Aurora Energy's CPP Proposal

Submission on the Commerce Commission's Draft Decision

18 December 2020

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1. INTRODUCTION

1.1. PRELIMINARY

1. We welcome the opportunity to submit our views on the Commerce Commission's Draft Decision on Aurora Energy's CPP proposal comprising:

   1.1. Aurora Energy's proposal to customise its prices and quality standards: draft decision (**the Draft Decision**);

   1.2. [Draft] Aurora Energy Limited Electricity Distribution Customised Price-Quality Path Determination 2021 (**the Draft Determination**); and

   1.3. Supporting documents[1]

2. Our submission is supplemented by expert reviews provided by PricewaterhouseCoopers (**PwC**) and WSP Global Inc. (**WSP**):

   2.1. PwC New Zealand Limited. (2020). Aurora Energy – CPP Draft Decision SONS and People Cost Allowances: An assessment of Strata Energy Consulting's Opex Briefing Report 6. (**PwC Expert Report**).

   2.2. WSP Australia Pty Limited. (2020). Aurora Energy CPP Draft Decision: Benchmarking Review. (**WSP Expert Report**).

3. No part of our submission is confidential.

1.1.1. CPP Process Overview

4. Aurora is attempting to implement a step change in the capability of its business and quality of its network.

5. The development, testing and submission of a CPP proposal is an onerous process, more so for businesses like Aurora that are starting from a relatively low level of asset management maturity. The process is also extremely resource intensive and costly. The cost of verifying and assessing Aurora's CPP proposal, alone, is forecast to total $2.549 million[2], approximately $0.663 million (35%) greater than for Powerco's 2017 CPP proposal[3] - reflective of both the breadth of issues facing Aurora compared to Powerco, and of the more intensive assessment programme, including wide stakeholder consultation, being undertaken by the Commission.

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1 Available from https://comcom.govt.nz/regulated-industries/electricity-lines/projects/our-assessment-of-aurora-energys-investment-plan?target=documents&root=215975.

2 Independent verification - $677,923, independent audit - $350,921, Commission application and assessment fee - $1,520,000.

3 Data sourced from Powerco's price setting compliance statement and annual compliance statement for the 2019 disclosure year – refer www.powerco.co.nz.

6. The CPP process is designed to accommodate changes in a regulated supplier's circumstances, including where a step-change in expenditure is required. It is the key mechanism that has been designed to ensure that regulated suppliers continue to have incentives to innovate and invest in circumstances where these can no longer be assured by the default settings. It is vital to maintaining investor confidence and certainty.

7. From the time Aurora started embarking on its asset management improvement journey, starting with the 2018 independent review of the state of our network, we have opened our doors to the Commission with the resulting interactions fostering common understandings and transparency. We consider that, at the very least, the Commission has had a clear understanding of the need for the investment and improvements we have been undertaking.

8. The Commission's reliance on Strata Energy Consulting's (**Strata's**) benchmarking methodology indicates the Commission is reluctant to accept that Aurora is in a different position to other EDBs and the Draft Decision, if left unchanged, will prevent Aurora from making the asset management improvements that the Commission has indicated – through the quality breach process – it expects Aurora to achieve. The reliance on benchmarking is predicated on the assumption that the best evidence of Aurora's expenditure requirements is the cost structure of other EDBs, rather than the detailed, ground-up assessment undertaken by the independent verifier, and is therefore antithetical to the CPP process.

9. In our view, the Draft Decision threatens to weaken CPPs as an effective option for EDBs.

2. Submission Summary

Box 1: Submission summary

- The Draft Decision on Aurora's CPP proposal will have a serious impact the business.
- The revenue cap, restricting annual movements in total revenue to an arbitrary 10% (nominal) pushes revenue deferral beyond what Aurora considers sustainable given the current state of the business' balance sheet, exposes Aurora to changes in pass-through and recoverable costs and drives perverse incentives to avoid executing contingent projects and making necessary transmission investments.
- Proposed reductions to non-network expenditure allowances compromise Aurora's ability to execute its network investment programme, and eliminate all possibility of undertaking the business improvement initiatives required to lift general asset management maturity.
- Many efficiency adjustment have been applied erroneously, indiscriminately in the case of network capex, and in the case of vegetation management, double counted.
- The Draft Decision has been informed by external advice provided to the Commission that is not fit-for purpose. The analysis performed by the Commission's contractor is contains a material number of errors, is based on an unsound methodology, and its report is opaque.
- Strata's benchmarking analysis is flawed and does not provide a sound basis to depart from the conclusions reached by the independent verifier.
- Key information required to understand the adjustments made to Aurora's CPP proposal was not made available in a timely manner, and provided in such volume as to render the consultation period inadequate.
- The Commission's public and stakeholder meetings on the Draft Decision were poorly planned and executed and, in the context of stakeholder meetings, failed to identify diverse and truly representative participants.

10. We expand on these points below with further details provided on these and other issues in the remainder of our submission.

2.1. Overall Impact on our Business

11. The Draft Decision, if left unchanged, will have a significant detrimental impact on our business.

12. The Commission has failed to appreciate the impact of its somewhat arbitrary 10% limit on annual price increases on the financial position of the company over the next five years. The rationale for a cap at all is not well reasoned.

13. In developing our CPP proposal, we were acutely aware of the impact that our proposed investment will have on customers' prices. At several stages in the CPP development process, the Board and

Management challenged the proposed investment and reduced forecast expenditure, in part, to reduce pressure on prices. We also considered the maximum cashflow deferral that we could accommodate in order to sustainably moderate price impacts, and subsequently settled on deferral of $32 million (in the context of a 5-year CPP). In other words, to minimise price shocks, the company elected to defer $32m of what would be permitted line charge revenue for a full five-year period beyond the three-year CPP period proposed. The Commission proposes that a further $9 million be deferred; however, we consider that the additional deferral proposed in the Draft Decision goes beyond what is reasonable.

14. Since 2017, Aurora has been investing at rates that are significantly above the levels compensated for under DPP2/3. This short-term and transitional approach has been necessary given the circumstances of the business, and the need to reduce the risk of asset failure across the network. This could not have been achieved without the support of our shareholder, Dunedin City Holdings Limited, and funding lines made available from Dunedin City Treasury Limited.

15. With the determination of our CPP proposal, however, we need to move the business forward and reduce debt levels to more sustainable levels and to a position where the business is financeable on a stand-alone basis. This requires ensuring that revenue deferral does not go beyond the original $32 million offered in our proposal.

16. The imposition of the proposed revenue limit will also mean that, in some disclosure years, the business will go beyond deferring recovery of the opex IRIS incentive, which is the real (and temporary) issue impacting on Aurora's proposed revenue path, to deferring recovery of some of its actual costs incurred in that year. Given Aurora has already spent several years investing above the DPP allowances, and effectively deferring recovery, this would exacerbate the financial challenge the company currently faces, and which it sought to resolve through the CPP.

17. While the Draft Decision has broadly recognised the need for capital investment to improve the health of asset fleets and to implement core software systems, it has neglected to adequately consider the associated operational costs that will be required to execute an elevated investment programme and to make the broader business system and process improvements that are required to lift the overall asset management maturity of the business.

18. The Commission's draft CPP decision sets an opex allowance at a level lower than the current DPP3. This is incomprehensible given the acknowledged challenges which the business is facing, and the work that the company has put in over the past three years to build up to its current capability and capacity to deliver its essential work programme. Based on Strata's desk top benchmarking, the Draft Decision sets a total opex allowance that is around 18% lower than current levels in 2020 (and directly presumes a non-network opex allowance which is c.25% lower than current levels) despite the bulk of this expenditure and drivers for expenditure being independently verified. The Strata analysis also assumed minimal linkage between non-network expenditure and work undertaken on the network which is intuitively not the case.

19. The proposed reduction in Aurora's non-network opex allowance will significantly compromise our ability to efficiently deliver our re-investment programme and will heighten safety and reliability risks in the medium-term.

20. The Draft Decision and the modelling that underpins it fails to adequately consider the scale of the network investment uplift that has occurred since the fourth quarter of the 2017 disclosure year. Without adequate resources to assess, scope, procure and manage contract work packages, delivery of the CPP work programme is compromised, and our assessment of the Draft Decision is that insufficient resources have been allowed to manage the work programme.

21. In addition to delivery of the investment programme, the proposed non-network opex allowance reduction also impacts the improvements that we need to make to the business and its core management systems, to deliver improved outcomes for our customers. As the Draft Decision stands, our ISO55000, consumer engagement, and data improvement programmes will be crippled, as will our capacity and capability to respond to the extensive and onerous delivery reporting requirements that the Commission has signalled.

22. The proposed non-network opex allowance reduction will impact on our ability to maintain our current levels of customer service and responsiveness, and will certainly not provide adequate resources to make the service improvements that customers have told us they would like us to make.

23. The Draft Decision forces Aurora into a simple and obvious dilemma:

- drastically cut its capability and capacity to deliver the programmes are required to assure a safe and reliable network, leading to additional adverse outcome for consumer interests; or
- over-spend the proposed allowances to ensure that immediate consumer interests in safety and reliability are protected, while exposing the business to additional future cashflow challenges and stranded costs that will inevitably challenge the viability of the business, compromise Aurora's regulated return, and therefore undermine long-term consumer interests by dis-incentivising investment and innovation.

24. That choice illustrates that the Commission's Draft Decision is inconsistent with the purpose of the CPP, and with the Part 4 regime as a whole.

2.2. Proposals for Reducing Prices and Price Smoothing

25. The Commission has proposed that the potential for consumer price shock should managed by applying a 10% cap to annual changes in the total revenue (including MAR, recoverable and passthrough costs) that Aurora can recover from prices, commencing with Aurora's total revenue from prices set for the 2021 disclosure year (DPP3, year 1).

26. We consider that the Commission's justification for a cap value of 10% is arbitrary, and fails to strike an appropriate balance between minimising price shocks and ensuring cash-flows are adequate to finance delivery of the CPP and secure the company's financial position. The Commission has said that minimising price shocks is in the interests of consumers. But ensuring Aurora is able to fund the CPP within appropriate financial and lending parameters is equally in the long-term interests of consumers, per the s 52A purpose statement. The Commission's approach fails to take into account the financial position of the company entering into the CPP, as a result of its investments in DPP2, and therefore inappropriately prioritises minimising price shocks over the financial sustainability of the company. Putting that aside, however, applying the cap to total revenue essentially puts the risk

of pass-through cost variation on to the EDB. This is not appropriate. It is likely also to lead to some perverse outcomes:

- Recovery of any required transmission investments will be deferred to the next regulatory period, providing a very strong incentive not to enter into any Transpower new investment contract. This places supply to the Queenstown community at risk since the 110kV transmission line serving the Wakatipu basin (designated a connection asset, with the costs directly recovered from the benefitting EDB) is reaching it N-1 limits and will require a series of tactical upgrades during the CPP period; and
- Recovery of costs associated with any contingent project will be deferred to the next regulatory period, providing a very strong incentive not to progress contingent projects. This is problematic because the Commission has designated a range of growth-related projects, particularly in the Queenstown/Wanaka areas, as contingent on growth trigger events.

27. When assessing whether a price cap or smoothing is necessary or desirable to minimise price shock, the Commission should consider the relative level of pricing and the absolute quantum of the increase. An increase on a low starting price is less likely to result in price shock than the same increase on a high starting price. The draft 'one-size-fits-all' 10% revenue cap is too crude to make this distinction.

28. Additionally, any cap value that is specified needs to be specified in real terms. In terms of potential consumer price shock, it is real increases in prices that matter, not nominal increases.

29. We further expand on revenue smoothing and management of price shock in section 4.

2.3. Proposed Non-network Opex Allowances

30. The Draft Decision proposes a significant reduction in the allowances for the system operations and network support (**SONS**) and people cost portfolios based on an opinion that these do not reflect the efficient costs of a prudent EDB.

31. Regrettably, the external advice that the Commission has relied upon to determine that Aurora's SONS and People costs should be reduced by 29% and 31% respectively appears flawed. Expert evidence we have provided to support this submission demonstrates that the analysis performed by Strata, and which is directly linked to proposed expenditure reductions, opinion based, utilises an unsound methodology and contains a material volume of errors and inconsistencies.

32. Strata's benchmarking approach is predicated on the assumption that the best evidence of Aurora's expenditure requirements is the requirements of other EDBs. That assumption is antithetical to the purpose of the CPP process. And in any event, given its methodological flaws, Strata's analysis provides weak evidence that Aurora's proposed non-network opex should be considered an outlier, and therefore the Commission cannot rely upon it.

33. In light of this expert evidence, we consider that the Commission should prefer the conclusions reached by the independent verifier. The independent verifier's comments provide guidance to the Commission on areas for further exploration, but do not suggest that a wholesale change to the assessment approach is required or warranted.

34. Strata's consideration of SONS and people cost expenditure appears to have been undertaken in isolation, using its own subjective opinion of the dimensions of a theoretically efficient EDB in steady state. The analysis fails to consider the extent of the works programme Aurora has been executing since 2017, and the initiatives required to improve the maturity of its asset management practices.

35. The more significant deficiencies in Strata's work are listed below:

- Strata's approach does not adequately recognise Aurora's unique circumstances and ignores the significant investment Aurora has made in the network prior to the CPP period which has been well above Aurora's regulatory allowances;
- Inappropriate use of benchmarking findings. Benchmarking should not be used to set allowances but rather used to determine areas for potential further investigation;
- Strata's reliance on $/ICP and $/km benchmarks fails to account for the amount of work Aurora is undertaking relative to other EDBs and its investment in asset management capability. When assessed against the average value of the work to be delivered during the CPP period, Aurora compares favourably to peer EDBs;
- Strata's selection of 5 EDBs from the available 29 EDBs is a poor basis for comparison and results in a restricted view of the available data. For example Strata's comparator group includes Powerco, whose scale (3-4 times Aurora's size) means it could be expected to achieve economies of scale that Aurora cannot, and is not a good comparator for Aurora;
- The network parameters used to select the comparator group were not based on an assessment of the drivers of the expenditure categories being assessed;
- Strata applied an uplift factor on average expenditures to represent the increased opex program based on Powerco rather than Aurora's proposed program of work and did not make appropriate adjustments to account for the significant differences in operations and scale of the businesses;
- Strata's analysis is not consistent with the conclusions expressed in the Commission's Draft Decision. For example, the Strata analysis implies reductions in full-time equivalents (**FTEs**) that are significantly greater than those stated in the Commission's draft decisions;
- The disclosure data relied upon by Strata was not prepared on a consistent basis (for example, reporting definitions differ by EDB), and therefore does not support robust benchmarking;
- There are data and calculation errors in Strata's modelling and inconsistencies in reasoning. The analysis lacks sufficient transparency for the Commission to properly weigh it against the analysis undertaken by the independent verifier. For example, the Strata analysis fails to recognise the full quantum of non-staff costs or the capitalisation of internal labour costs.
- PwC has calculated that on adjusting for the full quantum of non-staff costs and labour capitalisation alone the corrected SONS and People cost allowances are $24.0 million higher than calculated by Strata and relied upon by the Commission. It is important to note the PwC calculation is not presented by Aurora as an alternative allowance proposal. It does illustrate however, the magnitude of assumption errors identified in the Strata analysis;

- Strata's analysis relied on a 'senior management' challenge based on its opinion rather than fact. The analysis assumed more accuracy than was proven and included recommendations that are inconsistent with industry practice; and
- The outcome of Strata's benchmarking and assessment is that the CPP draft decision on opex is significantly below (~20%) the DPP3 level by the end of the CPP period.

36. The reduction in allowable expenditure on people is especially problematic. Based on Strata's analysis, the Commission has determined that Aurora should reduce staffing levels by around 20 FTEs; however, owing to the defects in Strata's analysis, the actual reduction in FTEs required to meet the Commission's proposed SONS and people cost expenditure allowance, *ceteris paribus*, is around 43.

37. Should the Draft Decision prevail unmodified, the reduction in non-network expenditure is likely to materially impact our ability to efficiently deliver the network investment programme and will require us to pare back non-delivery activities to the barest minimum and possibly beyond. The proposed evisceration of Aurora's human capital has eliminated the possibility of undertaking any of the business improvement initiatives that are widely acknowledged as necessary and will heighten safety and reliability risks in the medium-term, and will certainly undermine our ability to prepare for future, more complex, asset management decision-making and a low carbon, electricity-based future.

38. We further expand on Strata's analysis in section 2.5.1 and on the reduction to non-network opex in section 5.

2.4. Proposed Efficiency Adjustments

2.4.1. Network Capex

39. The Draft Decision proposes that a blanket 5% efficiency adjustment is applied to network capex portfolios, for the following reasons:

- improved asset management systems and processes;
- replacement model 'over-forecasting';
- new field service agreements increasing competition and better works delivery processes; and
- ICT systems investment.

40. The top-down efficiency adjustment appears to have been adopted by the Commission, based on advice received from Strata in which different reasoning for the adjustments is observed:

- overestimation bias;
- deliverability; and
- unit cost reductions.

41. The Strata Report and analysis appears to contain no quantitative basis for the proposed level of efficiency adjustment. It is also evident that Strata has not considered the efficiency adjustments made by Aurora to a number of fleets. Those gradually increasing adjustments reflect that underpinning improvements take time.

42. We find the Draft Decision to apply an across-the-board 5% efficiency adjustment to network capex to be inappropriate for the following reasons:

- different justifications given by the Commission and Strata;
- insufficient justification of the proposed level of efficiency adjustment by Strata and the Commission;
- lack of understanding that business improvements are gradual and take time; and
- the proposed Draft Decision reduction in SONS and People expenditure will hamper our ability to drive business improvements

43. Section 5.1.1 provides more details behind our reasoning why the proposed efficiency adjustment should be set aside.

2.4.2. Network Opex

44. The Draft Decision proposes a circa 25% reduction in the vegetation unit rate, implying that the vegetation programme can be delivered more efficiently. We disagree with this conclusion on the basis that Strata and the Commission have not justified the apparent inefficiency. To test our conclusion, we asked WSP to undertake a review of Strata's benchmarking, including the direct comparison with MainPower.

45. WSP concluded that the benchmarking analysis is fraught with poor input data quality, difficulty in identifying comparable distribution businesses who are undertaking a 'first-cut' and with a comparable mix of urban and rural networks.[4] We provide further detail in section 4.3.1.

46. Furthermore, in addition to the 25% reduction of the unit rate above, the Draft Decision continues to apply the proposed Aurora CPP application efficiency ($735,338 over the 5 years) which in our view is 'double counting' efficiency gains. The application of both efficiency adjustments is in contradiction to Strata's view in their Opex Briefing Report 5:

> *"As noted above, we have recommended in a separate briefing report a 25% step change in Aurora's vegetation management opex. This reduction accounts for the effect of contestability in the provision of Aurora's vegetation management.* ***Therefore, to avoid double counting, we have removed the $735,338 efficiency benefit Aurora included in its CPP proposal*** *to reflect improved contractor productivity created by increased competitive tension under Aurora's new contracting approach (refer to Table 3 above)."*[5] [Aurora emphasis]

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4 WSP Expert Report. Section 5, p19.

5 Strata Report. p117.

2.5. Assessment and Consultation Process

47. A number of aspects of the process leading to the Draft Decision have caused us concern. These include:

- delays in publishing key information;
- the short timeframe to prepare our response;
- badly executed public and stakeholder consultation

2.5.1. Key Information

48. Given the obvious and significant role Strata's analysis played in the Draft Decision, we expected that the Commission would publish Strata's report with the other documents supporting its Draft Decision. However, despite repeated requests, the Commission took 8 days to publish Strata's report.

49. When we did receive Strata's analysis, we found that it would be necessary for us to try to replicate Strata's work to fully understand it because, in some cases, the report chapters are opaque, analysis includes options, and key variables are expressed as ranges.

50. We also made a number of requests for the supporting models and spreadsheet analysis that underpinned the Strata Report. We received these reports on 3 December 2020, 22 days after the release of the Draft Decision.

51. The delays in making this information available, and the shortcomings in the information provided, have made it difficult for us to meaningfully engage in the consultation process. It also suggests that Commissioners should be concerned about the reliance they should place on the conclusions expressed by Strata.

2.5.2. Timeframes for Submissions

52. We note that the information accompanying the Commission's Draft Decision is more extensive than for any CPP Draft Decision made to-date. This has resulted in significant pressure to properly evaluate the decision.

53. Clearly, the submission timeframes originally established by the Commission were inadequate and, while we are pleased that the Commission granted an extension to the due date for submission equal to the delay in publishing the Strata Report, we still consider the timeframe to be inadequate in light of the delay in providing the material described in paragraph 50 above, and the importance of that information.

54. It is frustrating that, having spent several years and substantial resources preparing our CPP proposal, there is such a limited opportunity to engage in a meaningful way with the Commission's evaluation of our proposal.

2.5.3. Stakeholder Consultation

55. While we acknowledge the importance of soliciting stakeholder views during regulatory price-quality setting processes, we are fundamentally disappointed in approach to the Commission's stakeholder and public meeting during late November / early December.

56. We consider that the Commission did not effectively engage with stakeholders because it:

- allowed rude, insulting and disruptive behaviour at a number of meetings;
- failed to actively chair meetings, to the extent that at one meeting, the Commission had to abandon its planned presentation;
- failed to identify diverse and truly representative participants for its stakeholder meetings;
- allowed the meeting to diverge from the topic actually being consulted on;
- failed to adequately correct misinformation;
- did not adequately back its own regulatory framework and associated controls.

57. While the consultation process has achieved the basic requirement of allowing interested persons an opportunity to be heard, the Commission cannot safely assume that the views expressed represent the interests of consumers generally. We provide more detailed comments in section 10.3, including the recommendation that the Commission considers the value of the public and stakeholder meetings against the additional costs that will be borne by consumers through the larger recoverable cost of the Commission's CPP assessment. We provided this feedback directly to the Commission, by letter, on 7 December 2020.

3. Review of CPP Expenditure

Box 2: Review of CPP Expenditure

- Aurora's CPP proposal was subjected to robust independent verification, in accordance with the IM requirements, prior to submission;
- The independent verifier was suitably qualified to perform the verification. Both Farrierswier and GHD organisations with multinational presence and experienced and have previously verified Powerco's CPP and Transpower's IPP respectively;
- Strata has undertaken a top-down review, higher level analysis than the verifier;
- While it is appropriate that that the Commission further investigates specific areas suggested by independent verifier, it is not appropriate to discard the independent verifier's work and substitute it with the inferior, higher-level analysis;
- Strata's reliance on its 2018 compliance review of Aurora's quality breaches is inconsistent with good engineering practice, as conclusions are based on outdated information that is different to our CPP proposal;
- Expert reviews of the Strata Report underpinning the Draft Decision have been undertaken by WSP and PwC, and demonstrate that Strata's analysis contains a material number of errors and is not reliable.

58. In this chapter, we address the reviews of Aurora's CPP proposal, both throughout development and post-submission.

3.1. Independent Verification of our CPP Proposal

59. An important aspect of the Commission's CPP framework is the use of pre-submission verification by an independent expert (the independent verifier). The verification process is intended to add value to the quality of CPP proposals and to the Commission's decision making by testing, in advance of submission, the assumptions underpinning forecast information relating to capital expenditure, operating expenditure, and intended quality standards.

60. An overriding duty for the independent verifier is to assist the Commission as an independent expert on relevant matters within the verifier's area of technical expertise. Independent verification plays a key role in making CPP application more efficient by allowing the Commission to avoid duplication of effort by relying on the professional opinion expressed by the verifier.

61. The independent verifier is engaged by the CPP applicant, and is subject to a tripartite deed between the CPP applicant and the Commission. Under the tripartite deed applicable to Aurora's CPP proposal, the independent verifier owed an overriding duty to the Commission "*to assist the Commission as an independent expert on relevant matters within the Verifier's area of technical*

expertise, with particular reference to aspects of Capex, Opex and service quality of Aurora's business".[6]

62. The independent verifier's roles and responsibilities under the IMs[7] include:

- engaging with the CPP applicant in an independent manner in accordance with its Terms of Reference;
- assessing the extent to which the CPP applicant's policies allow it to provide services on an efficient basis and meet the general needs and expectations of customers;
- assessing the extent to which the CPP applicant's policies have been implemented;
- prior to the Commission's assessment of the CPP proposal, assessing whether the CPP applicant has provided complete and sufficient information in its intended CPP proposal;
- prior to the Commission's assessment of the CPP proposal, providing an opinion to the CPP applicant on whether its capex forecasts and Opex forecasts meet the expenditure objective;
- providing an opinion to the CPP applicant on the reasonableness of its key assumptions and policies for its forecast information;
- 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 customers; and
- providing a list of the key issues which it considers the Commission should focus on when assessing the CPP proposal.

63. Recognising the importance of independent verification to the CPP process, we sought proposals from a short-list of leading international economic and engineering consultancies. Following the Commission's approval, we engaged Farrierswier Consulting Pty Ltd (**Farrierswier**) be appointed as the independent verifier, with GHD Pty Ltd (**GHD**) supporting Farrierswier in a subcontracted capacity.

63.1. Farrierswier is an expert advisory and management consultant that provides services to businesses, governments and regulators in the utility and infrastructure sectors in Australia, New Zealand and the Asia Pacific region. Notably, Farrierswier's experience in verifying Powerco's 2017 CPP proposal demonstrated its suitability for verifying our CPP proposal.

63.2. GHD is a professional services company providing engineering, construction and architectural expertise. GHD has global expertise with a staff of over 10,000 across 200 offices in five continents – Asia, Australia, Europe, North and South America, and the Pacific region. GHD's involvement in verifying Transpower's 2019 IPP proposal evidenced its suitability to act in a subcontracted capacity, to bring a specialist engineering perspective.

64. While our CPP proposal was based on a three-year regulatory period, the independent verifier was required to assess our CPP against a 'default' five-year regulatory period. The independent verifier

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6 Aurora CPP tripartite deed, clause 4.3(a).

7 Commerce Commission. (2012). Electricity Distribution Services Input Methodologies Determination 2012. Schedule G, p237.

assessed the bulk of our planned expenditure, according to the requirements of the IMs. For the five year period, the independent verifier:

- Assessed $463.56 million (76.4%) of our $606.55 million total proposed expenditure;
- verified $451.07 million (97.3%) of the $463.52 million of expenditure it reviewed as meeting the expenditure objective (prudent and efficient);
- categorised $7.53 million (1.6%) of the $451.07 million verified expenditure as contingent on qualifying trigger events (such load growth that was uncertain under COVID-19 conditions); and
- categorised $12.49 million (2.7%) of the $463.52 million of expenditure it reviewed as unverified (unable to determine that the expenditure met the expenditure objective); and
- did not review $142.99 million (23.6%) of our $606.55 million total proposed expenditure.

65. For opex, the independent verifier:

- assessed $229.23 million (91.7%) of our $249.93 million proposed opex;
- verified $220.04 million (96.0%) of the $229.23 million of opex it reviewed as meeting the expenditure objective (prudent and efficient);
- categorised $9.12 million (4.0%) of the $229.23 million of opex as unverified (unable to determine that the expenditure met the expenditure objective); and
- did not review $20.70 million (8.3%) of our $249.93 million proposed opex.

66. For capex, the independent verifier:

- assessed $234.33 million (65.7%) of our $356.61 million total proposed capex;
- verified $231.03 million (98.6%) of the $234.33 million of capex it reviewed as meeting the expenditure objective;
- categorised $7.53 million (3.2%) of verified capex as contingent on qualifying trigger events; and
- categorised $3.30 million (1.4%) of the $234.33 million of capex it reviewed as unverified; and
- did not review $122.28 million (34.3%) of our $356.61 million total proposed capex.

67. Importantly, in the context of this submission, the independent verifier's report noted that:

- $77.1 million (96%) of SONS expenditure was verified;
- $37.7 million (94%) of expenditure on people was verified;
- $20.3 million (96%) of vegetation management expenditure was verified;
- $15.7 million (92%) of corrective maintenance expenditure was verified; and
- $21.6 million (99%) of reactive maintenance expenditure was verified.

68. We consider that it is appropriate that the Commission investigates the areas suggested by independent verifier. It is not appropriate, however, to discard the independent verifier's work and substitute it with the inferior, higher-level analysis undertaken by Strata.

3.2. Strata Desktop Review

69. The Commission engaged Strata *"to assist the Commission in its consideration"* of Aurora's CPP proposal, with the Commission providing *"a list of questions on specific topics related to the CPP application, and these questions formed the basis for Strata's work"*[8] (the **Strata Report**).

70. Strata performs a significant proportion of its work for the Commission and Electricity Authority, with some work performed for large energy users. Strata has corporate associations with EMCa and Efficient Energy International, both based in Australia, as well as associations with a small number of individual consulting engineers in New Zealand.

71. Strata's work for the Commission falls into two general categories:

- assisting the Commission to evaluate regulatory proposals similar to Aurora's CPP; and
- undertaking broad reviews of EDB practices following a breach of regulatory standards, in order to provide evidence to support enforcement action.

72. The independent verifiers that have reviewed recent CPPs (Aurora's, Powerco's and Wellington Electricity's[9]) and Transpower's individual price-quality path proposal are large international economic and engineering consultancies that provide advisory service to a broad range of clients, including regulators and electricity transmission and distribution businesses. By contrast, in the context of the electricity transmission and distribution industries, Strata appears to work exclusively for the regulation sector and relies on the personal experience of its small team of principal consultants to set 'de-facto' industry standards in its reporting.

73. Strata's limited expertise, experience and depth of resources contrasts starkly with those of PwC, WSP and Farrierswier/GHD (the independent verifier), each of whom have arrived at contrary views to Strata and on which all are broadly aligned.

3.2.1. Receipt of the Strata Report

74. On the date of the Draft Decision (12 November 2020), we requested that the Commission provide Strata's report. We were advised that the report could not be released immediately on the basis that Strata had been asked by the Commission to update its report.

75. After a number of follow-up requests, we were provided on 20 November 2020 with a set of draft briefing reports that were prepared by Strata and upon which the Commission relied to inform its Draft Decision. The draft briefing reports were caveated with advice that they were in note form and intended to be supplemented by conversation.

76. Finally, late on 20 November 2020, we were provided with a copy of the Strata Report as now available on the Commission's website. Given that report was prepared after the draft decision was

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8 Strata Energy Consulting Limited. (2020). Consolidated Draft Briefing Reports Assessment and opinions on specific topics related to Aurora Energy's June 2020 Customised Price Path application. November 2020.

9 Wellington Electricity received an exemption from the requirement to obtain verification under IM clause 5.1.3, and instead provided evidence of an independent engineering review of its earthquake readiness business case. The independent engineering review was undertaken by Jacobs Engineering Group, an international engineering consultancy specialising in construction and infrastructure.

released, Commissioners presumably relied on Strata's notes and briefing papers rather than the report in making their draft decisions.

77. We also made a number of requests for the supporting models and spreadsheet analysis that underpinned the Strata Report. We received these reports on 3 December 2020, 22 days after the release of the Draft Decision.

78. We remain concerned that Strata's evaluation of Aurora's CPP proposal has been rushed, and has not been supported by adequately considered analysis. The Strata Report and supporting models were delivered much later than is reasonable if good process and practice is observed. The Strata Report is contains a material quality of errors and inconsistencies and, in the context of analysis underpinning the significant reduction in non-network opex allowances, is based on an unsound methodology.[10] If the Commission proposes to depart from the conclusions of the independent verifier in reliance on analysis from Strata, it should assure itself that the process adopted by Strata is equivalent to that of the independent verifier in its detail, rigour and level quality assurance. That is not the case.

3.2.2. References to 2018 Observations

79. Within the Strata Report, there are repeated references to its 2018 observations *"when we conducted the most recent Quality Non-compliance Review of Aurora"*[11]. Strata was engaged by the Commission to *"undertake an investigation into the causes of the quality standard non-compliance of Aurora Energy (Aurora) in the 2016 and 2017 Regulatory Assessment Periods"*[12] (hereafter **2018 compliance report**).

80. In the course of that investigation, Strata conducted a desktop review of information that Aurora provided to the Commission under a notice to supply information issued on 31 March 2017 under section 53ZD of the Commerce Act 1986 (**the Act**), and conducted a two-day site visit on 9 & 10 November 2017.

81. Strata issued its draft 2018 compliance Report on 18 May 2018, which on review, was observed to contain a material number of factual errors and inaccuracies. We responded with a paper explaining the inaccuracies in the draft 2018 compliance report, and supported by an expert report. To our knowledge, Strata did not prepare an amended or final report addressing the errors and inaccuracies raised by us and therefore its 2018 compliance report remained in draft.

82. A significant period of time has elapsed since we provided the information upon which Strata prepared its 2018 compliance report. In fact, over three years have elapsed between Strata's last engagement with Aurora in connection with its 2018 compliance report and issuing its opinion report on Aurora's CPP. In that period of time, Aurora has transformed its asset management

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10 WSP Expert Report, *passim*.

11 Strata Report, p4, provides a representative example.

12 Strata Energy Consulting Limited. (2018). Quality non-compliance Report Aurora Limited's non-compliance with the DPP quality standards for 2016 and 2017 assessment periods: Draft report. 18 May 2020. p11.

strategies, processes and systems, as acknowledged by the Commission in the Agreed Statement of Facts provided to the High Court to support the parties' joint submission on penalty.

83. Forming judgements on material that is out-of-date and different from our proposal is not representative of good engineering practice by any objective standard, and invalidates any conclusion drawn from that material.

3.2.3. Strata's Conclusions

84. We have serious concerns about the manner in which the Commission has accepted recommendations from Strata. In our view, Strata's review of our submission has been entirely inadequate.

85. Strata's analysis is a top-down, desktop review that relies heavily on questionable assumptions and benchmarks. This is in contrast to the extended, rigorous, on-the-ground evaluation undertaken by the independent verifier, and which the IMs clearly contemplate. Strata's analysis focuses on a benchmarking exercise, comparing Aurora's proposed expenditure to other EDBs operating at different levels of maturity and with differing business operating models. This focus is completely at odds with the CPP process, which is intended to be a bespoke and tailored price path to reflect an EDB's unique circumstances.

