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By email: submissions@ea.govt.nz

Dear John,

TPM review: connection charges working paper

Thank you for the opportunity to comment on the Electricity Authority's Connection Charges Working Paper (CCWP), dated May 2014. No part of our submission is confidential.

A key focus of the CCWP is defining potential problems with TPM connection charges before then exploring potential alternatives to the status quo - allowing submitters to test and help inform the logic and assumptions underpinning the analysis. We support this approach.

We broadly agree with the CCWP on one substantive point but depart from it on several others, summarised below.

1. The existing connection charge framework is fit for purpose and compatible with the investment and incentive regulation under Part 4 of the Commerce Act.
2. We agree that parties could theoretically "seek to connect within a loop, or to have connection assets configured in a way that creates a loop". If there is evidence that this is a problem in practice then we would support a targeted and proportionate change to the TPM to address it.
3. The CCWP misunderstands the incentives applying to Transpower and our customers, ignores the empirical evidence and, crucially, fails to properly account for Transpower investment and quality regulation under Part 4 of the Commerce Act
4. The CCWP incorrectly concludes that intrinsic features of the current framework, namely smoothing of connection charges and averaging costs over a pool of connection assets, are 'problems' when, assessed in light of (a) incentives for Transpower and our customers (b) empirical evidence, they are benefits that promote the long term interests of end users.
5. The CCWP incorrectly concludes that intrinsic features of the 'DRC' model are 'benefits' when, assessed in light of (a) incentives for Transpower and our customers (b) empirical evidence with this model, they are 'problems' that run contra to the long term interests of end users.

Our views on staged commissioning are unchanged from those expressed in the NAaN TPM exemption process.

We are also concerned that the Authority is trying to do too much through the TPM and, in the process, risks upsetting the carefully balanced suite of incentives and investment planning established by the Commerce Commission, Transpower and interested parties under Part 4 of the Commerce Act.

We expand on each of these points point below.

1. THE EXISTING CONNECTION CHARGE FRAMEWORK

While we are revenue neutral between different pricing options we are of the view that the current connection charge methodology is fundamentally sound and fit for purpose - it is stable and well understood by our customers.

It is also complementary to the investment framework we operate within under Part 4 of the Commerce Act: it supports our fleet strategies and investment plans and, consequently, our ability to meet our GRS obligation on connection assets. Collectively this provides customers with choice while allowing us to optimise effectively across the network and means that how we do this is, rightly, our decision as asset owner (subject to the Commerce Commission's investment rules and approvals).

The only issues we presently see with connection charges are:

- the impact of four-year averaging of maintenance costs (which we are proposing to address as part of our review of the TPM under clause 12.85 of section 12.4 of the Electricity Industry Participation Code 2010)
- that assets that will become interconnection assets after completion of a phased transmission upgrade could, in certain circumstances, be treated as connection assets in the interim (as reflected in our unsuccessful NAaN exemption application in 2013).

2. COST SHIFTING

The potential opportunities to “seek to connect within a loop, or to seek to have connection assets configured in a way that creates a loop”¹ are very limited.

The only example given in the CCWP, Meridian Energy's Project Aqua, relates to a project which did not proceed. The CCWP did not establish that the proposed loop connection arrangement was inefficient, which makes it difficult to establish whether the example is relevant at all.² We are aware of only one example where a connection customer made a request for a line to be built between two GXP's that would have made that line, and the existing connection asset, interconnection assets. Transpower did not consider that the investment would satisfy the GIT and did not pursue the investment itself.

However, if the Authority has evidence that this problem exists (and this consultation should help flush out any such problems) then we would support a targeted and proportionate change to the TPM to address the problem.

3. INTERPRETING THE INCENTIVES AND EMPIRICAL EVIDENCE

We strongly support the Authority's clear effort to describe the problem it sees with the status quo.

¹ Electricity Authority, working paper “TPM: Connection charges”, 6 May 2014, paragraph 1.15.

² Electricity Authority, working paper “TPM: Connection charges”, 6 May 2014, paragraph 6.9.

However, we are concerned the CCWP has adopted a simplistic and overly theoretical view of how firms *might* behave, rather than how they *do* behave and has not given sufficient weight to the investment and incentive frameworks that operate under Part 4 of the Commerce Act.

