Consumer Advocacy Council

16 December 2022

Electricity Authority

Email: WholesaleConsultation@ea.govt.nz

To whom it may concern,

Re: Promoting competition in the wholesale electricity market in the transition towards 100% renewable electricity

1. Executive Summary

1.1 The Consumer Advocacy Council (the Council) recommends the Electricity Authority (the Authority):

A. specifically ensures equity and fairness for small consumers be applied to its interpretation of its expanded objective, alongside the existing 'limbs' of competition, reliable supply and efficient operation.

B. ensures that residential and small business electricity bills have the best information available to incentivise and enable demand responses.

C. recognises the limited ability of residential and small business consumers to respond to price and places them at the centre of its decisions about price, reliability, sustainability, and the structure of the electricity market.

D. provides leadership in connecting management of electricity supply to other government policy objectives (and responsible agencies) where there are intended and unintended impacts on health, poverty alleviation and climate change.

E. uses additional metrics other than economic in assessing appropriate regulatory settings.

F. in relation to the transition to renewable energy:
- investigates and reports on options for creating a market that incentivises investment in new renewable generation
- takes a longer-term (intergenerational) view when setting policy, taking into account demand growth, new and developing technology and operational practices, rather than just focusing on keeping current supply and demand in balance

- makes changes to the Code as necessary and works with other regulators to remove barriers to solutions that enable communities to take greater control of their own energy supply.

G. investigates and reports on whether the current wholesale market model is fit for purpose to meet consumers' needs and delivers a fairly priced and reliable electricity supply, and considers incentives to ensure sufficient new renewable generation can enter the wholesale electricity market.

H. investigates and reports on alternative models, including, as a starting point:
   - treating renewables and non-renewables separately in the wholesale market
   - developing a flexible and equal access market as suggested by the Innovation and Participation Advisory Group in its advice to the Authority dated July 2021

I. investigates and reports back on possible options to improve current settings that could be included in New Zealand's energy strategy.

2. Introduction

2.1 This submission is from the Council, the independent advocate for residential and small business electricity consumers in Aotearoa New Zealand.

2.2 Our submission is informed by research on the wholesale market that we commissioned from the New Zealand Institute of Economic Research (NZIER). We reference NZIER's report in this submission and cite extracts where relevant. The report is attached to this submission (appendix one).

3. General comments

3.1 Electricity is an essential service and is needed to support health and wellbeing. Most New Zealanders need electricity to heat, cool and light their homes, cook, shower, run appliances, and increasingly power new technology, such as electric vehicles.

3.2 Similarly, small businesses rely on electricity to operate, whether they are running an online store, a local cafe, involved in manufacturing or providing other services in their communities.

3.3 Without electricity, our country and our economy does not function. The importance of and reliance on electricity therefore cannot be underestimated. Management of electricity supply is becoming even more important as we move towards decarbonising the economy.

3.4 Fair pricing of this essential service is critical. Many residential and small business consumers have limited ability to change their electricity demand in response to price rises. It is therefore crucial that regulatory settings ensure consumers can access electricity at fair prices and that prices are not returning excessive profits to generators.

3.5 We submit that current settings are not delivering optimal outcomes for consumers. Of note, the NZIER report suggests the current market structure has been contributing to spot price spikes and high forward prices, bringing windfall gains to large generators and higher costs to consumers.

3.6 Decisions made today will have intergenerational impact. Planning horizons therefore need to take a longer-term approach, recognising the significant investment planning required for electricity and the impact of decisions made now for our future.

3.7 Consumers need to be at the heart of this planning.

3.8 We consider an integrated New Zealand energy strategy is crucial and needs to be expedited. However, we note that a strategy for electricity has existed for some time with

the government's 100 percent renewable electricity goal. We submit that the Authority should be working towards this goal.

4. Specific comments

4.1 The Authority's statutory objective

4.1.1 The Authority's statutory objective is set out in section 15 of the Electricity Industry Act 2010 and requires it to promote competition in, reliable supply by, and efficient operation of the electricity industry (not just the market) for the "… long-term benefit of consumers".

