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4 April 2017

John Rampton  
GM, Market Design  
Electricity Authority

By email to: [john.rampton@ea.govt.nz](mailto:john.rampton@ea.govt.nz)

Dear John

### TPM review: Oakley Greenwood CBA Question & Answer consultation

We appreciate the opportunity to comment on the Oakley Greenwood (OGW) responses to questions from stakeholders relating to the calculations in their TPM CBA.

We provide general observations about process issues, and in relation to the questions and responses below. The Appendix provides specific comments on the OGW responses, and are limited to what was possible in the short time provided for comment.

#### Summary of our comments

A summary of our comments and observations is that:

- The Q&A on OGW's CBA would have been beneficial earlier, allowing the Authority and OGW more time to address deficiencies before final decisions are made by the Authority.
- The OGW response on implementation costs (relying on intuitive judgment over expert evidence) is concerning. We note that OGW does not appear to have considered Transpower's submissions, including independent reports by PwC on implementation costs.
- OGW has not attempted to quantify:
  - a (large) range of detriments or inefficiencies arising under the Authority's proposal
  - the implication of 'shadow prices' (the Authority's proposal) differing from customer to customer and not being the same as LRMC.
- The OGW CBA cannot test the impact these detriments because it models outcomes of a hypothetically perfect TPM (not the Authority's proposal).<sup>1</sup>
- One implication is that the Authority does not have a quantified basis on which to prescribe key design features, such as asset valuation methodology, in the TPM Guidelines. Separately, we note that estimated benefits related to the pricing of *future* investments<sup>2</sup> (not sunk investments).

More broadly we are concerned by the general quality and rigour of OGW's work. We recognise quantitative CBA can be difficult but consider many of the issues raised with OGW's work might be addressed through some basic quality checks.

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<sup>1</sup> Or of important design choices including scope of the Area of Benefit charge and different asset valuation methodologies.

<sup>2</sup> Assuming (i) the Authority's shadow pricing theory worked (this is contested) and (ii) the AoB shadow prices resembled LRMC (this is not contested; shadow prices *will not* resemble LRMC).

We note the Commerce Commission Guidelines for Quantitative Analysis<sup>3</sup> and encourage the Authority to review the OGW work in light of these.

### Process issues

Our ability to respond effectively has been limited by the very short time-frame for submissions (OGW's answers issued between Wednesday 29<sup>th</sup> and Friday 31<sup>st</sup> March, and submissions due less than two days later Tuesday 2pm<sup>4</sup>).

We are not sure how well the CBA Q&A step has worked in practice. We would have found it more useful if the session had been undertaken prior to submissions on the CBA (which formed part of the 2<sup>nd</sup> Issues Paper). Holding the Q&A earlier would have allowed the Authority to refine and improve the CBA, including fundamental methodological issues, in good time ahead of its final decision. In addition, the CBA would have been able to inform an Authority's assessment of different options – a key role of CBA and not performed in this process.

OGW's inability to meet the Authority's timeframe for responses to submitter questions further limited the opportunity for follow-up questions or clarifications (and, as the deadline for this submission was not extended, effectively used up the time available to submitters to process and comment on OGW's responses).

We note stakeholders have not had an opportunity to submit on the HVDC component of the CBA (this component was not released with the rest of the CBA as part of the 2<sup>nd</sup> Issues Paper), and that this was only released on 23 March 2017. We are concerned that given the wealth transfers there is now a substantially revised HVDC CBA on which the Authority has not sought submissions. We are aware of some simple but material inaccuracies for key inputs to the model as well as broader methodological issues.<sup>5</sup>

### General observations about the Q&A

Our priority for engaging in the TPM review has been to help the Authority arrive at a workable and durable TPM. However, we have expressed ongoing reservations about the quality and usefulness of OGW's CBA work and the Authority's use of CBA.

We think that it would be useful for the Authority to draw on the Commerce Commission Guidelines for Quantitative Analysis when conducting CBA. In light of the deficiencies evident from OGW's CBA the principles (4) that the CBA must be robust, and (5) that the quantitative analysis is reviewed to ensure it is error free are particularly relevant. We would have particularly welcomed that the review included publication of documents which verify and validate the analysis, as well as external review ("for example, where the results have substantial impact or are particularly sensitive"). In our view these steps should be undertaken before the Authority makes final decisions on the TPM.

