

**Network Tasman's submission on the Electricity Authority's Consultation Paper: More efficient distribution prices – what do they look like?**

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Dear Jean-Pierre,

This letter constitutes Network Tasman's submission on the Authority's Consultation Paper *More efficient distribution prices – What do they look like?*

We understand the Authority's case for distribution price reform and agree with the general need to reform prices. However, we diverge with the Authority over the urgency for reform. The case the Authority presents for urgency is based on flawed analysis.

The Authority also appears to be dogmatically wedded to distributors adopting prices that send the most efficient price signal possible, rather than achieving the most efficient outcome possible. They are not the same thing. Each price structure creates costs and benefits, the Authority has done no analysis to measure the net benefit of different price structures, or the relative efficiency of each of its suggested options. It may be that a seasonal time of use tariff would achieve 90 per cent of the benefits of dynamic critical peak demand charge, but the Authority doesn't know whether or not that is the case.

When it comes to the LFC Regulations, the Consultation paper contradicts itself and other advice it has given distributors. The Authority's advice on complying with the LFC Regulation is unambiguous and absolute. Capacity and demand charges are both variable charges. However, this assertion is contradicted in the Consultation paper when the Authority states that capacity charges are an efficient way of recovering fixed costs (that assessment is based in the premise that fixed costs should be recovered using fixed charges). In addition, the Authority has undermined its position stated in the Consultation paper that capacity and demand charges are variable, by stating that an assessment of whether a charge can be considered to be fixed or variable is dependent on whether the consumer faces material barriers to changing their capacity (or demand). If there are material barriers, it is fixed. If there aren't, it's variable.

The Authority states that distributors haven't moved quickly enough and must reform their prices with urgency. However, distributors have been uncertain about how the Authority wants distributors to reform their prices since the Authority Chair announced at the Authority's distribution pricing conference that it would review its distribution pricing principles 30 months ago. During this time, all distributors have known is that the sole piece of official guidance from the Authority about how they should reform their prices – the distribution pricing principles – will change. When you know the rules are going to change, but don't know how, it's difficult to plan your next move.

The Authority’s case for urgency is based on assumptions that are demonstrably inaccurate

The Authority uses the results of the study completed by NZIER in September 2015 as the basis for urgency. NZIER stated that the cost of maintain existing distribution tariffs ‘high consumption charges’ is between \$2.7 billion and \$5 billion.

Firstly, the NZIER analysis does not present a case for distribution tariff reform. It is a comparative analysis of tariffs with high consumption charges and those with low consumption charges – the structure of the factual and counterfactual tariffs appear to be the same. It states that \$2.7 billion to \$5 billion in inefficient investments could be saved by distributors rebalancing their tariffs to reduce their consumption charges and increase their fixed charges.

This is not a case for wholesale tariff reform, rather for distributors to rebalance their existing tariffs.

Secondly, the NZIER analysis is based on PV adoption forecasts that looked optimistic at the time and are now confirmed to be. The NZIER analysis forecast that solar PV adoption would jump from almost zero per cent penetration (of maximum possible) in 2015, to almost 10 per cent in 2016, about 18 per cent in 2019 and 38 per cent in 2020.<sup>1</sup>

It is not immediately clear what the NZIER assumed the maximum possible penetration to be. However, the Concept Consulting report that the Authority also references when discussing the benefits of distribution tariff reform assumes that the maximum uptake of household solar PV to 65% of all households.<sup>2</sup> We have used this figure in our analysis.

Table 1 below summarises the number of residential ICPs, the maximum number of those residential ICPs that can install solar PV (assuming a maximum of 65% of all households), the number of small scale solar PV installations in New Zealand<sup>3</sup> and the penetration rate for household solar PV. All actual numbers have been sourced from the Authority’s EMI website.

Figure 1: Actual and NZIER forecast solar penetration rates

	Residential ICPs	Maximum possible residential solar PV installs	Number of solar PV installs	Actual penetration rate	NZIER penetration rate <sup>4</sup>
Sep-15	1,760,908	1,144,590	8,157	0.71%	0.3% <sup>5</sup>
Sep-16	1,773,431	1,152,730	12,432	1.08%	9%
Jan-19	1,825,510	1,186,582	22,355	1.88%	18%

Note: Although the actual figures for 2019 only account for one month of the 12 month year and the NZIER penetration rate (presumably) applied to a later date in the year, the magnitude differences in the actual and NZIER’s forecast penetration rates are so significant that the mismatch in timing is entirely irrelevant.

<sup>1</sup> These figures are not exact as the exact figures are not provided in the paper. The figures are visual estimates of the data represented in Figure 1 of the paper.

<sup>2</sup> Concept Consulting, *Electric cars, solar panels, and batteries in New Zealand Vol 2: The benefits and costs to consumers and society*, June 2016, p.47.