In our view this has led to the false conclusion that material problems exist when in fact they do not. For example, reading the CCWP, one could infer that:

- customers are strongly motivated to overstate their need and that Transpower has an incentive and ability to blithely accept the need as a GRS issue
- the checks and balances provided by investment approval processes under Part 4 of the Commerce Act are ineffectual (or don't work as well as they should)
- there is pent up demand amongst customers to finance and build GRS connection assets that is currently being hindered by the TPM (and that doing so would yield large efficiency gains)
- changing to a "saw-tooth" price method will address these 'problems', be complementary to existing Part 4 regulation and be net positive for consumers.

In our view none of these inferences hold. In fact, an analysis informed of the investment and incentive frameworks under Part 4 and the empirical evidence shows that the reverse is true. While we touch briefly on the reasons why below, we think it would be helpful to discuss further with Authority staff.

3.1 Incentives for Transpower under Part 4 of the Commerce Act

The CCWP describes the incentives Transpower is subject to under the Part 4 of the Commerce Act and specifically the Capex Input Methodology (Capex IM) and Individual Price Path (IPP). At paragraph 4.11 the CCWP clearly describes the incentive that the Commerce Commission has placed on Transpower to:

- not exceed approved capex or opex levels;
- optimise expenditure between opex and capex to minimise 'whole of life' costs; and
- reduce total opex / capex expenditure (while meeting required service levels).

It is our view that these incentives, alongside approved expenditure allowances and quality standards, provide Transpower with powerful motivation to seek out and avoid unnecessary expenditure. Put simply, it would be irrational for Transpower to undertake a TPM connection investment unless we were convinced that it was necessary.

However, the full suite of incentives will operate together for the first time in RCP2 and in our experience are not generally well understood. We are concerned, having reviewed the CCWP analysis and conclusions, that the working paper has not fully captured how they are designed and their effect.

3.2 Incentives for our customers

Although we are not expert in the workings of the default price path (DPP) regulation applicable to electricity distribution businesses under Part 4 of the Commerce Act we understand those firms have no incentive to over-estimate future demand (as this could feed into a lower than otherwise DPP). This is consistent with our experience of those firms' behaviour.

The CCWP expresses concern that the averaging/insurance approach "may incentivise more regular upgrades or replacements than what is efficient since connection customers will not face the full costs of more frequent upgrades and replacements". This is not consistent with our experience of customers' behaviour or the available empirical evidence (see section 2.2). Nor is it correct that

customers are able to overstate their need and have assets included in the TPM when they should rightly be contracted for directly.

More broadly we are concerned that the Authority has misunderstood the nature of the service we provide and the incentives that apply for our customers. In particular it is unhelpful to compare the functional long-lived assets used to provide connection services with desirable consumer goods that have prestige value and the utility or desirability of which changes quickly.

Beware the false analogy

Analogies can be helpful to illustrate a point – especially where particular nuance makes it difficult to clearly articulate the issue. However, one must take care that the analogy is applicable to the issue in question.

For example: it may well be preferable to drive a new rather than old Toyota Corolla...but does that hold for switch yards and transformers? We think not.

In the same way, the latest iPhone may have prestige value for a consumer...but does that hold for the cell tower (arguably analogous to switch yards and transformers) that provides the mobile service? We think not.

Could customer's 'fool' Transpower into providing a service in excess of GRS, should they consider it to their advantage? We think not. Transpower has internal processes to evaluate whether proposed investment in connection assets is consistent with the requirements of the GRS. If a customer prefers investment at a level which would exceed the GRS we are required under the Code to ensure the connected party has consulted with its stakeholders that they are prepared to pay for a higher level of service, before signing a CIC. Conversely, where a customer prefers investment which would result in a service level less than the GRS, we are required to consult with the Electricity Authority before a CIC can be signed.

3.3 Use of empirical evidence to test a hypothesis

In addition to misunderstanding the incentives in operation for Transpower and our customers we are concerned that the CCWP does not attempt to test the 'desk top' problem hypothesis empirically. This is particularly worrying as the information required to test the hypothesis put forward in the CCWP is available, albeit not on short notice (the questions asked of the Authority and Transpower by MEUG³ are of the sort that one might ask to test a hypothesis).