A critical issue is that, like the original 2012 TPM CBA undertaken by Sapere, OGW's CBA does not actually evaluate the Authority's proposal. Instead, it estimated potential generation-transmission investment co-optimisation under LRMC pricing. We also question whether OGW (or the Authority) has attempted, as far as is possible, to quantify detriments and benefits of the Authority's proposal.

We think questions have highlighted a legitimate and serious issues with the CBA. While some OGW responses have been meaningful, many have not and, overall, do not alleviate these concerns.

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<sup>3</sup> <http://www.comcom.govt.nz/the-commission/commission-policies/guidelines-for-quantitative-analysis/> enclosed at Appendix B.

<sup>4</sup> Changed without notification from 4pm.

<sup>5</sup> We note, for example, average HVDC revenues across RCP3 (2020-2025) are forecast by Transpower to be approximately \$100m per annum, or around one third lower than that assumed by OGW when modelling future generation investments.

Many of the responses seem intended to 'address' the questions but do not provide a helpful or meaningful answer. The response to the question about implementation costs is a good example. OGW assumes TPM development and implementation costs for the sector to be \$2m; in contrast, we estimate the direct cost:

1. to Transpower to develop and implement a new TPM as close to an order of magnitude greater than OGW's estimates (with OGW estimates for for the *entire* sector).
2. of the review to date<sup>6</sup> as comfortably in the tens of millions (we estimate the Authority alone has spent over ten million dollars) and that this is likely to be a fraction of the full cost to the sector, once opportunity costs are accounted for.

We were surprised, given this process and analysis by Transpower and PWC, with OGW's original estimate their justification: "We took an independent approach based on our best judgement".

In our view this response is not adequate. There are actual cost estimates, prepared by Transpower and PWC, for implementing the new TPM, that OGW should be aware of and could have drawn on. The cost estimates by Transpower and PWC<sup>7</sup> are the only estimates that we are aware of.

We consider that OGW responses to the questions about:

- how the CBA would be impacted by whether sunk investments were included as eligible investments or not;
- the impact of different asset valuation methodologies; and
- the impact of optimisation [list not exhaustive];

served to highlight that, because the CBA does not model the Authority's proposal, it could not model the impact of design variations to the Authority's proposal.

Finally, we observe that the principal benefit assessed by the CBA related to the impact of AoB charges on *future* transmission investments (*if* the Authority's shadow pricing theory held *and if* the AoB shadow prices resembled LRMC). Two implications of this are (i) the AoB charges do not need to apply to sunk investments to achieve the benefits that OGW have estimated, and (ii) the Authority does not have a quantified basis to make decisions on matters such as which valuation methodology should be used, so would need to rely purely on intuitive judgment.

The above support our view, (and that of many submitters), that the Authority should make further changes to the proposed Guidelines to reduce prescription and provide Transpower flexibility to assess, as the party with the information, the full range of alternatives on critical design matters.

Yours sincerely



Jeremy Cain  
**Regulatory Affairs & Pricing Manager**

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<sup>6</sup> The review is still in the first of four stages. Completion of the review requires (i) the Authority to determine new TPM Guidelines (ii) Transpower to convert the Guidelines into a full methodology (iii) the Authority to approve, then consult, then determine a new TPM (iv) Transpower to implement that into pricing, finance and operating systems and processes.

<sup>7</sup> The latter form the basis of discussions between Transpower, the Authority and the Commerce Commission regarding application of section 54V of the Commerce Act 1986 to allow recovery of TPM implementation costs (which were expressly excluded from Transpower's 2015-2020 individual price path) by Transpower.

