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## **Submission on Technological change and the future of work issues paper**

ETNZ - The Energy Trusts Association - represents the Trust owners of electricity distribution businesses throughout New Zealand, the largest of which is Entrust (majority owner of Vector) and the smallest of which is the Buller Electric Power Trust. The majority of the Trustees of these energy trusts are elected by electricity consumers who are the beneficiaries of the Trusts.

As the organisation representing consumer and community owners of electricity distribution businesses – ‘EDBs’, ETNZ has both an asset owner and a consumer perspective in addressing this topic.

### ***Primary objectives***

We recognise the importance of the two broad questions posed for the inquiry:

- *impacts of technological change and disruption on the future of work, the workforce, labour markets, productivity and wellbeing, and*
- *positioning New Zealanders to take advantage of innovation and technological change in terms of productivity, labour-market participation and the nature of work.*

However, we believe that answers to these questions should be interpreted to conform with and support several primary objectives already implicit in evolving government policies, i.e:

- reducing greenhouse gas emissions
- achieving clean air
- achieving effective customer/consumer engagement and benefit from technologies
- promoting public health and wellbeing

## ***Primacy of electricity supply and system convergence***

Efficient electricity delivery is fundamental to most existing technologies and, almost certainly, to the vast majority of new or developing transformative ones. Ensuring that electricity delivery evolves in tandem with technological change is, in our view, all-important.

Also, there is a clear trend for network-based technologies and systems to converge, and to become mutually reliant on processes such as cyber security and data sharing. As artificial intelligence becomes entrenched we would expect this convergence to extend down into households and appliances, as well as to be a vital part of commercial and industrial processes and procedures.

It would be useful if the Commission could investigate the role of electricity delivery and of EDBs in supporting the emergence of transformative technologies.

It would also be useful for attention to be given to the trend towards convergence and to the repositioning that may be needed to ensure that this occurs optimally.

## ***Workforce issues***

A primary concern for ETNZ and for the wider electricity distribution industry is the aging workforce. Given its primary role it's essential for a suitable workforce to be available, if the electricity delivery system to meet the demands of new technologies while maintaining secure supply levels through the transformative processes involved. 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 skilled labour 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
<b>Grand Total</b>	<b>30,155</b>	<b>100</b>

If the Commission considers investigating this potential workforce shortfall, it would be important to take into account the uncertainty about importing suitable workers as the projected world-wide growth of electricity supply systems gains pace, and also the possibility that New Zealand electricity workers (and particularly younger ones) will be attracted off-shore by higher wages.

### ***Regulatory impediments***

A fundamental issue for policy makers is, in our view, the regulatory focus on *yesterday*, rather than on *tomorrow*. Much of the regulatory regime applying to electricity distribution has been developed out of issues and processes that were appropriate in the last century but that tend to impede the roll-out of forward-looking systems. For example, there is a current view among New Zealand regulators that it may be appropriate to segregate so-called monopoly activities by EDBs from ‘contestable services’.

ETNZ believes that the regulatory focus should be lifted away from concerns about the possibility of ‘monopoly advantage’ and towards the achievement of the primary objectives we have listed above. In our view effective regulation should be aimed at promoting efficient research and investment while providing a policing, rather than a prohibition, approach that ensures fair business practices.

We also believe that regulators should be encouraged to prioritise legislative instructions and policy objectives. A long-standing concern is the Commerce Commission’s inertia in putting section 54Q of Part 4 of the Commerce Act (Part 4 regulates monopolistic businesses, including EDBs). Section 54Q was a far-sighted and very relevant clause in the Act, inserted in 2008:

#### **54Q                      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 Part in relation to electricity lines services.

Investing in energy efficiency, reducing energy losses and promoting consumer empowerment through demand-side management are activities that seem central to positioning the electricity system to make the most out of technological change. Despite the (unusual) inclusion of two ‘musts’ in this legislative instruction, no significant incentives have emerged and there has been a recent regulatory drive towards creating regulatory disincentives (for

example, the Electricity Authority, that works in tandem with the Commerce Commission in regulating EDBs, has been focussed on removing the arrangement that allows EDBs and connected users to be rewarded for avoiding transmission costs e.g. by providing local generation or reducing demand).

### ***Other issues***

Effective and reliable **cyber security** will become increasingly important as networks converge and extend into appliances, etc. A strong regulatory focus on ensuring that coherent protections extend across electricity systems and interconnected networks of all types would be worth highlighting.

**Communication and control systems, data sharing with consumers, protocols for activities such as pattern recognition, etc.** are all issues that seem central to the roll-out of transformative technologies. Investigative work focussed on these adjuncts to tomorrow's systems would be useful, as would ensuring that the relevant workforces receive appropriate training. Here the problems emerging from mass communication systems underline the importance of addressing challenges of this nature early.

**Consumer empowerment** should not be a casualty of technology roll-outs. Traditionally the electricity industry has been based on top-down arrangements that are designed to maximise returns in the energy markets, and that are not necessarily compatible with an emerging consumer focus on energy conservation and other demand-side activities such as solar deployment.

ETNZ appreciates the opportunity that the Issues paper provides to consider these matters. We look further to further involvement as the Commission's investigation progresses.

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Chair, ETNZ