



15 August 2023

Via email [distribution.pricing@ea.govt.nz](mailto:distribution.pricing@ea.govt.nz)

Tēnā koe,

Thank you for the opportunity to provide feedback on the “targeted reform of distribution pricing” issues paper. The paper covers a wide range of topics related to pricing in theory and in practice. Given this wide scope, we encourage the Authority to explore the merit of targeted engagement on topics of interest (and if material). We appreciate the consultation process is a relatively low-cost method for the Authority to get feedback and prioritise where effort should be directed for analysis and engagement. Given the detailed nature of the topics and their interdependencies better approaches and analysis are needed to identify issues and possible problems. We are happy to help and look forward to reading submissions from others.

If you have any questions regarding this submission or would like to talk further on the points we have raised, please contact [Andrew.Kerr@powerco.co.nz](mailto:Andrew.Kerr@powerco.co.nz).

Nāku noa, nā,

A handwritten signature in black ink, appearing to be the initials "AK" with a stylized flourish.

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**POWERCO**

# Question responses

We have contributed to and support the submission by Energy Networks Aotearoa.

## Context

Q1. Are there other options that you think the Authority should consider?

We encourage Authority staff to engage more deeply with distributors about pricing in practice. There are no barriers to the Authority engaging directly with a distributor on the specifics and trade-offs of its pricing rather than through published documents; engagement via compliance documents is not an effective approach to build understanding. We are keen to help.

If the Authority has concerns about an EDB's pricing, one-on-one engagement (a virtual call-in) is a useful first step (low cost, targeted, shared understanding). We share the ENA's thoughts that a call-in option will likely result in delaying changes to, and innovation in, price structures, and tie up significant amounts of time. The prohibition of, or mandating of, certain pricing approaches would be both simple and risky as it could reflect point-in-time views eg consider how views on transmission and distribution pricing have evolved.

Q2. Do you have any comments on the options outlined?

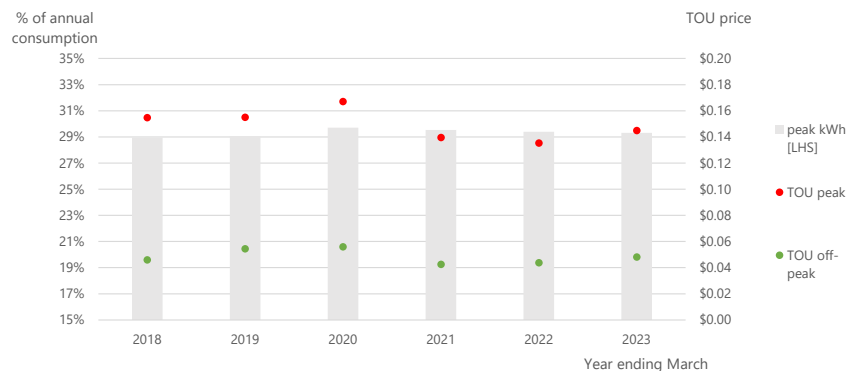
We encourage the Authority to work through any preferred options with a practical lens, clarify the outcomes and measurables up front, do a dry-run trial, and agree to a post-implementation review.

## Peak period price signals

Q3A. Do you agree that a combination of TOU tariffs and load control (appliance) tariffs would be useful for the smart management of peak demand?

Directionally, yes, as prices are part of the overall system. TOU distribution prices will be useful, though not the full package for smart management of peak demand. This is because prices are an 'opt in' response. Should a customer assess their need to be higher than the price (a cost to them), then they can choose to pay that price. The ability to control load is more reliable than relying on pricing to attenuate demand, however the tariffs and operation regarding control of EV charging are likely to be significantly more complex than for HWC, and subsequently less effective.

The adjacent chart presents Powerco's TOU distribution price levels and associated percentage of annual consumption at peak times for a part of network. Through the period<sup>1</sup> peak consumption has averaged around 29% of total consumption. One interpretation is that variations of



<sup>1</sup> For example, Covid lockdowns, changes to level of distribution fixed charges, phase out of low-fixed charge regulations, innovation of retail pricing.

around +/-20% on variable charge had no impact on proportional peak use (average annual consumption is similar).

**Q3B. Do you consider that TOU pricing could have unintended consequences for congestion on the LV network?**

Given the indirect link between pricing and behaviour, *any* form of pricing could have intended and unintended physical (distribution and transmission networks) and financial (wholesale markets, reserves) impacts. Care is needed drawing a 1:1 mapping of a single attribute to a single outcome. For example, LV network issues, whether it be congestion or power quality, can be instantaneous and a function of customer and network conditions or events. Attributing a congestion or quality outcome to a distributor's TOU price level or structure, which is wrapped into an offering from a retailer, requires care. TOU distribution price signals are an opt-in and lagged approach to elicit a potential response (or value). The specification of time-blocks could potentially attract load spikes depending on how it packaged with retailer offerings eg scheduled overnight EV charging. We are seeing retailer offerings which already have relatively extreme price offerings. Analysis of these consumer behaviours will be insightful to the Authority to understand the impact of different customer groups to these retail price signals, regardless of the underlying distribution prices (same retail package, different EDB pricing).

