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2 October 2017

Low-emissions economy inquiry
New Zealand Productivity Commission
P O Box 8036
The Terrace
Wellington 6143

By email: info@productivity.govt.nz

Dear Steven,

Re: Issues Paper – Low-emissions economy inquiry

The Independent Electricity Generators Association Incorporated (IEGA) welcomes the opportunity to make submissions to the NZ Productivity Commission (Commission) on the issues paper relating to transitioning to a low-emissions economy.

Background on IEGA

The IEGA comprises approximately 40 members who are either directly or indirectly associated with predominately small scale power schemes throughout New Zealand for the purpose of commercial electricity production.¹

Our members have made significant economic investments in generation plant and equipment throughout New Zealand that is embedded within local distribution networks with 95% of the plant using renewable fuel. Combining the capacity of member's plant makes the IEGA the sixth largest generator in New Zealand.

IEGA members are small, entrepreneurial businesses, essentially the SME's of the electricity generation sector. We are price takers in the electricity market and provide significant benefits to the regions in which we operate. Our distributed generation:

- introduces competition resulting in lower regional electricity prices for consumers as well as enabling new retailers to enter the market with Power Purchase Agreements;
- employs around 200 people across most regions of New Zealand;
- results in rebates and distributions back to local communities. For example, Pioneer Energy has distributed over \$62.5 million over 15 years to its community trust shareholder;
- assists with security of supply as many of our schemes are designed to run islanded from the transmission grid in an emergency loss of transmission; and
- avoids or defers distribution network and transmission investment.

¹ The Steering Committee has signed off this submission on behalf of members

IEGA members are proud to contribute to achievement of New Zealand's 90% renewable electricity target. We strongly support efforts to lower emissions in the electricity and energy sector as well as the entire economy. Members have new generation investment options which can meet growth in local demand. However, decisions about when to invest depend on stable and predictable government targets and regulatory environment.

Regulatory change impacting distributed generation

The IEGA recommends a cross-party multi-agency approach to climate change policy and initiatives as climate change is a fundamental issue for the New Zealand economy. It is essential that all parts of government and all regulatory decisions take into account New Zealand's international commitments to reduce emissions.

Regulatory change should build on, and not disrupt, New Zealand's existing low emission activities. These activities can be role models and lead the transition to lower emissions. IEGA members' investment in renewable distributed generation is an example of a low emission activity.

This investment has been made on the basis of a long standing regulatory regime based on peak demand pricing for the transmission system. More recently, over 2003 to 2007, central government developed and promulgated the Electricity (Connection of Distributed Generation) Regulations 2007 to facilitate connection of distributed generation. This regime recognised the value of distributed generation to the electricity supply chain.

However, this policy setting was dramatically changed by the Electricity Authority in early 2017. These changes are yet to be fully implemented. During the consultation phase IEGA commissioned PwC² to estimate the impact of the proposed changes on the financial viability of members. Eliminating payments made to distributed generation to reflect reduced transmission costs was estimated to have the potential to reduce cashflow (EBITDA) on average by 30% and wipe out \$500 million of enterprise value for the distributed generation sector. This significant negative financial impact may result in closure of existing generating plant and could impact the financial viability of, or delay investment in, new generation capacity.

The Electricity Authority's decision has a negative impact on distributed generation investors and the electricity supply chain. The Authority's analysis is limited to its narrow focus on economic efficiency and a statutory objective which, it claims, limits it from taking into account other matters that are significant for delivering wider government policy, such as New Zealand's climate change commitments. The Authority also does not consider wealth transfers in its analysis.

It is clear from the Commission's (and other) reports that existing policy settings are insufficient to achieve New Zealand's climate change targets in their own right. Projections of emission reductions are based on the existing generating plant. Any reduction in distributed renewable generation capacity will increase emissions, either by this capacity being replaced with thermal capacity and/or due to the increased level of transmission and distribution losses that occur when electricity is generated far from load.

The regime put in place by central government recognised the benefits to the entire system of distributed generation maximising generation output during peak demand periods. Electricity is lost as it travels over transmission and distribution network lines – these losses increase as volumes transported increase. That is, losses are the highest during periods of peak demand. Distributed generation is located close to local load and therefore the electricity is transported shorter distances and losses are lower. If distributed generation no longer supplies electricity during periods of peak demand we estimate the value of the lost electricity (as demand is met instead by grid connected

² See report at <https://www.ea.govt.nz/dmsdocument/21168>

generating plant located distant from load) could be \$500 million per annum. Further, renewable distributed generation will be replaced with non-renewable electricity during these peak periods. In summary, every unit of peak generation is by definition a unit of thermal emissions and line losses - so managing peak demand is targeting and managing emissions.

Growth in distributed generation, or distributed energy resources, is a major focus overseas. These distributed systems involve local communities and consumer investment and predominately use renewable fuel. Renewable distributed generation has advantages over utility scale grid connected generation, for example: lower losses on the transmission grid (discussed above); lower losses on the distribution network as the generation is located close to load; deferring or avoiding investment in transmission and distribution infrastructure; and a smaller environmental footprint and visual impact. Further, some of these technologies are economic with utility scale generation while others will be at parity by 2025.

In our view there is considerably more potential for investment in these lower emissions sources of electricity. A transition path should involve reducing barriers to entry for consumers and investors so that New Zealand can benefit from the full economic and wider community benefits of solar and other distributed energy resources.

Conclusions

This is an exciting time for the energy sector, and potentially our members. For example, demand for renewable electricity can be expected to increase about historic BAU growth rates with an uptake of electric vehicles; the supply of electricity will become more diverse as consumers decide to invest in solar pv and / or battery storage; distributed generation, or distributed energy resources, may become the norm with investment in physical transmission and distribution network infrastructure becoming the 'alternative'.

The IEGA notes the Commission's comments that New Zealand's developed economy position as a signatory to the Paris Agreement likely places New Zealand with an obligation to achieve a zero net CO₂ emissions economy closer to 2050 than 2100. We agree with the Commission's view that

"While this is a very ambitious and challenging goal, it offers many opportunities for the New Zealand economy, overall, to benefit. Specifically, the gains from investing in low emission, climate-resilient infrastructure or green innovation and technology deployment will

more than offset the impact of higher energy prices, tighter regulatory settings, and high-carbon assets that may become economically stranded before the end of their economic life (OECD, 2017b, p. 21)." ³

In summary, our key messages are:

- Existing distributed generation must be treated on a level playing field with all other ways of supplying electricity to consumers.
- There are options for new generating capacity⁴ connected to local networks that are economic, have a smaller environmental footprint than grid-connected generation and provide an incremental increase in supply more aligned to growth in demand. However, a stable and predictable regulatory environment is important for investors.
- All government agencies, including independent agencies, must be required to take into account the government's climate change targets and international commitments in its policy,

³ New Zealand Productivity Commission (2017) Low-emissions economy: Issues paper. Available from www.productivity.govt.nz Page 63

⁴ Estimated at over 150MW using Electricity Authority data at https://www.emi.ea.govt.nz/Wholesale/Datasets/Generation/Generation_fleet/Proposed

primary and secondary legislative and rule decisions. A cross-party multi-agency approach is essential.

The IEGA would welcome the opportunity to discuss this submission with you in more detail.

Yours sincerely

A handwritten signature in black ink, appearing to read 'W McNabb', written in a cursive style.

Warren McNabb
Chair