The impact of regulations on Aurora's line charging and investment

Toby Stevenson and Matthew Williamson
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Contents

Glossary

Abbreviation	Stands for
AMP	Asset Management Plan
BBAR	Building Blocks Allowable Revenue
CAPEX	Capital expenditure
CPI	Consumer Price Index
CPP	Customised price-quality path
DCC	Dunedin City Council
DCHL	Dunedin City Holdings Limited
DPP	Default price-quality path
EDB	Electricity Distribution Business
EV	Electric Vehicle
ID	Information Disclosure
IM	Input Methodologies
MAR	Maximum Allowable Revenue
NPAT	Net Profit After Tax
NPV	Net present Value
OPEX	Operating Expenditure
RAB	Regulated Asset Base
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
TCSD	Term Credit Spread Differential
WACC	Weighted Average Cost of Capital

Executive summary

In March 2024 Dunedin City Council (DCC) published a consultation document seeking feedback on preferences for one of two options: Sale of Aurora Energy or Keep Aurora Energy

Aurora Energy is a regulated Electricity Distribution Business (EDB). A number of submitters, some of whom appeared at hearings in front of Council in May 2024, referred to possible approaches a different owner than DCC might take to consumer interests which raises the question of how effective regulation is.

We have been asked to address three questions that go to the level of protection regulations provide to electricity consumers. Our answers were presented at a workshop in July 2024. This report is a written form of that presentation.

We have not been asked to form a view on the merits of the consultation question. The three questions we were asked, and the high-level answers, follow.

Question 1: What is the scope for Aurora to **raise lines prices** across the network, **rebalance lines charges** amongst consumer groups, **defer maintenance** to save cost, or **underinvest** under the current regulatory framework? If there is scope, would a different owner take advantage of that latitude?

1. Revenue recoverable through lines charges is capped by the Commission's approach under Part 4 of the Commerce Act and the regulations apply to all (non-exempt) EDB owners.

2. Lines charges cannot be increased more than allowed by the Commission irrespective of who the owner is.

3. Aurora's allocation of lines charges amongst consumer groups including sub-networks is transparent and consistent with Electricity Authority guidelines and oversight. There is minimal scope for cross subsidisation between consumer groups.

4. Service quality standards are factored into the process of determining the revenue allowances. The asset management plan (AMP) content, Information Disclosure requirements and director signoff of the AMP are an integral part of the workings of the quality part of the regulatory framework. No owner wants to take the risk of failing to meet their quality standards.

5. Consumers are equally protected from adverse outcomes in both the price and quality of lines services they receive, regardless of who owner of the EDB is.

Question 2: How enduring is the **regulatory framework** in Part 4 of the Commerce Act?

1. The stated aim of Part 4 of the Commerce Act is **to promote outcomes consistent with those produced by competitive markets**, including providing incentives to invest, innovate and make efficiency gains, while requiring suppliers to share gains with consumers and to limit excessive profits.

2. It is hard to see the circumstances whereby the fundamental premise of the stated aim is undermined by a future government.

3. Most parties' policies released ahead of the 2023 general election had provisions to increase reliance on competition, or equivalent, to achieve better outcomes for consumers, not diminish it.

Question 3: What is the likelihood that the community would be better off or worse off **if Aurora was owned by a party other than DCC/DCHL**?

This question is answered in part, by the actions prompted by New Zealand's decarbonisation goal. Supply of renewable energy will need to rise to meet demand and the level of fossil fuels available to ensure secure supply will fall. At a distribution network level demand will rise, especially from EV charging, and the patterns of EV charging will change the way networks are managed. Increasing installation of rooftop solar generation will also change the way networks are managed. Distribution business will have to be more resilient than usual over coming years. In order to best manage Aurora through this period the owner of Aurora may benefit from some of the following attributes:

1. Long term investment horizons allowing a flexible dividend policy.
2. Understanding the challenges facing EDBs with decarbonisation.
3. Able to deal with uncertainty and risk.
4. Access to capital, specifically cost-effective debt.
5. Comfortable with debt-to-equity ratios that are consistent with Commission's regulated cost of capital over each regulatory period.
6. Experience with regulated businesses.
7. Synergies with other similar businesses esp. other regulated network businesses.
8. Economies of scale.

In the longer term when demand growth stabilises, and capital investment requirements ease off, Aurora will continue to earn a regulated return on regulated assets but with the headroom to make choices about where it chooses to allocate after-tax free cashflow. i.e. paying dividends, reducing debt, accelerating maintenance or replacement of assets where appropriate.

1. Introduction

Electricity consumers are protected under price and quality regulation whoever the owner of an Electricity Distribution Business (EDB) is. The possibility that consumers are worse off price wise or service quality wise under a different owner is not an argument against Aurora having a different owner.

There may be variations between EDB owners on, for example, the reputational risk they are prepared to take on by lowering quality standards or the degree to which they press the EDB for dividends during this period of high investment. However, the price-quality regulations and the Commission's monitoring regime will ensure that consumers interests are not compromised regardless of who an EDB's owner is.

For recovery of the allowable costs of running a network i.e. lines charges, and the treatment of different consumer groups within the resulting maximum allowable revenue, consumers would not feel much if any difference between two different owners of the EDB. On the service quality side, the Commission's monitoring regime has improved over time. It is unlikely now that the Aurora network would be allowed to get to the state it was in 2016. The regime for protecting consumers has been refined and tightened since Aurora found itself in the position it found itself in 2016. I understand that what happened at Aurora in 2016 has informed the way the Commission have evolved the monitoring and investigation functions.

For this written report I have rechecked the basis of a number of observations I made at the 1 July workshop. I stand behind all of my comments and in this written report have taken the opportunity to spell out a few points in more detail.

2. Brief – Three questions

We have been asked to address three issues that were the subject of a number of submissions during DCC's consultation on the possible sale of Aurora Energy:

1. What is the scope for Aurora to **raise lines prices** across the network, or **rebalance lines charges** amongst consumer groups or **defer maintenance** to save cost or **underinvest** under the current regulatory framework? If there is scope, would a different owner take advantage of that latitude?
2. How enduring is the **regulatory framework** in Part 4 of the Commerce Act?
3. What is the likelihood that the community would be better off or worse off **if Aurora was owned by a party other than DCC/DCHL**?