86. The Commission should require compelling evidence before departing from the independent verifier's view. In the Commission's 2016 IM review decision the Commission said that "*the pre-application verification process is intended to promote certainty for suppliers as to how their expenditure is likely to be assessed, as well as to assist us to make the most effective use of the tight statutory timeframes for evaluating CPP proposals, through the verifier highlighting which areas of a proposal we should focus on.*"[13]

87. In this case, rather than invite the independent verifier, in the course of its process, to provide further information on those areas of concern to the Commission (which the verifier verified nonetheless), the Commission has ignored the verifier's findings and has instead appointed Strata to re-evaluate Aurora's proposed expenditure. Strata's analysis does not provide further analysis of those limited elements of Aurora's proposed expenditure that the independent verifier was unable to verify. Rather, it recommends discounting a substantial proportion of the expenditure that the independent verifier concluded was consistent with the expenditure objective. 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.

88. Since 2014, the Commission has engaged Strata to provide a report on at least 11 of the EDB/GPB price-quality matters the Commission has considered. On only a handful of occasions has the Commission appointed an engineer other than Strata. The consequence is that the Commission has

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13 Commerce Commission. (2016). Input methodologies review decisions: Topic paper 2: CPP requirements. 20 December 2020. Paragraph 323, p72.

become captured by Strata's view on engineering matters and has no processes or mechanisms to challenge that view.

89. The Commission's use of Strata's recommendations calls the review process into question.

90. We provide examples of our concerns with Strata's analysis below, with further detail provided in the body of this report and throughout the appendices:

- arbitrary recommendations;
- inadequate review of CPP material;
- poor analysis and engineering judgement;
- lack of modelling capability;
- a lack of clarification requests;
- internal inconsistencies and contradictory statements; and
- basic errors in the report suggesting a lack of review.

91. We have had little-to-no involvement with Strata while it prepared its recommendations, in stark contrast to the extensive engagement and challenge by the independent verifier. As demonstrated in this submission, this has led to a series of misinterpretations and errors.

3.3. Expert Reviews of Strata's Desktop Review

92. Given the Commission's Draft Decision on Aurora's CPP proposal delivered exceptionally large adjustments to non-network opex, with those adjustments relying to a material degree on advice provided by Strata, we considered it necessary and appropriate to obtain expert reviews of aspects of the non-network analysis provided in the Strata Report.

93. We engaged PwC and WSP to undertake those expert reviews, which accompany this submission as expert evidence.

94. PwC is a multinational professional services network of firms, operating as partnerships under the PwC brand. PwC ranks as the second-largest professional services network in the world. PwC New Zealand Limited is the preeminent advisor to the electricity sector in New Zealand. Working extensively with the electricity distribution sector, PwC provides advisory, audit and tax services to most of New Zealand's sector participants, assisting the sector to navigate industry changes and the ongoing evolution of a complex regulatory environment.

95. Headquartered in Montreal, Canada, WSP is a broad, multi-disciplinary, professional services company with significant presence in the energy, power generation and distribution sectors. WSP acquired the engineering capabilities of Parsons Brinckerhoff in 2014 and Opus International consultants in 2017. WSP's expertise in the distribution sector was demonstrated by its role in verifying Powerco's CPP proposal, where it provided expert engineering advice to Farrierswier.

3.3.1. WSP's Expert Review of Strata's Benchmarking Approach

96. WSP was engaged to review the alternative benchmarking assessment undertaken by Strata for SONS and people expenditure, which Strata identified as principally driving the increases in non-network opex. We also asked WSP to look at the benchmarking approach used by Strata for vegetation management, which was the foundation for a 25% reduction in expenditure based on adjusting unit rates to a notional efficient level.

97. Overall, in relation to the benchmarking for SONS and people expenditure, WSP found *"that it applied benchmarking inappropriately and that neither the approach or outcome could be relied upon to inform an appropriate level of expenditure"*.[14] WSP concluded that *"the Strata benchmarking is inadequate and not fit for the purpose to inform the Commission's decision on the appropriate level of expenditures for SONS and People Costs"*[15].

98. In relation to Strata's benchmarking of vegetation management expenditure, WSP found that *"the vegetation management benchmarking and direct comparison undertaken by Strata is not appropriate as it is based on a flawed methodology that assumes all changes in cost are caused by the unit rate and fails to consider changes in volumes that may exist"* and concluded that the benchmarking *"is inappropriate to be used as the basis for calculating a reduction to Aurora's proposed vegetation management expenditure"*.[16]

99. Detailed findings from the WSP Expert Review are outlined alongside our discussions on Non-network opex (section 5.1) and vegetation management (section 5.3).

3.3.2. PwC's Expert Review of SONS and People Expenditure Allowances

100. In reviewing the benchmarking approach adopted by Strata, PwC's overall finding is that Strata has not adequately recognised the unique circumstances facing Aurora during the CPP period. The approach Strata has taken to benchmark Aurora to a comparator *"cohort average, and apply a step change based on the Powerco CPP does not derive SONS and People Cost opex outcomes which are consistent with Aurora's planned asset management and network investment programme during the CPP period"*.[17]

101. Detailed findings from the PwC expert review are outlined alongside our discussion on the non-network opex draft decision (section 5.1).

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14 WSP Expert Report. piv.

15 WSP Expert Report. pv and section 4.3, p18.

16 WSP Expert Report. pv.

17 PwC Expert Report. Section 1, p4.

4. Revenue Smoothing

Box 3: Revenue smoothing

- Price shock is a potential issue that requires careful management;
- Future price shocks are a real possibility, as consequence of revenue deferral, and expected changes to transmission pricing following closure of the Tiwai aluminium smelter;
- It is not appropriate to create future price shocks as a consequence of avoiding a price shock in the present;
- The proposed revenue cap mechanism drives perverse incentives to avoid making transmission investments and progressing contingent projects;
- The value of the revenue cap is arbitrary and does not sufficiently reflect Aurora's individual circumstances;
- Revenue caps disproportionately penalise EDBs with low existing prices;
- COVID-19 effects are not an appropriate justification for revenue deferral.

102. Aurora acknowledges the need and desirability that the Commission consider whether setting an alternative rate of change for the Aurora CPP price path is required to minimise any undue financial hardship to the supplier or to minimise price shock to consumers.[18]

103. The key issue for revenue smoothing and associated price impact is the treatment of the opex IRIS incentive. In our CPP application, we proposed that the IMs for calculation of the opex IRIS incentive be amended to allow extended recovery over an 8-year period, which would accommodate the initial 3-year CPP period being applied for, followed by a second 5-year CPP period (or potentially, although unlikely) a reversion to the DPP.

104. The Commission, however, has preferred that the opex IRIS incentive be calculated according to the IMs, and to apply a nominal 10% rate of change to total revenue to smooth price impacts.

105. 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.

4.1. Price Shock

106. The Commission has explained that it weighs the consumer impact of price changes against the cashflow requirements of the company in the regulatory period. While we agree with that general framing, the Commission has struck an inappropriate balance that fails to properly take account of; (a) the low prices Aurora consumers have historically enjoyed, and (b) the company's financial

[18] These considerations are set out in section 53P(8) of the Commerce Act 1986 and, while they are stated in the context of default price-quality paths, they are also valid considerations for customised price-quality paths.

position on entry into the CPP. We note that the financial sustainability of the company is also ultimately in the long-term interests of consumers.

107. We consider that in determining whether adjustments are needed to manage price shock, and the nature of those adjustments, the Commission should consider:

- The submission provided by DCHL/DCTL expresses concern about the company's pathway back to sustainable levels of debt if the Commission's proposed deferral of recovery of in-period expenditure is carried through to the final determination. DCHL/DCTL's letter of comfort was predicated on Aurora's proposal, including the level of deferral proposed by Aurora, which represents the maximum that Aurora considers it can responsibly defer to future periods;
- the relative level of Aurora's current line charges (and consumer retail prices in the Aurora network areas): An increase on a low starting price is less likely to result in price shock than the same percentage being applied to curb increases on a high starting price. The draft 10% price cap is too crude to make this distinction;
- that price shock is caused by real price increases not nominal increases;
- that consumers are benefitting from current low interest rates which have kept line charges (distribution and transmission) lower than they otherwise would be. The same won't necessarily be the case for the next regulatory period, and could lead to deferred price shock;
- that deferral of revenue recovery could potentially result in larger future price shocks; and
- that the Electricity Authority is monitoring residential consumer debt / non-payment / disconnection levels following COVID-19 and has not found evidence that COVID-19 has had a material impact on the ability of consumers to pay their power bills.

4.2. Multi-period Price Smoothing

108. We continue to prefer that any price smoothing be contained within the CPP regulatory period, with the opex IRIS incentive recovered over two regulatory periods, particularly given the Commission's Draft Decision to set a 5-year regulatory period, rather than the 3 years Aurora proposed.

109. Aurora would not fully recover its revenue within the CPP regulatory period, under either of the price smoothing options in the Draft Decision.

110. Regardless of the extent to which the Commerce Act (implicitly) permits the Commission to attempt to smooth revenues or prices over more than a single regulatory period, the Commission should consider options for price smoothing that are self-contained within the CPP period. As the Commission has noted "*consumers' interest in avoiding price shocks must be balanced against their interest in avoiding ultimately having to pay more for lines services due to delaying Aurora's revenues*".[19]

[19] Draft Decision, paragraph G32, p459.

4.3. Potential Future Price Shock

111. We agree with the Commission's view that "*[I]t would not be in consumers' interests to avoid a price shock now, only to face one in five years time*".[20] However, there appears to be a gap in the Commission's pricing analysis, as it does not look at the risk of a price shock in the subsequent regulatory period. There is a risk that the Commission's Draft Decision will result in, or exacerbate, potential price shocks in the future. For example:

- Prices under DPP3, and the Aurora CPP, have been suppressed due to historically low interest rates. The WACC estimate determined for DPP3, Transpower's IPP and, ultimately, Aurora's CPP is 4.57% compared to 7.19% determined for the previous regulatory period. The WACC effect alone reduced EDBs' nominal revenue requirements in 2020/21 by $225m and Transpower's by $140m.[21] The Commission should consider the implication of deferring revenue recovery to the next regulatory period if interest rates are higher (as is likely);
- The Electricity Authority's indicative prices under the (pending) new transmission pricing methodology (TPM) is for Aurora's transmission charges to increase by between 17.6% and 22.5%, depending on assumptions made, in the 2023/24 pricing year.[22] The quantum of the increase will be higher if the Tiwai aluminium smelter closes its operations as it has announced it will (although this maybe offset to some extent by a countervailing reduction in wholesale electricity prices). For example; one option Transpower is considering is to pro-rate Tiwai's benefit-based charges across remaining transmission customers;[23]
- Aurora has signalled it intends to apply for a second CPP for the regulatory period immediately following the initial CPP.

112. It would be useful for the Commission to test its price cap Draft Decision under various scenarios, including increases in interest rates, potential timing of the new TPM, and indicative transmission pricing under a new TPM (and exit of the Tiwai smelter) to quantify the risk that avoiding a price shock or suppressing prices now, could result in consumers facing a price shock in five years' time. We have not undertaken this work ourselves given the short time-period for submissions on the CPP and the extensive range of matters we need to address.

4.4. Nature of the Proposed Revenue Cap

113. Aurora has several misgivings about the Commission's proposal to minimise price shock to consumers by setting a nominal 10% revenue cap on Aurora's forecast allowable revenue.

114. We consider that any cap should be set in real terms – consistent with the Commission's approach to evaluating the need for alternative rates of change in the DPP3 reset. In terms of potential consumer price shock, it is real increases in prices that matter, not nominal increases.

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20 Draft Decision, paragraph G34, p459.

21 Commerce Commission. (2019). 2020-2025 price-quality paths for EDBs and Transpower Final decisions: Presentation to Stakeholders. 27 November 2019.

22 Electricity Authority. (2020). Transmission pricing methodology 2020 Guidelines and process for development of a proposed TPM Decision. 10 June 2020, Table 8.

23 Transpower New Zealand Limited. (2020). TPM Development: TPM Options Part C: Adjustments to charges. November 2020.

115. The cap should be on allowable revenue, not forecast allowable revenue. Setting the cap on Aurora's forecast allowable revenue, rather than allowable revenue, means the extent to which Aurora can recover its prudent and efficient costs and investments, during the CPP period, will be dependent on exogenous factors such as changes in pass-through and recoverable costs. As noted above, the closure of Tiwai smelter will result in substantial increases in transmission charges.

116. This would have potential perverse and unintended consequences, for example:

- Recovery of any required transmission investments will be deferred to the next regulatory period, providing a very strong incentive not to enter into any Transpower new investment contract.[24] This is problematic because the CML-FKN transmission line (designated a connection asset, with the costs directly recovered from the benefitting EDB) is approaching its N-1 limit and will require several tactical upgrades during the CPP period (special protection scheme, variable line rating, tactical thermal upgrades (ground clearances), etc).
- Recovery of costs associated with any contingent project will be deferred to the next regulatory period, providing a very strong incentive not to progress contingent projects. This is problematic because the Commission has declined a range of growth-related projects, particularly in the Queenstown/Wanaka areas, due to the uncertainty around COVID-19. This could potentially see Aurora declining large connections to manage growth.

4.5. Revenue Cap Value

117. We consider that the value of the revenue cap is arbitrary and does not sufficiently reflect Aurora's individual circumstances.

118. When assessing whether a price cap or smoothing is necessary or desirable to minimise price shock, the Commission should consider the relative level of pricing and the absolute quantum of the increase. An increase on a low starting price is less likely to result in price shock than the same increase on a high starting price. The draft 'one-size-fits-all' 10% revenue cap is too crude to make this distinction.

119. The Commission should specifically consider that Aurora's line charges are low, on average, relative to other EDBs - *"approximately $321 per year less than the average across the 17 price-quality regulated lines companies between 2013 and 2019"*.[25]

120. The relatively low level of Aurora's pricing is illustrated well in Figure X2 of the Draft Decision. A very similar picture emerges when assessing average distribution and line (distribution + transmission) charges on a $ per customer basis using disclosure information, and on an average c/kWh basis using MBIE Quarterly Survey of Domestic Electricity Prices (QSDEP) data.[26]

121. The low starting point for Aurora's line charges, in-of-itself, helps protect consumers against price shock. The increases in line charges which will be necessitated by the CPP essentially bring Aurora's

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24 As 'new investment contract' is defined in the electricity Industry Participation Code.

25 Draft Decision. Paragraph X25, p10.

26 Available from https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/energy-prices/electricity-cost-and-price-monitoring/.

line charges up from one of the lowest in the country to 'middle of the pack'. Aurora should not be further penalised for having a starting point of relatively low prices.

122. Relatedly, we note the Electricity Authority's view is that the appropriate way to avoid or minimise price shock is based on the size of changes to retail tariffs. Aurora residential customers currently benefit from some of the lowest retail prices in New Zealand. Again, this protects against the risk and extent of price shock. Aurora customers are better insulated from risk of price shock than, for example, consumers further south in Balclutha or northward in Kerikeri, even with the price increases that will be necessitated by the CPP.

4.6. Alternative Approach to Setting the Revenue Cap Value

123. We consider that it would be better to define price shock in terms relative to average or median national line charges, rather than a percentage change to our current line charges. The approach of capping prices at 10% of the EDB's line charges essentially disadvantages EDBs that have managed to maintain relatively low prices.

To illustrate, we use a comparison of Aurora with neighbouring OtagoNet and with WEL Networks which sits at the median of EDB prices:

Table 1: Illustrative effects of 10% cap on relative EDB prices

	Aurora	Median (WEL Networks)	OtagoNet
Total line charge revenue (000s)	$96,584	$123,316	$37,945
ICPs	89,866	91,917	16,588
Average line charge	$1,075	$1,341	$2,288
Illustrative 10% increase per ICP	$107	$134	$229
Total average charge after increase	$1,182	$1,475	$2,516

125. Under the Commission's price cap 'rule', OtagoNet would be permitted a $229 per ICP increase – over double the $107 available to Aurora. We do not consider an increase in average line charges from $2,288 to $2,516 to be equivalent to an increase from $1075 to $1,182 in terms of protecting consumers from price shock.

126. The increase that would be permissible for OtagoNet is equivalent to a 21% increase in Aurora's prices. That notwithstanding, we suggest that if Aurora's prices were allowed to increase by $228 per ICP in a single year, there would be less price shock because the increase would result in average line charges of $1,304 which would still be substantially lower than OtagoNet's existing prices.

127. A better approach may be to set the cap relative to the industry average or median. Based on a 10% cap, this would permit Aurora a relatively modest increase of $134 to $1,209 per ICP (equating to 12.5%).

4.7. COVID-19 IMPACTS

128. The Electricity Authority (the Authority) has been monitoring debt levels following the COVID-19 lockdown. In its decision to close the Retailer Debt Deferral Scheme earlier than scheduled, the Authority noted that COVID-19 hadn't resulted in cashflow concerns for retailers, "as a consequence of the lockdown and materially increased customer non-payment of bills", that were initially feared when the scheme was introduced under urgency.

129. The Authority specifically noted that:

> *"Figure 1 and 2 below show the aggregate levels of debt as a percentage of revenue for the commercial and residential sectors respectively. The illustrations show that, as at 13 September 2020, overall debt levels are not far from historical levels."*[27]

Fig. 1. Residential debt

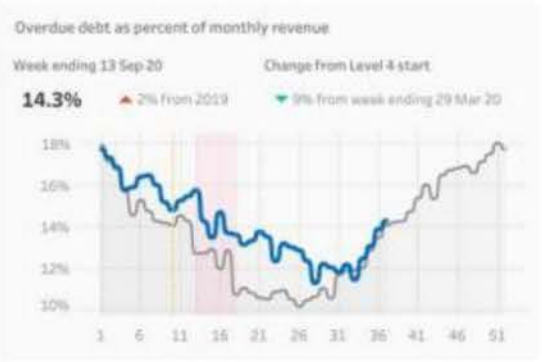

Fig. 2. Business debt

130. The Authority's analysis and actions demonstrate that the impact of COVID-19 should not be used as justification for revenue deferral.

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27 Electricity Authority. (2020). COVID-19 Retailer Debt Deferral Scheme proposal to close: Decision. 20 October 2020. Paragraph 3.13, p6.

5. Proposed Opex Allowances

Box 4: Proposed opex allowances

- The analysis underpinning the Draft Decision to reduce non-network opex is not fit-for-purpose;
- PPI benchmarking has been used inappropriately by Strata;
- Strata's cohort benchmarking uses metrics that are inconsistent with the drivers of network costs, and the benchmarking fails to adequately consider the scale of Aurora's network investment programme;
- Proposed reductions in the SONS and people cost portfolios compromise Aurora's ability to execute its network investment programme and eliminate Aurora's capacity and capability to make asset management and business process improvements;
- Trend factors included in Aurora's base-step-trend modelling are legitimate and appropriate, and should be reinstated;
- Aurora's staffing levels are significantly lower than the comparator cohort when assessed against the average value of work to be delivered during the CPP period;
- The proposed levels of non-network expenditure included in Aurora's CPP proposal are prudent and efficient;

  Reductions in Aurora's proposed vegetation management are informed by analysis, including direct comparison with a single dissimilar EDB, that is flawed because it assumes that all changes in costs are driven by the unit rate;
- Proposed efficiency adjustment for vegetation management have been double-counted.

5.1. Non-Network Opex

5.1.1. General

131. Non-network opex is the expenditure Aurora incurs in running its business and managing and operating its network assets.

132. The Draft Decision proposes significant adjustments to the non-network expenditure allowances to account for:

132.1. perceived general expenditure inefficiencies;

132.2. specific insurance premia, staff training, legal fees and customer communication matters; and

132.3. the removal of network growth assumptions.

133. The Commission's Draft Decision has relied on advice received from Strata. As outlined earlier in this submission and supported by expert advice, we do not consider that the desktop analysis performed by Strata is fit-for-purpose. In our view, the analysis has resulted in expenditure allowances that have been curtailed to such an extent as to put full delivery of the network expenditure programme at risk, and to eliminate our capacity to drive operational improvement into the business. Specific comment on the Strata analysis is provided in section 3.

5.1.2. Non-Network Opex (SONS & People)

134. The main portfolios included in non-network opex, and to which the Commission proposes a significant reduction, are the SONS and people costs portfolios.

SONS and people expenditure supports our operations and delivers important customer outcomes

135. SONS comprises expenditure on the management and operation of Aurora's network and associated assets. It includes our asset management and planning function; operations and network performance; works programming and service delivery; aspects of regulatory and commercial (noting that most of these costs are allocated to business support); operational technology; customer initiated works and contact centre; and planning and delivery process design functions.

136. Table 2, below, outlines what appropriately funded SONS functions allow us to do and what the long-term impact on consumers would be if Aurora is not provided an adequate SONS allowance.

Table 2: SONS expenditure purpose and consequence of under-funding

SONS expenditure allows us to ...	The Impact of underfunding is ...
Manage and plan investment in assets	– assets are unlikely to be managed efficiently over their lifetime; – reliability will not meet customer long-term expectations; – the network may not operate safely or in an efficient and practical manner.
Plan and monitor network performance	– unplanned outages will become more frequent and for longer as a result of network faults not being reviewed and understood; – health and safety matters may not be identified and left unresolved.
Manage work programmes	– the required investment in our network will not be deliverable; – insufficient works coordination will lead to planned outages being more frequent and for longer than is necessary;

	– not monitoring our service providers will likely result in delivery of inefficient services that are not aligned to customers' long-term best interests.
Manage operational technology and communication IT services	– an unsupported ADMS system could result in operational network failure through poor demand and outage management or at least would result in inefficient operation of the network.
Engage with customers	– new connections will not be timely and are likely to fall short of customer expectations; – contractors delivering new connection services will not be monitored and therefore may not deliver services efficiently, safely, and to customers' expectations; – network investment plans will not be able to be scrutinised by Aurora's customers.
Grow and develop our asset management and operational practices	– enhanced risk-based asset management decision-making will be deferred, leading to poor work prioritisation as more complex decisions are required.
Prepare for the uptake of distributed energy resources	– the foundations for a low carbon electrified future will not be developed, constraining customer technology uptake and new services.

139. The people cost portfolio includes the cost of employing business support staff and external service providers. It comprises staff costs for human resources and communications; accounting and finance and risk assurance; regulatory and commercial; and information technology (IT) functions.

140. Table 3, below, outlines what an appropriately funded people cost portfolio allows us to do and what the long-term impact on consumers would be if we are not provided an adequate people costs allowance.

Table 3: People expenditure purpose and consequence of under-funding

People costs expenditure allows us to ...	The Impact of underfunding is ...
Communicate with our customers	– we will be constrained in our ability to keep our customers informed of our investment plans and progress in delivering on them; – we will be unable to consult and seek regular feedback on customers' emerging preferences; – we may be unable to extend the current Customers Advisory Panel (CAP) as a standing

	forum convening throughout the CPP period, as planned. Planning for the CAP to reconvene from 1 April 2021 is already underway.
Employ and retain capable people as well as manage their skills and competencies	– operational and capital efficiencies may not be able to be achieved; – business objectives will not be able to be delivered on.
Plan, manage and report on our risk management, financial and taxation requirements	– if timely performance reporting cannot be achieved then stakeholders will be unable to monitor our performance; – risks may go unchecked and result in negative outcomes not consistent with the long-term customer interests; – additional transactional activity from our increased investment programmes may not be able to be met; – there is a risk we could fall short on statutory and regulatory obligations.
Meet our regulatory and commercial requirements	– pricing principles may not be appropriately applied in pricing decisions; – regulatory obligations may go unmonitored and result in requirements not being met; – planning, property and environmental risks and opportunities may not be identified and appropriately acted upon.
Provide IT support services across the organisation	– forecast operating and capital efficiencies may not be able to be met.
Grow and develop our operational practices	– future operating and capital efficiencies may not be realised.

141. Aurora's objectives include delivering outcomes that are consistent with the long-term interests of consumers. Our CPP proposal set out the level of expenditure required to meet this objective.

5.1.3. Obligations Cannot be met

142. The Commission's Draft Decision reductions of 31% and 33% to the SONS and people costs portfolios, respectively, do not provide Aurora with sufficient allowances to meet its basic business, asset management and customer obligations, let alone let us meet the long-term interest of consumers.

143. PwC has concluded in its report that if the proposed opex reductions were to be implemented, then Aurora would need to reduce its headcount to 115 FTEs (-26%) in RY22 and 112 FTEs (-28%) in RY24, provided it could also maintain current average salaries and the current mix of staff and non-staff costs.

144. The inferred staffing level calculated by PwC is considerably lower than the 132 to 140 FTE's suggested by Strata and only marginally above the 2017 'Delta benchmark' of 108 FTEs. It should be clear that such a reduction in staffing levels is not tenable in the context of our current asset management maturity levels and the scale of our asset renewal plan.

145. Any proposed cuts to our proposed SONS and people cost expenditure will place us in a position where we are forced to consider:

145.1. abandoning, or severely constraining, our implementation of asset management systems based on ISO 55001, including compliance certification;

145.2. a heavily triaged investment in developing our systems and processed, with a narrowed focus placed on only the systems and processes that enable the delivery of the network capital and maintenance programmes; and/or

145.3. heavily reduced preparation for the transformational impact of distributed energy resources and a low carbon future.

146. Prioritising our work in this manner would run counter to the manner in which we have been re-focussing the business and would force us back towards overly-lean practices which have been judged independently as ill-advised. We note that the Commission's enforcement proceeding against Aurora in relation to our breach of the quality standards emphasised the Commission's concerns with the historically unsophisticated approach to asset management. The programme of transformation since the appointment of the current Board and management, which continues through the CPP, responds to this concern. However, the Commission's draft decision implies winding back the improvements we have made.

147. An environment in which we are compelled severely moderate our improvement programmes is not in the long-term interest of our consumers, because:

147.1. improved asset management practices, systems and processes are the basis for driving future operational efficiencies for the benefit of our customers; and

147.2. preparing for the transformation to a distributed energy resource future will improve our ability to prudently and efficiently invest in a network that will deliver innovative technology based solutions for consumers; and

147.3. the efficiencies that we factored into our CPP proposal will no longer be available to exploit.

148. We are confident that we have forecast a level of SONS and people expenditure that appropriately balances the Part 4 purpose statement. We note the independent verifier's report verified 96% of our proposed SONS and people cost expenditure.

Proposed SONS and people allowances are not consistent with the Part 4 purpose

149. Under funding Aurora's non-network opex activities will put our ability to deliver on asset management, network operations, works delivery and customer experience improvements at risk and is inconsistent with the Part 4 purpose statement.

150. The Part 4 purpose, among other things, is to:

150.1. promote the long-term benefit of consumers;

150.2. promote outcomes that are consistent with outcomes produced in competitive markets; and

150.3. ensure that regulated suppliers like Aurora have incentives to innovate and invest, improve efficiency, and provide services at a quality reflective of consumer demands.

151. The non-network opex Draft Decision does not promote the purposes as outlined above. Instead it appears the Commission, influenced by the analysis performed by Strata, has based its draft decision on an exaggerated view of short-term cost efficiency. As it stands, we believe the draft decision would be to the long term detriment of consumers.

5.1.4. Strata's Benchmark Review

152. The majority of the adjustments applied to the non-network opex allowance result from the desktop review our forecasts by Strata as summarised in the Strata Report.

153. Strata's approach to deriving the recommended opex has been to:

153.1. adjust Aurora's forecast SONS and people opex to the long-term average of a benchmark cohort of electricity distributors;

153.2. increase the benchmark opex by a ratio derived from Powerco data, to reflect additional SONS and people opex expected to be incurred during a CPP; and

153.3. cross check the analysis using a notional 'senior management' challenge.

154. We engaged WSP and PwC to review the Strata Report, to assess Strata's benchmarking approach and to determine whether the resulting recommendations were consistent with the regulatory framework. The findings from each of the reports are summarised below.

5.1.5. WSP's Expert Review of Strata's Benchmarking Approach

155. WSP reviewed the alternative benchmarking assessment undertaken by Strata for SONS and people costs.

156. WSP found that Strata applied benchmarking inappropriately and its analysis could not be relied upon to inform an appropriate level of expenditure. WSP formed this view as follows.

Partial Performance Indicator (PPI) benchmarking was used inappropriately to identify the base level of expenditure applicable to Aurora.

157. The outcomes of Strata's PPI benchmarking cannot be relied on, and are inappropriate to be used directly in determining expenditure levels. The joint working paper by the Australian Competition & Consumer Commission and the Australian Energy Regulator on Benchmarking Opex and Capex in Energy Networks supports this view.

158. Strata's selection of 5 EDBs from the available 29 EDBs as a comparator group was inappropriate as the selection was based partially on network parameters that were not demonstrated to represent similarities between the EDBs relevant to the SONS and people cost expenditure being benchmarked. WSP's assessment shows that only two EDBs should be considered as outliers and that 27 of the EDBs were available for inclusion in the comparator group. Strata's selection of 5 EDBs appears to have resulted in a restricted view of the available data that led Strata to an incorrect view of the relative efficiency of Aurora's forecast expenditure for SONS and people cost.

159. Strata's use of a single normalisation factor in its PPI benchmarking did not appropriately account for differences within the comparator group. Use of multiple normalisation factors leads to different outcomes that Strata did not consider. Hence, Strata's view should be considered to be based on an incomplete assessment.

160. PPI benchmarking does not clearly address known expenditure programmes. These expenditures are likely to be observed as inefficiencies if their existence is not known about by the reviewer. Hence PPI benchmarking should be used as a process to identify areas for further investigation, as preferred by other Regulators, rather than for calculating a reduction factor.

The application of the benchmarking did not follow an appropriate methodology

161. The recommended adjustments to non-network opex were based on an unreliable assessment that:

- ignored the inherent limitations in the accuracy of the PPI benchmarking to establish the average expenditures that should apply for Aurora
- applied an uplift factor on the average expenditures to represent the increased opex program under the CPP that was based on Powerco rather than on Aurora's proposed program of work. Strata did not make appropriate adjustments to Powerco's expenditures to account for the significant differences in operations and scale of the businesses and the approach failed to fully consider all of the aspects of Aurora's CPP
- did not appropriately treat variable non-staff costs in the benchmarking model, likely resulting in an understatement of FTE numbers required

162. used a 'senior management' staffing challenge to develop an alternative FTE forecast that was used as an input to the benchmarking model. This challenge was based on Strata's opinion rather than being fact based and assumed more accuracy than was proven.

Strata's claim that their assessment was based on three approaches is incorrect

163. While Strata states that they have used three approaches to develop their forecasts (a senior management' staffing challenge, benchmarking and comparing Aurora's proposed opex with Powerco's), they have actually used three inputs to the one benchmarking approach and hence have not provided an independent verification to their modelling as cited to be a strength of their calculation methodology.

164. WSP's assessment of the independent verifiers benchmarking

165. In comparison, WSP notes that although the Verifier's benchmarking could be refined, it is well considered in that:

- the benchmarking is used appropriately to identify areas for further analysis and not to calculate a reduction factor
- a larger group of EDBs were used which provides a better view of relative performance
- multiple normalisation factors were applied to better account for differences between the businesses
- uncertainty in the data was explicitly acknowledged and addressed.

5.1.6. PwC's Expert Review of SONS and People Expenditure Allowances

166. PwC reviewed the report prepared by Strata and the accompanying spreadsheets. The purpose of the review was to assist in understanding the approach and supporting analysis underlying the recommended opex allowances, and to assess whether the approach and the resulting SONS and People Cost opex allowances are consistent with the regulatory framework.

167. In reviewing the benchmarking approach adopted by Strata, PwC's overall finding is that Strata has not adequately recognised the unique circumstances facing Aurora during the CPP period. The approach Strata has taken to benchmark Aurora to a comparator "*cohort average, and apply a step change based on the Powerco CPP does not derive SONS and People Cost opex outcomes which are consistent with Aurora's planned asset management and network investment programme during the CPP period*".[28]

Cohort Benchmarking

168. PwC concluded that the Strata cohort benchmarking does not deliver outcomes that are consistent with the CPP expenditure objective because:

- it uses benchmark metrics which are inconsistent with the drivers of non-network costs;
- there is no benchmark data for the People Cost portfolio and therefore the benchmarks are inferred from other cost categories;
- it includes Powerco within the cohort group and Powerco's scale (approximately 4x Aurora) means it is not a good comparator for Aurora;

[28] PwC Expert Report. Section 1, p4.

- it fails to consider the impact of different organisation structures and operating models on the balance between SONS and business support costs; and
- it fails to consider the scale of Aurora's network expenditure programme, and the obligations on Aurora to meet network performance standards and delivery requirements within the CPP regulatory period.

169. PwC concludes that Aurora's proposed non-network opex is not out of line with the cohort. Noting that the proposed network programme to be undertaken by Aurora during the CPP period is considerably larger than the cohort group average. It follows that the Non-network opex is also higher.

170. PwC notes that Aurora's ratio of Non-network opex to Network expenditure during the CPP period is in line with the average of the cohort. This outcome appears to be consistent with the regulatory expenditure objective, which is an Input Methodology requirement of a CPP, and requires the CPP expenditure allowances to:

- reflect the efficient costs of a prudent non-exempt EDB;
- meet the expected demand for electricity services;
- manage appropriate service standards; and
- comply with applicable regulatory obligations.

Powerco comparisons

171. PwC concludes that Strata's benchmarking approach is flawed in the context of Aurora's CPP, because it does not reflect a reasonable assessment of Aurora's prudent and efficient costs, necessary to meet Aurora's expected demand, service standards and regulatory obligations.

172. This is based on PwC's finding that:

- Strata's approach to deriving the CPP step change adjustment is subject to the same benchmark metric limitations identified for the cohort benchmarking.
- It also ignores the differences between the CPPs for Powerco and Aurora.

173. The PwC report identifies that the direct comparisons with Powerco are invalid, and makes the point that the underlying drivers of CPP applications are unique to each applicant business, and there is no valid reason why expenditure step-changes associated with Powerco's CPP are relevant to Aurora or any other EDB.

Staffing Levels

174. PwC concludes that, when the average value of work to be delivered during the CPP period is considered, Aurora's staffing levels are significantly lower that the comparator cohort selected by Strata.

175. PwC identified errors and incorrect assumptions in Strata's modelling that drive inconsistencies between briefing report 6 in the Strata Report and the non-network opex allowances in the Draft Decision.

176. PwC identified that Strata has under-estimated non-staff costs in the SONS and People cost portfolios and overlooked the capitalisation of internal labour. PwC calculated a corrected opex allowance based on Strata's recommended FTE count which is $24 million higher than the upper bound figure presented in the Strata report.

