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1 March 2013

Dr Brent Layton,
Chairman,
Electricity Authority
(By email)

Dear Brent,

Transmission Pricing Methodology

As you and your colleagues may be aware the Auckland Energy Consumer Trust (AECT) is a consumer organisation as well as an owner of a substantial stake in the energy industry. As such it is concerned about the way aspects of the current TPM proposal will affect our consumers. In particular, we point to the cost uncertainty created by the new system and the lack of a clear analysis that demonstrates the gains are worth having. We see these as matters that need to be addressed before any changes to the TPM proceed.

These issues are briefly addressed in the attached report which was prepared for us by NZIER.

Yours sincerely,

A handwritten signature in black ink, appearing to read "wcairns", written over a horizontal line.

William Cairns
Chairman

Proposal by Electricity Authority:

Consumer issues

NZIER report to AECT
February 2013

About NZIER

NZIER is a specialist consulting firm that uses applied economic research and analysis to provide a wide range of strategic advice to clients in the public and private sectors, throughout New Zealand and Australia, and further afield.

NZIER is also known for its long-established Quarterly Survey of Business Opinion and Quarterly Predictions.

Our aim is to be the premier centre of applied economic research in New Zealand. We pride ourselves on our reputation for independence and delivering quality analysis in the right form, and at the right time, for our clients. We ensure quality through teamwork on individual projects, critical review at internal seminars, and by peer review at various stages through a project by a senior staff member otherwise not involved in the project.

Each year NZIER devotes resources to undertake and make freely available economic research and thinking aimed at promoting a better understanding of New Zealand's important economic challenges.

NZIER was established in 1958.

Authorship

This report was prepared at NZIER by John Yeabsley

It was quality approved by Mike Hensen

1. At a glance...

This note takes a consumer's view of the Electricity Authority's [EA] proposal for a new Transmission Price Methodology [TPM] in the consultation paper, "Transmission Pricing Methodology: issues and proposal" of 19 October 2012. This publication includes a number of proposed changes to the TPM, which would change the mechanisms for the allocation of the cost of the network.

The examination here is not comprehensive, nor detailed, as it is understood a number of other parties with greater resources are undertaking significant analyses which they will be communicating to the EA. We also neglect many aspects of the EA's proposal as they are more technical, or do not raise readily-analysed questions for consumers.

Our focus is on the way the proposal might affect consumers, broadly. This reflects the consumer interest of the Auckland Energy Consumer Trust, [AECT] which is owned by over 310,000 electricity consumers in the Auckland region. Our viewpoint is necessarily the generic one of a "typical consumer," as the EA's proposals may fall differently on different types of consumers, [particularly as there are various retailers operating in the AECT region.]

The AECT is, of course, a substantial shareholder of Vector Ltd, which is making its own submission.

1.1. Issues

The key consumer issues here relate to the uncertainty associated with aspects of the EA proposal; this carries over into problems with undertaking a credible estimation of the size and incidence of both costs and efficiency benefits. This leaves consumers in general with uncertainty about what might be the effect on them, and no clear assurance that the whole project will yield a positive outcome.

Key matters that give rise to consumer disquiet:

- The new approach will be **expensive to implement** – and will **re-allocate costs among users on implementation** in exchange for the potential for long term efficiency gain.
- EA's cost benefit analysis [CBA] of the proposal seems to be a quantitative illustration of the benefits, were dynamic efficiencies to occur. The **CBA lacks a compelling argument** linking changes in transmission cost allocation to improved investment decisions delivering future efficiency gains.
- Detail on how the proposal would work in practice is sparse relative to its complexity. It is **unclear what real influence** will be created by the suggested changes, as there is no new power created.
- Direct beneficiaries can only be identified for about 20% of the total revenue required, so **most of the cost will be spread over the network** based on regional peak demand.
- The EA has not clearly addressed whether generators will be able pass through increases in inter-connection charges to consumers.

1.2. Where next?

Submissions on the EA's issues paper are flowing. Based on our high-level consideration we expect major electricity users, plus many generators and distribution companies will:

- express their concern over the consequences of the cost and complexity of the scheme; and
- press for a more robust CBA of the proposal, particularly with respect to the link between the change in transmission costs and the likely realised efficiency gains.