3. Question 1 – An EDB owner's latitude to raise prices or compromise quality

What is the scope for Aurora to **raise lines prices** across the network, or **rebalance lines charges** amongst consumer groups or **defer maintenance** to save cost or **underinvest** under the current regulatory framework?

- There is no scope for Aurora to raise lines charges beyond what is allowed by the Commerce Commission under its application of part 4 of the Commerce Act.
- The scope for Aurora to rebalance lines charges amongst consumer groups, including amongst sub-networks, is confined to a judgement on the allocation of costs between consumer groups as allowed by the Electricity Authority's distribution pricing principles.[1] The implication is that were Aurora to raise prices in one consumer group they would have to lower them in another.
- The scope to defer maintenance or underinvest is limited by the transparency of the information disclosure requirements, improvements to the monitoring regime over the years, director liability under Schedule 17 of the information disclosure requirements, the reputational risk of failures on the network and the risk of a fine for a breach. I note that any fine for a breach would come out of net profit after tax (NPAT), i.e. its not OPEX, which adds to the disincentive.

3.1 The regulatory framework

The regulatory framework is based around the work of two independent agencies each with a statutory responsibility focused on the long-term interests of consumers:

- The Commerce Commission protects consumers against extraction of monopoly rents by sectors with little or no competition including EDBs. This is achieved through the application of regulations governing price and quality under Part 4 of the Commerce Act. These regulations aim to ensure consumer interests are promoted regardless of ownership.
- The Electricity Authority's distribution pricing principles and active reform programme protect against cross subsidy of lines charges between consumer groups. This is consistent with the reliability and economic efficiency limbs of their statutory objective.

Default price path

EDBs have been subject to a **default price-quality path** (DPP) since 2009.

A DPP imposes maximum allowed prices <u>and</u> minimum service standards. The main components of a DPP are:

- the maximum prices & revenues allowed at the start of the regulatory period.

[1] Electricity Authority 2019 Distribution pricing principles See here

- the annual maximum rate at which prices can increase – this is expressed in the form of 'CPI-X', i.e. prices can increase by the rate of Consumer Price Index (CPI) less a prescribed percent or 'X-factor'.
- the minimum service quality standards that must be met.

Customised Price Path

- Electricity Distribution Businesses (EDBs) may apply to the Commission for a **customised price-quality path** (CPP) that better reflects their specific circumstances for a finite period.
- Under a CPP the regulator approves bespoke allowances for what an electricity network business can invest, the consequential charges to its customers, and minimum service levels over a specified period. It comes with a higher level of scrutiny for the duration, and EDBs on a CPP revert to a DPP when the term concludes.
- In 2020 Aurora applied for a CPP. Their Asset Management Plan (AMP) supporting the application focused on additional investment required to reduce risk, and improve network safety and reliability, following years of under-investment and deferred maintenance. The CPP, which runs from 2021 to 2026, gives Aurora the ability to recover additional costs through line charges for the purposes of fixing, upgrading and maintaining its network.

3.2 Workings of service quality standards

Quality and reliability standards set by the Commission reduce the risk that EDBs seek to increase profits by cutting costs and compromising quality. In December 2016, DCHL commissioned a report on the state of the Aurora network from Deloitte who found:

> An under investment on asset inspections/condition monitoring, planned maintenance and asset replacement over the last 25 – 30 years.

This is the root cause of where Aurora finds itself today. The current Aurora board and management are in the process of delivering a safe and reliable network.

The disclosure regime is about shining a light on:

- What should happen with quality,
- What is actually happening with quality, and;
- Responding to any divergence in a timely fashion.

The regulatory framework has evolved such that a decline in quality standards would be picked up more quickly than was the case in 2016. The Commission sets quality performance targets for each EDB based on close scrutiny of Asset Management Plans and an understanding of maintenance requirements for assets at whatever stage of the life cycle assets are at. Independent reports are used to verify what is happening on a network as required.

The performance of all EDBs is monitored based on the targets and the Commission's expectations of performance across all EDBs. Performance is disclosed publicly.

Inside the Commission a monitoring team keeps track of each EDB's performance and uses a series of escalations if data shows that something might be amiss. Escalation might just be conversations and letters and may lead to investigations. Investigations can lead to a finding of a breach and fines.

Aurora found itself in this position as a result of its historic failings. The Otago Daily Times reported 28 March 2020:

> Aurora Energy was ordered to pay almost $5 million for breaching its network quality standards with an excessive level of power outages from 2016 through 2019.
>
> Commission deputy chairwoman Sue Begg said Aurora did not adequately respond to recommendations stemming from the commission's 2014 warning to it for contravening its quality standards in the 2012 assessment period.
>
> ''Aurora's previous management and board were well aware of the deteriorating state of its network but failed to take action,'' Ms Begg said.

Performance targets are set for:

- System Average Interruption Duration Index (SAIDI). This describes the minutes of non-momentary electric interruptions, per year, the average customer experienced.
- System Average Interruption Frequency Index (SAIFI). This describes the number of non-momentary electric interruptions, per year, the average customer experienced.

Aurora reports on its targets and its performance against targets in the annual report as shown in Figure 1.