We have not had the capacity to respond to MEUG's questions as fully as we might have liked in the timeframe available however we did undertake some limited empirical analysis to test the central propositions in the CCWP:

Empirical analysis of connection transformer fleet ages

To test the hypothesis that the current TPM and investment approval framework resulted in the systemic premature replacement of TPM connection assets we analysed our connection transformer fleet⁴. The key conclusions were:

- the average age of connection transformers is 31.4 years (the accounting life of these assets is 50 years) and the oldest is 79 years old
- 41% of connection transformers are more than 80% depreciated and 18% are fully

³ See: <http://www.ea.govt.nz/development/work-programme/transmission-distribution/transmission-pricing-review/consultations/#c12271>

⁴ The highest cost connection asset

depreciated (i.e. have exceeded their expected economic life)

- 60% of connection transformer replacements over the past 5 years have been made under private investment contract.

These conclusions do not suggest there is a systematic problem resulting in premature replacement of connection transformers. On the contrary they suggest that the current pricing and investment framework is operating as intended and efficiently (if anything we should be replacing assets *sooner*).

Further, we observe that customers have consistently opted not to build connection assets even where Transpower currently enjoys no “competitive advantage” (i.e. for non-GRS investments that are carried out under investment contracts).

4. PROBLEM DEFINITION

We consider that the misunderstanding of incentives for Transpower and our customers and the decision not to test the problem hypothesis empirically has led to the incorrect conclusion that intrinsic features of the current framework are ‘problems’ when they are, in fact, ‘benefits’.

In particular the CCWP characterises the finance cost-free price smoothing and de facto insurance intrinsic to the current TPM as cross-subsidies and therefore problematic. We view these as meeting our customers’ needs. We briefly discuss each below including the extent to which either produces cross subsidies.

4.1 Cross-subsidy

We do not disagree that broadly cost reflective prices will generally promote efficiency. However, we simply do not agree that the current TPM produces systematic or material cross-subsidy. Our difference of view may be due to the apparently static view taken in the CCWP (whereby a subsidy is held to exist where payments are less than allocated cost in any particular year) and to assume that customer incentives are driven by those short-term impacts.

A subsidy should be defined as a situation where **the expected payments for a service over the lifetime of the assets used to provide the service are less than the cost of providing the service over that timeframe.**

In our view a long run analysis is unlikely to conclude that any material cross subsidy exists between connection asset classes or between connection customers. That view reflects the fact that, while the current TPM charge involves averaging and produces a smoothing affect, we have been unable to identify any systematic cross subsidy between asset classes or between customers.

4.2 Price smoothing

Although the valuation method used for valuing connection assets for revenue requirement (in relation to return on and of capital) purposes is Depreciated Historic Cost (DHC) the valuation method used for allocating this revenue requirement to individual connection ‘asset building block’⁵ is Replacement Cost (RC).

That means that customers’ charges are a function of the asset building blocks employed to deliver

⁵ The ‘asset building block’ is a specific description of a network asset with a specified cost and life which represents the modern equivalent of an existing asset or group of assets.

the required service level (but are not directly related to the current book value of the physical assets providing that service at each connection location).

By pooling multiple connection assets, the connection charge method is able to provide customers with the equivalent price smoothed over the lifetime of the asset, without incurring additional finance costs to defer cashflows.

4.3 Insurance for long lived assets

The CCWP characterises the de facto insurance intrinsic to current TPM as an inefficient cross-subsidy. We do not agree with this characterisation and consider such an approach akin to suggesting that the beneficiary of an insurance claim is being subsidised by all the other policy holders.

While we acknowledge that different firms' appetite for risk will differ, and some may opt to bear this risk (directly or through commercial insurance), our experience with investment contracts is that most of our customers prefer not to bear this risk directly.

As well as reflecting customer preferences our expectation is that attempting to replicate the portfolio cover provided for at present through asset-specific policies would be costly.

4.4 Service type charges

The CCWP states that "Connection charges are very different in nature to service-type charges that are typically flattened, such as bank fees, e.g. connection asset service levels vary considerably over an asset's life, connection assets are capital intensive, and connection assets are difficult to relocate".

