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Submissions
Electricity Authority
PO Box 10041
Wellington

By email to: submissions@ea.govt.nz

Consultation Paper – Transmission Pricing Review

This submission outlines Norske Skog Tasman Ltd (NST) response to the TPM Guidelines proposed by the Electricity Authority. (EA)

NST supports submissions made by The TPM Group, and submissions by the Major Energy Users Group (MEUG), except where those submissions may differ from any points made in this NST submission.

Summary:

NST operates a mechanical pulp mill and newsprint paper machine in Kawerau, with an average gross load of approximately 56MW and a peak load of 94MW. NST offers approximately 50MW of embedded co-generation (called Onepu Station) and also actively participates in Interruptible load with an average IL of approximately 30 MW and has a dispatch capable load station capable of participating in Dispatchable Demand.

NST does not agree with the residual charge mechanism proposed in the 2019 revised TPM guidelines. The proposal results in a significant cost impost from which NST gains no benefit.

Electricity is the single largest cost input for NST and maintaining an affordable electricity supply is essential to NST's survival in the declining newsprint market. The mills with the lowest costs will survive. Whilst the current TPM proposal provides for a cap to allow consumers time to adjust to the new charges, that is cold comfort for a business which requires constant cost reductions to maintain profitability. The proposed residual charge would cause significant financial stress to NST.

NST believes that the proposed TPM guidelines will result in an increased investment in the Transmission Grid and will therefore increase Transmission costs. A better approach and measure of any proposed TPM's merit, would be to reduce the size and cost of the Transmission Grid i.e. lower transmission prices overall. The present TPM Guidelines proposal does not show a transmission pricing reduction so is no improvement from a Transmission cost perspective.

It is our view that the present TPM approach has served consumers well for many years by curtailing transmission grid investment, which was one of the original aims of TPM. Participants are incentivised not to run during system peaks. The present TPM will continue to be beneficial due to the present TPM's net demand RCPD favouring North Island off-Grid "behind the meter" embedded generation and demand shifting option.

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RCPD Regional Coincident Peak Demand – removal

The proposal to remove RCPD and replace it with GXP Peak Energy Spot prices will not benefit consumers because the RCPD signal is necessarily strong enough to make it worthwhile to pursue; thereby deferring costly grid investment and avoiding inefficient binding constraints.

The opportunity to reduce energy cost and RCPD charge is available to all participants. Energy consumers who can store energy for short periods of time or can shift demand from peak to off peak pricing and consumption are financially incentivised by RCPD to do so and should do so if they can. However, many consumers are not willing to reduce peak load even if they are able to do so.

The revised TPM guidelines, which propose removal of RCPD and rely on peak nodal GXP energy Spot Prices to trigger demand reduction, will not be responded to by many consumers, because the GXP energy Spot Price signal is a weaker signal than RCPD i.e. less motivating than RCPD.

Larger energy consumers who are unwilling to reduce demand, even for short periods, simply don't want the "process pain" to do it and will just pay the peak spot price. For this reason, NST believes that RCPD should remain as is, in order to continue to strongly motivate consumers to reduce demand when the grid requires this.

From 2014 until 2018 NST participated in Dispatchable Demand where, as a dispatch capable load station, mill load was "dispatched" off, for high GXP Energy Prices if prices were greater than the mills maximum acceptable price. NST remains the only market participant to use this Nodal Pricing signal to curtail demand, in any meaningful way.

So, the historical evidence of the absence of consumer use of Dispatchable Demand, indicates that consumers may not be willing or able to respond to GXP Prices, and that RCPD continues to be the best tool, to limit peak demand i.e. the Proposal to use GXP pricing instead of RCPD probably will not work as well as RCPD.

The Transmission Grid - RCPD & HVDC

The removal of RCPD as proposed by the revised TPM Guideline, includes the belief that more Grid peak transmission capacity is available. However, without strongly signalled RCPD peak physical MW demand control, using high spot prices to limit the peak physical MW demand will most likely not be as successful. Instead the Grid will limit demand by reaching a physically binding constraint(s) more often. NST's view is that increasing the degree and frequency of reaching binding transmission constraints is not an efficient way to operate the Grid in the long term.

Usually, when a transmission constraint occurs then all consumers downstream of the constraint will see very high energy prices because supply is short; and generators upstream of the constraint may see zero energy prices because of the apparent energy surplus. The Spring washer effect may also apply as SPD tries to re-route energy via any remaining routes. So, when a Transmission constraint occurs, usually some generators and some consumers "lose" (and some "win" depending on which side of the constraint you

are). However, in this constraint situation, the overall market is not operating cost efficiently at all and overall the market “loses”.

