-year CPP period based on an expected initial annual notional 10% nominal cap on increases in forecast revenue from prices in combination with our setting of the X-factor at +5%.⁶⁷¹
- G2 It discusses the submissions we received on our draft decision, how we have responded to these and how this has changed Aurora's forecast allowable revenue.
- G3 It then details how these changes to forecast allowable revenue have influenced our decision-making on determining the notional 10% revenue cap and the resulting smoothed CPP price path.
- G4 This attachment also discusses the estimated extent to which the recovery of revenue by Aurora is expected to be deferred into a regulatory period for recovery after the CPP period.

Summary of our decisions

- G5 We have capped Aurora's revenue to minimise price shocks to consumers. This capping has the effect of smoothing price increases to consumers over the CPP period. The key decisions relating to the CPP price path in this Attachment G are as follows:
- G5.1 An annual notional revenue cap on the increase in allowable revenue is confirmed as our approach to minimise price shocks;
- G5.2 The revenue cap we set will initially be based on a nominal 10% cap. In years 2-5 of the CPP period, forecast allowable revenue will be able to depart from that cap for the following factors:
- G5.2.1 Any difference between our initial forecast CPI% used to set the price path and the updated forecast CPI% each year; and
- G5.2.2 Any increase between the forecast year-ahead transmission charges used to set Aurora's CPP price path and Transpower's most recent year-ahead forecast each year.

⁶⁷¹ The X-factor effectively sets the slope of the price path between year one and year five of the CPP period. See clause 5.3.4(6) of the IMs to see how this is applied in the price path formulae. The revenue cap mechanism specifies the percentage increase in the forecast allowable revenue that Aurora may use in setting its prices for each year of the CPP period.

- G5.3 Including the forecast CPI adjustment in the setting of the revenue cap will allow any difference between the initial forecast CPI and the most recent Reserve Bank CPI forecasts for each coming year to be reflected in the revenue cap. This will reduce Aurora’s exposure to inflation risk in respect of the timing of recovery of its allowable revenues, similar to the treatment of EDBs on the DPP.
- G5.4 We have also allowed Aurora to include a pass-through cost for the costs of any independent review of Aurora’s performance mid-period through the CPP period. This proposed review under information disclosure requirements is described in Chapter 4 of this paper.⁶⁷²
- G5.5 We consider that the annual revenue cap described above best meets our framework below, in that:
- G5.5.1 All revenue deferral into the next regulatory period is expected to be able to be recovered in that next period, with only relatively modest annual increases in revenue during that period;
 - G5.5.2 The revenue cap will minimise price shock for consumers and, as a result, smooth revenues across the CPP period;
 - G5.5.3 Aurora is able to invest in its network as contemplated by this CPP and to meet the quality standards we set based on the capex and opex allowances;
 - G5.5.4 It is expected to recover all of its CPP period Building Blocks Allowable Revenue (BBAR), plus its forecast pass-through costs and forecast recoverable costs, except its IRIS costs within the CPP period; and
 - G5.5.5 There is expected to be a relatively small step-off change in revenues in terms of the revenue difference between the second regulatory period and the following period after that, but we consider this can be addressed at the time.
- G5.6 The determination allows increases in forecast transmission costs compared to our opening forecasted transmission charges to be passed through to consumers in adjustments to the revenue cap:
- G5.6.1 The revenue cap formula will require Aurora to adjust its annual revenue cap upwards in years 2 to 5 of the CPP period to reflect any increase from the transmission charges forecast at the time of

⁶⁷² We decided to provide in the price path for a pass-through cost under clause 3.1.2(1)(b) of the IMs that would permit Aurora to recover its reasonable costs of any independent expert opinion that may be required by us under our proposed Aurora information disclosure requirements we are currently consulting on. Those pass-through costs would be washed-up in the CPP price path wash-up amount in the year the costs are incurred and would be recovered by Aurora through the revenue wash-up draw down amount.

this decision and Transpower's annual advice of its proposed transmission charges for each upcoming year of the CPP period; and

- G5.6.2 This eliminates Aurora's exposure to unforeseen increases in the deferral of transmission costs that it cannot recover until future periods. However, any adjustment during the CPP period will likely mean that Aurora's revenues (and consequently its prices) may increase by more than the initial notional 10% annual revenue increase cap we have described above.
- G5.7 We have included this mechanism because of the potential for changes in the Transmission Pricing Methodology and other transmission related costs to adversely affect the ability of Aurora to recover these pass-through costs.
- G5.8 The CPI used to set the initial smoothed price path has been updated from that coinciding with the determination of the WACC rate to the forecast value included in the November 2020 Reserve Bank Monetary Policy Statement (MPS) as per Aurora's request for an IM variation to allow this update. This change, which is described in Attachment I, does not affect the forecasting of revaluation gains.

Structure of this attachment

- G6 This Attachment has the following structure:
- G6.1 Our objectives when setting the CPP price path;
 - G6.2 Our approach to setting the CPP price path;
 - G6.3 Our CPP price path scenarios;
 - G6.4 Our decision-making framework and preferred CPP price path;
 - G6.5 Submissions on our draft decision CPP price path;
 - G6.6 Our changes to the draft decision as a result of submissions;
 - G6.7 How these changes affect Aurora's forecast allowable revenue; and
 - G6.8 How these changes affect Aurora's CPP price path.

Our objectives when setting the CPP price path

- G7 Our objectives when setting the CPP price path are to achieve a balance between minimising price shocks on consumers in the CPP period or a subsequent regulatory period,⁶⁷³ and providing Aurora with sufficient revenues to continue to efficiently invest in its network so as to be able to provide services to consumers at the quality they demand.
- G8 This attachment discusses these objectives when setting a CPP price path. We use judgment to make some key decisions:
- G8.1 How quickly Aurora's allowable revenues (and therefore lines charges) enable Aurora to recover from consumers its investment in building and maintaining its network; and
 - G8.2 Whether any of Aurora's investment recovery should be deferred beyond the end of the CPP period, for recovery in a following CPP or DPP period.

⁶⁷³ Our price shock objective includes not only the impact on consumers of large increases in prices, but also of uncertainty of future prices and lack of pricing predictability.

- G9 There is no perfect balance to these decisions, so in our draft decision we presented two CPP price path scenarios for stakeholders to provide feedback on. These were for price smoothing both within the CPP period and into the next regulatory period.

Our approach to setting the CPP price path

- G10 Aurora's CPP has several unique features, not least it proposes a considerable uplift in spending. In addition, Aurora's opex IRIS incentive amounts are significant, and the cashflow profile of this item is materially negative due to an IRIS penalty in the first year, before becoming materially positive from year 2 of the CPP period onwards due to an IRIS incentive.
- G11 Usually we would smooth the CPP price path by adjusting the X-factor to smooth the maximum allowable revenue (MAR), which is Aurora's allowable revenue before pass-through costs and recoverable costs have been included. However, because the opex IRIS recoverable cost is not included in the MAR, we cannot smooth this component of allowable revenue using the X-factor.
- G12 Given these unique features, our draft decision proposed applying a combination of the following measures to assist revenue smoothing during the CPP period:
- G12.1 Apply maximum limits to the percentage increases in Aurora's total 'forecast allowable revenue' as provided for under IM clause 3.1.1(1)(b) of the IMs,⁶⁷⁴ and
- G12.2 Adjust the X-factor as provided for under IM clause 5.3.4(6).⁶⁷⁵

⁶⁷⁴ Setting maximum limits on the percentage increase in aggregate total revenue ensures that forecast pass-through costs and forecast recoverable costs can be smoothed by allowing unrecovered revenues to accrue and then be recovered in later years or regulatory periods from the revenue wash-up account.

⁶⁷⁵ Adjusting the X-factor in this way can counter the initial negative opex IRIS penalty amount in year one of the CPP period followed by positive opex IRIS incentive amounts in years two to five of the CPP period.

The rationale for setting a maximum percentage change in forecast allowable revenue

- G13 Setting maximum annual percentage changes for forecast allowable revenue allows us to minimise price shocks for Aurora’s consumers, and has the effect of smoothing Aurora’s revenue throughout the CPP period, including pass-through costs and recoverable costs, such as opex IRIS - which has an uneven profile. Without this measure, Aurora’s revenues (and potentially its prices) could also take on the same uneven profile which may produce price shocks.
- G14 This approach can also defer revenues into the next regulatory period by allowing unrecovered revenues in the CPP period to build-up and then subsequently be drawn down (along with an interest factor) from the revenue wash-up account. Using the X-factor alone does not provide for this.
- G15 In Aurora’s case, this approach has the effect of Aurora not being able to recover the full amount of its CPP period allowable revenue at the gross level within the CPP period. Some of that amount will remain in its closing wash-up account balance at the end of the CPP period, and that balance would be recovered in subsequent regulatory periods, along with the cost of capital on that outstanding balance.⁶⁷⁶
- G16 This approach is consistent with workably competitive markets, in that all investment in a particular period would not necessarily be expected to be recovered in that same period.
- G17 Delaying Aurora’s recovery of revenue would result in lower price increases in the CPP period than would be the case if we did not apply price path smoothing. However, it does mean that allowable revenue (and prices) will be higher in subsequent regulatory periods than they would be otherwise.
- G18 If Aurora chooses to revert to a DPP at the end of the CPP period and there is a material amount of under-recovered revenue in the revenue wash-up account, we can still set maximum percentage changes for forecast allowable revenue throughout the DPP to manage revenue smoothing – as per IM clause 3.1.1(1)(b).

Rationale for applying a different X-factor

- G19 As mentioned, Aurora’s forecast allowable revenue for this CPP is heavily influenced by the opex IRIS incentive amounts. These incentives are -\$15 million in the first year of the CPP period,⁶⁷⁷ before then becoming materially positive amounts each year from year 2 onwards in the CPP period.
- G20 This means that revenue is effectively restricted from increasing in the first year of the CPP period because IM clause 3.1.1(1)(a) prevents Aurora’s forecast revenues from prices (its actual revenues) from exceeding its forecast allowable revenue. This means we are unable to use that year for revenue smoothing.

- G21 It would also mean that when the annual opex IRIS amount becomes a positive incentive amount from year two of the CPP period onwards (i.e. moves from being negative to positive), coupled with a rising BBAR from extra capex and opex expenditure, the allowable revenues would increase significantly from year two onwards through the CPP period.
- G22 The X-factor can be used to resolve these two issues. Setting the X-factor at +5% inverts the slope of the MAR path. This increases the maximum allowable revenue in the early years of the CPP period and reduces it in the later years of the CPP period, which helps counteract the price path effects of the opex IRIS profile and the rising values of the BBAR.

Our CPP price path scenarios

- G23 In our draft decision we modelled the smoothed price path for a five-year CPP period under various scenarios. We then presented two scenarios for consultation. These two scenarios offered different maximum limits to the percentage increases in Aurora's total allowable revenue and set the X-factor to +5%. Each produced a different result in terms of price shock for consumers and revenue deferral for Aurora, as summarised in Table G1.

Table G1 Summary of possible modelled scenarios from draft decision

Scenario Number	Scenario Description
1	<p>Setting the CPP X-factor at +5%⁶⁷⁸ to allow year one revenues of the CPP period to increase relative to year one of DPP3 (2020/21).⁶⁷⁹</p> <p>Set a 10% per annum revenue cap on the nominal forecast allowable revenue for each year of the CPP period and assume a 2% per annum revenue cap in the next regulatory period.</p> <p>Scenario 1 would result in the deferral of \$35.9 million⁶⁸⁰ revenue into the next regulatory period and that this can be recovered in the next regulatory period based on the 2% annual revenue cap.</p>
2	<p>Apply an X-factor of +5%, which would hold assessment period 2022 revenue constant.</p> <p>Set a 5% revenue cap in year one of the CPP period, followed by a 10% per annum revenue cap in years two through five of the CPP period, and a 3% per annum revenue cap for the next regulatory period.</p> <p>Our analysis showed that Scenario 2 proposed deferring \$65.6 million into the next regulatory period.</p>

⁶⁷⁸ A negative X-factor (Aurora proposed a -7% X-factor) means that the change in prices between DPP3 and the CPP would be lower and the rate of increase in prices would be higher than if the X-factor was positive (as we are proposing). This was discussed in greater detail in our draft decision.

⁶⁷⁹ We are not making any decisions at this time with respect to the price path for a later regulatory period. The 2% cap in a hypothetical second CPP period therefore does not reflect that we consider that an absolute 2% cap should apply in that period. It reflects more our concern that any revenue deferral effects carried over from the CPP period should be limited to allow further headroom for the outcomes of a second CPP application to potentially be accommodated in a larger overall cap of, say, 10% per annum in that later regulatory period.

⁶⁸⁰ Our draft decision presented this as \$40.7 million. This figure was based on an X-factor of -7% in order to make it more comparable to Aurora's original CPP application.

Our decision-making framework and preferred CPP price path

- G24 In setting Aurora’s maximum allowable revenue under the CPP we are guided by the forecast expenditure we approve when applying the expenditure objective. However, the expenditure objective does not provide guidance on how the maximum allowable revenue should be smoothed each year of the CPP period. Accordingly, in considering revenue smoothing, we have been guided by the Purpose of Part 4 (which is also one of our Evaluation Criteria).⁶⁸¹
- G25 The Purpose of Part 4 is to promote the long-term benefit of consumers. We consider the minimising of price shocks to be in consumers’ long-term interests.⁶⁸²
- G26 However, minimising price shocks must be balanced against consumers’ interest in avoiding ultimately having to pay more for lines services due to deferring recovery of Aurora’s revenues,⁶⁸³ while also making sure the revenue path remains net present value neutral for Aurora. For example, this has led us to avoid scenarios where the wash-up balance is not expected to be brought to zero (or close to it) in a timely fashion. To continue to defer revenue recovery into future periods could result in consumers ultimately paying more in the long run through the accumulation of compounding interest on the deferred amounts.
- G27 It is also important to ensure Aurora has sufficient revenue to maintain and upgrade its network. This is consistent with the Part 4 purpose of having “incentives to innovate and to invest, including in replacement, upgraded and new assets”.
- G28 We also prefer to avoid a situation which could lead to a price or revenue shock when Aurora transitions from its CPP on to a subsequent CPP or DPP. It might not necessarily be in consumers’ interests to avoid a price shock now, only to face one in five years’ time. However, we note that we could still take various steps when setting Aurora’s forecast allowable revenue under its subsequent price-quality path to mitigate any shock contributed to by this CPP decision.
- G29 Given the above, we have had regard to the following considerations and framework in reaching a decision with respect to imposing a revenue cap and/or X-factor:
- G29.1 smoothing out revenue shocks for consumers – in this case revenue increases are used as a proxy for increases in consumer prices;⁶⁸⁴

⁶⁸¹ Chapter 5.

⁶⁸² In that regard we note that the Act explicitly provides for the minimisation of price shocks at s53P(8)(a) when setting the X factor for a DPP.

⁶⁸³ When revenue recoveries are deferred beyond the CPP period, an interest factor is applied, usually at the WACC rate, to compensate Aurora for the time value of money. As a result, this “interest” has the effect of

- G29.2 balancing the benefits of avoiding price shocks against the ultimate cost to consumers of deferring price increases. In particular, ensuring the revenue wash-up balance can be brought back to zero (or close to it) by a projected horizon, which for practical purposes we have taken to be the end of a second regulatory period;
- G29.3 ensuring Aurora will have sufficient annual revenue to invest and innovate (in particular as contemplated by the CPP application) in its network and meet the quality standards we set based on the capex and opex allowances in the CPP; and
- G29.4 ensuring there is not a material revenue step off, or difference between total annual revenues, between the end of the next regulatory period and the one that follows that.⁶⁸⁵
- G30 Based on this framework, we concluded in our draft decision that Scenario 1 was our preferred approach.⁶⁸⁶ The settings under that scenario allow for the revenue wash-up balance to be cleared and no material revenue step-off issues by the end of the next regulatory period.
- G31 That price path scenario also gave a balance between minimising price shocks for consumers against providing assurance to Aurora that it could expect to recover all the BBAR of the CPP period without exposing Aurora to unknown risks of revenue deferral, especially those associated with the following regulatory period, such as changes in the cost of capital.
- G32 Nevertheless, Scenario 2 was still considered a viable alternative in the draft decision and we presented both scenarios for stakeholders to provide their submissions with their preferences.⁶⁸⁷

increasing consumer prices in those future periods, and in increasing overall the amount that consumers will pay in nominal terms for the investments that Aurora will make on its network.

⁶⁸⁴ See Attachment H for our estimates of how our decisions on smoothed revenues are expected to translate into residential consumer bill impacts.

⁶⁸⁵ For the discussion in this Attachment G we have included preliminary thinking on a second CPP period following the current regulatory period one we have made draft decisions for. This is why this fourth objective looks at the step off in revenues from the end of that second hypothetical period. However, this does not take account of any future decisions to increase Aurora's forecast allowable to take account of the additional investment which Aurora has signalled will continue to be required in the next regulatory period.

⁶⁸⁶ Scenario 1 was a draft smoothed price path with a 10% revenue cap for all years of the CPP period.

⁶⁸⁷ Scenario commenced with a revenue cap of 5% in year 1, followed by 10% revenue caps in years 2 to 5 of the CPP period.

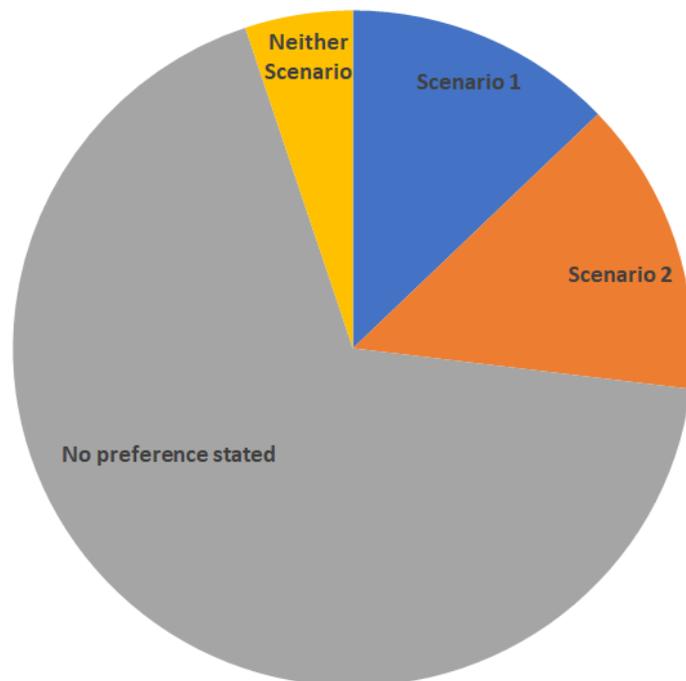
Submissions on our draft decision CPP price path

G33 Submissions and cross submissions raised several issues regarding the CPP price path and revenue smoothing, including their preferences for Scenario 1 or 2. We discuss these below and our response to them.

Preferences for Scenario 1 or 2

G34 Of the 78 submissions we received on the draft decision, 21 stated a clear preference between Scenarios 1 and 2. Overall this preference was almost evenly split; 10 were in favour of Scenario 1⁶⁸⁸ and 11 in favour of Scenario 2 – as shown below in Figure G1. A small number of submitters stated that neither scenario was acceptable.

Figure G1 Submissions stated preferences for CPP price path scenario



G35 Submissions were also split in terms of who stated a preferred scenario:

G35.1 Approximately half of the submissions that stated a preference were from individuals. There was an even mix of individuals in favour of each scenario;

⁶⁸⁸ Two of these submissions were from Aurora and its owner DCHL.

- G35.2 All four Grey Power groups that submitted were in favour of Scenario 2.⁶⁸⁹ These groups preferred a smaller short-term bill impact, while acknowledging the extra cost of deferring revenues into the longer term. The two Community associations that submitted favoured Scenario 1. However, each group will represent a larger number of consumers. For example, Grey Power Central Otago cited its 270 members in the region; and
- G35.3 Queenstown Lakes Council favoured Scenario 1, noting that Scenario 2 was a short-term solution that resulted in consumers paying more in the long run. Whereas Central Otago Council preferred Scenario 2, noting the immediate economic impact of the COVID pandemic on the region.⁶⁹⁰
- G36 Aurora's submission on our draft decision did not state a preference for either scenario, rather it stated that while it agreed with the need to minimise price shocks for consumers, it was concerned that the avoidance of price shocks appeared to have been elevated above other considerations and that the 10% revenue cap was arbitrary.⁶⁹¹
- G37 As explained in our decision-making framework, we have been guided by the purpose of Part 4 in deciding on our approach. As we explain later in this attachment we prefer the settings of Scenario 1 for our final smoothed price path decision, given the level of deferred revenue that results from Scenario 2 may reduce the incentives for Aurora to invest in maintaining and upgrading its network during the CPP period.

Operating expenditure

- G38 Aurora, along with various other electricity distributors and the ENA, made submissions that challenged the operating expenditure reductions in our draft decision. We assessed these submissions and took advice from our engineering consultants, Strata. This analysis and decision making are discussed in greater detail in Attachment E of the decision.
- G39 Based on the submissions on our draft decision and our further analysis we have made the following changes to operating expenditure forecasts in our decision relative to the draft decision:

⁶⁸⁹ [Central Otago District Council – Submission on draft decision for Aurora's CPP – 18 December 2020](#), para 5, [Grey Power NZ Federation – Submission on draft decision for Aurora's CPP – 14 December 2020](#), page 2, [Grey Power Otago Inc. – Submission on draft decision for Aurora's CPP – 14 December 2020](#), page 1, and [Queenstown Grey Power – Submission on draft decision for Aurora's CPP – 6 December 2020](#), page 1.

⁶⁹⁰ [Queenstown Lakes District Council – Submission on draft decision for Aurora's CPP – 14 December 2020](#), page 2 and [Central Otago District Council – Submission on draft decision for Aurora's CPP – 18 December 2020](#), page 2.

⁶⁹¹ [Aurora Energy letter – Submission on draft decision for Aurora's CPP – 18 December 2020](#), page 2.

- G39.1 Vegetation management opex has been increased by \$5.1 million (2020 real) over the five-year CPP;
- G39.2 SONS & People opex has been increased by \$21.9 million (2020 real) over the five-year CPP;
- G39.3 Administration and Governance opex has been increased by \$1.1 million over the five-year CPP; and
- G39.4 Corrective maintenance has been increased by \$0.3 million (2020 real).

Capital expenditure

- G40 Aurora made the submission that various capital expenditure programmes we had reduced or deferred in our draft decision be reinstated. This was supported by several other submitters, including the Arrowtown Residents Association. We assessed these submissions and took advice from our engineering consultants, Strata. This analysis and decision making are discussed in greater detail in Attachment D of the decision.
- G41 Based on the submissions and our analysis we have made the following changes to capital expenditure forecasts in our decision:
 - G41.1 The two Arrowtown growth projects of the 33kV Ring Upgrade project (\$5.4 million real 2020) and the Zone Substation 33kV Indoor Switchboard project (\$2.6 million) were reinstated;
 - G41.2 The one-year deferral of the subtransmission cable investments were reversed (project cost of \$12.1 million real 2020 in the CPP period); and
 - G41.3 The partial reduction in remote terminal units' expenditure was reversed (\$0.2 million real 2020).

Updating CPI in the CPI-X price path for MAR

- G42 Our draft decision highlighted that the IMs do not allow us to update Aurora's CPI forecast used in smoothing the MAR price path. This presents a risk to Aurora's future revenue recovery. If actual inflation proves to be lower than Aurora's CPI price path forecast (as is now expected), Aurora will permanently forgo a portion of its allowable revenue. As such, our draft decision stated that we would be open to considering a request from Aurora for an IM variation to allow us to update the CPI forecasts.
- G43 Aurora made this request in its submission on our draft decision and we have accepted it. We have updated the CPI used in the CPI-X price path to reflect the Reserve Bank's November 2020 MPS. (We did consider using the February 2021 MPS, but the timing of this update meant we could not accommodate this.)

