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2021 Draft Advice for Consultation

Submission to the Climate Change Commission

From the Electricity Networks Association

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1. Introduction

The Electricity Networks Association (ENA) is the industry membership body that represents the 27 electricity distribution businesses (EDBs, sometimes called lines companies) that take power from the national grid and deliver it to homes and businesses.

The ENA harnesses the collective expertise of members to promote safe, reliable and affordable power for our members' customers.

ENA's primary role is to guide development of policy for the electricity distribution sector, to engage with government agencies on the sector's behalf and to co-ordinate communications and other activities on behalf of our members. In carrying out its tasks, ENA carries out extensive and independently facilitated consumer and stakeholder engagement.

2. Overview

The ENA appreciates the opportunity to make a submission to the Climate Change Commission on its draft advice to government. We broadly support the commission's proposed approach to achieving net-zero emissions New Zealand by 2050.

Based on feedback from agencies carrying out high-profile consultations, ENA hasn't commented on the entire 188 pages of draft advice and 24 consultation questions, instead keeping its submission focussed on subjects of direct relevance to electricity distribution and therefore ENA members.

While we held back from commenting on draft advice outside our immediate remit – such as agriculture, forestry, and waste gases - we have responded to consultation question one about principles, question 15 concerning the heat, industry and power sectors, and question 19 regarding the multisector strategy.

The distribution sector recognises the criticality of its networks in achieving the government's decarbonisation objectives and stands ready to support New Zealand as it undertakes a significant transformation in energy use.

3. Question 1 - Principles to guide our advice

ENA broadly agrees with the commission's seven principles but offers constructive comment on two of them.

One of the key messages in principle one is that, to align with 2050 targets, New Zealand must take a long-term view of infrastructure development and that "assets and investments with long lifetimes will need to be transformed".

As electrification is a key part of the transition strategy, it is essential that the commission understands that greater amounts of low-emission electricity generation and increased loads will require significant

investment in transmission and distribution assets. This investment is not limited to “poles and wires”. Capital will also be channelled to management systems required to control networks becoming more complex due to two-way flows, significant new loads, battery storage, battery-to-grid, and distributed generation.

Meanwhile, we cannot overemphasise the extent to which consumers are demanding greater reliability and resilience from their electricity supply. This will only be compounded as a direct consequence of energy concentration – a shift by many consumers from using a range of energy sources (such as petrol and gas in addition to electricity) to one source, electricity. Due to this reduction in energy diversity, outages will impact a wider range of necessities – including driving and heating, and therefore consumers will expect greater resilience and reliability.

Greater demand, and higher expectations that the power will stay on, puts significant upward pressure on network capital expenditure and operating costs. This reality should be recognised explicitly by the commission but, at the principle level, it does not appear to have been addressed.

While speaking of avoiding unnecessary cost, principle four downplays the likelihood that network companies will require more revenue to invest in new or upgraded assets and management systems, acquire new IT and data management skills, and bolster spending on asset management.

We note the principle to “avoid unnecessary cost” – and we support an investment approach which results in the least cost to customers whilst supporting the commission’s pathway to decarbonisation. Under the commission’s pathway, delivering long term reliability, efficiently, will require the right type and level of investment to be made at the right time by EDBs. This requires investment for the future – rather than an incremental reduction in capex.

We encourage the commission to be clear and explicit about the fact that decarbonisation, and the transformation and enhanced reliability that it requires, could require further investment (and we acknowledge the commission’s recommendation for transmission and network upgrades which may be required). However, delivering electrification at least possible customer cost – and achieving the most efficient pathway in the long term – is also about the right type of investments, made at the right time.

ENA therefore recommends that the commission modify principle four to read: “The actions Aotearoa takes to meet emission budgets and targets **will require that critical investments are made at the right times**, but all unnecessary costs should be avoided”.

