



Submission to the Electricity Authority
on the
Updating the Regulatory Settings for Distribution
Networks
Consultation Paper

28 September 2021

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Introduction

1. Electra Limited (Electra) welcomes the opportunity to submit on the Electricity Authority's (EA), *Updating the Regulatory Settings for Distribution Networks*, Consultation Paper, 26 July 2021 (the EA's Consultation Paper). Nothing in this submission is confidential.
2. New Zealand's low carbon future targets are aspirational. Decarbonisation is one of the many actions that will need to be taken to realise the governments targets. Electra is one of 29 electricity distribution businesses (EDBs), and as an industry we have been called on to lead New Zealand's' decarbonisation journey. We do not take our leadership role lightly. Accordingly, to set direction we have formed aspirations to—
 - (i) Improve visibility on our LV network
 - (ii) Contribute to best practice industry standards
 - (iii) Make it easy to work with us
 - (iv) Have least cost operating arrangements
 - (v) Continue to build our capabilities and capacity
 - (vi) Evolve future prices.
3. Our aspirations give us direction by helping us to focus on the future and not stay caught up in the past. Delivering to our aspirations will be difficult as it will require us to target solutions that bring long-term benefits to consumers by not getting distracted by short-term superficial wins.
4. Included in Appendix A are our answers to the EA's questions in its preferred format.

Improve visibility on our LV network

5. We aspire to improve the visibility on our low voltage (LV) network through the promotion of a transparent, secure, and affordable information layer. Our vision is multifaceted.
6. The first facet is to have an information layer for faults and constraints broken down by asset and fault types. The information available to us would include dates and times, energy flows (including bi-directional), demand, changes in voltage levels, current and impedance, number of consumers interrupted, duration, and main equipment involved. All at the individual connection point (ICP) level.

The second facet is the potential that distributors could take on the role of the distribution system operator (DSO), where they monitor and control demand response and controllable DERs to maximise the value of the flexibility they offer.
7. Visibility on the LV network is essential for EDBs to efficiently manage the increased electrification predicted by the Climate Change Commission's report, *Inaia tonu nei: a low emmissions future for Aotearoa*¹ and Transpower's report, *Whakamana i Te Marui Hiko: Empowering our energy future*². At present there is clear 'have and 'have-nots' between the EDBs with access to real-time and post-event data though

¹ A copy of the Climate Change Commission's report can be found on its website at <https://www.climatecommission.govt.nz/our-work/advice-to-government-topic/inaia-tonu-nei-a-low-emissions-future-for-aotearoa/>

² A copy of Transpower's report can be found on its website at <https://www.transpower.co.nz/resources/whakamana-i-te-mauri-hiko-empowering-our-energy-future>

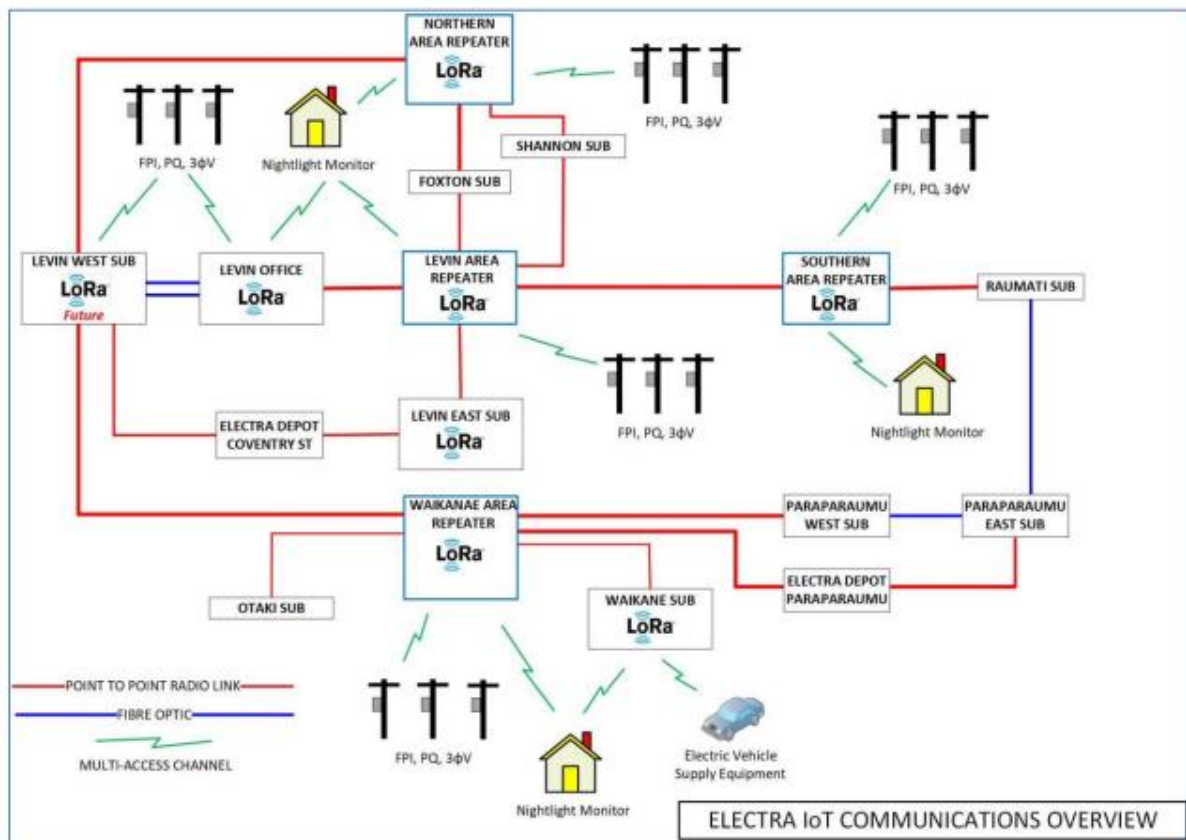
the ownership of electricity meters on their network and those EDBs that are reliant on metering data from third parties, e.g., meter equipment providers (MEPs).

8. There continues to be slow progress in making metering data available. MEPs currently enjoy an oligopoly advantage without regulatory oversight to prevent price gouging. Accordingly, metering data is made available at prices that are much higher than what we consider reasonable and at a quality that is much lower than we expect.

What visibility do we currently have on our LV network?

9. In 2019 in conjunction with the Electricity Lines Business CIO Forum, we undertook to build and implement a communications platform and prototype sensor devised to improve the visibility on our LV Network. The trial results exceeded our expectations and since 2019 we have built, produced, and deployed low-cost sensors on our network together with a reliable communications infrastructure.
10. LoRaWAN (long range wide area network) is a IoT network that has a series of gateways (effectively long-range Wi-Fi routers in Levin, Moutere and Forest Heights as shown in Figure 1 below³.