- G44 Wellington Electricity's submission on our draft decision also agreed with the suggested forecast CPI IM variation to allow Aurora to earn a real return.⁶⁹² Vector also agreed with the proposal to provide a more current CPI forecast for Aurora's price-path.⁶⁹³
- G45 However, Orion's submission to our draft decision suggested an IM variation to allow the use of a more up-to-date CPI forecast would be inconsistent with our previous reasoning.⁶⁹⁴
- G46 Orion appears to be referring to forecast CPI applying to revaluations rather than the forecast CPI applying to Aurora's price-path. Forecast CPI for revaluations applying to Aurora's CPP are the DPP3 values as specified in the IMs (to be consistent with the CPI forecasts made at the time of the DPP3 WACC). The IM variation that Aurora requested does not alter how we forecast revaluations.
- G47 Orion also submitted that the inflation forecasting approach is an important topic for consideration at the next Part 4 IM review. This is also reflected in Vector's submission noting that CPI has historically been over-forecasted and has had a material impact on suppliers' revenues.
- G48 We agree that the approach to inflation forecasting is an important topic that we should consider in the next Part 4 IM review.

Updating cost escalators

- G49 In its verification report, the Verifier stated:⁶⁹⁵

In our view, the labour and materials escalators recommended by Sapere for Aurora Energy to use when preparing its expenditure forecasts for the CPP application are no longer appropriate given the significant impact that the COVID-19 pandemic is having and likely to have on costs over the CPP and review periods.

- G50 The Verifier noted that a key issue for our assessment of the CPP application would be to consider whether the cost escalator forecasts should be updated to better reflect the potential economic consequences of COVID-19.⁶⁹⁶

⁶⁹² [Wellington Electricity – Submission on draft decision for Aurora's CPP – 17 December 2020](#), p. 3-4.

⁶⁹³ [Vector Electricity – Submission on draft decision for Aurora's CPP – 18 December 2020](#), para 10.

⁶⁹⁴ [Orion – Submission on draft decision for Aurora's CPP – 10 December 2020](#), p. 4-5.

⁶⁹⁵ Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" (8 June 2020), p. 122.

⁶⁹⁶ Farrier Swier Consulting Pty Ltd and GHD Pty Ltd "Verification report - Aurora Energy CPP application" (8 June 2020), p. 124.

G51 We agreed with this view. We considered the cost escalator forecasts in Aurora's proposal were no longer relevant because they did not include the significant economic impacts of the pandemic. As such, our draft decision updated the cost escalator forecasts to better reflect the up-to-date expectations of cost changes following the onset of COVID-19.

G52 Powerco's submission on our draft decision noted that the draft decision cost escalators were made during a time of significant economic impact and uncertainty.⁶⁹⁷ It noted that this necessitates extra scrutiny to ensure that the forecasts are relevant to Aurora.

G53 However, Aurora's submission on our draft decision proposed that we not adopt updates to cost escalator forecasts and instead should use the cost escalator forecasts from its proposal.⁶⁹⁸ Aurora suggests that the forecasts in its proposal were:⁶⁹⁹

...completed before the immediate economic impacts of the pandemic were apparent and are more consistent with a medium-term view of the cost inflation relevant for Aurora's CPP period.

G54 Aurora cites our decision on the transition of Wellington Electricity's CPP back to the DPP to not update the cost escalators. Aurora notes paragraph 3.35 of our decision on Wellington Electricity's transition to the DPP, but does not reference the previous paragraph that outlines some of the key reasoning for our approach in that decision, which was:⁷⁰⁰

G54.1 Our decision is not to use the updated LCI, PPI and CGPI forecasts and to revert to the forecasts that were used to set the DPP3 capex and opex projections for all other EDBs. This decision:

G54.1.1 avoids the inconsistency that arises from the mechanics of the model; and

G54.1.2 is a low-cost way of setting a price path for Wellington Electricity that uses readily available data and recognises the limited remaining time to set different starting prices under s 53X (i.e., by the end of November 2020).

G55 Our Wellington Electricity decision was influenced by several factors including:

⁶⁹⁷ [Powerco – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p. 2.

⁶⁹⁸ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), para 350.

⁶⁹⁹ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), para 350.

⁷⁰⁰ [Wellington Electricity's transition to the 2020-2025 DPP – Final decision – Reasons paper – 26 November 2020](#), para 3.34.

- G55.1 the fact that it was transitioning back to the DPP where a wider ‘broad brush’ approach is applied to all suppliers on the DPP;
- G55.2 that there was limited time in setting the transition and there was no opportunity to vary the IMs; and
- G55.3 that the DPP is considered a low-cost approach where there is not generally a tailoring of conditions for EDBs.
- G56 For a CPP there is more scope for setting customised allowances that better reflect the expected level of efficient and prudent costs required by the supplier compared with the DPP. This is also relevant to cost escalators, and hence we can use the most up-to-date forecasts to better reflect the expected costs of inputs.
- G57 We accept that there may be some uncertainty around forecasting cost inflators into the future, but this has always been the case and there will likely always be a degree of forecasting error as external conditions change.⁷⁰¹ The key point is that the forecasts are unbiased estimates and are timely in that they reflect the most relevant expectations of cost inflators at the time we set expenditure allowances.
- G58 We also note that there would be some inconsistency in updating the CPI forecast applied to the price path (which Aurora requested and we have agreed to) but then not also updating the remaining cost escalator forecasts applying to the price-path.
- G59 Therefore, we have updated our draft decision cost escalator forecasts to reflect more up-to-date estimates for our decision given the economic disruption and uncertainty from COVID-19.

Nominal nature of CPP revenue cap

- G60 Some submissions commented that the nominal 10% per annum revenue cap proposed in our draft decision exposed Aurora to inflation risk.⁷⁰² We have considered these submissions and have made changes to the manner the revenue cap will be calculated by Aurora each year under our CPP decision. These changes make our approach more consistent with the approach for non-exempt EDBs on the DPP.

⁷⁰¹ We also consider that the economic uncertainty from COVID-19 has somewhat reduced since we set the forecasts for our draft decision. We can also not ignore that the impacts of COVID-19 on cost inflators did not happen as this would not reflect true expectations of costs.

⁷⁰² [Electricity Networks Association - Cross submission on draft decision for Aurora's CPP - 18 January 2021](#), page 1.

- G61 For the purposes of applying our final CPP price path decision, and because we estimated a combination of real value and forecast CPI values that approximate on average the 10% nominal annual revenue cap from our draft decision, this change does not impact the CPP price path. However, over time the actual price path may alter according to how inflation forecasts change over the CPP period.
- G62 Further detail on how this adjustment to the revenue cap percentage for the forecast CPI will be required to be implemented by Aurora is set out in Attachment K.

Transmission pass-through costs reflected in the CPP revenue cap

- G63 Submissions to our draft decision noted that our approach of capping revenues at the gross revenue level means Aurora could be exposed to the under-recovery in the CPP period of incurred costs that it has limited control over - the main one being transmission charges.⁷⁰³ Transmission charges could vary materially during the CPP period for a number of reasons, with the main ones being:
- G63.1 because of future approved investments by Transpower, the transmission charge impact of the Tiwai aluminium smelter's possible exit, and transmission charge impacts of revisions to the Transmission Pricing Methodology; and
- G63.2 there is also uncertainty around what the level of transmission charges incurred by Aurora will be when Transpower's allowable revenues are determined as part of RCP4 IPP reset decisions for the next regulatory period commencing in 2025/26.
- G64 We accept these points. As a result, our decision is to:
- G64.1 prescribe initial annual transmission charges for each year of the CPP period. These are based on Aurora's original forecasts that we used in the draft CPP price path decision, which are inflated by two percent per annum, and are inclusive of forecast new investment contract (NIC) charges; and
- G64.2 include in the revenue cap formula an adjustment that will require Aurora to increase its annual revenue cap in years 2 to 5 of the CPP period to reflect any increase between the forecast year-ahead transmission charges used to set Aurora's CPP price path and Transpower's most recent year-ahead forecast each year.

⁷⁰³ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), para 111, and [Vector Electricity – Submission on draft decision for Aurora's CPP – 18 December 2020](#), para 47.

- G65 This does not change the forecast transmission charges we have included in Aurora's forecast allowable revenue, nor does it change the CPP price path. However, Aurora's recovery of revenues (and consequently prices) may differ in years 2 to 5 of the CPP period from the 10% revenue cap we have initially provided in our final determination.
- G66 This decision de-risks Aurora for the timing of revenue recovery of unforeseen increases in transmission costs, which are the largest pass-through cost that Aurora has limited control over. This avoids unforeseen increases in transmission charges being added to the deferred revenue wash-up balance to be recovered in future periods, which would result in increased costs to consumers over time (given deferred revenue is adjusted for Aurora's time value of money). It also mitigates the risk that Aurora's incentives to upgrade its network are compromised.
- G67 Further detail on how this adjustment to the revenue cap percentage for transmission charges will be implemented by Aurora is set out in Attachment K.

Reopener events and passing through of resulting costs to revenue

- G68 Aurora submitted that applying a revenue cap resulted in a strong incentive not to progress contingent projects during the CPP period, as the recovery of the associated costs would be deferred until the next regulatory period.⁷⁰⁴ In Aurora's view, this was problematic given that we have designated some growth projects as being contingent on growth trigger events.
- G69 We have not amended our revenue cap approach to allow Aurora to pass through the costs associated with approved contingent projects. This is because, in the case of any reopener event that results in us amending Aurora's price path, we may give effect to that change by amending Aurora's annual revenue limit or we may adjust the MAR and let the additional amount be washed-up in the next regulatory period.

Independent review of Aurora's performance

- G70 Several submissions on our issues paper and draft decision expressed concern around Aurora's ability to complete on time the work required to upgrade its network and, to provide some accountability on this, wanted some form of independent review to take place.
- G71 We acknowledge these concerns. In our Aurora ID draft decision paper, we propose requiring Aurora to obtain opinions from one or more independent experts in year 3 of the CPP period on Aurora's progress on repairing and upgrading its network and also on other aspects of Aurora's service delivery, including improvements it is making to monitoring of voltage quality, asset management practices, consumer engagement, and identifying and mitigating safety risks.⁷⁰⁵ The report will assess Aurora's progress, and make recommendations on how Aurora can improve, in these different areas.
- G72 For more details on these proposed reviews, refer to Chapter 4 of this reasons paper and our Aurora ID draft decision paper.⁷⁰⁶

⁷⁰⁴ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), para 26.

⁷⁰⁵ The areas we propose requiring mid-period expert opinions are diverse and as such it is unlikely that one consultancy will have all of the expertise required. Aurora will select, with our approval, the necessary independent expert or experts.

⁷⁰⁶ Aurora ID Draft Decision Paper, published on 31 March 2021

- G73 We have decided to provide in the price path for a pass-through cost under clause 3.1.2(1)(b) of the IMs that would allow Aurora to recover its reasonable costs of any independent expert opinion that may be required by us under any information disclosure requirements we set for Aurora. Those pass-through costs would be washed-up in the CPP price path wash-up amount in the year the costs are incurred and would be recovered by Aurora through the revenue wash-up draw down amount.
- G74 The IMs allow us to specify a pass-through cost in a CPP determination provided it meets certain criteria,⁷⁰⁷ which the cost of the expert opinion does. These criteria include the cost being outside the control of Aurora and being associated with the provision of electricity distribution services. The cost of an opinion relates to assessing Aurora's delivery and performance of electricity distribution services, we are imposing the cost on Aurora, and it is appropriate for this cost to be recovered from Aurora's consumers given it is for their benefit in scrutinising and reporting on Aurora's progress.
- G75 As the cost of obtaining an independent expert opinion is currently not yet known, we have not included it in our CPP price path forecasts or the smoothed price path. The cost of obtaining any opinion will therefore increase Aurora's allowable revenue in later years of the CPP period, but in specifying the pass-through cost for these expert opinions in the CPP determination, we are proposing the cost to be no more than is reasonable. As this cost will be subject to the revenue cap, it will most likely be washed-up and then recovered by Aurora in the next regulatory period.

⁷⁰⁷ Under clause 3.1.2(3) of the IMs, the cost in question must:

(a) be-

- (i) associated with the supply of electricity distribution services;
- (ii) outside the control of the EDB;
- (iii) not a recoverable cost;
- (iv) appropriate to be passed through to consumers; and
- (v) one in respect of which provision for its recovery is not otherwise made explicitly or implicitly in the DPP or, where applicable, CPP; and

(b) come into effect during a DPP regulatory period or, where applicable, CPP regulatory period.

Revenue deferral and financeability

- G76 Aurora's submission in response to our draft decision raised a concern that the deferral to the next regulatory period of additional revenue (beyond the \$32.4 million proposed by it in its CPP application) would place significant pressure on its balance sheet.⁷⁰⁸ Aurora's owner, Dunedin City Holdings Ltd, and Dunedin City Treasury Ltd (DCTL) (who provides all of Aurora's funding) provided a joint submission raising a similar concern that insufficient consideration had been given to Aurora's financial position.⁷⁰⁹
- G77 DCHL's and DCTL's joint submission stated that their support for Aurora extended to accepting Aurora's proposal in its CPP application to defer \$32 million of revenue beyond the CPP period to help ease pressure on prices, but this was at the extreme end of what is acceptable to Aurora's shareholder. They submitted that DCHL needed to ensure, on behalf of the City of Dunedin, that it receives an appropriate return and that its funding is secure. They submitted that any additional deferral 'unfairly placed more of the cost burden on DCHL'. Aurora's submission reiterated this position, stating that it is only because of shareholder support that it has been able to raise the debt necessary for the work on its network undertaken already, but that it is now 'at the point' where it 'must demonstrate a pathway back to sustainable levels of debt.' Aurora submitted that undercompensating Aurora during the CPP period risked compromising the delivery of the CPP.
- G78 We have considered those submissions, and make the following observations:
- G78.1 Neither Aurora nor DCHL state that they cannot obtain funding or finance the CPP investment programme if Aurora is subject to the revenue cap;
 - G78.2 No evidence was put forward to support these claims. For example, there was no analysis presented to demonstrate financial pressure at a level that would unavoidably compromise delivery of the CPP, nor were there reports from its financiers or bankers that would be expected to verify these assertions;
 - G78.3 DCHL's and DCTL's concerns about secure funding can be expected to be met by Aurora's return over time of the full allowable revenue plus interest at the WACC rate;

⁷⁰⁸ [Aurora Energy letter – Submission on draft decision for Aurora's CPP – 18 December 2020](#), page 2.

⁷⁰⁹ [Dunedin City Holdings –Submission on draft decision for Aurora's CPP – 18 December 2020](#), page 23.

- G78.4 As explained below, we forecast that during the CPP period Aurora should recover its BBAR amounts plus all of its forecast recoverable costs and forecast pass-through costs. The portion of total revenue which will be deferred to the next regulatory period is estimated to only be IRIS incentive amounts relating to the prior DPP regulatory period. Based on our modelling, Aurora should expect to recover any deferred amount in the next regulatory period;
- G78.5 Further, Aurora's CPP proposal included a letter from DCTL advising it would provide funding to support Aurora through the CPP, and there has been no communication to us that this support has been withdrawn or restricted, and if so, why; and
- G78.6 DCHL currently provides all of Aurora's equity and long-term debt. If DCHL is unable or unwilling to provide more funding to Aurora, it has the option to allow Aurora to raise funds from other sources.
- G79 In addition, we also assessed the implications on Aurora's net cashflow as a result of our decision. This analysis is discussed in further detail in the final section of this attachment.

Our weighting on consumer affordability

- G80 DCHL and Aurora⁷¹⁰ noted in their submissions on our draft decision that they considered the weighting we provided to affordability for consumers was too high in our decision-making process, relative to other objectives of innovation, investment and efficiency.
- G81 The issue of consumer affordability is not one that we directly considered when making our decisions, other than through price capping to minimise price shocks. As we stated in our draft decision, we have limited ability to address affordability and energy hardship issues as part of the CPP process. Rather, we are required to assess whether Aurora's proposed spending in its application is necessary, efficient and in the best long-term interests of consumers.
- G82 To the extent we take affordability into account, we have done so through smoothing Aurora's allowable revenue over time in order to minimise price shocks for consumers. This is done to provide consumers with time to adjust to the increased costs. But this consideration is balanced against ensuring Aurora is able to invest and ultimately recovers its efficient costs.

⁷¹⁰ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), para 106 and [Dunedin City Holdings –Submission on draft decision for Aurora's CPP – 18 December 2020](#), p 3.

- G83 Aurora also commented that our price shock concerns do not consider Aurora's line charges have been low relative to other distributors in the past. However as noted, our assessment of price shock does not relate to the absolute level of prices consumers are facing, rather it arises from the scale of the change in those prices and the timeframe over which that occurs. Comparison to other suppliers is not relevant to that assessment. We also note that there are different price levels throughout Aurora's three pricing regions.
- G84 For the above reasons, we disagree with Aurora's submission that we have placed too great an emphasis on affordability.

The 10% revenue increase is arbitrary

- G85 Aurora and DCHL made submissions on our draft decision that the annual 10% cap on revenue increases presented in our draft decision was arbitrary and the basis for it was not clear.⁷¹¹
- G86 As part of our draft decision we tested various scenarios that were described in our draft decision. Each scenario was assessed against various measures; including its ability to smooth price shock for consumers, the amount of revenue recovery that would be deferred into the next regulatory period, and how quickly that deferred revenue would be recovered.
- G87 The 10% cap on annual revenue increases (Scenario 1) best met those criteria.
- G88 Finally, in response to submissions, we have allowed the revenue cap to be adjusted for changes in forecast inflation, and for increases in transmission charges more than currently forecast.

The deferral of revenue may lead to price shocks in the future

- G89 Aurora Energy submitted on our draft decision that the deferral of revenue could mean price shocks in the following regulatory period.⁷¹²
- G90 As noted above, in our draft decision we tested several scenarios using various measures, including the amount of revenue Aurora would be required to defer and how quickly this deferred revenue would be recovered.

⁷¹¹ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), para 117, [Dunedin City Holdings – Submission on draft decision for Aurora's CPP – 18 December 2020](#), p 2.

⁷¹² [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), para 111.

- G91 We assessed that the amount of deferred revenue in our preferred scenario (Scenario 1) was expected to be recovered in the following regulatory period without undue price shock for Aurora's consumers.
- G92 Based on our analysis we are comfortable with the level of revenue deferral into the next regulatory period and its recovery. However, we do acknowledge that there are factors that could change in the course of the next five years before the second CPP begins, and these could lead to a price shock in future periods.⁷¹³ We cannot forecast and account for all of these variables. We will have to assess Aurora's next CPP (or transition to the DPP) at the time it occurs and consider corrective action at that time to minimise any potential future price shock.

Our changes to the draft decision as a result of submissions

- G93 As discussed above we have made the following changes to our draft decision which impact Aurora's CPP price path:
- G93.1 revised Aurora's forecast operating expenses;
 - G93.2 revised Aurora's forecast capital expenditure;
 - G93.3 updated forecast operating and capital expenditure cost escalators and foreign exchange rates;
 - G93.4 updated the forecast CPI to the November 2020 Reserve Bank MPS on account of Aurora's request for an IM variation to allow this update;
 - G93.5 changed the revenue cap formula from a nominal percent change to a real + forecast inflation percent revenue cap, and allow any variance between the forecast inflation and the most recent CPI forecasts for the coming year to be reflected in the revenue cap;
 - G93.6 allowed annual transmission cost variances that are higher than our opening forecasted transmission charges to be passed through to consumers; and
 - G93.7 included a pass-through recoverable cost for the independent review of Aurora's performance mid-period through the CPP.
- G94 We have applied these changes to our CPP price path and have derived the impact on Aurora's MAR, forecast allowable revenue and to Aurora's deferred revenues. The following sections discuss these changes in more detail.

⁷¹³ We have addressed two of these variables in the form of allowing variances in inflation and transmission charges to be passed through to consumers during the CPP period in the form of the revenue cap formula.

G95 We have not updated the CPP price path for Aurora's actual 2019/20 financial results. A comparison between the 2019/20 actual and forecasts results indicated that most of the actual results were not materially different from forecast. Only commissioning assets were materially below forecast due to several projects being delayed. Aurora has stated that it has subsequently completed these projects and that it does not expect these delays to cause any material delay in commissioning other assets in the current year.

Our review of Aurora's capital expenditure forecasts

G96 Our review of submissions and our further analysis we undertook in response to those submissions has led us to make the following changes to capital expenditure forecasts in our decision. These changes, described in greater detail in Attachment D, are:

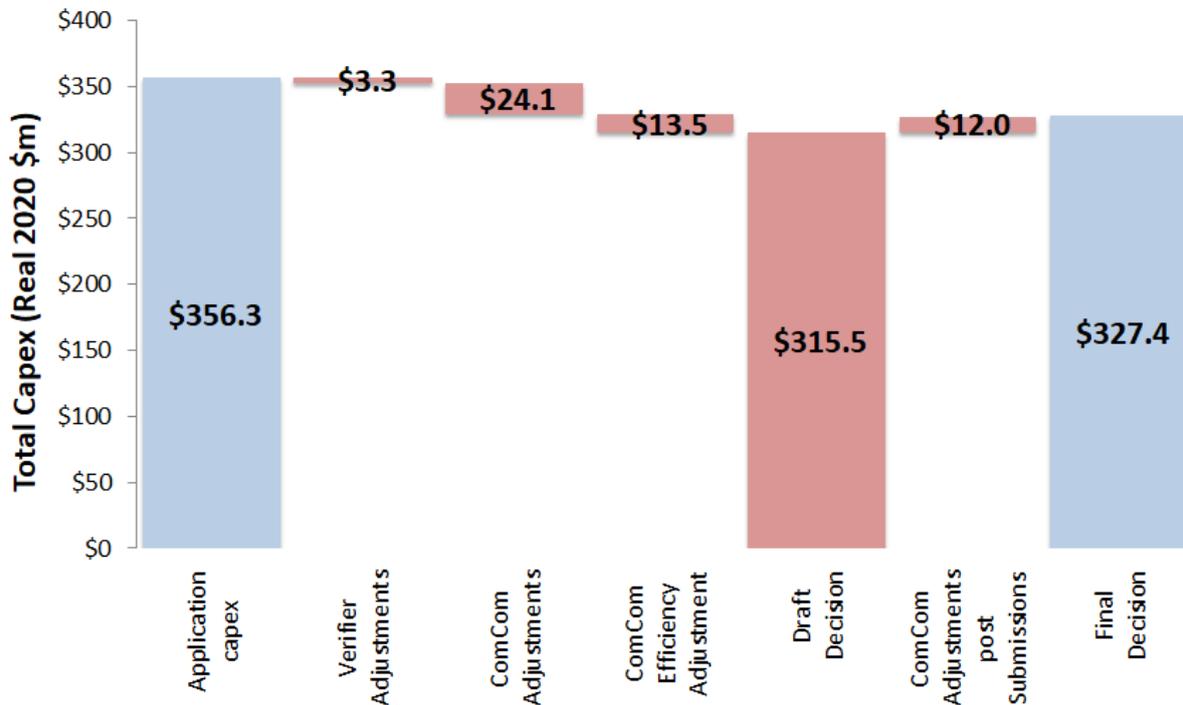
G96.1 The two Arrowtown growth projects of 33kV Ring Upgrade and the Zone Substation 33kV Indoor Switchboard projects were reinstated;

G96.2 The one-year deferral of the sub-transmission cable investments were reversed; and

G96.3 The partial reduction in expenditure on remote terminal unit expenditure was reversed.

G97 As a result of these changes, the total capex for the five-year CPP period has increased by \$12.0 million (real \$2020, excluding capital contributions and right of use assets) relative to our draft decision. However, our draft decision reduced capex by \$40.9 million relative to the CPP application. The net change in capex from the CPP application to our decision is a \$28.9 million reduction. Figure G2 shows the total capex movements from CPP application, to draft decision, to decision.

