For Submission to:

Electricity Authority

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Submission by Buller Electricity Limited

on

TPM Options Working Paper

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1. EXECUTIVE SUMMARY

Buller Electricity Limited (BEL) is broadly supportive of the Transmission Pricing Methodology (TPM) proposals recently promulgated by the Electricity Authority (EA). In particular, BEL supports the following likely consequences of the proposed TPM:

- Reducing free-riding on transmission investment
- Redressing the growing disconnect between localised investment and localised transmission charges
- Reducing the ability for parties to game the allocation of transmission charges to their advantage
- Removing ACOT as a driver of inefficient investment in distributed generation.

The proposed TPM results in transmission charges that are more directed / targeted to transmission customers and are more complicated as a consequence. However, BEL notes that these more complex arrangements do not necessarily guarantee more efficient outcomes or a fairer allocation of transmission costs.

The issues that BEL would like the EA to give consideration to as it advances its TPM proposal are:

- Issue 1: As the TPM and distribution pricing methodologies are inherently linked by similar principles, the EA needs to consider the flow-on effect of its proposed TPM on distribution pricing.
- Issue 2: Does cost reflectivity require deep connection charges and/or LRMC pricing, and does this in turn provide more efficient outcomes?
- Issue 3: The TPM must recognise circumstances where transmission customers would not agree to pay for the *existing service potential* of deep connection assets if negotiations were taking place today.
- Issue 4: Investments in long life transmission infrastructure will be inefficient unless the industry regulators provide a clear statement of who assumes the primary risks and rewards of asset ownership under the proposed TPM.
- Issue 5: The EA should give consideration to reducing the more extreme impacts of the proposed TPM—in particular through transitional mechanisms (e.g. a glide path), and a broader HHI range for phasing in the deeper connection charge.

On the basis that these issues are addressed, BEL supports the EA's Base Option with retrospectivity over transmission investments to 2004.

2. INTRODUCTION

Buller Electricity Limited (BEL) is broadly supportive of the Transmission Pricing Methodology (TPM) proposals recently promulgated by the Electricity Authority (EA)[1].

2.1. THE CASE FOR CHANGING THE TPM

Without expressing a preference for any particular option, the EA has made a case for changing the TPM. In particular, the EA is concerned that Transpower's current transmission pricing methodology is not dynamically efficient[2], and that transmission costs are overly socialised through the current interconnection charges.

BEL supports the following aspects of the proposed TPM:

- *Less free-riding* … as new transmission investments will be 'well considered' by the beneficiaries of that investment, given that they will bear / incur the associated costs for the foreseeable future.
- *Redressing the disconnect between localised investment and localised transmission charges* … the current socialisation of transmission costs is increasingly producing winners and losers as the transmission infrastructure investment grows in the Upper North Island (UNI) but is paid for by Transpower customers throughout the country.
- *Fairer allocators (e.g. AMD)* … the current transmission pricing methodology has allocators that are open to gaming or abuse. Some parties (including major industrial customers) are avoiding their share of the socialised transmission costs.
- *Restoring sanity to the ACOT industry* … there is an *avoided cost of transmission* (ACOT) industry, subsidised by EDBs, which has resulted in some distributed generation being commissioned without any underlying benefit to the system or consumers.

2.2. ISSUES OF CONCERN TO BEL

As the EA advances and refines its proposals for the TPM, BEL requests that the EA give consideration to the following issues:

[1] "Transmission Pricing Methodology Review: TPM options working paper"; 16 June 2015 (the *Options Paper*)

[2] Dynamic efficiency is ensuring the appropriate level of investment occurs today, to provide efficient outcomes in the future.

a. *The EA needs to consider the flow-on effect of its proposed TPM on distribution pricing*

- BEL notes the similarities between its current pricing methodology and Transpower's existing transmission pricing methodology.
- With the EA proposing changes to the TPM, a concern is the extent to which BEL may in the future be obliged or compelled to follow a similar methodology.
- This is a particular concern for BEL stemming from the EA *Options Paper*, and BEL would like some clarification on this.
- Locational cost reflectivity for BEL's sparsely populated network region may deliver significant price shocks to rural consumers—but without delivering any efficiency benefits.

b. *Does cost reflectivity require deep connection charges and/or LRMC pricing, and does this in turn provide more efficient outcomes?*