Figure 1: Electra IoT communications overview



11. The deployment of 25 low-voltage power quality (PQ) meters enables us to monitor the condition of our power transformers at a significantly lower cost than deploying traditional meters. The data we receive from LoRaWAN is used in our information layer and allows us to make informed decisions on the maintenance and replacement of our high voltage (HV) assets.

³ More information about LoRaWAN can be found in section 4.5.3 of our 2021-2031 Asset Management Plan (AMP). A copy of our 2021-2031 AMP can be found on our website at <https://electra.co.nz/our-company/disclosures/>

12. The benefits that we have received to date from our investment in LoRaWAN has included identifying and resolving power quality issues and over-voltage requiring transformer tap change and addressing customer queries about outages at their ICP. The limitation of LoRaWAN is that it gives us visibility on our HV network only.

Why improve visibility on our LV network?

13. The step-change required by the electricity industry to support New Zealand's decarbonised future is significant. We believe that there are two principal drivers for improving visibility on our LV network:
 - (i) increase in consumer expectations of quality and security of supply; and
 - (ii) increase in embedded generation installed capacity.
14. What EDBs need, irrespective of where they are on their journeys is information to base good decisions on. Information will give us visibility as to how increased consumer expectations and embedded generation, including distribution energy resource (DER), impacts the distribution network and when that impact is likely to change the way we manage our networks.

Increase in consumers expectations of quality and security of supply

15. Consumers do not value electricity; they value what they can with it. As the reliance on electricity increases due to the uptake of electric vehicles (EVs), smart appliances, and prosumer⁴ behaviours, consumers' expectations of quality and security will also increase.
16. We have conducted several customer surveys over the last decade. There is a recurring theme that consumers do not want to pay more for their electricity supply even if a higher price means improved quality and security. This message is at odds with the increased reliance that consumers will have on electricity distribution services under decarbonisation. This leads us to believe that while consumers' expectations may increase, their willingness to pay more will not.
17. Meeting consumers' expectations will require us to deliver a higher standard at the same or lower costs. A standard that we have been working to under the current regulatory framework that drives dynamic efficiency. Visibility at the LV network level will enable us to, over time, meet consumers' expectations by implementing new processes that support the services that consumers want.
18. Currently, we can see faults on our HV network when it impacts multiple consumers. Visibility on our LV network will enable us to see faults at an ICP; even before that fault results in an interruption. Thereby we will meet consumers' expectations that energy will flow when, where, and how they want it to meet their individual needs, whether to charge their EV, run a smart appliance, trade their excess energy on our network, or provide flexibility services.

Increase in embedded generation installed capacity

19. Undoubtedly, DER have a crucial role in supporting New Zealand's move to a low carbon economy. And because DER is connected at the electricity distribution level, EDBs are responsible for connecting and integrating the DER into the energy supply chain while ensuring supply reliability.
20. The value of DER is without question. The current unknowns are:
 - (i) how will DER impact distribution network; and

⁴ A prosumer is a consumer who becomes involved with designing or customising products for their own needs for example, PV owners that sell their excess power through peer-to-peer trading platforms.

(ii) when will distribution networks be impacted?

21. The answers to these questions will vary from network to network. Some EDBs are being impacted now, and some have yet to see any measurable impacts.
22. To date, we have had one isolated DER incident that saw material voltage drops on our network, requiring us to curtail their injection while the matter was resolved. We learned a lot from that incident, not least of all, that to begin with, neither party understood each other well.
23. As the subdivisions grow on our network, we expect DER also to grow. Our concern is that we won't know the constraints until it develops into a problem because of our lack of visibility on our LV network. Reactive network augmentation is never as effective as proactive network augmentation.
24. However, proactive augmentation may not be efficient. Without our information layer in place, we will be required to make investments on our network akin to 'taking a leap of faith' and investing today for the demand that will come; but we don't know when.
25. We agree with the EA's statement—

"Flexibility traders do not have access to the congestion data unless the distributor provides it to them. This means that they are unable to make informed investments in DER. For flexibility markets to be competitive, congestion data would need to be available for everyone competing in that market on the same terms."⁵
26. However, we do not agree with the EA's assertion that EDBs are actively withholding information readily at hand from flexibility traders to create a barrier to entry for DER. The situation is that while we have visibility on our HV networks, we do not have visibility on our LV networks. Much of the DER on our network will be small scale and operate on our LV network, with load aggregators acting as flexibility traders. We cannot provide these flexible traders with information about congestion on our LV Network because we don't have it to give.

Why don't we have visibility on our LV Network?

27. Predominately, faults on our LV network are reported through our call centre and are a manual process where the operator records the time of the call as the start time then once power is restored, the field crew record the restoration time. Constraints are measured at the HV level through metering at our substations and several of our transformers. We do not currently measure constraints on our LV network.
28. We don't currently have visibility on our LV network because we have limited metering on our LV network.
29. We could put meters at all ICPs to capture the data that we need for our information layer. It is estimated that installing the meters alone would cost upwards of \$1.6 million⁶. Or we could access the data currently available through the smart meters that are already on our network.
30. Meter equipment providers (MEPs) supply metering services to industry participants, principally retailers. There are 22 MEPs in New Zealand according to the EA's list of Metering Equipment Providers on its website⁷. MEPs do not operate on all networks, for example we have two MEPs operating on the Electra Network. Much of the information we need to get visibility on our LV Networks is currently being collected by MEPs. However, due to complex contracting arrangements with their principal

⁵ The EA's Consultation Paper, paragraph 4.17 on page 28.

⁶ Estimate is based on 45,000 ICPs at approximately \$35 per meter for a standard smart meter.

⁷ [Metering Equipment Providers — Electricity Authority \(ea.govt.nz\)](https://www.ea.govt.nz/metering-equipment-providers/)

customers, we cannot readily access this existing data without entering equally complex contracts.

How do we plan to improve the visibility on our network?

31. We need data accordingly; as a starting point, in good faith, we will share data through the existing channels and in the existing formats with other willing industry participants. Over time we will work with willing industry participants to scope systems that better enable long-term solutions to improve the visibility of our LV network, including faults and constraints.
32. Table 1 below summarises the data we believe is currently available and could be easily share by industry participants.