Figure G2 Changes in Aurora's total capital expenditure in CPP period (\$Real 2020, excluding capital contributions and right of use assets)

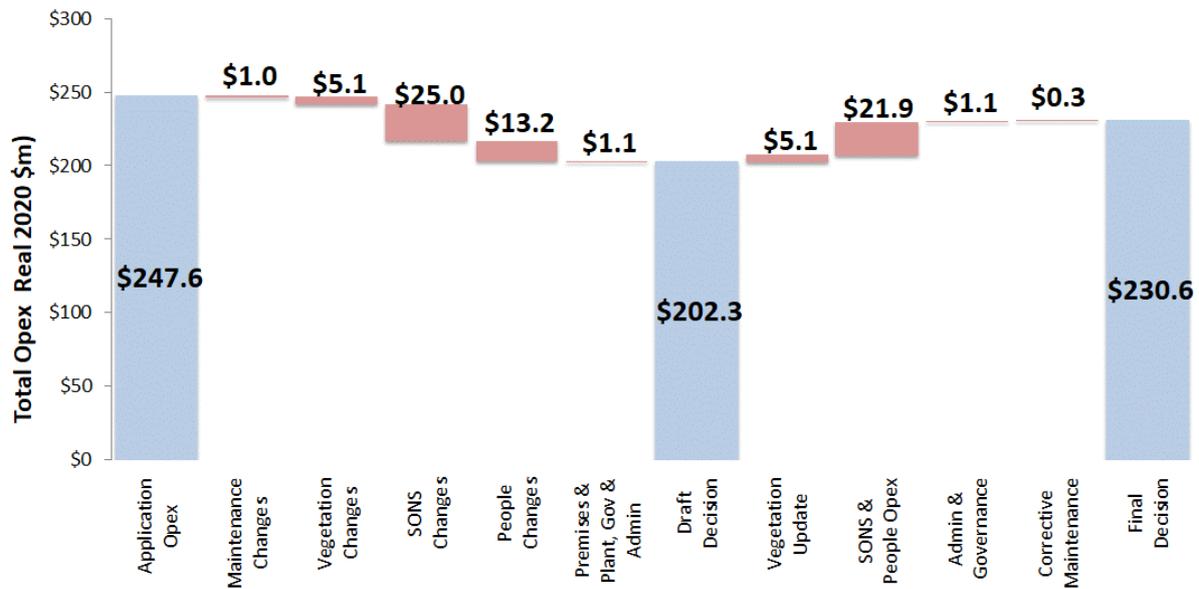


G98 Our decision on capital expenditure reduces the total nominal five-year MAR by \$3.4 million compared to the original CPP application. This is a combination of our draft decision, which reduced MAR by \$4.6 million and the changes detailed in Attachment D that increase MAR by \$1.2 million relative to our draft decision.

Our review of Aurora's operating expenditure forecasts

G99 Our review of submissions and our further analysis has led us to make changes to opex forecasts in our decision. These changes are described in greater detail in Attachment E.

G100 As a result of these changes, the total opex for the five-year CPP period has increased by \$28.3 million (real \$2020, excluding capital contributions and right of use assets) since our draft decision. However, our draft decision reduced opex by \$45.3 million. The net change in opex from the CPP application to our decision is \$16.9 million. Figure G3 shows the total movements from CPP application, to draft decision, to our decision.

Figure G3 Changes in Aurora's Total Operating Expenditure in CPP period (\$Real 2020)

G101 Our decision on the operating expenditure allowance reduces the total nominal five-year MAR by \$17.9 million compared to the original CPP application. This is a combination of our draft decision, which reduced MAR by \$48.7 million and the changes detailed in Attachment E that increase MAR by \$30.8 million.

Our update of Aurora's cost escalators and foreign exchange rates

G102 Given the disruption that Covid-19 has had on the New Zealand and worldwide economies, we updated the cost escalator values and foreign exchange rate forecasts in our CPP price path model for the draft decision. We have also updated these forecasts for the decision. For this we used independent forecasts from the New Zealand Institute of Economic Research (NZIER) based on more recent data. We also updated the various metal commodity price forecasts from our draft decision using more recent World Bank forecasts.

G103 Our decision on updated cost escalators and foreign exchange rates reduces the total nominal five-year MAR by \$7.6 million compared to the original CPP application. This is a combination of our draft decision, which reduced MAR by \$8.9 million and the changes to our draft decision (detailed below) that increase MAR by \$1.3 million.

G104 The individual cost escalators and foreign exchange rate adjustments are discussed below.

Our review of Aurora’s operating expenditure cost escalators

G105 There are two cost escalators applying to Aurora’s opex; the Producers Price Index (PPI) and the Labour Cost Index (LCI). Figures G4 and G5 compare the PPI and LCI in Aurora’s CPP application with the NZIER forecasts used in our draft decision, and our updated for our decision.

Figure G4 Producers Price Index (PPI) forecasts

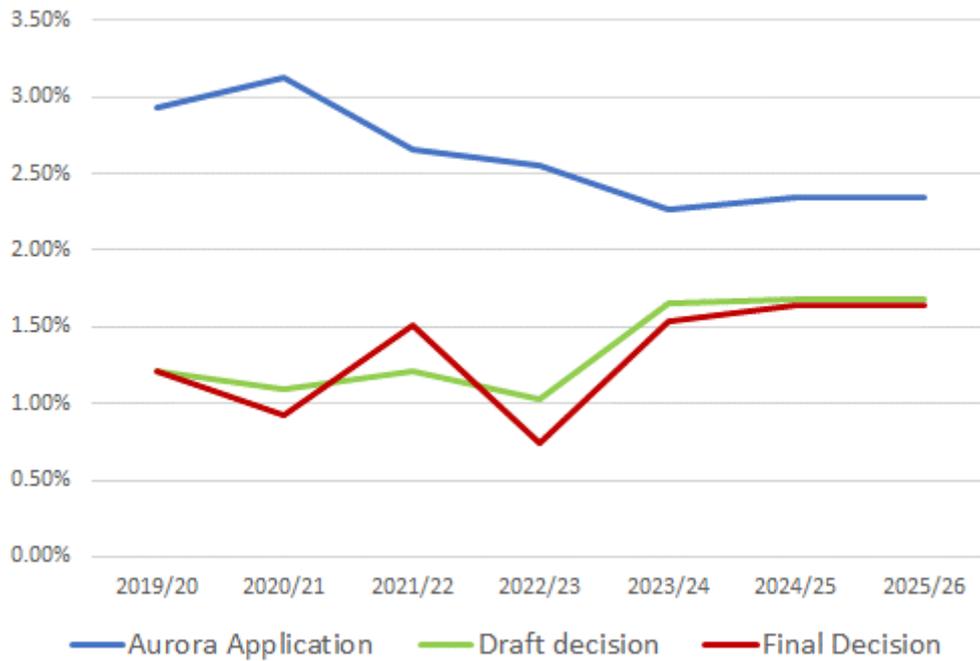
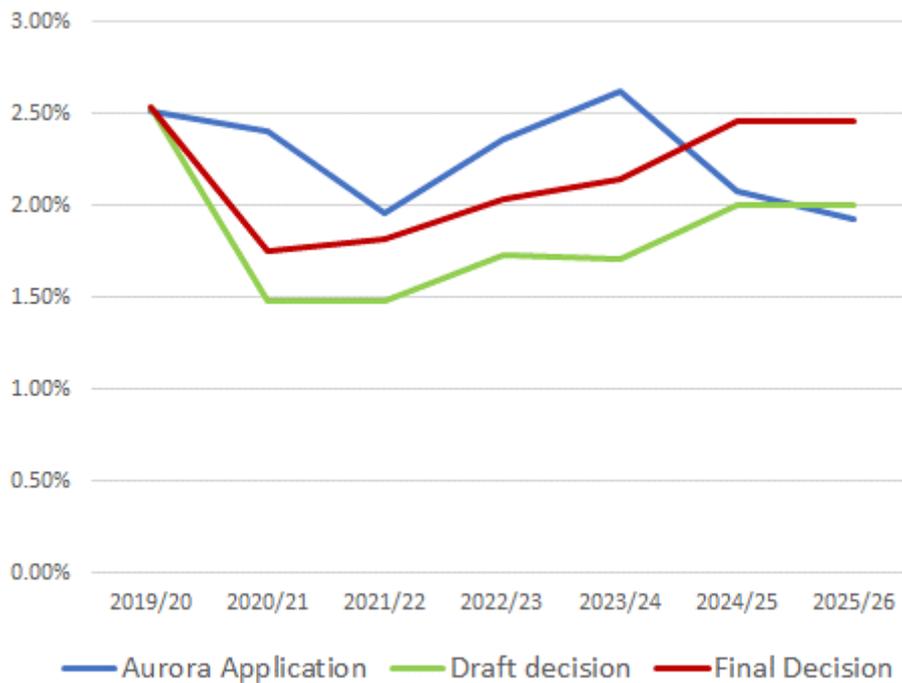


Figure G5 Labour Cost Index (LCI) forecasts



G106 The PPI is relatively consistent with the draft decision estimates, whereas the LCI has increased, though not back to pre-COVID19 levels. This suggests some of the negative effects of COVID-19 on the economy's labour market have moderated since our draft decision, though not fully.

Our review of Aurora's capital expenditure cost escalators

G107 We have updated the CPP capital expenditure cost escalators used in our draft decision using more recent NZIER forecasts. This included the Capital Goods Price Index (CGPI) and the Labour Cost Index (LCI) for Construction (as shown in Figures G6 and G7). Both have been negatively impacted by Covid-19 since Aurora's CPP application and are forecast to continue to grow at these lower levels.

Figure G6 Comparison of Capital Goods Price Index (CGPI) forecasts

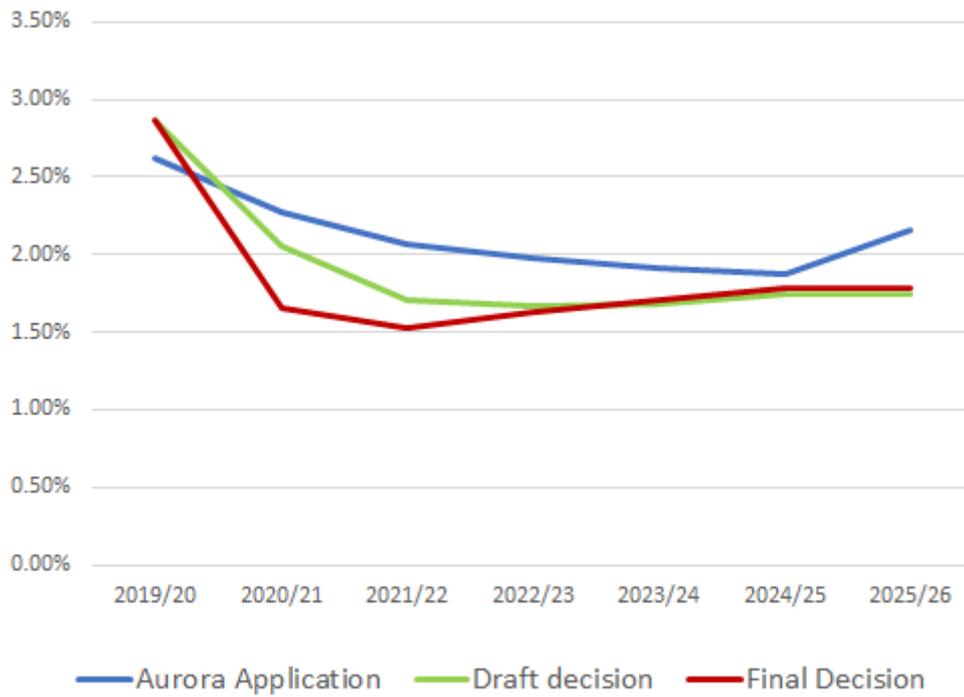
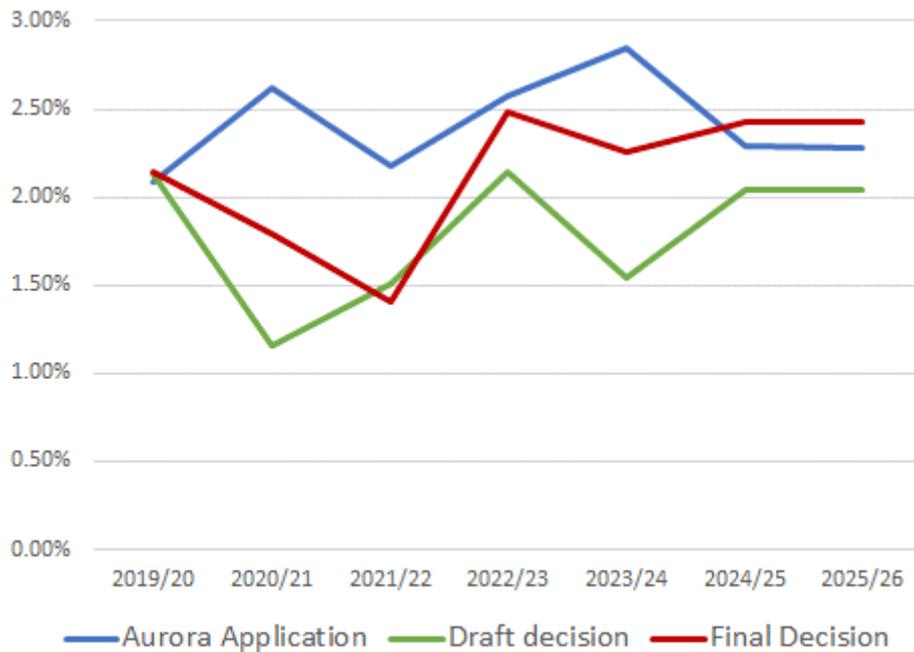


Figure G7 Comparison of Labour Cost Index – Construction (LCI -Construction) forecasts



G108 We also update the metal price assumptions using World Bank forecasts as at October 2020:

G108.1 aluminium (used in cables and conductors);

G108.2 copper (used in transformers and switchgear); and

G108.3 iron ore (as a proxy for steel, which is used in transformers and switchgear).

Our review of Aurora's Foreign Exchange Rate Forecasts

G109 We have updated the NZD/USD exchange rate forecasts in our CPP price path model using forecasts from NZIER, given that metal price forecasts are generally denominated in USD. This results in a slightly higher forecast USD/NZD exchange rate over the CPP period compared to Aurora's proposal and our draft decision, as shown below in Table G2.

Table G2 Forecast NZD/USD exchange rate comparison

	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
Aurora's Proposal	0.644	0.644	0.644	0.644	0.644	0.644
Draft Decision	0.647	0.657	0.658	0.660	0.660	0.660
Final Decision	0.680	0.680	0.672	0.666	0.660	0.660

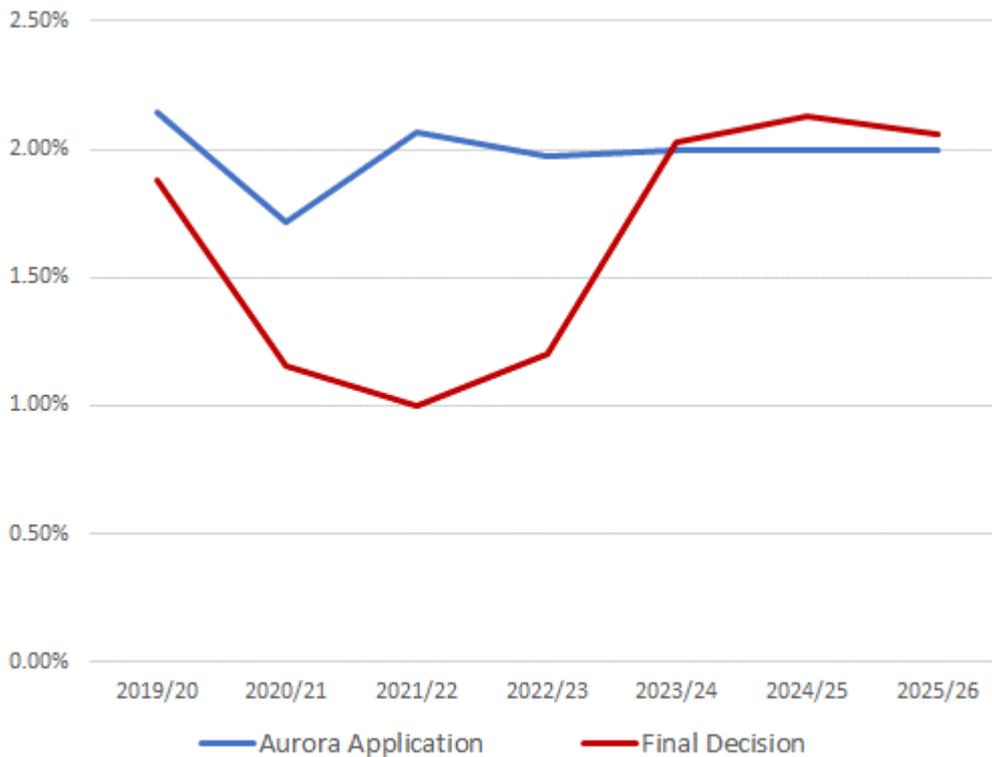
G110 This can be expected to provide greater purchasing power for imported electrical equipment and lower Aurora's forecast capital expenditure.

Our update to CPI for Aurora's price path

G111 As discussed earlier, we have agreed to an IM variation with Aurora to update the forecast CPI for the price path to the November 2020 Reserve Bank MPS.⁷¹⁴ The effect of this change is to lower Aurora's MAR over the five-year period by \$57,000. BBAR is unchanged. However, the PV of the cashflow streams associated with the MAR remains the same.

G112 Figure G8 below compares the CPI for the price path used in Aurora's CPP application and the updated CPI based on the November 2020 MPS. The reduction in forecast CPI in the next two years is considerable, before it is forecast to revert to around 2% per annum.

⁷¹⁴ Reserve Bank of New Zealand "Monetary Policy Statement November 2020" (11 November 2020), available at: <https://www.rbnz.govt.nz/monetary-policy/monetary-policy-statement/mps-november-2020>

Figure G8 Forecast CPI for the Price Path

How these changes affect Aurora's forecast allowable revenue

The components of Aurora's forecast allowable revenue

G113 Aurora's forecast allowable revenues are made up of various components. It is defined in IM clause 3.1.1(4) (see Figure G9).

Figure G9 Forecast allowable revenue defined

- (4) For the purpose of this subpart, 'forecast allowable revenue' as specified in a **DPP determination** or **CPP determination** includes-
- (a) **forecast net allowable revenue;**
 - (b) forecast **pass-through costs;**
 - (c) forecast **recoverable costs**, excluding any **revenue wash-up draw down amount** under clause 3.1.3(1)(v) for the **disclosure year** referred to in subclause (1); and
 - (d) the balance of the **wash-up account** available for draw down.

G113.2 The 'forecast net allowable revenue' noted above in IM clause 3.1.1(4)(a) is a distributor's MAR, which is derived from the distributor's BBAR, with the CPI less the X-factor being applied for revenue smoothing.

G113.3 The forecast pass-through costs and forecast recoverable costs include such items as forecast transmission costs, and local authority rates and industry levies. The opex IRIS and other incentive and penalty amounts are included as forecast recoverable costs.

G113.4 Any differences between a distributor's actual revenue from prices and its allowable revenue are transferred to the revenue wash-up balance. Any balance in the wash-up account earns the cost of capital to ensure that the time value of money is maintained. This balance forms part of the forecast allowable revenue for the next financial year, and subject to certain conditions, this balance can be recovered in future years.

Changes to Aurora's building blocks allowable revenue and maximum allowable revenue

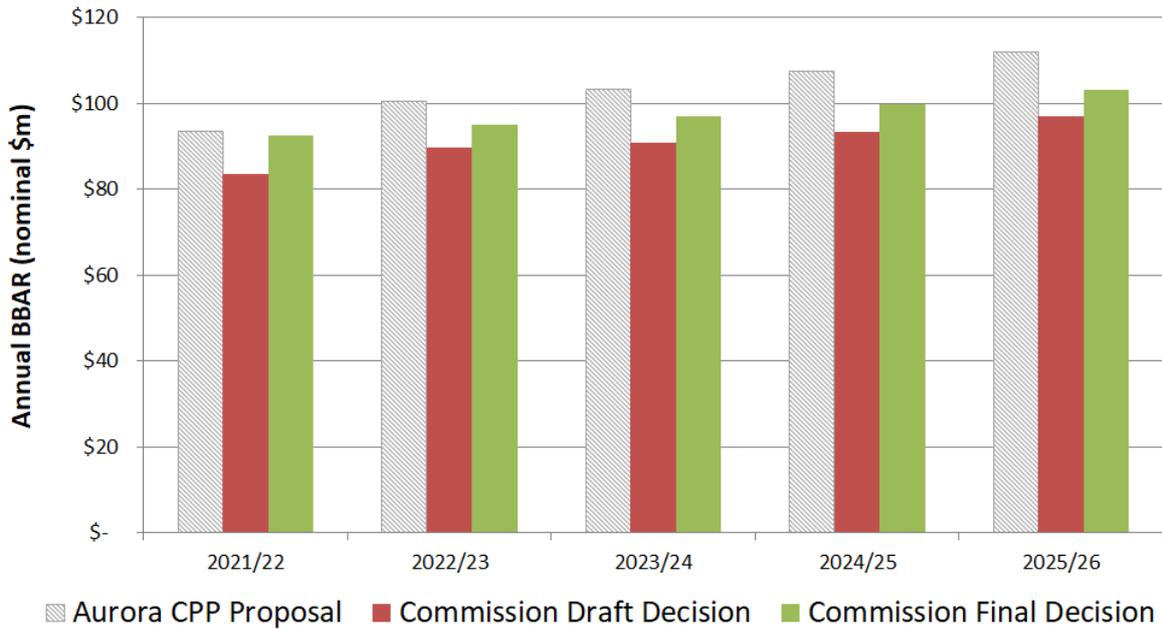
G114 The BBAR is the combination of the individual annual recoverable items that go into revenue recovery, including operating expenses, depreciation, taxation and allowable profit. By its nature, it can be somewhat volatile year on year. As such, BBAR is smoothed through the application of "CPI less the X-factor" revenue smoothing.

G115 Aurora's total BBAR (i.e., unsmoothed price path) in its CPP application was \$516.3 million for the five-year CPP period. Our decision has reduced this by approximately \$29.2 million to \$487.1 million, or around 5.7%.⁷¹⁵

G116 Figure G10 compares the unsmoothed annual BBAR for the CPP application, the draft decision and this decision.

⁷¹⁵ This change is a combination of the \$62.3 million reduction in our draft decision, offset by the subsequent increase of \$33.1 million due to the combined changes between our draft and final decisions.

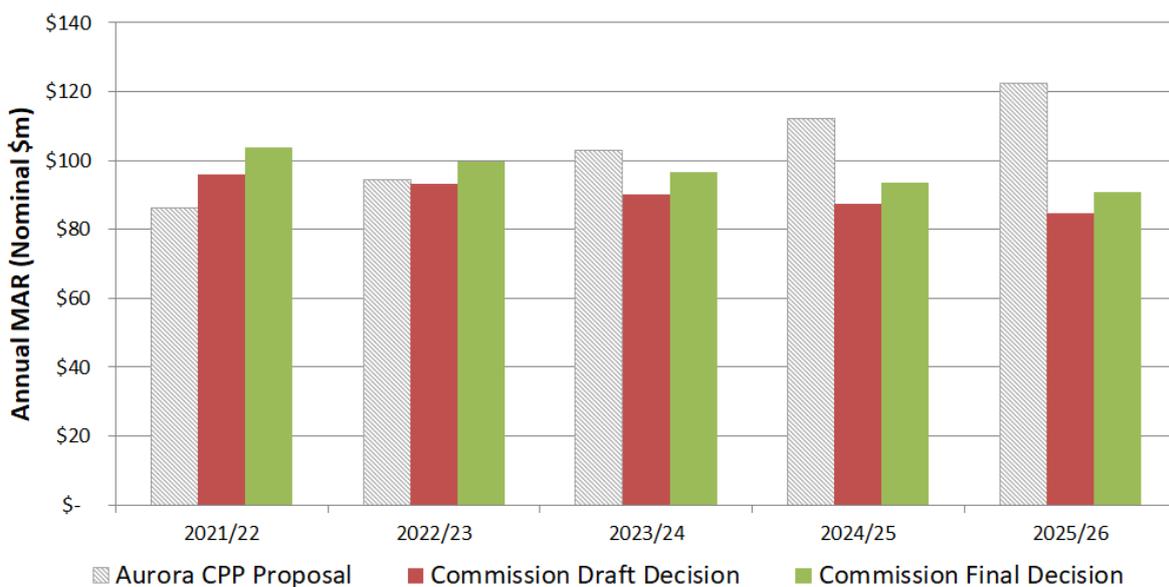
Figure G10 Change in annual nominal building blocks allowable revenue



G117 Aurora’s total MAR (i.e., BBAR smoothed using CPI - X) in its CPP application was \$518.4 million for the five-year CPP period. Our decision has reduced this by \$33.9 million to \$484.5 million, or around 6.5%.

