The Sustainable Energy Forum Inc.

P O Box 11 152, Wellington Email: info@sef.org.nz Web: http://www.sef.org.nz

Contacts for this Submission
Steve Goldthorpe, convenor, 0274849764
Molly Melhuish 027 230 5911
28th May 2021

**Submission on Commerce Commission's**
**"Open letter—ensuring our energy and airports regulation is fit for purpose"**

The Sustainable Energy Forum (SEF) is a group of individuals and companies with an interest in a sustainable energy future for NZ. Current membership is about 100, including corporate and individual members ranging from staff in major energy companies to students and retired people. Many members are active in small-scale sustainable energy supply and energy efficiency activities.

SEF's objective is to "facilitate the use of energy for economic, environmental and social sustainability". All three elements of sustainability are relevant to the consideration of energy regulation in today's changing environment.

This submission has been prepared by members of the SEF executive. Due to time constraints, the broader membership of SEF has not been canvassed for their comments.

**Our Submission**

The open letter inviting comment on the changing environment in the energy sector is on the Commerce Commission's website at
https://comcom.govt.nz/__data/assets/pdf_file/0022/253561/Open-letter-Ensuring-our-energy-and-airports-regulation-is-fit-for-purpose-29-April-2021.pdf

We would be grateful for any opportunity to speak to this submission.

SEF strongly agrees that policies for decarbonisation and new energy sector technologies have raised major issues for the regulation of electricity networks.

We agree that the decarbonisation pathway outlined by the Climate Change Commission "may mean an increasingly significant role for electricity", with changes in investment required in the energy sectors. We would however focus on "new technologies and alternative solutions for accommodating growth on electricity networks."

We disagree that the bulk electricity system needs to grow as rapidly as planned; instead the progressive introduction of energy efficiency and demand side response, together with local solar energy, can reduce growth in demand for bulk electricity, releasing supply (in

combination with the impending closure of the Tiwai Point aluminium smelter) sufficient for electric vehicles.

Quoting from The IEA's recent report "Net Zero by 2050: "*The key pillars of decarbonisation of the global energy system are energy efficiency, behavioural changes, electrification, renewables, hydrogen and hydrogen- based fuels, bioenergy and CCUS.*" Network companies are key actors in the areas of electrification and renewables - but importantly they have roles in energy efficiency and behavioural change also, as illustrated below.

**Network companies should be at the centre of managing new technologies**

We believe electricity distributors are uniquely placed to promote decarbonisation. Overseas experience is highly relevant. The google group "The Electricity Brain Trust", was launched last year by members of the US. Regulatory Assistance Project and the Brattle Group, to discuss the very issues on evolving technology that the Commerce Commission has addressed. Its longest-running thread is the one on "Promoting Distribution-level Solutions", which began just after the Texas freeze.

A contributor, Dave Erickson, described succinctly, in the US context, how nations could effectively design reliable infrastructure for the future (our emphasis):

> *If I was king of the universe, an "infrastructure plan" at the federal level would look like this:*
> *1 Convene the states and* ***agree on national building codes and standards*** *for both commercial and residential buildings*
> *2.* ***Fund a massive retrofit project*** *that would bring all non-conforming buildings up to this code regardless of ownership*
> *3. Part of this building code is to make these buildings flexible loads that can respond to a variety of stimuli, including price. This would in part be based on* ***an independent engineering review of the distribution system characteristics in a particular area****. It could also include an independent engineering evaluation of "optimal portfolios" of flexible demand, storage and renewable generation for each area.*
> *4* ***Require utilities to support the installation of these optimal portfolios****, and hand over operation of them to an independent operator, which would operate them to minimize the reliance on the bulk system.*
>
> *Then we start talking about the requirement for new bulk system resources and infrastructure.*

Energy use in buildings is particularly important in management of distribution networks, as buildings create the peak demands which are the biggest cost driver in electricity networks, Amory Lovins, a regular contributor, said:

> *We need both ends: end-use efficiency AND demand response—fix those old houses and time EV charging and home heating to be interleaved or staggered, not coincident. Much cheaper than tripling the distribution expenditure cap.*

This contrasts sharply with our own NZ government's strategy based on expanding bulk electricity supply, which will require augmenting transmission and distribution systems to carry the increased loads.