Table 1: Summary of data we believe is currently available and could be easily shared

The data that we can readily share with industry participants includes	The data that we believe exists and could be readily shared with us includes
<ul style="list-style-type: none"> • network constraints at the grid, subtransmission, and transmission level 	<ul style="list-style-type: none"> • operational data such as power quality, voltage, and current. Metering event data such as tampers, reverse energy, voltage tolerance extrusions
<ul style="list-style-type: none"> • planned outage information 	<ul style="list-style-type: none"> • Meter Ping
<ul style="list-style-type: none"> • load control 	<ul style="list-style-type: none"> • electric vehicle chargers, including make and model and controllability.
	<ul style="list-style-type: none"> • ICPs that subscribe to retailer time shift plans e.g., Free power between 9pm-12pm
	<ul style="list-style-type: none"> • Internal ripple relay status

33. Data that is more sensitive and needs significant further work includes customer data at the ICP level, e.g., consumption and demand. As discussed in paragraph 17 above, data at the consumer level will better meet consumers' expectations in a decarbonised future.
34. As an industry, we are data rich but information poor. Industry participants, including us, hold a wealth of data that due to legacy systems that often require a heavily manual process for data retrieval means, as stated by the EA in its Consultation Paper data is—

"...expensive, and not widely available. This is partly due to the processes required to verify, validate, and estimate raw data, but also due to the way data is communicated from meters to back-office systems and end users. As the level of DER increases, having near real-time data will be essential to optimise the network throughout the day."⁸
35. We agree that industry participants should not be asked to share data introducing further material costs to collect, verify, or share. Accordingly, we will commit to sharing our current network data with industry participants at either no cost or at no more than the incremental cost of providing it.

⁸ The EA's Consultation Paper, paragraph 4.6 on page 26.

Data should be shared at no more than incremental cost

36. Pivotal in the success of data sharing is industry participants' willingness to work together in good faith and put aside self-interest for consumers' long-term benefit. We believe that the EA can achieve this by supporting an industry-wide in-principle agreement that data will be shared at no more than the incremental cost of providing it.
37. The data template has added a layer of bureaucracy that, in our view, has been less than successful. Rather than EDBs spending copious amounts of time pulling together evidence of its lack of success, let's simply ask who is using the data template. What is valued is used; if industry participants are not using the data template, it is because it is not valued; if it is not valued, then it is not working as a vehicle for data sharing. What is not working needs to be replaced.
38. In principle, the agreement is simple and does not add another layer of bureaucracy. The incremental cost is the least and, therefore, not prohibitive for either the data provider or the recipient.

Data sharing is high impact high effort

39. Access to data has been the most widely debated issue within the electricity industry. An issue that is far from being resolved indicates the size of the problem and its significance.
40. We believe that access to information is a high-impact, high-effort solution. Making it the most important and perhaps difficult solution to implement. When considering the next steps, we urge the EA to prioritise this high-impact, high effort issue.

Contribute to best practice industry standards

41. We aspire to contribute to establishing best practice industry standards by taking the time to understand DER and working with the industry to establish the best way to getting DER connected safely, cost-effectively, and appropriately to the network.
42. As discussed above in paragraph 22, we have had one incident with DER on our network; the lesson learned was that we did not understand each other well. Best practice industry standards would have gone some way to have helped us understand the customer, and the customer has understood us and may have avoided the incident.
43. We believe that establishing best practice industry standards is a journey; and the first step in that journey is to establish best practice industry guidelines.

Guidelines are a pragmatic first step

44. As an industry, we currently operate under a multitude of standards⁹. The risk of introducing standards with a DER focus too quickly is that rather than supporting DER, it will create an unintended barrier to entry. Best practice industry guidelines provide a suitable 'stop gap' that fills the dual roles of giving the industry confidence over safety and performance and flexibility to adapt to ever-changing technological solutions.

⁹ An exhaustive list of access New Zealand standards for all electrical installations and appliances can be found on the Electrical Workers Registration Board website at <https://www.ewrb.govt.nz/for-registered-electrical-workers/your-licence/access-nz-standards-for-all-electrical-installations-and-appliances/>

45. In its Consultation Paper, the EA identifies the creation of guidelines as a minor issue and puts forward a solution whereby—
- "Guidelines could be developed by industry or facilitated by the Authority and then published by the Authority."¹⁰
46. We agree with this light-handed approach as it is a pragmatic way to get started and move New Zealand toward a more long-term solution. With the support of the EA as a facilitator, we could deliver this as an industry lead solution.
47. As an industry establishing our own best practice guidelines is an important first step to making the connection and operation of DER work smoothly and efficiently. It will be easier for guidelines to keep evolving as new and better solutions are found and industry forms a better awareness of new technologies; or simply different ways of looking at things.
48. There will be aspects of the guidelines that need to be rigidly defined, such as safety, while other aspects may be more open to application, such as comms. Over the long-term, guidelines will likely not offer the industry enough direction and will need to evolve into standards.

DER registry is a great way to make a start

49. A great way to start would be the DER registry as proposed by the EA.¹¹ Having full visibility over where DER is located on our network would be of assistance to us. A registry would also help us engage with consumers to establish what guidelines would be of the most value to them. Giving us, as an industry, a way to target our efforts and resources.

Standards will eventually need to replace the guidelines

50. Guidelines are not a long-term solution as guidelines provide the 'what' but not the 'how.' The role that DER will play in New Zealand's decarbonised future will eventually necessitate the standardisation of the how.
51. The decision point at which guidelines are replaced with standards is a question of adequacy. The trigger for change will depend on the extent to which the how starts to drive the solution. As an industry, we will need to carefully monitor this trigger point and front foot the opening of discussion for change.
52. Equally important will be creating a process for continuous improvement for the standards. Best practice standards must continuously improve. Too often, standards are set and then not methodically tested to confirm that the standard remains the best way to do things or just the way things are done. DER will adapt and evolve quickly, and the standards must keep pace or risk becoming part of the problem and not the solution.

Industry standards are a medium impact medium effort

53. As a rule, standards are applied after default practices have been established by the market. The establishment of standards tends to support the sustainability of an existing market rather than creating one. Accordingly, we believe that establishing standards, while beneficial, will have a medium impact at best.
54. While Standards will take time and resources to establish, there is a well-established process by which standards are drafted, consulted on, implemented, and executed. As such, we believe the effort needed is medium.

¹⁰ The EA's Consultation Paper, paragraph 5.52 on page 41.

¹¹ The EA's Consultation Paper, paragraph 5.57 on page 41.

55. We would urge the EA to make supporting industry to determine guidelines a priority, but not to make standards one of its high priorities. We believe that other higher priority solutions need the EA's attention, currently than standards.

Make it easy to work with us

56. We aspire to make it easy to work with us by living up to our expectations as industry leaders.
57. We put the customer at the centre of everything that we do. As we are community-owned, this is easier for us to do than it would be for other businesses. One of the most important ways we can be the leaders our community wants us to be is to be present for DER customers in the capacity that they need us to be.

