19/092
E5/14

26 September 2019

Submissions
Electricity Authority
PO Box 10041
Wellington, 6143

UNISON AND CENTRALINES SUBMISSIONS ON TPM PROPOSALS

Unison and Centralines welcome the opportunity to submit on the Authority's latest TPM proposals and associated cost benefit analysis. We have elected to make a joint submission as our views are in common.

In this submission we comment on what we see as the key elements of the proposal and the cost benefit analysis supporting it. We attended the Authority's CBA Workshop, which we found valuable in assisting us to understand the key sources of costs and benefits under-pinning the proposals.

We see the key elements of the proposals as:

1. A benefits-based charge for a select number of recent major transmission investments;

2. A benefits-based charge for future major transmission investments;

3. A residual charge that recovers the balance of interconnection revenues that is designed to be largely fixed and unavoidable;

4. Discretion for Transpower to implement a transitional peak-based charge;

5. A transition mechanism that softens the impact of change in existing allocations of transmission charges.

Unlike other stakeholders who have retained an armada of consultants to review the Authority's proposals we have taken a high-level approach to our assessment of the proposals and recommendations. While it is clear that those facing transmission charge increases have incentives to criticise and find weaknesses in the numerical analysis and models, in our view it is important to develop a proposal that is based on a sound conception of feasible options and their likely impacts on incentives.

In the remainder of this submission we comment on the key elements listed above.

Benefits-based charges

Unison and Centralines have both been significantly adversely affected by the current TPM. Our consumers live in regions which have generally lower incomes and people at the lower levels of deprivation indices. Significant transmission investments have been made to benefit consumers outside our regions, which our consumers therefore implicitly subsidise. As a result of these investments, transmission interconnection charges have increased by more than 50% since 2010. This is unfair on the consumers in Unison and Centralines' regions.

Stakeholders that are in regions that have benefitted from transmission investments and therefore benefit from these implicit subsidies, will no doubt argue that it is unfair to implement changes in allocation methodologies after investments have been made. Or they may argue that there are too many flaws or too many assumptions in the models used to come up with benefits-based allocations such that they should not be used.

Centralines and Unison's responses are as follows.

Firstly, although it is generally undesirable to make allocation changes after an investment has been made, stakeholders in those regions should not be surprised that a regulator would subsequently make changes to allocations where the status quo results in material inequitable outcomes. This is particularly the case when those inequitable outcomes are in the form of subsidised investments that benefit those stakeholders at the expense of stakeholders who derive no benefit from those investments. Confidence and certainty in regulation is enhanced when a regulator acts to address an objectively unreasonable outcome.

Secondly, in regard to identification and quantification of benefits of particular transmission investments, it became clear to Unison and Centralines at the CBA Workshop that there are significant modelling judgements and assumptions that eventually have to be decided upon to calculate charges to identified beneficiaries. Although we do not have the expertise to critique the Authority's analysis and modelling, we do think that consideration needs to be given to how "scientific" the models and analysis needs to be to reasonably levy charges on beneficiaries of those investments. The more "scientific" the approach, the more the TPM review could be tied up in disputes and endless critiques of the models. We strongly urge the Authority to consider how the development of the Guidelines, and Transpower's subsequent implementation, will protect against potential identified beneficiaries delaying implementation of the benefits-based charge through endless challenges. We also think that consideration needs to be given to the whether the models give adequate recognition to the purposes of some of the investments, particularly where they have been made to improve reliability and resilience, which may not be captured in the vSPD modelling. It may be more preferable to adopt simpler models or zonal approaches than rely on complex models such as vSPD.

We are, however, concerned that if the identification of beneficiaries and quantification of benefits relies on such significant judgments, assumptions or speculation about what might have happened absent the transmission investment, that a wide range of outcomes is feasible with different, but plausible alternatives. If this is the case we think it would be better to dispense with the beneficiaries pay model entirely to avoid a TPM that is essentially arbitrary.