Appendix: Specific comments on the Q&A

E-mail No.	Question	OGW response	Transpower comment
4	<p>Would OGW’s calculation of net benefits change if the AoB charge applied to all major existing transmission investments?</p>	<p>If we understand this question correctly, this refers to the revision that was made to the proposed Guideline (the revision was contained in the December 2016 supplementary consultation paper) that Transpower must include: <i>“a method for including further assets as eligible investments, if doing so would promote the Authority’s statutory objective.”</i> In our December 2016 document in which we outlined our assessment of changes to the proposed Guidelines relative to the original set published for the second issues paper, we provided the following response. ...</p>	<p>As we understand it, the OGW response supports the position held by the majority of submitters that AoB should not be applied to any sunk investments.</p> <p>OGW’s CBA is unable to test the difference between applying CBA to (i) all sunk investments, (ii) the Authority’s proposed selection of sunk investments or (iii) no sunk investments. This is because OGW have not modelled the Authority’s actual AoB TPM proposal, instead modelling LRMC pricing.</p> <p>In essence, the OGW CBA only estimates the benefit of pricing future AoB investments. This means that the OGW CBA would produce the same results under each of the three, very different, scenarios [(i), (ii) and (iii) above].<sup>8</sup></p>
5	<p>How does OGW’s calculation of net benefits reflect the marginal price adjustment mechanism, which allows a customer to face a marginal price for credible commitments to reduce demand equal to the marginal costs saved by Transpower?</p> <p>Why is OGW’s calculation of net benefits not affected by the changes that the EA has</p>	<p>In the CBA for the proposal in the second issues paper, we stated that one of the potential benefits of the AoB charge over the deeper connection-based charge was its structure, namely that it was proposed to include a cost-reflective marginal price signal (which is analogous to the ‘marginal price adjustment’ mechanism). Notwithstanding this, we did not explicitly reflect the marginal price adjustment (MPA) mechanism in our CBA values (i.e., it was a <i>qualitative</i> benefit of the AoB charge as compared to the deeper connection-based charge).</p>	<p>OGW did not model the Authority’s actual AoB TPM proposal. Instead, it modelled a hypothetically efficient TPM (based on regional LRMC).</p> <p>This meant it was not possible for OGW to compare alternative variations, such as the impact of the marginal adjustment mechanism (scope of AoB, asset valuation etc), in the CBA.</p>

<sup>8</sup> Refer also to our response to the question (e-mail 17): “Would OGW’s calculation of net benefits change if the AoB charge did not apply to any existing transmission investments?”

E-mail No.	Question	OGW response	Transpower comment
	<p>made to the specification of the marginal price adjustment mechanism to make it asymmetric in nature?</p> <p>How would OGW's calculation of the net benefits be affected if the marginal price adjustment mechanism were not part of the TPM?</p>	<p>Hence, despite the revised Guidelines as detailed in the December 2016 supplementary consultation paper making this an "additional component", we did not change the CBA as it did not affect our original CBA values. The corollary is that the CBA quantifications wouldn't be affected if it were not part of the TPM. However, to be quite clear, it is our understanding that the proposed Guidelines will allow Transpower to introduce it if it is practicable and consistent with the requirements of clause 12.89 of the Code.</p>	
6	<p>How does OGW's calculation of net benefits reflect that charges to individual customers under the area of benefit (AoB) charge may be higher or lower than LRMC?</p>	<p>As noted in our response to issues raised on the CBA for the second issues paper, the CBA is intended to reflect future decisions, not to model detailed decision processes that would be undertaken on a project by project basis with contemporary information about costs and specific locations.</p> <p>Put another way, the CBA was designed to assess future system-wide economic impacts of the proposed TPM as a result of the incentives it creates for future decisions by affected stakeholders. LRMC assessments are considered to be valid indicator of the long-term economic implications over multiple projects but may be above or below individual project costs.</p>	<p>The question raises a valid issue that has not been addressed by the Authority. Even if the Authority's shadow pricing theory held for interconnection assets different customers would face different shadow prices for assets with the same LRMC.</p> <p>A comparison of the Authority's indicative price against LRMC estimates shows, for example, that different South Island generators would face different AoB charges (on a MWh/average injection basis) for the same assets (HVDC Poles 2 and 3).</p> <p>Putting to one side questions over whether the Authority's shadow pricing theory holds, the CBA should recognise that the shadow price signal would vary amongst different customers (i.e. it in contrast to an LRMC signal, it will send a mix of (a) too strong and (b) too weak pricing signals).</p> <p>Consequently, if OGW had modelled the Authority's actual proposal the estimates benefits of the shadow pricing would have consequently been less than under LRMC pricing.</p>
13	<p>In calculating implementation costs, how did OGW calculate implementation costs an order of magnitude less than those estimated by the EA?</p>	<p>We took an independent approach based on our best judgement that focused on the incremental costs associated with implementing the proposed approach.</p>	<p>It is not clear what considerations did OGW have regard to in applying its "independent approach" and applying their "best judgement".</p> <p>We query why OGW appeared to have no regard to the views of Transpower, the party charged with implementing the changes,</p>

