



1 October 2019

Submissions
Electricity Authority
P O Box 10041
Wellington 6143

By email: submissions@ea.govt.nz

Dear Jean-Pierre

Re: Consultation Paper-Transmission Pricing Review

Flick Electric brings smart energy choices to life by offering innovative electricity products to consumers, including a product directly linked to the wholesale spot price (known as Freestyle). Our interest in the proposed transmission pricing methodology (TPM) arises from two key new aspects of the proposal, namely:

- a. the expectation of consumer responsiveness to the wholesale spot price; and
- b. the increased reliance on the wholesale spot market to signal the need for efficient timely investment in generation, transmission and distribution infrastructure.

Our full comments on these two aspects of the proposal follow and are summarised below.

The summary

The success of the wholesale nodal price to trigger timely investment in transmission and generation infrastructure is a significant portion of the positive CBA result. The EA acknowledges that wholesale nodal prices will be more volatile as a result of their TPM proposals. Higher risk is therefore inevitable for independent retailers.

Flick strongly submits that the TPM must be put on hold until the EA has been able to put in place regulations that support a performing and fair wholesale market (both spot and hedge products).

The EA's understanding of, and attention to, market issues and opportunities is fundamentally wrong. As a result work priorities are misaligned to initiatives that are required to ensure arrangements promote competition for the long term benefit of consumers.

Initiatives that would support a performing and fair wholesale market which must be implemented by the EA, and the success of these initiatives assessed, before the TPM is implemented include:

- mandatory market making

- tougher rules on disclosing wholesale market information
- more detailed monitoring of contract prices and generation costs; and
- disclosure of information by gentailers on profitability of their retail and generation activities.

a. Consumer responsiveness to wholesale spot prices

Your consultation paper states that:

"... load is expected to become more price-responsive in the future than it has been in the past. This is because:

- (a) currently emerging and prospective load control technologies are increasingly able to facilitate real-time responses to system congestion*
- (b) the real-time pricing (RTP) project will introduce nodal-level scarcity pricing and thereby potentially stimulate a significant expansion in real-time demand response."*¹

Flick is concerned about the reliance the EA has placed on these assumptions which contribute significantly to the cost benefit analysis (CBA) outcome and require marked behavioural change.

It also implicitly assumes that retailers will increasingly offer products linked to the spot price compared with the current structure where the majority of consumers are insulated from volatile markets by having fixed pricing and contracts.

Consumer behaviour

The EA's regular consumer survey provides insights in relation to consumer responsiveness. According to the *Electricity Consumers' Survey*, September 2018² when switching power retailers - spot pricing does not feature as an influence.

However, knowledge (certainty) about the price per kilowatt hour is important (83% of respondents that have not reviewed or switched their retailer state this is important). As is the knowledge about the total estimated electricity bill and the amount that can be saved by switching.³

"For reviewers, the important factors to weigh up if switching were mostly price related. A vast majority (92%, up 3%) of reviewers gave an important rating (7-10, on a 0 to 10 scale where 10 is extremely important and 0 is not at all important) for the price per kilowatt hour with

¹ Paragraph 4.209 page 53 of the EA Consultation Paper 2019 issues paper – Transmission pricing review

² <https://www.ea.govt.nz/dmsdocument/25507-electricity-consumers-survey-september-2018>

³ "Nearly a third (30%) of respondents said they would need to save \$250 or more a year to consider switching, while 28% said they would switch for \$150-250, 23% would switch for \$150 or less, and 19% were unsure."
Ibid, Page 8

46% saying it was extremely important. The discounts offered were also rated important by the majority of respondents (91%, up 2%). The terms and conditions of the contract and the type of plan that matches your daily usage were rated important by 86% of respondents. Followed by the plans available to you in your area, whether the price per kilowatt hour (kWh) can change during the contract and the estimated total electricity bill amount were all between 83% and 85%.”⁴

This suggests a disconnect between the predictions made in the TPM proposal and EA research about customer behaviour, electricity usage and spot price appeal. The wholesale spot price is not predictable, certain or known in advance, the total estimated bill based on the spot price would be unknown and a discount or reduction in the cost of electricity from switching to spot is by no means guaranteed. This suggests that a majority of consumers will not change their behaviour as predicted by the EA.

It is public knowledge that a substantial number of Flick customers switched to other retailers in 2018 when the spot price increased above the long run average. Customers reacted to the high spot prices by electing the certainty of lower fixed price offers from other retailers. This behaviour is not consistent with consumers being interested in engaging in the spot market, rather this is evidence of a desire to minimise their electricity costs.

