New Zealand Steel

16 September 2024

The Electricity Authority
Wellington.
network.pricing@ea.govt.nz

Re: Submission on Transmission pricing methodology amendments: a level playing field for emerging technologies.

Thank you for the opportunity to review this discussion paper and submit.

Summary comment

This paper purports to relate to emerging technologies, but the analysis and comments are largely restricted to BESS and how specific aspects interface with the TPM.

"The TPM is a long and technically complex part of the Code"[1]. It was developed and implemented over a decade during which there were changes in Authority Board members, most if not all senior management roles more than once, and to some extent industry participants.

One of the key objectives for the TPM has been durability. Any amendments need to be carefully thought through for wider implications, but we don't see evidence of this with the current consultation. Technologies and their application will continue to advance and may necessitate a review to TPM provisions. However, this is not the situation here where BESS technologies were known and consulted on at various latter stages of the TPM development process. The proposed changes undermine durability of the methodology.

We cannot support the proposed amendments without seeing wider consideration of BESS within the complexities of the TPM. We outline specifics through this submission including the minor impacts relating to BESS connections relative to other unacknowledged deficiencies with the TPM.

The executive summary indicates the issue being considered in the consultation paper "…has became apparent now because of detailed modelling recently provided to the Authority."[2] On this basis can we assume the Authority will consider substantiated submissions to change other issues within the TPM part of the Code – some of these being far more significant with regard to the inefficiencies referenced in this paper?[3]

[1] Para 1.2
[2] Executive summary 2nd para page 2. Also para 3.22
[3] Eg para 2.15 relating to "…higher electricity prices and exacerbate security of supply problems in meeting peak demand". Removal of the peak demand component of the TPM has been shown in modelling undertaken by Tesla Forecasting to add 7% the Auckland peaks. Repeated in 2.21.

Connection charge

1. The Paper identifies a claimed 'double' allocation of shared assets to BESS. BESS charges were specifically considered during the latter stages of the TPM development process. It is requested the Authority set out what has changed to now support a change re allocation to BESS.
2. The paper references both "Customer" and "Consumer". It is critical that the difference is clearly understood – the terms are not inter-changeable. For the context of the paper a Customer is an EDB and a direct connect supply such as a large industrial ie a Customer of Transpower. A consumer relates to an individual or entity taking supply from and connected to an EDB. A direct connect is both a Consumer and a Customer. Note 5 on page 8 is confusing and requires clarification as to "…referred to as customers connected to the assets, even though they may not be connected directly. The opening sentence of Para 3.83 seems to have partially mixed Consumer with Customer. These points require clear understanding between impacts if the there embedded connections v's direct connect.
3. For the TPM provisions to apply a BESS needs to be a Customer of Transpower ie connection at a GXP. This requires a BESS of MW scale to be economic (versus smaller scale connected through and EDB). The paper does not provide such context.
4. To have shared assets requires at least two Customers at a GXP[4]. To be a Customer will require TPM charges for both specific assets (at least one connection in a GXP switch room) and for shared assets. ie there cannot be a shared asset unless there are at least two customers, and if there are shared assets there must also be a customer specific asset(s) Para 2.5 and 2.6 seem to not recognise this fact.
5. While BESS will be of varying sizes the paper clearly envisages BESS of scale eg 100MW. This scale of BESS is already under construction in NZ and will be significant size even at the larger GXPs involved. In many situations BESS will likely dwarf existing connections. Upgrading of GXPs will also likely be a norm. The paper does not mention these factors and how these investments can be accommodated within the TPM first-mover provisions and what impacts this may have on existing Customers. Para 2.20 skips over these important points and outcomes will vary from GXP to GXP.
6. Para 2.15 and 2.21 outline the inefficiencies that may arise if BESS connection charges are disproportionally large. We submit this in itself is not a substantive reason for the proposed changes to the Code – other settings within the TPM generate significantly greater inefficiencies eg removal of a peak signal and application of AMD for the residual charge at the GXP level and not at the ICP level[5].
7. As mentioned above the TPM was promoted to be durable. This we expected brought a regulatory certainty on which to base business decisions. There has been no appreciable change to the BESS situation, other than builds have commenced. To

[4] It is acknowledged a new GXP on a shared line could be a scenario.
[5] Refer NZ Steel submission referenced in footnote 8 below.

make the changes to the settings will cut across the base to some third-party BESS agreements already in place and undermines the durability of the TPM – one of the very things the Authority wanted to avoid.