- BEL notes that the proposed TPM results in transmission charges that are more directed / targeted to transmission customers that are users, beneficiaries or causers of transmission investments/costs.
- Transmission charges become more complicated as a consequence.
- BEL accepts that the EA's motivations are to create a semblance of workable competition in the transmission sector—leading to more efficient investment and consumption decisions.
- Notwithstanding this, BEL notes that the more complex rules do not guarantee more efficient outcomes or a fairer allocation of transmission costs.
- BEL considers that the EA has done a good job analysing and explaining where the costs of the proposed TPM will rest, but in the main has only provided anecdotal comment on the benefits. To what extent has the EA considered and/or analysed the benefits, and is it available in a readily accessible manner.

c. *The TPM must recognise circumstances where transmission customers would not agree to pay for the existing service potential of deeper connection assets if negotiations were taking place today.*

- Most of the current transmission infrastructure was built without regard to market-like principles and/or economically efficient outcomes.
- It is fundamental that any retrofitted deep connection charge requires optimisation as well as utilisation adjustments to those deep connection assets in order to reasonably reflect the transmission infrastructure investment that would have occurred if market like negotiations had occurred in relation to that historic investment.

d. *Investments in long life transmission infrastructure will be inefficient unless the industry regulators provide a clear statement of who assumes the primary risks and rewards of asset ownership under the proposed TPM.*

- The EA is concerned with dynamic efficiency (i.e. appropriate investment).
- In order for investment to occur, investors must have a clear expectation of achieving a sufficient risk adjusted return.
- In the case of Transpower and EDBs, the Commerce Commission in setting the revenue requirement delivers this expectation over the course of a 5-year regulatory period.
- It is not clear whether the negotiated, competitive outcomes the EA is seeking under the proposed TPM will easily fit with the Commerce Commission's approach. For instance:
    - it is not clear that the *safe harbour* of permitting Transpower to recover losses from asset stranding will drive the workably competitive outcomes the EA is seeking; or
    - if Transpower accepts the risks and rewards of asset ownership, then the Commerce Commission must accept higher returns for Transpower.
- The allocation of risks and rewards of asset ownership will be one of the biggest factors affecting investment in the future—particularly when new and/or disruptive change is on the investment horizon.

e. *The EA should give consideration to reducing the more extreme impacts of the proposed TPM*

- BEL is concerned that the EA is advancing measures that will trigger price shocks but will not necessarily create efficiency improvements.
- Initial price shocks could be addressed through transitional mechanisms (e.g. a glide path).
- In addition, BEL is concerned about the stability of the TPM over time. The bright lines for 'deeper connection' and 'area of benefit' charges are arbitrary, for example:
    - it is proposed to base deep connection charges on transmission assets where 'typical' load flows are concentrated on only a few customers (… using the Herfindahl-Hirschman Index (HHI) to measure concentration, and treating assets as deeper connection assets where the HHI > 5,000[3]); and
    - the area of benefit charge for new investment exceeding $20m may also include post 2004 investments exceeding $50m, and will be allocated to static or dynamic beneficiaries sets as determined by a Grid Investment Test or private benefits methodology;

  and, hence relatively small changes could invoke significantly different outcomes. Because of this, there will be strong incentives for suboptimal behaviours and/or for transmission customers to game the TPM.
- The impact, and arbitrariness of deeper connection charges could be addressed by adopting a broader HHI range for phasing in the deeper connection charge—e.g. graduating the HHI range from 4,000 to 6,000.

These issues of concern to BEL are elaborated on in the remaining sections of this submission.

2.3. PwC Submission

BEL is a party to the PwC submission (made on behalf of 21 Electricity Distribution Businesses). BEL supports that submission except where BEL has taken a contrary position in this paper.

[3] Actually, the EA proposes a graduated demarcation. Deep connection charges are to be phased in linearly from HHI > 4,000 to HHI < 5,000. For HHI > 5,000 deeper connection charges will apply in full.