Another interesting part of this UMR research notes that just 41% of consumers think it is worthwhile to review which retailer they are with. Comparing this level of engagement with the amount of engagement required to take advantage of dynamic spot pricing we specifically ask how the EA expects to influence consumers and change deeply entrenched behaviours.

Reinforcing this view of consumer engagement is the description of “Non-active consumers”. To quote from the report,

“When looking at the profile of consumers that had not undertaken any action, including switching, reviewing or investigating offers – demographics of this group were relatively similar to the general public respondents overall. This indicates a limited opportunity to target specific demographic groups to achieve major shifts in behaviour. It points to the need for a broad behavioural campaign which has wide appeal.”⁵

⁴ Ibid Page 36

⁵ Ibid Page 8

Cost benefit analysis results

The EA's assumptions about aggregate demand elasticity have a sensitivity range in the CBA of \$2.6 - \$4.6 billion around the mid-point of \$2.7 billion. Thus, the assumptions about consumers' responding to changes in peak and off-peak prices have a marked impact on the overall CBA result (and is the second most sensitive assumption).⁶

The EA's Real-time pricing (RTP) consultation included a gross benefit of \$71 million from mass market and industrial consumers responding to the wholesale spot prices.

While the RTP and TPM are two different EA projects there must be some explainable relationship between the two CBA results (of \$71 million and \$2.6 - \$4.6 billion respectively). Flick requests the EA provide a reconciliation of the two pieces of analysis, including the key assumptions made, to explain the variability in the results.

If the difference in the CBA results is explained by the inclusion of the scarcity price in the TPM CBA analysis, this is a concern. The scarcity price under RTP is \$20,000/MWh and when a 'scarcity' situation arises distributors are required to determine which load to 'turn off'.

Flick queries how often the TPM CBA modelling resulted in a scarcity situation over the period to 2050 (implying a shortage of generation and/or transmission capacity)? We note the CBA is hypothetical but are concerned about the impact on consumers if the transmission or generation investment does not occur as assumed in the CBA given this implies a substantial reduction in consumers' experience of reliable electricity supply.

Conclusion

Based on our experience with electricity consumers choosing to be directly exposed to the wholesale spot price in times of volatility, we submit the EA has grossly overestimated the potential benefits of consumer responsiveness in support of its TPM proposal.

If the EA continues to expect consumer responsiveness and behavioural change we submit the EA should articulate how it would implement a "broad behavioural campaign" and how this campaign will support the TPM's expectations of consumer actions.

We also request the EA be explicit to consumers about the assumed reliability of supply (or scarcity situations) resulting from the TPM proposal.

⁶ A practical indication of consumer responsiveness to peak / off-peak pricing would be if a network company revenue declined after introducing peak / off-peak charges.

b. Reliance on the wholesale spot market to achieve efficient timely generation, transmission and distribution investment

The following extract⁷ explains the EA's reliance on the wholesale spot market to achieve timely transmission and generation investment:

- 3.4 Wholesale market prices, established at the different points where electricity exits the transmission network (so-called nodal prices), would take on the role of rationing demand for grid-supplied electricity at grid exit points when congestion arises, and delivering an efficient economic signal to inform future grid investment decisions.
- 3.5 The Authority considers that the proposed approach would mean that the wholesale market would signal transparently where grid congestion exists through higher nodal prices at congested nodes, and lower nodal prices elsewhere.

Under this proposal the wholesale nodal price will be highly sensitive to the timing of generation and transmission investment. In our view, the current performance of the wholesale spot and hedge market is not fit-for-purpose for this new role.

Generation investment

With New Zealand's increased focus on new renewable generation capacity – the location of new plant is primarily driven by the location of the renewable fuel resource – ie water, geothermal activity or wind. That is, the location of current or new transmission infrastructure is a secondary consideration.

Flick is very concerned about generator hold-out. The electricity supply demand situation is already tight⁸.

Transpower's 2019 Annual Security Assessment⁹ includes scenarios that result in the NZ Winter Energy Margin at or below the desired threshold in each year from 2021 – before any change in consumption behaviour (increase in peak demand) as a result of the proposed TPM.