Both of these moves are supported by the contents of this report.

1.3. What about the consumers?

From a consumer perspective there is little robustly established upside to offset the identified risks and uncertainty associated with the proposed change. There are likely to be complex reactions by the various participants in the markets.

Improvements in the quality of investment decision-making for transmission assets would be welcomed; they should be tightly targeted on producing a more efficient and productive service to consumers. But this proposal as it stands in practice seems to have too many features that are not tightly tied to this objective, and their effect is to complicate the likely outcomes to consumers' disadvantage.

The Trust should not support the proposal without significant improvements in the robustness and reliability of the analytical assessments.

1.4. The rest of the paper

In the following pages a brief picture of the situation, what is proposed and the way the issues arise has been covered.

2. Background

2.1. How does the current TPM allocate cost?

The current TPM was set in 2007 and recovers the cost of transmission assets through a combination of connection charges, interconnection charges and HVDC charges, applied to entities that control assets directly connected to the grid. HVDC charges are allocated to South Island [SI] generators.

HVDC charges are a substantial part of the transmissions costs and are expected to rise sharply within the next five years as the link is upgraded. [Technically, one link, 'Pole 1' is past the end of its useful life. The new link 'Pole 3' will be considerably more expensive to commission and therefore cost more than either of Pole 1 and 2.]

Allocation of the HVDC charge was always an issue, and has again become contentious as:

- Allocation to SI generators and 'customers'¹ was done on the premise that the HVDC link was used mostly by SI generators supplying electricity to the North Island, thereby earning revenue on generating capacity surplus to SI requirements.
- New HVDC links will be dearer, raising fresh questions about the allocation of sunk and new link costs.

2.2. Why has the EA proposed a change?

The EA sees current HVDC charging as problematic because it imposes costs on SI generators out of line with their share of benefits from the HVDC. In short, the EA consider that recently there have been material changes to the electricity industry that warrant reconsideration of how the transmission network costs are allocated. Forthcoming large increases in transmission prices will 'up the ante' in terms of lobbying.

2.3. What change is the EA proposing?

The EA is proposing to change the TPM so transmission costs are recovered on the principle of the 'beneficiary pays'. The main elements of the change are:

- Beneficiaries of the HVDC will pay a charge for HVDC and interconnection, and
- All parties connected to the transmission grid share the residual cost.

Conceptually this 'lines up' users and investment funding; it thus provides a 'natural' voice to influence decisions, instead of market feedback. EA proposals include: charging the beneficiaries of interconnection assets [HVDC pole 2, and other assets commissioned since 2004 valued at more than \$2 million] according to benefits they receive from these assets. Benefits would be estimated by comparing actual pricing

¹ Customers are defined by the EA as a 'person who has or controls assets directly connected to the grid.'

and dispatch with a model of what would occur without particular interconnection assets. Calculations would cover each half hour, levied a month in arrears.

Where a beneficiary cannot be identified, costs related to transmission links will be recovered through a 'regional coincident peak charge': 50% levied on injection and 50% on demand. Regions and peaks would be defined so as to incentivise efficient management of peaks.

2.4. What does this mean?

From an economic viewpoint this notion can be presented as a simple method of providing clear and accurate signals about efficient investment in the network. But this demands that 'beneficiaries' are identified and benefits accurately estimated. And our assessment is that there are significant difficulties with both of these legs.

Moreover, the positives need to be considered in relation to regulation of Transpower. As we understand the process it starts with a difficult Commerce Commission [CC] task of determining the allowable revenue [MAR].² The favourable side of the proposal is to increase the motivation of a lobby that could target Transpower's [regulatory] asset base [AB, where $MAR = AB \times WACC$] by tying beneficiaries to [investment] costs.

Questions arise: How might this work in practice? To be successful, it seems to demand that either, more voices will influence a CC decision, or that, [more subtly] the net will widen with favourable consequences. In other words, greater information and linkages will motivate more participants to join the submission process, and one of them will find the argument that makes a better CC decision.