**Q3C. Do you consider that use of shoulder pricing as part of the TOU price structure could be an effective way to mitigate this risk? What other ways could be effective?**

The same comments above about attribution apply here. Attributing a customer's behavioural response to a distribution price signal which is a relatively small part of a consumer's daily routine needs. In a theoretical world of elastic demand, full pass-through of signals, and fully informed/engaged consumers, it may help. But, even in that hypothetical world it will likely only work to separate EV charging load from other non-shiftable load. Non-price issues that impact charging behaviour can cause congestion issues. Regardless of cause, shoulder pricing is likely to become a path towards granularity and complexity that could be avoided by load control; could be easily overpowered by disparity at the retail pricing level (eg Contact's 'Good Nights' plan) and still result in problematic levels of load congregating as soon as the lowest rate takes effect. Analysis of these consumer behaviours will be insightful to the Authority to understand the impact of different customer groups to these retail price signals, regardless of the underlying distribution prices (same retail package, different EDB pricing)..

**Q4. Do you agree with the assessment of the current situation and context for peak period pricing signals? What if any other significant factors should the Authority be considering?**

Controllable load is a service, response to pricing signals is opt-in. Control of HWCs provides a more dynamic tool for EDBs to manage network circumstances at any time of day or year eg temporary reconfigurations, event-based load changes combined with network events, offering to reserves market, responding to System Operator events. The paper's analysis in Figure 2 appears to directionally support this because the value exceeds the implied value to the peak/off-peak differential. The assessment seems biased to certain outcomes for certain types of load – stakeholders will benefit from viewing the method used to ensure any conclusions are valid. Comments regarding step changes in capacity cost are interesting, as step changes like this are effectively promoted by the EA in its guidance on TPM pass-through and distribution allocation ie that costs should be spread equally within a consumer group to *avoid* sending a price signal. Selection of a bus charging facility as the example reflects a nuanced edge-case, and one that is not representative of a wider problem, and it is unclear whether differences are material, versus just being different and reflecting the network circumstances/costs.

**Q5. Do you agree with the problem statement for peak period pricing signals?**

The statement would benefit from more clarity about the impacts on efficiency eg investment by distributors or other parties. There are a significant number of variables involved in assessing existing congestion, forecasting future congestion and the potential investment options or network configuration options to address it, the ongoing cost of those options, and the allocation of those costs to consumer groups with varying demand elasticity.

We support further information (from the EA and/or industry) on customer views about pricing. For example, a recent survey of our residential customers showed:

- 18% look at their lines charges on every bill (if itemised)
- 46% of customers believe households should be charged different rates based on location and usage. Around 14% believed each household should pay the same total amount ie a fully fixed charge
- 58% of customers are aware of peak and off-peak pricing
- 65% would consider adopting peak/off-peak pricing if available, and of these, 54% would alter their usage

Another fruitful area of analysis could be to quantify (roughly) the marginal impacts of the concerns included in the problem statement eg how many consumers, how much investment, options to reward flexibility to assess what the problem actually is. Furthermore, in its previous guidance the EA suggested that peak differentials should be adjusted relative to demand elasticity:

*114 It is rare that the revenue collected from the price signalling step will match the revenue a distributor is allowed to earn. Most of the time the revenue collected from the price signalling part of the process will be less than the allowed revenue, but sometimes it could be more than the allowed revenue (especially if the distributor has a very strong price signal it needs to send to one group).<sup>2</sup>*

We are keen to know more about the Authority's perspective(s) on this topic. One area worth exploring with EDBs is the "robust and transparent analysis" – there could be value in the Authority setting out the when/where/what.

#### Q6. Do you have any comments on the Authority's preferred pricing for peak periods?

Our comments for above relate to the practicalities of pricing. Clarity on whether these options refer to distribution and/or retail pricing would be helpful. We also add:

- 4.29(a), the suggestion, and related exemption, relies purely on the compliance of retailers. We are keen to understand the Authority's view on the role of distributors.
- 4.29(b) Deemed and residual profiles are primarily an issue with energy market reconciliation, and only secondarily, if applicable, GXP billing by an EDB. The EA should not be relying on distributors to fix problems with the wholesale market. GXP billing does not affect the granularity of data provided to distributors.
- 4.29(d) We agree with the principle of platform agnostic pricing and note the potential inconsistency with connection pricing later in the paper. HWC control and EV charger control vary in both the effectiveness and value, and thus should have differing prices, eg where EV chargers have an override function to avoid the control.