G118 This change is a combination of the \$67.0 million reduction in our draft decision, and the subsequent \$33.2 million increase due to the combined changes in our decision – as discussed earlier. This is illustrated below in Figure G11.

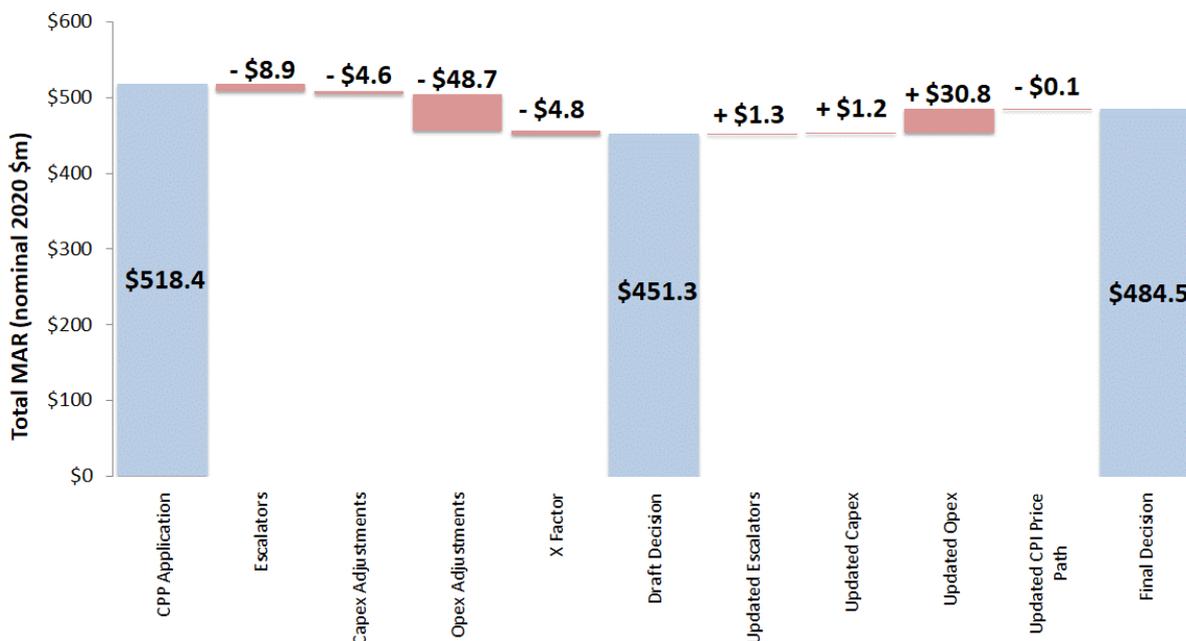
Figure G11 Change in annual nominal maximum allowable revenue



G119 The CPP application proposed an X-factor of -7% which gave the MAR a positive slope over the five-year CPP period. Our decision is based on an X-factor of +5%, which inverts the slope of the MAR to be negatively sloped over the five-year CPP period. This was done in order to counteract the profile of Aurora’s opex IRIS penalty and incentive payments, and smooth Aurora’s overall forecast allowable revenue. These opex IRIS penalty and incentive payments are discussed in the next section on recoverables and pass-through costs.

G120 Figure G12 shows how each of the adjustments discussed earlier have reduced the five-year pre-tax MAR from CPP application to draft decision to decision.

Figure G12 Adjustments to Aurora’s five-year total MAR in nominal terms

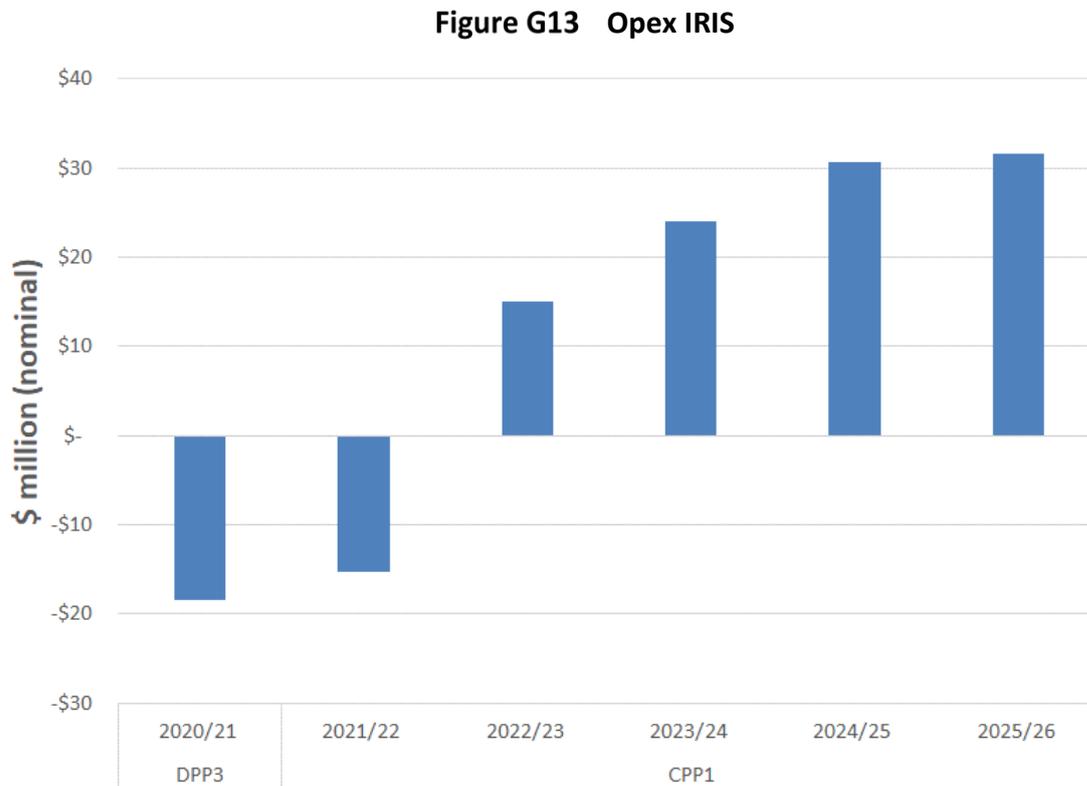


G121 The change to allow variances between the final decision’s forecast average CPI and latest CPI forecast for any coming year to be passed through to consumers will only be known when any forecast CPI variance takes place.

Recoverable costs and pass-through costs

G122 None of the changes made in our decision relative to our draft alter our forecasts of recoverable costs or pass-through costs - including opex IRIS and other incentive and penalty recoverable costs. The change to allow variances between actual and forecasted transmission charges to be passed through to consumers through adjustments to the revenue cap will only be known when Transpower advises Aurora each year of its transmission charges for the upcoming year. As such this change does not alter Aurora’s initial forecast allowable revenue.

G123 As noted earlier in our discussion on the changes to MAR, we noted that we have adjusted the X-factor to +5% to account for the profile of the opex IRIS penalty and incentive payments. Figure G13 below describes the annual opex IRIS penalty and incentive payments. As shown, this starts with a negative penalty in the first year of the CPP, before becoming positive incentive payments.⁷¹⁶ Setting the X-factor at +5% inverts the slope of the MAR to smooth out this profile.



Revenue wash-up balance

G124 Our reductions to Aurora's expenditure allowances and our approach to smoothing revenues will result in revenue being accrued in the wash-up balance during the CPP period. These amounts will have to be recovered in a later regulatory period.

G125 The impact in deferred revenues and the recovery of this revenue is discussed in the following section on Aurora's price path.

⁷¹⁶ As noted in Attachment F, Aurora proposed an IM variation to allow the total opex IRIS amount to be spread and recovered evenly over 8 years. Our draft decision did not accept this proposal and instead smoothed revenue at the gross aggregated level through the revenue cap, rather than smoothing opex IRIS and replying on the X-factor.

The combined effect on Aurora’s Forecast Allowable Revenues

G126 Aurora’s forecast allowable revenue in its CPP application was \$756.9 million for the five-year CPP period. Our decision has reduced this by \$33.9 million to \$723.1 million, or around 4.5%.

G127 This change is a combination of the \$67.0 million reduction in our draft decision, and the subsequent \$33.2 million increase due to the combined changes in our final decision – as discussed earlier. This is illustrated below in Figure G14.

Figure G14 Aurora’s total forecast allowable revenue: from CPP application to our decision



How these changes affect Aurora’s price path

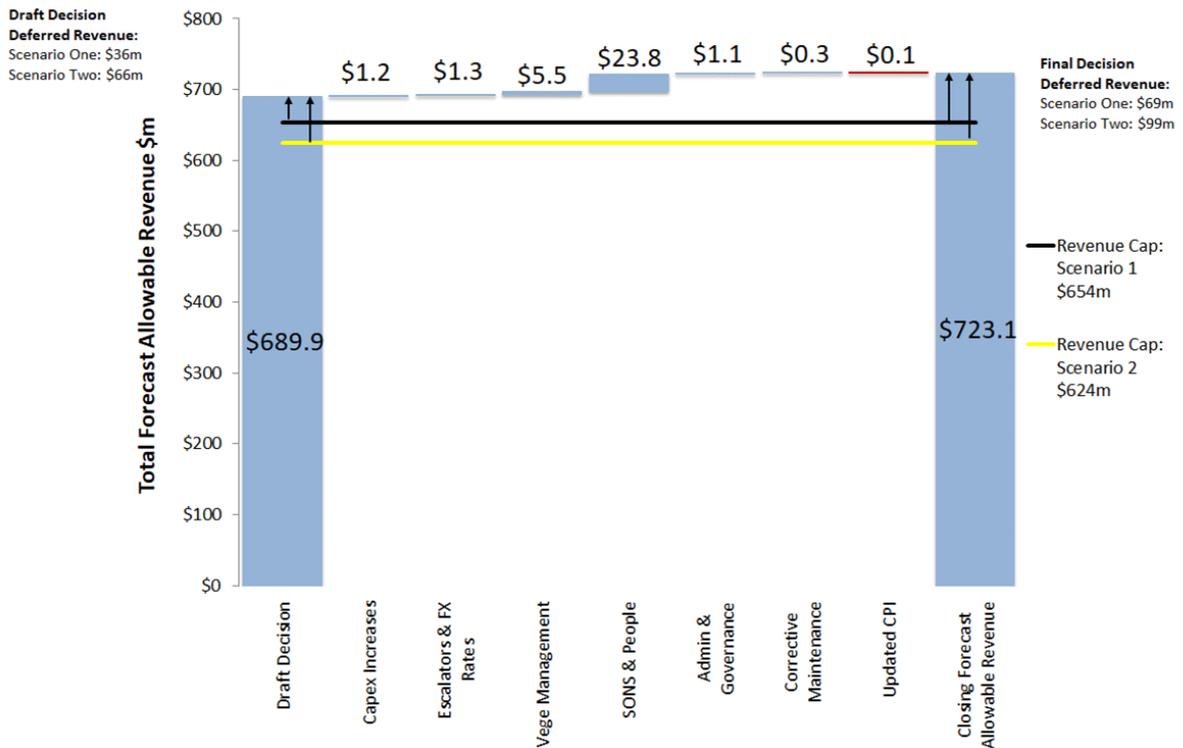
G128 Aurora’s CPP price path is effectively set by our decision to apply a revenue cap on the annual percentage increase in forecast allowable revenue. This is separate from the development of forecast allowable revenue, but the difference between the two represents a revenue deferral. Aurora will still recover the same amount of revenue over time, adjusted for the time value of money, but it will do this over a longer timeframe than the CPP period.

- G129 In our draft decision we presented two revenue cap scenarios, which would defer different amounts of revenue into the next regulatory period:⁷¹⁷
- G129.1 Scenario 1: An annual 10% maximum increase in forecast revenue from prices in each of the five years of the CPP; and
- G129.2 Scenario 2: An initial 5% increase in forecast allowable revenue in year 1, followed by an annual 10% increase for each of the remaining four years of the CPP.
- G130 Our draft decision proposed Aurora's forecast allowable revenue over the five-year CPP of \$689.9 million, based on the 5% X-factor:
- G130.1 Scenario 1 of our draft decision would have provided Aurora with \$653.9 million of revenue over the five-year CPP period and would defer \$35.9 million of revenue into the next regulatory period. We assessed that this amount of deferred revenue could be recovered by Aurora with modest annual increases in total revenue of around 2% per annum over a hypothetical subsequent five-year regulatory period;⁷¹⁸ and
- G130.2 Scenario 2 of our draft decision would have provided Aurora with \$624.2 million of revenue over the five-year CPP period and would defer \$65.6 million of revenue into the next regulatory period. We assessed that this amount of deferred revenue could be recovered by Aurora with annual increases in total revenue of around 3% per annum over a hypothetical subsequent five-year regulatory period.
- G131 Our decision adjusts Aurora's forecast allowable revenue by \$33.2 million from the \$689.9 million level at the draft decision stage to \$723.1 million in our final decision. This means:
- G131.1 Scenario 1 would now defer approximately \$69.1 million revenue for the next regulatory period; or
- G131.2 Scenario 2 would now defer approximately \$98.9 million revenue into the next regulatory period.
- G132 Figure G15 tracks this increase from the draft decision through to the final decision, along with both scenario revenue caps and deferred revenue.

⁷¹⁷ As discussed earlier, Scenario 1 was our preferred approach based on our evaluation framework. It smoothed revenue and price shock for consumers by deferring some of Aurora's allowable revenue into the next regulatory period. It projects that this deferred revenue in the wash-up balance would be cleared within the next regulatory period.

⁷¹⁸ This was based on our assessment of Aurora's operating expenditure as part of the CPP and Aurora's capital expenditure from its 2020 asset management plan.

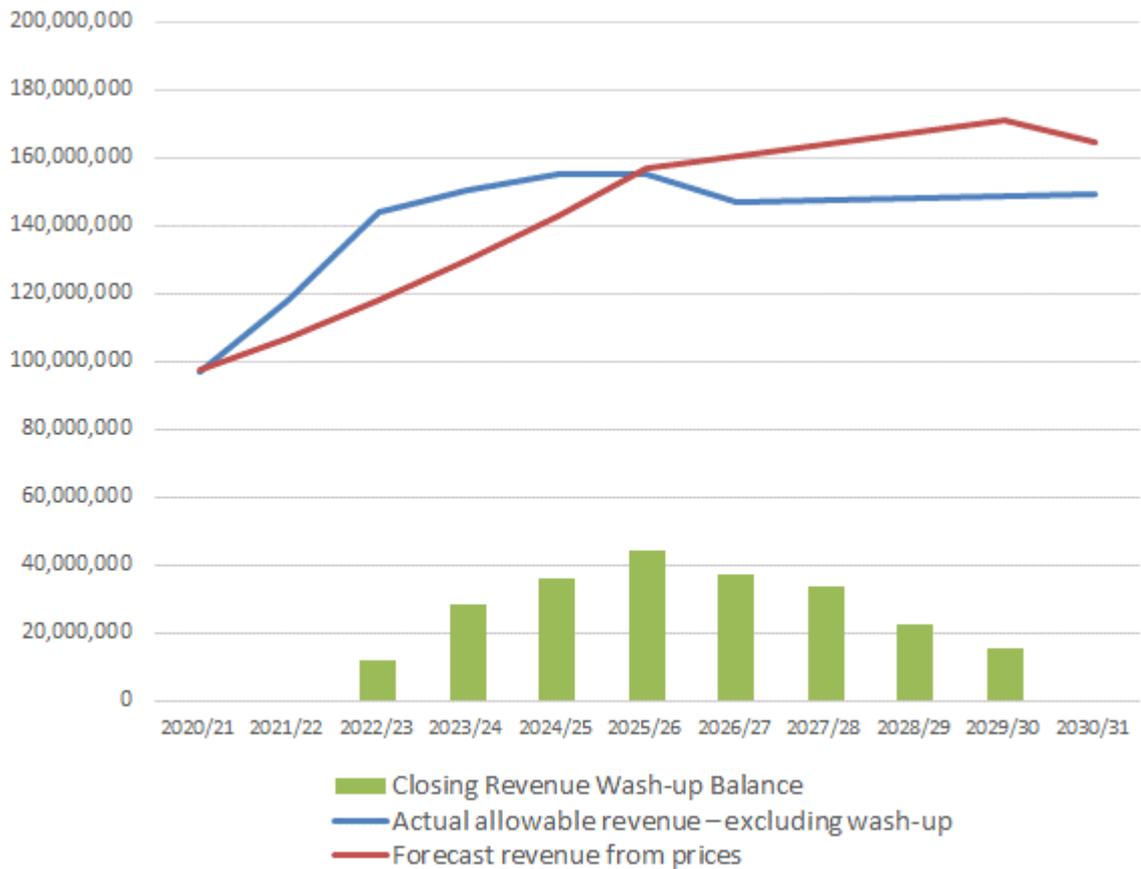
Figure G15 Adjustments to Aurora’s Forecast Allowable Revenue



G133 Ensuring that all deferred revenues could be expected to be recovered in the next regulatory period was a key consideration in our assessments of the scenarios in our draft decision. Therefore, we have tested whether the \$33.2 million increased deferred revenue could potentially still be recovered in the next hypothetical period under each scenario.

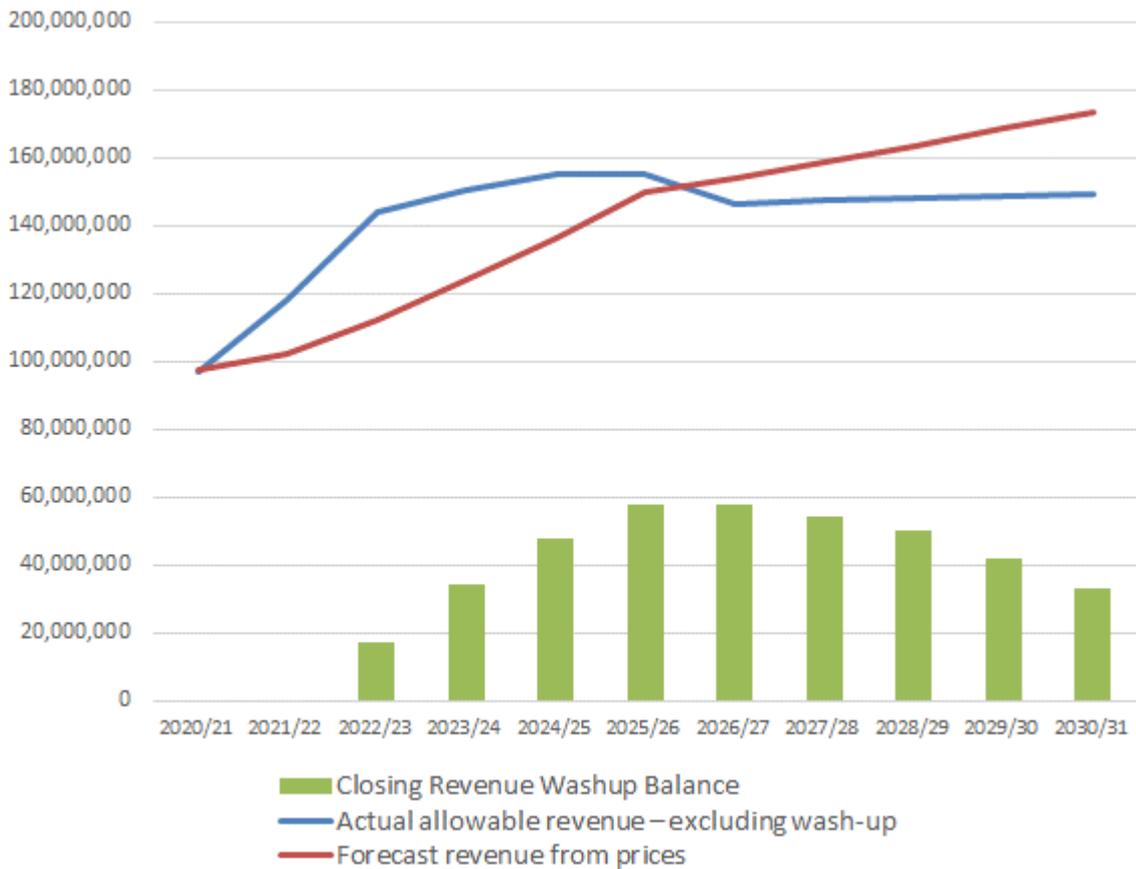
G134 Our modelling of a hypothetical second five-year regulatory period was based on various inputs, including Aurora’s capital expenditure from its 2020 asset management plan and our assessment of Aurora’s operating expenditure as part of the current CPP. We updated our opex forecasts in the second regulatory period to reflect the changes in the opex allowance made in our CPP decision.

G135 Under Scenario 1, we determined that all of the deferred revenue could still be recovered within a second hypothetical five-year regulatory period by the 2030/31 year. This is based on 2.25% annual revenue increases within a second five-year regulatory period, as shown in Figure G16.

Figure G16 Scenario 1: Forecast recovery of deferred revenues

G136 There is a relatively small step off between a second regulatory period and the one following that. However, this is only approximately a 10% difference in Aurora's forecast revenue from prices (used to recover the wash-up) and its actual allowable revenue (excluding the wash-up balance). We consider steps can be taken to smooth this step-off into that next period and note that this could involve a reduction in revenue to Aurora, and in prices to its consumers.

G137 Under Scenario 2, we determined that not all of the deferred revenue would be recovered comfortably in the second regulatory period. Based on the higher assumed 3% annual revenue increases in the second regulatory period we presented in our draft decision, there would still be a deferred revenue wash-up balance of \$33.5 million in the 2030/31 year, as shown in Figure G17. It would require an even higher 6% annual revenue increase in the second regulatory period to clear the wash-up balance, which is more significant and could therefore create price issues for Aurora and consumers when the time comes for the price path to be reset for that regulatory period.

Figure G17 Scenario 2: Forecast recovery of deferred revenues

G138 We consider Scenario 2 would not have met our objective of clearing the revenue wash-up balance at the end of the second regulatory period. We also had concerns that this level of revenue deferral would place pressure on Aurora in terms of its incentives to meet its commitments to upgrade its network and meet the quality standards we set based on the capex and opex allowances in the CPP. This is discussed further in the following section.

G139 In addition, to clear the wash-up balance would require higher annual revenue increases in order to recover the cost of interest on the deferred revenue than would otherwise be the case. It appears that it would also produce a material revenue step off, or difference between total annual revenues, between the end of the next regulatory period and the one following.

Deferring the recovery of BBAR - compliance with the IMs

G140 The IMs contemplate that the BBAR will be recovered within the CPP period and we are therefore looking only to defer, at most, the pass-through costs, recoverable costs and the IRIS incentive amount into the next regulatory period.⁷¹⁹ To test whether this would occur, we compared the total five-year amount of revenue deferral against Aurora's BBAR, IRIS, forecast transmission costs, and its other forecast pass-through costs and other forecast recoverable costs for Scenario 1, as shown in Table G3. This comparison is shown in nominal and PV terms.

Table G3 Aurora's recovery of BBAR: Scenario 1

Item	PV \$ (2020)	Nominal \$
PV of BBAR	398,613,929	455,833,241
PV of IRIS - Unsmoothed	65,889,052	80,297,986
PV of transmission charges	102,003,372	116,609,000
PV of total remaining pass through and recoverables	36,554,107	41,643,795
PV of deferral scenario 1	(62,072,681)	(69,130,850)
Difference between PV IRIS and Revenue Deferral	3,816,370	11,167,136

G141 The total deferral under Scenario 1 never exceeds the total amount of the IRIS incentive in either PV or nominal terms. It is less than the IRIS amount in PV terms by ~ \$3.8 million and in nominal terms by ~ \$11.2 million.

G142 This means that under Scenario 1 Aurora would recover all of its BBAR in the CPP period, and it would also recover its forecast transmission charges, its other forecast pass-through costs, and its other forecast recoverable costs within the CPP period.

G143 The only item it will not fully recover in the CPP period is its IRIS incentive amount.

G144 Under our modelling, Scenario 2 would defer revenues of more than the IRIS amounts over the next five years, meaning that some forecast pass-through costs or non-IRIS forecast recoverable costs (such as transmission charges) would not be recovered in the CPP period. However, all of the BBAR would be recovered in the CPP period revenues.