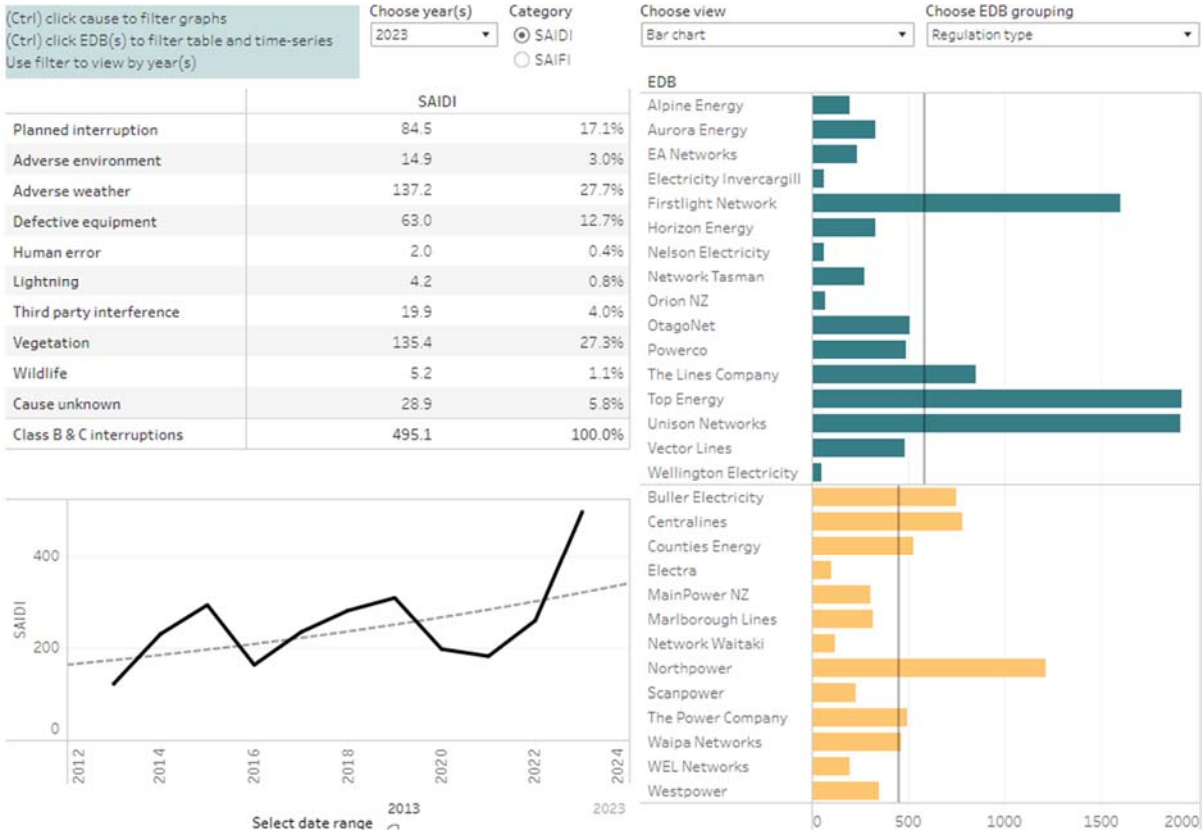
Figure 1 Reliability Performance Targets (Statement of Intent Targets – Period Ended 31 March 2023)[2]

SAIDI			
Class B Interruptions (Planned)	≤ 195.96 minutes	Achieved	110.34 minutes
Class C Interruptions (Unplanned)	≤ 124.94 minutes	Achieved	106.49* minutes
SAIFI			
Class B Interruptions (Planned)	≤ 1.11	Achieved	0.60 interruptions
Class C Interruptions (Unplanned)	≤ 2.07	Achieved	1.75* minutes

The Commerce Commission reports progress for all EDBs against SAIDI and SAIFI. Aurora's statistics are reported by the Commission and shown in Figure 2 and Figure 3 by cause and in comparison with all other EDBs.

[2] Note: Class C SAIDI and SAIFI are expressed as normalised figures. The Commerce Commission's price-quality framework allows for the effect of extreme events to be removed, resulting in normalised figures that are compared against target. The raw results for Class C SAIDI and SAIFI were 156.3 minutes and 2.48 interruptions respectively.

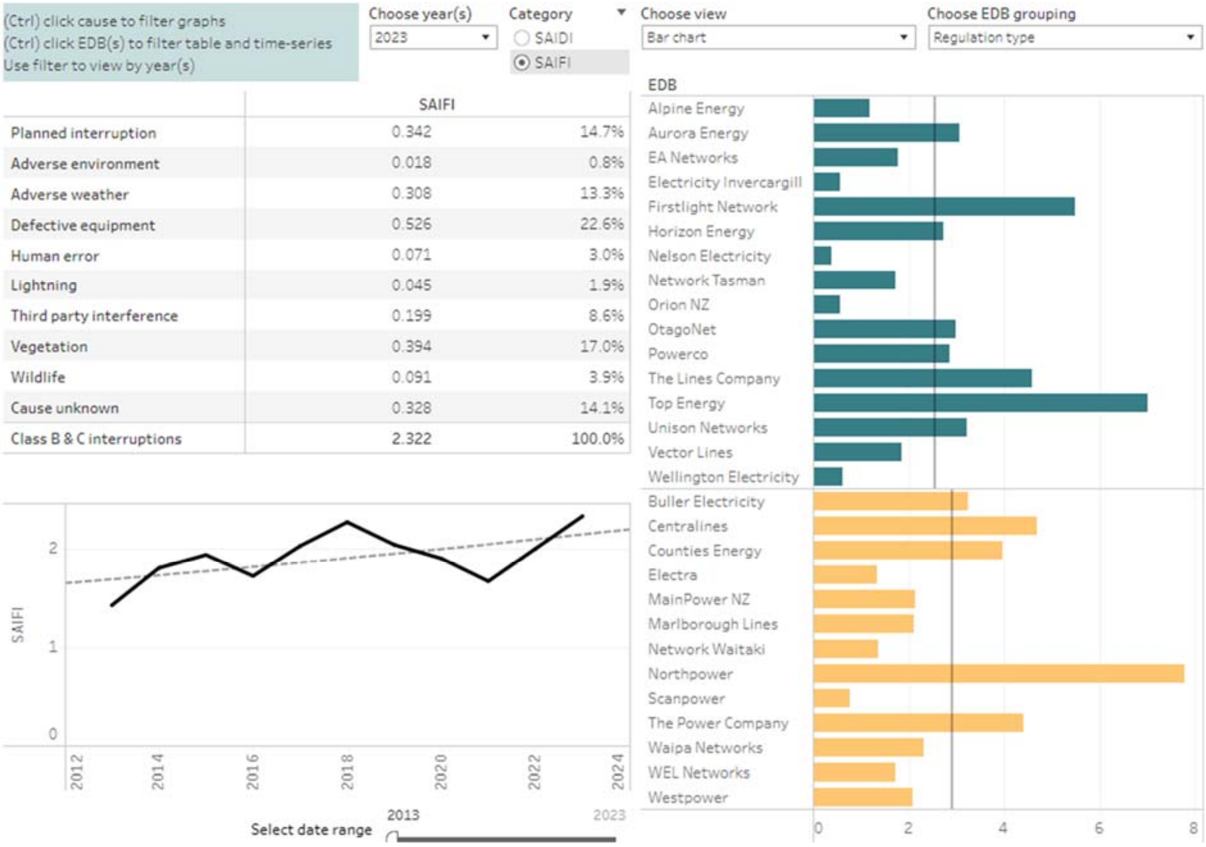
Figure 2 Reliability by cause - Aurora Energy SAIDI[3]