4. Question 15 - Do you support the package of recommendations and actions for the heat, industry and power sectors?

4.1. Confidence in Distributors as Enablers

ENA agrees with all the statements in “Necessary Action 5” but would like to comment further and add context to your action 5d: *“Assess whether electricity distributors are equipped, resourced and incentivised to innovate and support the adoption on their networks of new technologies, platforms and business models, including the successful integration of EVs”*.

EDBs are well aware of the challenges and opportunities that will arise from a rapid shift to a net-zero economy.

In particular, the impacts of mass adoption of new residential technologies that rely on the electricity distribution system, such as EV charging units, are something EDBs have been giving careful consideration to for some years and will continue to do in the future. We know, for example, the uptake of smart EV chargers and the ability of networks to coordinate and manage the integration of new distributed assets – including EVs and solar PV and battery systems – will be key to affordable electrification.

This is indicated by the experience of overseas jurisdictions – such as Australia – where there is high distributed solar uptake. But without networks having the visibility or ability to coordinate these assets, high solar uptake has led to reduced power quality. As well as learning from overseas jurisdictions, we are consulting across New Zealand to proactively develop our understanding of future sector needs, including those around enabling decarbonisation.

The most recent example of this consideration is the [ENA Network Transformation Roadmap](#), published by ENA in April 2019.

The roadmap represents a collective effort on the part of EDBs to assess the likely impacts on the electricity distribution system of a shift to a net-zero economy, and then develop a set of actions to help the sector respond to these impacts. We are therefore confident that EDBs are well prepared to meet these challenges.

The roadmap is modelled on work carried out by Energy Networks Australia, although other, similar international projects, were considered as templates. That there is a proliferation of international projects of this type demonstrates that the challenges of decarbonisation and electrification with respect to electricity distribution are not unique to New Zealand.

Many of the jurisdictions which New Zealand typically compares itself against are considering how best to transform their distribution networks to accommodate new loads and technologies, and New Zealand lines companies can and will take the best learnings from these and apply them in Aotearoa.

Expanding on the content of the roadmap, it assumed that, in all reasonably plausible future scenarios, New Zealand would take the action necessary to meet its international climate change commitments, and the consequent actions for the electricity distribution sector were designed to ensure that this could be achieved. To be blunt, there is no 'do nothing' option within the roadmap, which reflects the long-held understanding within the sector that the lines companies and their networks must be transformed to support decarbonisation of the wider economy.

ENA and its members are constantly reviewing and testing our assumptions regarding the needs of consumers to ensure we are responsive to any new developments. To that end, ENA is this year working with an expert consultant to revisit the roadmap and test whether its key assumptions (including those related to climate change) are still accurate and appropriate two years after publication. While this work is ongoing, early output indicates that the original roadmap assumptions were sound and remain relevant for the impacts that lines companies should expect from decarbonisation.

In addition to the review of the roadmap, ENA carried out over 50 face-to-face interviews in February and March 2021, mainly with EDBs, but also external stakeholders. The feedback is an input into a review of the ENA's forward work programme. These interviews overwhelmingly support the view that the sector is a key enabler of decarbonisation. This role is welcomed and seen as a significant opportunity but also a challenge that will require coordination, communication, and delivery for the long-term interests of consumers.

4.2. Regulatory Issues

The industry has concerns about the fitness of the regulatory system, which constrains the actions EDBs can take and the resources they can deploy to addressing the challenges of electrification at scale.

4.2.1. The Commerce Commission and Part 4 of the Commerce Act

ENA is of the view that the Part 4 regulatory regime in its current state is not sufficiently flexible or forward-looking to allow adequate resourcing of EDBs to respond to the impacts of a net-zero economy. As we noted above, delivering the most efficient and affordable transition to a low emission future will require the right level and type of investments to be made at the right time – that can efficiently manage new load on the network and ensure that the network continues to be resilient in the context of a changing climate. This focus on smart investment for long-term affordability and avoided cost is not aligned with the Commerce Commission's focus on incremental efficiency and minimising revenue.