E-mail No.	Question	OGW response	Transpower comment
			<p>or our independent expert adviser (PWC). Both Transpower and PWC derived estimates using empirical evidence which has been published and to the best of our knowledge not found to be excessive (or even disputed) by submitters or the Authority.</p> <p>The CBA should be corrected by including the PwC estimates of implementation costs (\$14.4m) for Transpower. Added to this should be prudent estimate of costs that our customers and other parties including the Authority might incur to (i) participate in the development, approval and implementation of the new TPM and (ii) on going application of this TPM.</p>
14	<p>How does OGW's calculation of the net benefits of replacing the HVDC SIMI charge with the new HVDC AoB charge account for the fact that the new HVDC AoB charge on South Island generators – indicatively recovering from South Island generators around 45% of the current level of the HVDC charge – will increase the costs of developing new South Island generators, relative to new North Island generators (i.e. creating a similar (albeit likely weaker) investment disincentive to the existing HVDC charge)?</p>	<p>The SIMI charge is a per MWh charge on South Island Generators, and is set at a level that is designed to recover the full revenue requirement associated with the existing HVDC link. Given that the majority of that revenue requirement is likely to be related to the recovery of the sunk investments that have been made in the existing link, it means that a variable charge is in effect being used to recover the costs of a sunk investment (or investments whose costs cannot largely be reversed). This potentially means that existing and future investment decisions (by generators) may be affected by this charge, even though any response to that charge will NOT change those otherwise sunk costs.</p>	<p>The OGW response appears to support the view that AoB should not be charged to existing assets, and against the default option of allocating AoB to generators on the basis on average injection (which is the same as SIMI).</p> <p>The OGW response also highlights that there would be distortions, which OGW have not attempted to quantify, from imposing AoB charges on generators for transmission as it will result in recovery of sunk costs through variable (spot market) prices.</p>
		<p>Further to the above, a per MWh charge over the entire year, to our mind, cannot reflect the forward-looking costs of the HVDC link (i.e., this charge couldn't, by</p>	<p>Again, this appears to be an argument against the default option of allocating AoB to generators on the basis of average injection (which is the same as SIMI).</p>

E-mail No.	Question	OGW response	Transpower comment
		<p>“accident”, be cost-reflective) simply because of its structure. In particular, it is our assumption that the forward-looking costs of the HVDC link (i.e. those costs that will be incurred in the future) will not be materially driven by overall throughput. Or put another way, it is implausible to make the case that every single MW that is transmitted over every single one of the 8760 hours in a year in the future has the same impact on the future costs of operating/maintaining/augmenting the HVDC link. Rather, the future costs of the HVDC link (that can be influenced by a generators future investment behaviour) will be predominately driven by throughput when the link is constrained (as this is what will drive the future augmentation of the link).</p>	<p>We note that, the 'logic' of the OGW argument would suggest HAMI should have been retained over SIMI (when quantitative evidence prepared separately by Transpower and the Authority found the reverse to be true). In our view, this highlights the importance of quantitative evidence (including quantifying the detriments and benefits to the extent practicable) and not just relying on intuitive judgment.</p> <p>The AoB charges adverse wholesale electricity market detriments (distorting dispatch order, and raising spot prices) is a major omission from the CBA.</p>
		<p>So everything else being equal, we believe that it is entirely reasonable to assume that in isolation, the SIMI charge can only lead to inefficient outcomes. The SIMI modelling is focused on assessing what the potential economic loss from applying the SIMI charge is.</p>	<p>This is incorrect. OGW neglects to consider how the SIMI charge compares against an LRMC signal (reflecting the future cost of expanding the HVDC).</p> <p>It also appears to miss the point of the question. We don't think the question was challenging (or expressing a view on) whether or not current HVDC charges results in an inefficiency. Rather, the point is that <i>if the current HVDC charges result in inefficiency so will the replacement AoB charges.</i></p> <p>Based on the Authority's indicative prices (and the default average injection allocation) the AoB HVDC charges could simply resemble a diluted version of the status quo allocation to South Island generators using SIMI. OGW have not accounted for this (consequently resulting in overstatement of the benefits of changing the TPM).</p>
		<p>As the questioner alludes, this SIMI charge will be replaced with another charge. The comment implies that there may be an economic loss stemming from the alternative arrangements. In particular, they state that</p>	<p>Again, this response supports application of AoB to new investments only (which the Authority has considered previously).</p>

