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Submission on *Climate Change for Aotearoa*

ETNZ - The Energy Trusts Association - represents the trust owners of electricity distribution businesses throughout New Zealand.

As the organisation representing consumer and community owners of EDBs, ETNZ has both an asset owner and a consumer perspective in making this submission.

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Our position summarised

Our trusts are accountable to consumers and, in contrast to other parties controlling key assets in the electricity supply chain, have a primary focus on consumer and community impacts rather than on bottom line profits. ETNZ and its members have been supporting activities that are compatible with the Commission's recommendations for some years, and we endorse the vision and the actions presented in the draft report.

We are confident that trust-owned electricity distributors can make a very significant contribution to achieving that vision, and we believe that it would be timely and effective to refocus several core electricity industry arrangements to support the report's objectives.

In particular we are aware of the number of market and regulatory arrangements that are either inconsistent with achieving the report's vision, or that could be developed further to assist in its achievement.

This is expanded upon below, under highlighted references from the report.

Impacts on emissions budgets:

Electricity bills (page 81)

We agree that the impacts of the proposed moves on electricity bills are uncertain, and that the factors identified in the report (smelter closure, transition from gas, etc) contribute to this uncertainty.

On balance we believe that the forward price path for domestic electricity will be higher, rather than lower, than the path shown in figure 5.1, due to factors such as:

- Sustained and perhaps increasing monopolistic power involving control of water storage and hydro generation pricing, as gas is phased out of generation and as gas-dependant industries such as dairying transition to long-term electricity supply contracts;
- Increasing demand for supply security as electricity consumption rises and factors such as intermittent generators, smart appliances and working from home have a rising impact;
- New dry year and peak-time back-up options (such as battery storage and perhaps pumped storage) become established;
- The existing ratio of peak water storage levels to annual demand cycles diminishes (i.e. at present the storage lakes hold something like 5 weeks of winter electricity demand when full. As demand rises this can be expected to drop – a trend that may be accentuated as gas is phased out);

- Snow melt declines with rising ambient temperatures, meaning reduced inflows to storage lakes;
- The flattening of peak use transmission price signals (required by the new Transmission Pricing Methodology, assuming that it is implemented) promotes less efficient electricity use.

Also, we consider that there is a high probability that alternative major loads, such as data centres, will emerge if and when the aluminium smelter load falls away, contributing to upward pressures on prices.

On that last point, we would expect pressures on electricity suppliers and Transpower to offer deals that have the effect of loading additional costs onto domestic and small commercial/industrial users. While we question the economics and fairness of such deals, they have been an entrenched practice in the New Zealand electricity sector for many decades, and – for example – specific provision is made for them in the Transmission Pricing Methodology.

Regional electricity prices (page 82)

We suggest including the impacts of the complex *nodal pricing arrangements* on regional electricity prices. Basically these translate the half-hourly wholesale prices determined at the key Transpower nodes (notably Benmore and Haywards) into local prices at around 150 'Grid exit points' ('GXPs') pepper potted around the country. For example, the price at one of the more remote Hawkes Bay GXPs might be 10% higher than the Haywards price.

One overdue reform would be to improve the transparency of GXP pricing. This would be of some assistance to parties investing in local and regional supply and demand-side options. While there is a great deal of on-line information available on matters that are relevant to large established market participants, this primary pricing data is remarkably obscure.

Assisting lower income households (page 83)

Our members are strongly in favour of interventions that result in warmer, healthier homes and more efficient energy consumption. They have many involvements throughout New Zealand in support of warmer homes, efficient LED lighting and other measures promoting the Commission's objectives. These range from the *Southland Warm Homes Trust's* package of insulation and heating arrangements, through to NorthPower's *Vehicle to Grid* programme aimed at developing scope for households to reduce peak electricity costs through 'exports' of peak-time energy from EVs.

Trusts, along with ETNZ, have had a close involvement with EECA and its programmes for many years.

Fuel costs and access to transport (page 84)

We note the various issues raised in the Commission's analysis. Finding effective and equitable mechanisms to achieve a rapid transition to EVs will benefit hugely from the coordinated engagement of many parties and workstreams. In our view this transition, which is central to achieving climate change goals, is too important to be 'left to the market' supported by a bit of central government tweaking.

