

Electricity Price review submission

March 2019

A focus on new technology – item 7 of the Terms of Reference

In one of its opening paragraphs the EPR states:

The paper also contains suggestions to help ensure the electricity sector functions well during the transition away from carbon-based fuels – a consideration that will become increasingly important as electricity meets more of New Zealand’s energy needs. It is vital the industry makes full use of the opportunities presented by emerging technologies, which have the potential to limit price rises. It is also vital those opportunities are fully supported by the regulatory framework.

We agree with the sentiment expressed in this paragraph. What has surprised us is that there are so few suggestions in the document that will support the increase of new technologies, such as solar, batteries, demand management and so on. Particularly given that these technologies are already in market and being deployed in meaningful numbers and issues around policy/regulatory settings are becoming apparent.

The terms of reference for the review state that:

The objective of the review is to ensure that the New Zealand electricity market delivers efficient, fair and equitable prices as technology evolves and we transition to a lower emissions future, taking into consideration the requirements of environmental sustainability and the need to maintain security and reliability of supply - the energy trilemma.

7 The review will consider:

- The potential impacts of emerging technology on services and prices, and how this may affect different customer groups.*
- The current regulatory framework and its ability to promote the potential benefits from emerging technologies.*

With electricity demand set to increase by between 50 and 100% in the next few decades it is important that new technologies that can substantially improve efficiency are encouraged into the electricity industry. This industry is by its nature extremely conservative and is currently ranked by Callaghan Innovation as the second least innovative industry in NZ. Introducing new technology will be challenging. Hence we support item 7 of the EPR’s terms of reference.

The report scarcely touches on emerging technology and has failed to meet point 7 of its terms of reference. New technology can enable massive efficiency gains in the electricity sector, altering some fundamental paradigms. For example, just in time management can be introduced, as compared to over-building a network for presumed future growth thus increasing economic efficiency. Technology can enable the grid and distribution system to operate at close to 100% efficiency, improving the productivity of the whole economy and presumably reducing costs and therefore prices in the electricity sector. The technology to improve efficiency in the power is available, being deployed and needs favourable policy settings to ramp.

Our understanding is that the EPR considers that the Interim Climate Change Commission (ICCC) will cover off the aspect of new technology. Conversely, it is also our understanding that the ICCC will

not cover item 7 of the EPR's ToR - the *regulatory framework and its ability to promote the potential benefits from emerging technology*. If item 7 in the EPR's terms of reference is not to be covered effectively by the EPR and is not covered by the ICCC who is the EPR expecting to meet this part of its terms of reference? We consider this to be a critical question as the new technologies are already being deployed into the network in meaningful numbers and thus potential benefits are actually realisable now. What is needed is a favourable policy environment to enable new technology deployment to ramp up fast.

The relationship between the work of the EPR and the ICCC needs to be clarified. From talking with members of both the EPR and ICCC it seems there is a gap in terms of which process will be addressing new technology.

Comments on specific actions

A1 – Establish a consumer advisory council. We support this. It needs to be well-versed in the benefits that new technology can deliver for consumers.

B1 – Establish a cross sector group on energy poverty. We support a cross sector group on energy poverty. We suggest that new technology needs to be part of its scope and it needs to be well briefed on new technology and the way new technology can help reduce energy poverty.

B4 – Set up a fund to help households in energy poverty become more efficient. New technology needs to be considered as part of the suite of solutions, for example, assisting households reduce peak demand and benefit from time of use pricing. Community energy should also be considered as a means of generating and delivering cheaper electricity.

B5 – Offer extra financial support for households in energy hardship: Any policy for those in energy hardship needs to consider the benefits that new technology can bring to help reduce power prices, both across the board and for specific households.

B8 – Explore bulk deals for social housing and/or Work and Income clients: Any policy on bulk deals needs to include solar/batteries and community energy as part of the suite of options.

C3 – Make it easier to access electricity usage data: We support making electricity data more available. Easier access to data will create a range of opportunities for consumers and business offering services, resulting in a more cost effective and efficient power sector.

D2 – Introduce mandatory market-making obligations: Any steps to improve the liquidity of the New Zealand electricity futures market is supported.

E1 – Issue a government policy statement on transmission pricing: A government policy statement may help break the deadlock in transmission pricing. Any policy statement on transmission pricing must reflect the benefits of new technologies.

E2 – Issue a government policy statement on distribution pricing: We think this is a very important action because as electricity demand increases the pressures on networks will become significant. Pricing regimes and other incentives for shifting demand away from peak need to be covered in any policy statement. Not least as behind the meter storage technology to facilitate this is already being deployed. An overall goal should be to ensure that future investment is minimised while also ensuring appropriate levels of service. As well as principles, the policy statement also needs to cover specific issues, such as consistent approaches to distributed generation approvals.

E3 – Regulate distribution cost allocation principles: The distribution pricing discussion needs to have some discussion about new technology. It is at the distribution level that the new technology is being and will be delivered. This is a huge shift from the last 100 years where new technology has mainly been a focus at the transmission level, e.g. the HVDC, the dispatch system and the wholesale electricity market. The adoption of new technology at the distribution level has not been an area of attention by electricity sector policy makers. The policy-making focus will need to ensure the right policy settings for the timely and appropriate uptake of new technology.

E4 – Limit price shocks from distribution price increases: There is a need to ensure that price shocks are managed, otherwise negative narratives around new regimes may be developed and once those narratives are developed they can unduly influence pricing policy.