<sup>3</sup> This figure will overstate the number of solar PV installations on households as it includes all distributed solar PV (ie business and residential). For the purposes of our analysis this is irrelevant.

<sup>4</sup> These figures are not exact as the exact figures are not provided in the paper. The figures are visual estimates of the data represented in Figure 1 of the paper.

<sup>5</sup> The NZIER paper quotes a penetration rate of 0.3% as at the end of 2014 (p.11). This date clearly doesn’t align with the dates of the other figures in the same row, but it provides an indicative base from which NZIER’s forecasts are anchored.

An 18 per cent penetration rate would mean 213,500 solar PV installations by the end of 2019. If the current linear growth of around 350 installs a month continues there will be 26,000 installations by the end of 2019.

NZIER then forecasts step change in installations over 2020, with the penetration rate forecast to be just under 40 per cent. Holding the ICP growth static from January 2019, this would mean an additional 261,000 solar PV installations in 2020, for a total of 474,000.

NZIER figures are clearly unrealistic and the Authority cannot continue to use the NZIER analysis.

The NZIER paper is not the only source the Authority uses to describe the cost of maintaining existing distribution tariffs. The Authority also cites a Concept Consulting presentation – *New technologies + old tariffs = problem!* – which discusses the findings in its report *Electric cars, solar panels, and batteries in New Zealand Vol 2: The benefits and costs to consumers and society*. In these documents Concept Consulting estimates that the costs of misaligned price signals in existing electricity tariffs could encourage inefficient solar PV adoption costs of approximately \$1.8 billion over 20 years.

We haven't tested the robustness of Concept Consulting's analysis. However, our conclusions are the same as described above - even if they are robust, the Concept analysis doesn't present the case for reform urgency or the wholesale price reform the Authority is advocating for:

- Urgency - the Concept analysis assumes solar PV penetration rates of around 3-4 percent in 2021. This is hardly a wave of investment that will swamp distributors and result in significant cost shifting.
- Reform - the solution to problems created by high consumption charges is to remove the high consumption charges. More efficient prices are likely to more effectively remove incentives for inefficient investment in emerging technologies, but it is not clear whether the marginal gains of these actions, relative to more simple solutions, are material.

### Focus on the big wins - More efficient prices don't necessarily result in more efficient outcomes

The Authority appears to be dogmatically focused on distributors adopting the most efficient prices possible, rather than its statutory objective of promoting competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers. That is, efficient outcomes. Price reform isn't a cost free exercise and to determine the most efficient outcome, the Authority needs to consider the marginal benefits of moving to each of its assessed price structures against the marginal costs of doing so.

It's entirely plausible, for example, that what the Authority considers a "step in the right direction" - time-of-use prices will address the majority of the Authority's concerns.

The Authority's primary premise is not that traditional load growth is resulting in inefficient network investment, or that traditional consumers using the network inefficiently. While these are both undoubtedly true, the inefficiencies are small and the costs of addressing them are likely to be high. The Authority has stated the reason distribution pricing is on its radar is because consumer behaviour is changing and it is emerging technologies that are (or more accurately, are expected to) enable that change and amplify the inefficiencies of existing distribution pricing. As we have discussed above, the expected surge in solar PV installations hasn't occurred.

It is two technologies that are driving these inefficiencies. Solar PV and electric vehicles.

There is insufficient investment in both solar PV and electric vehicles to warrant any immediate concern on an economic basis. There is no evidence of a flood of inefficient investment in either technology. However, if there were to be inefficient investment in either technology:

- Inefficient investment in solar PV will be driven by inefficiently high consumption charge during daylight hours and inefficiently low consumption charges at peak times.
- Inefficient investment in and charging of EV's would also be driven by inefficiently high consumption charges (this time overnight) and inefficiently low consumption charges at the peak.

Network Tasman considers that a lot of the benefits of price reform is likely to be gained from rebalancing revenues so they reflect our general cost structure, i.e. 80 per cent fixed and 20 per cent variable. This relatively low cost action would largely remove incentives for inefficient over-investment in solar PV.

Similarly, rebalancing fixed and variable costs would go some way to addressing the likely disincentives that high consumption charges place on investing in EVs, but would not remove the incentives for EV owners to charge their vehicles when the network is likely to be congested – affecting service quality and triggering network upgrades. To do that, distributors would likely need to introduce a peak price for when their network is, or is likely to be, constrained.

If it is emerging technologies that are driving these changes, there is a case for focusing on this emerging behaviour. The costs of inefficient EV investment and charging can be addressed with EV specific tariffs that signal the cost of charging when the network is congested (if it is congested).