⁷¹⁹ IM clause 5.3.4(6).

G145 We have concerns that this level of revenue deferral in respect of forecast pass-through costs and forecast recoverable costs would place pressure on Aurora in terms of its incentive to meet its commitments to upgrade its network and to meet the quality standards we have set based on the capex and opex allowances in the CPP. This reinforces our view that the Scenario 2 price path should not be preferred for our decision.

Implications of revenue cap on Aurora's net cashflow

G146 Aurora and DCHL submissions on our draft decision raised concerns that the amount of revenue deferral through our smoothing approach would lead to a financeability issue.⁷²⁰ We assessed this in terms of the impact that our decision will have on Aurora's forecast net cashflow compared to its original CPP application. This approach differs to focusing on the change in revenues because the change in the net cashflows is a better indication of Aurora's ability to finance its business.

G147 To assess this, we measured the difference in six cashflow items (revenue, opex, capex, pass-through costs, notional interest expenses and notional taxation)⁷²¹ to observe how Aurora's forecast net cash position changes. Provided in Table G4 is the sum of these items over the five years of the CPP period in terms of Aurora's CPP application and our decision.

G148 We forecast that Aurora's net cashflow from our decision has improved by \$3.9 million compared to the cashflow in its original CPP application.

⁷²⁰ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), para 103, and [Dunedin City Holdings –Submission on draft decision for Aurora's CPP – 18 December 2020](#), p 2-3.

⁷²¹ We have determined notional interest expenses and notional taxation based on our CPP inputs for the cost of debt at 2.92%, leverage of 42% and corporate tax is set at 28%. We tested these results using inputs that were more closely aligned with Aurora and determined similar results in terms of movement in net cashflows.

Table G4 Change in Aurora’s net cashflows – CPP application versus our decision

Aurora's Cashflows - Nominal	CPP Application	CPP Final Decision	Difference Application to Final
Revenues	\$ 724,914,794	\$ 653,927,118	-\$ 70,987,676
Opex	\$ 271,686,688	\$ 247,235,859	-\$ 24,450,829
Pass throughs	\$ 152,486,269	\$ 152,486,269	\$ -
Capex	\$ 384,414,367	\$ 345,810,495	-\$ 38,603,872
Notional Interest	\$ 47,155,451	\$ 45,781,389	-\$ 1,374,062
Notional Tax	\$ 12,456,579	\$ 1,991,242	-\$ 10,465,337
Net Cashflow	-\$ 143,284,561	-\$ 139,378,138	\$ 3,906,423

G149 This outcome arises because the reductions in revenue are roughly matched by reductions in opex and capex. The reduced capex represents a relatively large cash “outflow” that is avoided, whereas the cash “inflows” associated with that capex are relatively small during the CPP period, as they are recovered over the life of the assets which spans multiple regulatory periods. In addition, the reduced net cashflows also reduces Aurora taxable income and notional tax paid. The combination of these changes produces an improvement in the net cashflows of \$3.9 million compared to the CPP application.

G150 While we recognise that actual levels of debt and taxable income will differ to the notional amounts used in our analysis, we have used notional values as they are calculated on the same basis as the CPP application and our decision. Nevertheless, we did cross-check our analysis of Aurora’s cashflows using forecasts based on its most recent actual levels of debt and taxable income and we derived similar results to the above.

Attachment H Illustrative price impacts

Purpose of this attachment

- H1 This Attachment H sets out our forecast of the illustrative price impacts arising from our decision on Aurora's CPP across the five-year CPP period. The price impacts are shown based on the initial 10% limit on the rates of increase in forecast revenue from prices, as detailed in Attachment G.
- H2 This price impact is shown in terms of the change in Aurora's lines charges, which are the combination of all the costs that are included in Aurora's prices (this includes provision for transmission charges and pass-through costs such as levies and local authority rates, which are unaffected by our CPP decision), and the total bill impact for the consumer, which includes all of the components of a delivered electricity charge.
- H3 These bill impacts are illustrative for residential consumers that have specific characteristics in each of Aurora's three pricing regions. All prices and percentage references in this attachment are in nominal terms unless stated otherwise and are inclusive of GST.

Summary of our analysis

- H4 Our decision to cap Aurora's revenue at a 10% annual increase over the 5-year CPP period is unchanged from our draft decision. As such, the price increases that were presented in our draft decision are the same as those resulting from our decision.
- H5 As a result of Aurora's pricing methodology, lines charges (distribution and transmission charges) for residential customers will increase by 7.5% to 10% (compounding annually). This is forecast to increase residential lines charges (depending on how large the consumer is) over the five years by the following:
- | | |
|----------------|--|
| Dunedin: | 54% total increase in lines charges over the five years, or between \$270 (small) and \$540 (large) per annum by 2025-2026 |
| Central Otago: | 61% total increase in lines charges over the five years, or between \$380 (small) and \$875 (large) per annum by 2025-2026 |
| Queenstown: | 43% total increase in lines charges over the five years, or between \$240 (small) and \$570 (large) per annum by 2025-2026 |

- H6 Our decision represents a 3.7% to 5.6% annual increase in the total residential electricity bill (inclusive of lines and energy charges) over the five-year CPP period. This is forecast to increase residential total electricity bills (depending on how large the consumer is) over the five-year CPP period by:
- Dunedin: 24% in the total electricity bill (inclusive of energy costs and lines charges), or between \$345 (small) and \$690 (large) per annum by 2025-2026
 - Central Otago: 31% in the total electricity bill (inclusive of energy costs and lines charges), or between \$440 (small) and \$1,020 (large) per annum by 2025-2026
 - Queenstown: 20% in the total electricity bill (inclusive of energy costs and lines charges), or between \$325 (small) and \$770 (large) per annum by 2025-2026
- H7 However, actual bill impacts will differ to our forecasts for a variety of reasons:
- H7.1 Different levels of electricity consumption and the time of year given seasonal differences in consumption;
 - H7.2 Aurora has recently updated its pricing methodology and has signalled further updates in subsequent years;
 - H7.3 Our decision will allow Aurora to adjust the limit on annual increases in revenue for the future variances in transmission costs compared to our opening forecasted transmission charges. It also allows adjustments for any future variances between the original forecast inflation and the most recent inflation forecasts to be reflected in the revenue cap. These are described in further detail in Attachment K; and
 - H7.4 We are also allowing Aurora to recover the one-off costs of the independent reviewer that will be appointed midway through the CPP period to assess Aurora's performance in meeting its CPP targets. We do not know what this cost will be, so it is not included in our forecasts.

Structure of this attachment

- H8 This Attachment has the following structure:
- H8.1 the unique features of Aurora's pricing;
 - H8.2 overview of our approach to modelling illustrative bill impacts;
 - H8.3 residential lines charges illustrative bill impact (for distribution and transmission);
 - H8.4 residential illustrative total bill impact (inclusive of energy costs and lines charges);

- H8.5 summary of our illustrative modelling results; and
- H8.6 comparison to Aurora's forecasted price increases.

The features of Aurora's pricing

H9 Aurora's pricing has the following features:

- H9.1 Aurora has three distinct pricing regions: Dunedin, Central Otago and Queenstown. Each region has separate pricing schedules. Aurora applies the same cost allocation and pricing methodology amongst its regions and within consumer classes, but because each region has distinct differences in the number of consumers, relative consumer density and the consumer consumption profiles, the price levels between each region are also distinctly different;
- H9.2 Aurora's pricing only offers residential tariffs that are compliant with the Electricity (Low Fixed Charge Tariff) Regulations 2004 – that is, the tariffs have a 15 cents per day fixed charge and the remainder is made up of relatively high kWh consumption charges. The majority of EDBs offer a variety of residential tariffs, including a Low Fixed Charge (LFC) tariff required by those Regulations; and
- H9.3 The LFC tariff has a relatively high variable kWh consumption tariff with different tariffs for winter and summer. This tariff difference combined with greater consumption in winter produces a large seasonal variation in the size of a residential power bill. For example, higher monthly electricity bills in winter and lower ones in summer. This makes forecasting Aurora's bill impact on anything other than an annual basis challenging. As such, we have developed the bill impact in this Attachment H using an annual approach. Nevertheless, we also present monthly bill impacts to assist stakeholders to understand the change, but we emphasize monthly bills will vary considerably due to these seasonality effects.

Overview of our approach to modelling illustrative bill impacts

H10 Our approach to modelling Aurora's illustrative bill impacts has not changed since our draft decision. In summary:

- H10.1 Our modelling of Aurora's lines charges and the total electricity bill impact is based on the Indicative Pricing Model that Aurora provided us. We have adapted and extended this model for our modelling. This includes extending it to include Aurora's total forecast allowable revenue, and to include tariff development and small, medium and large residential bill impacts;
- H10.2 All prices and price movements are in nominal terms (i.e. they include forecast increases in inflation) and include GST, given these are the prices and costs that consumers pay. This includes applying inflation forecasts to

Aurora's transmission pass-through charges and to the energy component of the total electricity bill;

H10.3 We present the bill impacts in terms of both the Aurora bill impact level and at the total bill impact level – that is, the full cost of delivered electricity;

H10.4 This means that bill impacts are presented at these two different levels:

H10.4.1 the lines component level, which are Aurora's costs that it charges. These include the impact of the CPP decision in terms of Aurora's direct costs and its other pass-through costs and recoverable costs, such as Transpower's transmission charges; and

H10.4.2 the total electricity bill level, which includes Aurora's costs and the retail electricity component, charged by the retailer;

H10.5 We only present the price impacts for residential consumers. Developing commercial price impacts is problematic given the diverse nature of these consumers;

H10.6 We present the bill impacts using small, medium and large residential consumer profiles. Each profile is based on the actual annual electricity consumption in the three regions; and

H10.7 Bill impacts are represented by changes in annual costs. We do not attempt to address the seasonality of bills throughout the year, but we do present average monthly amounts for the line component and the total electricity bill.

H11 Our approach does not account for any external impacts on Aurora's prices like changes to the Transmission Pricing Methodology (TPM), which is currently under development between Transpower and the Electricity Authority. There are also several other factors outside of the scope of our decision that mean consumers' price experience will differ from our estimates. For example, wholesale or generation costs may fluctuate due to market conditions, and we only control the network revenues Aurora may recover from its customers.

H12 In addition, Aurora has stated that it has updated its pricing methodology since our draft decision.⁷²² This includes:

H12.1 Changing the way in which Aurora allocates operational costs between regions from 1 April 2021. The effect is to be a modest reduction in costs

⁷²² https://yoursay.auroraenergy.co.nz/news-and-updates/news_feed/customer-feedback-prompts-changes-to-regional-pricing

paid for by Central Otago and Queenstown consumers and a slight increase in costs for Dunedin consumers; and

- H12.2 Changing the approach for allocation of asset related costs from 1 April 2022. This change has not yet been fully consulted upon and is unclear what price impact it will have.
- H13 We have not updated our pricing modelling to account for these changes. This is because the 1 April 2021 changes are not expected to materially alter our pricing impact analysis and Aurora has not determined what the 1 April 2022 changes will be. Therefore, there is the possibility that our illustrative price changes will differ due to Aurora's pricing methodology changes.
- H14 In addition, the actual increase in revenue may differ to the 10% cap in any particular year depending on several factors. Our price path decision has allowed for Aurora to recover the future increases in transmission costs compared to our opening forecasted transmission charges. We are also allowing any future variances between the original forecast inflation and the most recent inflation forecasts to be reflected in the revenue cap. These are described in further detail in Attachment K.
- H15 We are also allowing Aurora to recover the reasonable costs of any independent reviewer (or reviewers) that we are proposing under our information disclosure proposals may be appointed midway through the CPP period to provide an opinion on Aurora's performance in meeting its CPP targets.⁷²³
- H16 A more detailed discussion of our approach to modelling price impacts and the independent review of our modelling approach was provided in Attachment H of our draft decision.

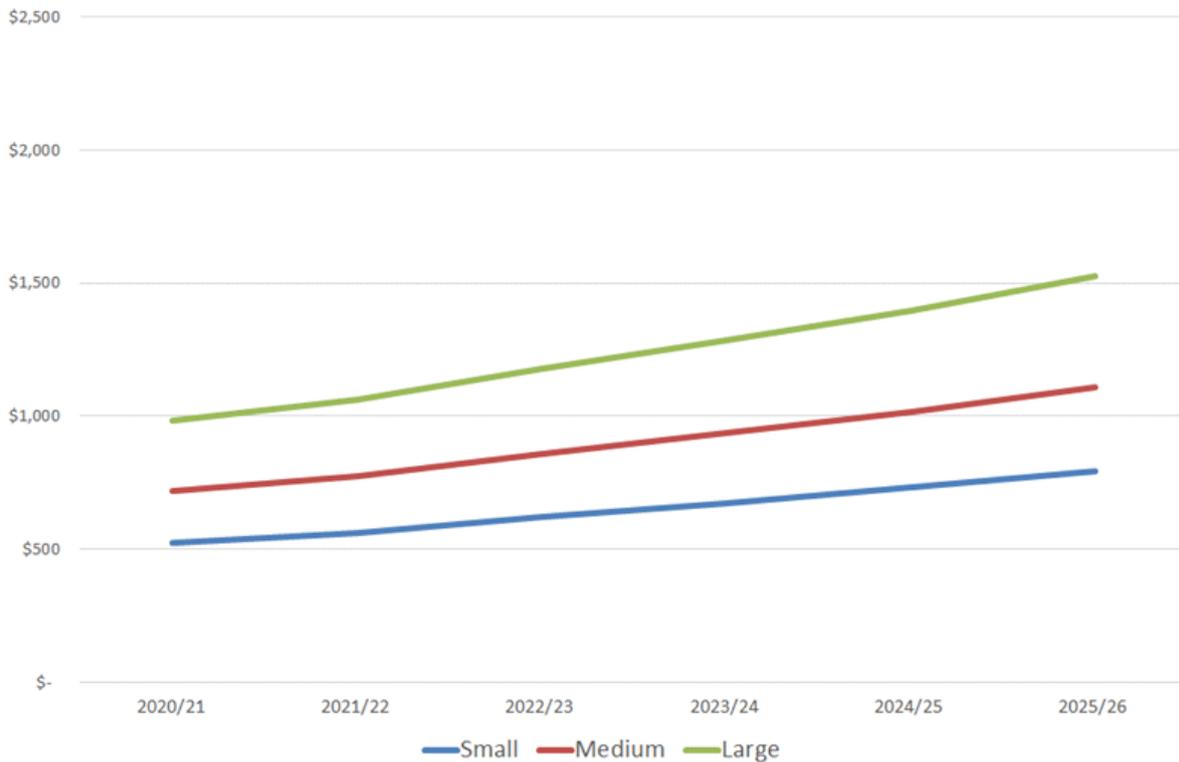
Residential lines charges bill impact (for distribution and transmission charges)

- H17 Lines charges represent all of Aurora's costs and include its direct costs of electricity distribution and its other pass-through costs and recoverable costs, such as local authority rates and transmission charges from Transpower. The nominal increases in Aurora's annual lines charges (including GST) for each residential profile in each region are forecasted as follows. Note that these include a forecast CPI increase in transmission charges and other pass-through costs:

⁷²³ This is detailed further in our "Proposed Additional Information Disclosure Requirements Draft Reasons Paper" we published on 31 March 2021.

H17.1 **Dunedin:** we estimate that our decision will result in a 9.0%⁷²⁴ compound average growth in lines charges from 2020-2021 to 2025-2026.⁷²⁵ See Figure H1. This will produce a total increase in annual lines charges of around 54% by 2025-2026. We estimate that annual lines charges will rise by \$270 for smaller consumers and \$540 for larger consumers by 2025-2026.

Figure H1 Estimated Dunedin Residential Annual Lines Charges

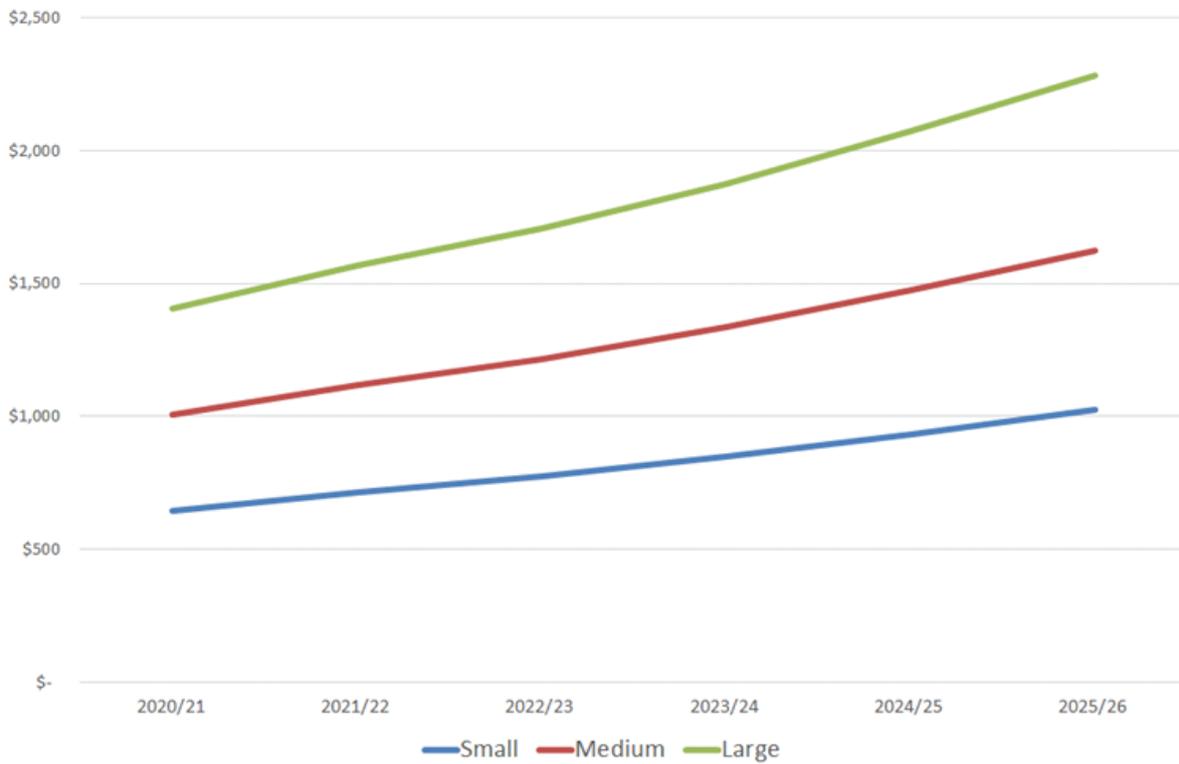


H17.2 **Central Otago:** we estimate that our decision will result in a 10% compound average growth in lines charges from 2020-2021 to 2025-2026. See Figure H2. This will produce a total increase in annual lines charges of around 61% by the end of the CPP period in 2025-2026. We estimate that annual lines charges will rise by \$380 for smaller consumers and \$875 for larger consumers by 2025-2026.

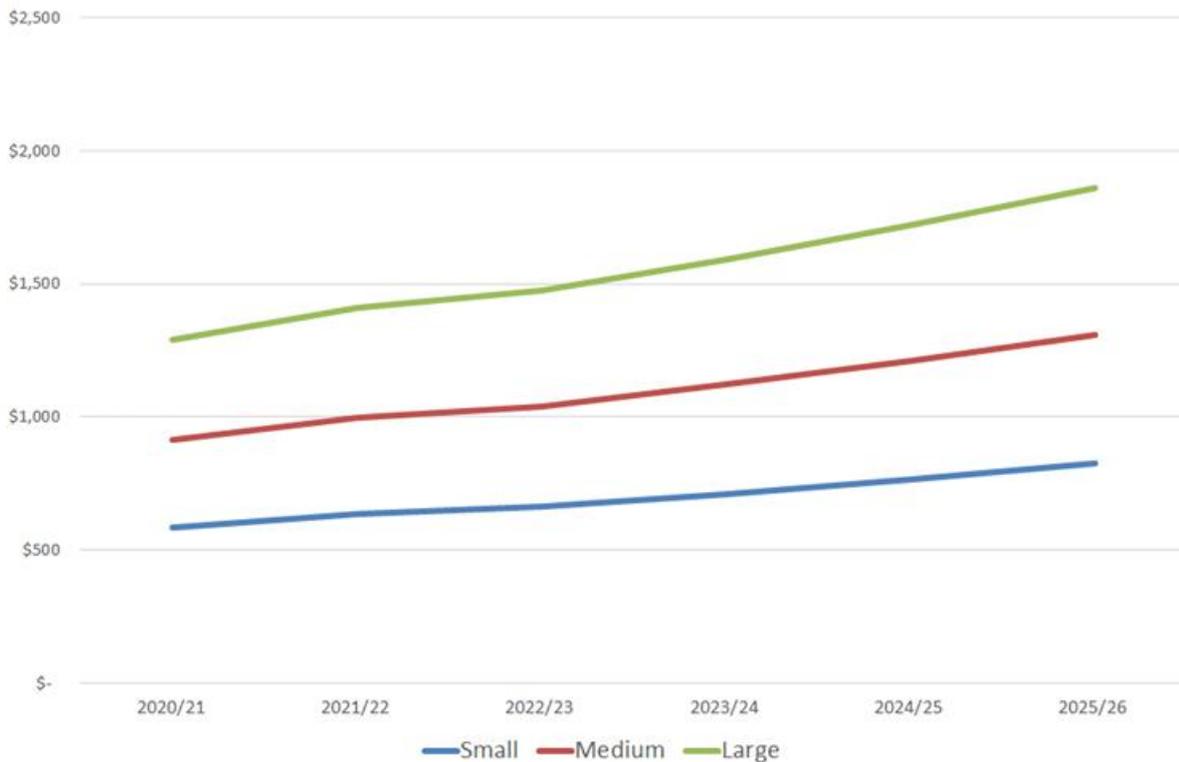
⁷²⁴ Each region's residential consumers are forecast to encounter slightly different price increases. This is due to how costs are allocated between the three regions, but also how costs are allocated amongst commercial and industrial consumers.

⁷²⁵ Given the LFC tariff has a high variable charge, there is very little variation in the increase in compound average growth rate between customer classes.

Figure H2 Estimated Central Otago Residential Annual Lines Charges



H17.3 Queenstown: we estimate that our decision will result in a 7.5% compound average growth in lines charges from 2020-2021 to 2025-2026. See Figure H3. This will produce a total increase in annual lines charges of around 43% by the end of the CPP period in 2025-2026. We estimate that annual lines charges will rise by \$240 for smaller consumers and \$570 for larger consumers by 2025-2026.