The EA has misidentified the problem and therefore is not proposing the best solution

58. In its Consultation Paper, the EA infers that EDBs are not adequately incentivised to invest in flexibility services on their networks or grant access to third-party flexibility services. The EA defines the problem as two-fold:
- distributors may favour network solutions when non-network solutions could be a more efficient option; and
 - If distributors decide to invest in DER, they may be more likely to favour in-house investment or use subsidiary firms rather than follow a competitive procurement process.¹²
59. It appears that the EA may have come to this conclusion by having incorrectly defined the problem as distributors actively creating barriers to entry for DER. We believe that the barriers to entry for DER is a wider market structure issue than distributors not yet having the evidence that coordinated DER delivered through contestable framework can provide network reliability or serve as an alternative network investment¹³.
60. Non-network solutions form part of all EDBs asset management plans (AMPs) under the Information Disclosure Determination¹⁴. Specifically, the determination requires EDBs to provide a detailed description of their network development plans, including—
- Analysis of the significant network-level development options identified, and details of the decisions made to satisfy and meet target levels of service, including—the alternative options considered for projects that are planned to start in the next five years and the potential for non-network solutions described¹⁵—found at section 4.3.5, Options for meeting to managing demand, of our 2021-2031 AMP.
 - A description and identification of the network development program, including distributed generation and non-network solutions and actions to be taken, including associated expenditure projections¹⁶—found in section 4.3, Development policies, standards, and methods, of our 2021-2031 AMP.

¹² The EA's Consultation Paper, paragraph 6.4 on page 44.

¹³ The EA's Consultation Paper, paragraph 6.5 on page 44.

¹⁴ Commerce Commission, Electricity Distribution Information Disclosure Determination 2012, 3 April 2018 (the Information Disclosure Determination).

¹⁵ The Information disclosure Determination clause 11.9.2.

¹⁶ The Information disclosure Determination clause 11.10.

- A description of the EDB's policies on non-network solutions including—
 - economically feasible and practical alternatives to conventional network augmentation. These are typically approaches that would reduce network demand and improve asset utilisation; and
 - the potential for non-network solutions to address network problems or constraints¹⁷
 —found in section 4.3.5, Options for meeting to managing demand, and section 4.5, Innovation, and emerging technologies, of our 2021-2031 AMP.
61. Further related party transaction rules in the Input Methodologies¹⁸ require that EDBs demonstrate arm's-length transactions, which strongly encourage competitive tenders where there is a competitive market to support at least three viable tenders.
62. Accordingly, it is not a lack of 'incentives' on EDBs causing the lack of flexibility traders to enter the market and booster competition. Rather, the problem is with the market structure. Flexibility traders cannot compete on an even playing field with the gentailers and are being discouraged from market entry.
63. In its *International Energy Agency, Energy Policies of IEA Countries, New Zealand 2017 Review* (the IEA New Zealand 2017 Review),¹⁹ the IEA made several observations about New Zealand market design. Including that generator's sell bilateral financial hedges or over-the-counter contracts for difference (OTC CFD) to other generators or retailers. Market liquidity was generally poor as generators were only inclined to sell sufficient hedge products to cover the generation portfolio of their firms.²⁰
64. The New Zealand financial markets are dominated by five generators Meridian, Genesis, Mercury, Contact, and Trustpower. These five generators are also energy retailers and, as such, referred to as gentailers. There is little or no incentives on gentailers to offer financial hedges to flexibility traders as they offer services that are in direct competition with them. The IEA report observed that—
- "The government has the aim to stimulate competitive new entry of non-physical financial market participants to reduce reliance on physical wholesale markets to supply forms of hedging products. However, it does not yet seem to function in an optimal manner. The current financial market is relatively new and still lacks liquidity and depth. It does not create sufficient incentives that are needed to support efficient and cost-effective risk management by retailers to sustain competitive, new independent retail entrants."²¹
- The IEA goes on to state that—
- "Under the current spot market arrangements, the risk management of the gentailers (physical hedging strategy) is driven by the ownership and the vertically integrated structure rather than the seasonal price fluctuations during a dry year; the high prices in the spot market benefit the generation business at the expense of the retail segment; when spot prices are low, the loss or profits on the generation side is offset by increased profits in the retail arm."²²

¹⁷ The Information disclosure Determination clause 11.12.

¹⁸ Commerce Commission, Electricity Distribution Services Input Methodologies Determination 2012, 20 May 2020 (the Input Methodologies).

¹⁹ A copy of the IEA New Zealand 2017 Review can be found on its website at [Energy Policies of IEA Countries: New Zealand 2017 Review – Analysis - IEA](#)

²⁰ The IEA 2017 Report on page 71.

²¹ The IEA 2017 Report on page 72.

²² Supra n21.

65. One role of DER's in New Zealand's decarbonised future is in the generation market, whereby flexibility traders will bid into the market to supply energy. Nodal spot prices may result in material price fluctuations representing a significant financial risk for flexibility traders. Mitigating that financial risk is a barrier to entry for all but the largest of flexibility traders. Only these large players will be positioned to enter financial hedges or futures contracts. Medium and smaller flexibility traders are likely to weather the risk or enter the market some other way, perhaps in the instantaneous reserves market.
66. However, the IEA identified other market issues in its report including:
- Nodal prices are affected by the price of the instantaneous reserve, which is the trade-off between the cost of energy and instantaneous reserves arising from the co-optimisation of energy and the instantaneous reserve market.²³
 - The spot market is uncapped Prices are uncapped—except for scarcity events when the price is capped at between \$10,000 and \$20,000/MWh.²⁴
 - New Zealand has no capacity market or capacity payments; instead, a half-hour instantaneous reserve market operates alongside the energy market. Energy and instantaneous reserve prices and volumes are determined at the exit points and nodal pricing.²⁵
- Making both the problem and the solution multifaceted.
67. We are not bringing the IEA's observations to the EA to claim 'it is not us; it is them' as we must operate as an industry and not defend our positions within the supply chain. Rather, we bring this evidence to the EA to evidence that it has misidentified the problem and is therefore not proposing the best solution.
68. We urge the EA to reconsider the problem and solution with a whole market approach. Then we can reconsider the role that we need to play to deliver that solution.

Making it easy to work with us is low effort, high impact

69. As discussed above, becoming customer-facing will be easier for some EDBs and harder for others. Over the long term, we must have systems in place that meet DER customer's needs. Our people need to understand DER, our process needs to support transparent, and our technology needs to support effective outcomes. Developing long-term systems require us to have a principle of equal access to our network.
70. Support from the EA to achieve our system change goals would go a long way. Correctly defining the problem and therefore identifying the solution is paramount to achieving this. Accordingly, we encourage the EA to reconsider its problem definition in Chapter 6 of its Consultation Paper.

Have least cost operating arrangements

71. We aspire to have the least cost operating arrangements that encourage efficient investment from all customers connected to our network, including flexibility services.
72. Having least cost operating arrangements will support the connection of DER to our network and strengthen our relationship with flexibility traders. .

²³ The IEA 2017 Report on page 69.

²⁴ The IEA 2017 Report on page 70.

²⁵ The IEA 2017 Report pages 68 and 96.