3. IMPACT OF THE TPM ON DISTRIBUTION PRICING

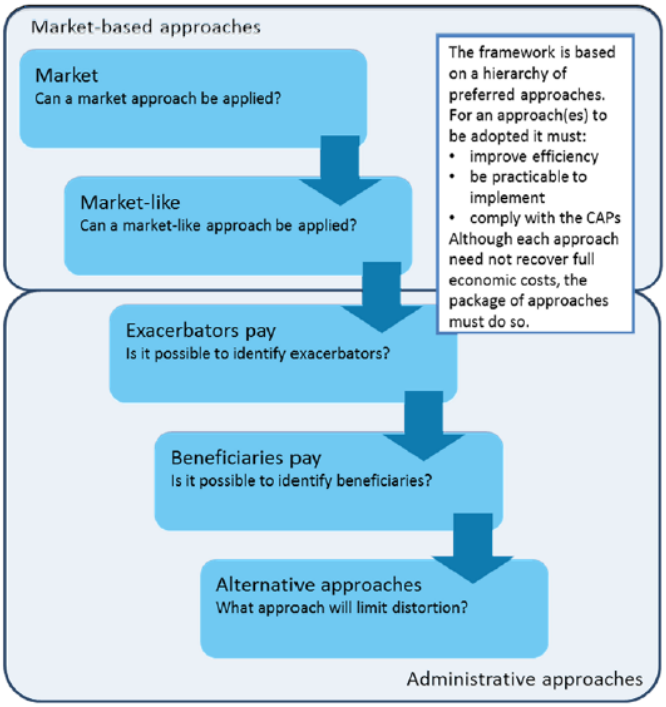
There are similarities between Transpower's existing transmission pricing methodology, and the current pricing methodologies of electricity distribution businesses (EDBs).

For instance:

- EDB's have asset specific charges and capital contributions which are similar to Transpower's connection charges
- EDB's have postage stamp prices which are similar to Transpower's interconnection charges

The current transmission pricing methodology recovers Transpower's revenue requirement from loads and generators using connection charges, HVDC charges, and interconnection charges.

The EA proposes to step through the following hierarchy of allocators until Transpower receives its revenue requirement.



Essentially, the proposed TPM allocates transmission costs to users, causers, and beneficiaries where criteria are met. This results in the following range of charges (potentially) to recover Transpower's revenue requirement:

DME framework	
Market	LCE credit
Market-like	The existing connection charge
	Deeper connection charge
	LRMC charge
Exacerbators-pay	kvar charge
Beneficiaries-pay	AoB charge
	SPD charge
Alternative approaches	Capacity-based residual charge

Most EDBs will not have an equivalent or similar charge to the new charges proposed by the EA. However, it is likely that any equivalent will be a proxy locational charge that affects the rural and remote consumers the most.

With the EA proposing changes to the TPM, a concern is the extent to which EDBs may in the future be obliged or compelled to follow a similar methodology. BEL requests that the EA consider whether a flow-on effect of its proposals on distribution pricing is intended.

Locational cost reflectivity for BEL's sparsely populated network region may deliver significant price shocks to rural consumers—but without delivering any efficiency benefits.

This is a particular issue that arises from BEL taking a broad view of potential impacts stemming from the EA *Options Paper* proposals, and BEL would appreciate the EA providing some clarity as to any likely downstream impacts on electricity distribution pricing.

4. IMPACT OF THE TPM ON EFFICIENT OUTCOMES

BEL accepts that the EA is motivated to create a semblance of workable competition in the transmission sector—leading to more efficient investment and consumption decisions. It would also appear that the EA is motivated to improve cost reflectivity at a locational level. The EA portrays the current lack of cost reflective prices in terms synonymous with cross subsidies. For instance[4]:

- Transmission investment in the Upper North Island > $1.3bn since 2004.

  … 39% of this is paid for by Tx Customers in the Upper North Island (UNI)

- Transmission charges in LNI, USI and LSI have increased 61% on average since 2004 … with most of this increase relating to investments in the UNI (particularly the Auckland region)

- In 2007, Transpower's RAB (assets) were distributed 60% for the North Island and 40% for the South Island. Now it is 79% NI and 21% SI.

  … However, over the same period, transmission charges have remained approx. 66% NI and 34% SI.

From the perspective of economic efficiency, cross subsidisation occurs when customers pay charges that are: (a) lower than the incremental cost of the service; or (b) more than the stand alone cost of the service. Both of these produce inefficient outcomes. To date, having charges that exceed the standalone costs of transmission would not be considered particularly likely, and concerns (if any) are more related to charges being less than the incremental costs of transmission. This was an outcome that Castalia noted when it reviewed EDB pricing methodologies for the EA. Castalia noted:

"Cross subsidies occur when the prices charged to a customer (or customer group) do not recover the incremental costs of providing the lines service. For network businesses with a very large proportion of assets being fixed costs that are shared by various customer groups, the incremental costs of serving a consumer are very small. This means that cross subsidies are very unlikely to occur.