177. PwC also concluded that if the proposed opex reductions were to be implemented, then Aurora would need to reduce its headcount to 115 FTEs (-26%) in RY22 and 112 FTEs (-28%) in RY24 provided it could also maintain current average salaries and the current mix of staff and non-staff costs. This inferred staffing level is considerably lower than the 132 to 140 suggested by Strata and only marginally above the 2017 'Delta benchmark' of 108 FTEs.

Model errors

178. PwC identifies that the models which support Report 6 contain input and logic errors, and introduce inconsistencies in the benchmark data used to derive the scaling ratios applied to Aurora's SONS and People Cost opex.

179. It is also noted that the model includes adjustments to input data and formula, many of which are hard coded values within calculation cells which is not consistent with spreadsheet best practice.

180. The consequences of the modelling errors and incorrect assumptions identified are that:

- the benchmark data used for Aurora is not consistent with the CPP proposal or the benchmark data used for the cohort
- the denominators used for the key benchmark metrics are inaccurate
- the FTE estimates are inaccurate
- the recommended opex allowance is insufficient to support the recommended FTE levels.

181. PwC, accordingly, views Strata's recommendations as not fit for purpose.

5.1.7. Commission's Basis for its Draft Decision

182. In applying the Strata recommendations in its Draft Decision, the Commission references Strata's assessment of Aurora's decision-making process, FTE levels and our proposed expenditure relative to Powerco's as supporting evidence for the adjustment.[29]

183. This section responds to the Commission's specified basis for supporting the Strata recommendation.

Aurora's decision-making process

184. Strata questioned the robustness of Aurora's decision-making process.

185. To assist the Commission in understanding the effectiveness of our decision-making process we have subsequently engaged PwC to gather further information that supports our FTE decisions.

[29] Draft Decision. Paragraph E55, p376.

186. We would also note that, contrary to Strata's assertions, independent advice has been provided on the need for Aurora's new business structure, the capabilities we require and appropriate staffing levels. This independent advice includes, but is not limited to:

186.1. The 2016 Deloitte report;

186.2. Review's undertaken during quality breach enquiries;

186.3. The ASML asset management maturity report;

186.4. The Commission approved independent verifier's report.

187. All of the above supported our FTE decisions, which were informed by an executive team with extensive industry experience and were challenged by a Board of Directors with industry knowledge.

188. Strata appears to provide its advice on the basis that Aurora did not compare its proposed level of staff to that of Delta's. We strongly oppose the notion that reference back to an organisational structure that failed is an appropriate approach for determining our future staffing needs. Reference to an organisational structure that failed to deliver on the long-term interest of consumers would be ineffective and costly.

189. We note Strata's assertion that Aurora should have sought additional external advice on its organisation structure. We do not agree that incurring further costs on additional advice was warranted, or would have added value or insight to our decision making process.

190. It should be noted that, even if the Commission did support Strata's assumption, this would only suggest that further investigation is required. It would not in itself amount to a reason for limiting Aurora's expenditure allowance.

FTE analysis

191. The Draft Decision asserts that Aurora employs around 20 (13%) more FTEs than required. This is based on Strata's notional 'management challenge' of new roles, and its analysis that purports to apply opex levels consistent with Aurora's peers.

192. WSP identifies, and we support the conclusion, that this analysis was opinion-based rather than fact-based, and inferred more accuracy than was supportable.

193. PwC's analysis also outlines that:

193.1. the FTE benchmark cross-checks presented by Strata are inconsistent with the opex allowances in the Draft Decision;

193.2. Aurora's staffing levels are significantly lower than the cohort when assessed against the average value of the work to be delivered during the CPP period; and

193.3. the staffing levels inferred by Strata are only marginally higher than the original Delta benchmark

194. We also note that even if it was deemed that Aurora did employee around 20 (13%) more FTEs than required (we do not agree that this is the case), that would not support a 30% reduction in the proposed SONS and people costs allowances.

Comparison to Powerco's absolute expenditure

195. In its Draft Decision, the Commission also relies on Strata's direct comparison of Aurora's forecasts to Powerco's CPP expenditure. This comparison is neither relevant or meaningful as Aurora is facing very different circumstances and looking to address different issues from what Powerco faced at the time of preparing its CPP.

196. Strata has claimed that Aurora is proposing to spend more than Powerco received in the SONS opex category in its CPP. The Strata analysis, however, fails to take into account:

196.1. appropriate time periods and the impact of increasing SONS costs across the industry;

196.2. different SONS and BS expenditure categorisation; and

196.3. that Powerco has subsequently spent and is forecasting to spend more than the Commission's allowance.

197. Table 4, below, compares the relative expenditure of Aurora and Powerco after removing the impact of these two factors. The analysis identifies that Aurora's total non-network opex is nearer to 60% of Powerco's expenditure. The analysis, however, does not consider wider cost categorisation, environmental impacts, or the impact of different operating models.

Table 4: Relative expenditure of Aurora and Powerco

RY22-26 ($RY20, $m)	SONS	Business support	Non-network opex
Powerco	$88.2	$169.3	$257.5
Aurora	$81.2	$74.8	$156.1
Relative spend	92%	44%	61%

198. The Strata analysis also fails to recognise that Powerco has spent, and is forecast to spend, more on SONS than the Commission allowed for in its CPP decision. This a material oversight in the Strata analysis.

5.1.8. Specific Expenditure Adjustments

199. The Commission's Draft Decision also provides for additional specific adjustments to Aurora's proposed expenditure on:

199.1. Insurance premia;

199.2. Staff training; and

199.3. Legal fees and customer communication.

200. This section responds to each of the proposed specific adjustments referenced the paragraph above.

Insurance premia

201. The Draft Decision, on Strata's recommendation, proposes a reduction in the provision for insurance premia of $247,026 over the CPP period.[30]

202. Strata considered that for material damage and business interruption insurance, given Crombie Lockwood's advice (specifically, the plateauing of the material damage and business interruption market), an annual increase of 5% would be more likely to meet the expenditure objective than an annual increase of 10%.

203. Strata has correctly identified that we made a 10% increase to our material damage and business interruption insurance cost forecasts, but has not correctly identified the reason for this 10% assumption. Material damage and business interruption insurance costs have been increased by 10% to:

- reflect Crombie Lockwood's advice that premiums may still rise by 5-10% per annum; and
- to provide for the increase in the value of our insured assets. The value of our insured assets is forecast to increase as we continue to invest in our network.

Staff training

204. The Draft Decision proposes that our annual staff training-related opex be reduced from $2,735 per FTE to $2,000 per FTE. This reduction is also based on advice from Strata.

205. Strata considered that increasing the average allowance per staff member to almost $3,000 per annum would not meet the expenditure objective because:

205.1. most training is expected to be on-the-job training consistent with Aurora's formal learning and development policy. There is a cost associated with on-the-job training in terms of reduced productivity, but this is a separate cost;

205.2. Aurora proposes to invest in new systems and processes throughout its business, from asset management to consumer connections to payroll. Undoubtedly training will be needed in these areas, but the cost of this training is likely to be factored into the cost of these investments; and

205.3. Aurora should be able to achieve economies of scale through onsite training of groups of staff (e.g., project management, network coordination, users of Microsoft Office applications).

206. Strata does not provide any supporting evidence as to why $2,000 is a more appropriate level of staff training.

207. It is evident, through the external independent advice we have received, that our systems, processes and procedures, and staff capability need to be significantly improved if we are to deliver on our

[30] Draft Decision. Paragraph E168, p402

elevated investment programme and efficiently manage our assets for the long-term benefit of consumers. Upskilling our staff is an important part of that process.

208. We note that consistent with other organisations, Aurora has on-the-job training as an aspect of staff development. This however does not impact on our forecast staff training costs because:

208.1. the costs of on-the-job training are not included in our forecast staff training costs; and

208.2. it is not appropriate to substitute formal training with on-the job training when an organisation needs to lift its overall competency.

209. Aurora's staff training budget is focused on improving staff capability. The cost of training staff in new system and processes is not included in forecast staff training costs. Our recent activities have focused on increased capacity, recruitment and system development. As we transition into the CPP period we will focus more on enhancing our staff capabilities. Training is an important component of capability development and requires an increase in investment to support the transition to our targeted asset management maturity.

Legal fees and customer communication

210. The Commission's Draft Decision is to remove $1.1m of our Governance and Administration costs. In doing so, the Commission notes that it anticipates reductions may be possible in regard to expenditure on legal fees and customer communication costs. The decision is based on Strata's analysis.

211. Strata considered Aurora should further reduce the amount of legal costs in its base year, to reflect efficiency benefits from bringing in-house a material amount of its legal work. Currently, Aurora has no legal advisor or corporate lawyer on its staff.

212. We consider that generalist in-house legal council 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.

213. Strata queried whether Aurora's annual allowance of $0.5 million in communications costs for RY19 included some one-off costs associated with Aurora's CPP application.

214. 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.

Trend factors

215. The Commission's Draft Decision is to remove the network growth factor from the SONS and people costs allowances.

216. The network growth factor was included in our forecasts to reflect the increase in non-network opex that has been proven to occur when the network grows. Applying a non-network opex growth factor

across all non-network opex costs is consistent with the approach applied by the Commission in its most recent DPP decision.

217. The Commission has determined a non-network opex growth factor is not relevant for this CPP on the basis that:

217.1. the application of a network growth factor under a DPP does not imply that it is necessarily appropriate to also apply this under a CPP;

217.2. growth in the number of network assets does not necessarily drive increases in SONS and people costs; and

217.3. the staffing levels already recruited prior to the start of the CPP period should be able to absorb any incremental activities associated with network growth, which is not expected to be significant over the coming years.

218. Strata also suggested that:

218.1. whilst a growing network will, over time, require more opex relating to system operations, network support and business support, the overwhelming majority of Aurora's opex in the SONS programme of work relates to human resourcing;

218.2. staffing levels recruited for the SONS programme of work prior to the start of the CPP period would be able to absorb any incremental activities associated with network growth; and

218.3. COVID-19 may slow network growth over the next two years, and that given the uncertainty associated with the resumption of international tourism in New Zealand, this effect may persist for longer.

219. For the reasons laid out in section 5.2.1, we consider that the trend factors applied in our CPP proposal are legitimate and appropriate.

5.1.9. Proposed Non-network Expenditure is Reasonable

220. Our proposed non-network opex allowance was developed to allow us to deliver operational improvements that are in the long-term interests of electricity consumers. Consistent with the Part 4 purpose, it includes an efficient level of expenditure to:

220.1. meet our asset management, network operation and works delivery business plans;

220.2. innovate and invest;

220.3. improve efficiency; and

220.4. provide services at a quality that meets our customers' expectations.

221. In determining the appropriate level of investment, and in the long-term interests of consumers, we have taken into account Aurora's:

221.1. elevated investment needs;

221.2. low level of asset management maturity;

221.3. new business operating model; and

221.4. the need to improve our asset capability and to establish more efficient network operations, works delivery and customer facing business processes.

222. In submitting our proposal, we were confident that the proposed expenditure was efficient on the basis that we had:

222.1. received and acted on the 2016 Deloitte report which identified the need for change;

222.2. considered the Commission's views (in the course of quality breach enforcement and documented in an agreed statement of facts) on shortcomings and established an organisational structure to address those areas in which we needed to improve;

222.3. employed independent experts to advise on Aurora's asset management maturity and the steps required to meet best industry practice;

222.4. reviewed and adjusted our base-year expenditure to set it at an efficient base level;

222.5. carefully ascertained what expenditure we would need incur in addition to the efficient base, including reductions as the needs case was addressed;

222.6. challenged proposed expenditure and FTE levels through management, executive and Board approval processes;

222.7. compared our proposed expenditure to EDBs with similar levels of activity;

222.8. engaged with the independent verifier who reviewed and assessed our proposed expenditure against the expenditure objective.

222.9. adjusted our proposed allowance to accommodate the independent verifier's findings as they were received.

223. Subsequent to the submission of our CPP proposal and in response to the Commission's Draft Decision and Strata's analysis we have:

223.1. engaged PwC and WSP to assess the Strata analysis and to determine the extent to which the resulting recommendations are consistent with the regulatory framework;

223.2. engaged PwC to perform a detailed analysis of our FTEs relative to other EDBs;

223.3. revisited the independent verifier's (and our own) benchmarking analysis to address Strata and the Commission's identified concerns; and

223.4. performed a second challenge of our expenditure to identify what, if any, non-network opex deliverables could be excluded from the CPP period and assess whether this would be in the long-term interest of consumers.

224. Our findings from the above continue to show that our expenditure over the CPP period is efficient, meets the expenditure objectives and most importantly is consistent with the long-term interests of our consumers.

5.2. Network Opex (Maintenance)

225. We set out our views on draft decisions relating to maintenance opex below.

5.2.1. DPP Trend Factors

226. The Commission has not provided sufficient justification for its Draft Decision in relation to the use of DPP trend factors. The removal (corrective maintenance) and reduction (reactive maintenance) of these factors from BST forecasts is inconsistent with its own approach under the DPP and its decision on Powerco's CPP:

226.1. The points raised to try and justify their removal broadly apply to all EDBs subject to price-quality regulation, and Strata has not provided any specific evidence as to why they are not applicable to Aurora;

226.2. We note that equivalent trend factors were used by Powerco in its CPP application and were approved;

226.3. The level of Strata's adjustment to the reactive maintenance factor appears entirely arbitrary and has not been justified.

227. Further discussion on this topic is included in Appendix A.1.

5.2.2. Corrective Maintenance

228. Our CPP proposal included reductions in corrective maintenance to reflect expected improvements in asset condition. These improvements, in turn, reflected our planned increase in asset renewals. The Commission has proposed reducing the increase in planned renewals by 30%. This would reduce the level of asset condition improvements and we would expect there to be a corresponding reduction in corrective and reactive maintenance benefits, leading to a shortfall of $300,000. Unless renewals capex is reinstated, this amount should be reintroduced as part of the final determination.

229. The Commission's decision is inconsistent with the advice from Strata, who suggested that the level of this reduction would depend on the ultimate renewals allowance:

> *"We recommend the step change in corrective maintenance opex generated by additional defects identified by increased preventive maintenance be 60% of Aurora's proposed step change over the CPP and review periods.* ***However, we 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"[31] [Aurora emphasis]

230. Further discussion on this topic is included in Appendix A.2.

5.2.3. Reactive Maintenance

231. Our proposed reactive maintenance opex over the CPP Period include a negative 'step-change' of $300,000k per annum. This reduction was predicated on our ability to make capability and process improvements to improve the efficiency of our reactive maintenance arrangements. The proposed reductions to our engineering capability (SONS opex reductions) will prevent these improvements.

232. Reactive maintenance is undertaken to address faults on our network and to ensure services can be restored safely and as quickly as practicable. These works cannot be prudently deferred. In the absence of our planned improvements, these allowances will need to be increased (i.e., reinstatement of the annual $300,000 reductions) or our ability to respond to faults during the five-year CPP Period will be curtailed.

233. Further discussion on this topic is included in Appendix A.3.

5.3. Network Opex (Vegetation Management)

5.3.1. Vegetation Benchmarking

234. Our review of the Strata benchmarking raised concerns about the approach and application of the findings.

235. To test our concerns we asked WSP to undertake a review of Strata's benchmarking and the direct comparison with Mainpower. The key findings of the WSP review were:

235.1. the benchmarking is flawed because it assumes that 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;

235.2. the quality/variances in EDB reporting on vegetation costs does not enable benchmarking to be undertaken effectively; e.g., reporting on vegetated feeder length versus total overhead system length.

235.3. the selection of a comparator group was challenging with differences in either terrain or urban and rural ratios;

235.4. external factors that drive a difference between EDBs, such as the regulations and council vegetation management, were not accounted for in the comparison. In particular, the additional cost of the 'first cut' and the percentage of trees for which owners have declared 'no interest'; and

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31 Ibid. p105.

235.5. the bottom-up direct comparison with Mainpower did not recognise the differences in ratios of urban versus rural networks and basic terrain, and insufficient bottom-up information was sought from Aurora to enable this to be done effectively.

236. We note 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.

237. The proposed adjustments to our vegetation expenditure will 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.

238. The following sections present our two specific concerns with the Commissions Draft Decision; the application of an arbitrary unit rate (effective immediately), and the double counting of efficiency adjustments.

5.3.2. Arbitrary Unit Rate

239. The Commission has chosen to apply this rate starting from 1 April 2021, despite the current commercial arrangements applying for a further year:

> *"We recommend the unit rate for Aurora's vegetation management opex should be approximately 75% of the $98,907 proposed by Aurora—we suggest $75,000. In making this recommendation, we recognise Aurora is in an existing contractual relationship with Delta for vegetation management until RY22 and that the Commission may want to account for this when setting Aurora's vegetation management opex allowance."*[32]

5.3.3. Double-Counting of Efficiency Adjustments

240. The Commission's decision to retain our original efficiency adjustments is entirely inconsistent with mandating an efficient unit rate from the beginning of the period. This 'double application' of efficiency adjustments suggests a lack of understanding.

241. We note that the narrative contradicts the actual application which includes both the unit rate adjustment and the staged Aurora efficiency adjustment:

> *"As noted above, we have recommended in a separate opex briefing report a 25% step change in Aurora's vegetation management opex. This reduction accounts for the effect of contestability in the provision of Aurora's vegetation management.* ***Therefore, to avoid double counting, we have removed the $735,338 efficiency benefit Aurora included in its CPP proposal*** *to reflect improved contractor productivity created by increased competitive tension under Aurora's new contracting approach (refer to Table 3 above)."* [Aurora emphasis][33]

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32 Strata Report. p94.

33 Strata Report. p117.

242. Despite stating "to avoid double counting, we have removed the $735,338 efficiency benefit Aurora included in its CPP proposal", Strata retained the original efficiency adjustments, effectively double counting the adjustment.

6. Proposed Capex Allowances

Box 5: Proposed capex allowances

- The blanket 5% reduction to capex portfolios has not been adequately justified, and reasons given by the Commission and Strata are mis-aligned;
- Strata's capex review:
  - contains arbitrary and unquantified recommendations;
  - contains basic errors suggesting a lack of review and quality assurance;
  - demonstrates inadequate review of the material provided;
  - contains material inconsistencies and contradictory statements;
  - demonstrates poor analysis and engineering judgement;
  - demonstrates a lack of modelling capability and a poor understanding of repex models in particular;
- The Arrowtown 33kV bus project has been inappropriately categorised as contingent, as there are significant and verified renewal drivers present;
- The Smith Street to Willowbank subtransmission cable project has been inappropriately categorised as contingent, as there are significant and verified renewal drivers present.

6.1. Network Capex (General)

6.1.1. Blanket 5% Capex Reduction

243. The Draft Decision proposes an 'across-the-board' 5% reduction to our network capex portfolios. We disagree with the proposed adjustment and the lack of justification.

244. Contrary to the 'one-size-fits-all' adjustments used, the activities and portfolios subject to the adjustment vary significantly. They have different drivers and various spend profiles. As an example, consumer connections, volumetric renewals, and large projects are all fundamentally different activities and have varying relevance to the justifications used by the Commission.

245. This submission sets out our views on the adequacy of the basis for these reductions. In summary, we dispute the flimsy rationale provided, disagree with the use of arbitrary adjustments, are concerned by the lack of any impact assessment, and we consider the use of 'across-the-board' adjustments inappropriate.

246. Before reaching its final decision the Commission should consider the long-term impact of these adjustments.

247. In its briefing notes, Strata states:

> *"We recommend that the Commission applies a -5% efficiency adjustment to the total asset replacement capex forecast in each regulatory year, to reflect* ***overestimation bias*** *in the forecast,* ***deliverability****, and* ***unit cost reductions****."*[34] [Aurora emphasis]

248. The Commission's rational is set out below:

> *"removal of $13.5 million based on a 5% top-down efficiency adjustment to reflect* ***improved asset management systems and processes,*** *replacement model over-forecasting,* ***new Field Service Agreements increasing competition and better works delivery processes****."*[35] [Aurora emphasis]

and

> *"a top-down 5% efficiency adjustment has been applied to reflect expected improvements in asset management,* ***ICT systems investment****, new Field Services Agreements with* ***external contractors tendering for more than 50% of the capex projects and programmes****."*[36] [Aurora emphasis]

249. Based on the above, there are inconsistent reasons given between the Strata Report and the Draft Decision, including; deliverability, scope for improved processes, impact of contestability, overestimation bias, and ICT improvements.

250. Of the reasons suggested, below we set out below why they are inappropriate:

250.1. **Deliverability concerns:** despite the independent verifier being comfortable with our approach (e.g., discussions with vendors and deferring non-critical works);

250.2. **Process improvements:** the reductions to non-network opex and our engineering capability, in particular, will limit our ability to make meaningful efficiency gains through improved processes (both those in our CPP Application, and the additional reductions proposed by the Draft Decision);

250.3. **impact of contestability:** both Strata and the independent verifier determined that our costs are generally reasonable and, in many cases, have already been subject to market testing;

250.4. **overestimation bias:** Strata's assertions about overestimation bias are unfounded, and given without any justification or evidence. We believe this is partly due to the fact that they have not reviewed our material adequately and do not seem to understand repex modelling (see table B1.8 where we explain that our models use longer asset lives than other EDBs);

250.5. **ICT improvements:** while ICT spend has been allowed, we will require significant time and inputs from our wider business. This will no longer be possible and we expect these

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34 Strata Report. p34.

35 Draft Decision. Paragraph 2.37.5, p58.

36 Draft Decision. Paragraph D15.4, p206.

improvements to be delayed. Furthermore, our forecasts include efficiencies to account for ICT gains in the medium term – it will take time to implement technology and longer to realise the full benefits.

251. Following discussions with the independent verifier, we made efficiency adjustments to a number of fleets (e.g., crossarms and LV enclosures) to reflect improving processes. These gradually increasing adjustments reflect that the underpinning improvements take time. The fact that the Commission did not apply the 5% adjustments (or a 'top-up' adjustment to reach 5%) to our crossarms and LV enclosures fleets suggests that:

251.1. it was not reflecting the deliverability or over estimation aspects as these would still apply (if they were valid); and

251.2. the Commission accepts the need for gradual efficiency improvements (given our adjustments took this form).

252. Further, any such adjustments applied from the beginning of the period and equally to all years suggest a lack of understanding of how businesses improve over time, and that certain fleets will have differing scope for such improvements.

253. We provided material to the independent verifier and the Commission of our deliverability review at a portfolio level. These reviews are discussed in our application material and in the independent verifier's report.

254. We consider this adjustment approach to be inappropriate. In addition:

254.1. forecasting approaches and potential delivery risks vary across the more than 20 portfolios with different drivers and delivery risks;

254.2. the independent verifier was confident that our approach assured a deliverable work programme;

> *"Aurora Energy's approach to deliverability appears well considered, and discussions with service providers are well advanced. There are risks associated with its deliverability plan, but we expect that Aurora Energy can and will manage them."*[37]

254.3. we have significant ability to flex between portfolios in a given year to ensure that over the CPP period we can deliver our plan;

254.4. constraining our renewal programmes in this manner may lead to increased asset-related risk.

[37] Farrier Swier Consulting Pty Ltd. (2020). Verification Report: Aurora Energy CPP Application. 8 June 2020. Table 1.1, p16.

255. The above reasons, together with the deficiencies inherent to the type of adjustment used, are a cause for considerable concern. Our view is that the proposed, indiscriminate reduction to network capex should be rescinded.

6.1.2. Issues with Strata's Review

256. We have serious concerns about the manner in which the Commission has unreservedly accepted recommendations from Strata. In our view, the manner and approach to the review has been entirely inadequate.

257. We provide examples of our concerns, below, with further detail provided in the body of this report and throughout the appendices:

257.1. arbitrary recommendations, provided without justification or quantified basis;

257.2. basic errors in the report suggesting a lack of review and quality assurance;

257.3. inadequate review of the material provided to them;

257.4. material inconsistencies (within their drafting) and contradictory statements;

257.5. poor analysis and engineering judgement; and

257.6. lack of modelling capability, with a poor understanding of repex models in particular.

Arbitrary recommendations

258. In our view, Strata has included a number of arbitrary and unjustified adjustments. The material that we have seen does not include any meaningful explanation or quantitative basis to support Strata's recommendations.

259. Table 5, below, lists a number of these arbitrary and unjustified adjustments with references to further discussion in the appendices.

Table 5: Arbitrary recommendations made by Strata

Arbitrary recommendations	Appendix
5% reduction to network capex	B1.12
70% adjustment to reactive maintenance trend (opex)	A1.3
Providing 'estimates' with no basis or explanation	A4.3
50-67% adjustment to corrective maintenance	A4.6
$75,000 unit rate for vegetation	A5
Arbitrarily shifting expected life of pole mounted transformers by 5 years	B1.8
Arbitrarily shifting expected life of pole mounted fuses by 2 years	B7.3
Arbitrarily shifting expected life of pole mounted switches by 2 years	B7.4

75%/33% deferral adjustments to pole mounted transformers	B5.4

Errors and misunderstandings

260. The Strata Report includes a series of errors. These errors point to a lack of internal review and quality assurance.

261. We are concerned that the Commission, when reviewing this material, did not point out these errors. In our view, this points to a lack of robust process in the Commission's process.

262. Table 6, below, lists a number of these errors with references to further discussion in the appendices.

Table 6: Errors and inconsistencies in the Strata Report

Errors and inconsistencies	Appendix
Multiple errors when interpreting our corrective maintenance adjustments	A4.6
Despite stating "to avoid double counting, we have removed the $735,338 efficiency benefit Aurora included in its CPP proposal", Strata retained the original efficiency adjustments, effectively double counting the adjustment.	A5.1
Multiple material typos and incorrect references	B1.13, B4.1, B4.2, B4.3
Incorrect references to our LV cable modelling approach	B4.5
References to 'standard distributions' instead of normal distributions	B5.12
Basic errors when calculating implied unit rates	B5.25
Stating that we claimed that the pole-mounted transformers programme is "critically optimised"	B5.29
Inclusion of a chart with no legend or explanation making it entirely meaningless	B7.5
Misquoting DC system asset lives	B7.8

6.1.3. Inadequate Review of our CPP Material

263. Due to the amount of material apparently ignored or overlooked, we believe that our CPP proposal was not adequately reviewed by Strata. Given Strata's repeated references to our 2018 AMP, we suspect that our 2020 AMP, in particular, was not properly considered.

264. As explained in our proposal, since 2018 we have updated our:

264.1. renewal modelling;

264.2. asset information;

264.3. strategies and objectives;

264.4. AHI methodology; and

264.5. work programmes.

265. Forming judgements on material that is out-of-date and different from our proposal is not representative of good engineering practice by any objective standard and invalidates any conclusion drawn from that material.

266. This calls Strata's recommendations into question. We intend to raise this with the Commission separately, at an appropriate time, as part of a broader discussion on the process used to review and consult on our proposal.

267. Table 7 ,below, lists a number of examples of where Strata's review of material has been inadequate, with references to further discussion in the appendices.

Table 7: Examples of Strata's inadequate review of our CPP material

Inadequate review of material	Appendix
Claims that we made no post-modelling adjustments	A1.3, B1.6
Ignoring/overlooking reactive maintenance adjustments	A4.7
Ignoring/overlooking material setting out strategic linkages	B1.2, B3.1, B5.1
Making repeated references to material in our 2018 AMP that has been superseded, and ignoring material in our 2020 AMP	B1.4, B5.5, B5.8, B5.11,
Ignoring/overlooking material (both ours and from the independent verifier) that explained and demonstrated our challenge processes	B1.5
Ignoring/overlooking the independent verifier's review of our forecast models	B1.7
Ignoring/overlooking evidence of our deliverability review and the independent verifier's comments on this	B1.11
Ignoring/overlooking benefits analysis to support subtransmission cable forecasts	B2.1
Ignoring explanations on how we prioritised safety critical work	B3.4, B3.6, B5.18
Claiming an "absence of information on how the health index value is derived and supported"	B5.22
Claims that "no information was provided" on the use of safety criticality	B5.24, B5.29

Material inconsistencies and contradictory statements

268. There are several significant internal inconsistencies and contradictions in the Strata Report. These point to a lack of internal review and quality assurance. We are concerned that the Commission, after reviewing this material, did not seek to have these addressed.

269. There are also material inconsistencies between Strata's recommendation and the position taken in the Draft Decision. In our view, the latter is only appropriate with some explanation from the Commission, which has not occurred. In our view, this points to inadequacies in the Commission's process.

270. Table 8, below, lists a number of material inconsistencies and contradictory statements within the Strata Report, with references to further discussion in the appendices.

Table 8: Material inconsistencies and contradictory statements in Strata's report

Material inconsistencies and contradictory statements	Appendix
Claims that we made no post-modelling adjustments	B3.3
Inconsistencies between Strata recommendations and Draft Decision	A4.8
Despite stating "to avoid double counting, we have removed the $735,338 efficiency benefit Aurora included in its CPP proposal", Strata retained the original efficiency adjustments, effectively double counting the adjustment.	A5.1
Stating "Aurora did not provide any policies, planning standards, or key assumptions" and then discussing and commenting on multiple examples	B1.1, B1.3,
Stating "nothing in the documents supplied provided linkages to higher level policies and strategies"	B1.13, B6.2
Referencing deliverability adjustments that they claim elsewhere were not made	B2.4, B5.17
Concluding, in multiple cases, that unit rates are reasonable and consistent with market rates, then applying a 5% adjustment to reflect future competitive rates	B2.5, B3.7, B4.6, B5.26, B5.30
There are material inconsistencies between Strata's recommendation on subtransmission cables and the Commission's explanation	B2.7, B2.8
Inconsistent interpretations of our LV cable modelling	B4.1, B4.2
Inconsistent views on our approach to volumetric modelling of pole mounted transformers	B5.23
Suggesting that facilities (non-network) capex should not be adjusted "given the relatively low value of the forecast, we do not recommend an adjustment" while recommending adjustments to three network fleets with lower spend	B7.9

Poor Analysis and Questionable Engineering Judgement

271. The inclusion of spurious analysis and information appears to be an attempt to imply a level of rigour and supporting analysis that was not undertaken. This is particularly unhelpful given the apparent lack of critical review by the Commission.

272. Table 9, below, lists a number of examples of Strata's poor analysis and questionable engineering judgement with references to further discussion in the appendices.

Table 9: Examples of poor analysis and questionable engineering judgement in Strata's report

Poor analysis and questionable engineering judgement	Appendix
Removal of DPP trend factors	A1.4
Claims that LIDAR will only lead to vegetation management work	A4.1
Poor understanding of inspection regimes	A4.4
Poor understanding of corrective maintenance activities	A4.5. A4.6
Making unexplained adjustments to asset lives that are already older than those of other EDBs	B1.8, B7.3, B7.4
The application of efficiency adjustments from the beginning of a regulatory period	B1.12
Inclusion of spurious 'analysis' that is it not discussed or referenced	B1.14, B5.13, B6.1
Deriving highly-flawed conclusions from historical fault information	B2.2
Flawed conclusions on failure consequences	B2.6
Irrelevant references to our 2018 AMP	B5,2
Suggesting we should have sense-checked our spend against historical levels despite the acknowledged levels of historical underinvestment	B5.3
Recommending deferrals to pole mounted distribution transformers while acknowledging that such deferrals will increase safety risk	B5.4, B5.19, B5.20
Demonstrating a lack of practical engineering understanding of pole-mounted assets	B5.6, B5.7
Not understanding the differences between ongoing work programmes and major projects	B5.15, B5.16
Strata attempted to replicate our modelling with different data and settings and then concluded that the difference in results is due to an adjustment by us based on our "understanding of the condition of the assets and the low failure rates being experienced".	B6.3

A suggestion that we should change our already committed, 75% complete RY21 (pre-CPP) work programme is nonsensical.	B7.6
Claiming that expenditure may be double counted, or triple counted if it is also an opex item	B7.7
Questioning why assets might be past their expected age, despite the numerous references in our proposal to historical under investment	B7.8

Lack of modelling capability

273. Strata seems to be confused between standard renewal forecasting approaches. As outlined in our CPP main proposal and AMP20, a **survivor curve** approach is used when actual, historical replacement data is available to calculate a survivorship function and associated risk. A **repex model** approach is used when historical replacement information is scarce and assumes a normal replacement distribution around an expected life.

274. A standard repex model contains a calculation to convert the normal distribution to a corresponding survival rate purely for information purposes.

275. Also, the term 'standard distribution' is incorrect, and we assume Strata means the normal distribution we have employed (further drafting errors).

276. We use normal distribution as it generally has a 'wider' replacement (not failure) distribution compared to Weibull. We did this because we are being conservative around our expected life assumptions as we do not have any historical failure information. Using the Weibull function (built in the model as a selectable option) will produce more replacements compared to the normal distribution.

277. We are strongly of the view that Strata does not have sufficient understanding of these modelling techniques to form relevant, meaningful opinions. In contrast, the independent verifier understood the approach and the underlying context for its use.

278. The table below lists a number of examples where Strata's lack of modelling capability has been demonstrated, with references to further discussion in the appendices.

Lack of modelling capability	Appendix
Error calculating corrective maintenance adjustment	A4.6
Incorrect statements around the use of failure rates in repex modelling	B1.7, B3.5, B4.4, B7.2
A lack of understanding of standard repex modelling	B3.2, B5.21
Errors trying to derive historical unit rates	B5.25
Inability to understand links between models that reflect asset interdependencies and prevent double-counting	B5.28

Attempts to replicate our modelling using less granular information disclosure data	B6.3
Deriving entirely incorrect unit rates	B6.4

6.2. Proposed Use of Contingent Projects

279. In general, we believe that the contingent projects mechanism is a sensible approach, given the potential (albeit reducing) uncertainty due to COVID-19. Our CPP growth project modelling and project overview documents provided the level of detail required for the independent verifier to assess whether our growth projects met the expenditure objective. In our view this format should form the basis of a contingent project application. However, the approach would need to ensure the mechanism is workable and commensurate with the size and type of the proposed investments.

280. There are revenue and cashflow implications, however, under the terms of the Draft Decision. Recovery of costs associated with any contingent project will be deferred to the next regulatory period, providing a very strong incentive not to progress contingent projects. This is problematic because the Commission has declined a range of growth-related projects, particularly in the Queenstown/Wanaka areas, due to the uncertainty around COVID-19. This could potentially see Aurora declining large connections to manage growth and the security-of-supply implications on the network.