Default agreements are an unworkable solution

73. We do not agree with the EA's statement in its Consultation Paper that—
- "The cost of developing and negotiating contracts for flexibility services is high for both flexibility traders and distributors. Distributors also have a stronger negotiating position as a natural monopoly, which could deter flexibility traders from entering the market and reduce competition."²⁶
- The statement appears to be a hangover from the EA's justification of setting the DDA; and has no place in a discussion about the future.
74. We agree with the EA that negotiating agreements should not be cost excessive or perceived as a barrier to entry.²⁷ Flexibility services are common in many jurisdictions, including the United Kingdom, and copies of agreements are readily available on the distributor's websites.²⁸
75. We could use the existing agreements of our peers as the basis for creating principle-based guidance that both EDBs and flexibility traders can choose to use, as and when needed, as the maturity of the parties is likely to dictate the usefulness of the guidance.
76. Flexibility services will change and adapt as technology and the market evolves. The risk of setting a predetermined mandated agreement is that rather than supporting flexibility services and its uptake, it will inhibit and detract entrants into the New Zealand energy market.

Least cost operational arrangements are low impact, low effort

77. Negotiating and entering into operating agreements with flexibility traders is not the reason for the small number of flexibility traders in New Zealand. As discussed above on page 11, wider market structural issues have created barriers that must be addressed at some time by the EA. Accordingly, while a least-cost operational arrangement will support flexibility traders, an agreement is of low impact.
78. The DDA created a level of animosity in the energy market that was less than helpful to any stakeholder and added no value to consumers. An industry approach in good faith would result in a consistent and useable operational arrangement. Using existing agreements as a base and harnessing existing industry knowledge and skills would make setting operational agreements low effort.

Continue to build on our capabilities and capacity

79. We aspire to continue to build on our capabilities and capacity by delivering electricity distribution services to our fullest ability.
80. Over the short term, we intend to:
- consider avenues of communication with flexibility traders to scope what forms effective and appropriate control might take
 - scope demand response participation to ensure that consumers have the quality of service and security of supply that they expect
 - continue to participate in the existing industry working groups and advocate more industry collaboration.

²⁶ The EA's Consultation Paper, paragraph 7.1 on page 55.

²⁷ The EA's Consultation Paper, paragraph 7.3 on page 55.

²⁸ For example, SP Energy Networks, in Scotland has a copy of its standard Flexibility Services Agreement on its website at [Draft Flexibility Services Agreement \(spenergynetworks.co.uk\)](https://www.spenergynetworks.co.uk/Draft-Flexibility-Services-Agreement)

81. Over the long term, we aspire to:
- make available on our website a constraint dashboard and other information useful to flexibility traders and other interested persons
 - work with our peers to embed systems that support future technologies on our networks, such as systems automation and better risk management of cyber threats
 - collaborate more with our peers to take advantage of synergies, including entering contracts and joint ventures where it is appropriate.

We have already taken an important first step

82. This month we completed an important first step to building on our capabilities and capacity by taking delivery of Huringa Pungao, Energy Transformation Roadmap, Interim Report on 15 September. The Interim Report, by Energia in conjunction with Electra's staff, introduces the context and analysis that supports our energy transformation roadmap.
83. The primary objectives of the roadmap are to:
- ensure Electra has the network capability to allow consumers to connect and increase their use of electricity to replace fossil fuels
 - ensure Electra can connect and integrate DER to the network and allow the owners of DERs to participate in energy markets
 - guide the development of our network to integrate DERs and support bidirectional power flow, which includes having appropriate hosting capacity to cater for growth in DERs
 - guide the development of the systems and processes required to support open access to the distribution network for a wide range of consumers and DERs.
84. By pursuing the roadmap for the long-term benefit of consumers we should:
- deliver a reduction in the cost to serve and hence the price consumers pay; and
 - achieve the objectives and drive costs down from the worst-case uncontrolled scenario towards the controlled scenario.
85. The intent of the roadmap is to define a range of strategies that we can follow to achieve our objective at the lowest cost to serve. The roadmap is our starting point for Electra's transformation work. Further detailed modelling will be undertaken over the next 12-24 months. With the roadmap evolving along the direction layout by the Interim Report as technology and consumer expectations evolves.

Bigger is not necessarily better

86. The EA's solution to building EDBs' capabilities and capacity is disappointing and not aspirational. In its Consultation Paper, the EA make the statement—

"Having 29 distributors is not necessarily the most efficient way to structure the distribution sector in New Zealand. This potential inefficiency may be pronounced as distributors have to adjust to network transformation due to the complexities of integrating DER and the electrification of the economy. An inability for some distributors to adjust may lead to not all consumers benefiting from the changes in technology and innovation happening on distribution networks.²⁹"

²⁹ The EA's Consultation Paper, paragraph 8.1 on page 58.

87. The EA's push for further rationalisation of distribution companies is a solution looking for a problem. It is repeating an old theme that stops us from looking forward by keeping us firmly in the past.
88. The 2018 Electricity Price Review considered the option of requiring small distributors to amalgamate³⁰. At *E8: Require small distributors to amalgamate* the advisory panel surmised that—
- "New legislation would compel small distributors to merge to cut costs and lower prices for consumers...Our first report suggested the relatively small scale of some distributors could be pushing up operating costs, which consumers ultimately pay for."
- The advisory panel, however, did not favour legislatively imposed amalgamations as—
- "We consider legislatively imposed amalgamations would be heavy-handed and would trample on existing property rights."³¹
89. Given that the Electricity Price Review considered amalgamations in some detail and then dismissed that as a viable option, we can have confidence that amalgamations are not the solution that New Zealand is looking for.

What matters is continuing to work together

90. The Electricity Review did put forward an aspirational solution that we would encourage the EA to consider in the place of continuing its focus on amalgamations—
- "...we encourage more contracting and joint ventures between distributors, as well as greater collaboration more generally between them..."³²
91. As an industry, there already is a high level of collaboration simply because we are natural monopolies and do not need to protect our market position. Accordingly, we share resources, lessons learned from trials, and pilot projects and participate in the legal industry working groups, e.g., IPAG and informal, e.g., round tables. All 29 EDBs are members of the Electricity Networks Association not because we must be but because we choose to be.
92. EDBs are quiet achievers. Most of us do not have communications or marketing resources and do not actively tout our successes. The lack of visibility of collaboration has done us a disservice. It has resulted in stakeholders, such as the EA, mistakenly believing that we operate in silos and are unprepared to lead New Zealand's decarbonised future.
93. The EA's concern that—
- "It is possible that some distributors do not have the capability and infrastructure to integrate increased volumes of DER as well as manage the increased load from the electrification of transport and process heat."³³
- is the same concern for regulators in many other jurisdictions as they take their decarbonisation journeys.
94. However, the EA's solution of further regulation will not support us to deliver New Zealand's decarbonised future. There are other more effective and appropriate solutions that we should consider. Including, removing any undue regulatory uncertainty or barriers to timely and prudent investment in "smart grid" and related network control infrastructure.

³⁰ Electricity Price Review, Hīkohiko Te Uira, Options Paper for discussion, 18 February 2019.

³¹ Supra n30 on page 27.

³² Ibid n31

³³ The EA's Consultation Paper, paragraph 8.3 on page 58.