4.1.2 The Authority sets out in a 2011 paper its interpretation of this statutory objective as follows:

> *The Authority interprets its statutory objective as requiring it to exercise its functions in section 16 of the Act in ways that, for the long-term benefit of electricity consumers:*
> - *facilitate or encourage increased competition in the markets for electricity and electricity-related services, taking into account long-term opportunities and incentives for efficient entry, exit, investment and innovation in those markets;*
> - *encourage industry participants to efficiently develop and operate the electricity system to manage security and reliability in ways that minimise total costs whilst being robust to adverse events; and*
> - *increase the efficiency of the electricity industry, taking into account the transaction costs of market arrangements and the administration and compliance costs of regulation, and taking into account Commerce Act implications for the non-competitive parts of the electricity industry, particularly in regard to preserving efficient incentives for investment and innovation.*

4.1.3 On 31 December 2022, this statutory objective will be expanded (as a result of amendments to the Act) by a further objective contained in the new section 15(2) stating: "The additional objective of the Authority is to protect the interests of residential consumers and small business consumers in relation to the supply of electricity to those consumers."

4.1.4 The Authority therefore needs to consider its broadened mandate and how it can ensure the interests of residential and small business consumers are protected in relation to the supply of electricity.

4.1.5 The wholesale market is obviously a key factor in the supply of electricity. However, it is only one part of the electricity industry that the Authority regulates. In reviewing wholesale arrangements, the Authority should also be considering the flow on effects on other interconnected parts of the industry.

Recommendation:

We recommend the Authority specifically ensures equity and fairness for small consumers be applied to its interpretation of its expanded objective, alongside the existing 'limbs' of competition, reliable supply and efficient operation.

4.2 Small consumers' vulnerability to high electricity prices

4.2.1 The Council was established following the Electricity Price Review. This report found consumers faced many barriers to participating in the electricity industry and lacked a voice in decision-making processes. It recommended the Council be established to provide a voice and ensure regulators listen to consumers.

4.2.2 A key concern highlighted in the NZIER report we commissioned to support this submission is the vulnerability of small consumers to high electricity prices. Increased electricity prices directly affect consumer wellbeing, especially those on low incomes who already find it difficult to pay for power.

4.2.3 Consumers have limited ability to adjust their consumption, especially during times when additional generation is required, such as during winter. The greater need for electricity by consumers during winter months, notably for heating, highlights their relative vulnerability to higher electricity costs.

4.2.4 Consumers' capacity to adjust their usage is further constrained by limited information on and access to time of use pricing. The potential benefits of smart meters and other technology that can help consumers manage their usage are also not being fully realised.

4.2.5 New Zealand has a high roll out of smart meters; according to the Authority's EMI portal, 90.4 percent of residential customers have a smart meter. However, it appears difficult for consumers to get timely access to the data these meters record, for themselves or for third party providers. As the NZIER report notes:

> *To incentivise demand response from small electricity consumers, measures should provide them with better information on how their electricity costs are calculated. In the US, smart meters have increasingly rolled out to residential consumers. Jessoe and Rapson (2014) showed households [that] were informed on usage and prices cut their consumption more in responding to higher prices than those [that] did not receive real-time information. However, the effectiveness of such tool would be undermined if the rollout rate is low and/or the information is not delivered in a timely and accurate manner.*

4.2.6 To help address the problems consumers face, the Council has commissioned research on electricity bills and what can be done to improve them so that consumers have good information on power usage and costs. We expect to finalise this research in 2023 and will share it with the Authority.

4.2.7 Benefits could also be provided to consumers by improving access to consumption data. For example, if usage data was available to the Powerswitch site better comparisons may be possible about the plan options available to consumers. Improved data access would also help consumers considering investment in distributed generation (including batteries), electric vehicles and smart home technology.

Recommendation:

We recommend the Authority ensures that residential and small business electricity bills have the best information available to incentivise and enable demand responses.

4.2.8 In relation to pricing, we note the consultation document states (emphasis added):

> *The wholesale electricity market is also a **very effective way to discover and coordinate dispersed information about demand and supply – including what prices different consumers are willing to pay** and prices that different generators are willing to supply at – to guide their actions, and to encourage efficient investment and innovation.*
>
> *This discovery process results in important outcomes to the benefit of consumers:*
>
> - *lowest-priced offers to generate are dispatched first, before more expensive generation is used, balancing generation with demand at least cost*
> - *when demand grows and prices rise, it encourages investment in more generation when the expected returns get high enough*
> - *innovation and tailoring are rewarded – new technologies (including alternatives to electricity) can push out higher-cost generation or offer consumers more choice*
> - ***when there are supply constraints, prices allocate scarce electricity to consumers who value electricity the most; those with more flexible demand use less or wait.***

4.2.9 The assumption that the wholesale market is effective in discovering and coordinating the prices that residential and small business consumers are willing to pay fails to recognise the price inelasticity issues with electricity. As noted above, consumers have limited ability to adjust consumption in response to price rises or to influence the wholesale market.