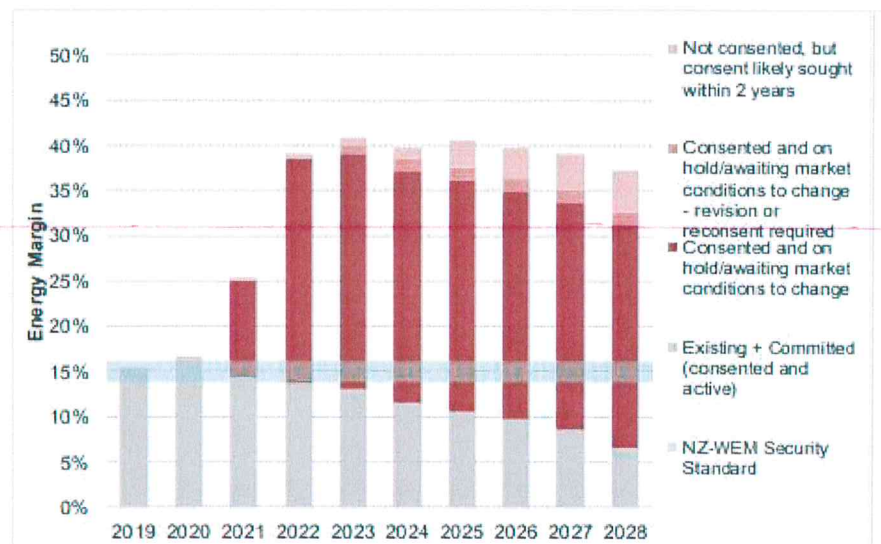


Figure 73: NZ WEM – Low Demand and Reduced generation

⁷ EA Consultation paper Page 13

⁸ A recent report by Concept Consulting summarises the change in supply and demand since 2012 at <https://www.ea.govt.nz/dmsdocument/25623-review-of-impact-of-trading-conduct-enforcement-action-on-spot-prices-concept-consulting>

⁹ <https://www.transpower.co.nz/sites/default/files/bulk-upload/documents/SoS%20Annual%20Assessment%202019%20report.pdf> page 34 and 33

The scenarios are where a 5% reduction in non-thermal generation output is assumed as well as low demand growth (Figure 73) and where generation build is delayed by 1 year with medium demand growth (Figure 69).

If peak demand increases as the EA expects the supply situation will be very tight.

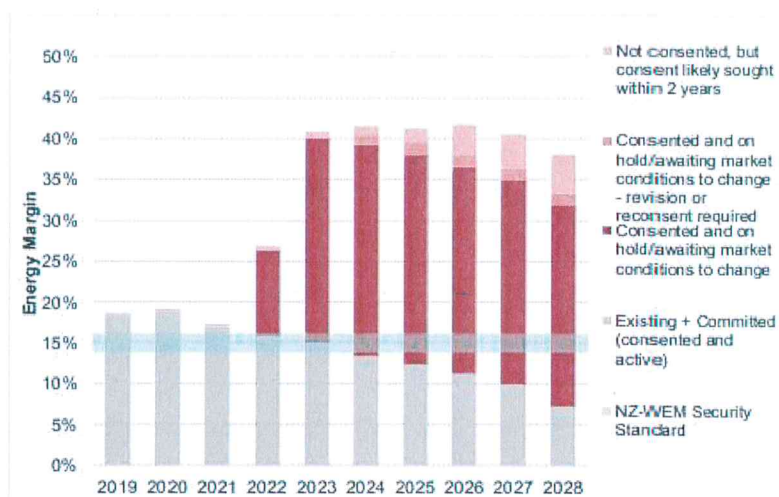


Figure 69: NZ WEM – Medium Demand and Delayed Build Times

While there can be increased engagement in the regulatory process for transmission investment approval (as the EA assumes), there is no equivalent¹⁰ for engaging in a company's decision to invest in new generating capacity in this competitive market. A benefit-based charge may also incentivise generators to provide less information to the System Operator for their grid planning so as not to trigger any cost allocation.

Transmission investment

The EA is proposing consumers will benefit from being free to consume more when they value electricity the most - at peak times. The performance of the transmission grid (and distribution networks) in this environment is untested.

Distribution companies currently control 800MW of load reflecting the capacity utilisation of their network infrastructure.

Transpower estimate¹¹ 20% of gross demand is met by demand response (DR) and distributed generation (DG) and not carried by the transmission grid. It also concluded that:

"The grid cannot meet gross demand in all areas. Extreme change in DR and DG behaviour will affect grid operations, create market constraints with increased opportunities for pivotal behaviour by generators. It may lead to load shedding."