The IEA report made aspirational recommendations that the EA should consider

95. In its IEA New Zealand 2017 Review, the IEA listed several recommendations following its special focus on electricity distribution development. Including the recommendation referenced in the EA's Consultation Paper—
- "Extend the price-quality regulation to all distributors where it is cost-effective to do so, which would be facilitated through regional integration, starting with enforcement or reliability standards."³⁴
96. However, the 2018 Electricity Price Review has already considered the above recommendations and several of the IEA's other recommendations and as such these can be considered as addressed or as being addressed. Including options that have already been addressed or are being addressed is superfluous and unhelpful.
97. We believe two IEA recommendations that could be considered aspirational and should be considered further by the EA, include:
- removing any undue regulatory uncertainty or barriers to timely and prudent investment in "smart grid" and related control infrastructure; and
 - further developing incentives for the procurement of demand response, energy efficiency services, distributed generation, and other local network management resources, where it is prudent and cost-effective to do so and where it may serve to accelerate the development of an efficient and innovative retail sector.³⁵
98. What are the 'undue regulatory uncertainties or barriers' and what should the 'incentives for the procurement of demand response, energy efficiency services,' etc., look like is the matter for consultation with the electricity industry and its many stakeholders. We urge the EA's role to facilitate the discussion and support the electricity industry to deliver on New Zealand's decarbonisation goals.

Building our capabilities and capacity is high impact and high effort

99. The building on our capabilities and capacity will deliver New Zealand its low carbon future and, as such, is high impact. We understand that building on our capabilities and capacity will take commitment, making it a high effort.
100. At Electra, we have committed to making that effort and delivering consumers the services they want at a price they are willing to pay.

Evolve future prices

101. We aspire to continue evolving our future prices so that customers pay no more than their fair share of the costs to serve.
102. Our pricing is evolving to support New Zealand's goal of being carbon neutral including, providing pricing plans for export charging and electric vehicle tariffs. Our Time of Use (ToU) pricing is intended to encourage customers to shift load to times where we have greater capacity through the incentive of a lower consumption price. Smoothing load helps us to avoid unnecessary distribution network construction.
103. Separating pricing from a discussion about future networks is easier said than done. Electrification is being touted as the foundation of New Zealand's low carbon future. Accordingly, the price of electricity distribution services cannot be simply segmented

³⁴ The EA's Consultation Paper, paragraph 8.23 on page 61.

³⁵ The IEA 2017 Report on page 162.

and removed from the discussion. Fundamental to any proposed system change is how much will it cost and who will pay for it?

Why are there different prices for commercial and residential consumers?

104. In its Consultation Paper, the EA observed that—

"...distribution pricing to commercial customers, particularly large ones, is generally more efficient, reflecting the bargaining power and options available to those customers. But that still leaves a significant portion, mass-market/residential consumers, for whom prices may not yet be efficient."³⁶

105. We agree with the EA that prices for our commercial customers tend to be more efficient than prices paid by mass-market/residential consumers. There are four reasons for this:

- i) lack of information at the consumer level,
- ii) price inelasticity by mass-market/residential consumers
- iii) the inherent trade-off between efficiency and fairness, and
- iv) re-bundling of EDB pricing options by some retailers mask any efficient signals.

106. We, like many of our peers, have been evolving our pricing over several years. The difficulties we face when evolving our prices are legacy and enduring issues that will take a long-term view to solve.

107. The first difficulty is information at the consumer level. We have very good visibility of our HV network, and commercial customers tend to be connected to the HV network. As discussed from page 3 above, we aspire to improve the visibility of our LV network, which will give us the information layer needed to continue to evolve our prices.

108. The second difficulty is the price inelasticity by mass-markets/residential consumers. Commercial customers tend to be more price elastic and, therefore, responsive to pricing signals. Traders offer residential customers 'smooth pay' or an 'all you can eat tariff' which all but remove pricing signals. Similar tariffs are rarely offered to commercial customers.

109. The third difficulty that we face is the inherent trade-off between what is efficient and what is fair. We aspire to have future prices whereby customers pay their fair share of the costs to serve them. We accept that our aspirations are unlikely to result in prices that are as efficient as the EA wants. However, as a community-owned business, we cannot, in good faith, implement prices that grossly disadvantage the most vulnerable in our community.

Decarbonisation must not result in winners vs losers

110. Decarbonisation is a journey that we are all going to take together, and as such, we cannot separate the discussion around pricing from the wider discussion around decarbonisation. Decarbonisation will end up with the:

- 'winners' — those that can take advantage of technology through less energy-intensive appliances, more energy-efficient housing, PV, and batteries and reduce their costs to serve; and
- 'losers' — those who cannot update, upgrade, or access alternative energy supply and carry the burden of their costs to serve and the avoided costs of the winners.

³⁶ The EA's Consultation Paper, paragraph 9.5 on page 63.

111. Socio-economic equity would say that it makes sense to divert some of the gains from the winners to compensate the losers, at least in the short to medium term, as we all take the decarbonisation journey. But such a move would be a form of cross-subsidisation that will result in less efficient prices had the losers simply been left to deal with the position they find themselves in.
112. It is estimated that 20% of residential consumers in New Zealand struggle to pay for the very basics, including electricity. This means there is a high potential for a significant number of losers, at least in the short term, as New Zealand takes its decarbonisation journey. That is not a reason not to take the journey. However, it is a reason to question if efficient pricing will help or hinder New Zealand's decarbonisation journey. A discussion that the EA has unfortunately chosen not to engage with in its Consultation Paper.

Pricing is low impact, high effort

113. Mass market/residential consumers are price inelastic, combined with smooth pay and all-you-can-eat offering many consumers will never see the true prices they pay for our services. As such, pricing changes have a low impact.
114. Changing our pricing to become cost reflective as defined by the EA is a high effort. It will require a more comprehensive data, complex pricing structures, and sophisticated billing systems. All these factors make pricing a high-effort solution.
115. Pricing is low impact, and high effort, which is not to say that pricing should not evolve. Pricing must evolve as legacy structures do not necessarily represent our current cost structures and will not represent future cost structures. We will continue to evolve our future pricing but only to the extent that customers pay not more than their fair share of the costs to serve.