4.2.10 The NZIER report notes that while wholesale electricity prices are not passed directly to most consumers, these prices:

> *influence the forward price curve for electricity which may be an input for bilateral strike prices and retail prices, particularly for the small electricity consumers, who get charged a smeared cost usually based on averaging the marginal costs of electricity supply or bilateral prices. With little time-of-use information on when electricity is most costly to generate, small electricity consumers lack the ability and incentive to adjust their demand during peak times. This has a direct impact on their wellbeing, especially for those on low incomes who already find it difficult to pay their power bills.*

Recommendation:

We recommend the Authority recognises the limited ability of residential and small business consumers to respond to price and places them at the centre of its decisions about price, reliability, sustainability, and the structure of the electricity market.

4.3 Electricity is an essential service

4.3.1 As noted in the introduction to this submission, electricity is an essential service and, as such, consumers must pay regardless of price, or risk their electricity supply being cut. Similarly, many small businesses are heavily reliant on electricity to produce their goods and services. Electricity prices inevitably affect the cost of these goods and services.

4.3.2 Current prices are having a negative effect on many households. The Council recently surveyed consumers to ask about how they were managing electricity costs. This survey found:

- About one in two consumers were often only heating the room they were in; about the same number were often putting on extra clothes to stay warm.
- More than a third had reduced the use of heaters and heat pumps; a quarter frequently turned off heaters altogether.
- One in four consumers cut back on showers and other hot water use.

4.3.3 Renters were more likely to do all of the above.

4.3.4 Some consumers are taking steps to lessen their energy use in response to climate change. However, many households are forced to make decisions about whether to heat or eat. Switching off heating has a detrimental impact on health and wellbeing, particularly when indoor temperatures are <18˚C, the minimum recommended by the World Health Organization.

4.3.5 A 2021 *Growing up in New Zealand* study of more than 2000 eight-year-olds found nearly half were sleeping in bedrooms that were too cold (19°C or less). The study also found children sleeping in these environments had a higher likelihood of reported poorer overall health.

4.3.6 We consider the economic analysis of the electricity market that the Authority uses is failing to consider the broader impacts and costs of worsening wellbeing and poor health caused by energy poverty.

4.3.7 We reiterate our earlier recommendation that the Authority review its interpretation of its statutory objective (dated 14 February 2011) to include fairness and equity as part of

ensuring long-term benefits to residential and small business consumers. Fairness needs to be central to decision making.

Recommendation:

We recommend the Authority provides leadership in connecting management of electricity supply to other government policy objectives (and responsible agencies) where there are intended and unintended impacts on health, poverty alleviation and climate change.

We recommend the Authority uses additional metrics other than economic in assessing appropriate regulatory settings.

4.4 Transition to renewables and new technology

4.4.1 The Climate Change Commission projects that the renewable electricity generation share will reach 96.5 percent by 2030.

4.4.2 Forecasts show New Zealand will need additional new renewable generation to meet the country's decarbonisation goals. Renewable generation is intermittent in nature and needs to be well-managed to address reliability and security of supply issues. The NZIER report notes:

> *In an energy-only market setting like New Zealand, investment and entry of new generation are solely incentivised by prices (Philpott et al. 2019, 9). This presents a challenge for New Zealand to achieve its decarbonisation and the 100 percent renewable generation goals, especially regarding whether the current model would deliver adequate capacity required for meeting the increased electricity demand and reliance on intermittent renewable generation.*

4.4.3 Investment in generation requires long-term planning and investors will require regulatory certainty. The NZIER report also notes:

> *As large infrastructure for electricity supply is very expensive and takes a long time to build, more forward investment planning is needed to ensure that there will be sufficient capacity to meet the increased demand. Thus, the electricity market regulator needs to ensure a market design that provides incentives for investment such that it enables a smooth transition path for consumers.*

4.4.4 The Council is also aware there are limitations to some new technologies coming on stream. Open access to grid and distribution networks, multiple trader relationships, peer-to-peer trades, community renewable energy microgrids and flexible markets could provide long-term benefits to consumers, but currently there are Code barriers to their operation.