The bank fee analogy is unhelpful. Service-type charges are common for services that are capital intensive (including in workably competitive markets). For example, the offers by electricity generators for dispatch, and wholesale electricity market prices, are not driven by depreciation or the age of the assets. Likewise, Air New Zealand does not set different charges for flights between Auckland and Wellington on the basis of the age of the plane, or even whether the new (and superior to travel on) A320 Airbuses are used. (Aeroplanes are obviously easy to relocate but the relevance of this comment is wholly unclear.)

4.5 Competition issues

With regard to the discussion at paragraphs 7.30, 7.31 and 7.32 about the impact of ARC based charges in reducing other parties' ability to compete with Transpower we make the following observations.

- We work with our customers to determine the best asset mix and time to replace and who will undertake this work and who is best placed to own these assets. The answer to this question is down to a number of factors including who has spares inventory, management capability, inspection and test procedures and trained staff.
- For some of our larger customers (including some generators, larger distribution companies and direct connects) who have this capability it makes sense for them to own the connection assets (even at 110 & 220kV level) while for smaller customers who do not have exposure to those voltage levels it makes sense for Transpower to manage the assets.

- We have a number of customers who are undertaking the replacement of connection assets that Transpower presently owns at 66, 33, 11kV and who will ultimately own them rather than Transpower because, ultimately, they are best placed to own the assets⁶.

We would be happy to brief the Authority further should it wish to better understand the trade-offs involved in determining who is best placed to own particular assets. We note that this is a matter we are working with the Commerce Commission on in context of the DPP reset.

5. THE DRC 'SAW-TOOTH' MODEL

We describe above the analytical problems that have, we believe, led the CCWP to conclude that intrinsic features of the existing TPM are 'problems' when they are, in fact, 'benefits'. A corollary of this is that intrinsic features of the 'DRC' model characterised as 'benefits' are, in fact, problems.

5.1 Customer engagement in the investment decision process

We believe that our customers are sophisticated and rational and act in the long term interests of their shareholders.

As a consequence, we believe that a transmission customer's incentives to engage in any Transpower investment decision process will generally be determined by the NPV of payments the customer will expect to make over the life-time of the asset (rather than the payment they will initially incur when the asset is built i.e. the sum of charges they pay will be broadly equivalent to the cost of providing the service). The same is true for connection customers' build-buy decisions (or any business case).

However, we agree with the CCWP that it is possible to construct prices so that 'price shocks' affect short run decisions.

It is possible, for example, to engineer a price shock so great that even a large firm (or one who can pass the cost on) will balk at the price 'shock' and seek to defer what they, we and the Commerce Commission consider to be the optimal investment timing (whether the need case is asset condition, fleet management, or capacity driven).

This view is consistent with our previous experience of DRC as the charging method up to the 1990s – the problem is particularly acute for smaller customers.

[Anecdotal] Reasons for previous departure from DRC

We have not trawled the archives to understand the reasons for departing from the DRC pricing method in favour of the current framework, however we understand, anecdotally it was:

- to discourage customers from resisting the replacement of assets due to price shocks when it was appropriate to do so (reducing Transpower's ability to efficiently and safely manage our assets and meet our regulatory obligations)
- because the price paid simply did not reflect the utility that a customer received from the asset over time, i.e. an asset that is 90% financially depreciated is likely to be providing close to 100% of the service provided by a new asset (not 10% as the book value would imply).

We cannot be certain of customers' reaction to DRC and do not wish to overstate that reaction. However, the anecdotal reasons for departing from this approach in the past appear equally valid now – and, if that proves to be the case then our ability to execute our fleet management strategies

⁶ Transpower is actively divesting lower voltage assets where we consider our customer is better placed to own and manage these assets.

and meet Commerce Commission deliverability targets will be impaired. It is possible that some investments may simply not be possible (for example, safety driven outdoor to indoor conversions).

In the interests of brevity we have refrained from a detailed critique of DRC in this submission; however, we are available to discuss the matter further with Authority staff, if that would be of assistance.