E5 – Phase out low fixed charge regulations: Phasing out the low user charge would be a mistake. What should occur is that the standard user charge should be phased out. The principle guiding lines charges should be to maximise utilisation of infrastructure (which will result in minimising future investment), given that the electricity sector is about to go through a period of substantial expansion and potentially investment. For example, it is important that consumers receive signals about when it costs more to provide electricity. Low or negligible fixed charges with time of use pricing is currently internationally recognised as best practice¹.

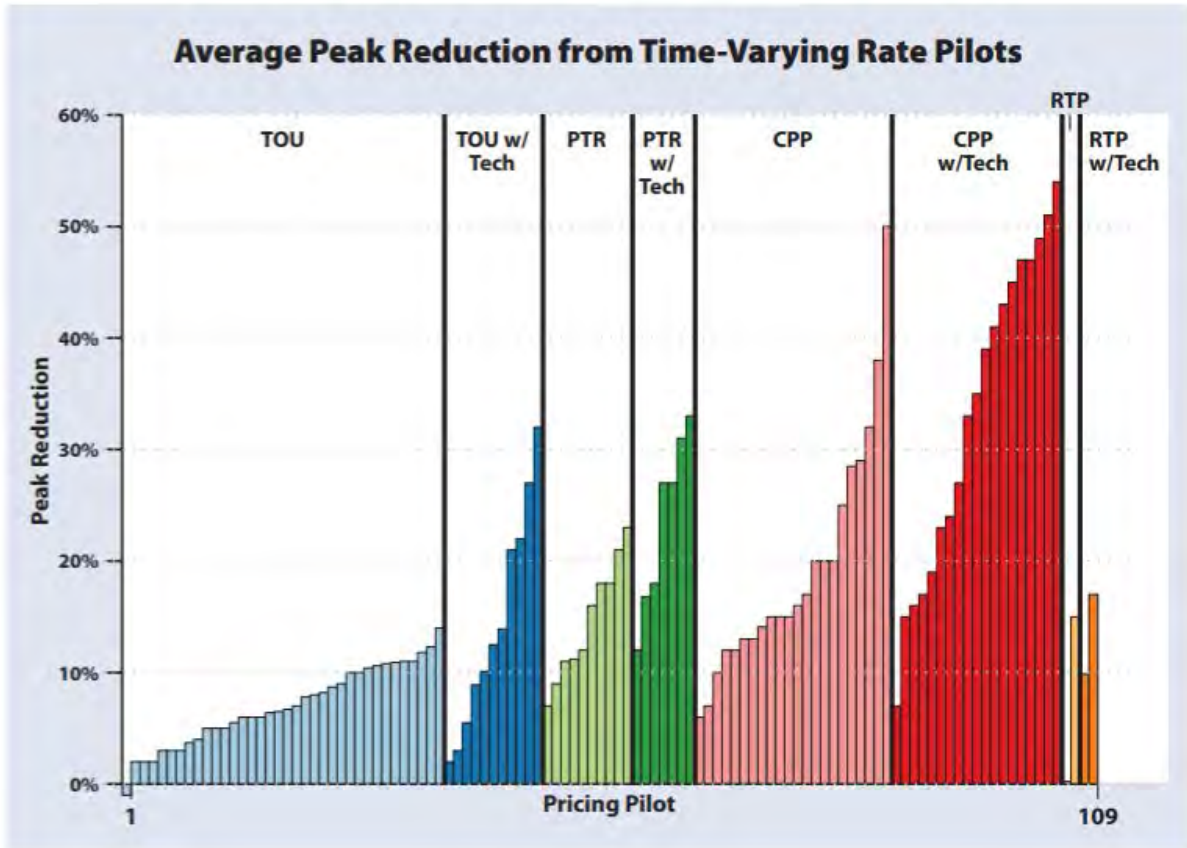
Quotes from the Regulatory Assistance Programme (2018) on lines charges are worth noting:

“Fixed charges take the power of choice out of consumers’ hands and are contrary to the EU vision of broad deployment of energy efficiency, demand response, and distributed generation. They promote consumption at times of stress on the grid and overconsumption generally, resulting in increased costs for all by driving excessive investment in underutilised grid infrastructure. Given the need to decarbonise the transport and heat sectors in large part through electrification, fixed charges will exacerbate the problem of underutilised grid infrastructure and higher costs for the energy transition. The incentives created by further shifts to fixed charges will lead to the need to overbuild distribution infrastructure and in so doing will create a significant hurdle for the deployment of beneficial electrification of the heat and transport sectors.

Consumers respond to price signals. Fixed charges take the power of choice out of consumers’ hands and disincentivise the adoption of elements for a consumer-centred, clean energy transition (such as energy efficiency, demand response, and distributed generation). They lead to higher costs for all by promoting underutilisation of existing infrastructure and excessive investment in new infrastructure. Fixed charges are inefficient, do not promote equity across users of the grid infrastructure, and are contrary to economic theory and practice.

The most effective ways of managing the cost of the electricity network – peak demand – is via time of use pricing coupled with very low or negligible fixed charges. The technology is now available to flatten demand and increase productivity in the power system and therefore the entire economy. The graph below outlines the results of real examples on peak reduction.

¹ https://www.raonline.org/wp-content/uploads/2018/01/rap-ck-mh-aj-network-tariff-design-for-smart-future_2018-jan-19.pdf



From the Regulatory Assistance Programme. TOU=Time of Use price signals. PTR = Peak Time Reduction (demand response). CPP= Coincident Peak Pricing. Tech refers to ways of controlling demand.