An effective, early intervention is required to identify and establish the necessary infrastructure.

Electricity distributors are a group with the potential to provide nationwide coverage, involving and supporting integrated services. They have the experience and substance to negotiate bulk supply contracts, and have billing mechanisms that can be adapted to handle retail arrangements. While other options may be considered appropriate, it would be sensible to recognise the ability of the electricity industry to advance the penetration of EVs and to at least discuss this with the distribution industry.

Business, industry and workers (section 5.5)

We would expect the employment and contracting arrangements associated with the projected increases in electricity demand to be manageable at the 'upstream' end of the industry – generation and transmission. However, we understand that the distribution sector is becoming increasingly exposed to pressures created by an aging workforce, a deducing supply of trade trainees and the expected renewal of international 'poaching' of younger linesmen and technicians as other countries also transition away from carbon.

As the following table from the Electrical Workers Registration Board shows, the average age of the electricity delivery workforce is well into the '50s, meaning a potential shortfall by the mid-2020s:

Age of Electrical Workers Eligible to Apply for a 2017 – 2019 Licence

The following table and graph summarises the age in ten year bands of electrical workers who are eligible to apply for a 2017 – 2019 licence.

Age Range	Total	% per Age Group
Under 25	929	3
25 - 35	6,656	22
36 - 45	5,927	20
46 - 55	7,652	25
56 - 65	6,423	21
Over 65	2,561	8
Unknown	7	0
Grand Total	30,155	100

We would also expect to see the same factors having impacts on the availability of electricians to the wider community, who will also be in demand from the expected housing expansion.

A strength of the electricity distribution industry in New Zealand is its ability to provide skilled trades jobs in local communities. Every distributor requires either a trained workforce or, more commonly, access to local contractors able to maintain and operate its network. These local work opportunities strengthen communities, particularly as the transition to electricity use occurs and where access to new technologies will involve new support services.

Energy sector (Section 5.5.2, page 90)

We note the Commission's comments (page 100) on the potential for small or large hydro dams to help provide capacity for dry years, and the associated negative economic and environmental impacts. Here we believe that local communities have the capability to make reasoned decisions on the trade-offs involved, and we would like to see assessment of small hydro (and other options, such as micro-pumped storage) included in the mix of technologies open to proponents of localised generation. The draft report emphasises the value of advancing localised transition planning, and barriers to such planning are undesirable.

Necessary action 1 (page 103)

"We recommend that, in the first budget period the Government progress the following steps to meet emissions budgets:

- a. Identify communities and regions that may be particularly affected by climate change and the transition to a low emissions society, and initiating processes for localised transition planning in these areas.***

This would require the Government to work in partnership with local government and regional economic development agencies, iwi/Māori, local communities, businesses, civil society groups and stakeholders.”

Electricity distributors, with their large network footprints in all regions, are well positioned to identify and monitor flooding risks. Information of this sort is vital to network security, and the capability exists to extend network sensors into sensitive areas.

Fire risk in forested areas is an issue that networks are acutely aware of. As temperatures rise the risks associated with proximity of power lines to vegetation will increase, and it is apparent that the current *Electricity (Hazards from trees) Regulations* are inadequate.

Also, Time-critical necessary action 5: *Manage forests to provide a long-term carbon sink*

We strongly support such measures that will provide a low net cost, substantial contribution to achieving the Commission’s vision. Here again we emphasise the need for parallel measures to help widen the gap between electricity distribution and forest fire risks. This is an issue where discussion with the people involved in electricity distribution tree control would be helpful.

Direction of policy in the Government’s emissions reduction plan (section 6)

Necessary 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.