5.2 Important issues to address in any transition

If the Authority decides to change to a different connection price methodology we recommend careful consideration be given to how the change interacts with previous pricing policies. For example, the extent to which the change creates arbitrary gains and losses (i.e. cross-subsidies) between our customers depending on the age and book values of assets serving them. This risks creating protracted disputes, even litigation. One way to reduce this risk and to avoid self-interest colouring the debate would be to apply changes on a forward looking basis only.

If the Authority decides that the change should apply to existing connection assets it should take into account the difference between actual past depreciation payments and the payments that would have been made under the revised method. This would help the Authority avoid creating arbitrary cross-subsidies amongst customers. It should also adopt the same approach to depreciation as provided in the Transmission Input Methodologies. (The CCWP is silent on what form of depreciation would be applied under 'DRC'.)

6. OTHER MATTERS

6.1 Staged commissioning

This issue has been traversed in submissions in response to Transpower's NAaN TPM exemption in 2013⁷. Our views on staged commissioning are unchanged from those expressed in that process but we reiterate our view that the TPM simply did not contemplate that interconnection assets may transition through a phase during construction where, for a short period of time, they appear to be configured as connection assets.

The Commerce Commission's Part 4 regime provides incentives for us to deliver projects in the most cost-effective manner. If our staged build/commissioning programme is most efficient overall, then individual connected parties should not be penalised as a result. If it is more efficient for us to commission assets in a manner which results in some assets being connection assets temporarily, those assets should not be considered connection assets from a pricing methodology point of view. If they are, connected parties will be incentivised to force Transpower into a non-optimal commissioning programme and extra costs will be incurred overall.

We note that Vector has initiated proceedings under the Declaratory Judgements Act challenging Transpower's and the Authority's interpretation of the existing TPM).

6.2 The role of TPM in promoting investment efficiency

A theme of this submission is that the CCWP does not adequately account for regulation applicable to Transpower and many of our customers under Part 4 of the Commerce Act. Some of the aspects of the Commerce Commission Part 4 regulation relevant to the current analysis are listed below.

- The Commerce Commission is responsible for setting Transpower's maximum allowable revenue or "MAR" (the revenue that the TPM can recover), and for ensuring incentives to invest and

⁷ Transpower, Draft Decision: NAaN asset classification under the TPM, 1 October 2013, page 2.

improve efficiency, while the Electricity Authority determines how that revenue is to be recovered through the TPM.

- The operation of Part 4 of the Commerce Act does not simply encourage regulated suppliers to maximise their RAB. The operation of Part 4, instead, incentivises regulated suppliers to improve efficiency and reduce cost. The Transpower IPP includes specific rewards for reducing capex below forecast levels.
- The overall Part 4 incentive on Transpower is to invest in connection assets no more (and no less) than is efficient to meet the GRS requirements. For example, interaction between the incremental rolling incentive scheme (IRIS) and the base capex efficiency incentive creates incentives to (a) optimise between opex and capex for lowest whole of life cost (b) avoid any unnecessary expenditure.
- The introduction of revenue linked grid output measures from RCP2, designed around our asset management and fleet strategies⁸, and which assume Transpower will be able to deliver investment plans make no provision for price-shock induced customer “hold-out”.
- Electricity distribution businesses are effectively penalised under the DPP for over-forecasting demand growth i.e. the higher the forecast demand growth the lower the price cap that is needed to allow them to fully recover their costs. Consequently they have no obvious incentive to over-estimate future demand/need for upgraded capacity for connection assets.

We are uneasy that, while Part 4 of the Commerce Act is intended to ensure we “have incentives to innovate and to invest, including in replacement, upgraded, and new assets” and to “provide services at a quality that reflects consumer demands”, proposals made in the CCWP could act as an impediment to both these objectives.

Next steps

We think the Authority’s original view that connection charges are broadly efficient was the correct one and, in our view, there is little value in the Authority expending further resources in this area. However, if it decides to undertake further work we strongly recommend that it takes account of the natural and regulatory incentive the affected firms are subject to and tests its hypothesis empirically where possible.

Please let me know if you have any questions or would like to discuss any of the points made in this submission.

Yours sincerely,



Jeremy Cain
Regulatory Affairs Manager

⁸ The Commerce Commission’s proposal is that approximately \$20m per annum of Transpower revenue will be at risk (+/- 1% of revenue)