281. There are associated timing issues also. At the Commission's Queenstown stakeholder meeting, the Queenstown Lakes District Council expressed concern that the contingent project approach may not be timely enough to be effective, especially since the Commission is bound to observe proper process, including general consultation.

6.2.1. Specific Project Commentary

Arrowtown 33kV bus

282. If the growth driver for Arrowtown 33 kV bus project is considered 'contingent', the Commission must realise that there is also an underlying renewal driver that means deferral of the project is not prudent. If the project does not eventuate in the time earmarked for a growth need (RY24-25), then renewal drivers will dominate with proposed installation of the 33kV bus and associated equipment in RY25.

283. The project also allows to bring the Arrowtown ring into line with our security of supply standards (category Z1). In our CPP proposal, we noted that:

> *"Although the ring will provide the capacity and enhanced security following the Arrowtown 33kV ring upgrade project, the ring will still not have uninterrupted supply in the event of some faults.*
>
> *There is no protection on the existing 33 kV outdoor bus at Arrowtown and the Arrowtown 33/11 kV power transformers are protected by 33 kV fuses. In the event a fault occurs on the Arrowtown 33 kV ring our contractors have to survey the lines, identify the fault, manually isolate the fault and re-energise the un-faulted sections of*

the ring to restore supply to consumers. Our protection standard requires power transformers and 33kV bus to be equipped with differential protection. This standard aligns with normal industry practice.

Additional security on the ring will be required to securely meet the existing and forecast demand."[38]

284. The key issue from the above excerpt is that the 33kV bus and power transformers are only protected by fuses, with that form of protection being coarse. The Arrowtown power transformers, at 5MVA, are the largest transformers on the network that are protected by fuses only.

285. This was highlighted as a risk in WSP's 2018 independent review of the state of the Aurora network.[39]

286. T1 has had extensive oil leaks; the most severe of all our power transformers, and refurbishment has been assessed as uneconomic. T1 and T2 do not have appropriate oil bunding, which presents an environmental risk, and there is no firewall segregation, which prevents a risk of damage/destruction of all transformers if one fails catastrophically. These factors, combined with relatively high loading and high fault level, present an elevated consequence of failure and therefore high risk if the fuse protection fails to operate correctly, a likely scenario if a high impedance fault was to occur.

287. While there is an elevated level of risk at Arrowtown, the deferral of renewals to align with growth drivers was considered reasonable and efficient from a project delivery perspective. If, however, growth does not eventuate, this project will still need to be executed on the basis of renewals drivers.

288. On the basis of multiple renewal drivers, we propose that the Arrowtown 33kV bus is included in the network capex expenditure allowance in RY25. If growth is strong in the Arrowtown area, we will accelerate the project as required to meet appropriate network performance levels.

Smith Street to Willowbank subtransmission cable

289. In our subtransmission cable renewal modelling, the Willowbank subtransmission cables were forecast for renewal in RY22. We then assessed the Dunedin 33kV 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.

290. Thus, the main driver for this growth project was based on an underlying renewal need but only categorised as a growth project due to the fact that it is enhancing security-of-supply in the Dunedin 33kV network. The project must proceed to avoid the risk of failure of the Willowbank 33kV cables and therefore cannot be treated as a contingent project. If the project does not eventuate in the time earmarked for the growth (security-of-supply) need starting in RY22, then a like-for-like replacement of both Willowbank subtransmission cables is required, necessitating expenditure within the CPP period.

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38 Aurora Energy Limited. (2020). Customised price-quality path application. 12 June 2020. Section F4.1, p139.

39 WSP Australia Pty Limited. (2018). Aurora Energy: Independent Review of electricity networks. Section 17.4.2, p172.

291. We are concerned by the Commission's decision to treat this project as 'contingent' since the project has an underlying renewal need. It appears to us that the Commission has not considered that their decision to defer the project as contingent will drive a more costly (in the CPP) and less resilient like-for-like replacement.

7. Quality Standards

Box 6: Quality standards

- Aurora supports the Draft Decision on planned reliability limits;
- The Draft Decision lowers the unplanned reliability limits to levels that create an unnecessarily high risk of future compliance breaches;
- The Draft Decision sets unplanned reliability targets to levels too low for the quality incentive scheme to be effective;
- The draft reliability limits are not linked to proposed expenditure allowances;
- Retention of the quality incentive scheme is inconsistent with consumer views on reliability.

292. This section sets out our views on the Commission's Draft Decision on the proposed quality standards.

7.1. Context

293. Consistent with the Commission's consultation feedback, we concluded that while consumers did not necessarily want to pay more for improved reliability, they also did not want to see it deteriorate further.

294. With the expenditure proposed in our CPP proposal, we forecast reliability to stabilise through the 3-year CPP period with a slight improvement likely in the 4-to-5-year timeframe. This is commensurate with what consumers told us they are willing to pay for, and positions the network for future reliability improvement if consumer preferences change in the future.

295. When setting unplanned reliability limits for the full CPP period (3 or 5 years), consideration must be given to the worst performing year, taking account of individual year forecasts and weather related impacts, to ensure that limits are not unnecessarily breached. Improvements in reliability later in a 5-year CPP period cannot be reflected in setting a limit for the early years of a CPP period.

296. In the context of the significant work plan ahead of us, and the need to undertake upgrade and renewal work in a safe manner for our contractors, we support the Draft Decision's position on planned outage reliability standards (SAIDI and SAIFI), which are consistent with DPP3 levels. The DPP3 planned reliability levels recognise the uplift in work in the later part of DPP2, supporting a continuation of this trend.

7.2. Planned Reliability

297. We support the planned outage reliability standards (SAIDI and SAIFI) proposed in the Draft Decision, which are consistent with DPP3 levels. With appropriate works coordination and improved outage

notification we will be able to deliver the elevated level of work on the network through the CPP period, irrespective of the length of the CPP regulatory period.

7.3. Unplanned Reliability

298. We consider that the Commission has lowered the unplanned reliability limits to levels that create an unnecessarily high risk of future breaches, and has set the unplanned reliability target level too low for the Quality Incentive Scheme to be effective. It remains our view that, given our focus on safety related works, the proposed Quality Incentive Scheme will be less effective during the CPP period than would normally be the case.

299. The Draft Decision narrative and modified modelling supports our view that unplanned reliability performance will stabilise at current levels and improve slightly toward the end of the 5-year CPP period.

300. Therefore, Aurora and the Commission have set out to establish what is the 'current' level of performance in an average year (for target setting) and in an adverse year (for limit setting).

301. The Commission interprets our unplanned reliability forecasts to demonstrate a further deterioration of unplanned reliability as follows:

> *"Aurora suggested slight reliability improvements may arise as a by-product of 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 outages that are19% longer and 10% more frequent than recent years (2016-2020)."*[40]

302. We do not consider that 5-year averaging is an appropriate comparison to make in the context of a deteriorating trend, as it is not appropriate to compare RY22-26 performance with performance dating back to RY16.

303. Our analysis and proposed unplanned reliability forecasts reflect the fact that reliability has continued to deteriorate over the last few years, whereas the analysis supporting the Draft Decision places greater emphasis on averaging performance over a slightly longer period to account for 'possible' cyclic trends.

304. There are merits and weaknesses in either approach, but we have placed greater emphasis on capturing recent performance, as this is most relevant in a deteriorating trend. We note that Strata has observed a 'possible' cyclic trend, but has not statistically demonstrated or found a reasonable explanations for the trend, which renders the observation speculative and creates uncertainty over its relevance.

Therefore, we do not agree with the Commission's view that our forecasts represent a further decline in unplanned reliability performance, and we do not agree with Strata's findings that:

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[40] Draft Decision. Paragraph C20, p164.

> *"We have concluded that it is not appropriate for Aurora's unplanned reliability model to be to use the RY18 to RY20 3-year unplanned interruption performance because:*
>
> - *it has a bias towards over estimating the output prediction; and*
> - *it is not aligned with the historical profiles observed for both SAIDI and SAIFI."*[41]

305. Biasing toward recent performance has relevance when performance is changing (this is not over-estimating), especially when the root cause of an historic cyclic trend/profile has not been established.

306. The Commission also states:

> *"Our draft SAIDI and SAIFI targets are similar to Aurora's recent experience over the last five years, at around 2% better than its average 2016-2020 experience (rather than Aurora's proposed 19% and 10% forecast deterioration)."*[42]

307. In setting targets that are 2% lower than the preceding 5-year average indicates that the Commission believes that, instead of a deterioration in unplanned reliability performance in the last 5 years, there has been a small improvement . We do not subscribe to this view, as supported by our forecasting. Table 10, below, demonstrates the declining reliability performance (duration) relative to 2016 levels.

Table 10: Declining reliability performance relative to 2016

	2016	2017	2018	2019	2020
DPP3 Backcast	88.8	57.5	97.0	98.2	110.1
Average					90.3
Performance relative to 2016	-	↓	↑	↑	↑

308. Both Strata and the Commission point to the use of a 3-year average in Aurora's forecasts as leading to a conservatively high forecast, and therefore have proposed an alternative 4-year average. [43,44]

309. The selection of a 4-year average has not been justified as more appropriate than a 3-year average. In our view, a 3-year average better reflects recent asset performance and also current operational practice, which includes taking account of refinement to our auto-reclose disarming during fire season, extra HV isolation associated with restricting live operation of some LV fuses, line patrols before re-livening, etc.

310. The Commission proposes to use a 4-year normalisation period to match the 4-year averaging period.[45] In our view, these do not need to be matched as the level of normalisation is likely to be more a function of weather than network performance and, statistically, the variability of the

41 Strata Report. p173.

42 Draft Decision. Paragraph C41, p170.

43 Strata Report. p173.

44 Draft Decision. Paragraph C54.1, p176.

45 Draft Decision. Paragraph C54.2, p176.

weather makes a short (4-year) period problematic. Underlying reliability performance is a function of asset health and operational practices etc., which change over time, so a shorter averaging period is more appropriate. We chose a 10-year normalisation period to help remove the variability in a 4-year period. Strata supports this view as follows:

> *"... the yearly ratios, especially for SAIDI, can be quite variable. This is understandable due to the variability in MED occurrences. However, by taking the modelling approach that it did, Aurora had to produce a DPP3 normalised output. Combining this with a 10-year average ratio will have eliminated some of the variability in the outputs of Aurora's composite model. Accordingly we consider that:*
>
> 1 *Aurora's technique and process used to normalise its unplanned interruptions was reasonable given the structure of its composite model; and*
>
> 2 *the scaling approach that Aurora has applied is consistent with the DPP3 methodology"*[46]

311. In our view, there are complex factors that need to be considered when assessing the impact of historic and future asset replacement regimes on reliability. Strata and the Commission have potentially misunderstood the application of our asset health model to inform the unplanned reliability forecast and, therefore, may have incorrectly applied the Verifiers comments on age-based versus risk-based replacements to reliability forecasting.

312. Aurora's forecasting model develops a relationship of asset health scoring to reliability performance. When we replace an asset, the asset is updated with a healthier score which, as part of a fleet programme, statistically flows through to improved reliability. The actual time of replacement for historic and future asset replacements will vary from the assumed age-based allocation of asset health scores, and with a risk lens, this is good asset management. As long as the model has historical asset health determined in a consistent way over time (age-based assumption) then the relationship of forecast asset health to reliability is consistent over time, irrespective of actual asset health.

313. The Draft Decision provides an example of better targeting those assets with poorest condition leading to better than forecast reliability. However, you could equally choose an example where an asset's replacement is deferred (as per the independent verifiers view) based on lower safety risk, which will intuitively result in a decline in reliability performance. To reiterate, there are complex factors to consider, and to apply an arbitrary 5% improvement factor to the modelled results has not been justified.

7.3.1. Draft Reliability Limits are not Linked to Expenditure Allowances

314. We note that the asset management decision-making improvements suggested above are subject to an improvement in systems, processes and resources which have been put at risk by the reduced non-network opex allowances.

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[46] Strata Report. p173-174.

315. Similarly, the 1% per annum improvement in reliability associated with our preventive and corrective maintenance objectives [47] is certainly not attainable with the reduction to the corrective maintenance allowance proposed in the Draft Decision.

316. Furthermore, our reliability forecasts do not include a maintenance component, as the modelling assumed that as our assets age, we will have sufficient corrective maintenance allowance to stabilise/maintain their current/recent level of performance. The Draft Decision reliability targets and limits have not been adjusted to take account the proposed reduction in corrective maintenance expenditure.

317. The Draft Decision also proposes to reduce our vegetation management opex allowance (based on unproven inefficiency) which will ultimately impact our ability to deliver vegetation management improvements and reduce vegetation-related faults. Our forecast includes six minutes (pre-normalisation) of improvement to reliability associated with delivering our vegetation management plan. The Draft Decision's reliability limits have not been adjusted to take the proposed reduction in vegetation management expenditure into account.

318. Similarly, the proposed all-inclusive 5% efficiency adjustment to network capex is not achievable and will therefore result in a reduction of renewal volumes, leading to a consequential deterioration in asset health and a decline in reliability performance of the associated assets.

319. Consistent with our CPP Application, the Draft Decision supports our view that there is a greater-than-normal uncertainty associated with the reliability forecasting data. This creates a greater risk of breaching 'standard' reliability limits, and we support the Commission's conclusion that there should be a greater than normal margin between the target and the limit.

320. The Draft Decision proposes to set the limit two standard deviations above Aurora's forecast target. While this creates an uplift over existing limits, we consider it remains a very challenging limit to manage to, and will inevitably incentivise investment in reliability initiatives to reduce the risk of breach. This is contrary to consumers' stated preferences, and will divert some focus and expenditure from our safety-led plan.

321. We note the Commission's view that reliability targets should be set to average forecast performance over the regulatory period[48], and we can understand this logic in the context of the quality incentive. We consider this appropriate, subject to the reliability limits remaining decoupled from the final CPP decision targets.

7.3.2. Summary

322. In summary, the unplanned reliability targets and limits specified in the Draft Decision are lower than our modelling indicates is the current level of reliability performance. Therefore, if the Draft Decision stands, we will need to invest in reliability initiatives to manage the risk of breaching reliability limits

47 Draft Decision. Paragraph C56.2, p178.

48 Draft Decision. Paragraph 56.3, p178.

through the CPP period. This is contrary to consumers' stated preferences, and will divert some focus and expenditure from our safety-led plan.

7.4. Quality Incentive Scheme

323. We reiterate, consistent with the rationale for our CPP proposal, that our current focus (and indeed the focus of the past three years) is on safety risk management and, in general , we are not investigating investments in reliability improvement[49]; albeit we endeavour to take all practical operational steps to minimise the impact of planned and unplanned outages to customers.

324. To provide further clarity, we know that at the margin there are 'economic' reliability investments (capex and opex) that could be made on the network, but these are not affordable for our communities at this time, and they will distract our limited internal and external resources from safety-related work.

325. We are wary of a quality incentive mechanism that is not aligned to the circumstances of the business or what consumers have told us. If a business is in a position where it must prioritise other investment over reliability investments, then a quality incentive mechanism simply becomes an ex-post revenue adjustment mechanism rather than genuinely trying to influence improved performance.

326. Customers' preference for us to defer investment in reliability performance was based on our consultation communication indicating that safety investments in the network would lead to reliability stabilisation, or a very slight improvement in the later part of the CPP period. In this context, it is appropriate to have some assurance that we will stabilise reliability. We are of the view that the reliability limit provides the required reliability performance protection for customers and the QIS is not appropriate for our CPP.

[49] Exceptions include security of supply enhancements where there is an elevated level of prolonged outage risk; e.g., Clyde/Earnscleugh reinforcement.

8. LENGTH OF CPP PERIOD

Box 7: Length of CPP period

- The Draft Decision, based on flawed advice provided by Strata, has resulted in non-network opex allowances in the Draft Decision that are insufficient to support our investment and business improvement programmes and serve only to weaken Aurora's incentives to invest;
- 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.

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[50] 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.

328. We also reiterated our views on the term of the regulatory period that should apply in our response to the Commission's issues paper.[51,52]

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

50 Aurora Energy Ltd. (2020). Customised price-quality path: Application. Section 4.1, p42.

51 Commerce Commission. (2020). 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.

52 Aurora Energy Ltd. (2020). Aurora Energy's submission in response to the Commission's CPP issues paper. 20 August 2020.

Commission's reasoning, a CPP of three years would mean that Aurora would likely need to transition back onto 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.

331. In our submission on the CPP issues paper, we noted that the risk of expenditure allowances being set to high or too low (neither case being in the long-term interests of customers nor the company) was mitigated in part "*by the fact that the Independent Verifier was in fact able to substantially verify both our three and five-year expenditure forecasts to an equal level*".[53]

332. Regrettably, the Commission's Draft Decision has been influenced by analysis performed by Strata which, as expert evidence provided with this submission demonstrates, is flawed. This has resulted in non-network opex allowances in the Draft Decision that are insufficient to support our investment and business improvement programmes and serve only to weaken Aurora's incentives to invest.

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.

53 Ibid. p4.

9. INDICATIVE REPORTING REQUIREMENTS

Box 8: Indicative reporting requirements

- The Draft Decision, based on flawed advice provided by Strata, has resulted in non-network opex allowances in the Draft Decision that are insufficient to support a material step-change in reporting associated with improvement initiatives;
- The extensive list of proposed reporting requirements is entirely at odds with the Commission's Draft Decision to reduce Aurora's level of engineering capability;
- We will reconsider our views on indicative reporting requirements when the proposed requirements are consulted on and in light of the final decision on Aurora's CPP.

334. While the Draft Decision does not include many specifics on the Commission's proposed reporting regime, it does highlight a number of areas that are being considered. The paper indicates that the Commission is interested in the views of stakeholders on these areas.

335. Our overall view is that the proposed set of indicative reporting areas was broadly relevant when viewed in the context of our original CPP Proposal. However, based on the subsequent Draft Decision the proposed list is now largely redundant as it focuses on improvement initiatives that are no longer viable.

336. In light of the proposed opex reductions, we will have little choice but to refocus our remaining capability and capacity on delivery of safety-driven work and ensuring the safe operation of the network. We expect that this will lead to:

- deferral of our asset management improvement programmes;
- withdrawal our commitment to undertake a pricing review;
- suspension of social/community driven activity (e.g., charity, sponsorships, discretionary stakeholder engagement);
- an inability to fund a mid-period expert review;
- an inability to undertake new reporting (e.g., regional works delivery, pricing); and
- an inability to undertake voltage quality-based work.

337. As a general point, we find the level of activity implied by this list of 'process improvements' to be entirely at odds with the Commission's Draft Decision to reduce our levels of engineering capability. The list below is a summary of the initiatives listed in the Draft Decision and discussed in Appendix C.1 below.

- processes to ensure that asset health models are informed by asset condition data and models are consistent with industry accepted modelling practices for each asset class and type, where appropriate;

- processes to test whether volumetric asset health modelling using age-based survivor curves are consistent with industry accepted modelling practices for each asset class and type where appropriate;
- processes to improve understanding of asset criticality and prioritisation of asset replacement and renewals;
- processes to coordinate asset condition, asset health models and criticality understanding;
- processes to improve the asset risk framework to inform risk-based decision-making. Risk frameworks should ideally be driven by asset management systems with expert opinion informing decisions but not driving these decisions and containing considerations of reliability risk, environmental risk, HILP risk and safety risk;
- processes to improve risk-cost trade-offs using an industry accepted condition-based risk framework;
- processes to improve asset unit-rate estimates that feed into Aurora's costing building blocks models;
- processes to improve the accuracy of Aurora's building blocks costing models, definitions and inherent assumptions;
- regular reviews of audited asset unit-rate cost estimates and building block costs processes to ensure that they remain fit for purpose;
- managing and updating asset unit-rate cost estimates and building block costs through a single point of control and in an environment that is accessible to staff;
- processes to improve initial project and programme cost estimation, with final costs within a variance of +/-10%.
- processes to improve asset management tools and data so that these tools and processes; improve organisational knowledge and decision making, ensure that assets are replaced or renewed in a timely manner, and ensure that expenditure forecasts can be relied on;
- processes to improve the data collection from internal and external stakeholders (including contracted service providers);
- processes to improve data sharing between Aurora and its service providers;
- processes to use data to test performance, evaluate whether the asset management policies and objectives are being achieved, and identify corrective actions and areas for improvement; and
- processes that enable Aurora to demonstrate how it ensures that there is consistency and traceability between technical asset information and accounting records; with a technical, operational and financial linkage, which is consistent and traceable to assets.

338. We set out more views and context for the proposed reporting areas in Appendix C.1.

10. Other Key Matters

Box 9: Other key matters

- Aurora agrees with the Commission's views that a variation to IM clause 3.1.1(8) may better promote the Part 4 purpose;
- Other updated inflators should not be adopted and inflators used in the CPP proposal should be used;
- The Commission's public and stakeholder meetings on the Draft Decision were poorly planned and executed and, in the context of stakeholder meetings, failed to identify diverse and truly representative participants;
- Minor corrections are required to the Draft Determination, in order to reflect the Draft Decision;
- Problematic aspects of the quality standards that apply in both the DPP3 determination and Draft Decision should be reviews

339. In this section, we address the following key matters:

339.1. CPI forecast for the price path

339.2. Cost escalators

339.3. Commission stakeholder and public engagement

339.4. Draft determination

10.1. CPI Forecast for the Price Path

340. The Draft Decision notes that the CPI forecast used in setting the price path is not able to be updated because of how it is prescribed in the IMs. This presents a risk to Aurora's future revenue recovery if expected, actual inflation is lower than the CPI used in setting the price path. The Draft Decision states:

> *"As part of its submission to this draft decision Aurora can propose an IM variation to allow the use of a more up-to-date forecast of CPI for the purpose of setting its price path. An IM variation to this effect would reduce the risk of revenue under-recovery consistent and allow Aurora to recover a better reflection of its costs. This is consistent with the Financial Capital Maintenance principle. Therefore, we consider that a variation to clause 3.1.1(8) of the electricity lines company IMs may better promote the Part 4 purpose."*[54]

[54] Draft Decision. Paragraph J43, 548.

341. CPI has been systematically over forecast in successive regulatory periods. CEG, on behalf of Vector in its submission on IMs for EDBs and Transpower, noted that *"[o]ver the current and previous regulatory periods, the IMs have over-estimated inflation forecasts, resulting in forced losses on EDB's of around 0.85% of the regulatory asset base (RAB) per annum."*[55]

342. This issue becomes vitally important to Aurora, owing to its current circumstances, the exceptionally low WACC, and the cashflow deferral proposed by the Draft Decision.

343. Currently the IMs require the price path to be determined using a forecast CPI based on the RBNZ Monetary Policy Statement (MPS) forecast from the quarter prior to the quarter in which the prevailing DPP WACC is determined. Forecast CPI is extrapolated for the three years following the MPS forecast to the RBNZ's target midpoint CPI, as stated in the relevant MPS.

344. Using an updated CPI forecast for the price path would be consistent with reducing the risk of inflation forecasting error and Aurora's ability to recover our CPP price path, as described in the Draft Decision. We therefore propose an IM variation for our CPP as follows:

PART 3 INPUT METHODOLOGIES FOR BOTH DEFAULT AND CUSTOMISED PRICE-QUALITY PATHS

SUBPART 1 Specification of price

3.1.1 Specification and definition of prices

(8) 'Forecast CPI' means-

(a) for a quarter prior to ~~the quarter for which the vanilla WACC applicable to the relevant DPP regulatory period or CPP regulatory period was determined~~ the fourth quarter of calendar year 2020, CPI as per paragraph (a) of the 'CPI' definition and excluding any adjustments made under paragraph (b) of the CPI definition arising as a result of an event that occurs after the issue of the Monetary Policy Statement referred to in paragraph (b) below;

(b) for each later quarter for which a forecast of the change in headline CPI has been included ~~in the Monetary Policy Statement last issued by the Reserve Bank of New Zealand prior to the date for which the vanilla WACC applicable to the relevant DPP regulatory period or CPP regulatory period was determined~~ , the November 2020 Monetary Policy Statement issued by the Reserve Bank of New Zealand, CPI last applying under paragraph (a) extended by the forecast change; and

(c) in respect of later quarters, the forecast last applying under paragraph (b) adjusted such that an equal increment or decrement made to that forecast for each of the following three years results in the forecast for the last of those years being equal to the target midpoint for the change in headline CPI set out in the Monetary Policy Statement referred to in paragraph (b).

55 Competition Economists Group. (2019). Dealing with negative real risk-free rates. Paragraph 9, p4.

10.2. Cost Escalators

345. The Draft Decision updates the cost escalator values used in the CPP price path model using independent forecasts from the New Zealand Institute of Economic Research (NZIER) based on more recent data . These escalators include:

- for opex, the Producers Price Index (PPI) and the Labour Cost Index (LCI); and
- for capex, the Capital Goods Price Index (CGPI) and the Labour Cost Index (LCI) for Construction.

346. In the recent final decision on Wellington Electricity's DPP, the Commission decided not to update the input cost escalators with the latest NZIER forecasts. This was a change from the draft decision, in response to submissions which raised concerns about whether the most recent NZIER forecasts were appropriate for establishing cost forecasts for the electricity distribution sector at this time.

347. For example, in our submission on the draft decision for Wellington Electricity's DPP, we stated that:

> *"The economic impact of Covid-19 remains uncertain for the New Zealand economy, as factors that are likely to affect the duration of the pandemic remain uncertain. We would have expected NZIER's report to have been made available to stakeholders, and for that report to carry some commentary on how uncertainty has been dealt with"*[56]

348. The final decision acknowledged that the current post-COVID economic conditions have affected different sectors in different ways, and that the electricity sector is not facing the same economic downturn as some other sectors. In addition, it was noted that recent forecasts have been made in a period of extraordinary and extreme economic impact and uncertainty due to COVID-19. These heightened uncertainties have been acknowledged by NZIER and New Zealand Treasury when publishing recent economic forecasts.[57]

349. As a result, the Commission decided not to update the LCI, PPI and CGPI forecasts for Wellington Electricity's DPP, as follows:

> *"While we would prefer to reflect information about current economic conditions in our decision, we recognise the considerable uncertainty inherent in current forecasts and, in particular, the extent to which they may reflect temporary differences in conditions in different sectors."*[58]

350. For the same reasons, we submit that the updates to the LCI, PPI, CGPI and LCI for Construction which have been made to the Draft Decision CPP models are not adopted, and instead the forecasts included in the CPP Proposal are used. These were 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.

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56 Aurora Energy Ltd. (2020). Submission - Draft Decision on Wellington Electricity Lines Limited's Transition to the 2020-2025 Default Price-Quality Path. 16 October 2020. Paragraph 13.1, p2.

57 Commerce Commission. (2020). Wellington Electricity Lines Limited's transition to the 2020-2025 default price-quality path: Reasons Paper. Paragraph 3.24-3.26, p16-17.

58 Ibid. Paragraph 3,35, p19.

10.3. Commission Stakeholder and Public Engagement

351. We recognise the importance of soliciting stakeholder views during regulatory price-quality setting processes. We also acknowledge that the Commission, in conducting two separate series of public and stakeholder meetings, has advanced its consultation approach well beyond what has been seen in any price-quality setting process before.

352. Nonetheless, we have some significant concerns about the way in which the Commission approached its public and stakeholder consultation round in late November / early December. We provided the following feedback directly to the Commission, by letter, on 7 December 2020

10.3.1. Attendee Conduct

353. At a number of the public meetings, and at Alexandra stakeholder meeting, we observed unacceptable behaviour from participants. This included the use of foul language, insults levelled directly at individuals, personal comments regarding the effectiveness of the Commission staff and Aurora Energy staff, individuals dominating the discussion and misrepresenting the truth, and inappropriate behaviour including scoffing, laughing, and interrupting the presenter and other speakers.

354. While we acknowledge that communities are entitled to feel angry, we do not accept that it is appropriate for this kind of unproductive conduct to go unchecked in any forum.

10.3.2. Active Chairing of Sessions

355. We consider that the Commission failed to maintain control of the meetings. Due to the inappropriate behaviour of attendees at the Alexandra public meeting, the Commission was unable to complete its planned presentation and was largely unable to respond to questions. Conversation often drifted from the topic at hand and inappropriate behaviour was left largely unchecked.

356. It was evident that the Commission team was unprepared to mediate a meeting characterised by public rage. We consider that the Commission should have engaged an independent professional mediator/facilitator to manage the session in a way that added value and fulfilled the task at hand – consulting on the Draft Decision.

10.3.3. Failure to Focus on Consultation Topics

357. We observed that, during the consultation, the Commission largely failed to engage on the topic at hand. The sessions lacked structure, there appeared to be no agenda beyond the slide presentation and there were no rules of engagement outlined at any sessions.

358. During the Alexandra session, the Commission failed to complete its presentation and the meeting concluded with attendees taking the microphone and grandstanding about historical issues for over one hour.

359. We noted that the key 'off-topic' themes from all sessions predominantly included; misappropriation of monies, a broken regulatory framework, dividend payment speculation, sale of Aurora Energy,

regional pricing, the requirement for a statutory manager to enter Aurora Energy, commentary about incompetence of both parties and trust issues, DCC ownership structure and white collar fraud, and transparency of electricity bills.

10.3.4. Failure to Correct Misinformation and Refute Ongoing Specious Allegations

360. It is well established that the community (in attendance at these sessions) has low levels of trust in both Aurora Energy and its owner the DCC. In all sessions, however, there was continued reference to historical payment of dividends unrelated to regulatory accounting and specious allegations of misappropriation of monies. We believe the Commission has a lead role in dispelling these accusations as the watchdog for this sector. This did not occur; in fact, the lack of trust discussion was repeatedly played back to attendees by Commerce Commission staff.

10.3.5. Participant Selection for Stakeholder Meetings

361. We observed that representation at all stakeholder meetings seemed narrow, with the business community and young people under-represented. Many of the attendees were individuals, not representing any particular group, and in some instances involved an individual who we understand that, while an ex-employee of one of Aurora's contractors, is not an Aurora consumer.

362. We understand the challenge presented in recruiting diverse representatives for a topic of this nature. This was the rationale for Aurora Energy taking a deliberative engagement approach with the formation of the Customer Advisory Panel (CAP). We consider this technique was a success and resulted in productive and representative views from a variety of sectors and groups with a diverse spread of age within this group.

363. While we acknowledge that the Commerce Commission has little choice over who attends the public sessions, we note that there were a number of individuals who attended nearly all meetings and in most cases influenced and dominated the discussion into repetitive, historical and narrow focus areas unrelated to the Draft Decision. On many occasions conversations were steered to topics which were untrue and alarmist, therefore setting the tone for the entire session. Participants who attempted to be productive or positive were promptly shut down by these individuals. On a number of occasions, the Commerce Commission staff were either corrected or their points elaborated on by these individuals which served to further skew much of the conversation.

364. We acknowledge that, by the final public meeting in Dunedin, the Commission started taking active steps to maintain a focus on the issues being consulted on, and to ensure all attendees had a reasonable opportunity to express their views; however, this was too late in the process to be truly effective.

365. We consider that these sessions missed the opportunity to engage a broad representation of views including small business, large users, community groups, retailers, developers in the region, generators, and young people. As such, the meetings failed to elicit truly representative views.

10.3.6. The Commission did not Back its Regulatory Control Framework Adequately

366. We consider that the Commission did not back its own regulatory control framework adequately, lost the opportunity to refute the allegations of incompetence levelled against it and to build trust in the price-quality and information disclosure regimes.

367. One representative example was the way the Commission responded to concerns about related-party relationships. This was a common concern across all Central Otago public meetings.

368. The Commission had the opportunity to describe the rigor with which all electricity distribution businesses are required to demonstrate that transactions with related parties are on arm's-length terms, including the need for independent audit assurance and, in some cases, independent valuation reports. Instead, the Commission confined itself to stating that it considered Aurora should move to a more contestable basis over time; a statement that did not give stakeholders much comfort that the Commission had control of the issue.

10.3.7. The Value of Public and Stakeholder Meetings Needs to be Reviewed

369. We understand that the cost of the Commission's public and stakeholder meetings will ultimately be borne by consumers, through recovery of the Commission's CPP assessment fee, currently estimated to be $1.5 million.

370. In light of our observations on the Commission's conduct of its public and stakeholder meetings, we consider that it is incumbent on the Commission to review the value it believes has been derived from the meetings. The impost on consumers is not insignificant.

371. To illustrate this, the Commission's assessment fee for Powerco's 2017 CPP proposal was $1.122 million. Setting aside the much higher per ICP cost of Aurora's CPP assessment, owing to scale effects, Aurora's additional assessment cost of $378 thousand represents approximately $4.15 per consumer, some of which will have been driven by the Commission's expanded approach to stakeholder engagement. We consider the Commission needs to review the costs and benefits of this expanded approach.

10.4. Draft Determination

372. We commissioned a legal review of the draft determination. We note the following observations:

Table 11: Observations on construction of the draft determination

Determination Ref.	Comment
Part 4: Interpretation	
"Major transaction"	Typo: "major transaction has the meaning given in clause ~~5.6.4~~ 4.5.4 of the IM determination"
Part 5: Customised price-quality path	
Clause 5.1(a)	Typo: "the price path specified in clause ~~0~~ 8"

Part 9: Quality standards	
Clause 9.7(c)	Typo: "CPP assessment period" should be in bold.
Part 11: Annual compliance statements	
Clause 11.4(g)(ix)	Typo: "main equipment" should be in bold.
Clause 11.4(h)(ix)	Typo: "main equipment" should be in bold.
Schedule 1.5	
Schedule 1.5(3)	the Commission appears to have conflated the 10% cap on the increase in Aurora's forecast allowable revenue in the CPP period with the X-factor, which the Commission proposes in its reasons paper to be set at 5%. Paragraph 3 of schedule 1.5 should be amended as follows: X ~~is the annual rate of change, as specified in clause 8.2~~ 5%.
Clause 8.2	Clause 8.2 (which sets out that the annual rate of change in revenue) is redundant, as the 10% cap is actually applied via clause 8.4(b) and schedule 1.7. Accordingly, clause 8.2 should be deleted.
Schedule 1.6	
Schedule 1.6(2)(a)	This clause states that "for the purpose of paragraph (1)(b), the 'previous CPP assessment period' of the first CPP assessment period of the CPP regulatory period is the first CPP assessment period of the DPP regulatory period." This clause appears to be redundant as clause 1(b) only relates to the second to fifth CPP assessment period.