8. The paper identifies 24 locations would currently be involved by the Code change with an approx. 50% of these impacted by the flow-on effect to embedded generation. Given the small number of Transpower Customer connection points ever likely to be involved, and the scale of customer size imbalances potentially involved, it is suggested a case-by-case approach be adopted. These would be best dealt with by Transpower working within a general TPM framework of optimising the use of assets and equity as to connection cost allocation between customers. There are varying scenarios where BESS will be connected and we submit a one-size-fits-all Code approach will likely create further anomalies within the TPM.
9. The issues outlined that relate to the embedded v's direct connect are valid. However, the paper fails to recognise these issues are deficiencies within the TPM, not with BESS connections per se ie Customers of Transpower have been assessed on an Anytime demand (AMD) basis whereas Consumers embedded in a network are not subject to the same direct assessment, but rather an after diversity assessment within the associated EDB (ADMD) – more on this in the following section on allocation of the Residual.
10. An unanswered question for the Authority relates to the unintended incentives that may arise for BESS to connect behind the meter where technically feasible.
11. We do not support the Connection asset proposal being considered in isolation from a wider examination of the TPM.

Residual Charge

12. Para 3.2 states "The residual charge is not intended to actively influence grid use or investment." Yet the paper sets out at length issues that are seen to arise with the Residual charge calculator for BESS[6]. We submit these are not specific to BESS, but rather reflect wider short comings of the TPM. NZ Steel has submitted in the past about the inappropriateness of such a large residual and the arbitrary nature of the allocation formula. The paper acknowledges this[7], but yet is proposing fine tuning for relatively minor issues.
13. The key issues lie with serious deficiencies in the TPM. We accept this consultation paper is not intended to re-litigate these issues, but the BESS issues should not be considered in isolation. As per our comments above, BESS allocations relating to the residual are minor relative to other significant issues. These are best referenced

[6] Para 3.22 for example does propose the residual allocator run contrary to this, and influence investment.
[7] Para 3.67 "…the Authority recognises there is no perfect allocator for the residual charge".

through the NZ Steel submission document of 1 October 2019[8] and we quote from the brief submission of 2 March 2020[9] listing the issues:

> *"The refinement we want to specifically comment on is the proposal to adjust the initial allocation of the residual charge. The proposed refinement goes no way to address the overriding issues:*
>
> - *The residual is disproportionately large.*
> - *AMD is an arbitrary allocator and contrary to the objective of efficiency.*
> - *The use of historic AMD raises more issues, and the proposed adjustment by four-year rolling average of gross annual energy usage does nothing to ameliorate the inadequacies of the original proposal.*
> - *AMD applied at the GXP level is inappropriate and inequitable.*
> - *The use of Gross rather than net, demand or throughput is inappropriate when there is cogeneration such as at New Zealand Steel. "*

14. We have outlined above the importance of clear distinction between Customer and Consumer. However, there is lack of clarity in the paper[10] as to how the impacts on Customers (of Transpower) will necessarily translate to benefits for Consumers who are connected through an EDB and the equity for direct connect consumers. Clarity is important given the focus of the Authority's main statutory objective[11].
15. In Para 3.59 the logic is particularly unclear referencing a new customer allocation to the load factor of other customers[12] which given the nature of BESS operation, will be irrelevant in determining a new base.
16. The paper outlines complexity relating to new connections and the phase-in formula of residual charges. Piecemeal changes are inappropriate and likely create unintended consequences.
17. As per our comments for the shared connection assets, changes to the Code without a wider review, would undermine the durability of the TPM. For these reasons we do not support the proposed changes relating to the Residual Charge.

In closing we reiterate we are opposed to the reopening of emerging technologies within the TPM in isolation. Any further consideration needs to be undertaken as part of a wider post implementation review of the TPM. It is not the place of this submission to relitigate wider issues in the TPM, however, given the changes in the Board and senior management at the

[8] https://www.ea.govt.nz/documents/1904/Submissions_TPM_2019_Issues_paper.zip
[9] https://www.ea.govt.nz/documents/1896/TPM_Supplementary_consultation_on_2019_IP.zip
[10] Para 3.24 through to 3.39
[11] Para 3.30(b)
[12] Para 3.59 – new customer residual allocation "…would be determined based on its estimated energy consumption and converted to MW using the average load factor of existing customers."

Authority, it will be appreciated if there can be an opportunity to further expand on our concerns at the inefficiencies contained in the TPM.

New Zealand Steel

Alan Eyes | Energy Manager – Policy & Industry
New Zealand Steel

T +64 9 375 8393 | **M** +64 21 870 629
E Alan.Eyes@bluescopesteel.com | **W** www.nzsteel.co.nz
A 131 Mission Bush Road, Glenbrook, Private Bag 92121, Auckland 1142