	SAIDI	
Planned interruption	84.5	17.1%
Adverse environment	14.9	3.0%
Adverse weather	137.2	27.7%
Defective equipment	63.0	12.7%
Human error	2.0	0.4%
Lightning	4.2	0.8%
Third party interference	19.9	4.0%
Vegetation	135.4	27.3%
Wildlife	5.2	1.1%
Cause unknown	28.9	5.8%
Class B & C interruptions	495.1	100.0%

[3] See Commerce Commission's NZ electricity distributor data and metrics page: here

Figure 3 Reliability by cause - Aurora Energy SAIFI[4]



The Commission has recently published an open letter on Aurora Energy's mid-period performance under its customised price-quality path [5]

1. The Commerce Commission (the Commission) welcomes the disclosure of two reports evaluating Aurora Energy Limited (Aurora)'s performance at the midpoint of its five-year customised price-quality path (CPP). We are publishing this letter under section 53B(2)(b) of the Commerce Act 1986, which requires us to publish a summary and analysis of information disclosed by regulated suppliers, including Aurora, so that stakeholders can better understand the performance of those suppliers.

2. The expert evaluations were completed by Energy Networks Consulting (Energy Networks) and Farrierswier and can be found here. Energy Networks' report evaluated Aurora's performance in areas associated with asset management and Farrierswier evaluated Aurora's customer engagement.

3. Encouragingly, the evaluations found that Aurora has performed reasonably well across the evaluated practice areas. Some positive examples from the expert evaluations found that Aurora:

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[4] ibid

[5] Commerce Commission Open letter on Aurora Energy's mid-period performance under its customised price-quality path 21 May 2024

- had made substantial improvements to its safety practices;
- had improved its asset management practices;
- maintained a good level of engagement consistent with the CPP process and good electricity industry practice; and
- used a wide range of forums to engage with customers.

4. However, Energy Networks' evaluation considered that Aurora could improve its network reliability because its unplanned outages remained high during Aurora's time on the CPP so far. We also drew attention to Aurora's network reliability issues in our recent fact sheet on Aurora's progress under its CPP.

It would be incredible for either a new owner or the existing owner to want to compromise on quality with a view to increasing profitability given the level of scrutiny that comes with the disclosure regime and Aurora's history. Under Schedule 17 of the information disclosure requirements directors are liable that information provided to the Commission in all material respects complies with the Commission's information disclosure determination, that prospective financial or non-financial information included in the accompanying information has been measured on a basis consistent with regulatory requirements or recognised industry standards and that forecasts are based on objective and reasonable assumptions which both align the EDB's corporate vision and strategy and are documented in retained records. Further, there are reputational risks with failures on the network and there is the risk of a fine for a breach. Any fine from a breach comes out of net profit after tax (NPAT), i.e. it's not treated as allowable regulatory OPEX, which adds to the disincentive.

3.3 Workings of price regulation

Price regulation is based around revenue limits and in the case of Aurora's CPP, a cap on annual revenue increases. EDBs can recover what the Commission consider are efficient operating costs and a regulated return on regulated assets to deliver the required quality by way of a revenue limit which is described in the Commission's default price-quality paths for electricity distribution businesses. The overall approach is described as follows: [6]

> A revenue path is the set of annual revenues an EDB is allowed to earn over the regulatory period. It has two main parts:
>
> - 'forecast net allowable revenue' (which allows for the smoothed recovery of building blocks allowable revenue (BBAR)),
> - pass-through and recoverable costs.
>
> Pass-through and recoverable costs (other than those giving effect to regulatory incentive mechanisms) are generally outside of a supplier's control, for example, Transpower costs, local body rates.
>
> If a supplier keeps its opex and capex lower than our forecasts, it can keep some of its savings. This creates an incentive to be efficient. This applies to both opex and capex.

The allowable revenue is developed through the building blocks approach as shown below in Figure 4. The building blocks approach adds up the components of an EDB's forecast costs and sets revenue limits equal to them. It starts with an updated regulated asset base (RAB) at the beginning of the DPP or CPP period. A regulated return on that investment based on what the Commerce Commission views as appropriate for that business is applied to the RAB. The projected return on investments is added to the projected costs of an efficient EDB over the regulatory period.

The Commission notes: [7]

> The limit on revenue provides incentives to focus on controllable costs. Profitability depends on the extent to which EDBs control costs. Actual costs may differ from forecasts for a variety of reasons, but the incentive to increase profits helps to create an incentive for EDBs to find efficiencies that result in reduced costs.
>
> There is a risk that EDBs may find these cost savings by reducing investment or maintenance. Quality standards play an important role in reducing the risk of this occurring.

The DPP has to specify revenue limits for each EDB for each year of the regulatory period The revenue limits are set net of pass-through costs and recoverable costs. The two main components of these revenue limits are:

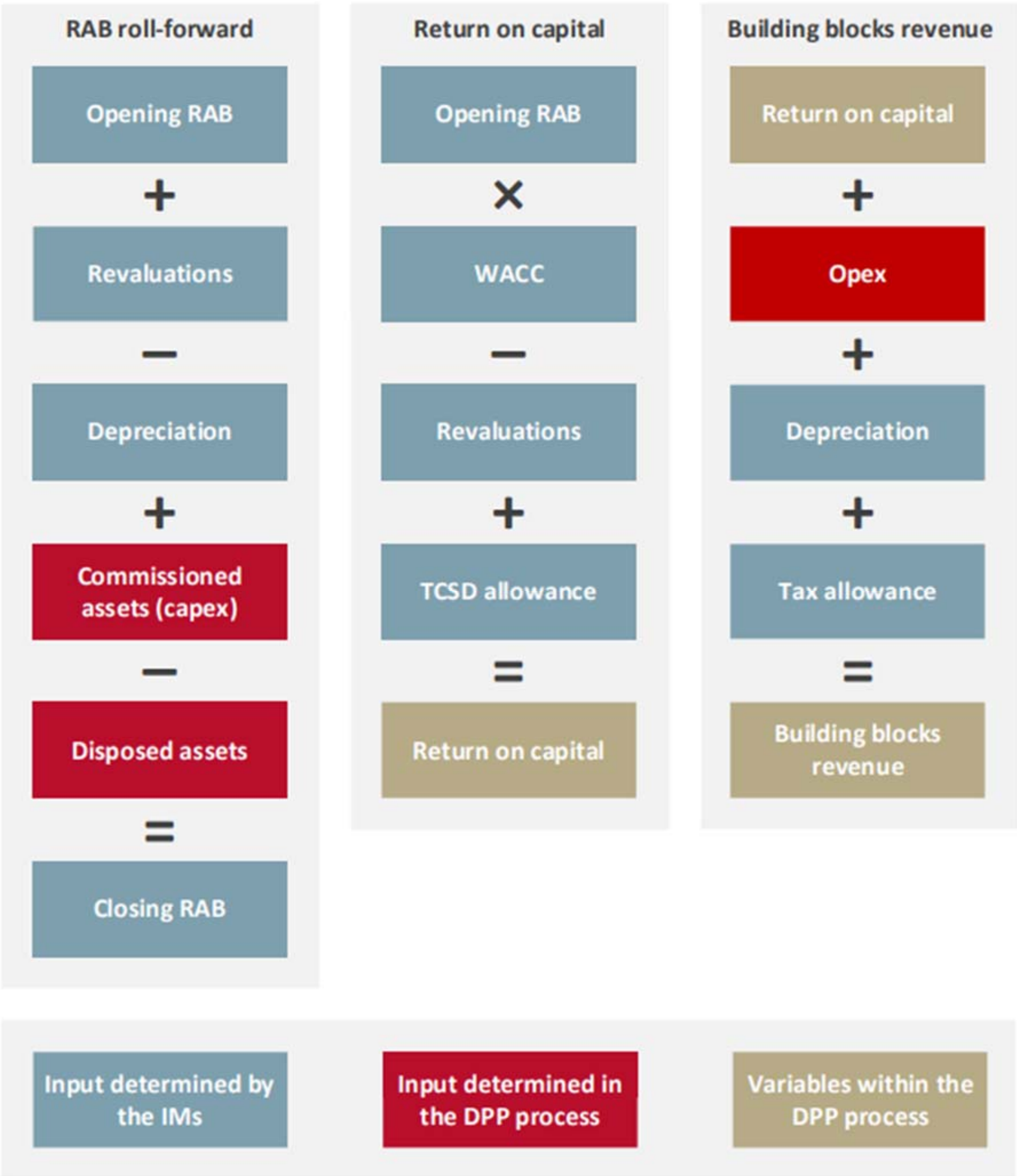
- the 'starting price' allowed in the first year of the regulatory period.

[6] Commerce Commission Default price-quality paths for electricity distribution businesses from 1 April 2025 Issues paper 2 November 2023

[7] ibid.

- the 'rate of change in price', relative to the CPI, that is allowed in later parts of the regulatory period.

Figure 4 How the Commission calculates BBAR[8]



The starting prices the Commission sets for EDBs are specified in terms of maximum allowable revenue (MAR), which is an amount net of pass-through costs and recoverable costs. The MAR amount is calculated through two processes:

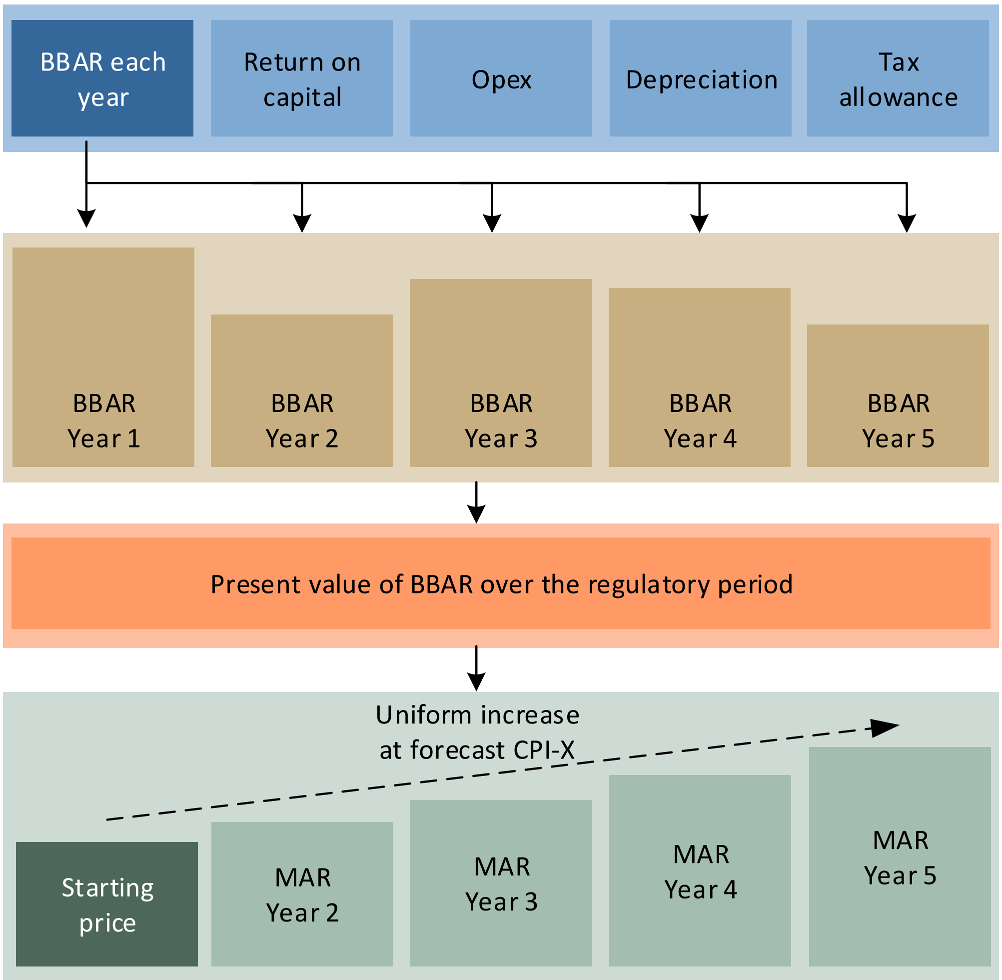
- Determining a BBAR for each year of the regulatory period as shown in Figure 4.

[8] Ibid.