E-mail No.	Question	OGW response	Transpower comment
		<p>“How does OGW’s calculation of the net benefits of replacing the HVDC SIMI charge with the new HVDC AoB charge account for the fact that the new HVDC AoB charge on South Island generators – indicatively recovering from South Island generators around 45% of the current level of the HVDC charge – will increase the costs of developing new South Island generators”. In response, our view is that this does not create a similar investment disincentive (even proportionally, i.e. 45%), because the recovery of historical investments made in the HVDC link under the proposed AoB arrangements are predominately de-linked from future investment behaviour.</p>	<p>If the current HVDC charge is statically inefficient (it is compared to a 'perfect' TPM), then scaling down the HVDC charge to 45% under the new AoB charges will not remove the inefficiency, it will only reduce it.* This is not reflected in the OGW CBA (which assumes AoB does not result in any inefficiencies).</p> <p>We are unsure what OGW mean by "the recovery of historical investments made in the HVDC link under the proposed AoB arrangements are predominately de-linked from future investment behaviour". The same could be said about the current HVDC charges. They are based on existing sunk costs. Under AoB the HVDC charges that will be incurred will depend on "future investment behaviour" e.g. a generator investing in the South Island will incur AoB HVDC charges.</p> <p>* Relatedly, we note that HVDC revenues from 2020-2025 are forecast by Transpower to average approximately \$100m per annum, or around one third lower than that assumed by OGW when modelling future generation investments (the OGW modelling results in overstatement of the benefits of change to the TPM).</p>
15	How does OGW’s calculation of net benefits reflect the ability of transmission customers to seek optimisation of asset values?	<p>It is our understanding that any optimisation of asset values would result in the recovery of some costs that were originally being recovered via the AoB charge, subsequently being recovered via the residual charge. In our view, as long as the allocation of residual costs is:</p> <ul style="list-style-type: none"> <li>• very difficult for customers to avoid in the future, and</li> <li>• broadly reflects a customer’s reliance on the transmission system then this would have no impact on our CBA for the second issues paper. It</li> </ul>	<p>OGW did not model the Authority's actual AoB TPM proposal. This meant it was not possible for OGW to compare alternative variations of the Authority's AoB TPM proposal e.g. with and without optimisation, in the CBA.</p> <p>In short, under the OGW modelling it doesn't make any difference whether assets are optimised or not. The OGW modelling hinges solely on the assumption that shadow pricing works, and future AoB charges act as a proxy for LRMC.</p> <p>The comment that: "In our view, as long as the allocation of residual costs is:</p>



E-mail No.	Question	OGW response	Transpower comment
		<p>is our view that the proposed basis for recovering residual costs meets these criteria.</p> <p>The above position reflects the statements that we made in our CBA for the proposal in the second issues paper that subject to two provisos, the way in which historical investments are recovered should not materially influence economic efficiency, as these costs have already been incurred and therefore, cannot be reversed. The two provisos are that the recovery mechanism minimises the extent to which it:</p> <ul style="list-style-type: none"> <li>• distorts the future usage of the existing network (e.g., consumption decisions); and</li> <li>• leads customers (including generators and distributed generators) to make inefficient connection, disconnection or other investment decisions.</li> </ul>	<ul style="list-style-type: none"> <li>• very difficult for customers to avoid in the future, and</li> <li>• broadly reflects a customer’s reliance on the transmission system then this would have no impact on our CBA for the second issues paper. It is our view that the proposed basis for recovering residual costs meets these criteria"</li> </ul> <p>is further evidence that OGW’s analysis is unresponsive of including of existing/sunk investments in the AoB.</p>
	<p>How does OGW’s calculation of net benefits reflect the default proposal that if the AoB charge cannot be calculated then the allocation is made on the basis of each customer’s average injection?</p>	<p>Consistent with the answer to the previous question, as long as the allocation of the residual costs is:</p> <ul style="list-style-type: none"> <li>• very difficult for customers to avoid in the future, and</li> <li>• broadly reflects a customer’s reliance on the transmission system</li> </ul> <p>then this would have no impact on our CBA. It is our view that the proposed basis for recovering residual costs meets these criteria.</p>	<p>The response to the question on average injection seems to be an error. We assume the answer OGW provided was to an entirely different question.</p> <p>Allocation to generators on the basis of average injection would impact on each generators SRMC (to different extents, given each generation plant will face different AoB charges) resulting in static inefficiency from: (i) distorted dispatch order; and (ii) higher spot prices. The OGW CBA assumes the Authority’s AoB TPM does not have any adverse efficiency impacts and so does not/cannot quantify these affects.</p>
16	<p>OGW has provided answers to numerous submissions, including Pioneer’s CBA issues. These answers confirm for us the CBA modelling is</p>	<p>Not specifically, however as the EA is across both pieces of work, we have (we think reasonably) assumed that they would have brought any areas of risk/issues to our attention for our consideration / review.</p>	<p>OGW’s answer appears to be “no”.</p> <p>Given that Authority/Concept have modelled application of the AoB TPM proposal, including calculating the charges customers</p>