The revised TPM proposal to remove RCPD in favour of GXP pricing will most likely result in a reduction in the security of supply. When a physical constraint occurs then the Grid equipment has reached a safe operating limit e.g. a thermal limit. Life expectancy of equipment operating at the limit is much lower than if the equipment is operating in its normal state. Equipment failure risk will increase due to the constraint. So, removing RCPD will result in more Grid constraints and therefore more equipment failures which can lead to loss of supply to consumers.

In Summary, NST’s view is that the proposed TPM will be less grid efficient, will increase energy prices that consumers pay, will result in more binding transmission constraints and increase the risk of transmission supply outages (blackouts).

To reduce energy losses and Transmission costs, it would be better to reduce the reliance on the Grid over time, by encouraging investment in off-Grid “behind the meter” generation options that are closer to the consumer e.g. Rooftop Solar, small Wind turbines, Electric Vehicles charge/discharge control and consumer level Battery energy storage. These technologies are becoming more available and affordable and could be installed by home and commercial consumers, retailers, distributors and direct connect large users.

Over time, distributed micro-grids with “behind the meter” off-grid generation and load would change the Grid from being the sole supplier of energy to being the backup N+1 security of supply. This concept was mentioned by Apple Inc. during the development of the new Apple headquarters building in Cupertino, California, where on site solar and gas turbine generation was to provide the energy needs of the building and the Grid provided the N+1 security.

CBA Cost Benefit Analysis – TPM Proposal

Refer TPM Group submission report from The Lantau Group Report and MEUG submission report from NZIER regarding the CBA and

The Residual Charge proposal

NST disagrees with the proposed residual charge and in particular using gross AMD as the allocator. Gross AMD is a theoretical demand calculated from the sum of metered net load and the metered generation. For consumers with embedded co-generation and associated co-gen load, the calculated gross AMD can never exist because increase or decrease of co-generation and associated load (co-load) always happens together; i.e. the theoretical maximum gross demand is not a real demand and the grid is never exposed to this gross demand.

For the proposed residual charge, NST would prefer the charge to be based on real i.e. net demand on the transmission grid. With a net demand residual “tax” at least the charge would be based on actual grid use. Using net MWh would be consistent with the Benefits Based charge calculation.

PDP Prudent Discount Policy proposed

Under certain circumstances it is conceivable NST could disconnect from the grid. Grid disconnection would need further study to determine economic and technical details to ensure viability and to see if disconnection would be net beneficial to NST.

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NST believes that NST grid disconnection would not be desirable for the market or beneficial to consumers as a whole because of the “stabilising” contribution NST makes i.e. peak demand load management; Interruptible Load offers, and MVAR/voltage support. However, where cost reduction is paramount to survival all options will be considered.

Price Cap proposal

Lastly NST would like the EA to consider a reduction in the price cap proposal of 3.5%. A 3.5% increase in electricity costs (which make up around 30% of total costs) is a very significant financial “shock” to NST’s business.

NST looks forward to further discussion on this TPM topic. If there are any questions regarding this submission please contact us.

Yours Sincerely

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Appendix I – NST Answers to Questions

- I.1 No. NST does not agree that the current TPM has problems. TPM has worked well by deferring transmission grid investment.
- I.2 Overall, NST disagrees with the proposal.
- I.5 Transpower best placed to determine the time required, and will depend on how much flexibility Transpower have.
- I.15 All utilised investments, the remainder should be written off.
- I.18 Net Load
- I.28 Yes; through a Historical Net demand
- I.29 Net AMD or Net Consumption
- I.30 Summed per customer
- I.31 Net Load
- I.39 Yes should include a price cap. A lower price cap as the residual charge is an arbitrary reallocation of sunk costs. For some consumers electricity is a significant cost and 3.5% increase is unsustainable.
- I.44 Yes e.g. RCPD
- I.47 Yes
- I.52 No, NST disagrees with the blanket interpretation that an efficient investment is always the objective.
It may well be that the present TPM is promoting inefficient grid investment because that is what is best e.g. inefficient off grid NI embedded solar generation may be better overall than on grid SI wind generation due to transmission and N+1 security issues.
- I.54 No. NST Disagrees with the conclusions E.26 (d) & (e).
- I.55 No disagree. Peak Demand control is more efficient than price control to constrain grid use.
- I.57 No.disagree.
- I.60 None of the alternatives presented seem to be significantly better than the existing TPM.
- I.65 It appears that there are arguments both ways by the experts, for and against the proposals.
In this case, it would be prudent to ensure that most market participants actually want the TPM to be changed before committing resources to it.