Constraints on the transmission network are going to appear in places they haven't been seen before. Constraints and the impact on nodal prices will be

¹⁰ Other than the resource consent process – an obligatory but very early step in the investment decision making process

¹¹ <https://www.ea.govt.nz/dmsdocument/21135-transpower> page 21

difficult to predict and model for risk management and investment decision purposes.

The timing of transmission investment can be highly sensitive to changes in demand in specific locations. For example: A 3% increase in winter load in the Upper South Island (USI) brings forward by 2 years the need date for a \$44.2 million investment in two switching stations.¹² The USI is a region where current load control capacity averages 24% of peak demand (269MW of 1,111MW).

Distribution investment

A key thesis by the EA is that consumers should not be discouraged from consuming electricity at peak times when they value the use of electricity the most. This thesis drives the reason for removing the current interconnection charge based on regional coincident peak demand.

In contrast, distributors are transforming their tariffs to be cost reflective and time-of-use tariffs (based on a \$/kWh rate varied by pre-defined time blocks) is described by the EA to “provide a crude but actionable signal” consistent with allocative efficiency.¹³ A distributor can determine their own periods of peak or off-peak demand. This matches volumes consumed with infrastructure capacity utilisation, encouraging efficient distribution operation and investment. The current use of load control indicates that network companies do not have the infrastructure capacity to encourage consumers to use electricity when they value it the most.

Wholesale market performance

The EA has stated wholesale nodal prices are going to be more volatile under this TPM proposal. The TPM is proposed to be operational over a period when New Zealand’s intermittent renewable generation is an increasing portion of the total – wind generation can be volatile intra-day and hydro storage varies by about 4,000GWhs or 10% of demand.

Volatility increases risk. Increased risk results in investors requiring a higher rate of return on any new investment leading to deferment of generation investment. Electricity retailers also face increased risk and charge consumers’ higher prices to cover this risk.

Increased spot price volatility could also be expected to discourage individual consumers from participating in the spot market (the 2018 experience being a practical example).

It is unclear if the EA has modelled the impact of increased risk on timing of generation investment. Flick requests a sensitivity be undertaken on the timing

¹² [https://www.transpower.co.nz/sites/default/files/plain-page/attachments/Transpower The Role of Peak Pricing for Transmission 2Nov2018.pdf](https://www.transpower.co.nz/sites/default/files/plain-page/attachments/Transpower%20The%20Role%20of%20Peak%20Pricing%20for%20Transmission%20Nov2018.pdf) Attachment 3

¹³ <https://www.ea.govt.nz/dmsdocument/25528-distribution-pricing-practice-note-august-2019> page 13-14

of generation and transmission investment and publish the resulting impact on wholesale prices.

The NZ electricity supply situation is highly sensitive to unexpected events – for example the Pohokura gas outage, equivalent to the unplanned loss of a thermal generating plant. In 2018 high volatile spot prices contributed to voluntary market makers calling ‘portfolio stress’ and their withdrawal from the ASX hedge market. The impact of a repeat of this event in the environment proposed to be created by the TPM could be catastrophic for independent retailers.

The EA’s reliance on the wholesale market to ration demand consistent with capacity utilisation is also flawed. Nodal prices do not consistently correlate with periods of peak demand but are driven more by fuel availability. For example, nodal prices can be low during peak consumption periods because of windy weather.

Conclusion

Wholesale nodal prices and activity in the spot and hedge market underpin the EA’s CBA assumptions and the success of the TPM proposal.

Given the expanded role for the wholesale market (spot and hedge), Flick submits it is imperative participants can rely on the hedge market to facilitate efficient risk management.

Independent retailers must be able to complete contracts to manage increased spot price volatility and risk through the hedge market (as well as owners of new generating capacity being able to contract the output of new plant using the hedge market).

Flick strongly submits that the TPM must be put on hold until the EA has been able to put in place regulations that support a performing and fair wholesale market (both spot and hedge products).

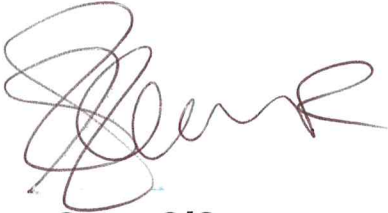
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- mandatory market making
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- more detailed monitoring of contract prices and generation costs; and
- disclosure of information by gentailers on profitability of their retail and generation activities.

We welcome the opportunity to discuss our suggestions in this submission with you in more detail.

Yours

A handwritten signature in red ink, appearing to read 'Steve O'Connor', with a stylized, cursive script.

Steve O'Connor
Chief Executive