- Smoothing each of the BBAR amounts over the regulatory periods by forecast CPI and any applicable X-factor in present value terms. This represents the yearly changes to the revenue limit that are allowed over the regulatory period. This process is shown in Figure 5.

When the BBAR is smoothed into annual MAR figures through applying forecast CPI and the X-factor, the present value of BBAR and MAR is kept constant.

Figure 5 From annual building blocks allowable revenue to annual maximum allowable revenue [9]

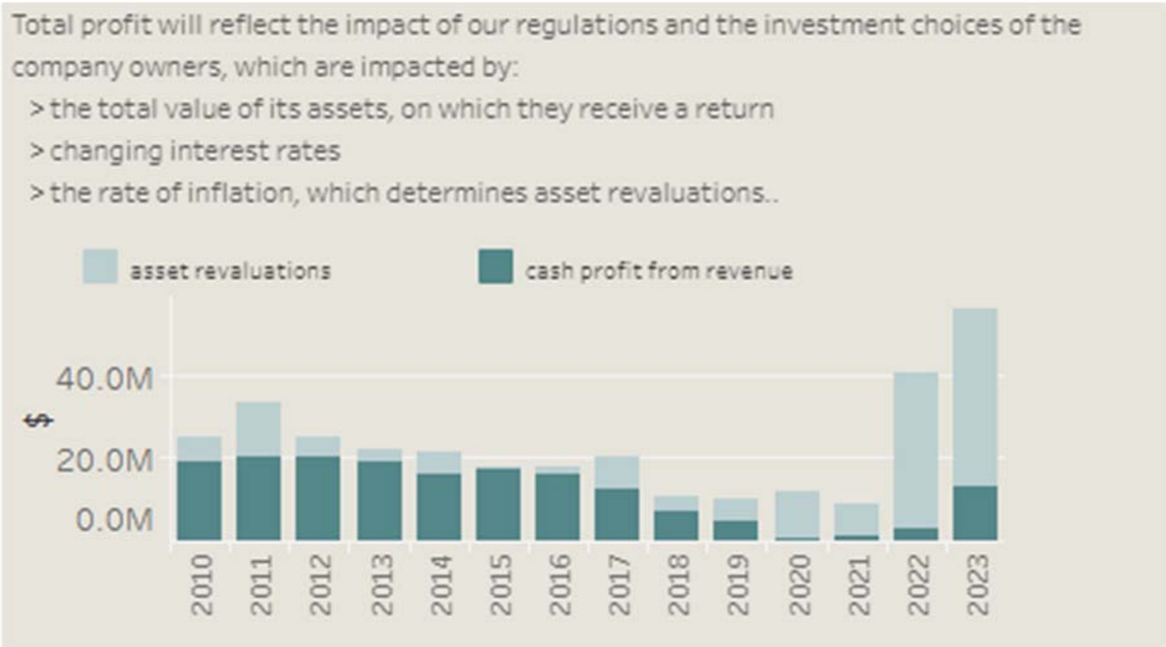


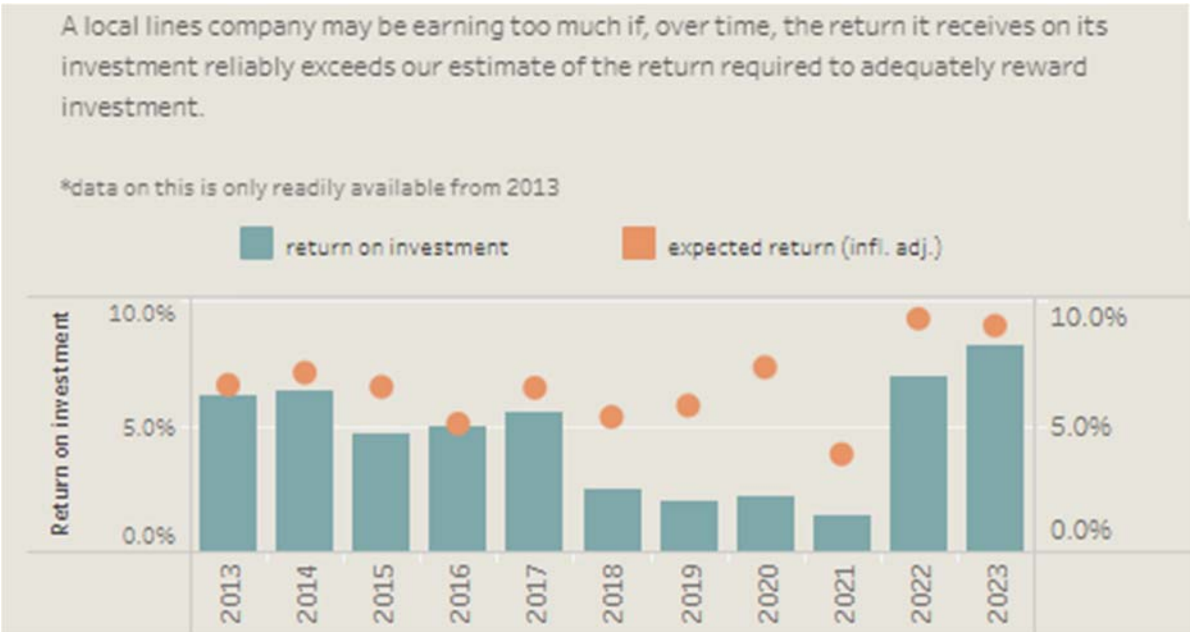
The limit on the smoothed increase in the MAR created by the CPI – X and revenue cap restraints on prices leads to some revenue being recovered in later years. This deferred revenue mechanism is discussed in the following section.

There is no scope for either a new owner or the existing owner to set prices outside the Commission's DPP or CPP process. The Commission monitors and comments on each EDB's return on investment against expected returns publicly as shown in Figure 6. In Aurora's case the Commission reports total profits were "not generally excessive"

[9] ibid

Figure 6 Aurora's historical profit and reported return on investment compared to the Commission's expectation of Aurora's return [10]





Deferred revenue

- Deferred revenue (revenue deferred to reduce the timing of price impact on consumers) arises from the deferred recovery of costs and regulated returns on capital that have been allowed by

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[10] See Commerce Commission's NZ electricity distributor data and metrics page: here

the Commerce Commission when the MAR is calculated, but which are not recoverable in the year the costs and capital investments are incurred.