10.4.1. Recoverable costs

373. In its draft reasons paper, the Commission has proposed that Aurora engage an engineering expert to carry out a forward-looking mid-period review or reviews as part of the requirements for the Annual Delivery Report.[59]

374. The Commission considers that "*[g]iven the benefits for Aurora's consumers from this information, our draft view is that the costs of the expert opinion (or, where necessary, opinions) incurred by Aurora will be recoverable in its pricing.*"[60]

375. We have suggested amendments to the draft CPP determination and variations to the input methodologies below to reflect the Commission's proposal.

Suggested variations to the IM Determination

- Add in new clause 3.1.3(1)(y):

3.1. Recoverable costs

(1) A recoverable cost is a cost that is-

[59] Draft Decision. Paragraphs I31 and I60.

[60] Draft Decision. Paragraphs I34 and I62.

[...]

*(y) a fee payable to an **engineer** for the purpose of responding to a requirement in an ID determination or a notice under section 53ZD of the Act, subject to the requirement in subclause (3A);*

- Add in new clause 3.1.3(3A):

(3A) The requirement of this subclause is that the process to approve an amount that may be recovered in respect of a particular EDB must be specified by the Commission in a CPP determination.

Suggested amendments to draft CPP Determination

- Insert the following sub-clause into Schedule 2.1 (recoverable costs):

*(10) An **engineer's** fee, provided for in clause 3.1.3(1)(y) of the **IM determination**, for **Aurora**, must be approved in accordance with Schedule 5.3.*

- Insert a new Schedule 5.3 following Schedule 5.2:

Schedule 5.3: Approval of engineer's fee

*(1) The **Commission** may require **Aurora** to produce or supply to the **Commission** a report from an **engineer** in relation to **Aurora's CPP** [pursuant to a requirement in an ID determination or a notice under section 53ZD of the Act].*[61]

*(2) The **Commission** may approve by notice in writing to **Aurora**, an allowance for costs incurred and amounts payable, in relation to the **engineer's** report described in paragraph 1.*

*(3) An amount the **Commission** approves under paragraph 2 is a **recoverable cost** under clause 3.1.3(1)(y) of the **IM determination** in the **CPP assessment period** to which the **engineer's** report relates.*

10.4.2. Quality Standards

376. There are a number of issues with the mechanics of the present DPP3 quality standards, upon which the Draft Determination is based. We were unable to comment on these issues at the time the DPP quality standards were developed, as the requirements were determined after the Draft Decision, and were not consulted on.

377. We consider that these issues should be corrected in the DPP, either as an amendment determination, or during the DPP4 reset process. However, given the customised nature of a CPP, we consider that there is no impediment to correcting these matters now for Aurora.

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61 It is not clear whether the Commission intends to provide for this requirement via an ID determination or through a s 53ZD notice, and hence this proposed drafting is intended to cover both possibilities.

Prescriptive method of defining additional notice

378. The Commission introduced the concept of additional notice to for planned interruptions in DPP3 and intends to continue the approach for Aurora CPP. Unfortunately, 'additional notice' is heavily prescribed and crosses into, and contradicts, the electricity information exchange protocols (EIEP) developed by the Electricity Authority as part of electricity market design. This is a longstanding protocol, the use of which will shortly become mandated by the Electricity Authority and in default distributor agreements.

379. The level of prescription involved, coupled with the difficulty in retaining auditable records of website notices and updates, means that the process of demonstrating that 'additional notice' has been provided is extremely arduous and, for Aurora, is a predominantly manual process.

380. Our understanding, in discussion with other non-exempt EDBs, is that because of the complexities that the 'additional notice' requirements have introduced, very few EDBs are attempting to provide 'additional notice' at this time. These requirements appear to be a barrier to providing better customer service.

381. Many of our existing practices would have met the intention of the 'additional notice' requirements, namely:

- Complying with EIEP5A, which requires us to provide:
  - Date and time of interruption and restoration;
  - An alternate day if applicable;
  - Reason for interruption;
  - At least 10 working days' notice to the retailer;
  - URL address for outage updates (although this is optional);
- Loading outage details on our website.

382. However, the overly prescriptive nature of the 'additional notice' requirements has meant that in addition to the above, our practices have had to incorporate the following, which add no value to the notification process:

- Recording in our internal systems that an interruption is a 'Class B notified interruption'. Evidence that the timeframe and notice content requirements have been adhered to should suffice for an interruption to qualify for de-weighted SAIDI. This requirement should be removed;
- Including in the notice that the interruption is to be treated as a 'notified interruption'. This requirement is meaningless to consumers and should be removed;
- Repeating the interruption and restoration dates/times in the format prescribed by the Commission because this conflicts with the date/time format required by EIEP5A. The drafting of schedule 3.1 should be amended to require compliance with EIEP5A.

383. Including additional wording to satisfy the requirements of schedule 3.1 subparagraph 5(a)(iv), when there is already the opportunity to include the URL address in the notification file. This should be

redrafted, or guidance provided by the Commission, that providing the URL address in accordance with EIEP5A is sufficient for compliance purposes

Additional guidance required from Commission

384. We understand, from discussions we have had with an auditor, that it is likely to apply a literal interpretation to the requirements. Clarification from the Commission on the following areas would aid interpretation and enable us to understand the expectations for compliance from a practical perspective:

- From a practical perspective what does "at the same time" in schedule 3.1 subclause (5)(b) mean (to the minute, hour or day)?
- The Commission in its drafting has anticipated that a planned interruption may occur wholly outside the notified window. However, at what point does a notified interruption that occurs wholly outside the notified window become an 'unplanned' interruption and the original interruption become an 'intended interruption cancelled without notice'?
- If an outage affects only one customer and that customer requests that the outage be cancelled on the day, should the distributor still incur the SAIDI penalty?
- Can notice of moving to an alternative day be given at any point up to the original scheduled outage start time? The decision to move to the alternate day generally occurs on the day of the originally notified outage, unless heavy weather is forecast in advance.

Appendix A. Detailed Response to Draft Decision on Opex Allowances

In this appendix we set out further, more detailed, views on aspects of the Draft Decision on opex allowances.

Network Opex (Maintenance)

A.1. Removal of DPP Trend Factors

	E263 – Draft Decision	Aurora Response
A1.1	… defective network assets rather than network growth are the key driver of corrective maintenance.	The growth in the number of defective network assets is in proportion to the size of the network. Over time, the increased number of assets in a larger network leads to an increased likelihood of defective assets. That is, the 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.
	Pages 96 – Strata	**Aurora Response**
A1.2	The Commission's calculated growth factor for Aurora factors in reactive maintenance opex undertaken in response to defects related to the age and/or condition of an asset. Therefore, we consider the growth factor applied to reactive maintenance should be less than the Commission's growth factor, as the age and condition defects are not related to growth.	The meaning/intention here is unclear and implies that the approach used in the DPP is inappropriate. These observations and others (e.g., warranty payments) apply equally to other EDBs and under a DPP. We note that Powerco used similar DPP-based factors and this was fully approved. No equivalent issues were raised by Strata or the Commission. Given its use under the DPP, the onus is on Strata and the Commission to explain/demonstrate why it should not apply to Aurora under a CPP. We note again that the network is increasing in size, year-on-year, and this has and will continue to have an impact on the level of corrective and reactive maintenance. This effect is separate from asset health, which has been treated separately. These reductions should be reinstated.

	Pages 97-98 – Strata	Aurora Response
A1.3	We estimate that at the start of the CPP and review periods (i.e. RY22), 35% of unplanned outages will be caused by equipment deterioration, with this percentage falling to 25% by RY26. This is based on: • The 2018-20 average contribution of defective equipment to Aurora's unplanned interruptions; and • Our understanding of Aurora's expenditure programmes. Based on an average of 30% for this estimate [equipment deterioration] over the RY22–RY26 period, we would apply to Aurora's proposed reactive maintenance over the CPP and review periods a network growth factor that is 70% of the Commission's growth factor.	These two figures are unrelated and no relationship has been explained or demonstrated. Strata has presented no basis for the use of a 70% factor. This implies Strata has managed to link our expenditure programme to defects quantitatively. We have seen no evidence of such calculations or other basis for the 70% figure. Strata's rationale for removing this appears to be based on improving asset condition and therefore less defects/failures occurring on the network. However, this appears to ignore the negative step change that we have applied in the corrective maintenance forecast. **We are concerned by recommendations based on assertions and assumptions that are not explained.**
	Strata – page 95 to 100	**Aurora Position**
A1.4	Defective network assets are the key driver of corrective maintenance. Defects are typically related to the age and/or condition of an asset. Assets installed to cater for network growth (whether new or used) should be defect-free and in good condition when installed and for a reasonable period subsequently—certainly for the duration of the CPP and review periods. Also, warranties are likely to cover any early defects at or during commissioning	The rationale for justifying their removal broadly applies to all EDBs subject to the price-quality regulation and Strata has not provided any evidence as to why they are not applicable to Aurora. – we note that equivalent trend factors were used by Powerco in its CPP application and were approved. In our view the Commission should demonstrate why these factors are not applicable to our forecast expenditure or reinstate.

A.2. Corrective Maintenance - Reduced Impact of Improving Asset Condition

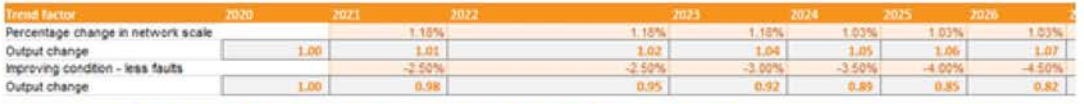
	N / A	Aurora Position
A2.1		Our CPP proposal included reductions in corrective maintenance to reflect expected improvements in asset condition. These improvements, in turn, reflected our planned increase in asset renewals. Due to the reduced amount of approved renewals work and/or the impact of the incorrectly assumed attainment of 5% capex efficiency, our original reduction in corrective maintenance is likely to be overstated. The Commission has proposed reducing the increase in planned renewals by 30%. This 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. This amount should be included as part of the final determination.

A.3. Reactive Maintenance – Reinstatement of Process Improvement Reductions

	N / A	Aurora Position
A3.1		Our proposed reactive maintenance opex over the CPP Period included a negative 'step-change' of $300,000 per annum. This reduction was predicated on our ability to make capability and process improvements to improve the efficiency of our reactive maintenance delivery. The proposed reductions to our engineering capability (SONS opex reductions) will constrain our ability to make these improvements achievable/sustainable. Reactive maintenance is undertaken to address faults on our network and to ensure services can be restored safely and as quickly as practicable. These works cannot be prudently deferred. In the absence of our planned improvements, these allowances will need to be increased (i.e., reinstatement of the annual $300,000 reductions) or our ability to respond to faults during the five-year CPP Period will be curtailed.

A.4. Defects-related Opex

	Strata – page 101 to 108	Aurora Position
A4.1	According to Table 1, the primary purpose of the lidar surveys is to provide quality data to prioritise vegetation management work packages. Therefore, any 'defects'-related uplift in corrective maintenance resulting from lidar surveys would double up on proposed vegetation management opex ($14.1m for the CPP period and $21.2m for the review period).	While the primary driver for using lidar is to monitor vegetation, it will also be used to identify conductor clearance issues. These would be recorded as defects and need to be rectified under corrective maintenance or renewals.
A4.2	We are aware that repex may be substituted for opex for reasons of practicality and efficiency. Crossarms and conductors requiring maintenance are probably going to be geographically close to crossarms and conductors requiring replacement, because of similar environmental conditions and, typically, similar type. Therefore, it may be more efficient for Aurora to expend more on repex and less on corrective maintenance.	Our capex allowances are constrained, limiting our ability to trade-off capex and opex. It should be noted that some defects relate to pole-top equipment that are not capex items (unless replacing the full crossarm assembly). We do not have a specific opex allowance for these.
A4.3	Our assessment is 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. [Aurora emphasis]	Strata has provided no evidence of an 'assessment'. **These broad, unfounded assumptions are a significant concern.** We have made adjustments to our corrective maintenance forecast to reflect ongoing renewals. It should be noted that our base year coincided with a period of elevated pole and crossarm replacements.
A4.4	We do not believe this same assessment applies to corrective maintenance resulting from greater monitoring of subtransmission lines. This is because Aurora's repex programme relating to subtransmission lines appears to be focussed on the Waipori subtransmission lines, rather than being targeted at subtransmission assets across Aurora's networks. Therefore, we believe it is unlikely that Aurora will	We will inspect all subtransmission conductors and are 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). Our capex allowances are constrained, limiting our ability to trade-off capex and opex.

	substitute repex for 'defects'-related corrective maintenance opex on subtransmission lines other than the Waipori lines.	
A4.5	In our experience, these asset categories are more likely to incur corrective maintenance expenditure as defects are discovered through routine inspections and testing, rather than being replaced via repex programmes (perhaps apart from indoor switchgear).	This is a poorly-informed opinion. A simple counterexample of this is the testing and replacement of protection equipment or DC systems. These items will generally need to be replaced as capex items, as they are often not repairable. **Strata's conclusion implies a lack of appropriate engineering knowledge.**
A4.6	We consider a 'defects'-related corrective maintenance step change that is approximately **50-67%** of that proposed by Aurora would better meet the expenditure objective. Our estimate is based on: • The considerations discussed above; and • The relative maintenance costs of the network assets listed in Table 1—the cost of corrective maintenance is on average higher for the network assets that we believe Aurora has— o **incorrectly included in this corrective maintenance step change (consumer owned poles and vegetation management); and** o included too many of (cross arms and distribution conductors). [Aurora emphasis]	This implies Strata has managed to link our expenditure programme to defects quantitatively. We have seen no evidence of such calculations or other basis for this 'range'. There also appears to be an error in the way this proposed adjustment has been calculated. The reference to "incorrectly including" corrective maintenance for consumer poles and vegetation management makes little sense. – The preventive maintenance will identify new defects, once the inspections occur. There will be additional corrective maintenance opex relating to these assets (no work on these can be capitalised) – There is no corrective maintenance included for vegetation management in this table – we have not included volumes for crossarms and distribution conductors; it's unclear how this can be deemed to be 'too many' **Strata's conclusion implies a lack of appropriate engineering knowledge.**
A4.7	Lastly, we note that an increase in corrective maintenance should be associated with a fall in reactive maintenance. Typically, this will be a lagged effect over several years or more. In relation to Aurora's CPP proposal, **we observe that Aurora has not proposed a reduction in reactive maintenance opex linked to the 'defects'-related step change in corrective management opex.** [Aurora emphasis]	We have included a reduction to reflect improving asset condition/fewer faults due to renewals and increased corrective maintenance.  | Trend factor	2020	2021	2022	2023	2024	2025	2026
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Percentage change in network scale		1.18%	1.18%	1.18%	1.03%	1.03%	1.03%
Output change	1.00	1.01	1.02	1.04	1.05	1.06	1.07
Improving condition - less faults		-2.50%	-2.50%	-3.00%	-3.50%	-4.00%	-4.50%
Output change	1.00	0.98	0.95	0.92	0.89	0.85	0.82	 **We consider this to be another example of Strata's inadequate review of our material, and the work of the independent verifier.**

A4.8	We recommend the step change in corrective maintenance opex generated by additional defects identified by increased preventive maintenance be 60% of Aurora's proposed step change over the CPP and review periods. However, **we 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.** [Aurora emphasis]	While, for the reasons set out above, we do not agree with this adjustment it appears that the Commission has not indicated it will adopt the recommendation to adjust this amount based on eventual expenditure allowances and quality standards. The Commission should clarify its reasoning for this position.

A.5. Reasonableness of Vegetation Unit Rate

	Strata – page 101 to 108	Aurora Position
A5.1	The Commission's decision to retain our original efficiency adjustments is entirely inconsistent with mandating an efficient unit rate from the beginning of the period. This "double application" of efficiency adjustments suggests a lack of understanding	Despite Strata stating "to avoid double counting, we have removed the $735,338 efficiency benefit Aurora included in its CPP proposal", the Draft Decision retains the original efficiency adjustments, effectively double counting the adjustment. **The Commission should clarify why this recommendation has not been adopted.**
A5.2	Given that Aurora points to KPMG's benchmarking as evidence that Aurora's vegetation management costs are efficient, it is interesting that Aurora decided against benchmarking its vegetation management costs with other New Zealand electricity distributors	The KPMG report already benchmarks Aurora's vegetation management costs against other NZ EDBs. We did not see any reason to duplicate effort and perform our own benchmarking over on top of robust analysis undertaken by an independent professional engineering organisation. **This is another example of unusual comments made by Strata that provide no insight to the review process.**
A5.3	A recent independent review of Aurora's vegetation management practices appears to indicate Delta's productivity can be improved.103 Aurora notes that Delta's productivity is improving, but **Aurora cannot, in the absence of tendering work to other utility arborists, know Delta's relative productivity in the provision of vegetation management.** [Aurora emphasis]	To clarify, the absence of tendering work does not necessarily mean that Delta is inefficient and should not be interpreted as a reason for a downward adjustment to the vegetation allowance. We have applied an efficiency wedge to our vegetation forecasts to capture areas where we anticipate productivity and works coordination gains over the current state.

A5.4	Aurora appears to believe this indicates that the proposed unit rate is efficient.	We state the following, from our CPP Main Proposal, regarding vegetation management efficiency Box 34: Vegetation management efficiency adjustment We have applied specific efficiency adjustment factors to vegetation management. We expect to see improvement in contractor productivity following the introduction of a competitive environment. We also expect an improvement in works coordination following the implementation of better asset management tools. These efficiencies have been applied from RY21. Our application of efficiency adjustment factors is due to the fact that we believe the unit rate can be improved (reduced). **This is another example of assertions and spurious comments made by Strata that are not explained and provide no insight to the review process. This also suggests that Strata has not adequately reviewed the CPP material.**
A5.5	Aurora cannot have a high degree of confidence about the efficiency of the proposed unit rate. For example, the increase in the per-km vegetation management cost in RY19 and RY20 over RY18 could indicate the proposed unit cost is too low for first cut activities.	This statement provides an explanation as to why it would be inappropriate to lower the unit rate applied in our CPP application. There are complex factors involved in why the unit rate may vary year-on-year (e.g., urban versus rural) and we considered the RY18 unit rate was an achievable target rate for the start of the CPP period.
A5.6	Despite this, Aurora has made the conscious decision to retain the $98,907 per km unit rate over the period RY24 to RY26,	This does not reflect our proposal. We have applied material efficiency adjustments across the period, effectively reducing this unit rate gradually over time. We note that Strata eventually recognises that we have applied efficiencies and the fact that their recommendation "double counts efficiencies" later in their report, see A5.1 above. These comments can be easily taken out of context without complete review of their report. **This is an example of internal inconsistencies and contradictory statements that suggest a lack of care in preparation and internal review. We are concerned that the Commission, when reviewing this material, did not point out these material errors. In our view, this points to inadequacies in the Commission's process.**
A5.7	Aurora did not benchmark the unit rate, for the reasons set out earlier. We agree there are limitations with benchmarking, making it a second-best alternative to Aurora competitively tendering the provision of vegetation management services on its networks.	As above, we did not seek to duplicate effort without good reason and relied on KPMG's analysis. **This is another example of spurious comments made by Strata that provide no insight to the review process.**

A5.8	**Our cohort of comparable distributors** Table 2 shows the cohort of distributors we have used in our benchmarking. We have chosen distributors that have to manage vegetation on networks similarly sized to Aurora in respect of one or more of the following: • Length of overhead lines; • Length of urban overhead lines; and • Length of rural overhead lines.	We are of the view that the 'cohort' selection based on these factors is fundamentally flawed as it doesn't take into account the vegetation density, vegetation state (1st versus 2nd cut) and the amount of vegetation cuts required per overhead line length. We note that Strata recognises this limitation later on in their report: *"We acknowledge the benchmarking is imperfect. It does not, for example, specifically account for matters such as different vegetation densities across distributors, different climatic conditions, distributors' different vegetation management plans, and consumers' differing propensities to declare 'no interest' in trees on distributors' networks."* Strata then proceeded to provide a qualitative explanation as to why these factors do not affect the outcome of their analysis, and we note that sensitivity analysis could have been performed to test this hypothesis. We also note that Information Disclosure requires EDBs to report the length of vegetation affected overhead line length. The definition is broad, and there is evidence in the reported quantities of different interpretations amongst EDBs, leading to benchmarking challenges. **However the fact that Strata has not recognised its potential use in this analysis suggest a lack of knowledge and sound engineering judgement. This calls into question Commission's reliance on inadequate analysis to inform the Draft Decision.**

A5.9 **Table 2: Distributors used in benchmarking of Aurora's vegetation management unit rate**

	Total circuit length (km)	*Overhead (km)*	*Urban Overhead Lines (km)*	*Rural Overhead Lines (km)*	*Remote Overhead Lines (km)*	*Rugged Overhead Lines (km)*	*Underground (km)*
Aurora Energy	6,575	4,407	1,637	2,692	-	79	2,168
Alpine Energy	4,317	3,522	309	3,117	-	96	795
Counties Power	3,251	2,326	95	2,146	-	85	926
MainPower NZ	5,021	4,031	51	2,411	1,440	128	991
Network Tasman	3,614	2,673	183	2,294	70	118	941
Orion NZ	11,452	5,438	1,703	3,170	144	184	6,015
OtagoNet	4,606	4,429	327	879	587	1,824	176
The Lines Company	4,385	4,065	489	2,974	300	83	320
Unison Networks	9,290	5,572	1,394	1,269	249	2,661	3,718
Wellington Electricity	4,746	1,726	1,335	392	-	-	3,019

Key: Similar to Aurora Energy

Disimilar to Aurora Energy

As per above, we are of the view that this comparison and adoption of cohorts is fundamentally flawed as it does not take into account vegetation density and vegetation cuts required per overhead line length.

We engaged WSP to undertake a review of Strata's benchmarking methodology and they have highlighted the following concern's with Strata's analysis:

> *"— the selection of the comparator EDBs was based on a similarity in line length in any one or more categories of total, urban, rural, remote and/or rugged line length. The outcome was a comparison of EDBs with significantly different network topologies.*
>
> *— The selection of the 10 comparator EDBs and methodology applied does not allow for the additional cost of vegetation management in urban environments. The selected group only contained three EDBs with similar urban line length."*[62]

In addition to WSP's observation, we fail to see how a 'good cohort' can comprise of such a wide range of EDBs, that can have differing vegetation strategies and investment.

A5.10 Table 3 compares, using dollars per km of overhead lines, the vegetation management costs of our cohort over the period RY13 to RY29. Actual costs apply for RY13 to RY19, while forecast costs apply for RY20 to RY29.

As can be seen, Aurora is significantly above the average across the past 7 years and is forecast to remain so for the coming decade.

Table 3: Vegetation management costs ($/km of overhead lines in constant RY20 dollars, for years ending 31 March)

Our view is that the selection of 'cohort EDBs' using these metrics is inadequate, as it does not account for the changing volumes of vegetation management in the forecast.[63]

> *Strata undertook benchmarking to assess the relative unit cost of vegetation management against a comparator group of 10 EDBs. However, WSP's assessment of the calculation methodology found that the data is not sufficiently robust to use for this type of analysis and the methodology fails to account for changes in the volume of work completed, instead assuming that all changes in cost are due to changes in the unit rate.*

In addition, WSP also make the following observation:

> *Since the actual length of lines managed is not known, the total line length has been used for the denominator. No evidence has been provided to demonstrate this is a suitable proxy. For example, Aurora has 4,407 km of*

62 WSP Expert Report. Section 5.2.1, p20.

63 WSP Expert Report. *passim*.

overhead line on its network but only completed vegetation management activities on 47 km in 2017 and 57 km in 2018.

Since the denominator in the calculation is static, if the volume of work increases then this analysis would show it as an increase in unit rate even if the unit rate had remained the same. This is shown in Table 5.1, where the benchmark outcome is shown to double as a result of increased volumes of work while the unit rate in both scenarios remains the same.

Table 5.1 Indicative example to illustrate impact of volume on benchmarking outcomes

SCENARIO	LINE LENGTH	VEG. MANAGEMENT LENGTH	ACTUAL UNIT RATE	BENCHMARK OUTCOME
Scenario A	4,000 km	50 km	100,000	1,250
Scenario B	4,000 km	100 km	100,000	2,500

This is an example of poor analysis and a lack of practical engineering knowledge by Strata.

A5.11 Table 4 compares the percentage of overhead lines that our cohort of distributors would be able to trim vegetation along if they each had the same unit cost Aurora is proposing over the CPP and review periods. For simplicity, we have applied the RY19 line length for each distributor across all the years. We consider this simplifying assumption to have little effect on the comparison across the cohort, because we expect the materiality of differing growth rates in overhead lines across the distributors to be relatively small.

Wellington Electricity is the only distributor that would be able to trim a similar percentage of overhead lines as Aurora. We do not know the distance of overhead lines that each distributor wants to trim over the next 5 to 6 years. However, **we believe several of the distributors with relatively low percentages in Table 4 would in fact be budgeting to achieve higher percentages with their vegetation management opex.** For example, in their 2019 and/or 2020 asset management plans, distributors such as Alpine Energy, Counties Power and The Lines Company have highlighted the need for increased levels of trimming on their respective networks. **We imply from this that these distributors would be wanting to trim a percentage of their overhead lines that is similar to Aurora's percentage.** [Aurora emphasis]

Alpine Energy and The Lines Company's vegetation management forecasts, as disclosed in ID schedule 11b, are 'flat' / relatively constant for the ten year period, which is in contrast to their AMP statements that Strata has referenced. Given their disclosed forecast, it suggests that both companies are, in fact, not forecasting an increase in vegetation activities. This is in contrast with Aurora's position where the back-log of first-cut vegetation results in an elevated level of expenditure in the short term. We fail to see how these two companies can be a part of the 'good cohort' comparator.

This analysis has failed to take into account the efficiencies over time that we have applied. It has assumed no network growth in their underlying assumption and failed to take into account a multitude of factors described previously

We also fail to see how Strata has arrived at the conclusion that other EDBs would be trimming a similar percentage to Aurora and how this links to their view that Aurora's unit rate is inefficient.

A5.12	Lastly, Table 5 provides an indication of the possible difference in per-tree unit cost across Aurora, The Lines Company and Unison. Caution needs to be exercised when considering this table. The figures for Aurora across 2019 and 2020 are actual costs.109 The figure for The Lines Company is an estimated cost based on The Lines Company's stated intention to cut or trim approximately 14,500 trees each year on a budget of $1.4 million (constant RY20 dollars).110 The 2015 and 2019 figures for Unison are estimated costs, based on Unison's stated intention in August 2014 to trim 18,000 trees annually.111 For the 2019 Unison estimate, we have assumed Unison still wants to be trimming 18,000 trees annually and then applied Unison's actual vegetation management cost for 2019. On the basis that vegetation management in rural areas is lower cost than urban areas, we would expect The Lines Company's unit rate to be lower than Aurora's and Unison's. However, we would have expected Unison's and Aurora's to be relatively similar. Aurora has approximately 250 km more urban lines that Unison, but Unison has significantly more overhead lines classified as 'rugged' **Table 5: Per tree vegetation management unit cost (constant RY20 dollars)** Note: Unison's 2019 unit cost assumes Unison wants to trim the same number of trees as in 2015.	We fail to see how the number of trees translate to our per km unit rate. In our view, the underlying assumptions and analysis has no substance whatsoever and highlights the lack of information available from other EDBs to form a definitive conclusion. **This demonstrates a lack of understanding and poor analysis by Strata.**

	2013	2014	2015	2016	2017	2018	2019	2020	2021
Aurora Energy	-	-	-	-	-	-	1,778	1,464	-
The Lines Company	-	-	-	-	-	-	-	-	98
Unison Networks	-	-	70	-	-	-	107	-	-

A5.13	Although we have been unable to directly benchmark Aurora's proposed unit rate for vegetation management, we consider it is valid to conclude that Aurora's proposed unit rate is high, based on the benchmarking we have been able to do	We find this statement contradictory and we do not understand how Strata can draw the unit rate conclusions they have. As highlighted in WSP's report, there are a multitude of issues that Strata have failed to consider.
A5.14	However, we have insufficient information to determine whether the urban nature of these networks is sufficient to justify the uplift in vegetation management costs relative to the overwhelming majority of New Zealand's distributors.	We do not understand how 'insufficient information' has led to a conclusion that our unit rate is higher than other EDBs.

A5.15	To get an indication of the relative cost of this resourcing requirement, we compared it with MainPower's vegetation management resourcing requirement. MainPower has two fulltime arborist crews carrying out most of MainPower's vegetation maintenance and providing supervision to thirdparty contractors working in the vicinity of MainPower's lines. Supporting the two arborist crews are a Vegetation Inspector and a Vegetation Control Supervisor, who work as required with tree owners and local authorities to support the maintenance programme.113 MainPower's estimated vegetation management cost for RY20 is $713,000. However, MainPower forecasts this cost to rise significantly in RY21, to $921,000, and then rise further to $1 million in RY22.114 We take from this that MainPower is planning to increase its resourcing for the coming year. Based on the size of the forecast increase in vegetation management opex, MainPower may be considering employing another arborist crew.	As above, there are key differences that Strata have not considered namely, the amount of urban vegetation managed and the universally acknowledged under-investment where Aurora is still undertaking first cuts as opposed to other EDBs which may be in the second cut stage. This is in line with WSP's view on Strata's analysis: *"Strata attempted to do a bottom up build based on data provided in MainPower's Asset Management Plan that provides some high-level cost information for their vegetation management crews as well as the number of crews. However, Strata's analysis was based on assumptions and is stated to be an uncertain assessment. In addition, the two networks are significantly different with respect to attributes that impact the cost of vegetation management that were not considered in Strata's assessment.* *Direct comparison with a single EDB may provide an indication of differences, but in WSP's opinion should not be used as the sole basis for making a decision on efficiency of unit rates and relied upon for determining the size of a reduction to opex."*[64] We do not agree with Strata's use of MainPower as a comparator.
A5.16	However, even after conservatively accounting for Delta's arborist crews to be larger than MainPower's, the conclusion one draws from the analysis is consistent with the conclusion drawn from the benchmarking analysis—Aurora's proposed vegetation management opex appears to not be consistent with the expenditure objective.	This appears to be another assumption, made on top of other assumptions fabricated to reach a biased conclusion. This is not supported by evidence in Strata's report.

[64] WSP Expert Review. Section 5.3.3, p22.

A5.17	Compared with distributors that are similar to Aurora in one or more of overhead line length / urban overhead line length / rural overhead line length: • Over the period RY13 to RY19, Aurora's vegetation management cost, on a $/km of overhead line basis (constant RY20 dollars), has ranged from double to almost 3.8 times the average cost across the other distributors • Over the period RY20 to RY29, Aurora's vegetation management cost, on a $/km of overhead line basis (constant RY20 dollars), is forecast to range from 1.67 times to approximately 2.75 times the average cost across the other distributors. Based on this comparison, we conservatively estimate a multiplier of between 1.67 and 3.8 in vegetation management cost equates to a multiplier of between 1 and 2 in unit cost. Therefore, we consider it is reasonable to infer that Aurora's unit rate might be 1–2 times as high as the average unit rate for the cohort of comparable117 distributors. **This translates to Aurora's unit rate being 0–100% higher than the cohort of distributors.** [Aurora emphasis]	As above, the conclusion drawn from this analysis is not appropriate as it contains fundamental flaws in their assumptions made. We also fail to see how a definitive conclusion can be drawn when our unit rate is within a relatively large '0-100%' range of the cohort. In addition, WSP conclude that: "*The vegetation management benchmarking and direct comparison undertaken by Strata is not appropriate because it is based on a flawed methodology that assumes all changes in cost are caused by the unit rate. WSP concludes that this is inappropriate to be used as the basis for calculating a reduction to Aurora's proposed vegetation management expenditure.*"[65]

[65] WSP Expert Report. Section 5.4, p22.

A5.18	As noted earlier, Alpine Energy, Counties Power and The Lines Company have highlighted the need for increased levels of trimming on their respective networks, like Aurora. Based on this, we assume they wish to trim vegetation along 1–1.2% of their overhead lines—being a similar percentage to Aurora. Under Aurora's proposed unit rate, Alpine Energy, Counties Power and The Lines Company would be able to afford perhaps 20–60% of their intended vegetation cut/trim over the period RY19 to RY21. This translates to Aurora's unit rate being 167%–500% higher than the unit rates of these three distributors. Furthermore, we believe that under Aurora's proposed unit rate, half the distributors in the cohort would be unable to trim the necessary amount of vegetation during a 'steady state' period of vegetation management. This is on the assumption that distributors' vegetation management is in a steady state from 2023 and the steady state percentage of overhead lines with trimmed vegetation falls within +/-50% of Aurora's 0.9% (ie, 0.45–1.35%). Against a lower bound of 0.45%, half the cohort of distributors would be able to achieve 55–90% of their planned vegetation trims. This translates to Aurora's unit rate being 110–180% higher than the unit rates of half the cohort of distributors. For the other half of the cohort, we assume Aurora's unit rate is no higher than the other distributors' unit rates. Therefore, Aurora's unit rate may on average be 55–90% higher than the cohort's average unit rate during 'steady state' vegetation management.	These appear to be additional assumptions, made by Strata without any evidence, fabricated to reach a biased conclusion. As above, the analysis has failed to consider a multitude of issues, as highlighted by WSP:[66] - *"the selection of the comparator EDBs was based on a similarity in line length in any one or more categories of total, urban, rural, remote and/or rugged line length. The outcome was a comparison of EDBs with significantly different network topologies.* - *the selection of the 10 comparator EDBs and methodology applied does not allow for the additional cost of vegetation management in urban environments. The selected group only contained three EDBs with similar urban line length.* - *notwithstanding our concerns with this methodology, in Table 6 of Strata's report they present four EDBs with similar outcomes to Aurora based on Strata's analysis. This means 17% of all EDBs have similar outcomes which appears to be too large a group to be considered outliers and is more likely to be driven by other factors. Notably, each of these EDBs have a high percentage of urban network supporting that urban environments are a contributing factor to higher vegetation management costs.* - *external factors that drive a difference between EDBs such as the regulations and council vegetation management were not accounted for in the comparison. In particular, the additional cost of the 'first cut' and the percentage of trees for which owners have declared 'no interest'."*

66 WSP Expert Report. Section 5.2.1, p20.

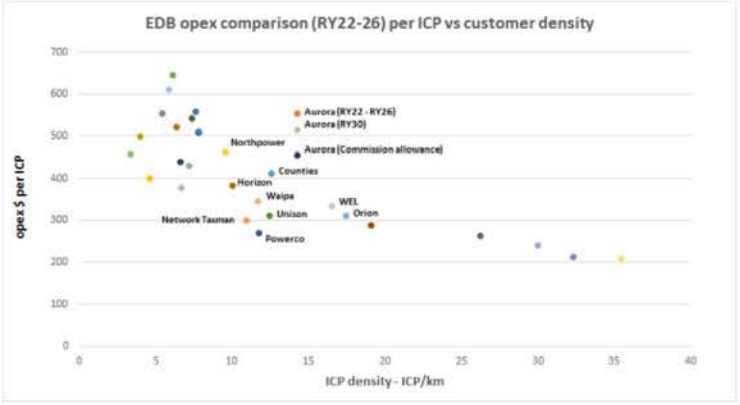
A5.19	We suggest a reduction of approximately 25% in Aurora's proposed unit rate Considering the key inputs set out above, we believe a unit rate that is approximately 75% of the $98,907 proposed by Aurora would better meet the expenditure objective.	This appears to be an arbitrary level of adjustment, not supported by or linked to Strata's analysis. This is in addition to the efficiency adjustment which we have applied. Despite Strata stating "to avoid double counting, we have removed the $735,338 efficiency benefit Aurora included in its CPP proposal", Strata retained the original efficiency adjustments, effectively double counting the adjustment.
A5.20	In making this recommendation, we recognise Aurora is in an existing contractual relationship with Delta for vegetation management until RY22 and that the Commission may want to account for this when setting Aurora's vegetation management opex allowance.	Given that Strata has not been able to show that our forecast unit rate is inefficient, we do not see a connection with the term of the current Delta vegetation contract which when renewed (with Delta and/or another contractor) we are not expecting a lower rate, other than our efficiency adjustments.