Often the prudent investments EDBs need to make to prepare their networks for net-zero impacts are binary in nature – for example, significant investments in new network management software and

control systems. For investments such as these a “build as you go” approach is not viable. However, this fact is not adequately accommodated under the current regulatory regime.

ENA would also like to highlight that the Commerce Commission’s current mandate does not include a consideration of sustainability or climate change. In its briefing to the incoming Minister of Commerce and Consumer Affairs Digital Economy and Communications in November 2020¹ the Commission advised (point 65):

“We do not have a statutory mandate in our legislation to promote the Government’s climate change objectives, with the exception of an obligation to promote incentives for energy efficiency when regulating electricity lines businesses.”

4.2.2. The Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations

A further constraint on EDB efforts to encourage the adoption of new technologies and new business models to manage the effects of a net-zero transition (e.g. demand response) is the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004.

These regulations, while well-meaning when put in place, have had the effect of constraining how EDBs can set and offer lines tariffs for their services, which in turn makes it difficult for third parties to assess the true value of any demand response service they could offer to EDBs.

Repealing or significantly reforming these regulations would unlock the ability for EDBs (and, significantly, retailers) to innovate their lines tariff structures to better reflect the true costs of demand on their networks, which would then allow a third-party demand response market to develop.

ENA commissioned research from Concept Consulting² on the continued detrimental economic and environmental impact of the regulations, assuming they were not removed. The study found that (pg. 41):

- **Economic:** Cost of approx. \$1 billion to \$1.5 billion over 30 years;
- **Environmental:** Approx. 8 MtCO₂ higher emissions out to 2050.

These impacts stem mainly from frustrated EV uptake and continuation of fossil-fuel based home heating, Concept said.

4.2.3. Enabling modern standards

We would also like to bring to the commission’s attention the very slow pace at which key regulatory documents are updated to accommodate new or updated standards. Standards are the backbone of rapid commoditisation and adoption by consumers of any new technology for connection onto a

¹ https://comcom.govt.nz/_data/assets/pdf_file/0017/230390/2020-BIM-Minister-of-Commerce-and-Consumer-Affairs-Redacted-version-.pdf

² <https://www.ena.org.nz/resources/publications/document/818/>

common network where supply quality and reliability are to be maintained. It is therefore important that government and regulators are quick to recognise new and updated standards in regulatory settings. In particular, having the right standards in place to ensure smart EV charging will be critical to the affordable electrification of transport.

A good example of where regulators have not moved fast enough to update standards in regulatory settings is in the frequent requests from the electricity sector to the Electricity Authority to update the Electricity Industry Participation Code (the Code) to integrate the use of 'hosting capacity' as a means of allocating capacity on the low voltage networks to distributed generation (especially solar photovoltaics).

Despite widespread industry support dating from 2016, a collective industry effort to develop a common guide for the connection of solar power to networks, and a formal Code change request by the EEA in December 2016 on behalf of the industry, which was consulted on in October 2019, the authority appears to be no closer to actually amending the Code. This is creating barriers to EDBs in implementing the common guide, which will hinder the uptake of solar and lead to supply quality issues. In a future where the pace of technological innovation and adoption is only going to increase, still waiting after five years for a relatively minor and uncontroversial change to the Code is unacceptable.

A separate but related example is the continued reference within key pieces of legislation to outdated standards. The Electricity (Safety) Regulations 2010, regulation 60 (2)(f) still requires distributed generation installations to comply with AS 4777.1, published in 2005.

This is despite AS 4777.1, .2 and .3 having been updated and superseded multiple times, and many requests from the sector to MBIE to update the regulations' reference to the more modern standard. As far as we are aware, there is currently no programme in place to update the Electricity (Safety) Regulations. We note that the solar industry has developed exponentially since the AS 4777.1 standard was published in 2005. In that time solar technology has progressed to the point where it is now able to provide advanced support to electricity distribution networks to assist in preventing congestion. However, it is not possible to take full advantage of these features without legally being able to require the new AS/NZS 4777 standard.