- The Commission's deferral of an estimated $69 mil of revenue to cap the rate at which allowable revenue could be recovered (and to smooth the pricing impact on consumers) was well documented in the Commerce Commission's 2021 final decision on Aurora Energy's proposal for a CPP.
- Aurora accounts for deferred revenue in their financial management and reporting – see note 3 of Aurora's 2023 annual report:[11]

> The Commerce Commission's Customised Price-Quality Path Determination for Aurora Energy included a 10% limit on the annual increase in line charge revenue in order to reduce the price impact on consumers. Combined with the impact of volume driven revenue variances the total deferred revenue for year ended 31 March 2023 is $39.315 million (2022: $13.417 million). This deferred revenue will be recovered from consumers in future financial years.

- The input methodologies provide for the deferred revenue plus "any related time value of money adjustment made in accordance with a **DPP determination** or **CPP determination**."[12] It would not be correct to say deferred revenue earns interest. It is correct to say that the regulations provide for the net present value (NPV) at the time revenue is deferred to be protected so no time value of money is lost when it is recovered. If this was not the case, then on the simplifying assumption that all actual values are equal to the projected values at the start of the CPP or DPP, the EDB would not meet it's cost of capital.
- It is also correct to say that when the revenue that is deferred is received in later years it is recorded and disclosed as both financial and regulatory income, and is subject to income tax in the year it is received.

3.4 Aurora pricing approach

The Electricity Authority has a framework for EDB pricing methodologies aimed at ensuring tariffs are cost reflective and that one group of consumers does not subsidise another. Aurora's pricing methodology reflects those requirements. To illustrate, Aurora allocates its lines charges amongst consumer groups as shown in Figure 7 Schematic of A.

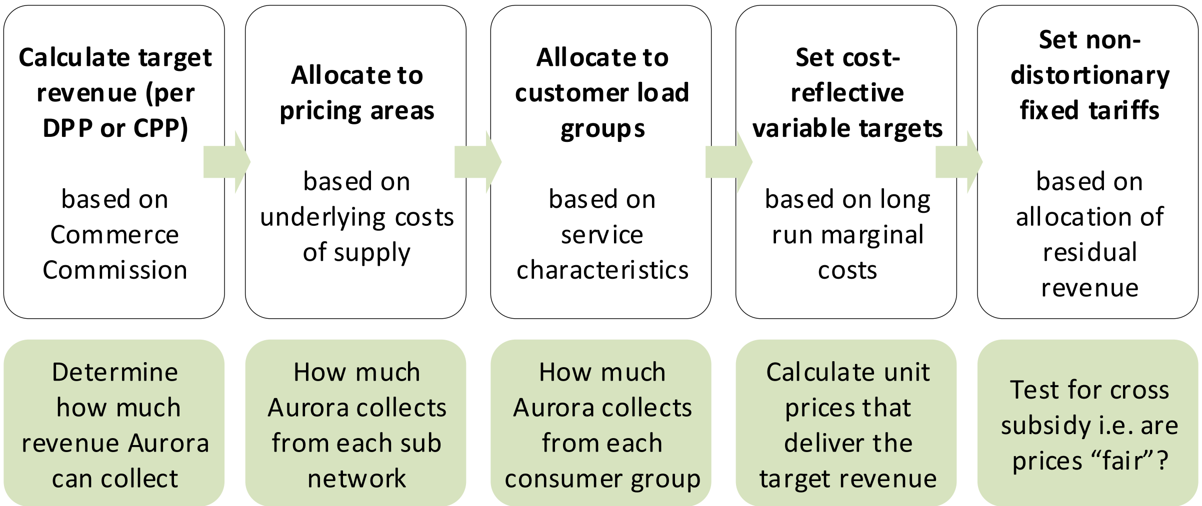
The breakdown of recoverable costs amongst consumer groups and sub-networks begins with the MAR as shown on the left-hand panel in the diagram. The second step is allocating MAR amongst the sub-networks based on the underlying costs of supply. Given that the MAR covers all three sub-networks any reallocation of costs in one sub-network area has to have a corresponding shift to the other sub-network areas. This is why we say a different owner couldn't simply raise prices in Dunedin to make more profit. If they did so they would have to lower cost recovery in the other sub-networks accordingly.

[11] Aurora Annual Report 2023

[12] Commerce Commission Input Methodologies Section 3.1.3(13)(k) 23 April 2024

The next step is to allocate costs in each sub-network between consumer groups. Here is the scope for cross subsidisation between domestic and commercial or industrial consumers. The tension here is to ensure that the costs assigned to each consumer group truly reflect the costs of providing the service to them. Finally, once recoverable costs are so allocated each EDB has to develop tariffs that don't over recover or under recover costs for the period. That does happen from time to time and when it is detected the offending EDB is required to put it right.

Figure 7 Schematic of Aurora's approach to assiging prices to sub-networks and consumer groups.



The Authority monitors EDB performance on their pricing approach scoring them against the following criteria:

- The EDB's unique circumstances.
- Adherence to the Authority's Distribution Pricing Principles.
- The overall strategy for distribution pricing.
- The pricing roadmap expected to deliver cost reflective and fair pricing for all parts of the network and all consumers.

In their 2023 report on distribution pricing the Authority notes:[13]

> Consistent with 2021, Wellington Electricity and Aurora continue to receive the highest overall score. These distributors demonstrated leading practice on several criteria and a consistent improvement compared to 2021.

This section shows Aurora's approach to pricing and, in particular, that it recognises the unique challenges in the three sub-networks. The scope for a different owner to arrive at slightly different allocation of costs amongst consumers is minor. There is no scope for a new owner to raise prices for some consumers without a corresponding reduction of prices for other consumers.

[13] Electricity Authority Distribution pricing scorecards 2023 Information paper 10 October 2023

4. Question 2 – The reliability of the regulatory framework

How enduring is the **regulatory framework** in Part 4 of the Commerce Act?

- The stated aim of Part 4 of the Commerce Act is **to promote outcomes consistent with those produced by competitive markets**, including providing incentives to invest, innovate and make efficiency gains, while requiring suppliers to share gains with consumers and to limit excessive profits.
- It is hard to see the circumstances where undermining the fundamental premise of the stated aim is prioritised by a future government.
- Most parties' policies released ahead of the 2023 general election had provisions to increase reliance on competition to achieve better outcomes for consumers, not diminish it.