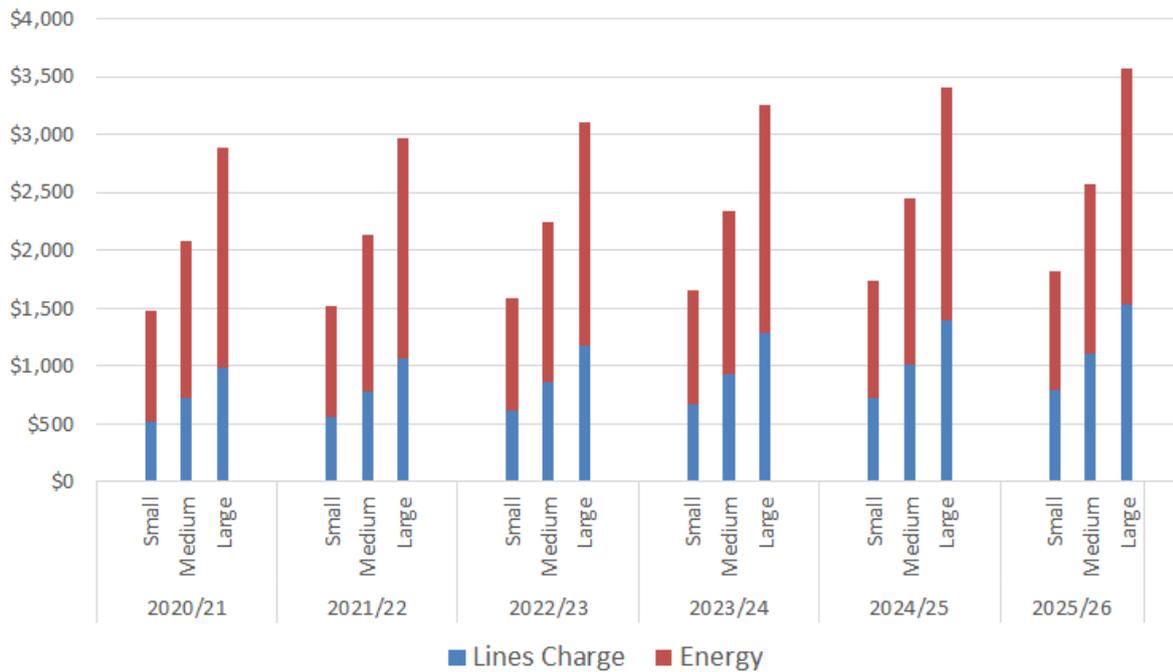
Figure H3 Estimated Queenstown Residential Annual Lines Charges

Residential total illustrative bill impact (inclusive of energy costs and lines charges)

- H18 To estimate the total bill impact inclusive of energy costs, we forecasted the total residential consumer energy bill impact based on the movements in lines charges and added MBIE's energy component that it ascribes to each of Aurora's regions in its QSDEP data series as at 15 August 2020. There have been updates to this data series since our draft decision. We have not updated our price modelling for these updates in order to retain comparability with our draft decision.
- H19 These charges are then applied to the same profiles of small, medium and large residential consumers in each region as we did for the lines charges above. They represent a broad estimate of all remaining retailer costs. For our forecast, we have assumed that these would increase at the rate of CPI used in Aurora's CPP models.
- H20 The nominal increases in total electricity bills (including GST) for each residential profile in each region are forecast as follows:
- H20.1 **Dunedin:** we estimate that our decision will result in a 4.4% compound average growth in the total electricity bill (inclusive of energy costs and lines charges) from 2020-2021 to 2025-2026. See Figure H4. This will produce a

total increase in an annual electricity bill of around 24% by the end of the CPP period in 2025-2026.

Figure H4 Estimated Dunedin Total Bill Impact Scenarios



H20.2 We estimate that the total annual electricity bill will rise by \$350 for smaller consumers and \$690 for larger consumers by 2025-2026 as shown in Table H1 below. The monthly bills and the change in monthly bill relative to 2020-2021 are presented in Tables H2 and H3.

Table H1 Estimated Dunedin Total Annual Bill

Dunedin Residential Consumers	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
Small Consumer Profile	\$ 1,472	\$ 1,516	\$ 1,585	\$ 1,658	\$ 1,735	\$ 1,818
Medium Consumer Profile	\$ 2,075	\$ 2,139	\$ 2,238	\$ 2,342	\$ 2,451	\$ 2,571
Large Consumer Profile	\$ 2,880	\$ 2,970	\$ 3,108	\$ 3,253	\$ 3,407	\$ 3,574

Table H2 Estimated Dunedin Total Monthly Bill

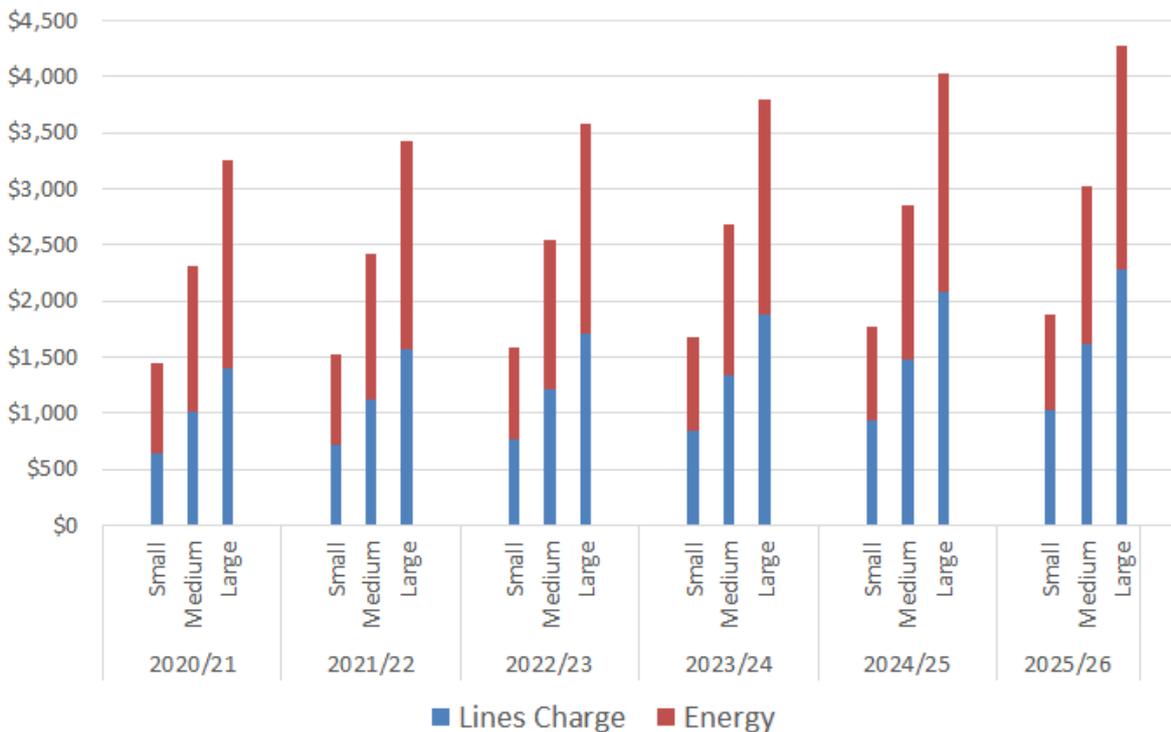
Dunedin Residential Consumers	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
Small Consumer Profile	\$ 123	\$ 126	\$ 132	\$ 138	\$ 145	\$ 152
Medium Consumer Profile	\$ 173	\$ 178	\$ 186	\$ 195	\$ 204	\$ 214
Large Consumer Profile	\$ 240	\$ 247	\$ 259	\$ 271	\$ 284	\$ 298

Table H3 Estimated Dunedin Year on Year Change in Total Monthly Bill relative to 2020-2021^{726, 727}

Dunedin Residential Consumers	2021/22	2022/23	2023/24	2024/25	2025/26
Small Consumer Profile	\$ 3.70	\$ 9.40	\$ 15.50	\$ 21.90	\$ 28.90
Medium Consumer Profile	\$ 5.30	\$ 13.50	\$ 22.20	\$ 31.30	\$ 41.20
Large Consumer Profile	\$ 7.50	\$ 19.00	\$ 31.20	\$ 44.00	\$ 57.90

H20.3 **Central Otago:** we estimate that our decision will result in a 5.6% compound average growth in the total electricity bill (inclusive of energy costs and lines charges) from 2020-2021 to 2025-2026. See Figure H5. This will produce a total increase in an annual electricity bill of around 31% by the end of the CPP period in 2025-2026.

Figure H5 Estimated Central Otago Total Bill Impact Scenarios



⁷²⁶ These illustrative price changes have been rounded to the nearest ten cents.

⁷²⁷ The table below sets out the estimated increase in years 1 and 5 of Aurora’s CPP in monthly terms (nominal and GST inclusive). These amounts are not additive. Using Dunedin small users as an example: “the \$3.70 increase in Year 1 does not add to the \$28.90 increase in Year 5. Both numbers are expressed relative to what consumers pay relative to 2020-2021 prices”. This applies to the other tables that show the change in monthly bills relative to 2020/-2021.

H20.4 We estimate that the total annual electricity bill will rise by \$440 for smaller consumers and \$1,020 for larger consumers by 2025-2026 as shown in Table H4 below. The monthly bills and the change in monthly bill relative to 2020-2021 are presented in Tables H5 and H6.

Table H4 Estimated Central Otago Total Annual Bill

Central Otago Residential Consumers	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
Small Consumer Profile	\$ 1,443	\$ 1,517	\$ 1,586	\$ 1,676	\$ 1,778	\$ 1,885
Medium Consumer Profile	\$ 2,306	\$ 2,426	\$ 2,538	\$ 2,684	\$ 2,850	\$ 3,023
Large Consumer Profile	\$ 3,255	\$ 3,425	\$ 3,585	\$ 3,793	\$ 4,029	\$ 4,276

Table H5 Estimated Central Otago Total Monthly Bill

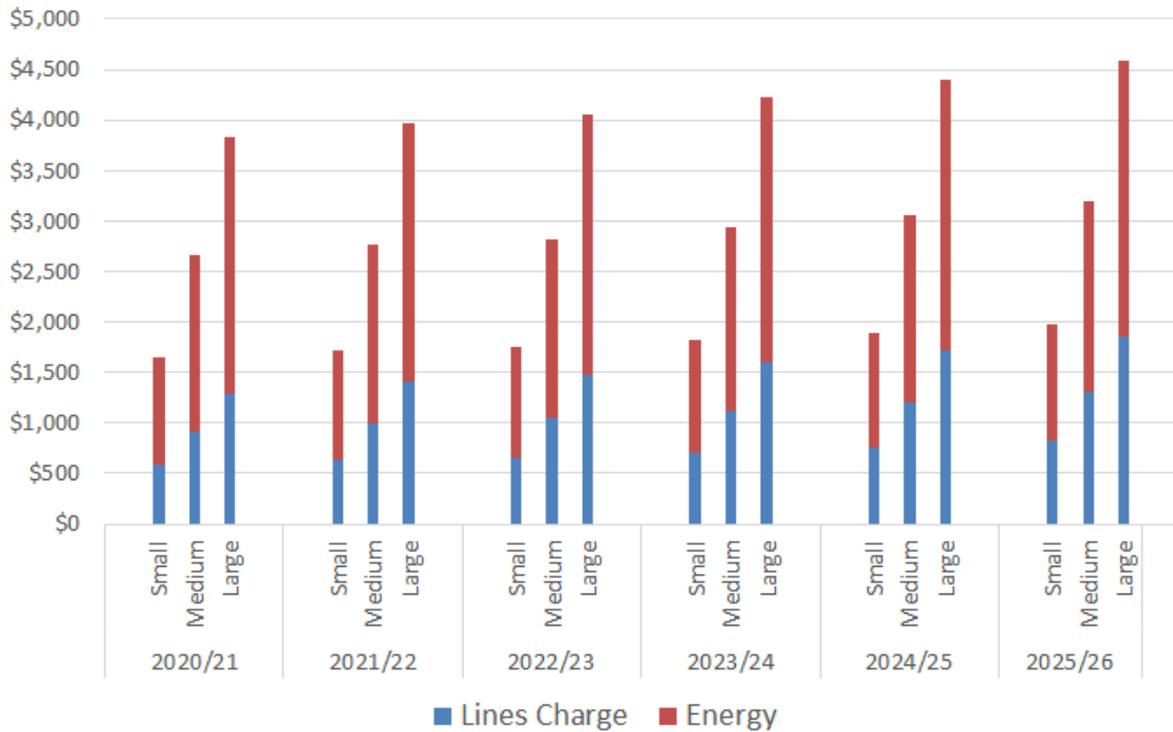
Central Otago Residential Consumers	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
Small Consumer Profile	\$ 120	\$ 126	\$ 132	\$ 140	\$ 148	\$ 157
Medium Consumer Profile	\$ 192	\$ 202	\$ 211	\$ 224	\$ 237	\$ 252
Large Consumer Profile	\$ 271	\$ 285	\$ 299	\$ 316	\$ 336	\$ 356

Table H6 Estimated Central Otago Year on Year Change in Total Monthly Bill relative to 2020-2021

Central Otago Residential Consumers	2021/22	2022/23	2023/24	2024/25	2025/26
Small Consumer Profile	\$ 6.10	\$ 11.90	\$ 19.40	\$ 27.90	\$ 36.80
Medium Consumer Profile	\$ 10.00	\$ 19.40	\$ 31.60	\$ 45.40	\$ 59.90
Large Consumer Profile	\$ 14.20	\$ 27.60	\$ 44.90	\$ 64.60	\$ 85.20

H20.5 **Queenstown:** we estimate that our decision will result in a 3.7% compound average growth in the total electricity bill (inclusive of energy costs and lines charges) from 2020-2021 to 2025-2026. See Figure H6. This will produce a total increase in an annual electricity bill of around 20% by the end of the CPP period in 2025-2026.

Figure H6 Estimated Queenstown Total Bill Impact Scenarios



H20.6 We estimate that the total electricity bill will rise by \$325 for smaller consumers and \$770 for larger consumers by 2025-2026 shown in Table H7 below. The monthly bills and the change in monthly bill relative to 2020-2021 are presented in Tables H8 and H9.

Table H7 Estimated Queenstown Total Annual Bill

Queenstown Residential Consumers	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
Small Consumer Profile	\$ 1,655	\$ 1,713	\$ 1,752	\$ 1,821	\$ 1,898	\$ 1,981
Medium Consumer Profile	\$ 2,668	\$ 2,763	\$ 2,826	\$ 2,940	\$ 3,066	\$ 3,201
Large Consumer Profile	\$ 3,825	\$ 3,962	\$ 4,055	\$ 4,219	\$ 4,400	\$ 4,596

Table H8 Estimated Queenstown Total Monthly Bill

Queenstown Residential Consumers	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
Small Consumer Profile	\$ 138	\$ 143	\$ 146	\$ 152	\$ 158	\$ 165
Medium Consumer Profile	\$ 222	\$ 230	\$ 236	\$ 245	\$ 255	\$ 267
Large Consumer Profile	\$ 319	\$ 330	\$ 338	\$ 352	\$ 367	\$ 383

Table H9 Estimated Queenstown Year on Year Change in Total Monthly Bill relative to 2020-2021

Queenstown Residential Consumers	2021/22	2022/23	2023/24	2024/25	2025/26
Small Consumer Profile	\$ 4.80	\$ 8.10	\$ 13.90	\$ 20.30	\$ 27.20
Medium Consumer Profile	\$ 7.90	\$ 13.20	\$ 22.70	\$ 33.10	\$ 44.40
Large Consumer Profile	\$ 11.40	\$ 19.10	\$ 32.80	\$ 47.90	\$ 64.20

Summary of our illustrative modelling results

H21 Our decision to cap Aurora’s revenue at a 10% annual increase over the 5-year CPP period will result in a 7.5% to 10% annual compounding increase in lines charges for most consumers. This is forecast to increase residential lines charges (depending on how large the consumer is) over the five years by the following:

- Dunedin: 54% total increase in lines charges over the five years, or between \$270 (small) and \$540 (large) per annum by 2025-2026
- Central Otago: 61% total increase in lines charges over the five years, or between \$380 (small) and \$875 (large) per annum by 2025-2026
- Queenstown: 43% total increase in lines charges over the five years, or between \$240 (small) and \$570 (large) per annum by 2025-2026

H22 Table H10 below provides the increase in Aurora’s monthly residential line charge component relative to 2020-2021 starting prices.

Table H10 Estimated Increase in Total Residential Monthly Lines Component relative to 2020-2021

Dunedin Residential Consumers	2021/22	2022/23	2023/24	2024/25	2025/26
Small Consumer Profile	\$ 3.30	\$ 8.10	\$ 12.60	\$ 17.30	\$ 22.60
Medium Consumer Profile	\$ 4.70	\$ 11.60	\$ 18.10	\$ 24.90	\$ 32.40
Large Consumer Profile	\$ 6.60	\$ 16.30	\$ 25.30	\$ 34.80	\$ 45.40

Central Otago Residential Consumers	2021/22	2022/23	2023/24	2024/25	2025/26
Small Consumer Profile	\$ 5.80	\$ 10.80	\$ 17.00	\$ 24.10	\$ 31.60
Medium Consumer Profile	\$ 9.40	\$ 17.50	\$ 27.50	\$ 39.10	\$ 51.30
Large Consumer Profile	\$ 13.30	\$ 24.90	\$ 39.20	\$ 55.70	\$ 73.00

Queenstown Residential Consumers	2021/22	2022/23	2023/24	2024/25	2025/26
Small Consumer Profile	\$ 4.30	\$ 6.50	\$ 10.50	\$ 15.00	\$ 20.00
Medium Consumer Profile	\$ 7.10	\$ 10.80	\$ 17.40	\$ 24.80	\$ 33.00
Large Consumer Profile	\$ 10.20	\$ 15.50	\$ 25.10	\$ 35.80	\$ 47.60

H23 This represents a 3.7% to 5.6% annual increase in the total electricity bill (inclusive of energy costs and lines charges) over the five-year CPP period. This is forecast to increase residential total electricity bills (depending on how large the consumer is) over the five-year CPP period by:

- Dunedin: 24% in the total electricity bill (inclusive of energy costs and lines charges), or between \$345 (small) and \$690 (large) per annum by 2025-2026
- Central Otago: 31% in the total electricity bill (inclusive of energy costs and lines charges), or between \$440 (small) and \$1,020 (large) per annum by 2025-2026
- Queenstown: 20% in the total electricity bill (inclusive of energy costs and lines charges), or between \$325 (small) and \$770 (large) per annum by 2025-2026

H24 Table H11 below provides the increase in Aurora's monthly total residential electricity bill relative to 2020-2021 starting prices.

Table H11 Estimated Increase in Total Residential Monthly Total Electricity Bill relative to 2020-2021

Dunedin Residential Consumers	2021/22	2022/23	2023/24	2024/25	2025/26
Small Consumer Profile	\$ 3.70	\$ 9.40	\$ 15.50	\$ 21.90	\$ 28.90
Medium Consumer Profile	\$ 5.30	\$ 13.50	\$ 22.20	\$ 31.30	\$ 41.20
Large Consumer Profile	\$ 7.50	\$ 19.00	\$ 31.20	\$ 44.00	\$ 57.90

Central Otago Residential Consumers	2021/22	2022/23	2023/24	2024/25	2025/26
Small Consumer Profile	\$ 6.10	\$ 11.90	\$ 19.40	\$ 27.90	\$ 36.80
Medium Consumer Profile	\$ 10.00	\$ 19.40	\$ 31.60	\$ 45.40	\$ 59.90
Large Consumer Profile	\$ 14.20	\$ 27.50	\$ 44.80	\$ 64.50	\$ 85.10

Queenstown Residential Consumers	2021/22	2022/23	2023/24	2024/25	2025/26
Small Consumer Profile	\$ 4.80	\$ 8.10	\$ 13.90	\$ 20.30	\$ 27.20
Medium Consumer Profile	\$ 7.90	\$ 13.20	\$ 22.70	\$ 33.10	\$ 44.40
Large Consumer Profile	\$ 11.40	\$ 19.10	\$ 32.80	\$ 47.90	\$ 64.20

Comparison to Aurora's forecasted price increases

Price comparisons to Aurora's CPP application

H25 In our draft decision we compared our forecasted illustrative price increases to those in Aurora's original three-year CPP application. This compares Aurora's illustrative price increases in year three of its original three-year CPP application against our illustrative price increase in year three of our five-year CPP.

H26 We have compared the increase in the total monthly electricity bill for the average residential consumer from the current year to the end of year three because this is the change that stakeholders indicated they were most interested in.

H27 However, comparisons have proven difficult because of the differences between the calculation methods. These differences include:

H27.1 Aurora's forecasts were presented in real terms whereas ours are in nominal dollar,⁷²⁸ as we felt that residential consumers would better engage with nominal amounts since their bills increase as inflation increases; and

H27.2 Aurora's forecasts excluded GST. Ours include GST, as we felt that most residential consumers would be bearing the GST cost.

⁷²⁸ Forecasts stated in real terms have been adjusted to remove the effects of underlying inflation, whereas nominal values include the effects of inflation and represent the total monetary value.

H28 We undertook a reconciliation to account for these differences. A summary of this reconciliation is shown in Table H12 for each region. The top row shows Aurora's forecasted increase in the monthly total electricity bill for its average residential consumer in each region at the end of year three.⁷²⁹ We have then made the numbers GST consistent and brought the figures into nominal terms (accounting for the updated inflation forecasts).

Table H12 Reconciliation of Aurora forecast price impacts with our estimates

Change in residential total monthly at the end of year three		Dunedin		Central Otago		Queenstown
Aurora's CPP Application stated change	\$	20.30	\$	30.90	\$	24.10
Aurora's updated change - GST consistent	\$	23.40	\$	35.50	\$	27.70
Aurora's updated change - GST consistent & Nominal	\$	36.00	\$	50.20	\$	44.10
Aurora's updated change - GST consistent & Nominal & Updated inflation	\$	32.70	\$	47.30	\$	39.80
Aurora monthly increase in consistent terms	\$	32.70	\$	47.30	\$	39.80
ComCom Change in monthly power bill	\$	22.20	\$	31.50	\$	22.70
Movement in Monthly Bill due to our decision	-\$	10.50	-\$	15.80	-\$	17.10

H29 As shown, the forecasts on a consistent basis are around 50% to 60% more than what Aurora originally published. For example, Dunedin's \$20 per month GST exclusive real increase from the 2020-2021 monthly bill is more akin to \$30 per month GST inclusive nominal increase.

H30 Our adjustments to the maximum allowable revenue described in Attachment G and our approach to revenue smoothing have reduced the total bill impact considerably across the first three years of the five-year CPP period. In most cases, it has reduced the increases by between 30% to 40%. Coincidentally, our forecasted monthly **nominal** increase in total electricity bills is similar to Aurora's forecasted increase in **real** terms.

H31 There are still some differences between our forecasts and Aurora's. Aurora used an average (or medium) residential consumer in each region, whereas we have used a median consumer profile. There are also some differences in how Transpower's transmission costs have been forecasted. However, we have estimated that these differences are relatively minor.

H32 There is nothing misleading in how Aurora presented its price impacts. It clearly stated that its forecasts were in real terms and excluded GST. The differences in the IRIS smoothing approach are purely due to different approaches being undertaken by us and Aurora in smoothing prices for consumers.

Price comparisons to Aurora's latest pricing announcements

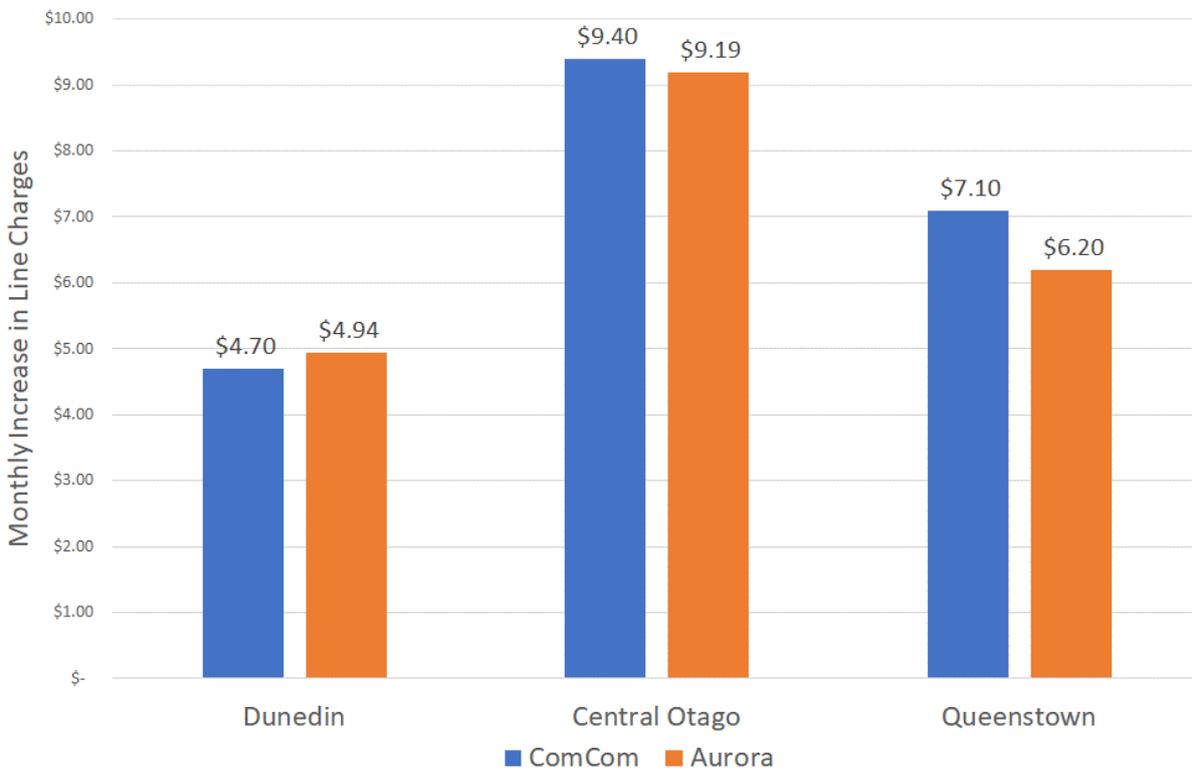
⁷²⁹ These figures differ slightly to those publicly released due to Aurora subsequently restating its forecasts.