In summary, we encourage the Government, in considering the Climate Change Commission's 'necessary action 5d', to assess not only the capability of EDBs to respond to the challenges of a net-zero economy, but more importantly whether or not the regulatory arrangements that govern the sector are adequate as well. This should include an assessment of:

- Part 4 of the Commerce Act 1986
- The Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004
- Part 3 of the Electricity Industry Act 2010 – currently these restrict the amount of generation a lines company may own and have connected to their network. This significantly inhibits the ability of lines companies to adopt new and innovative approaches to managing network constraints, such as adoption of grid-scale batteries.

- Electricity (Hazard from Trees) Regulations 2003 – currently not fit for purpose, the regulations need a substantial overhaul to meet consumer expectations of enhanced reliability of electricity networks.

4.3. National Energy Strategy

We support the commission’s recommendation, under ‘time-critical necessary action 3’, that the government develop a long-term national energy strategy. Clarity, consistency and certainty of long-term policy direction will be critical for those sectors that are likely to make significant investments in long-lived infrastructure to support decarbonisation.

ENA recommends that the long-term strategy be a joint collaboration between industry and government, and that it is overseen by a sufficiently resourced entity that has a clear vision and purpose in the energy sector. There should be some urgency placed upon this action, as EDBs (and other utility sectors impacted by the zero-carbon transition) will increasingly be making decisions involving trade-offs between individual versus community benefits, and a clear strategic direction will help make these decisions in a way consistent with these wider societal objectives.

MBIE, a ‘super’ ministry of government with a broad list of responsibilities, is not the right vehicle for preparing the strategy.

5. Question 19 - Multisector strategy - Do you support the package of recommendations and actions to create a multisector strategy?

ENA supports the package of recommendations outlined in the multisector strategy. We would highlight the importance to EDBs (and other network utilities such as electricity and gas transmission, telecommunications, etc) of consistent and coherent planning decisions at local and regional level that take account of the importance of electricity distribution networks in achieving broader societal decarbonisation goals.

With the increasing dependency of communities and the economy on electricity distribution networks, there is likely to be a corresponding need to reinforce and expand these networks. A significant barrier to doing so in a timely and cost-effective way can be the planning process under the Resource Management Act. The current legislation hinders and creates uncertainty of outcome and risk rather than enabling the development of electricity infrastructure.

Consenting costs can be disproportionate to the scale of the project, especially when re-consenting existing infrastructure. The pending reform of the Resource Management Act provides an excellent opportunity for government to address the needs of critical infrastructure providers which span multiple local or regional planning boundaries, and to put in place a supportive and enabling planning regime. We encourage the commission to recognise this opportunity in its recommendations to Government.

6. Conclusion

In conclusion, we summarise our submission to the commission with the following points:

- ENA and its members broadly support the commission's draft advice to government
- We broadly support the commission's principles but submit that the significant transformation of the electricity sector that is envisaged in the advice requires critical investments are made at the right time.
- The electricity lines companies are well aware of the likely impacts of electrification on their networks and have been for some time. The industry has developed its own strategy to respond to this and is also looking to international experiences to inform our approach.
- We have significant misgivings about the flexibility and responsiveness of all parts of the regulatory system to enable and support the needed transformation of the electricity distribution networks. These should be comprehensively reviewed by government as a matter of some urgency, and the commission's advice should reflect this.
- We support the long-term clarity and certainty a national energy strategy would provide.
- The upcoming reform of the Resource Management Act is an opportunity for the government to put in place planning legislation that better supports the provision of electricity distribution infrastructure.

7. Appendix

The Electricity Networks Association membership comprises:

Alpine Energy
Aurora Energy
Buller Electricity
Centralines
Counties Power
Eastland Network
Electra
EA Networks
Horizon Energy Distribution
Mainpower
Marlborough Lines
Nelson Electricity
Network Tasman
Network Waitaki
Northpower
Orion New Zealand
Powerco
PowerNet
Scanpower
The Lines Company
Top Energy
Unison Networks
Vector
Waipa Networks
WEL Networks
Wellington Electricity
Westpower