A later contributor to the Electricity Brain Trust thread gave a broader picture which aptly summarises the decarbonisation challenge:

> *To me the central debate is about continuing the dominance of centralized, top-down planning, control and ownership of electricity resources versus building a bimodal system where the bulk system is complemented by a proliferation of diverse local power systems that meet needs of customers and communities that the bulk system alone cannot address. In particular, needs for local resilience and environmental justice, which are as urgent as decarbonization and can't be achieved by focusing on the cheapest kWh or other conventional benefit-cost metrics.*
>
> *This need not and should not be a battle between bulk system advocates and Distributed Generation advocates. There are plenty of business opportunities for all segments of the industry, though I recognize that relinquishing some centralized control will be uncomfortable for many.*

**Position of public and consumer interest in electricity regulation**

In most other jurisdictions, electricity regulation and governance puts strong emphasis on consumer concerns, and almost all seek to control excessive exercise of monopoly power. The Commerce Commission's 2002 decision #473 on the application by the Electricity Governance Board Ltd sought to balance commercial and public-interest objectives, referring to the Government Policy Statements on electricity. That balance was removed by the 2010 Electricity Industry Act and the subsequent "Interpretation of the Statutory Objective", which openly stated that monopoly profits were to the benefit of consumers because they "expanded the size of the economic pie". (sections A5-A7)

SEF considers that the resulting governance system is highly biased towards the interests of the gentailer oligopoly, and is preventing small businesses, and especially prosumers, from competing on a level playing field, thus getting appropriate benefit from their investments. The quotes above indicate the critical role of distribution companies in bringing together portfolios of flexible demand, storage, and renewable generation in each area.

**Energy service businesses must be included in the definition of the electricity market**

SEF submitted in 2002:

> *distributed resources" ...include natural gas, LPG, firewood and solar energy for space and water heating, storage water and space heaters to reduce peak demand, switching devices to turn high-load appliances on at night, insulation in ceilings and floors to reduce power bills, draught stoppers, low-flow shower heads, energy efficient lightbulbs - the list goes on. The Regulatory Assistance Project has done much research on how such resources can be accommodated in competitive electricity markets (2 papers attached). Retail services are also needed to provide information and financial services, without which people and small businesses cannot gain advantage for themselves by participating in electricity markets.*

We described how the original NZ Electricity Market was designed for the demand side to take an active part. It morphed almost immediately into a supply-side market, with demands being forecasted by Trans Power, and consumers becoming passive price-takers. It was not deregulation but rather industry self-regulation.

Instead, we advocated "the creation of an independent regulatory function to oversee the evolution of the electricity market rules under a model that allows progressively increasing participation of retail consumers and energy service businesses".

The Commerce Commission's 2002 decision on electricity governance, https://www.comcom.govt.nz/dmsdocument/10472 acknowledged, (s 212*) "there can be special features in individual markets, such as the impact of distributed resources on the retail market, which may need to be recognised when considering the impact of the Arrangement".*

We consider that that time has arrived! The changing environment in the energy sector is indeed leading to significant change for the investment required. Local energy developments offer local resilience and environmental justice, which are as urgent as decarbonization.

**Distribution companies as distribution system operators**

Network companies need to broaden their asset management plans, to incorporate distributed energy resources whenever they are more cost-effective than investing in further distribution assets. Their economic analyses need to recognise the wider costs and benefits of such investment.

And network companies can and should act as "distribution system operators", able to observe demands in each substation and even each feeder, to distribute loads to reduce peaks, and thereby reduce the need to upgrade lines and transformers to carry the loads.

This requires a whole new investment in information technology, creating true "smart grids" which enable consumers to participate, preferably through automatic control of key appliances, to reduce costs of electricity supply.

Importantly, automatic control through "the internet of things" is certain to be vulnerable to cyberattack. It has been recognised that control of consumer appliances via a separate network run by a distribution company would be far, far more secure.