If the Authority identifies that it does not ultimately wish to implement benefit-based charges for recent major investments, Centralines and Unison strongly submit that the Authority should similarly not apply benefit-based charges to any future major inter-connection investments. If benefit-based charges only applied on a forward-looking basis, then Unison and Centralines could face the jeopardy that future major investments to the East Coast of the North Island are funded through benefit-based charges ***and*** must subsidise historical major investments which we do not benefit from. This would be a manifestly unreasonable outcome.

In summary, the decision on the application of benefit-based charges must be dynamically consistent. While a degree of “let bygones be bygones” would be seen as acceptable in relation to historical investments, Unison and Centralines would expect that all recent major grid upgrade projects be captured by a beneficiaries-pay approach. Although it is beyond our expertise to evaluate the Authority’s analysis, we query the basis on which the NAaN is excluded from the major investments – the name in itself indicates the intended beneficiaries of that investment.

Recovery of residual charges

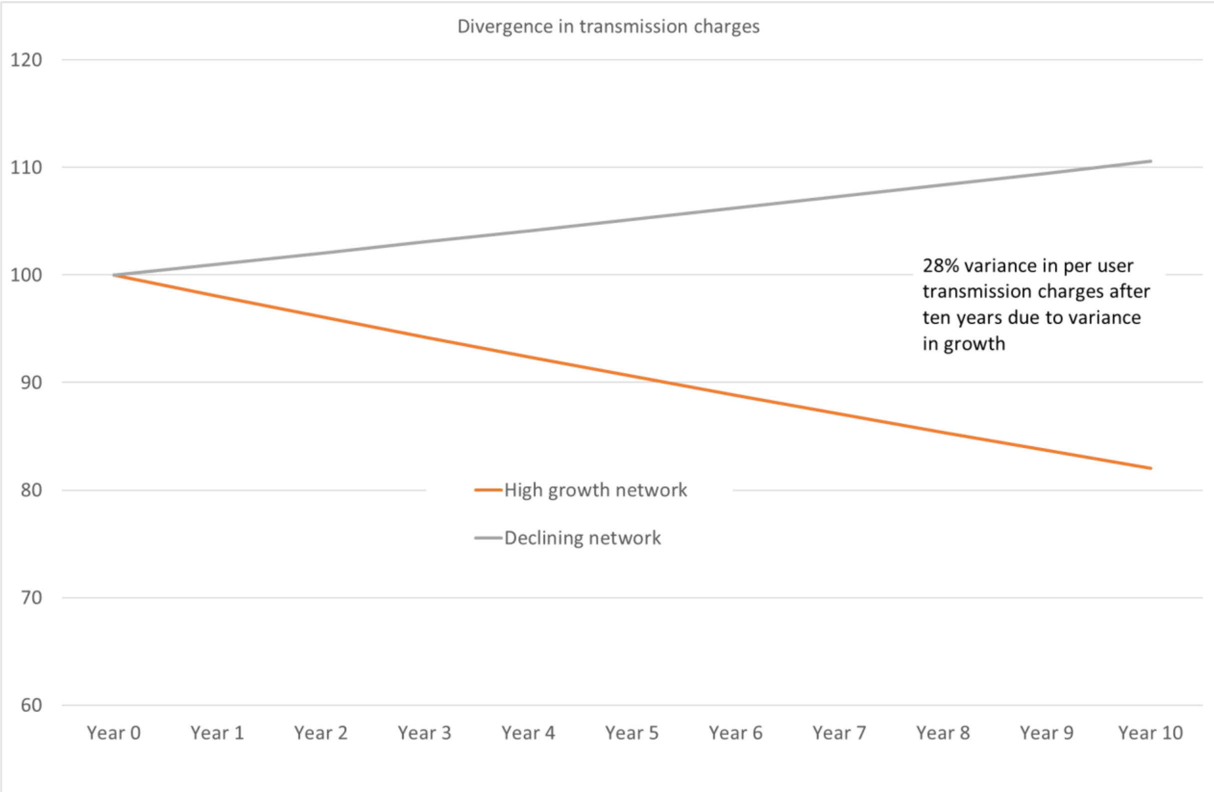
The Authority proposes that residual charges be recovered through measures that are largely fixed and unavoidable. A significant benefit is ascribed to the impact that this would have on the increase in consumer surplus due to the decrease in peak prices as a result of a reduction in the RCPD price signal, with consequential reductions in consumer surplus at off-peak times as off-peak prices.