We wonder whether there are not ways of changing the proposal to cut the likely costs, while retaining the possible benefits. What alternatives are there – a two part cost allocation system [obvious beneficiaries and others?] And we question what it substantively adds to the CC's processes in its present form?

2.5. How would distributors be affected?

It is difficult to answer in detail at this point. A distributor could face an increase in the cost of allocating and recovering transmission costs, or they may simply pass the new transmission charges through to retail by "opting out" of the process³.

A major issue may be the potential for significant variability in transmission charge outturn each month; currently they have [relative] certainty a year in advance. This effect will be to shift some financial cost risk to the company and create additional charges that may not be recoverable under the regulatory regime.

The overall impact is hard to be sure about – not the least because the changes proposed are going to cause reactions by participants in the industry. The size and incidence of long term benefits are thus unclear, but the EA maintain that the core of the dynamic gains will come from greater involvement by the beneficiaries in the decisions to invest in new network assets.

² The EA then has the job of deciding how that total charge should fall on its users.

³ This option is formally available as part of the proposal.

There are two problems with this. One is that distributors can opt out. And opting out of the process and passing transmission charges straight to retail [customers], means the incentive on distributors to influence investment decisions, and hence their costs, is blunted by the very allocation mechanism the EA is allowing. In addition, the existing system costs are sunk and shifting their fall among participants will not make the system more efficient.

The second is that the proposal may pass some costs of new investments directly onto users. This may, indeed, heighten their interest in the decision. But such extra information does not give them greater power to influence the process. And the structure of investments means understanding the proposal sufficiently to have an impact on decisions requires foresight; the implications have to be thought through.

Finally, in economic terms Transpower's interconnection users have no chance of 'exit'⁴ from the system; as long as they continue to carry out their function, there is no alternative to being totally connected. They are inevitably therefore confined in reacting via 'voice' – and clearer consequences may make users more aware, [and have more accurate knowledge] about the consequences of investments. In effect they can be "louder," but how or why should that change any of the relevant decisions?

Taken together these factors coupled with consumer's short term price elasticity being likely to be very low, may encourage distributors to adopt an "I don't care, I have other things to worry about" approach to the proposal. This would mean they only respond after it is implemented, and then only if consumers are able to muster political support against rising electricity prices.

Consumer costs from this proposal seem to stem largely from the proposal to reallocate costs of existing assets. All this does is change the way the overheads fall, without creating the ability to change any of the previous decisions.

2.6. Consumer perspective

Without being able to address the detail and thus estimate the likely impact on customers in some granularity, we make the following points about consumers:

- This exercise has a non-trivial cost, which has to be borne, somehow, by consumers. It is hard to identify any short term off-set for consumers.
- While in theory the idea of relating asset costs to the beneficiaries is sound, the proof of the pudding is in the eating. If only a small proportion of the overhead ties directly back to actual users, the issue arises of whether it is necessary to disturb existing situations of all consumers to bring this about?
- Similar questions need to be asked about the change in the "wash up" spread of costs – why this new allocation method? What do consumers in total gain – and surely some must lose? Is this the best way of pressuring Transpower's costs? How does this interact with the CC role?
- Looking longer term, this exercise is unlikely to provide customers with better ability to respond to the "signals" from the new system – regardless

⁴ The terms 'exit' and 'voice' are from Hirschman (AO Hirschman (1970) *Exit, voice, and loyalty*, Harvard University Press). He discusses ways customers express dissatisfaction with organisational performance, which includes overcharging.

how “sharp” they are. The customers are not making system investment decisions; moreover, in practice they are unable to identify and respond to relevant coincident peaks with their current investments. And anyway, most do not have tariffs that would reflect these charges. There may be some longer term benefit possible here, but it is only going to come after the consumers have the chance to evaluate the benefits of investing to provide options.

- The reallocation is going to influence investment decisions in the future; existing costs have been incurred and are sunk, while the obvious course of action if they are over-valued is to write them down, or off, so why not confine the “beneficiary” signals to **future** investment? As an investment test device this may have merit for consumers.