A.6. Non-network Opex – General Efficiencies

	Draft Decision – page 373, Strata – page 150	Aurora Response
A6.1	The main adjustments are a reduction in SONS and People costs. A significant rationale for this was set out by Strata after comparing Aurora's proposed expenditure in this area with that of Powerco: *We expect that, overall, Powerco's staffing needs under SONS should be greater than Aurora's—Powerco's network is almost four and a half times as long as Aurora's and Powerco has over three and a half times as many ICPs as Aurora. That Aurora proposes to outspend Powerco in SONS opex under the CPP reinforces our view that Aurora's staffing level does not meet the expenditure objective*	The Strata analysis fails to take account of: – appropriate time periods and the impact of increasing SONS costs across the industry; and – the different categorisations of expenditure between SONS and People costs by different organisations. People costs are a category of business support (BS) costs. Together, SONS and BS combine to make up total non-network opex. Table 4, in section 5.1.7 above, illustrates that while Aurora's forecast SONS expenditure may appear high relative to Powerco, its BS expenditure is much lower in relative terms. The analysis identifies that Aurora's total non-network opex for RY22-26 is estimated at 61% of Powerco's for the same period. It should be noted that neither this simple analysis, or the analysis undertaken by Strata, extends to include other cost comparison issues such as wider cost categorisation matters, environmental impacts, and the impact of different operating models.
A6.2	We also undertook top-down benchmarking to 'sense-check' whether the proposed reductions recommended by Strata were appropriate. We benchmarked Aurora's CPP opex expenditure levels against a cohort of electricity lines companies with comparable customer densities (ICP/network length), and opex expenditure levels of what Aurora appeared to consider were steady state in RY30. We tested the RY30 opex as Aurora appeared to consider this was likely to be business as usual in terms of predicted asset health. Figure E2 presents our top-down benchmarking 'sense-check' results and shows that Aurora's proposed CPP expenditure and RY30 expenditure could be considered outliers when compared to electricity lines companies with a similar ICP density. Our proposed CPP opex allowance result shows that this expenditure level appears to benchmark more reasonably against these cohort electricity lines companies, albeit our proposed	The use of customer density/network length comparators as a sense check is not appropriate as it does not adequately recognise the unique circumstances facing Aurora. It effectively repeats failures in the initial analysis by not recognising our: – elevated investment needs and the scale of the work programmes to be delivered; – low level of asset management maturity; – new business operating model; and – need to establish more efficient asset management, works delivery and customer facing business processes. The Draft Decision incorrectly references page vii of our AMP as evidence that we consider opex expenditure levels will be at a 'steady state' in RY30. We could largely expect our **renewals capex** to be at a steady state by RY30, as we are forecasting to clear renewal backlogs by then, however, we are yet to form a view on what the 'steady state' for **network opex** might entail. It is too early to predict whether opex will remain steady, increase or decrease during the later years of the forecast and therefore, in the absence of more detailed inputs we have chosen to assume an extension of RY26 levels across the RY27 to RY31 period.

allowance is still above Aurora's closest peer comparators such as Counties Power, Unison Networks, Waipa and Powerco.

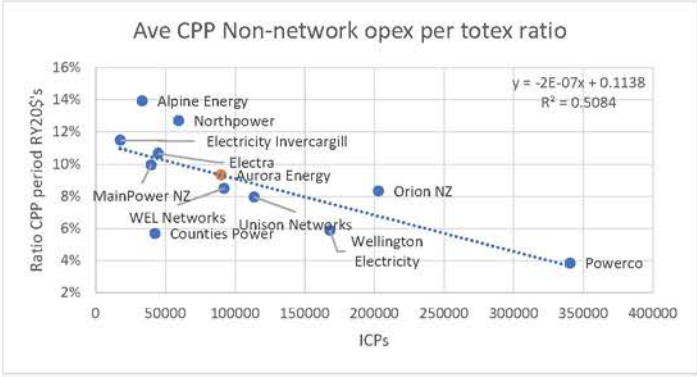
Figure E2 Aurora top-down ICP density 'sense-check' benchmarking



This is not inconsistent with the AMP requirements and industry practice under which the later years of AMP forecasts are often determined through the extrapolation of earlier year forecasts.

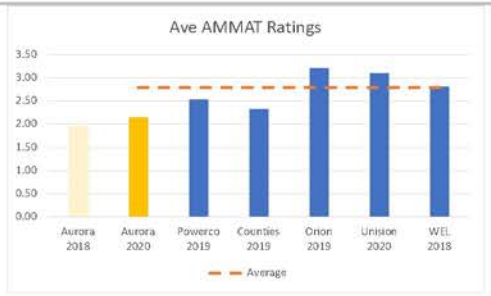
Aurora is not an outlier when the unique circumstances of Aurora are considered and taken into account – refer response to A6.3 below.

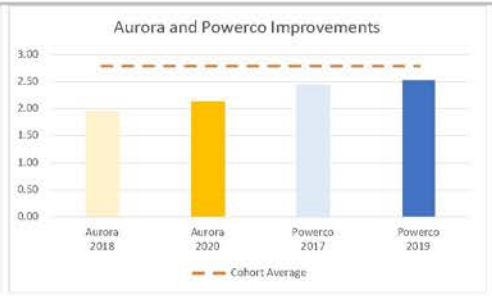
	Draft Decision pages 379 -383, Strata Report pages 134-135	Aurora Response
A6.3	In our review of the Verifier's report we note that its benchmarking results of Aurora against New Zealand electricity lines companies suggested Aurora may have proposed excessive expenditure and that this did not support the Verifier view that Aurora benchmarked reasonably. For example, in Figure C.36 of the Verifier's report, which is reproduced below as Figure E4, a SONS expenditure per totex ratio vs ICP density scatter plot was presented that showed Aurora was spending much more in RY2019 in the SONS category than electricity lines companies with a similar ICP density (such as Unison, Counties Power and Powerco). We also consider the trend line used in Figure E4 should not be relied upon given the very low 0.07 R-squared value associated with it. Finally, we are also not convinced that totex ratio benchmarking using a single year is a reasonable approach given Aurora is a	Totex ratio benchmarking is used to allow comparison between entities by normalising on the basis of activity. The Commission is correct in identifying that Aurora has elevated investment needs during the CPP period. Comparing us to other entities based on customer density or network length ignores this key aspect of our proposal. Using customer density as the basis for identifying a comparator group is not relevant as customer density is not a significant indicator of costs or activity-based requirements. The graph below re-performs the independent verifier's analysis with a view to addressing the Commission's concerns. The following approach is utilised in this analysis: – Average CPP spend is used instead of RY19; – ICP numbers are used on the X axis to normalise based on size – this considers economies of scale rather than density; – all BS costs rather than People costs are used;

	business in transition and capex can fluctuate significantly year on year for each business. When RY2019 people costs were benchmarked by the Verifier (see Figure E5 – Figure C40 in Verifier's report - people costs per non-network totex vs ICP density) Aurora non-network totex ratio appears to benchmark well against other electricity lines companies However, we note Aurora's non-network totex ratio is low because it includes Aurora's large SONS programme in the denominator. We also note that this graph is actually benchmarking business support costs not people costs	– SONS and BS costs are combined to remove cost categorisation implications (refer PwC Expert Report); – capex plus network opex is used as the denominator rather than totex so that SONS is excluded from the denominator.  The independent verifier's benchmarking of Aurora's FTE levels against the Australian comparators is not impacted by any matters raised by the Commission. **Conclusion:** The re-performed independent verifier benchmarking analysis (undertaken to address the relevant Commission concerns) and the original FTE analysis to Australian comparators both support the independent verifier's finding that Aurora "does not appear inefficient". It follows that the independent verifier's findings can and should be relied upon by the Commission.
	Draft Decision page 387	Aurora Response
A6.4	Strata noted that it was not clear that all of the new activities described by Aurora were activities that Delta was not undertaking prior to 1 July 2017. In reaching this conclusion it reviewed Aurora's historical documentation and disclosures and determined that some of these activities were being undertaken in the past by Delta.	The analysis we provided to Strata during its 2017 review referenced activities that were not performed by Delta to the standards, capacity or capabilities required of an efficient operator or at the levels required to meet our increased activity. On this basis, we do not see it as relevant that Strata has identified some of the activities referenced were being undertaken (to a less than adequate standard, capacity or capability) by Delta in the past. We also strongly oppose the notion that referring back to an organisational structure that previously failed is an appropriate benchmark. Such an approach would be contrary to the expenditure objective (prudent EDB) and the long-term interests of consumers.

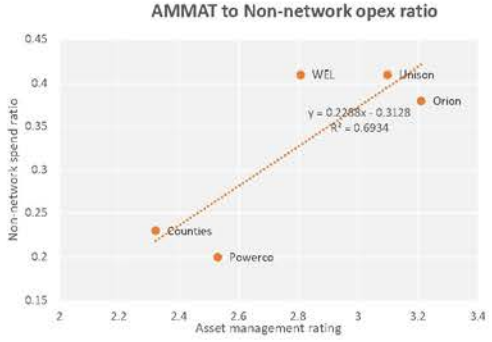
	Strata Report pages 129-130	Aurora Response
A6.5	We also note that several of the tasks associated with the additional roles are transitional—for example, the preparation of standalone policies for Aurora. As a result, we would expect to see a forecast reduction in SONS and People costs opex over time. This reduction is not apparent from the opex forecasts we have seen for the CPP and review periods, or beyond for that matter. The reduction seen across the period RY23 to RY26 is the completion of Aurora's second CPP application and Aurora's initial work on network evolution.	We note that our SONS and people costs do increase as we transition into the CPP period, reflecting the final ramp up towards our peak network capex programme and our need to continue to recruit the necessary staff to develop and implement critical systems and processes. Our asset management and business support maturity journey is not a 12 month exercise. We do not have the resources to undertake a single year 'across-the-business' maturity transition, nor could we realistically achieve this if resources were available. It takes time and coordination of a number of improvement programmes to achieve a sustainable outcome in asset management and business maturity. For example, the development of fleet strategies and maintenance standards, the implementation of an asset management system and enhancements to our risk-based decision making is a coordinated and iterative process that will take time to implement. Despite this, during the CPP period we start to realise cost reductions as our reliance on external support dissipates and the positive impact of efficiency factors is realised. Some of these savings are offset in our forecasts by increasing insurance costs, network evolution investments and the network growth factor adjustment which means they may not have been immediately identifiable. We would also note that we are yet to consider further cost reductions beyond RY26 due to the forecasting approach outlined in A6.2.
	Draft decision pages 387-388, Strata Report page 130	Aurora Response
A6.6	Strata also reviewed Aurora's process for making staffing decisions. It noted that: - Aurora has provided no evidence, either to the Verifier or us, of the business cases supporting the uplift in staffing levels; - there appeared to be little focus placed on looking for efficiency and productivity gains across roles; - Aurora's approach to benchmarking needed to be carefully evaluated;	We reject the notion that reference back to an organisational structure that failed is an appropriate benchmark, or a relevant means by which future staffing needs can be determined. Such an approach would be contrary to the expenditure objective (prudent EDB) and the long term interests of consumers. Our business case for the required FTE levels instead focused on industry best practice and included findings from the following independent reviews: – Review's undertaken during quality breach enquiries; – The AMCL ISO 55001 asset management maturity assessment and report; – FTE analysis relative to comparator organisations; and – The Commission appointed independent verifier's report

	- it is unclear how Aurora's Board gained enough comfort about Aurora's planned human resourcing expenditure over the space of a few years; and - the absence of an independent industry expert assisting Aurora to assess an appropriate level of human resourcing was surprising	All of these reviews supported our FTE decisions, which were informed by an executive team with extensive industry experience and were challenged by a Board of Directors with relevant industry knowledge. More recently, PwC has performed a detailed analysis of our FTEs relative to a comparator group which has also concluded that our FTE levels are in line with other businesses managing significant asset renewal programmes on their networks.
	Draft Decision page 388, Strata Report page 139	**Aurora Response**
A6.7	Strata concluded that it had reservations about using a base-step-trend approach to forecast SONS and people costs opex. Since separating from Delta on 1 July 2017, Aurora has undergone significant change, and while many of the activities undertaken in the SONS and people costs programmes of works are recurring, a number are not.	The base-step-trend approach is a standard forecasting approach used by other network companies, such as Transpower and Powerco, in proposing company-specific price controls. It is also an accepted forecasting approach among regulators, including the Commerce Commission and the Australian Energy Regulator. Strata is correct to identify that Aurora has undergone significant change but, in its assessment, it appears to not recognise: – our continued elevated investment needs during the CPP period; – the on-going cost impact of the identified change; – the need for sustained and continuous improvement. Our application of the bas- step-trend approach addresses the concern raised by Strata that some costs are not of a recurring nature by removing more than $3m (15%) of costs in the base year, and including step changes that increase and then reduce as non-recurring matters are addressed. It is important that we continue to improve our asset management maturity level. The first table below shows that our self-assessed asset management maturity remains low by comparison to the Strata comparator group. The second table demonstrates that the improvement we need to make to reach the cohort average is larger than the improvement Powerco was able to realise in the lead up to, and during, the initial part of its CPP.





A review of the comparator groups non-network opex also suggests there is a correlation between higher non-network opex levels and advanced asset management maturity levels.



We are of the view that our proposed investments in the SONS and people cost portfolios are critical to our targeted improvement in asset management maturity.

	Draft Decision pages 388-393, Strata Report pages 122-155	Aurora Response
A6.8	Strata top-down benchmarking and bottom-up analysis	We engaged WSP and PwC to review the Strata top-down and bottom-up analysis and the resulting recommendation.

	Draft Decision pages 393-397	Aurora Response
A6.9	As part of our decision we intend to impose a range of accountability measures on Aurora using an Information Disclosure (ID) reporting mechanism. We acknowledge that this will increase Aurora's work programme and have a cost associated with it. ...	In determining our efficient level of expenditure for the CPP period we have given regard to the Commission imposing accountability measures on us. Our proposal, however, does not consider the cost of: – more granular and specific pricing information; or – mid-period reviews.

	Lastly, we may propose that Aurora produces more granular and specific pricing information for its various consumers. This may require additional resource to enhance its present pricing model to produce the information. ... In summary, we have not made an explicit opex allowance for meeting the additional requirements. However, as noted in para E56 by choosing the upper bound FTE count estimated by Strata to calculate SONS and People expenditure allowances, and by not applying additional top down efficiencies improvements, we consider that we have allowed for the additional opex Aurora requires to meet the costs associated with the proposed additional requirements. This includes the costs associated with the pricing model development and the mid-period expert review.	The proposed requirements for more granular and specific pricing information are not clear at this time, but we note that the Commission assessed this as requiring an FTE for 8 months to develop and test. The work would likely need to be undertaken by external resource, given our existing development plans for pricing matters. It is not clear, given the errors in non-network opex benchmarking, that the Draft Decision provides for sufficient resources to fulfil the requirements proposed. We expect to comment further when the proposed information disclosure requirements are consulted on. As outlined in section 10.4.1, it is recommended that the cost of the mid-point review be included in recoverable costs by amending schedule 2.1 of the Draft Determination along with any necessary variation to IM clause 3.1.3(1). The proposed reductions of 31% and 33% in our SONS and people costs portfolios, respectively, do not provide us with sufficient allowances to meet our basic business, asset management and customer obligations, let alone to meet the additional commitments included in the Commission's proposal. It follows that the costs associated with additional accountability reporting cannot be met under the Draft Decision allowance. We do not agree with the assertion that by choosing the upper bound of the Strata recommendation, and by not applying additional top-down efficiencies, the Commission has provided a sufficient expenditure allowance to meet the additional costs. This statement is flawed on the basis that the Strata analysis is flawed – refer WSP and PwC expert advice. The comparison to Powerco and Transpower is also not relevant because: – the non-network opex allowances provided to Powerco and Transpower allowed them to develop the necessary underlying systems by taking into account their unique situations; and – they are larger organisations that have a greater ability to absorb costs.
	Draft Decision page 397, Strata Report pages 148-150	**Aurora Response**
A6.10	Strata observed that: - In the SONS opex programme Powerco sought $87.2 million and Aurora is seeking $80.4 million over the CPP period; and	As illustrated at A6.1, above, on a like-for-like basis and after considering appropriate time periods and the impact of different SONS and BS cost categorisation, our total non-network expenditure is expected to be in the order of 60% of Powerco's during our CPP period. That said, Section C1.1 also outlines why care needs to be taken when utilising this type of simple direct analysis.

	- in relative terms, Aurora is proposing an uplift in SONS opex that is $11.5 million higher than the uplift in SONS opex that Powerco received under its CPP proposal. Strata concluded that: *As we note above, Aurora is starting from a lower base than Powerco did in terms of asset management maturity. Therefore, we would expect Aurora's staffing needs in this regard to be higher than Powerco's. However, the reverse will apply in relation to each organisation's capex programme.* *We expect that, overall, Powerco's staffing needs under SONS should be greater than Aurora's-Powerco's network is almost four and a half times as long as Aurora's and Powerco has over three and a half times as many ICPs as Aurora. That Aurora proposes to outspend Powerco in SONS opex under the CPP reinforces our view that Aurora's staffing level does not meet the expenditure objective*	Strata's analysis of the proposed changes in SONS expenditure between Aurora and Powerco also fails to acknowledge that: – Aurora's historic SONS expenditure was not sufficient and failed to meet the long-term interests of consumers; – Aurora's relative increase in network spend is considerably higher than Powerco's (refer PwC Expert Report); – Aurora is required to make a more significant improvement in asset management maturity than Powerco, which results in higher costs throughout the CPP period to develop and implement a number of staged system and process improvements. For example, the AMS project will include data cleansing and loading, asset hierarchy development, integration with the GIS, work package creation, new business processes, mobility applications, risk assessment module, and ADMS and SAP integration; – Aurora's SONS costs have increased because of the change in its business model while Powerco's did not include a change in business model. For these reasons, it is entirely appropriate and not unexpected that Aurora would require a greater step change in SONS related expenditure than Powerco. The identification of this point further demonstrates that Strata has not fully understood the need for Aurora's CPP. We reject the notion that referring back to an organisational structure that failed is an appropriate benchmark or a relevant means by which expenditure allowances should be determined. Such an approach would be contrary to the expenditure objective (prudent EDB) and the long term interests of consumers.
	Draft Decision pages 397-398	Aurora response
A6.11	Aurora's analysis suggests that Aurora's level of non-network expenditure is not excessive relative to other electricity lines companies, when considering the size of its totex and network expenditure. We have also carefully reviewed the key analysis provided by Aurora to support its proposed SONS and people costs forecasts. We consider that this benchmarking analysis does not offer strong support for the view that Aurora's SONS and people costs are efficient. This is because unlike the majority of NZ electricity lines	It is important that the unique reasons for Aurora's CPP are considered in any benchmarking applied in the assessment of our proposal. The use of activity-based benchmarking; i.e., using totex or network spend as a normaliser, goes someway to providing a comparison to our peers that takes into account our unique situation. Aurora's unique situation during the CPP period includes our requirement to undertake a major capex programme as well as requirements to: – undertake a significant network opex programme; – invest in the setup of a new business structure; and

companies that are in a business-as-usual capex operating environment, Aurora is undertaking a major capex programme. This has the effect of increasing the denominator in its non-network opex ratio (non-network opex/network spend) and lowering its non-network ratio relative to other electricity lines companies.

Additionally, the industry average trend line in the graph may be misleading given only a few data points exist for electricity lines companies with network expenditure above Aurora's proposed expenditure.

In support of its proposal Aurora also undertook headcount benchmarking against five other electricity lines companies. The comparison did offer some support for the view that Aurora's forecasts implied better efficiency than what small neighbouring electricity lines companies were achieving.

However, the we consider there are limitations to this analysis noting that;

- Aurora's FTE count is 145 in the comparator table, but over the CPP period it is proposing an FTE count of 158;
- regarding the comparator group with FTE's closest to Aurora, it is noted one lines company headcount 'may not be like for like', and that another lines company head count includes around 20 design staff. It is therefore unclear whether the headcount numbers for these electricity lines companies are directly comparable with Aurora's headcount numbers; and
- there is an absence of other electricity lines companies which might be useful comparators.

The Commission concluded that it is difficult to make definitive conclusions from Aurora's headcount benchmarking analysis.

– invest in necessary asset management capability and maturity improvements.

We note the Commission references an EDB with 20 design staff, which demonstrates that benchmarking is fraught with challenges making like-for-like comparisons. Some businesses will outsource design, some won't, and others will have a hybrid approach like Aurora. Some businesses will have on-premise ICT solutions and others will have cloud solutions, or dual versus single control rooms, and so on. PwC's most recent review of EDB organisational structures supports this assessment (refer PwC Expert Report).

It is imperative that the Commission understands that Aurora is already resource constrained and the challenge we face every day is to prioritise the backlog of renewals on the network alongside our business and asset management maturity initiatives, which will be staged over a number of years.

It is unclear why the Commission has dismissed our FTE benchmarking on the basis that it can't make a definitive conclusion from it. The purpose of benchmarking is to provide support for decisions. The Commission acknowledges the comparison did provide some support, but then ignores that support in its conclusions.

	Draft Decision page 400	Aurora response
A6.12	The Draft Decision is that Aurora's SONS & people costs opex should be reduced based on Strata's upper bound FTE estimate of 136. The Commission notes that the FTE estimate has been used simply as an input into determining Aurora's SONS and people expenditure allowance. We are not approving a lower FTE count for Aurora, or its salary levels, and how Aurora operates and staffs its business within its expenditure allowance is a matter for it to decide.	As confirmed by the independent verifier, Strata and the Commission, our staff salary and remuneration levels are at or slightly below industry averages. It follows that any proposed cost reductions will likely need to be realised through staff reductions. It is clear from our analysis of the Strata Report that the proposed cost reductions to our SONS and people cost portfolios are too high. The expenditure allowances described in the Draft Decision purport to support a staffing level of around 136 FTEs throughout the CPP period. Strata's calculations are flawed, and resulted in recommended expenditure allowances which, in PwC's estimation, would support an average staffing level of around 114 FTE's. The inferred staffing level is only marginally above the 'Delta benchmark' and is simply untenable.

A.7. Specific Non-network Opex Adjustments

	Draft Decision page 401	Aurora Response
A7.1	Strata notes that Aurora has taken the mid-point of Crombie Lockwood's ranges for three of the four types of insurance contained in its insurance advice, but for material damage and business interruption, which comprises 60% of the cost of Aurora's insurance premia, Aurora has taken the upper end of Crombie Lockwood's range. Strata notes that regarding material damage and business interruption insurance, Crombie Lockwood said: *We have seen the Material Damage and Business Interruption market begin to plateau. It is our expectation that premiums may still rise between 5-10% on a year-on-year like-for-like basis. However, the market fluctuations will also be determined by any major natural disasters or weather-related events over the coming years."* Strata considers that given Crombie Lockwood's advice (specifically, the plateauing of the material damage and business interruption market) an annual increase of 5% would be more likely to meet the expenditure objective than an annual increase of 10%.	Strata has correctly identified that we made a 10% increase to our material damage and business interruption insurance cost forecasts, but has not correctly identified the reason for this 10% assumption. We increased our material damage and business interruption insurance by 10% to: – reflect Crombie Lockwood's expectation that premiums may still rise by 5-10% per annum; and – to provide for the increase in the value of our insured assets. The value of our insured assets is forecast to increase as we continue to invest in our network.

	Draft Decision page 404-405	Aurora response
A7.2	Strata considers increasing the average allowance per staff member to almost $3,000 per annum would not meet the expenditure objective because: - most training is expected to be on-the-job training consistent with Aurora's formal learning and development policy. There is a cost associated with on-the-job training in terms of reduced productivity, but this is a separate cost; - Aurora proposes to invest in new systems and processes throughout its business, from asset management to consumer connections to payroll. Undoubtedly training will be needed in these areas, but the cost of this training is likely to be factored into the cost of these investments; and - Aurora should be able to achieve economies of scale through onsite training of groups of staff (eg, project management, network coordination, users of Microsoft Office applications). Strata concluded that a more realistic allowance for Aurora's training costs be $2,000 per staff member per annum rather than the proposed $2,735 per staff member per annum, based on an FTE count of 158.	Strata does not provide any evidence as to why $2,000 is a more appropriate level of staff training. It is evident, through the external independent advice we have received, that our systems, processes and procedures, and staff capability need to significantly improve for us to efficiently manage our assets for the long-term benefit of consumers and to deliver our network investment programme. Upskilling our staff is an important part of that process. We note that: – consistent with other organisations, Aurora has on-the-job training as an aspect of staff development. This, however, does not impact on our forecast staff training costs because: – cost of on-the-job training is not included in our forecast staff training costs – it is not appropriate to substitute formal training with on-the job training when an organisation needs to lift its overall competency – the staff training budget is focused on improving staff capability. The cost of training staff in new system and processes is not included in forecast staff training costs – our recent activities have focused on increased capacity, recruitment and system development. As we transition into the CPP period we will focus more on enhancing our staff capabilities. Training is an important component of capability development and requires an increase in investment to support the transition to our targeted asset management maturity
	Draft Decision page 433, Strata Report page 162	**Aurora response**
A7.3	Strata considered Aurora should further reduce the amount of legal costs in its base year, to reflect efficiency benefits from bringing in-house a material amount of its legal work. Currently, Aurora has no legal advisor or corporate lawyer on its staff.	We believe that generalist in-house legal council would increase rather than reduce costs. A role of this nature generally engages and manages legal work across external counsel with 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.
	Draft Decision page 434	Aurora response
A7.4	Strata considers there should be an opportunity to realise savings in the $500,000 forecast for customer communications costs ... ... We also agree 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.	We note that: – only a small portion of the communication costs in governance and administration relates to customer communications; – the majority of the mentioned $500,000 communication costs relates to telephones and other communication equipment; – the customer communication costs included in governance and administration generally relates to newspaper adverts and other advertising for customer connection matters. The costs are not related to our CPP and are recurring.

Appendix B. Detailed Response to Draft Decision on Capex allowances

B.1. Network Capex (General)

In this appendix we set out general views that apply to the majority of draft decisions related to capex. The remainder of the appendix sets out views on the individual portfolios and fleets.

	Strata – page 29	Aurora Response
B1.1	We consider Aurora did not provide any policies, planning standards, or key assumptions.	This statement is repeated throughout the Strata Report. Our submission material refers to a number of these, all of which were provided to the Independent Verifier and so we expect were available to Strata. We set out a number of examples below when discussing individual fleets In our view, this suggests that Strata did not fully or adequately review our CPP material.
B1.2	We found that the information supplied by Aurora to support its CPP application did not demonstrate sufficient linkages between the AMP and the proposed asset management practices and the asset replacement forecast for the CPP.	The AMP was a core component of our CPP application and set out both our proposed future asset management initiatives and our replacement forecasts. In our 2020 AMP, we have overarching objectives and strategic priorities, set out as per Section 4.6: – Safety first – Reliability to defined levels – Affordability through cost management – Responsive to a changing landscape – Sustainability by taking a long-term view These are then linked to portfolio objective areas which are subsequently linked to specific fleet management activities. Below are a few example screenshots from our AMP:

Example 1

Underground Cables Portfolio Objectives

Our portfolio objectives for the underground cables portfolio are listed below.

Table 8.25: Underground cable portfolio objectives

Objective Area	Portfolio Objectives
Safety first	No fatalities or injuries to workers or public from contact with our cables or failure of our cables and terminations.
Reliability to defined levels	Cable failure rates are to be consistent with historical failure rates and not rise.
Affordability through cost management	Ensure lowest whole of life cost solutions are chosen, while giving regards to network resilience.
Responsive to a changing landscape	Manage obsolescence risk of fluid-filled cables.
Sustainability by taking a long term view	Minimise oil leaks from pressurised oil-filled cables. Minimise traffic interruptions when undertaking cable repairs or renewals in road reserves and plan consolidated works with other underground utilities. Opportunities to increase cable network resilience are taken, where cost is comparable to like-for-like replacement.

Meeting our portfolio objectives – safety first

Cables are generally inherently safer than overhead electrical assets. However, cast iron cable terminations have a failure mode with significant safety implications. To mitigate this risk, we are proactively replacing all of these terminations with modern types during the planning period.

Example 2

Distribution Switchgear Objectives

Portfolio objectives (set out below) guide our day-to-day asset management activities.

Table 8.63: Distribution switchgear portfolio objectives

Objective Area	Portfolio Objectives
Safety first	No fatalities or injuries to the public or service providers from maloperation of switchgear. No fatalities or injuries to the public from non-malicious equipment access. No step and touch voltage hazards.
Reliability to defined levels	Downward trend in unforced, condition driven, distribution switchgear fault related outages. Improve network reliability by addressing Do Not Operate (DNO) equipment.
Affordability through cost management	Maximum value is realised for our customers using a risk based prioritisation to ground mounted switchgear renewal and choosing lowest overall cost options.
Responsive to a changing landscape	Investigate ground mounted switchgear products that do not use SF_6.
Sustainability by taking a long term view	Implement good industry practice SF_6 management and reporting. Ensure sustainable inspection practices are in place.

Meeting our portfolio objectives –reliability to defined levels and affordability by cost management

DNO equipment such as inoperable EETEE and JW fuses reduce the operability of our network. Replacing this equipment in conjunction with other equipment is a cost efficient way to increase the reliability of our network.

We have set out further examples in the remainder of this appendix.

We suspect that our CPP proposal was not adequately reviewed by Strata. Given Strata's repeated references to our 2018 AMP, we suspect that our 2020 AMP was not properly considered.

	Strata – page 30	Aurora Response
B1.3	Our assessment of Aurora's policies, standards and practices is that it continues to be work in progress	This comment on their 'assessment' of Aurora's policies, standards and practices directly contravenes their repeated statements that "Aurora did not provide any policies, planning standards, or key assumptions" **This is an example of the many internal inconsistencies and contradictory statements in Strata's report.**

B1.4	We have concerns that the work to be done on the asset governance framework was identified in 2018 when we conducted the most recent Quality Non-compliance Review of Aurora	Our asset governance framework has been overhauled since 2018 and was reviewed by the IV. There are further examples were Strata seem unaware of governance related material that has been reviewed by the IV and supplied to the Commission with our CPP proposal. **Again, we suspect that our CPP proposal was not adequately considered by Strata.**
	Strata – page 31	**Aurora Response**
B1.5	Aurora should have: • ensured a rigorous top-down review and challenge was applied to its bottom-up forecasts; • undertaken assessments and made adjustments at an asset portfolio level;	We provided the independent verifier with information and evidence of management and Board challenge processes. When commenting on the overall network investment plan the independent verifier stated that: *"There are many aspects of Aurora Energy's capex and opex forecasts and supporting assumptions that support the expenditure objective. Aurora Energy also appears to have gone through a rigorous internal review and moderation process."*[67] On opex forecast validation: "Aurora Energy has undertaken internal reviews of its proposed opex forecasts, and there is evidence of internal moderation decreasing some forecasts (e.g. some proposed roles removed from the SONS and people costs forecasts, and negative trends included in the corrective and reactive maintenance forecasts)."[68] In our view this is further evidence that Strata did not adequately review the material provided to independent verifier and the Commission. It is our view that Strata has not adequately reviewed the material supporting our CPP proposal, including: – Commerce Commission Supporting and Relied Upon Material SharePoint site – Verification Report – Aurora Energy CPP Application, Farrierswier and GHD – Aurora Energy CPP Application – Aurora Energy Asset Management Plan (April 2020 – Mark 2030)

67 Farrier Swier Consulting Pty Ltd. (2020). Verification Report: Aurora Energy CPP Application. 8 June 2020. Table 1.1, p16.

68 Farrier Swier Consulting Pty Ltd. (2020). Verification Report: Aurora Energy CPP Application. 8 June 2020. Section 5.8.1, p103.