Unison and Centralines strongly agree that the current RCPD-based interconnection rate in excess of $100/kW is likely to be driving inefficient behaviour to avoid use of the transmission grid at peak times. However, we are concerned that the complete removal of the peak charge and reliance only on nodal prices to incentivise efficient use of the electricity system is likely to result in less efficient outcomes. EDBs currently engage in controlling hot-water at peak times to reduce inter-connection volumes, even though this is a zero-sum activity that pushes the interconnection rate higher to compensate for the lower volumes. Nevertheless, it is likely to have an overall effect of lowering energy prices (lower volumes at times of RCPD potential peaks), for zero loss of consumer surplus, as consumers are indifferent to the timing of water heating because of the amount of storage in the hot water cylinder. Complete removal of the RCPD-based charge would remove the incentive on EDBs to control hot water. Although EDBs are essentially acting on their consumers’ behalf to reduce RCPD peaks, we do not think that EDBs would or could similarly act to intervene in the energy market to reduce energy prices with load control, since these are not costs that EDBs pay directly.

To compensate for the increase in energy costs from more hot water heating during the peaks, retailers would have some incentive to procure control of hot-water loads. However, because EDBs cannot control on a retailer-by-retailer basis, this is problematic. Additional costs of new control systems may be required to achieve the same result, and additional coordination challenges would potentially have to be overcome, as hot-water control cannot be used twice (at least not without the risk of cold showers). We think that the Authority’s CBA analysis needs to evaluate more specifically the costs and benefits associated with different options for recovering the residual charge and in particular, the investment costs of retailers reproducing what EDBs currently achieve with ripple control. These costs are currently omitted from the CBA.

We think that the Authority should consider whether the permanent retention of a small, but sufficiently material, RCPD-based charge would be effective at achieving a better balance of encouraging shifting low-value discretionary loads (such as hot-water heating) away from peak periods. We recommend that the cost-benefit analysis needs to consider less extreme scenarios than "purely fixed" and "purely RCPD".

The Authority proposes that if there is a material changes in major loads or generation then Transpower could recalculate the allocation of residual charges. We agree with this feature, but submit that it is still too rigid and inflexible, and likely to give rise to future instability. For example, if one network has connection growth of 2% per annum and another network declines at 1% per annum, then over a ten year period the divergence in per user charges from an equivalent starting position is as follows:



We think the Authority needs to consider whether a more durable allocation of the residual charge would result from including a mechanism that compensates for gradual divergences in network growth rates. The mechanism could be dissociated from electricity use (e.g., numbers of new ICPs, TLA statistics on numbers of residencies etc). We think it is unlikely that the TPM would be durable if charges per user become linked to metrics that can diverge materially because of variances in growth rates: they are likely to disadvantage poorly performing regions and advantage growing regions. Overall, we think there are likely to be significant durability advantages to making "fixed charges" more variable over the longer term.

Finally, although we have not reviewed the CBA analysis in detail, we express concern that the benefits from moving to a more fixed recovery of residual costs have been substantially over-stated. Figures 6 and 7 reproduced from the Consultation Paper indicate the impact on marginal prices as a result of change from RCPD to a more fixed approach:

Figure 6 Efficiency cost of RCPD charge under the status quo

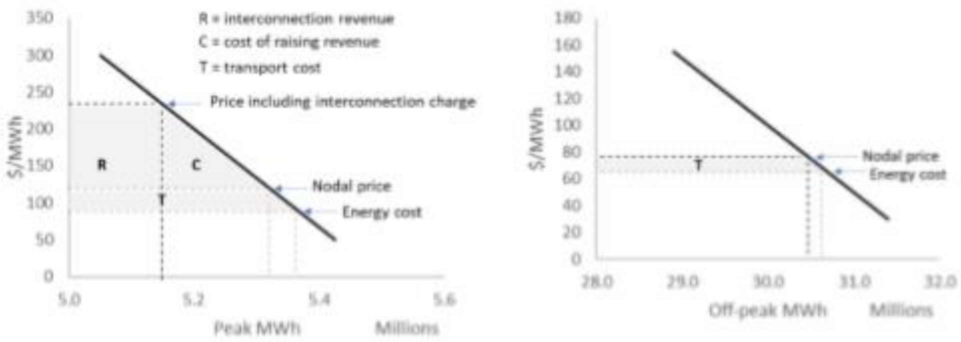
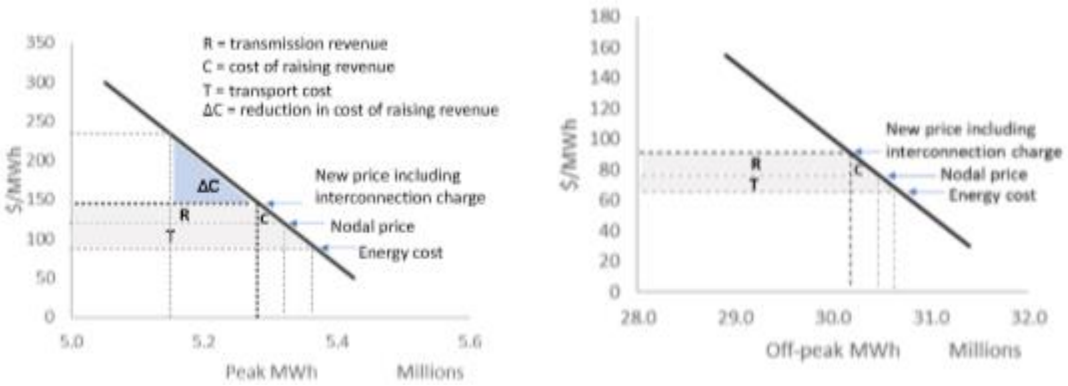


Figure 7 Increased allocative efficiency due to removal of RCPD charge



The Authority notes:

4.84 Using a consumer surplus measure, the central estimate of the allocative efficiency gains associated with changes in grid use (before adjusting for other benefits and costs) are: (a) $2.6 billion from the proposal (in a range of $81 million - $5.7 billion) (b) $1.8 billion from the alternative to the proposal (in a range of $4 million - $4.2 billion).

4.85 Given the very substantial reduction in peak prices over the period to 2049 discussed above, it is not surprising that the allocative efficiency gains from the proposal are so substantial. As noted above, an important source of consumer benefits from the proposal stems from escaping an upward spiral in the RCPD rate under the status quo, driven by load customers investing in DER.

Unison and Centralines submit that the projected impact on peak and off-peak marginal prices faced by consumers under the proposal relative to the status quo is almost certainly substantially over-stated, particularly if there is no change to the Low Fixed Charge Regulations.

We submit that it is incorrect for the Authority to assume that marginal distribution prices will perfectly (or even imperfectly) reflect marginal interconnection prices. EDBs are increasingly recognising that marginal distribution prices make a significant difference to incentives facing consumers due to the increasing energy choices they face. Optimising network prices to ensure that EDBs can recover their revenue requirement means considering the impacts of marginal network prices at different times. Examples include:

1. setting off-peak prices too high during the day risks creating too strong incentives for consumers to invest in technologies to avoid day-time consumption (e.g., solar),

2. setting off-peak charges too high over-night risks reducing the incentive to charge EVs at night-time.

3. setting peak-time charges too high encourages investment in batteries to arbitrage between peak and off-peak prices or to invest in alternative technologies (e.g., gas space heating).

Even if EDBs move away from consumption-based pricing (including TOU approaches) to capacity or demand charging (coupled with requirements to offer low fixed charges), similar considerations will apply in calibrating marginal distribution price signals to recover revenue requirements while least distorting use of the network. In this context, changing from an RCPD to fixed charge basis for interconnection revenue recovery is likely to have negligible, and possibly no impact on marginal network pricing signals to residential and smaller commercial consumers.

At the larger commercial and smaller industrial consumer level, a change from RCPD to a more fixed basis for revenue recovery may have some impact on network price signals, although Unison and Centralines' experience of directly reflecting RCPD to our larger consumers even at the >$100/kW rate, is that there is little interest among our consumers in managing their behaviour to avoid the transmission peaks, with significant observed annual volatility in demand, not a persistent trend decline in peak use associated with the lift in RCPD-based interconnection rate. Our assessment is that even for large consumers with high annual demands and consumption requirements, the economics of their business significantly trumps the electricity cost impacts of consuming during RCPD peaks.