The average household has limited ability to shift load during the peak because they have limited discretionary load. There are presumably high costs to consumers from cooking dinner earlier (or later) or making material changes to the temperature of their heating. There are benefits from households shifting the timing of their dishwasher and washing machine from the peak (if they are currently used them), but it's not clear whether they would be material. If they aren't, it's not clear what the benefit would from sending those price signals to consumers who are unable to meaningfully respond to them.

The Authority states that technology specific-tariffs aren't efficient and in theory that is correct, but the question the Authority should be answering is not what the most efficient tariff is, but what tariff achieves the most efficient outcome. If that is where the majority of the costs are coming from, it's possible a targeted tariff could achieve the most efficient outcome. The Authority should have an answer to whether that is the case. It doesn't.

Network Tasman isn't advocating for (or against) an EV specific tariff – we don't currently have a position on the issue – rather we are pointing out that the Authority needs to broaden the scope of its analysis from just the efficiency of the price signal to the efficiency of the outcome. Only once it has done that can the Authority compare the relative efficiency of the options.

### [Authority's contradictory views on the low fixed charge regulations create more uncertainty about price reform, not less](#)

Despite its steadfast assertion in the consultation paper that capacity and demand charges are variable charges for the purposes of the *Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004* (regulations), the Authority has contradicted this view in a letter to the ENA discussing compliance with the regulations.

The fact the Authority is unable to present a cogent and consistent analysis of the barriers (or otherwise) presented by the regulations not only undermines the Authority's broader credibility, it also does nothing to convince distributors that the Authority's generous interpretation of the regulations is robust.

In the Consultation paper, the Authority reiterates the view - set out in its 2016 guidance note on the regulations - that the regulations don't present a barrier to distribution price reform.

The analysis is based on the principle that if there is a relationship between the charge and the amount of electricity consumed, the charge is variable. The Authority says there is a relationship between both demand and capacity charge, and the amount of electricity consumed.

From our perspective, the Authority's analysis is inconsistent with the intent of the regulations. The regulations define a fixed charge as "a charge levied for each customer connection in currency per time period (for example cents per day)". Both demand and capacity charges are levied in this form, that generally being cents per kVa or kW per day.<sup>6</sup>

Overlooking this oversight, the Authority has contradicted its own analysis.

The Authority's guidance note states that in principle demand and capacity charges are variable. However, by the Authority's own admission the assessment of whether a charge is fixed or variable is more nuanced than that. In a letter to the ENA on 17 August 2017, the Authority addresses this exact point.

"The issue here is whether a fee of, say \$100, for changing a fuse would render a capacity charge (based on fuse size) a fixed or variable charge:

- If the fee presents a material barrier to a consumer changing the fuse size then the capacity charge is a fixed charge
- If the fee is not a material barrier (ie, it is a *reasonable fee*) then the capacity charge is a variable charge"

This same logic can be applied to demand charges.

The Authority's position set out in Consultation paper that capacity and demand charges are variable is inconsistent with the position reproduced above.

If the test is whether the benefit of a consumer changing their capacity or demand exceed the cost of doing so the Authority can't limit its analysis to any direct fees of doing so. For most households<sup>7</sup> reducing their peak consumption – and therefore reducing their capacity or demand charges - will require behavioural changes or investment in energy efficiency. These activities must be taken into account as they are not cost free activities.

Peak demand for most households occurs on winter evenings. Consumers can opt not to cook dinner using their electric appliances and elect not to heat their homes with electric powered heaters. However, whether the benefits of doing so outweigh the costs will determine whether consumers will take this course of action. Given kWh charges already provide consumers with incentives to

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<sup>6</sup> In reality, these are annual charges (\$/kVa or kW/year) that are billed on a daily basis. The charge is fixed for the entire 12 month period.

<sup>7</sup> Exceptions include new households that have inherited a fuse size or demand estimate that is incompatible with its needs.

reduce demand over winter, the easiest and lowest cost actions are likely to have already been exhausted.

Finally, not only has the Authority presented inconsistent views on the circumstances when a demand or capacity charge is variable, it has also stated in the Consultation paper that capacity charges are fixed.

The basic premise of the Authority's paper is that distributors should use cost-reflective prices to recover their costs. In practice this means fixed costs should be recovered via fixed charges and variable costs should be recovered via variable charges. In the table on page 13 of the Consultation paper, the Authority gives contracted capacity charging a 5 star rating. It comments that contracted capacity is a "non-distorting way to recover fixed cost". That is, contracted capacity charges are a good way to recover fixed costs because they are a fixed charge.

The Authority doesn't seem to be able to get out of its own way when discussing whether capacity and demand charges are fixed or variable. Given the inconsistencies in the Authority's statements, it's difficult to see how the Authority can continue the blanket assertion that capacity and demand charges are variable without further inflicting reputational damage and undermining its credibility.