4.4.5 We consider the Authority should be urgently developing solutions to allow these new technologies to become widely available.

Recommendation:

We recommend the Authority:

- investigates and reports on options for creating a market that incentivises investment in new renewable generation
- takes a longer-term (intergenerational) view when setting policy, taking into account demand growth, new and developing technology and operational practices, rather than just focusing on keeping current supply and demand in balance
- makes changes to the Code as necessary and works with other regulators to remove barriers to solutions that enable communities to take greater control of their own energy supply.

4.5 Competition in the wholesale market

4.5.1 The Authority's issues paper recognises the current market model is flawed. However, it does not suggest significant changes to address these flaws. Rather, the preferred approach in the paper is to use current settings to incentivise investment in renewable generation.

4.5.2 The Council agrees investment is crucial. However, as highlighted in the Authority's separate consultation paper on potential issues for winter 2023, there are problems with the wholesale market's ability to manage supply through the transition period to 100 percent renewable electricity generation by 2030.

4.5.3 The number of grid emergencies over the past winter shows the system is currently challenged in meeting consumers' needs and risks generation shortages when power is most needed. Changes will be required to meet consumers' needs for winter 2023. Longer-term changes will also be required to ensure that a future intermittent renewable energy mix provides a reliable and secure supply.

4.5.4 The Council also submits the market is not working competitively in the manner outlined in the Authority's paper. We note the open letter dated 13 September 2022 sent by small retailers to the Authority outlining just some of these concerns.

4.5.5 The NZIER report also notes issues faced by small players and new entrants:

> *… the wholesale market volatility and the resulting lift in the futures price … may have negatively affected new entrant retailers [that] could not obtain suitable bilateral arrangements to enable them to be competitive against the five gen-tailers [that] are vertically integrated. Analysis of EA's data on trends in retail market share and entry and exit shows that 14 retailers have left the electricity market since late 2018 and a number of other new entrant retailers have either not increased customer numbers or have reduced customer numbers.*
>
> *... our analysis showed some signs of market power across the vertically integrated gen-tailers, as it has given them significant competitive advantage over other competitors …*

and created barriers for new entrants through self-hedging contracts … This has consistently enabled them to obtain large short-term profits from the wholesale market. However, the increased number of grid emergency notices in the recent winter (NZ Herald 2022; RNZ 2022a) and Transpower's concerns about constrained generation capacity for the next two winters suggest that the gen-tailers are incentivised to make short-term profits and pay excessive dividends to shareholders rather than making long-term investment in new renewable generation. Ultimately, this comes at the cost of higher electricity bills for consumers, especially households and small businesses.

4.5.6 The vertical integration of generators and retailers (gen-tailers) is weakening competitiveness in the electricity market. The vertically integrated gen-tailers can generate at close to their own contracted position, which creates effective self-hedges against the impact of spot price volatility and spikes.

4.5.7 However, small retailers do not have the same protection and are exposed to the risk associated with volatile spot prices and have difficulty in obtaining adequate bilateral hedges. This hinders competition in the retail market.

4.5.8 Analysis indicates the market share of small and medium retailers has slowed in recent years. A considerable number of new entrant retailers have either exited the market or are not able to increase or maintain their customer numbers.

4.5.9 Feedback given to the Authority as part of its own survey of electricity industry participants noted:

Perceptions of competition were low, with many respondents suggesting current high prices, and incumbents' established revenue streams to weather this, indicative of limited competition and barriers for new entrants. Some respondents also cited a lack of transparency over internal pricing for generator/retailer ("gentailer") companies.

Recommendation:

We recommend the Authority investigates and reports on whether the current wholesale market model is fit for purpose to meet consumers' needs and delivers a fairly priced and reliable electricity supply, and considers incentives to ensure sufficient new renewable generation can enter the wholesale electricity market.

4.6 Influence of thermal energy on pricing

4.6.1 At times of peak demand, coal and gas determine the price of electricity. The New Zealand pricing equation uses the highest cost dispatched generation to determine spot price, and this is paid to all generators. This means thermal generation often sets the price of electricity and, at times of low intermittent generation and dry periods, leads to higher wholesale prices.

