

17 December 2021

Electricity Authority
PO Box 10041
Wellington 6143

Vector Limited
101 Carlton Gore Rd
PO BOX 99882
Auckland 1149
New Zealand
+64 9 978 7788 / vector.co.nz

By email: TPM@ea.govt.nz

Cross submission - Proposed Transmission Pricing Methodology (TPM)

1. This is Vector's cross submission on the Electricity Authority's (Authority) proposed TPM.
2. We note many submitters reiterated concerns about the 2020 TPM Guidelines, including the removal of the RCPD charge and the inclusion of sunk costs in the benefits-based charge.
3. We consider the Authority should address these concerns before incorporating the proposed TPM into the Electricity Industry Participation Code (the Code).

Impact of transmission charges

4. The uncertain impact of the TPM on future transmission charges was a key issue raised by submitters. For example, Contact submitted it was "concerned that stakeholders are unable to calculate with any certainty or precision what transmission charges will be prior to making a major investment decision" and that it found "this has deterred potential new load customers from making the transition from coal-fired to electric boilers."
5. Mercury similarly noted, "Investments will be necessary on both the generation and load side for New Zealand's decarbonisation objectives to be achieved, and these will be more difficult without a reasonable degree of confidence around transmission charges. Currently, even large stakeholders like Mercury struggle to fully understand the workings of its proposed charges relating to existing transmission and generation assets, let alone estimating likely charges that may attach to future build. This adds risk to new generation and load developments, making it more difficult to attract capital investment needed to finance projects – the latter being a particular challenge for new entrants."
6. It is a significant concern if investment decisions that could support decarbonisation are being negatively impacted by regulatory uncertainty.
7. We encourage the Authority and Transpower to prioritise support for stakeholders in forecasting future transmission charges. The Authority should consider suggestions by Counties Power for "a requirement to provide forward 10-year pricing forecasts by GXP that reflects [Transpower's] AMP investment Assumptions Book and TPM methodology" and Trustpower that "the Authority give further thought as to how the industry can efficiently access indicative charges for the medium and longer terms."

Removal of RCPD charge

8. The removal of the RCPD charge and the need for a peak price signal was another area of focus for many submitters.

9. We agree with Hiranga Energy's submission that, "The need to shift consumption away from peak demand periods is more crucial now than ever. As New Zealand transitions to 100% renewable electricity, and electrifies a greater portion of the economy, the intermittent nature of this renewable electricity makes meeting New Zealand's periods of peak demand ever more difficult.

The current RCPD mechanism is an existing, effective, proven tool to incentivise solutions and technologies that shift network connected demand away from peak demand periods. As outlined in the TPM change process, the RCPD charge is not without its flaws, however removing an extremely effective demand response tool without a sufficient replacement is a significant step backwards in New Zealand's electricity system transition to decarbonisation."

10. A number of submitters discussed the August 9 2021 grid emergency to emphasise the need for incentivising peak load control to contribute to system stability. Northpower submitted, "Transpower has completed analysis that shows removing the RCPD price signal could result in up to 300MW of additional peak load. We are concerned as to the accuracy of this analysis, and particularly the potential for increased grid instability, resulting in more instances of the black-outs experienced on 9 August 2021."
11. OjiFibre Solutions noted, "the events of 9 August 2021, where various events contributed to a shortfall of energy and scarcity pricing. Transpower has previously estimated that responses to RCPD signals contributes to approximately 2% reduction in gross demand. The 130 MW additional demand which would have been on the system if participants had not already reduced load would have exacerbated the situation even further, resulting in additional disconnection of load."
12. We consider the events of August 9 should give pause for removing the RCPD charge without any replacement incentive for peak shifting load control.

Benefits-based charge

13. We support the 50:50 split between load and generation under the simple method in the proposed TPM.
14. Transpower's submission reiterated its proposed approach is appropriate as, "Our assessment of these different approaches was that they supported a range of different potential allocations and our proposal was comfortably within these ranges. We agree with the Authority there is not strong evidence for moving away from Transpower's proposed weighting factor, which has an initial value of 1 and results in a roughly 50:50 split between load and generation."
15. We also agree with the Authority's statement in the consultation paper that the CBA is only one factor and its decision making must take account of other considerations, including the durability of the TPM.
16. It is clear the durability of the TPM would not be served by an unequal weighting factor between load and generation without strong empirical evidence that this is proportional to the benefits received by these parties.
17. We note Fonterra's suggestion that, "to support TPM durability, a five-year review of this split should only occur under further defined conditions (not just time)." We agree imposing criteria, beyond time, before a review is triggered could better promote certainty in the sector and therefore avoid disincentives to appropriate investment.

Residual charge

18. Vector's submission expressed concern that the proposed treatment of batteries in the residual charge would, in practice, be discriminatory to load. Other submitters also emphasised the need for technological neutrality. For example, Fonterra submitted "all electrical energy storage options need to be treated the same."
19. We also note Orion's submission that discussed the practical difficulties in implementing the proposed approach: "Distributors (and the reconciliation system) only have visibility of the energy that flows to and from an end consumer's installation. When a consumer is injecting to our network, there is no way we can know if that injection is from generation, from the battery, or from a combination of the two. Further, even where injection is from the battery, we will not know if that battery was previously charged from the grid or from generation, or from a combination of the two."

The situation is further complicated when there is a combination of generation, batteries and load all behind a single meter. We understand that several grid scale solar projects include load (such as data centres) or are being located adjacent to existing load to take advantage of direct connection to that load.

We don't think it is feasible, practical, or efficient to require customers to measure energy that flows in and out of their batteries, measure energy from generation, and measure load within their installation and provide this to the industry. Given this limitation, the measurements identified in the examples in the Consultation Paper will not be available, and the calculations cannot be carried out. It does not appear that the Authority will be able to implement its objective for the vast majority of battery installations.

Given that this limitation applies to the most efficient location of batteries, we are concerned that we should not place artificial barriers that may discourage batteries in these locations."

20. We agree with Orion that care needs to be taken to avoid disincentives to the efficient use of batteries. This further highlights the importance of maintaining a technology neutral approach. Otherwise there is a risk that the Authority's proposal - though designed to place batteries on an equal footing with generators - could inadvertently create barriers to their most efficient use.
21. If the Authority does progress this change we recommend it first investigate whether it is actually feasible in practice.

Whole system costs

22. We note Refining NZ's submission which stated, "the current market is functioning ineffectively. Current regulation and industry structure are not incentivising market participants to deliver the affordable, reliable, and lower carbon energy that Aotearoa needs... We further believe that whole of system planning is needed for the significant changes in electricity consumption and supply that must occur in the next decade; otherwise we will achieve inefficient outcomes and unintended consequences."
23. We agree the current market does not send signals to incentivise the most efficient investments for consumers. Instead, investment decisions are assessed in strict market silos and decisions made within these silos do not reflect the costs and benefits of investments on the whole electricity system.

24. We consider encouraging decisions that lower the cost of electricity from a whole system perspective needs to become the focus of the regulatory framework. Embedding a whole electricity system cost (WESC) metric would support this.¹

Yours sincerely



Richard Sharp
GM Economic Regulation and Pricing

¹ Vector engaged Frontier economics to produce an illustrative WESC as part of our response to the Climate Change Commission's draft advice. See: Frontier economics, Whole Electricity System Costs: A report for Vector (25 March 2021)