Trusts fully support this and recognise the immediate scope that exists to incorporate relevant performance goals in the annual *statements of corporate intent* they negotiate with their distribution companies. Regulatory shortcomings present challenges that the Government could address, however. As examples:

- The Commerce Commission has been extremely slow in responding to two directly relevant requirements that have been incorporated in the Commerce Act since 2008. Section 54Q of the Act reads:

Energy efficiency

The Commission must promote incentives, and must avoid imposing disincentives, for suppliers of electricity lines services

to invest in energy efficiency and demand side management, and to reduce energy losses, when applying this Part¹ in relation to electricity lines services.

- Broader requirements to promote “incentives to innovate and invest” and “incentives to improve efficiency” are spelled out in ***section 52A of the Commerce Act***. These apply to all regulated goods or services.

Despite these strong injunctions, so far only two ‘incentives’ to promote innovation and energy efficiency in electricity networks have emerged. In the current (2021-25) control period there is a provision for a trivial and capped provision applying to new technologies, and – for the moment – networks that are able to demonstrate reduction in transmission loads can receive *Avoided Cost of Transmission (ACoT)* rebates, although these simply result in the sums foregone being added to other Transpower customers’ bills.

While the ACoT arrangements could be made more equitable, the Electricity Authority, that works in tandem with the Commerce Commission in regulating EDBs, has been focussed on removing them. In the absence of any useful alternative mechanism for incentivising local generation and demand-side energy efficiency measures we see no reason why the two regulators should not be acting in a way that is consistent both with climate change objectives and the Commerce Act.

For example, Transpower could simply absorb the income drops resulting from any qualifying drop in its throughput due to demand-side measures. In the longer term such reductions in Grid use will reduce the costs of future transmission investment.

Necessary action 5e: Enable more independent generation and distributed generation, especially for remote rural and Maori communities, and ensure access to capital for this purpose.

There are several fundamental wholesale electricity pricing arrangements that discriminate against such local generation.

- Foremost among these is the practice – under the Electricity Authority’s Transmission Pricing Methodology (‘TPM’) – of

¹ Part 4 of the Commerce Act, covering regulation of the prices and quality of electricity lines services.

requiring Transpower to bill consumers (either directly or via pass-through charges to distributors) for the bulk of the costs of transporting Grid-dependant generators' electricity. In almost any other market remote suppliers face a competitive disadvantage because they must face the costs of delivery but the EA somehow reasons that consumers, rather than suppliers are the 'beneficiaries' who should pay those costs. This means that local generation, already disadvantaged by economies of scale, has the added disadvantage of being denied a locational advantage.

- A further disadvantage is the complex 'nodal pricing' system, referred to earlier. The wholesale price from central nodes such as Haywards has additional loadings at each GXP to reflect the energy losses and Grid constraints involved in getting electricity from those nodes to local communities. However, a local generation investor responding to, say, a 10% nodal loading in its area will see that loading diminish rapidly once it begins generating, as the nodal price is weighted heavily towards the volume of energy losses (and these fall with the square of the current, meaning that if the current drops by a factor of 2, the losses drop by a factor of 4).

While nodal pricing is a useful tool for efficient transmission dispatch it provides only an illusory price advantage to local generation. It would not seem beyond the bounds of the electricity market rules to find a mechanism that provides a fairer and more durable price signal to local generation.

- Despite having much the same form for the past 20 years, the electricity market remains based around spot market pricing, which reflects factors that are heavily influenced by the established generator-retailers (such as control of storage lake levels). Efforts continue to be made to create a parallel hedging market but these have not proved particularly effective to date for a number of reasons. One of those reasons is the existence (since the 'Bradford reforms' of 1997) of integrated generator-retailers. These 'gentailers' essentially hedge internally, and have little need for a fluid external hedging market that could be accessed by other parties if they had confidence in it.
- The Electricity Authority's drive to abolish, rather than restructure, the ACoT incentive arrangement (commented on above) potentially reduces further scope to provide a fairer pricing structure for local generators.

intensive high-rise multi-unit dwellings without any garaging, creating immediate barriers to the shift to electric vehicles.

- Disaggregated data, with inconsistent planning assumptions etc. We understand that this is being addressed by a Ministerial review.

Overall, we support the Commission's objectives and will be maintaining contact with our members on options for progressing them. We would be happy to discuss our submission and to expand on any of the points raised.


ETNZ