4.6.2 As noted in the NZIER report, the emissions trading scheme makes thermal electricity generation more expensive. In principle, this should incentivise switching to renewable generation.

4.6.3 However, because the spot market adopts a uniform marginal cost pricing mechanism, renewable generators that could generate electricity at generation-constrained times benefit from extra earnings that thermal generation spot prices provide.

4.6.4 Incentives are lessened for existing generators to invest in new renewable generation when electricity prices are set by gas and coal prices. Either an incentive is required for renewable energy, or constraints need to be placed on thermal generators.

4.6.5 Given New Zealand's dependence on thermal generation in dry years, there are significant costs that are passed to consumers, not only from thermal generation, but from non-thermal generation when generators' earnings are based on spot prices paid for thermal supply.

4.6.6 Carbon costs from thermal generation are also affecting the price of non-thermal and leading to windfall gains for renewable generators. Estimates included in the issues paper (p35) indicate renewable generators could earn an additional $1.6 billion over the period 2023-2027 due to increasing carbon prices.

Recommendation:

We recommend the Authority investigates and reports on alternative models, including, as a starting point:

- treating renewables and non-renewables separately in the wholesale market
- developing a flexible and equal access market as suggested by the Innovation and Participation Advisory Group in its advice to the Authority dated July 2021.

4.7 Energy Strategy for New Zealand

4.7.1 The Council agrees with the Authority's recommendation that the Ministry of Building, Innovation and Employment (MBIE) bring forward the completion of the Gas Transition Plan and New Zealand Energy Strategy.

4.7.2 However, we note New Zealand already has a goal of 100 percent renewable electricity by 2030. Our expectation is that the electricity industry should be working towards this goal regardless of the development of a separate energy strategy.

4.7.3 The 100 percent renewable electricity goal is presenting a challenge to the existing market model and highlights whether other models would provide better outcomes for consumers.

In wholesale and futures pricing, there are indications investment signals are not working as expected, as the forward price curve is persistently above the cost of new generation.

4.7.4 As large infrastructure for electricity supply is expensive and takes a long time to build, more forward investment planning is needed to ensure there will be sufficient capacity to meet requirements. We suggest this needs to be included in any discussions associated with the energy strategy development.

4.7.5 Consideration should be given to structures used in overseas jurisdictions and other options to improve current settings. For example, the costs and benefits of the following could usefully be explored:

- two markets that would separate base load energy generation to prevent price distortions and encourage meaningful solutions to be developed. Thermal base load electricity generation could be on a bilateral or capacity market and renewable generation could remain on an energy-only market
- contracting a fixed amount from smaller generators in a capacity market, which could provide a revenue flow to support additional renewable generation. This could ease the investment pathway as well as ensuring appropriate investments are made. A blended capacity and energy-only market could also ensure sufficient reserves were available to back up intermittent generation
- changes to schedule and dispatch arrangements and development of a flexible load market to allow a greater intermittent mix to be tolerated on both the grid and local networks without creating adverse effects on consumers
- virtual power plants where load aggregators that are not generators themselves (but control other generators' or consumers' premises as an agent) control significant portions of either generation or load and can impact demand for generation and/or wholesale price
- the impact on system operations of increasing amounts of embedded generation where distributors may impose operating conditions that restrict the generators' offer behaviour
- allowing the trialling of new technology and market processes that may benefit consumers, such as multiple trader relationships and peer-to-peer trading.

4.7.6 The Council notes the Authority is considering supply issues in its "Driving efficient solutions to promote consumer interests through winter 2023" consultation. However, we note these issues are not new. A solution is now urgent given the supply risks the Authority has identified in 2023 and beyond.

Recommendation:

We recommend the Authority investigates and reports back on possible options to improve current settings that could be included in New Zealand's energy strategy.

5. Conclusion

5.1 We wish to thank the Authority for the opportunity to submit on the 'Promoting competition in the wholesale electricity market in the transition towards 100% renewable electricity."

5.2 If you have any further queries regarding our submission do not hesitate to contact Jane Budge –Consumer Advocacy Council Lead, on either jane.budge@cac.org.nz or (021) 393-112.

Yours sincerely,

Deborah Hart

Chair – Consumer Advocacy Council