		Per the examples above, the independent verifier references several examples of top-down review and challenge that were applied to our bottom-up forecasts. The same material that was provided to the verifier has been made available to the Commission and Strata. **This is a key example of Strata not adequately reviewing the material provided to it. It calls into question the recommendations and advice to the Commission.**
B1.6	No post-model adjustments made by Aurora to the expenditure forecasts were apparent. This indicates that the modelled outputs were accepted without challenge or that the results were resilient to challenge, which would be very unusual for age-based replacement programmes.	This statement is made twice. Strata, itself, then reference and discuss a series of post-model adjustments that we made to our expenditure forecasts, including those for: – distribution cables – pole mounted distribution transformers – pole mounted fuses – pole mounted switches – Ancillary distribution substation – DC systems – Remote terminal units **In addition to the impact of these errors in the conclusions of the report, these contradictory statements and internal inconsistencies point to a lack of internal review and quality assurance.** **We are concerned that the Commission, when reviewing this material, did not point out these material errors. In our view, this points to inadequacies in the Commission's process.**
B1.7	For Aurora's models, we found that the critical assumptions included probability of failure based on age and assumptions of age-based failure rates. These assumptions must be tested against failure rates actually being experienced and engineering knowledge of the general condition of the fleet. We did not see any evidence that Aurora had done this.	The independent verifier thoroughly tested our modelling approaches in the context of our asset information limitations and relative asset management maturity. IV had the following views on our overall forecast methodology: *"Age based models – used age as the key determinant for asset replacement. This was implemented both as a deterministic approach and as the basis for modelling asset performance. These are generally not considered GEIP but are acceptable when no other data is available, and consideration is given to historical trends. Typically, this occurs for high-volume low-cost assets when they are first entering a phase of age-related failures, which currently is typical for many network businesses. Aurora Energy is using this approach for most of its renewal program:*

		[...] *– the use of this approach by Aurora Energy for these assets is consistent with industry practice except to the degree others have advanced their models."* [69] And the independent verifier on its findings on methodology *"Age based renewal models for crossarms, HV and LV conductors are based on assumed expected lives to generate a forecast for which the actual assets in need will be later confirmed through inspections. In each of these cases we have used benchmarking with peer organisations to assist in verifying the model outputs, and hence the validity of the age assumptions.* *Overall, the methods used to forecast the renewal capex are reasonable based on the data and knowledge of asset condition (where available) and asset attributes (age profile)."*[70] **In our view this is further evidence that Strata did not adequately review the IV report and its findings.** **In addition and based on material in this report, it is our view that Strata doesn't have a sufficient level of understanding to review this type of modelling.**
B1.8	Our results showed that moving the expected life from 60 to 65 years reduced the 3-year CPP period forecast from $10.4m to $6.8m, and reduced the forecast cost of the 10-year programme by nearly $10m.	Conversely, decreasing the expected age would increase the forecast. These "results" add nothing to an expenditure review process. We are surprised that the Commission saw fit to unreservedly accept this 'analysis'. There are further examples of this arbitrary adjustment, including – pole mounted fuses – from 55 to 57 years (ref. B7.3) – pole mounted switches – from 50 to 52 years (ref B7.4) Our chosen expected lives are materially older than other EDBs, a fact that was not considered. The following table sets out the expected lives of pole-mounted assets used to inform Powerco's renewal programmes. Powerco's related forecasts were approved as part of its CPP, so reflect a useful comparator.

[69] Farrier Swier Consulting Pty Ltd. (2020). Verification Report: Aurora Energy CPP Application. 8 June 2020. Section 4.6.1, p74.

[70] Farrier Swier Consulting Pty Ltd. (2020). Verification Report: Aurora Energy CPP Application. 8 June 2020. Section 4.6.3, p75.

Fleet	Aurora	Powerco
Wood Crossarms	55 years	35-40 years
PM Fuses	55 years	40 years
PM Switches	50 years	45 years
PM Transformers	60 years	45 to 60 years

We agree with the independent verifier view on the use of sensitivity below:

> *"Aurora Energy did not complete any sensitivity analysis for the assumptions in the input data. However, given the input data, assumptions, and methodology adopted by Aurora Energy we do not consider that sensitivity analysis is necessary. Sensitivity analysis of the model output to changes in input variables (i.e. age profile and expected age) results in an equal chance of being over/under presently modelled forecast."*[71]

In our view, Strata has demonstrated a lack of understanding and poor engineering judgement when suggesting these arbitrary changes.

B1.9	EA Technology found up to 20% reductions when utilities apply its CBRM methodology as a replacement for age-based replacement asset management	No reference for this claim has been provided by Strata. Nor has any qualifications for the type of utility and/or overall investment programmes, taking account of asset renewal backlogs for instance. The independent verifier found our modelling approach to be reasonable as per the following : *"Overall, the methods used to forecast the renewal capex are reasonable based on the data and knowledge of asset condition (where available) and asset attributes (age profile)."*[72]
	Strata – page 32	**Aurora Response**

71 Farrier Swier Consulting Pty Ltd. (2020). Verification Report: Aurora Energy CPP Application. 8 June 2020. Section D4.6, p360.

72 Farrier Swier Consulting Pty Ltd. (2020). Verification Report: Aurora Energy CPP Application. 8 June 2020. Section 4.6.3, p75.

B1.10	It is good electricity industry practice to consider the forecast at the portfolio level and apply an adjustment for over-investment bias.	Like most of the unfounded assertions made in the report, this has not been justified or evidenced by any examples. However, we shared with the independent verifier our Board and Executive challenge and moderation process (including deliverability (see below) and outcomes. It is also important to note that any moderation to the forecasts needs to be in the context of a renewal backlog situation where reductions in the forecast expenditure will further extend the period of elevated risk on the network.
B1.11	Consideration should also be given at the portfolio level to the deliverability of the total forecast replacement volumes as a whole. As Aurora's forecast is formed by the combined outputs from the models, this suggests that a portfolio level review has not yet been completed.	We provided material to the independent verifier and Commission of our deliverability review at a portfolio level. These reviews are discussed in our application material and in the Independent verifier's report. The independent verifier commented thus on deliverability: *"Aurora Energy's approach to deliverability appears well considered, and discussions with service providers are well advanced. There are risks associated with its deliverability plan, but we expect that Aurora Energy can and will manage them."*[73] and *"In our opinion, the work proposed in the capex and opex forecasts over the CPP and review periods does not appear undeliverable, notwithstanding some risks which are discussed below. Aurora Energy has identified these risks and has an appropriately advanced delivery plan across the capex and opex programs. Aurora Energy has largely already secured the resources it needs to deliver the programs; we consider that Aurora Energy will be able to source any additional resources it needs."*[74] **This is further evidence that Strata did not adequately review our proposal or the independent verifier's report.** This oversight is relevant to the arbitrary 5% adjustment suggested, which was linked to deliverability (see below).
	Strata – page 34	**Aurora Response**
B1.12	We recommend that the Commission applies a -5% efficiency adjustment to the total asset replacement capex forecast in	See the discussion in Section 6.1.1

[73] Farrier Swier Consulting Pty Ltd. (2020). Verification Report: Aurora Energy CPP Application. 8 June 2020. Table 1.1, p16.

[74] Farrier Swier Consulting Pty Ltd. (2020). Verification Report: Aurora Energy CPP Application. 8 June 2020. Table 1.1, p16.

each regulatory year, to reflect overestimation bias in the forecast, deliverability, and unit cost reductions.

Strata have presented no basis or evidence for the level of this proposed adjustment. **This is an example of the arbitrary adjustments recommended by Strata.**

We explain, below, why we are confident that this adjustment is inappropriate.

Overestimation bias

Strata has introduced this concept with no basis or evidence that such bias is present in our forecasts. In the absence of any explanation or justification for this view, we suspect that this may stem from their apparent lack of understanding of repex forecasting methodologies.

We are obviously concerned that the Commission would adopt recommendations with no basis or explanation.

Deliverability

Overall portfolio deliverability as discussed above. Below we set out examples of deliverability adjustments used in our proposal:

- distribution cables;
- LV cables;
- subtransmission cables;
- pole mounted fuses;
- pole mounted switches;
- ground mounted distribution transformers;
- pole mounted distribution transformers;
- DC systems; and
- RTUs.

Strata has ignored or did not review the findings of the independent verifier in relation to deliverability and ignored the adjustments that we made to multiple fleets to address deliverability. In fact they seem to have ignored their own suggested deferral (e.g. subtransmission cables).

Unit cost reductions

By applying this to all fleets, with no explanation, we have concluded:

- further inconsistencies given they make multiple references to unit rates being 'reasonable':

		"LV cable replacement was 6% lower than its benchmark. This should provide some assurance to the Commission that Aurora's replacement forecasts for distribution (sic) cables are reasonable."[75] Following discussions with the independent verifier we made efficiency adjustments to a number of fleets (e.g., crossarms and LV enclosures). These gradually increasing adjustments reflect that the required improvements take time. The fact that the Commission did not apply the 5% adjustments (or 'top-up' adjustments) to these fleets suggests that: – it was not reflecting the deliverability or over estimation aspects as these would still apply (if they were valid) ; and – the Commission accepts the need for gradual efficiency improvements (given our adjustments took this form). **Further, any such adjustments applied from the beginning of the period and equally to all years suggest a lack of understanding of how businesses improve over time and that certain fleets will have differing scope for such improvements.**
B1.13	Whilst the AMP and POD06 gave information on the asset fleet and strategies Aurora applies to manage the assets, **nothing in the documents supplied provided linkages to higher level policies and strategies.** [Aurora emphasis]	These statements are repeated verbatim (adjusting the POD title) for all fleets reviewed. The fleets reviewed have differing levels of linkage to overall, higher-level strategies, some of which are explicitly set out in the AMP.

[75] Strata Report, p46.

Underground Cables Portfolio Objectives

Our portfolio objectives for the underground cables portfolio are listed below.

Table 8.25: Underground cable portfolio objectives

Objective Area	Portfolio Objectives
Safety first	No fatalities or injuries to workers or public from contact with our cables or failure of our cables and terminations.
Reliability to defined levels	Cable failure rates are to be consistent with historical failure rates and not rise.
Affordability through cost management	Ensure lowest whole of life cost solutions are chosen, while giving regards to network resilience.
Responsive to a changing landscape	Manage obsolescence risk of fluid-filled cables.
Sustainability by taking a long term view	Minimise oil leaks from pressurised oil-filled cables. Minimise traffic interruptions when undertaking cable repairs or renewals in road reserves and plan consolidated works with other underground utilities. Opportunities to increase cable network resilience are taken, where cost is comparable to like-for-like replacement.

Meeting our portfolio objectives – safety first

Cables are generally inherently safer than overhead electrical assets. However, cast iron cable terminations have a failure mode with significant safety implications. To mitigate this risk, we are proactively replacing all of these terminations with modern types during the planning period.

This supports our view that Strata did not adequately review our CPP application material.

B1.14 The chart below shows the age distribution of PILC cables. We have included a comparison of Aurora's PILC cables with Unison's (serving Hastings and Napier) and WEL's (serving Hamilton). This comparison indicates that Aurora has older cables than the other two electricity distributors.

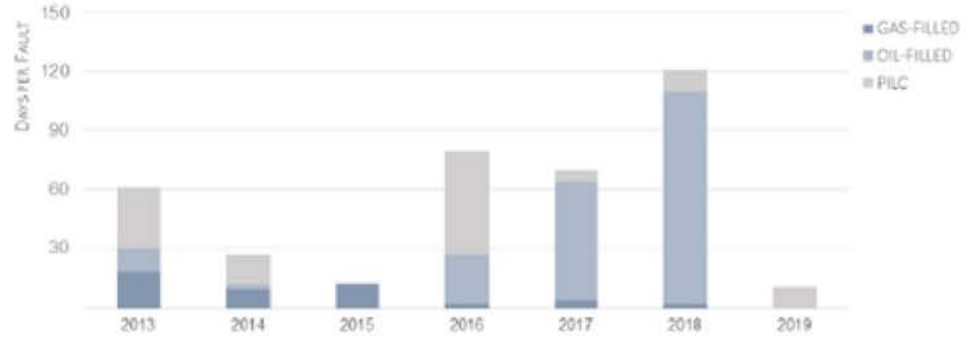
The report includes a number of spurious charts that are not referred to or referenced in relation to any conclusions made. In this example, no comparison was made to the proposed expenditure of Unison and WEL, which would be a logical further step. Instead, they merely state that Aurora has older cables than two randomly chosen EDBs.

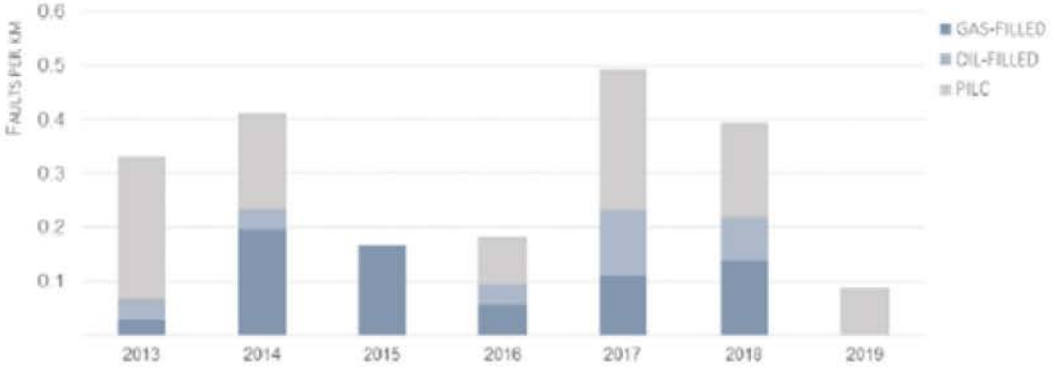
It is worth noting that the independent verifier did compare our capex with other EDBs during its more thorough and better-informed review.

We consider these to be examples of Strata including spurious information to imply a level of rigour and supporting analysis that was not undertaken.

B.2. Subtransmission Cables

	Strata – page 35 to 38	Aurora Response
B2.1	To support its descriptions and the proposed expenditure, it would have been valuable if Aurora had provided some quantification of the expected benefits.	Our modelling for Dunedin subtransmission options included NPV analysis and quantification of benefits. This was provided to the independent verifier and would have been available to Strata. This important analysis is relevant to a number of projects. Despite Strata's inability to locate the analysis from the material provided to the Commission, Strata also made no request for evidence of benefits analysis. Not seeking this information is another example of the limited, ad-hoc approach used by Strata. **This supports our view that Strata did not adequately review our CPP application material.**
B2.2	In the absence of information regarding the decline in faults in 2019, we consider that the timing of the Kaikorai Valley and Corstorphine cable replacements is not adequately supported. Because of this, we recommend that the Kaikorai Valley and Corstorphine cable replacements be moved back by 1 year. In making this recommendation we are conscious that Aurora has brought the Corstorphine replacement forward due to deliverability reasons.	Faults are stochastic, looking at a single year in isolation (as Strata has done) is almost meaningless, as can be deduced by looking at the charts Strata included in its own report (see below). Assuming a level of future performance based on a single year is not good practice. 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. **This is another example of poor analysis and a lack of practical engineering knowledge.**





B2.3	We consider that the low failure rates for subtransmission cables have not been sufficiently explained and that **if similar rates are seen in 2020 and 2021 on the Kaikorai Valley and Corstorphine 33kV cables, deferment of the cable replacements could be considered.** [Aurora emphasis] We recommend that the Kaikorai Valley and Corstorphine cable replacements be moved back by 1 year.	This 'wait and see' view is inconsistent with the recommendation to defer these two projects (i.e. the Draft Decision defers these before performance is confirmed). **This is another example of internal inconsistencies, poor analysis, and contradictory statements.**

B2.4	we are conscious that Aurora has brought the Corstorphine replacement forward due to deliverability reasons	We question whether or not Strata was genuinely "conscious" of this change, given the repeated comments that Aurora made no deliverability adjustments, being the partial basis of the 5% capex reduction.
B2.5	Aurora's unit costs are lower than those indicated by Jacobs. This 20% difference suggests Aurora may either be negotiating good price discounts or it has underestimated the likely costs. Aurora noted that it had not included any contingency in its price forecasts for subtransmission cable replacements.	The fact that our costs reflect market-tested rates is an example of why using a 'blanket' 5% adjustment is unjustified and inappropriate. We would like the Commission to explain its decision to apply a 5% reduction to this expenditure given it already reflects market-based costing and has no allowed contingency.
B2.6	if faults experienced have reduced, the replacement could also be deferred further for delivery reasons, especially given **that the consequences of failure have been reduced.** [Aurora emphasis]	This statement is incorrect. The consequence of failure will not reduce, it will in fact increase over time due to higher load. **This is an example of poor analysis and a lack of practical engineering knowledge.**
	Draft Decision	Aurora Response
	Paragraph D255 In relation to the sub-transmission cable renewals, Strata's key findings were that: [...] D255.6 **cable fault information from 2016 onwards shows cable faults have fluctuated widely**, and Aurora could have analysed this in greater depth in support of its application. [Aurora emphasis]	This is an excerpt from the Draft Decision that sets out Strata's views. As far as we can tell Strata does not make this 'key finding'. At least it was not included in the 'report' provided to us and published on the Commission's website. In fact, Strata only refer to, and rely on, the 2019 fault levels (a point we make above). We would be concerned if the Commission had further analysis which has not been made available to interested parties or was 'supplementing' poor analysis by Strata. We would appreciate if the Commission clarified the basis for this statement.
	Paragraph D257 We agree with the Strata conclusion regarding the observed recent low fault rate not supporting early cable replacements and agree that a one-year deferral at least be applied to this programme of expenditure.	Based on our comments above, we would like the Commission to explain why it has accepted this adjustment. We also seek to understand the Commission's reference to "early cable replacements". Without clarification and justification, the project expenditure should be reinstated.

B.3. Distribution Cables

	Strata – page 38 to 42	Aurora Response
B3.1	Whilst the AMP and POD07 gave information on the asset fleet and strategies Aurora applies to manage the assets, nothing in the documents supplied provided linkages to higher level policies and strategies.	These statements are repeated verbatim (adjusting the POD title) for all fleets reviewed. The fleets reviewed have differing levels of linkage to overall, higher-level strategies, some of which are explicitly set out in the AMP and respective PODs. **Meeting our portfolio objectives – safety first** Cables are generally inherently safer than overhead electrical assets. However, cast iron cable terminations have a failure mode with significant safety implications. To mitigate this risk, we are proactively replacing all of these terminations with modern types during the planning period. In our view this is yet another example of Strata not reviewing the material included in our proposal. This calls their recommendations into question. **Again, this suggests that the material was not adequately reviewed.**
B3.2	Aurora has not explained how it determined the failure distribution used in the models, nor how these aligned with Aurora's experience of cable failures.	Our models have been built using a standard repex methodology, as endorsed by the AER and consistent with those used by Australian utilities. This modelling approach is identical to those reviewed by the independent verifier, who concluded they were reasonable: *"Age based renewal models for crossarms, HV and LV conductors are based on assumed expected lives to generate a forecast for which the actual assets in need will be later confirmed through inspections. In each of these cases we have used benchmarking with peer organisations to assist in verifying the model outputs, and hence the validity of the age assumptions."*[76] Overall, the methods used to forecast the renewal capex are reasonable based on the data and knowledge of asset condition (where available) and asset attributes (age profile). The Commission itself states that: *"Aurora has taken a repex modelling approach to forecast replacement volumes beyond known asset condition and safety issues. Repex modelling is a statistical approach that forecasts quantities of assets to be replaced in the absence of asset*

[76] Farrier Swier Consulting Pty Ltd. (2020). Verification Report: Aurora Energy CPP Application. 8 June 2020. Section 5.6.3, p75.

		condition data. This is a reasonable forecasting approach to take when asset condition data is limited but asset age is understood."[77] **Strata's apparent lack of understanding of these models, their inputs, and how they derive expected future replacement needs is a serious concern.** In addition to evidence (discussed elsewhere) that our material was not adequately reviewed we request that the Commission explain why it has accepted Strata's findings relating to the use of repex modelling.
B3.3	Aurora did explain that it had smoothed the modelled work volumes to allow for delivery capability required for underground cable work. The chart below shows the effect that the smoothing adjustment has had on the forecast replacement profile.	A further contradiction to their statement that we made no post modelling adjustments. **This is another example of internal inconsistencies and contradictory statements.**
B3.4	In our opinion Aurora's smoothing adjustment more likely represents an under delivery of forecast quantities in 2020 and 2021 rather than a proactive adjustment to smooth future deliverability of the programme.	No, it does not represent an under-delivery. As explained in our proposal material, this was the result of us prioritising resources towards cast iron pothead renewals. **This supports our view that Strata did not adequately review our CPP application material.**
B3.5	Aurora's model indicates Aurora should replace an average of 2.1km of distribution cable each year over the 5-year review period. This is consistent with Aurora's recent replacement rates plus an uplift to reflect cables moving towards their end-of-life zone. However, **the ramping up of replacement volumes over the 5-year review period is driven by the assumed cumulative failure rates in the model.** [Aurora Emphasis]	This is incorrect, the replacement volumes are calculated from the failure rate not cumulative failure rates.
B3.6	In our opinion, Aurora's proposed 3-year replacement rates should be based on its modelled volumes.	We prioritised other high-risk assets (e.g. cast-iron pot heads) as we have a shortfall of technicians. This inevitably creates a backlog of cabling work that need to be addressed at a later date. Again, this is explained in our submission material.
B3.7	The unit cost for distribution cables used in MOD 07 is $420,000. Jacobs' 'sense check' of Aurora's price book found that Aurora's unit costs for distribution cables fell within 10%	We struggle to understand why "reasonable forecasts" with appropriate unit rates that have been adjusted for deliverability should have a 5% reduction that purportedly aims to address the lack of these.

[77] Draft Decision. Paragraph D58, p245.

	of the Jacobs estimate. This should provide some assurance to the Commission that **Aurora's replacement forecasts for distribution cables are reasonable.** Jacobs did not provide a comparison of the cast iron pothead replacement costs**. Aurora's unit cost for these replacements is $10,500, which appears to be reasonable.** **We have identified no material issues** with the distribution cables replacement forecast other than reducing the RY20 to RY24 volumes to remove the unsupported 'smoothing' adjustment.[Aurora emphasis]	We request that the Commission explain why it has accepted this adjustment.

B.4. LV Cables

	Strata – page 43 to 47	Aurora Response
B4.1	Key drivers of expenditure for LV cable renewal and refurbishment are: 1. type/age: **Aurora proposes to replace PILC cables that have exceeded their expected life of 100 years** and opportunistically replace cable lengths when replacing other assets, such as ground mounted distribution transformers, LV enclosures and/or poles; and 2. reactive replacements: distribution (sic) cables are replaced reactively when failures or third-party damage occurs (mainly due to cable strikes). [Aurora emphasis]	The 100 year is a modelling trigger used to predict likely future volumes. Replacing assets based on age is a proactive approach. Our submission is clear that we use a reactive strategy (as Strata notes elsewhere, see below)
B4.2	Aurora's replacement strategy[49] for its proposed LV cable replacements is to reactively replace: • on failure; or • when damaged by third-party action (e.g. from construction-related ground movement).	This statement contradicts the 100 year point above. This is another example of internal inconsistencies and contradictory statements. (note that Footnote 49 refers to POD20 - Ground Mounted Distribution Transformers)
B4.3	Forecasting approaches Aurora applied to form its forecast	This material refers to distribution cable, not LV cable, also footnote 50 refers to ground mounted transformers POD.

	Aurora describes the methodology it used to develop its distribution cable replacement volumes as an age-based repex approach: We forecast distribution cable replacements based on expected remaining life, using the repex calculation methodology. Distribution cables have an expected life of 45 / 80 years for XLPE / PILC cables respectively. The expected lives are modelled as a normal distribution where a replacement rate is then calculated representing a proportion of cables that will replacement by a particular age. We have a known population of cast iron potheads which are targeted for replacement.	**The consistent errors in the material suggest a lack of care in preparation and internal review.** We are also concerned that the Commission did not seek to have these addressed.
B4.4	The assumed failure rate curve represents the probability of failure (PoF) of assets at specific ages. The curve applied by Aurora indicates that the onset of end-of-life-related failures for its PILC LV cables begins at 70 years old. The need for reactive replacements would be expected to occur between 70 and 90 years old. **Beyond 90 years, the curve indicates that proactive replacements should have been completed unless the cables are considered to be low criticality**. [Aurora Emphasis]  	It is unclear to Aurora as to how Strata has arrived at the conclusion that PILC cables are replaced proactively from a cumulative failure distribution curve. **This lack of understanding of our models and basic reliability engineering is a cause for concern.**
B4.5	In its **2018 AMP**[52] Aurora states that it established replacement expenditure for its distribution cable assets on a volumetric / repex basis. **It delivers the forecast replacements through what it calls hybrid, criticality-based bundling**. [Aurora emphasis]	We assume this refers to our 2020 AMP, based on the footnote. The statement regarding hybrid criticality-based bundling is incorrect. See screenshot from AMP20 below – page 87: Low-voltage-cables ¤ | Low ¤ | Volumetric-/-Repex ¤ | Hybrid ¤ **The consistent errors in the material suggest a lack of care in preparation and minimal internal review.** We are also concerned that the Commission did not seek to have these errors addressed.

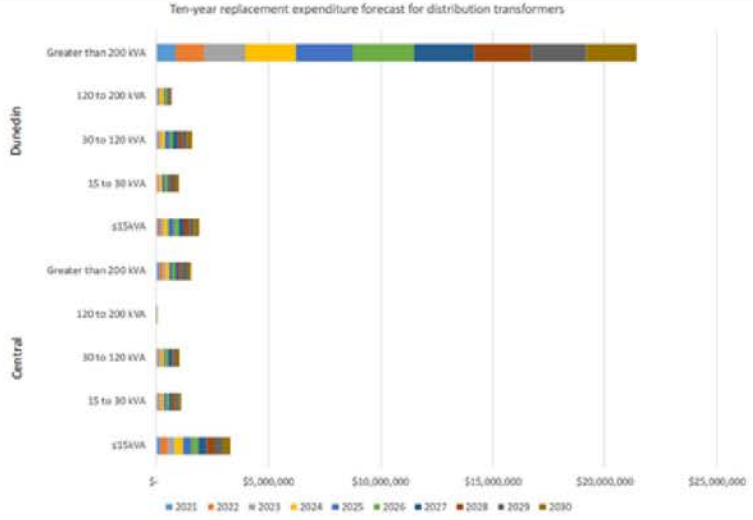
B4.6	its unit cost sense check, Jacobs determined that Aurora's unit cost for LV cable replacement was 6% lower than its benchmark. This should provide some assurance to the Commission that Aurora's replacement forecasts for distribution cables are reasonable.	This is another example of why the 5% adjustment is entirely unjustified and inappropriate. We would like the Commission to explain its decision to apply a 5% reduction to this expenditure given it already reflects market-based costing .

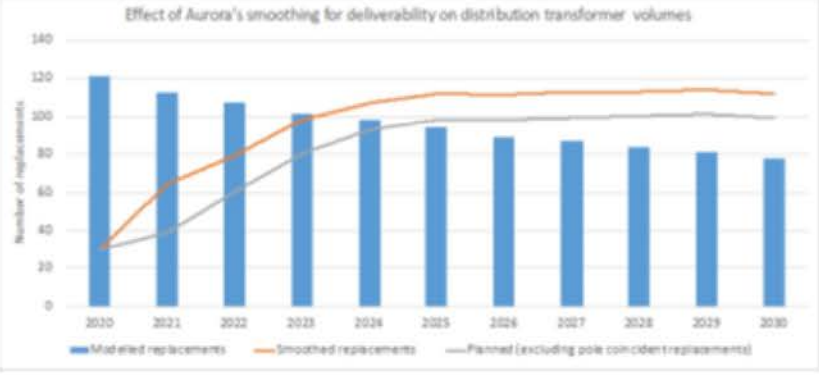
B.5. Pole Mounted Distribution Transformers

	Strata – page 47 to 58	Aurora Response
B5.1	Whilst the AMP and POD21 gave information on the asset fleet and strategies Aurora applies to manage the assets, **nothing in the documents supplied provided linkages to higher level policies and strategies.** [Aurora Emphasis]	As above, we show a screenshot example, below, from our 2020 AMP for Pole mount distribution transformers: **Meeting our portfolio objectives –safety first and sustainability by taking a long term view** We will replace transformers that are installed unacceptably low to the ground to help reduce public safety risk. The replacement will be a seismic resilient solution, whether a pole or ground mounted transformer. **This supports our view that Strata did not adequately review our CPP application material.**
B5.2	The ramping up of pole mounted transformer replacements was forecast in Aurora's 2018 AMP and the proposed expenditure for the CPP period is less than that forecast in the 2018 AMP.	We struggle to see the relevance of this, given that it is not explained or expanded on. **These appear to be 'filler' comments which do not add any value or support any conclusions.**
B5.3	It is unfortunate that Aurora did not present a comparison with its total historical pole mounted transformer replacements. This would have provided improved visibility and context for the proposed replacement programme and capex.	It is widely acknowledged that Aurora has had an extended historical period of under-investment. As such, any level of historical replacements would be low in comparison to the currently acknowledged renewal need. That being said, we have not received any requests from Strata or the Commission for additional information of this type. **If Strata believed this was important we would have expected an information request. This would appear to be another failure of the overall process.**
B5.4	The low number of post 60-year-old transformers reflects the replacement of transformers beyond that age. Assuming Aurora has historically applied a replace-on-failure strategy for pole mounted transformers, **the 60-year to 85-year age range is likely to be indicating**	Strata's statement indicates there is a renewal need for units past 60 years of age which is aligned with our renewal expected life assumption of 60 years. Yet Strata recommends deferral of pole mount to ground mount transformers replacement volumes by 75% / 33% in RY22 / 23 respectively.

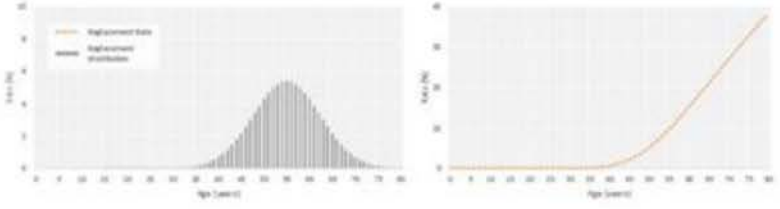
	the end-of-life failure profile that Aurora has experienced for these assets, with assets older than 60 years having a much higher risk of failure. [Aurora Emphasis]	These pole to ground mount conversions are safety related investments. We are concerned that Strata is suggesting that we should be increasing safety risk on the network by deferring these conversions, after acknowledging both the renewal need and the associated safety issues. For clarity, Aurora will not adjust its plans in any way that would increase safety risk. **We request that the Commission explain why it has accepted this recommendation.**
B5.5	In its 2018 AMP, Aurora's pole replacement strategy for RY19 to RY28 was to replace on average 50 distribution transformers per year. This appears consistent with the transformers currently older than 60 years, plus an allowance for a proportion of those moving above 60 years during the period.	We struggle to see the relevance of this given that AMP18 is largely out of date. Again, this appears to be 'filler' material to imply that some level of analysis has taken place. **This suggests Strata has not adequately reviewed our CPP proposal material.**
B5.6	Yet injuries from pole transformer failures are relatively rare and Aurora must have undertaken regular inspections and have good knowledge of any safety-related issues for transformers in high risk locations.	Pole transformer failures are not rare and while injuries caused by such failures are fortunately rare, it does not mean an absence of safety risk. We have undertaken inspections and have identified low-mounted unsafe transformers and seismic compliance issues which are set out in our 2020 AMP. **In our view, Strata has demonstrated a lack of understanding and poor engineering judgement.**
B5.7	Also, many of the higher risk transformers would have been replaced in the accelerated pole replacement programme because this was a risk prioritised programme.	This assumption is incorrect. The accelerated pole programme concentrated on wooden poles, which we are still replacing. We also have many transformers on concrete poles which have not yet been replaced. **In our view, Strata has demonstrated a lack of understanding and poor engineering judgement.**
B5.8	Also, Aurora's 2018 AMP did not specifically identify safety clearance compliance risk.	Our 2020 AMP discusses this. We struggle to see the relevance of references to our 2018 AMP. **This suggests Strata has not adequately reviewed our CPP proposal material.**
B5.9	Low asset failure rates do not support moving to a proactive asset replacement strategy	A proactive approach is primarily justified on the basis of risk, taking into account (in this case) safety consequences. Failure likelihood is a secondary driver for proactive replacements. Pole transformer failures are not rare and while injuries caused by such failures are fortunately rare, it does not mean an absence of safety risk.

		In our view, Strata has demonstrated a lack of understanding and poor engineering judgement.
B5.10	**Looking at the asset age profile of its pole mounted transformers, Aurora has not provided credible grounds to support its transition from the previous replace-on-failure strategy to a proactive approach.** However, the **age profile shows an approaching period where a higher number of pole mounted transformers will move beyond 60 years**, which indicates that failures will increase. A moderate increase in volumetric replacement forecasts is required to cover this. [Aurora Emphasis]	A proactive approach is primarily justified on the basis of risk, taking into account (in this case) safety consequences. Pole transformer failures are not rare and while injuries caused by such failures are fortunately rare, it does not mean an absence of safety risk. **In our view, these views demonstrate a lack of understanding and poor engineering judgement.**
B5.11	Aurora's strategy in 2018 was to replace 500 pole mounted transformers (one-eighth of the total) during the 10-year planning period, including converting 20 pole mounted units to ground mounted units. Aurora had determined that, by the end of the 10-year period, less than 1% of total distribution transformers would have a H1 condition rating. As indicated by the age profile of the pole mounted and ground mounted transformers, Aurora has been achieving its 2018 forecast replacement rate of approximately 50 per year. In addition, further transformers would have been replaced in conjunction with the pole replacement programme. The 2018 AMP59 indicates that at the time, 10% of pole mounted transformers were at HI=1. POD2160 indicates that, two years later, this has been reduced to 5%. This suggests that Aurora's 2018 strategy was reducing the average age of the pole mounted transformer fleet and, by proxy, HI	We struggle to see the relevance of these repeated references to our 2018 AMP. As explained in our proposal, since 2018 we have updated our: – renewal modelling; – asset information; – strategies and objectives; – AHI methodology; and – work programmes. **Forming judgements on material that is out-of-date and different from our proposal is not representative of good engineering practice by any objective standard and invalidates any conclusion drawn from that material.** **We do not see any plausible rationale for this, other than our CPP proposal material was not adequately reviewed.**
B5.12	Aurora identified62 the following key assumptions for its pole transformer repex forecasting: • for forecasting purposes, age is assumed to be a reasonable proxy for condition as failure modes are generally caused by corrosion, which increases over time; • a repex model is used and pole mounted distribution transformer life-expectancy is represented using a normal distribution as a reasonable proxy for replacement rates; and • units greater than 200 kVA are converted to ground mounted distribution transformers.	Strata seem to be confused between an approach and model calculations. As outlined in our CPP main proposal and AMP20, the survivor curve approach is used when actual, historical replacement data is available to calculate a survivorship function and forecast replacements. The repex model approach is used when historical replacement information is scarce and assumes a normal replacement distribution around an expected life. We use the repex model approach for pole mount distribution transformers. In our standard repex model, it contains a calculation to convert the normal distribution to a corresponding survival rate purely for information purposes.