Most distributors have a different understanding of what constitutes a cross-subsidy from the description provided above. As a result, many distributors claim that cross-subsidies are present on their network, but do not present clear evidence that the additional revenue earned from prices is less than the increment cost of service. The claimed cross-subsidies usually relate to the prices charged to high and low users, and urban and rural

[4] see Options Paper; paras1.22 to 1.24

customers. In our view, these claims appear to confuse cross-subsidies with price discrimination—which involves charging different prices to different customers receiving the same or similar service. As defined above, cross-subsidies involve the recovery of revenue that is less than the incremental cost of serving any particular customer or customer group." [5]

The socialisation of costs is not necessarily cross subsidisation. In light of this, the EA should not be motivated to achieve more efficient outcomes through addressing cross subsidies that do not exist. In this regard, BEL notes that the more complex rules of the proposed TPM do not guarantee more efficient outcomes or a fairer allocation of transmission costs.

BEL, however, is not dismissing the EA's proposals. The EA's proposals for deeper connection charges and/or LRMC pricing can be justified on the basis that improved price signals at a location will help inform investment and/or consumption decisions. As noted previously, cross subsidies occur when consumers pay more than the stand-alone cost of the service they receive. Conventional wisdom has been that the stand-alone cost is high. Whilst transmission charges are unlikely to have exceeded the stand-alone costs of transmission to date, the landscape is changing as a consequence of new technologies which threaten to reduce this cost. Therefore it is of increasing importance to have transparency and cost reflectivity in transmission charges so that investment in transmission alternatives can be assessed efficiently. BEL considers the economic efficiency argument to be less about cross subsidies, and more about signalling the potential over-recovery of stand-alone costs—including where the stand-alone cost is (directly or indirectly) a transmission alternative.

Area of benefit charges applying to investments can also be justified on the basis of the 'beneficiary pays' principle. BEL actually considers the EA's examples of cross subsidisation to be examples of distortions that can arise when the principle is ignored. BEL supports improved allocations of cost and cost reflectivity in these circumstances (i.e. to redress the increasing disconnect between localised investment and localised transmission charges).

[5] Castalia; "Review of Electricity Distribution Businesses' 2013 Pricing Methodologies - Report to the Electricity Authority"; November 2013; p25

5. DEEP CONNECTION CHARGES REQUIRE OPTIMISATION

The issue that most affects BEL under the proposed TPM is the application of deeper connection charges.

Going forward, the deeper connection charge is seen as a market-like mechanism where Transpower and the connected customer(s) will negotiate a mutually acceptable outcome. The EA expects that mutually acceptable outcomes could be achieved where the negotiation is limited to a few interested/motivated parties.

However, given that most of the current transmission infrastructure was built without regard to market-like principles and/or economically efficient outcomes, any retrofitted deep connection charge requires optimisation as well as utilisation adjustments to those deep connection assets in order to reasonably reflect the transmission infrastructure investment that would have occurred if market like negotiations had occurred in relation to that historic investment.

If the EA is to proceed with the deeper connection charge the TPM must allow an optimisation exercise to take place—effectively to recognise those circumstances where transmission customers would not agree to pay for the pre-existing service potential of deep connection assets if negotiations for those assets were taking place today. Optimisation, or getting the right size of investment to occur, goes to the heart of dynamic efficiency.

BEL consider this optimisation exercise to be essential—and the lack of such measures in the EA's proposals it is a key concern within our submission.

6. INVESTMENT RISKS

The EA is concerned with dynamic efficiency. In order for investment to occur, investors must have a clear expectation of achieving a sufficient risk adjusted return. BEL suggests that investments in long-life transmission infrastructure will be inefficient unless the industry regulators provide a clear statement of who assumes the primary risks and rewards of asset ownership under the proposed TPM.

The Commerce Commission's current regulatory model effectively guarantees Transpower (and EDBs) a market return on the original cost of their investment. This is known as financial capital maintenance (FCM), and is a regulatory construct rather than a market-like principle. In markets, an investor's capital is not 'maintained'—rather it is at risk—and asset owners generally assume the risks and rewards of that investment. The asset owner may negotiate with customers to transfer some of the risks, or may seek compensatory returns through higher prices.