Closing comments

116. New Zealand is looking to the electricity industry to lead its decarbonisation actions to support a low carbon future. At Electra, we believe that EDBs are well positioned to take the lead and deliver what is being asked of us as an industry. However, to do so, we must look forward and not continue to have our focused turned backward. If we are to successfully deliver long-term benefits, we cannot get distracted by short-term superficial solutions.
117. We urge the EA to reconsider several of its problem definitions and proposed solutions and look to be more aspirational and supportive as the sector leads New Zealand on its decarbonisation journey.
118. The primary contact for this submission is—

Dylan Andrews
General Manager — Lines Business
dylan.andrews@electra.co.nz

Appendix A — Submission in the EA's preferred format

Submitter	Electra Limited
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Question	Comment
Q.1 Have you experienced issues relating to a lack of information or uneven access to information?	<p>Yes, lack of data to create a meaningful information layer is a big issue that continues to be a problem. For example, the ENA Network Transformational Roadmap has a dependence on visibility to LV information, consumption etc. which is essential for all lines companies to understand the impact on the customer and the impact on the distribution network. Most lines companies do not have visibility to their LV networks because they don't have access to metering data beyond their HV network.</p> <p>A divide between the haves and the have not's, i.e., who has installed smart meters on their networks and those who have not has slowly emerged between lines companies. Those that have installed smart meters on their networks are using the meters to great effect. For example, Counties Power, using their own smart meter data to resolve outages quickly and safely while keeping customers up to date, a project that won it the Network Initiative of the Year at the 2019 Deloitte Energy Awards. Those EDBs that have not installed smart metering at their LV network and rely on data from smart metering through third parties, e.g., MEPs remain basically blind at the LV network level.</p> <p>The decision of the EA not to include data exchange in the DDA was a lost opportunity. The EA's decision enables delaying the sharing of end customer information indefinitely. Further inhibiting our ability to release timely information on constraints with customers. We appreciate the commercial sensitivity of the customer relationship with the retailer and Electra will accept anonymised data by connection to transformer if that provides a pathway for retailers to agree to freeing up customer data.</p> <p>We are interested in the engineering information, real time operational information, and making efficiency gains, e.g., power on/off rather than the personal details of each individual customer. Accordingly, if compromise can get us some traction on this stagnating we will accept anonymised data. Anonymised data can gain some efficiencies and is better than nothing.</p>

Question	Comment
<p>Q.2 What information do you need to make more informed investment and operation decisions?</p>	<p>We would like to have easier, more efficient access to the data that is currently captured by smart meters, e.g., consumption, demand, power quality, voltage, current, and Meter Ping. Over time as new data is captured we would like data on DER, and specifically EVs chargers.</p> <p>Consumption and demand data is key from a network planning perspective. As discussed at Q1 above we are willing to compromise and receive anonymised data. However, we accept that anonymising data on some parts of our network may be difficult due to the low numbers of customers on a transformer. Accordingly, we will accept that despite the network benefits we will not have access data where anonymisation is of greater value to the customer than the network benefit.</p> <p>We also to acknowledge that not all data is needed in real-time or high frequency we see this as a benefit is achieving short-term wins</p>
<p>Q.3 What options do you think should be considered to help improve access to information?</p>	<p>As discussed at paragraph 36 above we believe that the EA can improve access to information by supporting an industry-wide in-principle agreement that data will be shared at no more than the incremental cost of providing it. Current data sharing arrangements are cost prohibitive as data sharing is tied up in complex contracts between MEPs and their principal customers, the retailers. Accordingly, we cannot readily access this existing data without entering equally complex contracts.</p> <p>We support the EA's proposal to create a register of all DER, which includes solar and battery along with EVs and smart charging infrastructure last The registry should include all the attributes which have not yet been defined provided to the distributor through the Part 6 application process. The EA might also consider a register of EV chargers that would include information including, charger type, charger make and manufacture, interruptible capability, etc. Both registers could be achieved by extending the Registry. The Registry appears to be the natural 'holding tank' for essential engineering and participant data.</p> <p>Reinforce standards and obligations of information exchange. We need, as an industry, to adopt a set of accessing protocols, such as APIs or web calls, that are published by all of those in the industry and callable. All this needs to be done at the same time as maintaining privacy and giving Individuals should be able customers access to their own information, as well as the ability to easily grant third parties access to their data.</p>

Question	Comment
Q.4 Have networks experienced issues from the connection or operation of DER?	<p>The connection and operation of DER has not created operational issues on our network. We had a singular occurrence of voltage drops from a large solar connection when it was first connected. To manage the event, we curtailed their injection while we worked with them to support the injection of energy onto our network.</p> <p>Besides the mitigation of demand management issues that may arise we believe that DER will provide opportunities and positively contribute to system reliability, customer satisfaction, and market-related economic benefits. Widespread or systematic failures on our network are not expected to arise from the connection or operation of DER. We are supported by specialist resources and our active participation with industry groups allows us to dispatch the relevant DERs to deliver optimal value.</p>
Q.5 Do the Electrical (Safety) Regulations require review? If so, what changes do you think are needed (a) in the near term and (b) in the longer term?	As we understand it the MBIE are undertaking a review of the Electrical (Safety) Regulations. ENA members have submitted as has the Electricity Engineers' Association (EEA). Accordingly, we defer to these submissions and to MBIE review rather than risk derailing any work undertaken by MBIE to date.
Q.6 Does Part 6 remain fit for purpose? If not, what changes do you think are needed (a) in the near term and (b) in the longer term?	We support the ENA's position that Part 6 needs a full review.
Q.7 Is there a case to be made for minimum mandatory equipment standards for DER equipment, specifically inverter connected DER?	Yes, standards are essential to ensure that DER is supported and effective. However, the standards must be introduced with forethought and flexibility to adapt to technological change easily. As discussed at paragraph 44 above the risk of introducing standards too quickly is that rather than supporting DER, it will create an unintended barrier to entry. It would also be easy to overlook inter dependencies such as communication which will require standards that support protocols and provide customer incentives.

Question	Comment
Q.8 What standards should be considered to help address reliability and connectivity issues?	<p>Currently, there are voluntary standards, but it would be good to have a standard like AS/NZ PAS6011. Future appliances and how they would be made ready to incorporate demand management, i.e., controls and standards to cover specifics around the operation of batteries and EV chargers.</p> <p>Inverter standards could be amended to included power quality response modes, e.g., AS/NZS 4777.</p>
Q.9 Is there a case to look at connection and operation standards under Part 6 with a view to mandating aspects of these standards?	<p>Operation standards for DER are not clear. A review of Part 6 would be likely to address this issue.</p>
Q.10 What flexibility services are you pursuing?	<p>Over the short term we intend to continue using ripple control, which is essential to manage our constraints at peaks. Over the long term we will look to utilise DER, EV chargers, and small-scale battery discharge as part of our demand management as that load comes available to us.</p>
Q.11 Are flexibility services being pursued through a competitive process?	<p>No, not yet. Competitive process will come as the market scale sup and opportunities open.</p>
Q.12 What options should be considered to incentivise non-network solutions?	<p>EDBs are currently incentivised to explore the full range of solutions to meet energy demands through their AMPs. A quick read through EDBs AMPs will evidence a multitude of non-network solutions being strategized, implemented, and executed by EDBs.</p> <p>There is a role for regulators to remove, or at least reduce, the first mover disadvantage inherent with investment in non-network solutions. Regulators appear to have forgotten that it can be effective and appropriate to invest early at higher cost with the expectation that the relative costs of solutions will reduce over time.</p>
Q.13 What options would encourage competitive procurement processes for flexibility services?	<p>We will need to wait for the flexibility service market in our areas to scale up so that there are opportunities to procure the services. Competitive tenders require at least three service providers within the market. Currently there are not the market players for us to have a competitive tender process with.</p>