H33 Aurora has recently released its line charges for the 1 April 2021 year.⁷³⁰ It also made a press release on 1 March 2021⁷³¹ stating that:

...for a standard residential household consuming on average 9,000 units (kilowatt hours) a year, the lines component of monthly power bills will rise by \$4.94 for Dunedin customers (up by 7.6% on 2020); by \$9.19 for Central Otago and Wanaka customers (up by 8.5%); and by \$6.20 for Queenstown customers (up by 7.6%), effective 1 April.

H34 Figure H7 below compares Aurora’s forecasted price increases to our modelling of the medium consumer profile for each region in the 2021/22 year – as shown in Table H10 above. The line charge increases that Aurora has forecasted are very similar to ours.

Figure H7 Aurora and Commerce Commission forecasted monthly line charge increases for 2021/22



H35 Some of the differences between the two forecasts can be attributed to the change in Aurora’s pricing methodology discussed earlier and our forecasts are based on the medium consumer and Aurora’s are based on an average consumer of 9,000kWh in each region.

⁷³⁰ <https://www.auroraenergy.co.nz/assets/publication-articles/April-2021-Price-change-disclosure-Aurora-Energy-Network.pdf>

⁷³¹ <https://yoursay.auroraenergy.co.nz/news-and-updates>

Attachment I IM variations

Purpose of this attachment

- I1 This attachment outlines our decision on the Input Methodology (IM) variations that we have agreed with Aurora will apply over the CPP period.

Summary of our decision on the IM variations

- I2 Table I1 provides a summary of our decisions on the IM variations.

Table I1 Summary of our decisions on IM variations proposed during the process

IM variation	Our decisions
Operating expenditure incentives (Aurora application)	✗
CPP opex forecast (Aurora application)	✓
Reconsideration mechanisms (Our suggestion)	✓
Definition of 'actual opex' (Our suggestion)	✓
Definition of 'forecast CPI' (Our suggestion)	✓

Structure of this attachment

- I3 This attachment comprises:
- I3.1 Introduction;
 - I3.2 Operating expenditure incentives;
 - I3.3 CPP opex forecast;
 - I3.4 CPP reconsideration mechanisms;
 - I3.5 Definition of 'actual opex'; and
 - I3.6 Definition of 'Forecast CPI'.

Introduction

We may vary an IM that would otherwise apply to Aurora

- I4 In determining a CPP, and with the agreement of Aurora, we may vary an IM that would otherwise apply to Aurora for the CPP regulatory period.⁷³² This attachment outlines the IM variations that we have agreed with Aurora.

⁷³² Commerce Act 1986, Section 53(V)(2)(c).

- I5 Aurora wrote to us to propose variations to IMs for the:⁷³³
- I5.1 Urgent Project Allowance (claw back);⁷³⁴
 - I5.2 Operating expenditure incentives;⁷³⁵ and
 - I5.3 CPP opex forecast.⁷³⁶
- I6 Aurora subsequently withdrew its request for the Urgent Project Allowance.⁷³⁷
- I7 In addition to outlining our decision on the remaining two IM variations proposed by Aurora, this attachment provides our decision on the following additional IM variations that we suggested:
- I7.1 CPP reconsideration mechanisms; and
 - I7.2 Definition of ‘actual opex’.⁷³⁸
- I8 We also made an IM variation to use the most up-to-date forecast CPI for the purposes of setting a price path, as suggested by Aurora in its submission on our draft decision. This variation does not affect the forecasting of revaluation gains, as we continue to use the forecast CPI at the time when the WACC was determined when forecasting revaluation gains.
- I9 Although the agreement for IM variations is between the Commission and Aurora, we invited and received submissions from other stakeholders, as some of the matters raised by Aurora and us could have potential precedent effects for other decisions. We received submissions from Wellington Electricity and Vector Electricity in support of Aurora’s proposed IM variation to use the most up-to-date forecast CPI for the purposes of setting the price path.

⁷³³ Aurora “[Aurora Energy CPP Proposal – Application for IM Variations](#)” (1 June 2020).

⁷³⁴ EDB IMs clause 3.1.3(11).

⁷³⁵ EDB IMs clause 3.3.2(2).

⁷³⁶ EDB IMs clause 5.3.5(1).

⁷³⁷ Aurora withdrew its request for this variation as it determined that the merits of a Urgent Project Allowance were not as great as it anticipated, it would place greater upward pressure on prices and the justification and analysis might be distracting for the Commission and Aurora. See Aurora “[Aurora Energy CPP – Input Methodology \(3.1.3\) Variation Application](#)” (2 September 2020).

⁷³⁸ EDB IMs clause 3.3.3(9).

Our approach to the IM variations

- I10 We have applied the IM amendments decision making framework in deciding whether to agree to the variations applied for by Aurora and those suggested by us.⁷³⁹ Specifically, we considered whether the variations would promote the following outcomes:
- I10.1 promoting the Part 4 purpose in s 52A of the Act more effectively than the current IM;
 - I10.2 promoting the IM purpose in s 52R of the Act more effectively (without detrimentally affecting the promotion of the s 52A purpose); or
 - I10.3 significantly reducing compliance costs, other regulatory costs or complexity (without detrimentally affecting the promotion of the s 52A purpose).
- I11 To give effect to the four IM variations, a deed has been executed by us and Aurora. The IM variations deed is included in Schedule 12 of the CPP determination.

Operating expenditure incentives

- I12 Aurora proposed a variation to clause 3.3.2(2) of the electricity lines company IM, which would allow the IRIS incentive to be spread over two periods to smooth the CPP price path. Aurora considered that this proposal would assist in managing the scale of revenue uplift and potential rate of shock from our CPP decision.⁷⁴⁰
- I13 Our view is that the price path can be smoothed by:
- I13.1 specifying a limit on the annual maximum percentage increase in forecast revenue from prices; and/or
 - I13.2 adjusting the x factor in the ‘maximum allowable revenue before tax’ calculation.

Limit on the annual maximum percentage increase in forecast revenue from prices

- I14 Clause 3.1.1(1)(b) of the IM Determination allows us to limit revenue shocks to consumers caused by increases in the gross revenue that electricity lines companies can earn, after pass-through costs and recoverable costs (which include IRIS amounts) are included.

⁷³⁹ Commerce Commission “Amendments to Electricity Distribution Services Input Methodologies Determination – Reasons paper” (26 November 2019), para 2.18.

⁷⁴⁰ Aurora “[Aurora Energy CPP Proposal – Application for IM Variations](#)” (1 June 2020).

- I15 If the limit is applied, then the electricity lines company's revenue cash flows will be delayed, but any revenue reduction will be able to be recovered in future years, including beyond the current regulatory period, along with a time-value-of-money adjustment.

Adjusting the x factor in the 'maximum allowable revenue before tax' calculation

- I16 The x factor can be any factor we apply to Aurora and it sets a profile for the timing of recovery of the revenues allowed under the CPP price path. We can adjust this factor and this will potentially have the effect of smoothing revenues within the CPP regulatory period, before the addition of pass-through costs and recoverable costs. Attachment G provides greater detail on our decisions on revenue smoothing.

The application for a variation

- I17 With respect to the application for the IM variation, we consider that it is more effective to smooth revenues using those other two mechanisms, since they directly impact allowable revenues, whereas the net IRIS amount is only one component of allowable revenues.
- I18 Since the same or similar outcome can be achieved without an IM variation, we do not consider that this variation would better promote the Part 4 purpose. We also do not consider that the variation would promote certainty for Aurora (see s 52R) or significantly reduce compliance, other regulatory costs or complexity.
- I19 Our decision is not to agree to Aurora's application on this variation.

CPP opex forecast

- I20 Aurora has been transitioning to self-performing of business support functions that had previously been provided by Delta Utility Services (**Delta**), which impacts how operating costs are allocated. Therefore, Aurora proposed a variation to clause 5.3.5 of the electricity lines company IMs, which currently requires Aurora to have consistent operating costs with its current or most recent ID disclosures. This would understate the forecast operating costs due to Aurora's operating structure change.
- I21 Clause 5.3.5 of the electricity lines company IMs requires consistent cost allocation except for where there is a sale of assets. The intention was that by maintaining consistent allocation, incentives for improved efficiencies from engaging in other activities remained the same throughout the CPP regulatory period (subject to the sale of assets exception).
- I22 We have estimated that the requested variation would increase Aurora's maximum allowable revenue by approximately \$4 million over the five-year CPP period.

- I23 Aurora's change to its operating structure followed a 2016 independent review by Deloitte. It found that the current operating structure at that time did not optimise the performance of some parts of the business. One of its recommendations was to enter into a service provision agreement for a fixed period of time with Delta, for certain core services, to allow for a sensible transition to the proposed internal cost structure. Aurora began the transition to its new operating structure in 2018, and the remaining shared support will be phased out by 2023.
- I24 We consider that a restructure of this size and nature is analogous to a corporate restructuring, such as a sale. Therefore, although not explicitly provided for under the current IMs, we consider it is appropriate for Aurora to be able to recover the forecast operating costs that reflect its updated, and potentially more efficient, structure.
- I25 The IM variation will allow Aurora to recover a better reflection of its costs that it is likely to incur. This is consistent with the Financial Capital Maintenance principle. Therefore, we consider that a variation to clause 5.3.5(1) of the electricity lines company IMs better promotes the Part 4 purpose. Our decision is to accept Aurora's proposed IM variation on this matter.

CPP reconsideration mechanisms

- I26 Aurora applied for a three-year CPP period because of uncertain expenditure forecasts in the medium to long term.⁷⁴¹
- I27 To address the uncertainty that might arise due to us determining a five-year CPP period, we sought and obtained Aurora's agreement on an IM variation to introduce new reconsideration mechanisms for:
- I27.1 work that is dependent on capacity requirement, caused by a change in security of supply, or an increase in demand or generation on Aurora's network (referred to in the IM variation deed as the 'capacity event' reconsideration); and
 - I27.2 risk events relating to the condition of the network where the need or solution was uncertain when the CPP was determined (referred to in the IM variation as the 'risk event' reconsideration).

Capacity event

- I28 The capacity event reconsideration mechanism will allow us to reconsider the CPP if Aurora demonstrates that it needs additional capacity on its network.

⁷⁴¹ [Aurora Energy "Customised Price-Quality Path Application" \(12 June 2020\)](#), para 3; [Aurora Energy "Submission on Aurora Energy's Issues paper" \(20 August 2020\)](#), para 189.

- I29 The capacity event reconsideration mechanism, to an extent, mirrors the DPP reconsideration provisions that we introduced prior to setting DPP3.⁷⁴² Therefore, it allows us to provide additional funding where investment is required due to:
- I29.1 large connections (including alteration to existing connections);
 - I29.2 large system growth;
 - I29.3 combination of large connections and system growth; and
 - I29.4 large asset relocation.
- I30 Our view is that it is appropriate for us to reconsider the CPP if additional capacity is required on Aurora's network, and Aurora can demonstrate that it needs to invest during the CPP period for that purpose. Aurora will also need to show us that the need for the additional capacity was not sufficiently certain or could not reasonably have been foreseen by Aurora at the time we determined the CPP. This includes investment that was:
- I30.1 unforeseen at the time Aurora applied for the CPP;
 - I30.2 foreseen, but the need was uncertain at the time we determined the CPP; or
 - I30.3 foreseen and provided for in the CPP, but increased demand means that the allowance provided for in the CPP was too low.
- I31 The threshold for reconsidering the CPP due to a capacity event is two million dollars above any allowance for that investment that was provided for in the DPP or CPP. We consider that this is an appropriate threshold as it is in line with the following projects and programmes that Aurora proposed in its CPP application, where we have concluded that the need was not sufficiently certain to provide for expenditure in the CPP:
- I31.1 the Smith St to Willowbank intertie project; and
 - I31.2 \$2.1 million of consumer connections capex.

⁷⁴² [Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 - Final decision" \(27 November 2019\), Attachment G.](#)

- I32 We consider that if Aurora establishes that it needs additional capacity on its network and the projects listed above are required, it is appropriate for us to reconsider the CPP. We provide further information on our decision on these two projects and programmes in Attachment D of this paper. We also consider that it is appropriate for us to reconsider the CPP for similar projects that were not foreseen or certain at the time the CPP was determined.
- I33 We expect a capacity event would meet certain conditions, including the expenditure objective,⁷⁴³ which means that:
- I33.1 the capital expenditure and operating expenditure reflects the efficient costs that Aurora would require to meet or manage the expected demand, at appropriate service standards; and
 - I33.2 it complies with applicable regulatory obligations.

Risk event

- I34 The risk event reconsideration mechanism will allow us to reconsider the CPP if Aurora establishes that part of its network will deteriorate to the extent that failing to invest during the CPP period in taking steps to remedy the deterioration beyond the allowance provided for in the CPP would:
- I34.1 materially adversely affect its ability to meet its quality standards; or
 - I34.2 compromise safety for any person, equipment, the network or an embedded network.
- I35 Aurora will need to demonstrate that, at the time we made our CPP decision, one or both of the need to address the deterioration, and the most suitable and efficient investment solution to do so, was not sufficiently certain. This could have potential application to the Smith St to Willowbank intertie project (rather than as a capacity event) depending on the solution that Aurora proposes.
- I36 We consider this risk event reconsideration mechanism is appropriate for Aurora's specific circumstances because of the level of risk Aurora may be carrying that was not forecast when it submitted its CPP application.
- I37 The threshold for reconsidering the CPP due to a risk event is two million dollars above any allowance for that investment that was provided for in the DPP or CPP. We consider this is an appropriate threshold considering that it is intended to capture similar sized investment as a capacity event.

⁷⁴³ We have also made a minor variation to the definition of 'expenditure objectives' to better align the definition to electricity distribution services.

I38 Our view is that a risk event is an event where additional investment cannot be delayed until a future regulatory period without compromising safety or adversely affecting Aurora's ability to meet its quality standards. In order for a risk event to qualify for reconsideration, the remediation investment would have to meet the expenditure objective, as discussed above. Aurora will also need to demonstrate this with a probabilistic risk assessment.

How introducing new reconsideration mechanisms promotes the Part 4 purpose

I39 By allowing us to reconsider the CPP in relation to events that could not be foreseen at the time the CPP was determined, we consider this variation promotes the Part 4 purpose by enabling Aurora to invest in its network if further investment is required, consistent with s 52A(1)(a).

Definition of 'actual opex'

I40 We have previously made an IM amendment that explicitly excludes pecuniary penalties from operating costs.⁷⁴⁴ This IM amendment only came into effect for DPP3 (starting 1 April 2020) and was not in effect for DPP2.

I41 The \$5 million penalty that the High Court imposed on Aurora for breaching its quality standards for the 2016-2019 period was incurred on 23 March 2020.⁷⁴⁵ This means that without an IM variation the penalty will get included in the IRIS calculation for DPP2 as 'actual opex', the cost of which would then be shared with consumers during DPP3.

I42 We note that Aurora has excluded the penalty from its information disclosure, indicating that it has been removed from its regulatory accounts. This means that Aurora has effectively borne the full cost of the penalty. However, this approach is at odds with the IMs that applied at the time the cost was incurred.

I43 At our stakeholder engagement sessions consumers expressed concern that the cost of the High Court imposed penalty could be passed to consumers. They also wanted us to report back on whether the penalty was included in the CPP.

I44 We have agreed with Aurora to remove the penalty from the definition of 'actual opex', which means the penalty is not included in the setting of Aurora's CPP price path.

⁷⁴⁴ Electricity Distribution Services Input Methodologies Amendments Determination (No. 2) 2019 [2019] NZCC 20.

⁷⁴⁵ *Commerce Commission v Aurora Energy Limited* [2020] NZHC 610 [23 March 2020].

I45 We consider that this IM variation promotes the Part 4 purpose by ensuring that consumers do not bear the High Court imposed fine.

Definition of 'Forecast CPI'

I46 In developing the draft Aurora CPP price path, we used forecasts from 2019 for the expected changes in CPI instead of the most recent CPI forecasts. This is because the IMs require us to use the forecasts of CPI from prior to the date the WACC rate applied in the CPP was determined (25 September 2019) to model both the price path and forecast revaluation gains.

I47 We ideally use the most up to date forecast of all cost components, including the CPI, to set the CPP price path. Using up-to-date forecasts should produce more accurate estimates of costs over time than older forecasts.

I48 As part of its submission on our draft decision, Aurora proposed an IM variation to allow the use of a more up-to-date forecast of CPI for the purpose of setting its price path.⁷⁴⁶ It provided suggested draft wording of the definition of 'Forecast CPI' for the proposed variation to clause 3.1.1(8) of the IMs.

I49 An IM variation to this effect reduces the risk of revenue under-recovery and allows Aurora to recover a better reflection of its costs.

I50 Aurora's proposed IM variation was supported by submissions from Wellington Electricity⁷⁴⁷ and Vector Electricity.⁷⁴⁸

I51 We consider that a variation to clause 3.1.1(8) of the electricity lines company IMs better promotes the Part 4 purpose and on this basis we agreed to the proposed IM variation.

⁷⁴⁶ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020, p. 71-72](#)

⁷⁴⁷ [Wellington Electricity – Submission on draft decision for Aurora's CPP – 17 December 2020, p. 3](#)

⁷⁴⁸ [Vector Electricity – Submission on draft decision for Aurora's CPP – 18 December 2020, p. 3](#)

Attachment J **Our decision on technical changes we proposed to CPP determination**

Purpose

J1 The purpose of this attachment is to outline two technical changes to our draft CPP determination that we recently consulted on,⁷⁴⁹ the relevant points that submitters raised in our technical consultation, our decision on the technical changes, and the reasons for our decision.

Summary of our decision on the two technical changes

J2 The two technical changes we proposed would:

J2.1 provide for the impact on Aurora's allowed revenue and quality standards in the event that Aurora buys or sells network assets over the CPP period and therefore changes the number of customers Aurora supplies (technical change #1); and

J2.2 enable Aurora to set prices for the year starting 1 April 2021 based on our decision on Aurora's allowed revenue under the CPP (technical change #2).

J3 In summary, for the reasons we set out below, our decision is to:

J3.1 adopt technical change #1 into the CPP determination; and

J3.2 not adopt the main amendments for technical change #2 relating to the 2021-2022 year, but adopt the proposed amendments to clauses 11.1(a)(iii) and 11.2(b)(ii) into the CPP determination.

We consulted on two technical changes to our draft CPP determination

J4 After publishing our draft decision on Aurora's CPP proposal in November 2020, we identified two technical changes we considered should be made to the draft CPP determination. We consulted on the policy and drafting for these two changes in February 2021.

⁷⁴⁹ Commerce Commission, *Consultation on two technical changes to our draft determination for Aurora's proposal to customise its prices and quality standards* (technical consultation paper), 4 February 2021, available at: https://comcom.govt.nz/_data/assets/pdf_file/0018/233370/Aurora-CPP-Consultation-paper-on-two-technical-changes-to-Auroras-draft-CPP-determination-4-February-2021.pdf. The proposed drafting that accompanied our consultation paper is available at: https://comcom.govt.nz/_data/assets/pdf_file/0026/233369/Attachment-A-Technical-consultation-version-of-draft-Aurora-CPP-determination-4-February-2021.pdf.

- J5 The two changes we proposed are ‘technical’ in nature because they focus on how particular parts of the CPP operate, rather than specifying its key features – Aurora’s maximum regulated revenue and quality standards. The two technical changes relate to:
- J5.1 how the CPP determination treats certain business transactions Aurora might enter into, where Aurora either acquires or disposes of network assets, and which involve a transfer of consumers to or from Aurora’s network (technical change #1); and
 - J5.2 allowing Aurora, which was subject to the DPP up to 31 March 2021, to set its prices for the year starting 1 April 2021 (2021-2022 year) based on its allowed revenue under our CPP decision (technical change #2).
- J6 Our technical consultation paper did not seek views on any other aspects of our draft CPP decision outside of the two proposed technical changes. We received five submissions on our consultation on the two changes.⁷⁵⁰ We appreciate submitters’ efforts to provide their views and we have taken account of relevant points they raised in coming to our decision on the two technical changes. Two submissions raised points that were outside the scope of our technical consultation paper, which sought submissions only on the two technical changes proposed.

Technical change #1: Adjusting the CPP for the effects of transfers

If Aurora buys or sells network assets, we consider the CPP should provide for the impact on Aurora’s allowed revenue and quality standards

- J7 When an EDB such as Aurora buys or sells network assets from or to another EDB, this transaction will result in Aurora supplying more or fewer consumers, respectively. If the EDB involved is price-quality regulated,⁷⁵¹ as Aurora is, adjustments should be made to its price path and quality standards to reflect the changes in the scale of the regulated services the EDB will supply after the transfer.

⁷⁵⁰ All submissions on the technical consultation paper can be viewed at: <https://comcom.govt.nz/regulated-industries/electricity-lines/projects/our-assessment-of-aurora-energys-investment-plan?target=documents&root=233368>.

⁷⁵¹ That is, an EDB for which we set maximum revenues and quality standards, through the operation of s 54G of the Act (also known as a ‘non-exempt EDB’ or ‘price-quality regulated EDB’). We do not set maximum revenues and quality standards for the other ‘exempt’ EDBs.

- J8 Such adjustments ensure the EDB’s price path and quality standards reflect the scope and scale of the regulated services the EDB supplies at any stage in the regulatory period. This helps limit the EDB’s ability to make excessive profits and encourages it to provide services at a price and quality that reflects consumer demands – which is to the long-term benefit of those consumers.⁷⁵²
- J9 Our input methodologies allow us to reopen a CPP or DPP to adjust the relevant price path and quality standards for a transaction in which:
- J9.1 two price-quality regulated EDBs merge (merger);⁷⁵³ or
- J9.2 a price-quality regulated EDB acquires or disposes of network assets with a value equivalent to more than 10% of the total value of the EDB’s regulated assets at the start of the relevant year (major transaction).⁷⁵⁴
- J10 Our technical change #1 sought to also provide for any situation in which Aurora entered into a transaction that was not a merger or a major transaction (ie, it is a ‘transfer’) during the CPP period. This is because, before we proposed the technical change, our draft CPP determination would not have adjusted Aurora’s price path or quality standards to reflect the change to the scope and scale of the regulated services Aurora would supply after such a transfer.
- J11 Similarly, the draft CPP determination would also not have required Aurora to provide information and calculations in its annual compliance statement on any such transfer Aurora entered into during a CPP assessment period (ie, in a year running from 1 April to 31 March of the next calendar year).

As is the case for other EDBs on the DPP, we considered the CPP determination should adjust Aurora’s price path and quality standards following a transfer

- J12 In our technical consultation paper, we considered there was no persuasive reason to take a different approach to transfers under the CPP determination than under the DPP determination – which adjusts an EDB’s price path and quality standards after a transfer (not just a merger or major transaction via the IMs). We note that Aurora has been subject to the DPP, and it would continue to be so in the absence of the CPP.

⁷⁵² Section 52A(1)(d) and (a) of the Act, respectively.

⁷⁵³ Clause 3.2.1 of the *Electricity Distribution Services Input Methodologies Determination 2012* [2012] NZCC 26. A consolidated version (as at 20 May 2020) of the IMs can be viewed at: https://comcom.govt.nz/data/assets/pdf_file/0017/60542/Electricity-distribution-services-inputmethodologies-determination-2012-consolidated-20-May-2020-20-May-2020.pdf.

⁷⁵⁴ Clauses 4.5.4 and 4.5.6–4.5.7 and clauses 5.6.4 and 5.6.7–5.6.8 of the IMs.