	Whilst Aurora says that it does not use a survivor curve approach, in effect its repex model derives a survivor curve from a life expectancy distribution. For assets that it chooses not to apply a Weibull distribution curve to, Aurora uses a standard distribution with the standard deviation set at the square root of the expected life of the asset. This is used to produce an assumed failure rate for transformers at each age. Because the expected life for all transformers is set at 60 years, the model assumes that they will have the same life expectancy and probability of failure as all others (i.e. ≤50 kVA is the same as >200 kVA, Central Otago is the same as Dunedin, coastal is the same as highland, etc.). [Aurora emphasis]	Also, the term "standard distribution" is incorrect, we assume Strata means the normal distribution we have employed (further drafting errors). We use normal distribution as it generally has a "wider" replacement (not failure) distribution compared to Weibull. We did this because we are being conservative around our expected life assumption as we don't have any historical failure information. Using the Weibull function (built in the model as a selectable option) will produce more replacements compared to the normal distribution. **We are strongly of the view that Strata does not have sufficient understanding of these modelling techniques to form relevant, meaningful opinions.** In contrast, the independent verifier understood the approach and the underlying context for its use.
B5.13	 This analysis reveals that the primary driver of expenditure is a major $21.4m pole-to-ground conversion programme, which will take place on the Dunedin network over 10 years for >200 kVA transformers.	The $21.4m is a 10-year total and we are unsure why it is being referenced (repeatedly) rather than the CPP period total. This information is readily available in our model. **We consider these to be examples of Strata including supposed analysis to imply a level of rigour and supporting analysis that was not undertaken.**
B5.14	The unit cost used in the model for the >200 kVA pole to ground conversion is $141,750, which is three times greater than the next highest unit cost for a transformer replacement	These were checked by Jacobs:

		"Aurora also had a price under pole mounted transformers for a >200kVA ground mount conversion ($142k). [...] Jacobs cost estimate of $147k in this case was similar to Aurora's price-book".[78]
B5.15	The magnitude of the pole-to-ground conversion **programme** is not apparent in any of the documents we have reviewed. In our opinion, a $21.4m plus **project** should have warranted a fully developed business case, including options analysis, prior to inclusion in the CPP application. Given this situation, it is difficult to conclude that a volumetric age-based model was appropriate to use to forecast **these relatively low volume high cost replacements.** [Aurora Emphasis]	This is a programme, which will continue for the foreseeable future. It is business-as-usual. The reason that $21.4m "is not apparent" in our CPP material is that it is a 10-year total that is largely irrelevant to our CPP proposal. We will replace hundreds of pole-mounted transformers in the coming years meaning it meets our criteria for being a volumetric fleet / programme.
B5.16	In our opinion, the major pole-to-ground conversion programme should have been treated as a separate major project and forecast separately to the business-as-usual pole replacements.	This is a programme, which will continue for the foreseeable future. It is business-as-usual. It is not appropriate to treat it as a 'major project' as it not bound by a particular scope or timeframe. **In our view, this demonstrates a lack of understanding of our renewals programme.**
B5.17		Strata state that post model adjustments have not been made and that there is a lack of evidence on top-down challenges. This chart is an example of post model adjustments. Deferral of transformers past the CPP period seems to have been ignored by Strata which is an indication of top-down challenge and moderation. **This is another example of contradictory statements and internal consistencies within Strata's report.**
B5.18	The deferred ≤15 kVA replacements are likely to be recovery from an under delivery of forecast quantities in 2020 and 2021, rather than a proactive adjustment to smooth future deliverability of the programme.	This does not represent an under-delivery. As stated in our proposal material we have made a proactive adjustment to prioritise higher risk renewals. We would have expected such a statement to be supported by some explanatory basis or justification.

[78] Jacobs. (2019). Customised Price Path (CPP) Pricebook Review. 20 December 2019. p6.

		It also supports our view that Strata did not adequately review our submission material.
B5.19	Aurora has not explained why it is able to take on **the increased level of failure risk implicit in its deferral of modelled replacements**. There is no discussion on this included in its AMP or POD21 documents. We assume that this means its management and directors were unaware of it when reviewing and challenging the forecast expenditure. [Aurora emphasis]	We discussed these deferrals with senior management and the Board via earlier moderation rounds. It should be noted that Strata is more broadly recommending further deferrals, which (as they point out) will lead to increased safety risk on the network.
B5.20	We have no information to conclude whether the deferral is efficient and prudent, but on the assumption that Aurora management has evaluated and accepted the increased risk, we have no reason to challenge its legitimacy. However, the absence of detailed consideration of the risk undermines confidence in the reliability of the proposed volumes for the CPP period.	This conflicts with Strata's recommendation to defer 75% / 33% of PM to GM conversions in RY22/23 respectively. Strata have acknowledged that there is an increase risk and the deferral recommendation will further increase safety risk. We request that the Commission explain why it has accepted this recommendation.
B5.21	The modelling appears to **not have accounted for the historically low failure rates for distribution transformers when determining the normal distribution curve for failure rates**. [Aurora emphasis]	This again demonstrates a lack of understanding of repex modelling This information is available in our CPP application main proposal, please see below example screenshot: ***Repex Models*** 338. Repex models apply the same concept as survivor curve models, but are used for fleets where there is insufficient historical replacement data. The replacement distribution in this case is instead based on a normal or Weibull distribution around the expected life attributed to the asset type. 339. Figure 36, below, shows an example of a normal replacement distribution around an assumed expected life of 55 years (left) and its corresponding replacement rate. Figure 36: Repex replacement distribution and rate example  340. The replacement rate represents the likelihood that replacement of an asset will be warranted at any given age. The Repex model applies the replacement rate to the fleet age profile to produce an annual volume forecast.

341. This approach is more robust than simply assuming that equipment fails at a particular age. It is widely used in the Australian electricity sector as required by the Australian Energy Regulator (AER).

This suggest that Strata did not undertake a thorough review of our CPP material.

B5.22 Given the relatively low failure rates and **absence of information on how the health index value is derived and supported**, the escalation in critical assets is not explained by the factual evidence supplied by Aurora.

[Aurora emphasis]

Table 5.2 sets out our asset health categories, including the basis for the categories and the expected replacement period. It should be noted that when remaining life is zero, it does not mean that failure is necessarily imminent, but does indicate that an intervention is likely to be required and should be investigated.

Table 5.2: Asset Health (AH) categories

AH Score	Category Description	Indicated Replacement Period
H1	Asset has reached the end of its useful life	Within one year
H2	Material failure risk, short-term replacement	Between 1 and 3 years
H3	Increasing failure risk, medium-term replacement	Between 3 and 10 years
H4	Normal deterioration, monitor regularly	Between 10 and 20 years
H5	As new condition, insignificant failure risk	Over 20 years

B5.23 The critical issue with Aurora's use of a volumetric model is that 68% of the proposed expenditure relates to low volume, high cost items and is not consistent with its criteria for using a volumetric method.

This is inconsistent with the earlier statement Strata has made:

> *"Aurora has made the correct decision in not applying more sophisticated approaches to volumetric planning until it holds sufficient and reliable condition and other data on its pole mounted transformers."*[79]

These inconsistencies undermine confidence in Strata and evidently care has not been taken to prepare this report. We request the Commission to explain why these errors were not addressed prior to accepting recommendations which will result in elevated safety risk.

This is another example of contradictory statements and internal consistencies within their report.

B5.24 We have searched the available documents for information on the process followed for the top-down review, specifically to gain an understanding of **how the criticality assessment was made. No information was provided.**

[Aurora emphasis]

We prioritise pole mount transformers based on safety criticality. Below are screenshots from AMP20 that set this out, clearly.

[79] Strata Report. p55.

Use of criticality in works planning and delivery

Our public safety criticality framework is locational, so is applicable to distribution transformers (and the poles on which they are located). We use this framework to help prioritise replacements of two pole transformer substations. We will be developing criticality frameworks in further dimensions (e.g. service performance) for all assets in the first few years of the planning period.

Safety criticality is a key criticality dimension and we have developed a public safety criticality zoning to assist with prioritisation of renewal work.

Asset health or condition

Asset health and/or condition are the key renewal triggers. Most assets reach a health of H1/H2 or such a condition where replacement is prudent and run to failure is not applicable or sensible for a number of reasons. Considerations are given to criticality to assist with prioritising renewals when resources are limited.

This suggest that Strata did not undertake a thorough review of our CPP material.

B5.25 The chart [sic] below shows a comparison of unit costs for distribution transformers forecast for the CPP period in Aurora's 2018 AMP and in its CPP application.

Strata has incorrectly deduced, from AMP18, that we were planning to replace 50 units in each of those years, this appears to come from the following excerpt from AMP18:

Box 5.13: Investment Plans

To manage the risk associated with our distribution transformers we are:

- replacing ~500 pole mount transformers (one-eighth of the total) during the planning period, aligned with expected pole renewals. This includes converting ~20 pole mounted units to ground mounted.

Our 10 year plan includes $30 m of distribution transformer renewals. By the end of the period we expect to have less than 1% of distribution transformers classified as H1.

Strata has incorrectly assumed that this means an equal number of replacements per year, resulting in large unit rate variance each year.

The second error was using total spend on distribution transformers which has multiple asset types (see below from our 2018 AMP). In particular, they have ignored renewal of more expensive ground mounted units.

	2022	2023	2024
2018 AMP			
Forecast ($m)	$3.8	$4.1	$4.5
Units	50	50	50
Average	0.0752	0.0816	0.0908
	$75,200	$81,600	$90,800
3 year average	$82,533		
CPP application			
Forecast ($m)	$2.1	$3.0	$3.6
Units	60	80	95
Average	0.035	0.0375	0.037894737
	$35,000	$37,500	$37,895
3 year average	$36,798		

The difference in unit costs suggests that the replacement programme proposed in the CPP is markedly different from that which Aurora was forecasting for the same period in its 2018 AMP.

5.8.1. Overview of Fleet

Our fleet plan for distribution transformers is broken down into the following sub-fleets:

- Ground-mounted distribution transformers
- Pole-mounted distribution transformers
- Voltage regulators and auto-transformers
- Mobile distribution substations.

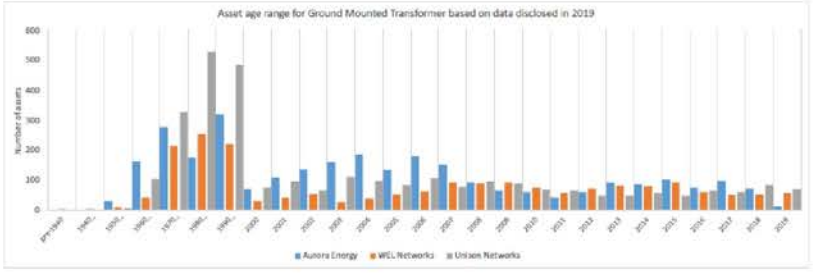
These errors could easily have been prevented through a clarification request. We believe that the lack of such requests has compromised the integrity of the review process.

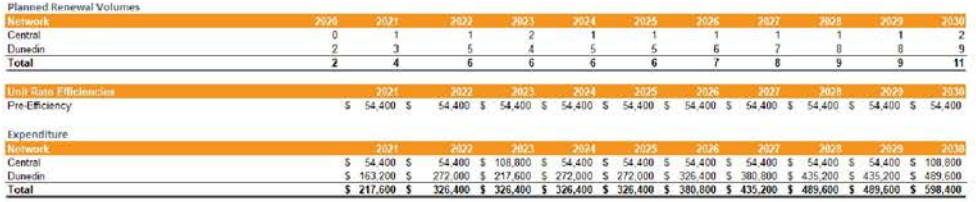
In our view, these errors demonstrate a lack of understanding of our proposal and are due to poor engineering judgement.

B5.26	Aurora's unit rates are also similar to those we have obtained during the reviews of other electricity distributors that we have undertaken for the Commission.	We expect such a broad statement (regarding competition) to be supported by some basis or justification however none were given. If our unit rates are already similar to other EDBs, many whom have competitive contracting environments, then further reductions in unit rates would be inappropriate.
B5.27	currently there is insufficient information to justify the timing and expenditure profile for the $21.4m pole-to-ground programme;	The pole to ground mount conversions total ~$11m in the CPP period. This is an ongoing programme. This is not a 10-year programme. These continuous references to $21.4m spend over ten years are spurious.
B5.28	the inclusion of some transformer replacements in the pole replacement forecast distort the expenditure forecast and is unnecessary;	This is another example that demonstrates Strata did not understand (or adequately review) our models and our delivery mechanisms. The pole forecast includes pole mount transformers that are replaced together with poles when both are found to be in poor condition. The pole mount distribution transformer forecast is for standalone transformer replacements. The exclusion, which is modelled in our forecast, is required otherwise it would be double counting replacements. This mechanism was tested and accepted by the IV in relation to poles and crossarms.

		In our view, these findings demonstrate a lack of understanding of our proposal, inability to review forecasting models, and reflect poor judgement.
B5.29	Aurora's claim that the programme is critically optimised is not supported by evidence [...] the deliverability smoothing is not optimised for criticality and will add risk—Aurora has not provided an explanation of how it has reached its conclusions on smoothing;	We have never claimed the programme is "critically optimised". Our AMP clearly explains the role of criticality when we deliver these works (see also B5.24) *Use of criticality in works planning and delivery* Our public safety criticality framework is locational, so is applicable to distribution transformers (and the poles on which they are located). We use this framework to help prioritise replacements of two pole transformer substations. We will be developing criticality frameworks in further dimensions (e.g. service performance) for all assets in the first few years of the planning period. See also paragraph B5.17 regarding post modelling adjustments. **These misunderstandings/errors could have been addressed through a clarification request. We believe that the lack of such requests has compromised the integrity of the review process and its findings.** **In our view, these errors demonstrate a lack of understanding of our proposal and are due to a lack of adequate review.**
B5.30	unit costs used in the CPP application are within the range of values we would expect for these assets.	This is another example of why the 5% adjustment is unjustified and inappropriate. We would like the Commission to explain its decision to apply a 5% reduction to this expenditure given it (for pole mounted distribution transformers) are already "within the range of values we [Strata] would expect for these assets".
B5.31	In our opinion, a business case will be needed to support the proposed $21.4m pole-to-ground programme. Given that investigations will only commence in 2021, it is unlikely the business case will be available at the commencement of the CPP. Therefore, it is reasonable to defer the commencement of the pole-to-ground replacement programme until the second year of the CPP. [...] Reduce the pole-to-ground programme's >200 kVA replacements forecast for RY22 and RY23 by 75% and 33% respectively, to reflect the likely timing of approval of the business case	As above, this is an ongoing programme, which has already begun and will continue for the foreseeable future. It is business-as-usual. Elsewhere, Strata has acknowledged that there is increasing risk with this fleet and the deferral recommendation will further increase safety risk. For the avoidance of doubt, Aurora will not defer any investments that would increase safety risk. **We request that the Commission clarify why it has accepted a recommendation to increase network safety risk.**

B.6. Ground Mounted Distribution Transformers

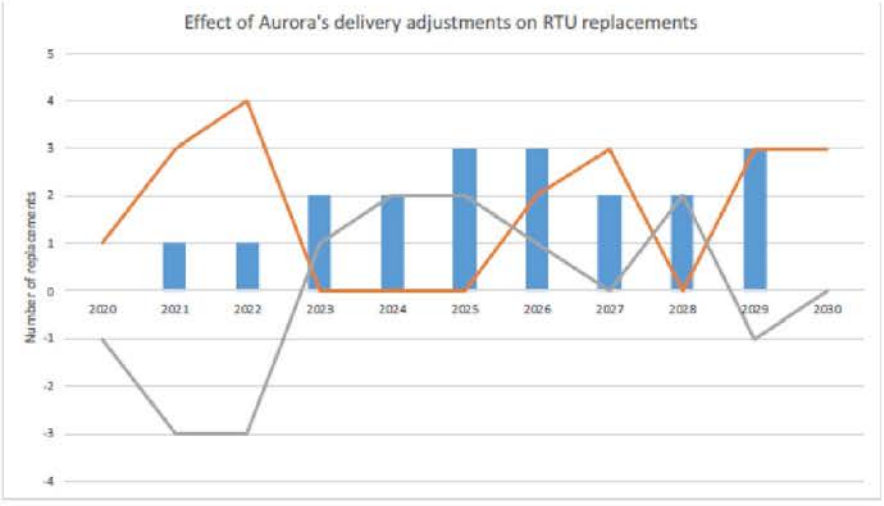
	Strata – page 59 to 61	Aurora Response
B6.1		The report includes a number of spurious charts that are not referred to or referenced in relation to any conclusions made. In this example, no comparison was made to the proposed expenditure of Unison and WEL, which would be a logical further step. Instead, they merely state that Aurora has older transformers than two randomly chosen EDBs. It is worth noting that the independent verifier did compare our capex with other EDBs during its more thorough and better-informed review. **We consider these to be examples of Strata including spurious information to imply a level of rigour and supporting analysis that was not undertaken.**
B6.2	The documents supplied by Aurora setting out its relevant policies are its CPP application, 2020 AMP and POD21. These are the primary sources of information considered in this assessment. Whilst the AMP and POD21 gave information on the asset fleet and strategies Aurora applies to manage the assets, **nothing in the documents supplied provided linkages to higher level policies and strategies**. [Aurora Emphasis]	Below is a screenshot example from our 2020 AMP for ground mount distribution transformers: **Meeting our portfolio objectives –responsive to a changing landscape** Trialling the use of distribution transformer monitoring systems will help us prepare for further changes in the way our distribution network operates, including increased electric vehicle and embedded renewable generation penetration, and changes to retailer offerings. **This supports our view that Strata did not adequately review our CPP application material.**
B6.3	Using **Aurora's 2019 information disclosures,** we determined that by the end of 2024, approximately 111 ground mounted transformers will be at or **beyond 60 years old**. On a straight age-based replacement, this produces an average replacement rate of 22 per year. **Aurora has reduced this to 6 annual replacements—this reflects its understanding of the condition of the assets and the low failure rates being experienced**. [Aurora Emphasis]	Strata has attempted to replicate our modelling using: – less granular data; – different modelling approaches (straight age vs repex); and – differing age assumptions. (60 years versus 70). They have then concluded that the difference in results is due to an adjustment by us based our "understanding of the condition of the assets and the low failure rates being experienced". This is entirely incorrect. **This demonstrates a lack of understanding of our forecast models, use of poor analysis, and poor judgement when interpreting the results.** We are unclear as to why Strata has used data from 2019 information disclosure when more granular and up-to-date population and age profile data is available in our forecast model. We forecast based on an expected life of 70 years, using our standard repex modelling.

B6.4	The unit cost we have derived from the forecast volumes and total cost is $50,000. However, in 2023 and 2025 the unit cost rises to $67,000 and $53,000 respectively. This indicates either an error in the forecast expenditure or a more bespoke approach to unit costs than Aurora says it has applied in its POD20.	We are unclear how or why Strata have made this observation. The screenshot below of our forecast model clearly shows a constant unit rate of $54,400.  Planned Renewal Volumes Network 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 Central 0 1 1 2 1 1 1 1 1 1 2 Dunedin 2 3 5 4 5 5 6 7 8 8 9 Total 2 4 6 6 6 6 7 8 9 9 11 Unit Rate Efficiencies 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 Pre-Efficiency $ 54,400 $ 54,400 $ 54,400 $ 54,400 $ 54,400 $ 54,400 $ 54,400 $ 54,400 $ 54,400 $ 54,400 Expenditure Network 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 Central $ 54,400 $ 54,400 $ 108,800 $ 54,400 $ 54,400 $ 54,400 $ 54,400 $ 54,400 $ 54,400 $ 108,800 Dunedin $ 163,200 $ 272,000 $ 217,600 $ 272,000 $ 272,000 $ 326,400 $ 380,800 $ 435,200 $ 435,200 $ 489,600 Total $ 217,600 $ 326,400 $ 326,400 $ 326,400 $ 326,400 $ 380,800 $ 435,200 $ 489,600 $ 489,600 $ 598,400 **This demonstrates a lack of understanding of our forecast models and poor analysis.**

B.7. Briefing Report 3 – Pole Mounted Fuses, Pole Mounted Switches, Ancillary Distribution Substation Equipment, DC systems.

The majority of issues we raised with Strata's review of cables and distribution transformers also relate to the fleets included in "Briefing Report 3". Below we set out points more directly related to the these particular fleets.

	Strata – page 62 to 75	Aurora Response
B7.1	No post-model adjustments made by Aurora to the expenditure forecasts were apparent. This indicates that the modelled outputs were accepted without challenge or that the results were resilient to challenge, which would be very unusual for age-based replacement programmes.	See table B1.6
B7.2	For example, Aurora used failure rates, derived from a standard distribution with a standard deviation formed from the square root of expected asset life, for all ranges of assets, (e.g. across the broad range of distribution transformers).	See table B1.7
B7.3	**PM Fuses** Changing the expected life from **55 to 57 years** reduced the 3-year CPP forecast expenditure by 22% and the 5-year review period forecast expenditure by 20%. [Aurora emphasis]	Refer to table B1.8
B7.4	**PM Switches**	Refer to table B1.8

	We found that changing the expected life assumption from **50 years to 52 years** reduced the 3-year CPP forecast expenditure by $88,200 and the 5-year review period forecast expenditure by $58,800. [Aurora emphasis]	
B7.5	**RTUs** 	This chart was included with no legend or explanation. **This is another example of poor analysis, which calls into question the validity of the report's recommendations.**
B7.6	**RTUs** In our opinion, Aurora should take the opportunity to replace one large and one small RTU in 2021 as part of its RTU repex expenditure.	When Strata's report was (eventually) released there was little more than three months remaining in RY21. We find the suggestion that we should change our already committed RY21 (pre-CPP) work programme to be nonsensical. The Commission's acceptance of this recommendation suggests a lack of diligence.
B7.7	**DC Systems:** There is the following confusing comment in POD25: *The expenditure is included in the related zone substation portfolio.* This suggests that the expenditure may be double counted, or triple counted if it is also an opex item	This is what the POD actually says: *This portfolio includes investments to undertake standalone replacements of DC systems assets located within zone substations. A proportion of DC system replacements will be undertaken as part of larger zone substation projects. The expenditure is included in the related zone substation portfolio. Recloser (field) batteries are replaced every four years; this low unit cost is expensed and excluded from this portfolio.* The reference to 'triple-counting' due to opex suggests a total lack of understanding of this work.

		These are further examples of poor analysis and questionable judgment.
B7.8	**DC Systems:** The POD records only one failure example—in RY20 one 10-year plus battery bank failed discharge testing at a Dunedin zone substation. However, this was a test failure and not a battery failure event. Also**, given Aurora replaces at 5 years, why was this battery above 10-years old?** [Aurora emphasis]	Our forward-looking strategy is to replace every six years. This is another example of basic errors in the Strata Report. **This question also displays a lack of understanding around the implications of historical under investment.**
B7.9	**Facilities** In the absence of information to support the proposed facilities expenditure, we are unable to conclude that the forecast is reasonable and prudent. However, **given the relatively low value of the forecast, we do not recommend an adjustment at the asset fleet level.** [Aurora emphasis]	There are four network capex portfolios that are <$600,000 per annum. Of these, three have been adjusted: – pole mounted switches; – pole mounted fuses; and – RTUs. **This is a further example of the inconsistent decision-making approach used by Strata.**

Appendix C. Detailed Response on other Aspects of the Draft Decision

C.1. Indicative Reporting Requirements

C.1.1. Overall Approach

I27 – Draft Decision	Aurora Response
For customer satisfaction, customer engagement, safety initiatives and monitoring voltage quality on the LV network, we will also require Aurora to provide updated plans in the first half year of the CPP period that will detail how it will develop improvements to its relevant processes during the CPP period.	Our improvement plans will be constrained by the capability and capacity of our staff and systems. Both of these will be severely compromised by the proposed reductions in SONS and people opex. We do not envisage being able to commit to any material improvement plans. We will reconsider our views on indicative reporting requirements when the proposed requirements are consulted on and in light of the final decision on Aurora's CPP.

C.1.2. Use of Public Meetings

I30 – Draft Decision	Aurora Response
We will also require Aurora to disclose the contents of the ADR by holding annual public meetings in each of its three regions.	The cost and required resource for such public meetings will need to be considered within our constrained budgets. We suggest that this requirement be reduced to online publication.

C.1.3. Mid-period Expert Report

I31 to I33 – Draft Decision	Aurora Response
It will assist interested parties if Aurora procured an engineering expert (or experts) to carry out forward-looking mid-period reviews of those aspects of the qualitative measures and provide an expert opinion on Aurora's progress against the development plans. The expert review will best be carried out in the second half of the third year of the CPP period	The cost of such an exercise would be considerable. As it stands we are not prepared to fund such a review. We note that the Commission considers this should be a cost that is recoverable in pricing; however, the cost of the expert report has not been designated a recoverable cost (refer section 10.4.1)

C.1.4. Consumer Updates

I36 – Draft Decision	Aurora Response
Our draft view is that the ADR will require Aurora to update consumers on how it is delivering services consumers value by reporting on communication about outages, network reliability and safety improvements.	Only where such reporting falls within statutory or CPP quality-standard compliance requirements.

C.1.5. Voltage Quality Opinion

I36 – Draft Decision	Aurora Response
Due to the relative complexity of the topic of voltage quality monitoring, we think it will be useful for both us and Aurora's stakeholders for an expert to be engaged by Aurora to carry out a forward looking mid-period review and provide an expert opinion on Aurora's progress against the voltage quality monitoring plan and, in particular, to make publishable recommendations on any change in course for Aurora for the balance of the CPP period.	Voltage quality is now likely to be a low priority during the CPP period (our focus will be on core work and safety). We do not envisage making material progress in this area. As such, this review would be of little benefit. We will reconsider our views on indicative reporting requirements when the proposed requirements are consulted on and in light of the final decision on Aurora's CPP.

C.1.6. Customer Charter Commitments

I44 – Draft Decision	Aurora Response
Our draft view is to require Aurora to: – publicly disclose its compensation scheme and service level targets; – report on how it has consulted with consumers on any proposed changes to its minimum service commitments and associated compensation; and – report the number and type of complaints it receives from customers and whether the complaints are covered by the service level targets and compensation.	Customer charter is already publicly disclosed. In light of the significant cuts proposed to non-network expenditure, it is unlikely that we will have the capability or capacity to make any changes to improvements to this voluntary initiative. We will reconsider our views on indicative reporting requirements when the proposed requirements are consulted on and in light of the final decision on Aurora's CPP. Complaints are reported to the appropriate regulator, Utilities Disputes Limited, being the approved dispute resolution scheme under section 95(3) of the Electricity Industry Act 2010

I45 – Draft Decision	Aurora Response
We favour requiring Aurora to report on: – how it has improved consumers' awareness of its charter and access to compensation, which includes reporting on the outcomes of Aurora's signalled review of identifying non-notified planned outages; – its performance against its implied targets in its planned SAIDI forecasts of increasing its compliance with the DPP3 notification criteria over the CPP period, and any planned outages that: are cancelled at short notice; and are >10% variance from notified time.	In light of the significant cuts proposed to non-network expenditure, it is unlikely that we will have the capability or capacity to make any changes to improvements to the voluntary customer charter. We will reconsider our views on indicative reporting requirements when the proposed requirements are consulted on and in light of the final decision on Aurora's CPP. Only where such reporting falls within statutory or CPP quality-standard compliance requirements.

I46 – Draft Decision	Aurora Response
Aurora currently does not record payments made against individual service standards, however, recording this information is a reasonable expectation.	Reporting of charter payments is conducted in our annual report and can be adjusted to report by category In light of the significant cuts proposed to non-network expenditure, it is unlikely that we will have the capability or capacity to make any changes to improvements to the voluntary customer charter. We will reconsider our views on indicative reporting requirements when the proposed requirements are consulted on and in light of the final decision on Aurora's CPP.

C.1.7. Outage Management Reporting

I47 – Draft Decision	Aurora Response
As part of the ADR, Aurora will include information on its performance against its voluntary charter and improvements it has publicly committed to making on outage notification. This includes implementing an improved outage management system and improving contractor expectations and correspondence about cancelled outages.	As above, we expect to suspend this initiative. This reporting will not be required. We will reconsider our views on indicative reporting requirements when the proposed requirements are consulted on and in light of the final decision on Aurora's CPP. We will report outages based on statutory / CPP quality-standard compliance requirements only.

C.1.8. Pricing Information

I54 – Draft Decision	Aurora Response
We expect that the following enhanced pricing information each year will allow interested persons sufficient information to assess whether Aurora has incentives to share with consumers the benefits of efficiency gains: – Information that allows interested persons to understand the implications of Aurora's assumptions, and methodological choices made on prices for each consumer group in each pricing region – Provide a worked example for a standard consumer in each consumer group (i.e., for a residential consumer that used 9000 KWh per year) in each pricing region on how that consumers prices are set. – Disclose Aurora's cost of supply model down to a level that individual contracts cannot be identified.	We will report pricing information based on statutory / CPP quality-standard compliance requirements only. In light of the significant cuts proposed to non-network expenditure, it is unlikely that we will have the capability or capacity to undertake a pricing methodology review. We are withdrawing this commitment, except to the extent required by the Electricity Authority. We will reconsider our views on indicative reporting requirements when the proposed requirements are consulted on and in light of the final decision on Aurora's CPP.

C.1.9. Asset Management Information

I59 – Draft Decision	Aurora Response
Aurora to also disclose the following asset management information: – processes and policies for testing assets consistent with industry standards – processes for consistent asset data entry and annual asset data audit – processes so that asset health models are informed by asset condition data and models are consistent with industry accepted modelling practices for each asset class and type, where appropriate – processes to test whether volumetric asset health modelling using age based survivor curves are consistent with industry accepted modelling practices for each asset class and type where appropriate; – processes to improve understanding of asset criticality and prioritisation of asset replacement and renewals. Depending on the investment	As stated elsewhere, our improvement plans will be constrained by the capability and capacity of our staff and systems. Both of these will be severely compromised by the proposed reductions in SONS and people opex. We expect that the majority of these initiatives will be deferred, negating the need for many of these reporting requirements. We will reconsider our views on indicative reporting requirements when the proposed requirements are consulted on and in light of the final decision on Aurora's CPP. While such information may be available, the cost of preparing useful and accessible reports for external stakeholders would be considerable. As it stands we are not prepared to fund such reporting.

drivers, this improved understanding could be based on the following information: – SAIDI and SAIFI impact of the asset outage - each key asset will have an asset health measure which will affect the asset outage probability with the outcome that SAIDI and SAIFI can be expressed probabilistically; – kWh or MWh impact of the asset outage - some understanding of the kW or MW outage magnitude and return to service durations needed for each of the key assets; and – asset outage reliability cost - which includes the consumer outage cost using VoLL, and can include the potential replacement cost of the asset, and the environmental cost of asset failure ; – processes to coordinate asset condition, asset health models and criticality understanding. – processes to improve the asset risk framework to inform risk-based decision-making. Risk framework ideally should be driven by AMS with expert opinion informing decisions but not driving these decisions and contain considerations of reliability risk, environmental risk, HILP risk and safety risk; – processes to improve risk cost trade-offs using an industry accepted condition-based risk framework. – provide regular reporting that describes the current level of business safety risk and actions that have been taken to quantify, control and mitigate safety risk within acceptable limits	**As a general point, we find the level of activity implied by this list to be entirely at odds with the Commission's Draft Decision to materially reduce our engineering capability.**

C.1.10. Cost Estimation Information

I72 – Draft Decision	Aurora Response
Our draft view is that disclosing the following cost estimation information will allow interested persons to assess whether Aurora has incentives to improve efficiency:	In light of the significant cuts proposed to non-network expenditure, it is unlikely that we will have the capability or capacity to put in place a formal cost-efficiency programme. While these improvements will likely eventuate,

– processes to improve asset unit rate estimates that feed into Aurora's costing building blocks models – processes to improve the accuracy of Aurora's costing building blocks models, definitions and inherent assumptions; – regularly reviewed and audited asset unit rate cost estimates and building blocks costs processes to ensure that they remain fit for purpose; – asset unit rate cost estimates and building blocks costs are updated and managed through a single point of control and in an environment that is accessible to staff; and – processes to improve initial project and programme cost estimation, with final costs within a variance of +/-10%.	we see no benefit in providing this information given the lack of a formal programme / baseline. We will reconsider our views on indicative reporting requirements when the proposed requirements are consulted on and in light of the final decision on Aurora's CPP.

C.1.11. Data Management Information

I78 – Draft Decision	Aurora Response
Our draft view is that requiring Aurora to disclose the following data collection and data quality information will allow interested persons sufficient information to assess whether Aurora has incentives to improve efficiency: – processes to improve asset management tools and data so that these tools and processes: improve organisational knowledge and decision making, ensure that assets are replaced or renewed in a timely manner and ensure that expenditure forecasts can be relied on – processes to improve the data collection from internal and external stakeholders (including contracted service providers) – processes to improve data sharing between Aurora Energy and Aurora's service providers	We now do not expect to put in place a formal data-improvement programme. While some process improvements will occur, we do not believe it will be possible to provide this information given the lack of a formal programme / baseline We will reconsider our views on indicative reporting requirements when the proposed requirements are consulted on and in light of the final decision on Aurora's CPP.

– processes to use data to test performance, evaluate whether the asset management policies and objectives are being achieved, and identify corrective actions and areas for improvement; – and processes that enable Aurora to demonstrate how it ensures that there is consistency and traceability between technical asset information and accounting records; with a technical, operational and financial linkage, which is consistent and traceable to the assets.	

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