The current regulatory approach permits Transpower to recover losses from asset stranding (e.g. through a *safe harbour* of ongoing and/or accelerated depreciation). However, this approach will undermine the workably competitive outcomes the EA is seeking with the current TPM proposals. Instead, to replicate market-like outcomes, the EA may open the door for:

- Transpower to assume the risks and rewards of investments
- Transpower to share/mitigate risks through exit charges or initial contributions
- Customers to assume the financial risks and rewards of transmission investments[6].

These matters also affect EDBs. EDBs are not compensated for assuming the risks and rewards of asset ownership. In the case of remote connections, EDBs are loathe to make investments that will need to be maintained, and operate at a loss, in perpetuity. Market like responses may give the customer the opportunity to invest in connection assets and then benefit from that investment if and when new customers are connected.

It is not clear whether negotiated, competitive outcomes of this nature will easily fit with the Commerce Commission's FCM approach. For instance, if Transpower accepts the risks and rewards of asset ownership, then the Commerce Commission must accept higher returns for Transpower.

Because the allocation of risks and rewards of asset ownership will be a key factor affecting investment in the future—particularly with new and/or disruptive technology on the investment horizon—it is important for the EA and the Commerce Commission to provide a clear statement of who assumes the primary risks and rewards of asset ownership under the proposed TPM.

[6] Whilst Transpower retains the operational risks

7. WILL THE TPM BE EFFECTIVE OR PROBLEMATIC?

Aside from the unpredictable impact the proposed TPM may have on future distribution pricing, BEL is also concerned that the TPM will:

- be responsible for significant price shocks to end users who have no ability to respond; and
- not be a stable pricing mechanism over time.

Arguably the EA is advancing measures that will trigger price shocks but will not necessarily create efficiency improvements as those most affected are end consumers without any ability to respond. In cost versus benefit terms, the benefits may not outweigh the 'transaction' costs. The EA should give consideration to reducing the more extreme price shocks associated with the proposed TPM through transitional mechanisms (e.g. a glide path).

In addition, BEL is concerned about the stability of the TPM over time. The EA needs to provide more information on how the 'area of benefit' charge will actually work in practice. The EA's proposals have too many variables at this stage. For instance, the the EA's proposals the area of benefit charge could be summarised as applying:

> *"… to new investments exceeding $20m but may also include post 2004 investments exceeding $50m, and will be allocated to static or dynamic beneficiaries sets as determined by a Grid Investment Test or private benefits methodology …"*

Similarly, the 'deep connection' charges are arbitrary and relatively small changes could provide significantly different outcomes. For instance, under the current demarcation of 5,000 on the HHI, deeper connection charges will apply where two customers have load flows concentrations of 70% and 30% respectively. This would also be the case for load flow concentrations of 60% and 40%. However, the introduction of a third customer changes things. For instance:

- with concentrations of 60%, 30% and 10% a partial deep connection charge will apply; and
- with concentrations of 40%, 40% and 20% no deep connection charge will apply.

Over the course of time, it is conceivable that major customers will come and go, or new generation will be connected, and the deeper connection charges will fluctuate. This may also trigger incentives for suboptimal behaviours and/or for transmission customers to game the TPM. In particular, working with (new) generators to avoid deeper connection charges may replace the ACOT *industry*.

BEL recommends that the EA consider a broader HHI range for phasing in the deeper connection charge. The impact, and arbitrariness of deeper connection charges could be addressed by adopting a broader HHI range for phasing in the deeper connection charge—e.g. graduating the HHI range from 4,000 to 6,000.

8. CONCLUSION

The EA's modelling suggests that BEL should be unaffected by the proposed TPM at the outset. This leaves BEL reasonably agnostic towards the EA's proposals, as BEL does not stand to benefit from the proposed TPM going ahead or being rejected.

Instead, BEL is motivated to ensure that there is clarity over the future impacts of the TPM—in terms of possible impacts on distribution pricing, investment outcomes, and stability of transmission prices over time.

Providing the EA moves to optimise deeper connection assets, BEL supports the EA's Base Option with retrospectivity over transmission investments to 2004.

Any questions in relation to this submission may be referred to:

Peter Best
Chief Financial Officer

Buller Electricity Limited