- J13 We considered the policy behind the DPP approach to transfers should also apply to the CPP, and for that reason, the change we proposed to the draft CPP determination followed the approach of the DPP determination.⁷⁵⁵ This included following the DPP approach for transfers Aurora might make with an exempt EDB, and for mergers and amalgamations that are not major transactions.⁷⁵⁶
- J14 Our view was, and is, that enabling Aurora’s CPP to be adjusted for the effects of all types of transfers, and for mergers and amalgamations that are not major transactions, would be consistent with the DPP and would ensure that at all times the CPP best reflects the scope and scale of the regulated services Aurora supplies.
- J15 We also considered the CPP should adopt the DPP’s annual reporting requirements relating to transfers occurring in the previous assessment period. This would align the CPP with the DPP in this regard and allow Aurora’s customers to understand the effects of a transfer (or a major transaction, amalgamation, or merger) on Aurora’s price path and quality standards.

Submitters acknowledged the practicality of aligning the CPP treatment of transfers with the DPP provisions

- J16 In his submission on our technical consultation paper, Mike Rodriguez considered this technical change is a positive change, ‘closing a loop’ in aligning the CPP with the DPP.⁷⁵⁷

⁷⁵⁵ In resetting the DPP, we consulted on the policy behind the DPP approach to transfers, which we consider should apply to Aurora’s CPP, at paragraphs 6.59—6.66 of our *Default price-quality paths for electricity distribution businesses from 1 April 2020 – Draft decision*, 29 March 2019, available at: https://comcom.govt.nz/_data/assets/pdf_file/0023/149801/Default-price-quality-paths-for-electricitydistribution-businesses-from-1-April-2020-Draft-Reasons-paper-29-May-2019.pdf. We received no submissions on that approach and finalised it in our *Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision*, 27 November 2019, available at: https://comcom.govt.nz/_data/assets/pdf_file/0020/191810/Default-price-quality-paths-for-electricitydistribution-businesses-from-1-April-2020-Final-decision-Reasons-paper-27-November-2019.PDF. As we note in our analysis below of the submissions on our technical consultation, Aurora identified in its submission that, compared to the DPP drafting, our CPP determination drafting for technical change proposed a number of wording differences for readability and clarity purposes.

⁷⁵⁶ ‘Amalgamation’ and ‘major transaction’ are defined in the IMs, and our CPP determination contains a definition of ‘merger’.

⁷⁵⁷ [Mike Rodriguez - Submission on targeted consultation on changes to draft determination for Aurora's CPP - 4 February 2021.](#)

- J17 Aurora recognised the approach was consistent with the DPP, and that similar intent, if not drafting, was included in the Powerco CPP.⁷⁵⁸ Aurora also suggested that, for the sake of efficiency, the requirements for transfers that are not mergers or major transactions be incorporated into the IMs at the next scheduled IM review.
- J18 Aurora observed that our drafting for this technical change differs compared to the equivalent drafting in the DPP determination, but noted the differences appeared to be for reasons of readability and clarity. Aurora also identified two typographical errors. We confirm Aurora is correct regarding our intention of refining the drafting from the DPP for readability and clarity purposes, and we also appreciate the drafting feedback and two typographical errors identified.

Our decision: include technical change #1 in Aurora's CPP determination

- J19 Having taken account of the relevant points raised in submissions, and for the reasons summarised above, our decision is to provide for technical change #1 on transfers in Aurora's CPP determination. This includes adopting minor drafting refinements to address the two typographical errors that Aurora identified in its submission.
- J20 The drafting providing for technical change #1 is in clauses 10 and 11.4 of the CPP determination.

Technical change #2: A better basis for setting prices for the 2021-2022 year

Aurora was required to set prices for the year starting 1 April 2021 using the DPP rules, but Aurora is now on a CPP

- J21 In December 2020, Aurora sought guidance from us on the basis it should use for setting its prices for the 2021-2022 year starting on 1 April 2021.⁷⁵⁹
- J22 Because Aurora had to set those prices before we finalised our CPP decision, the potential solutions for setting prices included using its allowed revenue under the DPP or its allowed revenue under our draft CPP determination.

⁷⁵⁸ [Aurora Energy - Submission on targeted consultation on changes to draft determination for Aurora's CPP - 18 February 2021](#). Aurora also suggested that, for the sake of efficiency, the requirements for transfers that are not mergers or major transactions are incorporated into the IMs at the next scheduled IM review.

⁷⁵⁹ Aurora's letter of 21 December 2020 to us on this matter and our response of 23 December 2020 can be viewed at: <https://comcom.govt.nz/regulated-industries/electricity-lines/projects/our-assessment-of-auroraenergys-investment-plan?target=documents&root=231108>.

- J23 The DPP governed Aurora's allowed revenue until the CPP comes into force on 1 April 2021. Under clause 8.4 of the DPP determination, Aurora had to set its prices based on its allowed revenue under the DPP for the 2021-2022 year. Aurora also had to provide a price-setting compliance statement before the start of the 2021-2022 year confirming that it has set its prices according to the DPP determination.⁷⁶⁰
- J24 Given that Aurora would be subject to a CPP from the start of the 2021-2022 year,⁷⁶¹ and the CPP determination would set a different allowed revenue (and basis for setting prices) for Aurora compared to the DPP, in the technical consultation paper we said we considered it would not be practical or sensible to enforce the above DPP price-setting requirements.
- J25 We also considered it appropriate to propose a solution to address the matter:
- J25.1 given Aurora must give notice of any price change to electricity retailers on its network; and
- J25.2 so that, if, after considering submissions, we decided to adopt technical change #2, we could incorporate it into our decision on Aurora's CPP proposal.

We proposed changes to the draft CPP determination to allow Aurora to set prices based on our CPP decision

- J26 In our response of 23 December 2020 to Aurora's letter, we confirmed to Aurora that given it would be subject to a CPP from the beginning of the 2021-2022 year, we did not intend to enforce the price-setting provisions of the DPP determination.⁷⁶²
- J27 As signalled in our letter, our technical consultation paper proposed changes to the draft CPP determination to:⁷⁶³
- J27.1 allow Aurora, if it considers necessary, to change the prices it had already set before 1 April 2021 for the 2021-2022 year during the 2021-2022 year so that its forecast revenue from prices for that first year of the CPP period will not exceed its allowed revenue for that year under our CPP determination;
- J27.2 set a fixed timeframe of 60 working days after 1 April 2021 for Aurora to:

⁷⁶⁰ Clauses 11.1 to 11.3 of the DPP determination.

⁷⁶¹ Under s 53T of the Act, once we decide that a CPP proposal complies with the IMs relating to the process for, and content of, CPP proposals, we must make a CPP determination within 150 working days, subject to ss 53U and 53Z of the Act. We issued a notice advising that Aurora's CPP proposal was complete and compliant with the IMs on 7 August 2020.

⁷⁶² See above n 12.

⁷⁶³ Technical consultation paper, above n 1, at paras 30 to 35.

- J27.2.1 make those changes to its prices for the 2021-2022 year; and
- J27.2.2 provide us with a CPP price-setting compliance statement to show that its updated prices comply with the allowed revenue under the CPP for the 2021-2022 year; and
- J27.3 if Aurora changes its prices at any other time during an assessment period in the CPP period, require Aurora to provide us with a CPP price-setting compliance statement before the updated prices take effect.
- J28 Our view outlined in the technical consultation paper was that the above changes would enable Aurora, if necessary, to align its prices for the 2021-2022 year with our CPP decision on the allowed revenue for that year once this decision is published. This in turn would ensure Aurora complied with our CPP determination and would enable a smoother transition from the DPP to the CPP.
- J29 We also considered that allowing Aurora to set its prices based on its allowed revenues during the CPP period will encourage it to invest in repairing and upgrading its network by enabling it to recover the costs of doing so in an appropriate timeframe.⁷⁶⁴

Submitters expressed differing views on technical change #2

- J30 In its submission, the Queenstown Lakes District Council (QLDC) did not support allowing Aurora to change its prices after the CPP commences on 1 April 2021 to align with our decision on Aurora's allowed revenue under the CPP. The QLDC considered that doing so would mean:⁷⁶⁵

[QLDC] communities will experience two price changes in rapid succession, creating unnecessary confusion and budgetary disruption.

- J31 QLDC therefore recommended that:⁷⁶⁶

Aurora should not be permitted to make price changes until such a time as they have received the Commission's decision and made the necessary notifications that prices will change. A single price change that takes into account the final decision would be a simple and logical approach that provides clarity for our communities.

⁷⁶⁴ This promotes the s 52A(1)(a) limb of the purpose of Part 4 of the Act by giving Aurora "incentives to innovate and to invest, including in replacement, upgraded and new assets".

⁷⁶⁵ [Queenstown Lakes District Council - Submission on targeted consultation on changes to draft determination for Aurora's CPP - 15 February 2021](#), p. 1.

⁷⁶⁶ [Queenstown Lakes District Council - Submission on targeted consultation on changes to draft determination for Aurora's CPP - 15 February 2021](#), p. 1.

- J32 We acknowledge the potential for two price changes in short succession to be confusing and disruptive.⁷⁶⁷ However, consistent with QLDC's submission, our intention behind technical change #2 was to ensure Aurora can and does set its prices based on our decision on its allowed revenue under the CPP.
- J33 Technical change #2 recognised that although Aurora was moving to the CPP, under the DPP, before 1 April 2021, Aurora had to set its prices for the 2021-2022 year starting 1 April 2021. If there had been a difference between the allowed revenue Aurora used in setting prices under the DPP and Aurora's allowed revenue under our CPP decision,⁷⁶⁸ a second price change would have been necessary to allow Aurora to resolve that difference and align its prices with its allowed revenue under the CPP.
- J34 However, we also note in relation to QLDC's submission that, in its submission on technical change #2, Aurora advised that:⁷⁶⁹
- J34.1 Aurora's price change under the DPP would be based on the allowed revenue for the 2021-2022 year under the draft CPP determination; and
- J34.2 if our final CPP determination set a materially different allowed revenue for the 2021-2022 year compared to the draft CPP determination, then Aurora would do a further price change, in line with technical change #2.
- J35 Our CPP decision is to set Aurora's allowed revenue for the 2021-2022 year at the same figure we set it at under our draft decision: \$107,112,000. This, coupled with the fact that Aurora has set its prices for the 2021-2022 year based on our draft decision, means the main amendments for technical change #2 are not needed.⁷⁷⁰ In terms of QLDC's submission, we do not see any reason under our CPP decision or CPP determination for Aurora to change the prices it has set for the 2021-2022 year based on our draft decision.

⁷⁶⁷ We note that under clause 7.5(a) of Aurora's *Default Distributor Agreement*, June 2020, except where it is otherwise required by law, Aurora must give electricity retailers 40 working days' notice of a price increase. Aurora has designed clause 7.5(a) (and its distributor agreement as a whole) to be consistent with clause 7.5(a) of the Electricity Authority's *Default Distributor Agreement Template*, available at: <https://www.ea.govt.nz/assets/dms-assets/26/26872DDA-Template-Track-Changes-following-2019-consultation.pdf>.

⁷⁶⁸ Under our draft decision, Aurora's allowed revenue for the 2021-2022 year was \$107,112,000. We have set the same allowed revenue for the 2021-2022 year under our CPP decision as that which we set under our draft decision: \$107,112,000.

⁷⁶⁹ [Aurora Energy - Submission on targeted consultation on changes to draft determination for Aurora's CPP - 18 February 2021](https://www.auroraenergy.co.nz/news/2021/distribution-prices-set-based-on-commerce-commission-draft-decision/). On 1 March 2021, Aurora also publicly advised that it would be setting its initial prices for the 2021-2022 year based on the allowed revenue in our draft CPP decision. See: <https://www.auroraenergy.co.nz/news/2021/distribution-prices-set-based-on-commerce-commission-draft-decision/>.

⁷⁷⁰ The main amendments we proposed for technical change #2 to accommodate a price change for the 2021-2022 year after the year had started were to clauses 8.5 and 11.1(a)(i) of the draft CPP determination.

J36 In relation to our proposed technical change #2 to the CPP determination's price-setting compliance statement provisions, Aurora further submitted:⁷⁷¹

We are unclear as to the intent of clause 11.1(a)(iii) [of the draft CPP determination]; however, we interpret it to provide an option to refresh all components of both forecast allowable revenue and forecast revenue from prices (including, for example, unforeseen changes in recoverable costs in the period). We request the Commission clarify the intent of clause 11.1(a)(iii) in its final decision.

J37 We advise that clause 11.1 of the CPP determination does not dictate when, or how frequently, Aurora can change its prices. These are matters regulated under the Electricity Authority's Default Distributor Agreement arrangements.⁷⁷²

J38 Rather, as we sought to convey in the technical consultation paper,⁷⁷³ our intention behind clause 11.1(a)(iii) of the CPP determination was that if Aurora changes its prices at any other time during an assessment period of the CPP period, it is appropriate to require Aurora (before the updated prices take effect) to publish and provide us with a price-setting compliance statement showing compliance with the allowed revenue under the CPP determination for that assessment period. Setting a requirement to this effect would give Aurora's customers comfort upfront that Aurora's updated pricing complies with the CPP price path.

J39 For the following reasons, we no longer consider the new clause 11.1(a)(iii) we proposed with technical change #2 is necessary:

J39.1 there is no further need for technical change #2's amendments relating to the 2021-22 year; and

J39.2 any price change Aurora makes during an assessment period will be washed up and visible in the annual compliance statement Aurora provides for that assessment period no later than five months after the end of the period.

⁷⁷¹ Aurora Energy - Submission on targeted consultation on changes to draft determination for Aurora's CPP - 18 February 2021, p. 2.

⁷⁷² See clauses 7.2 to 7.7 of the Electricity Authority's *Default Distributor Agreement Template*, above n 18, and Schedule 12A.1 of the Electricity Industry Participation Code 2010, available at: <https://www.ea.govt.nz/assets/TheCodeParts/Full-Merged-Code-1-February-2021-as-at-5-Feb-21.pdf>.

⁷⁷³ Technical consultation paper, above n 1, at para 34.

- J40 Mike Rodriguez submitted that he understood the need for Aurora to give advance notice of a price change. However, he considered that the price change process would lack transparency and proper order if Aurora set its prices to apply from 1 April 2021 before we made our final decision on Aurora's allowed revenue under the CPP determination to apply from the same date. He considered that this apparent discrepancy meant technical change #2 should not be included in the CPP determination.⁷⁷⁴
- J41 In response, we note that the CPP and DPP regimes require Aurora and other price-quality regulated EDBs to set their prices for a year on a forward-looking basis before the start of that year, based on their maximum allowed revenue from prices we have set in advance for that year.
- J42 Technical change #2 sought to recognise that, if the allowed revenue Aurora used in setting prices under the DPP differed from Aurora's allowed revenue under our CPP decision for the 2021-2022 year, it would have been appropriate to allow Aurora to resolve that difference by changing its prices to align with its allowed revenue for that year under the CPP.

Our decision: do not include the main amendments for technical change #2 in Aurora's CPP determination

- J43 Having taken account of the relevant points raised in submissions, and for the reasons summarised above, our decision on technical change #2 is to:
- J43.1 not proceed with the main amendments our technical consultation paper proposed to clauses 8.5 and 11.1(a)(i); and
 - J43.2 increase the timeframe we proposed in our draft CPP determination for Aurora to provide the first price-setting compliance statement under clause 11.1(a)(i) from five working days to 20 working days. We consider the increased timeframe is more reasonable given Aurora will be immediately occupied with the other aspects of our CPP decision; and

⁷⁷⁴ [Mike Rodriguez - Submission on targeted consultation on changes to draft determination for Aurora's CPP - 4 February 2021.](#)

Attachment K Limit on forecast revenue from prices

Purpose

- K1 The purpose of this attachment is to describe a method which sets out the annual calculation of the adjusted percentage limit on the annual maximum percentage increase in Aurora's forecast revenue from prices (often referred to as the 'revenue cap'). Each annual adjustment to the revenue cap will be made under our price-quality path decisions and in accordance with the IMs.⁷⁷⁵
- K2 Further details on our price path decisions can be found in Attachment G.

Overview

- K3 We have set Aurora's price path for the CPP period based initially on a limit on the annual maximum percentage increase in forecast revenue from prices of 10% nominal, as described in Attachment G.
- K4 After considering submissions from Aurora and others that argued that the nominal percentage limit should be treated as a combination of a real component and an inflation component, with the inflation component being adjusted during the CPP period, we made a decision to require the revenue cap to be adjusted for years 2 to 5 of the CPP period to reflect any change in the forecast CPI at the time Aurora sets its pricing each year (see Attachment G).
- K5 Submissions also proposed that due to uncertainties relating to the forecast Transpower transmission charges during the CPP period, a similar adjustment should be allowed for transmission charges as well, otherwise recovery of required transmission investments, including new investment contracts, might be deferred to the next regulatory period. However, Aurora proposed that this issue be addressed by applying the cap to allowable revenue, rather than to forecast allowable revenue.⁷⁷⁶ We have made a decision to require the revenue cap to be adjusted for years 2 to 5 to reflect any increases in forecast transmission charges (including new investment contract charges) as advised to Aurora by Transpower when it sets its pricing each year.

⁷⁷⁵ Electricity Distribution Services Input Methodologies Determination 2012 [2012] NZCC 26, clause 3.1.1(1)(b).

⁷⁷⁶ [Aurora Energy – Main submission on draft decision for Aurora's CPP – 18 December 2020](#), paras 115-116.

- K6 As the revenue cap effectively sets the profile of the price path and determines the rate at which Aurora may recover its allowable revenues from its customers, and also due to some deferral of revenues reflected by applying the 10% revenue cap, which we refer to in the CPP determination as the 'provisional' revenue cap, we have decided that Aurora will not be required to apply a symmetrical approach to adjustments to the transmission component within the revenue cap.
- K7 In contrast, because the forecast CPI component of the revenue cap will have a symmetrical adjustment treatment (ie, it may result in increases and decreases), the revenue cap will fall if the forecast CPI falls below the initial value for the forecast CPI that we have set in each year for the smoothed price path. Depending on what is happening with transmission charges at that time, it is also possible that the revenue cap may reduce below 10% nominal, which would have a price benefit for Aurora's consumers.
- K8 If transmission charges fall such that the 10% cap would otherwise reduce, Aurora will be able to maintain the 10% cap level, subject to what is happening at that time with the CPI, which could bring forward some of the revenues that have been deferred into the hypothetical second regulatory period.
- K9 The approach set out in this Attachment K is intended to result in a simplified methodology. Our aim is that any adjustments that Aurora will make will not be complex and that the level of accuracy will be commensurate with the judgement applied in setting the initial 10% nominal level of the revenue cap.

Implementation of an adjustment methodology

- K10 In this Attachment K we describe the principles that we specify for Aurora in the CPP determination for it to apply in making the CPI and transmission charges adjustments to the revenue cap.

Annual revenue cap compliance by Aurora

- K11 The initial limits on the annual percentage increase in forecast revenue from prices are set under clause 8.4 and Schedule 1.7 of the CPP determination at 10% per annum.
- K12 When Aurora sets its prices each year, under clauses 11.1 and 11.2 of the CPP determination it will be required to provide us with a price setting compliance statement, which includes certification by at least one director of Aurora and supporting calculations to demonstrate Aurora's compliance with the revenue cap.
- K13 The approach that Aurora must apply to adjust the revenue cap each year is set out under Schedule 1.9 of the CPP determination.

- K14 When Aurora is about to apply an adjustment to the revenue cap, it will be required under the CPP determination to provide us with its detailed model for the adjustments to us at least 20 working days before applying it in setting its prices. This will provide us with the opportunity to notify Aurora if we consider that the methodology it proposes to apply to the adjustment does not comply with the revenue cap requirements.
- K15 Aurora will be required to publicly disclose a copy of the documented model in support of an adjusted revenue cap at the same time as it provides the applicable price setting compliance statement to us.

General principles of the methodology

- K16 We have set three groups of baseline numbers in the CPP determination which form initial reference points from which Aurora must make forecast CPI and transmission charge adjustments to adjust the revenue cap each year:
- K16.1 Total forecast allowable revenue;
 - K16.2 Forecast CPI percentage; and
 - K16.3 Forecast transmission charges.
- K17 The initial total forecast allowable revenue numbers are:
- K17.1 2021/22: \$107,112,000;
 - K17.2 2022/23: \$117,823,000;
 - K17.3 2023/24: \$129,605,000;
 - K17.4 2024/25: \$142,566,000; and
 - K17.5 2025/26: \$156,822,000.
- K18 The 2021/22 revenue cap is not adjustable, as the cap is set by reference to the forecast revenue from prices for the first year of DPP3 and a fixed revenue cap of 10%.
- K19 The initial forecast CPI percentage numbers, which are the same as used in setting the price path, are (rounded):
- K19.1 2021/22: 1.0%;
 - K19.2 2022/23: 1.2%;
 - K19.3 2023/24: 2.0%;

- K19.4 2024/25: 2.1%; and
- K19.5 2025/26: 2.1%.
- K20 As for the total forecast allowable revenue, the forecast CPI percentage is not adjustable for the 2021/22 revenue cap.
- K21 For completeness we note that for simplicity we have specified the CPI adjustment to the revenue cap differently from the calculation method for the derived change in the CPI to be applied after each assessment period in calculating the wash-up amount for that CPP assessment period.⁷⁷⁷
- K22 The initial forecast Transpower transmission charge numbers, which we used in the pass-through costs when setting the initial smoothed price path in Attachment G, are:
- K22.1 2021/22: \$22,419,000;
- K22.2 2022/23: \$22,853,000;
- K22.3 2023/24: \$22,310,000;
- K22.4 2024/25: \$23,776,000; and
- K22.5 2025/26: \$24,251,000.
- K23 As for the total forecast allowable revenue, the forecast Transpower transmission charges are not adjustable for the 2021/22 revenue cap.
- K24 Each year Aurora will need to obtain in about December each year:
- K24.1 Reserve Bank forecast CPI percentage movements for the last four preceding quarters to enable an average annual forecast CPI to compare against the baseline forecast CPI number set out above; and
- K24.2 Updated forecasts for transmission charges payable to Transpower for the coming assessment period for electricity lines services and for charges payable to Transpower for new investment contracts.⁷⁷⁸

⁷⁷⁷ Aurora Energy Limited Electricity Distribution Customised Price-Quality Path Determination 2021 [2021] NZCC 3, Schedule 1.5: Calculation of wash-up amount for a CPP assessment period, paragraph (3)

⁷⁷⁸ Electricity Distribution Services Input Methodologies Determination 2012 [2012] NZCC 26, clause 3.1.3(1)(b) and (c).

- K25 If the Reserve Bank average forecast CPI percentage movement relative to the baseline forecast CPI number in any of years 2 to 5 is different from the initial baseline forecast CPI percentage number, the incremental percentage will be added to (or deducted from, in the case of reductions in the forecast CPI) the revenue cap for that upcoming assessment period, which will set for Aurora an adjusted revenue cap for that year when it sets its prices.
- K26 In the case of increases in the Transpower charges, a similar approach will be adopted, but because the forecast transmission charge numbers and new investment contract charges will be provided in dollars, it will be necessary to convert the incremental movement expressed in dollars to an incremental forecast percentage movement. This is because the IMs require the revenue cap to be expressed as a percentage:
- (b) the **Commission** may also specify a limit or limits on the annual maximum **percentage** increase in **forecast revenue from prices**.⁷⁷⁹ [emphasis added]
- K27 Provided the Transpower transmission charges percentage movement in any of years 2 to 5 is an increase, and the size of the movement exceeds any accumulation of incremental movements in transmission charges for earlier years in years 2 to 5, that excess incremental percentage will also be added to the revenue cap for that upcoming assessment period (but only for that year), and will again allow Aurora a higher revenue cap for that year when setting its prices.
- K28 Changes in transmission charges will need to be reassessed each year rather than on a trend basis similar to the forecast CPI, as the charges may vary from year to year depending on the external events that are causing the change in the charges, for example: Tiwai point aluminium smelter closure or the resetting of charges under the updating of the Transmission Pricing Methodology.
- K29 Current indications are that the CPI percentage change and the transmission charges change may only have muted effects on the revenue cap in year 2 of the CPP period, but possibly a greater effect in the later years of the CPP period. At this stage there is not sufficient certainty on either adjustment component of the revenue cap to be able to model any of these effects into the price path. Better information should be available to Aurora from December 2021 onwards as the year 2 price setting and later years' price settings are completed.

⁷⁷⁹ Electricity Distribution Services Input Methodologies Determination 2012 [2012] NZCC 26, clause 3.1.1(1)(b).