Question	Comment
Q.14 Have you experienced difficulties with negotiating operating agreements for flexibility services?	No, when approached we have found the contracting process relatively straightforward.
Q.15 Are the transaction costs of developing contracts a barrier to entering the market for flexibility services?	No, contracting is relatively straightforward and simple. We currently have a contract in place, and it appears to work well given the rate of uptake and lack of amendments or conflict during or after the contracting process.
Q.16 Would an operating agreement help lower transaction costs and level negotiation positions?	<p>Having a least cost operating arrangement is one of our aspirations. Repeating the process undertaken to develop the DDA is not a workable solution. The DDA process derailed work that we had already undertaken and added unnecessary costs for both us and retailers.</p> <p>Given the immaturity of the New Zealand flexibility services market we could look to our peers internationally for guidance.</p>
Q.17 What kind of operating agreement would address the issues described in this chapter?	Principle based approach could provide direction without locking parties into arrangements that can quickly become redundant and unworkable for both parties.
Q.18 What are distributors doing to ensure their network can efficiently and effectively manage the transformation of networks?	<p>We have created a network planning strategy “Electra's Huringa Pungao - Energy Transformation” that considers the impact of increased electrification predicted in Climate Change Commission report and latest Transpower Whakamana i Te Mauri Hiko report. Electra's strategy considers the regional impact of DER that includes electric vehicles, grid and customer solar and the displacement of gas. Investment and cost implications are included with a 20-year horizon. The predictions will inform the 2022 Asset Management Plan, 2022 Pricing Methodology and wider Electra Group Strategy. The key insights to date are</p> <ol style="list-style-type: none"> 1. Need to access LV information from smart meters 2. Significant impact of electric vehicles on predicted demand and consumption 3. Essential for the Electra to manage (control) existing and future loads on the network 4. Need to develop systems, people and data streams to meet future requirements

Question	Comment
	<p>We are also an active member of the EA’s Open Network group that identifies ways for the uptake of new technology on distribution networks. We consider there to be three options for meeting or managing demand.</p> <ol style="list-style-type: none"> 1. Do Nothing—where one or more parameters exceed a trigger point, the “do nothing” option may be a “do nothing yet but watch more frequently”, i.e., an appropriate deferral option. Essentially, “do nothing” is acceptable only when Electra is confident that service levels can be maintained, and risks remain acceptable. 2. Non-network (low investment): <ol style="list-style-type: none"> (i) Operational activities—actions such as switching the distribution network to shift load from heavily loaded to lightly loaded feeders or winding up a tap changer to mitigate a voltage problem will be considered. The downside to this approach is that it may increase line losses, reduce security of supply, or compromise protection settings (ii) Influence consumers to alter their consumption patterns—this allows assets to perform at levels below the trigger points. Examples include shifting demand to different time periods, negotiating interruptible and other tariffs with certain consumers so that over loaded assets can be relieved, or assisting a consumer to adopt a substitute energy source to avoid new capacity (iii) Install distributed generation or batteries—this allows adjacent assets to perform at levels below the trigger point. Distributed generation may be particularly useful where additional network capacity would eventually be stranded or where primary energy is going to waste (e.g., waste steam from a process) (iv) Modify an asset—allowing the trigger point to move to a level that is not exceeded (e.g., by adding forced cooling). This approach is more suited to larger classes of assets such as 33/11kV transformers (v) Install voltage regulator—installing an 11kV voltage regulator may relieve voltage constraints, which defers or avoids the need for upgrading to 33kV

Question	Comment
	<p>(vi) Retrofitting high-technology devices—these can exploit the features of existing assets, including historically generous design margins (e.g., using remotely switched air-breaks to improve reliability or using advanced software to thermally re-rate heavily loaded lines). We expect the installation of smart meters will provide more accurate demand data including the duration of peak loads.</p> <p>3. Network solution—install new assets with a greater capacity. This will increase the asset trigger point to a level at which it is not exceeded (e.g., replacing a 200kVA distribution transformer with a 300kVA transformer so that the capacity trigger is not exceeded).</p> <p>Lines business are working with the ENA through the STWG (Smart Technology Working Group), a group of representative lines business to deliver network transformational roadmap, which Alan Miller Consulting recently reviewed.</p>
<p>Q.19 How are distributors currently working together to achieve better outcomes for consumers?</p>	<p>EDBs work together and with other organisations in the sector, both formally and informally to achieve better outcome for consumers.</p> <p>Examples of formal engagement include the advisory and technical groups that the EA facilitate, the ENA CEO forums and working groups. From these facilitated groups several industries led solutions have eventuated including:</p> <ul style="list-style-type: none"> - Powerline³⁷, a web-based portal intended to make it easier for customers to apply for over dimension consents. - development of the Design and Operating Standards by PowerCo which many EDBs have adopted, and - the EDB North Island and South Island CIO Forum; the EDB Risk Managers Forum and the CFO Forum. <p>Examples of informally working together includes the sharing of continuous improvement learnings, findings of pilots, system changes, and networking events such</p> <ul style="list-style-type: none"> - Downstream and the Deloitte Energy Awards

³⁷ More information about Powerline can be found on its website at <https://powerline.co.nz>

Question	Comment
	<ul style="list-style-type: none"> - EDB selection of common stores (equipment and materials) provider - Mutual Aid agreement between EDBs that ensure assistance is provided during major events, and - innovation sharing that includes PowerCo hosting of EDBs to show case of non-traditional solutions. <p>Our informal connections give us an inexhaustible network of industry experts that interact daily.</p> <p>It would be fair to say that EDBs frequently work together informally and as such qualifying and quantifying the outcomes is difficult as most are incremental small improvements that are made over time. For example, changes to customer service process and systems that go largely unnoticed except by those consumers accessing that service. Accordingly, it is difficult for stakeholders to observe and quantify improvements that are leading to better outcomes for consumers, thereby perpetuating the perception that EDBs operate in silos.</p> <p>A better question to have been asked by the EA here might have been, how can EDBs make their achievements of better outcomes for consumers more visible to stakeholders?</p>
<p>Q.20 Could more coordination between distribution improve the efficiency of distribution?</p>	<p>If implemented well, greater coordination between supply chain participants would result improved outcomes for the end customer and efficiency of electricity distribution. However, it would be wrong to assume that a single Distribution System Operator (DSO) would be the optimal way to achieve this.</p> <p>In Electra’s opinion each EDB continue to be ideally placed to understand the unique conditions, constraints, and activities on the network. It is most important to develop a framework and operating systems that support attainment of the best outcomes for the customer while maintaining security of supply.</p>