#### [Distributors have been uncertain about the Authority's expectations](#)

The Authority has expressed its displeasure at the progress distributors have made on price reform. However, it fails to see that the time it has taken to provide guidance on the pricing principles has created a vacuum of information about its expectations for price reform.

The Authority has overall responsibility for distribution pricing. The only formal guidance distributors have on how the Authority wants distributors to set their prices is the pricing principles. For the past two years, distributors have understood that the existing pricing principles are going to change, but had no clear indication of how they would change. The Authority has offered no formal views or guidance in the interim period to fill the void. In fact, the Authority stated it would be inappropriate to offer comments on tariff efficiency, hypothetical or otherwise, before it had finished its review of pricing principles (as per LFC letter 17 August 2017).

The Authority cannot disassociate itself from any of its perceived failure by distributors to meet its (unarticulated) expectations. Placing the blame solely on distributors is neither fair nor conducive to building trust and goodwill between the Authority and distributors.

When discussing timeframes for reform, the Authority needs to take account of the environment in which distributors operate. The Authority repeatedly refers to the need for urgency and the urges distributors not to wait until 2020 to embark on price reform. Unfortunately, that ship has sailed. We were in the closing stages of finalising our price for 2019/20 when the Authority's consultation paper came out. Information disclosure obligations and obligations set out in our Use of System Agreements set hard deadlines for when prices need to be finalised. The 2020/2021 pricing year is the first pricing period that we, and presumably other distributors, are able to take account of any changes to the pricing principles.

#### [Support industry](#)

We are heartened by and welcome the Authority's desire to work more closely with distributors. Recent efforts to reform distribution prices have faced considerable opposition – including well-funded and mobilised publicity campaigns. As a primary advocate for consumer's interests in the electricity sector and the regulator advocating for price reform, the Authority's views carry significant weight. It should be willing to set up and advocate for the changes that distributors are

making. The Authority's failure to do so previously for networks that have already undergone price reform and faced significant backlash has diminished some distributor's appetite for price reform.

## Monitoring

The purpose of the monitoring regime is clear – to put public pressure on distributors that are dragging their heels on price reform. In theory this is an excellent approach. However, the Authority needs to ensure the monitoring regime is robust and achieves its stated objectives.

As mentioned earlier, the Authority's overriding view appears to be that distributors should adopt efficient prices and not that distributors should achieve efficient outcomes. This distinction is important because they are not the same thing. For example, networks that aren't experiencing constraints, according to the Authority, and should not be discouraging consumers from using the network at peak times (as there is spare capacity). In this case, there is no need for a peak price signal, yet distributors that fall into this scenario would be punished by the monitoring regime with a poor rating for network use. Distributors could introduce a peak price signal with a zero price, but there are no circumstances where doing so would be efficient.

The Authority needs to be careful to ensure its monitoring regime doesn't result in unintended consequences – such as gaming. The regime as described creates a number of incentives that Authority is presumably not seeking to create.

For example, distributors that are facing constraints could improve their ratings significantly by adopting a peak demand price signal with a zero or near zero price.

The Authority's regime will assess the top 3-5 tariffs, based on revenue. For most distributors this will capture their residential tariffs, which are generally their least efficient prices. Assessing the top 3-5 tariffs by revenue creates incentives for distributors to split their less efficient tariffs into smaller groups. For example, Network Tasman has a LFC tariff for consumers with a 15kVa connection that charges a fixed charge of 15 cents a day. It may be possible to split that tariff into two separate tariffs, one with a fixed charge of 15 cents a day and another with a 'variable' (according to the Authority's LFC guidance) capacity charge of one cent per kVa per day. Both end up charging the consumer the same amount, but may result in the tariffs dropping out of the top 3-5 by revenue.

Network Tasman is also uncertain how the monitoring regime will be applied to LFC Tariffs. The regulations require that the two tariffs have the same structure, but different cost allocations. Our perspective is that each LFC tariff is linked to its 'parent' standard tariff and the two tariffs should be considered together.

Most Network Tasman consumers have a degree of choice about the tariff they enjoy and it is not clear how the Authority will account for that choice. For example, our Group 1 consumers (those with a 15kVa connection), which is over 90 per cent of our consumers have the choice of being on an uncontrolled plan with a flat consumption charge at all times, or being on a day/night plan. In addition to this, consumers on both plans can elect to have their hot water controlled in exchange for a lower charge.

It is not clear what the Authority considers price structure for the purposes of monitoring regime. For example, are consumers on an uncontrolled and controlled water tariff are on a different tariff to those who are on just an uncontrolled tariff?

Network Tasman supports the Authority's objective for distribution price reform and looks forward to productively engaging with the Authority in the coming months and years.

I am happy to discuss any further details, should the Authority have any questions.

Kind regards,

Daniel Vincent

Regulatory and Commercial Manager