#### Q7. Are there other options you think the Authority should consider for improving peak period pricing?

Some considerations include:

- Working closely with some candidate EDBs to understand network operating and pricing.

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<sup>2</sup> <https://www.ea.govt.nz/documents/1875/Distribution-Pricing-Practice-Note-v-2.2-October-2022.pdf>

- Create a theoretical distribution network of its own and performing example peak pricing signal calculations, preferably without outsourcing the work to a consultant. EDBs could provide information regarding the variables to be considered, any observed outcomes, and critique the outputs. This would create a useful forum for robust and transparent analysis of issues including the strength of signals, transmission cost pass-through, pricing that rewards flexibility, cost allocation, revenue smoothing.
- Engage more deeply on scorecards. Our experience suggests deeper engagement would help them reflect the outcomes it seeks from them. We have struggled with how the Authority has repeatedly mis-interpreted aspects of our pricing practice, despite our best efforts to explain and demonstrate. The action could include more feedback loops and rationale for judgments. This approach could be scaled to align with the materiality of the issue, judgement, or customers affected. We understand there are many EDBs for the Authority to engage with – if there are resource constraints, then effort could be best directed at where the harm or potential benefit is highest, which would be supported by the Authority quantifying it's concerns rather than using qualitative judgements.

Q8. Which if any of the above options do you consider would best support distribution pricing reform around peak pricing signals and why?

The problem (including root causes) needs further analysis before options analysis.

In principle:

- We support continued work on the practice note and scorecards. This could include providing worked examples of the calculations distributors are expected to perform. This would ensure that the EA understands, in detail, what is expected and weighs the likely gains from 'more efficiency' versus the costs involved. As noted above, a demonstration network model could be useful for this purpose.
- The suggestions regarding mandating or prohibiting approaches typically cover issues underpinned by meter capability (which can be for a range of customer or situational reasons), retailer-MEP relationships, retailer system issues.
- We are curious to understand more from the Authority about platform-agnostic and appliance-specific tariffs.
- We support a virtual call-in option – this could act as a dry-run for a formal call-in option and test the value and practicalities of a codified process. Targeting engagement and understanding at the level of inefficiency at a specific EDB will be a useful learn-by-doing exercise.

## Off-peak price signals

Q9. Do you agree with the assessment of the current situation and context for off-peak pricing signals? What if any other significant factors should the Authority be considering?

No. There are various input costs faced by EDBs that result from either off-peak usage or the provision of network services outside of peak times. These include allocation of transmission charges, levies charged by regulatory organisations, and the operation and reactive maintenance outside of normal business hours (as required by quality incentive/penalty regime). These costs are not 'near-zero' - for example our transmission charges equate to around 1.4c/kWh across the network.

LFC compliant prices are a function of the non-LFC equivalent. Therefore LFC prices will carry a premium to the standard user prices. Based on comments in the paper, there is benefit in EA reviewing the relationship between these customer groups as this will address many of the statements in the paper about the scale of off-peak charges

and how the LFC works in practice. Tweaks to fixed charges for non-LFC customers will force higher variable rates onto LFC users, which both amplifies the impact on LFC users during the phase-out, and increase reliance on variable charge recovery. Attempts to under-recover from LFC price categories will distort the balance point to below 8000kWh and incentivise consumers to shift to LFC price categories.

One topic to explore in more detail is role of *absolute vs differential* usage prices. If EDBs seek to provide incentive for load control, it can be based on the value of the load available for shifting, which is best managed via a variable rate. A tariff for network controllable EV charging would therefore require a sufficient incentive versus the equivalent off-peak rate to promote uptake.

A focus on low off-peak rates forces higher fixed charges, and risks unintended consequences in terms of shifting costs among consumers eg EV vehicle charging may see consumers requiring 3ph60A connections, which flows through to different network requirements, and logically attract a higher fixed charge compared to current state eg \$1000+ per annum. As the Authority notes in its 2022 practice note: "Trade-offs abound in the journey to reform distribution prices".

#### Q10. Do you agree with the problem statement for off-peak pricing signals?

It is difficult to agree with the statement without definition of what a 'material charge' is and how it is influencing investment signals. We are keen to understand more about the Authority's thinking.

#### Q11. Do you have any comments on the Authority's preferred pricing for off-peak usage?

The potential customer impact is significant. Pushing costs to fixed charges will likely force significant unavoidable steps in the cost of marginal capacity, which are currently smoothed through relatively minor, but non-zero, variable charges. Without targeted In the context of decarbonisation, we will likely see customers caught in the cross-fire and making inefficient investment decisions based on sub-optimal price signals.