Overall, Unison and Centralines submit that the Authority needs to substantially redevelop the model for assessing the cost-benefit impact of changing the residual cost recovery from RCPD to a more fixed approach. Network pricing, particularly at the residential level is increasingly becoming a constrained optimisation challenge, not purely an exercise in translating cost structures into a one-to-one pass-through calculation. Regardless of the form of transmission charges, under the constraint of the Low Fixed Charge Regulations EDBs have to translate transmission charges into compliant variable charges. We submit that the assumptions that sit behind the calculations in Figures 6 and 7 of the consultation paper are unrealistically simplistic and, in our view, lead to a substantial over-statement of the allocative efficiency benefits of the proposal.

Discretion for Transpower to include a transitional peak charge

As set out above, we have significant reservations about the complete removal of a peak-related charge to recover a proportion of Transpower's revenue requirement. We think a modest charge, which encourages discretionary demand to be shifted from peak periods to off-peak periods would have significant benefits. For example, it can underpin the continuation of hot-water heating being shifted to off-peak times, resulting in lower energy prices at peak, with no loss in hot water amenity. We reiterate that the assessment of options for recovery of residual costs should consider the costs and benefits of a more intermediate stance between "pure fixed" and "pure RCPD".

In the absence of any residual revenue recovery through any form of peak-related charge, we support Transpower having the discretion to include a transitional peak charge.

Managing the transition

The Authority proposes that any change in TPM should be accompanied with a transitional approach which caps the rate of annual change. We think this is a sound policy and should better promote the public acceptability of change. Similar considerations are being considered in reforming the structures of mass-market distribution prices to ensure that there are not unmanageable rate shocks.

Summary and concluding comments

Overall, Unison and Centralines support the broad direction of the Authority's TPM proposals:

- We agree that the status quo, especially the high RCPD rate, is giving rise to inefficient outcomes.

- We also consider that there is an ongoing substantive unfairness associated with recovering the costs of recent substantial investments in the transmission system from parties that do not benefit from those investments.

Accordingly, we support:

1. In principle, the application of a beneficiaries pays approach to recent and future major investments, where there are very clearly defined parties that benefit (or are the major beneficiaries) from those investments.

2. Reform of the recovery of residual costs.

3. A transition approach to implementation to ensure rate shocks are avoided.

We would not support a dynamically inconsistent approach where a beneficiaries-pays approach only applies on a forward-looking basis. Such an approach would give rise to manifestly unfair outcomes and therefore undermine the durability of the TPM.

We would also not support a beneficiaries pay approach where the identification of beneficiaries or allocation of benefits is excessively sensitive to assumptions, modelling judgements and speculation about the counterfactual such that the results are essentially arbitrary.

We recommend that:

1. Further consideration be given to the methodologies for identifying and allocating costs to beneficiaries of particular investments and/or the decision-making process. We think there is a significant process risk that the beneficiaries-pay element of the proposal could become bogged down in challenge as adversely impacted parties seek to argue positions that allocate costs to other beneficiaries or widen the net.

2. Further options are considered for recovery of residual costs. The Authority has not tested whether retention of some form of peak-based charge would deliver higher net

benefits through the creation of incentives to shift non-time critical loads from peak to off-peak periods.

3. Consideration be given to making any “fixed charges” more variable over time to avoid giving rise to outcomes that would be seen as inequitable (and therefore undermine the durability of the proposals). Regional unfairness can arise if growth rates in some parts of the country diverge significantly from other regions.

Finally, we think it is critical that the Authority brings the TPM review to a robust, but timely conclusion. There are important policy issues for the industry to address in light of the opportunities the industry has to enable New Zealand to meet its climate change aspirations.

If you have any questions on the contents of this submission, please contact Nathan Strong at Unison Networks Limited (06 873 9406).

Yours sincerely,

Nathan Strong
GENERAL MANAGER BUSINESS ASSURANCE