How stable is the regulatory framework?

- The purpose of the Commerce Act is to promote competition in markets for the long-term benefit of consumers within New Zealand. (s1A)
- The Act establishes the independent Commerce Commission which plays a role in ensuring New Zealand's markets are competitive, consumers interests protected, and **sectors with little or no competition are appropriately regulated**.
- The Electricity Authority's statutory objective requires it to deliver competition, reliability and economic efficiency for the long-term interest of consumers.
- Both of these regimes have been strengthened since they were introduced and continue to be strengthened.
- Softening the promotion of competition in markets or regulation of sectors with little or no competition would be a major shift in government policy. The regulatory framework has not been softened in any way by successive governments to date.
- The prospect of unwinding the promotion of competition or regulation of sectors with little or no competition has not featured as policy for any political party to date. A review of all political parties' policy statements released ahead of the 2023 general election shows that most parties were looking to promoting benefits of competition (or equivalent for regulated sectors). For example, there were proposals to address the lack of competition in the grocery industry, fuel, banking and building products.

5. Question 3 – Attributes required of Aurora's owner

What is the likelihood that the community would be better off or worse off **if Aurora was owned by a party other than DCC/DCHL**?

- Consumers are well protected by the regulatory regime and that protection is not owner dependent.
- Every EDB in New Zealand faces the challenges of the high investment required to accommodate electrification which is, in turn, a consequence of New Zealand's legislated decarbonisation goal.
- In addition, Aurora is dealing with fixing, upgrading and maintaining its network after years of under maintenance and under investment.
- Aurora's owner will have to be more resilient and far sighted in the coming years than would normally the case. If DCC/DCHL doesn't have the resilience required to get through the coming years the electricity consumers on the Aurora network could, potentially, be worse off.

Attributes for EDB owners under price-quality regulation with the decarbonisation challenge

I can only answer for the community as power consumers. I cannot comment on whether the community would be better off or worse off from any other perspective.

The answer to this question lies, in part, on the speed and extent of New Zealand's transition to a low carbon economy. In 2017 electricity demand growth was modest and investment in new generation was keeping up with growth. Some generation came from fossil fuels but New Zealand was being supplied by ~85% renewable generation.

The incoming Government set out about decarbonising the economy by passing an Act legislating a target of net zero carbon by 2050 and establishing an independent Climate Change Commission whose role is to set the carbon budgets that would have to be met to get to zero carbon by 2050.

The implication of this shift was that amongst the major initiatives aimed at achieving the target would be higher levels of renewable electricity and, with that low carbon energy source, high levels of electrification in a number of sectors notably transport and industrial heat processes.

The twin effects of higher demand, i.e. increased supply, and lower use of fossil fuels combine to create a major challenge for energy supply, distribution and transmission. For the distribution sector Boston Consulting wrote:[14]

> In all pathways there is a clear need for a significant scaling up of transmission and distribution infrastructure investment to at least $30 billion in the 2020s.

It is unsurprising then to read in Aurora's Statement of Intent: which says: [15]

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[14] Boston Consulting Group THE FUTURE IS ELECTRIC A Decarbonisation Roadmap for New Zealand's Electricity Sector 17 December 2023

[15] Aurora Energy Statement of Intent for the year ending 30 June 2024

> As a regulated business, Aurora Energy has a responsibility to its customers to provide safe, reliable electricity infrastructure. To maintain a reliable network and cater for growth, we are planning to invest in the order of $800 million in the network over the next decade to be funded by increased revenue, increased borrowings and reduced dividends.

So, the answer to this question can be viewed through two time frames.

Aurora's upcoming investment requirements come on top of the investment already made as part of the restoration of the network under the CPP. That being the case during the coming years the owner of Aurora will have to be more resilient and far sighted than would normally be the case.

The owner of Aurora during this phase would benefit from some or all of the following attributes:

1. Long term investment horizons allowing a flexible dividend policy.
2. Understanding the challenges facing EDBs with electrification and decarbonisation.
3. Able to deal with uncertainty and risk.
4. Access to capital, specifically cost-effective debt.
5. Comfortable with debt-to-equity ratios that are consistent with Commission's regulated cost of capital over each regulatory period.
6. Experience with regulated businesses.
7. Synergies with other similar businesses esp. other regulated network businesses.
8. Economies of scale.

In the longer term when demand growth stabilises, and capital investment requirements ease off, Aurora will continue to earn a regulated return on regulated assets but with the headroom to make choices about where it chooses to allocate after-tax free cashflow. i.e. paying dividends, reducing debt, accelerating maintenance or replacement of assets where appropriate.

About Sapere

Sapere is one of the largest expert consulting firms in Australasia, and a leader in the provision of independent economic, forensic accounting and public policy services. We provide independent expert testimony, strategic advisory services, data analytics and other advice to Australasia's private sector corporate clients, major law firms, government agencies, and regulatory bodies.

'Sapere' comes from Latin (to be wise) and the phrase 'sapere aude' (dare to be wise). The phrase is associated with German philosopher Immanuel Kant, who promoted the use of reason as a tool of thought; an approach that underpins all Sapere's practice groups.

We build and maintain effective relationships as demonstrated by the volume of repeat work. Many of our experts have held leadership and senior management positions and are experienced in navigating complex relationships in government, industry, and academic settings.

We adopt a collaborative approach to our work and routinely partner with specialist firms in other fields, such as social research, IT design and architecture, and survey design. This enables us to deliver a comprehensive product and to ensure value for money.

For more information, please contact:

Toby Stevenson

Phone: (+64) 021 666 822

Email: tstevenson@thinkSapere.com

Wellington	**Auckland**	**Sydney**	**Melbourne**	**Canberra**	**Perth**
Level 9 1 Willeston Street PO Box 587 Wellington 6140	Level 8 203 Queen Street PO Box 2475 Shortland Street Auckland 1140	Level 18 135 King Street Sydney NSW 2000	Level 5 171 Collins Street Melbourne VIC 3000	GPO Box 252 Canberra City ACT 2601	PO Box 1210 Booragoon WA 6954
P +64 4 915 7590	P +64 9 909 5810	P +61 2 9234 0200	P +61 3 9005 1454	P +61 2 6100 6363	P+61 8 6186 1410

www.thinkSapere.com

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