Regarding AMD, a workshop would be a useful way forward to tie together the use, impact, and concerns the Authority has about AMD as a pricing tool. This would include how it is applied to pricing; the levels of elasticity for customers of the size where it applies; the likely effect of alternative pricing signals.

We are keen to understand more from the Authority about regarding transmission pass-through given

- The reality of transmission allocation being largely kWh based
- The Authority's desire for customers to face similar transmission costs whether they connect direct to the grid or via an EDB
- contractual requirements on EDBs to pass-through costs transparently to customers
- EDBs avoiding subsidisation.

There are a variety of ways these issues could be teased out.

We support and acknowledge the Authority's interest in more data (para 5.20). We have not responded directly to this targeted question given the wide scope of the consultation and time available.

#### Q12. Are there other options you think the Authority should consider for improving off-peak pricing?

No. The suggestion regarding prohibiting uniform charges would be challenging given the realities of data availability and data supply from retailers. The EA seems to have shifted its needs to prioritise its focus, which seems to have shifted significantly.

Q13. Which if any of the above options do you consider would best support distribution pricing reform around off-peak pricing signals and why

The problem (including root causes) needs further analysis before options analysis.

## Target revenue allocation

We support the ENA's submission on this topic, and the Authority's preferred solution that updating the practice note with technical guidance is a pragmatic first step.

## Connection pricing

We support the ENA's submission on this discussion, including the interface with Commerce Commission processes.

Powerco engages deeply with customers before, during, and after connection pricing decisions eg including reasons for change. Our experience is that analysis at an aggregate level eg Figure 6 requires caution given the outcome (prices) can reflect a range of network circumstance, design and costing processes, customer characteristics and requirements, decisions about on-site/dedicated/upstream assets, and the interaction with pricing structures (eg customised/asset-based or grouped). These factors should be considered by the Authority to get a clearer picture about the nature and scale of any problems with processes, including how different approaches are causing inefficient outcomes. After that, consideration of options to address can be targeted.

**Action:** deeper engagement of how the contribution policies are applied in practice.

## Retailer response

Q25A. Do you agree with the assessment of the current situation and context for retailer response? What if any other significant factors should the Authority be considering?

Distributors cannot realistically force retailers to submit TOU data to them nor *"increase the proportion of (your) customers that face time-varying charges"*. One option available to us is to set prices well above 'normal' prices, essentially penalising retailers when they do not submit half-hourly data. Effectively a penalty. Before going down this route, clarity about why retailers can or do not submit half-hourly data would be beneficial to the Authority.

Q25B. [for retailers]: What plans do you have for responding to distribution price signals as distributors reform their price structures? What barriers do you see to responding efficiently?

No comment.

Q25C. [for distributors]: What plans do you have to increase the proportion of your customers that face time-varying charges (for example, making TOU plans mandatory for retailers whose end-users have an AMI meter installed)?

We have a relatively high, and increasing, proportion of customers on TOU prices (>75%) with 84% AMI penetration on our Eastern region. All customers with a smart-meter are on TOU price category, though some retailers do not submit on this basis. For retailers not yet adopting our TOU pricing, we are interested to see their responses to Q25B on their plans for getting TOU-ready.

Q26. Do you agree with the problem statement for retailer response?

Multiple issues are being combined here, so more refinement is needed. The two retailer-based issues are data submission to distributors (or lack thereof) and extent of pass-through to consumers. These can occur simultaneously or separately, and in isolation to paying for energy on a residual profile. One data point of interest (based on registry data) is that across our entire network, around 60% of all residential connections with a smart meter appear to be submitting to the market using deemed or residual profiles.

**Action:** The interaction between distribution pricing and profiles requires further engagement to ensure a common understanding of the mechanics and concerns about the impacts on incentives.

Q27A. Do you have any comments on the Authority's preferred pricing?

We support customers being billed based on consumption that relates to distribution pricing structures derived from half-hourly data). How that is achieved is related, and important issue to consider if a change from current state.

Q27B. [for retailers]: What use do you make of deemed and residual profiles? Please explain the reasons for this. What barriers do you see to phasing out use of deemed and residual profiles?

No comment.

Q28. Are there other options you think the Authority should consider for retailer response?

The EA could examine the operation and effectiveness of the MEP/retailer relationship given their central role of the collection and provision of data for multiple parties: consumers, distributors, the market, 3<sup>rd</sup> parties.

Q29. Which if any of the above options do you consider would best support distribution pricing reform in the area of retailer response?

We support the Authority monitoring the interaction between retail pricing and customer behaviour (8.28). Putting pressure on distributors to effect change in the retail market is an indirect approach that is likely to result in slower (vs rapid) change. Any action is better targeted at the actual problem (once identified).