E-mail No.	Question	OGW response	Transpower comment
	<p>more theoretical in construction, than actually representing the specifics of the EA's TPM Proposal.</p> <p>It is therefore difficult for us to connect outcomes from this CBA model with the Results modelled by Concept and published by the EA in support of its proposal.</p> <p>Has OGW cross-referenced their modelling outcomes with Concept's AoB modelling and made adjustments to reflect Concept's assumptions?</p>		<p>would incur, in order to produce a robust CBA of the Authority's proposal OGW should have:</p> <ul style="list-style-type: none"> <li>• Modelled the Authority's indicative prices</li> <li>• Undertaken sensitivities such as Transpower recovering the AoB charge through a lump-sum tax versus the method for the residual (load) and average injection (generation)</li> <li>• Compared the AoB charges against their estimates of LRMC.</li> </ul> <p>It is not credible to say another pricing method was needed as a proxy for the Authority's proposal given the Authority has produced actual price estimates.</p>
17	<p>How does OGW's calculation of net benefits reflect the method of valuing assets for both existing and new investments? Would the calculation of net benefits change if depreciated historic cost (DHC) were used instead of indexed historic cost (IHC)?</p>	<p>Regarding new investments, our CBA for the proposal in the second issues paper assumed that the valuation technique that applied to transmission investments would result in cost-reflective AoB charges, therefore promoting efficient investment in, and efficient operation of those investments. To this end, the ex ante price signal that customers will face for new investments will reflect the estimated costs of constructing and developing those investments, hence being cost-reflective and consistent with our original CBA.</p> <p>Regarding historical investments, our original CBA also assumed that the valuation technique that applied to historical transmission investments would not distort</p>	<p>OGW did not model the Authority's actual AoB TPM proposal, so it would not have been possible to compare alternative variations, e.g. DHC v IHC, in the CBA.</p>

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		<p>future consumption or investment decisions in relation to transmission services. The valuation technique used to value historic investments, could, in theory, lead to inefficient disconnection from the network (e.g., if the valuation technique leads to a charge that is above a customer's standalone cost). To this end, we are of the view that neither depreciated historic cost (DHC) or indexed historic cost (IHC) would directly or indirectly lead to inefficient disconnection from the network, namely because both are linked to historic cost, which in turn is likely to be below any <i>individual</i> customer's standalone cost. Furthermore, in the unlikely event that it was above standalone cost, the prudent discount policy would be available to avoid the inefficient disconnection.</p>	
	<p>Would OGW's calculation of net benefits change if the AoB charge did not apply to any existing transmission investments?</p>	<p>We are not able to answer this question, as it is not clear from the question what the alternative charging arrangement would be in relation to existing transmission investments. It would be the (relative) efficiency of this alternative charging arrangement that would need to be assessed in order to provide a specific answer to this question.</p>	<p>It is unclear why OGW was unable to answer this question.</p> <p>The principle benefit the CBA assessed related to the impact of AoB charges on <i>future</i> transmission investments, <i>if</i> the Authority's shadow pricing theory worked <i>and if</i> the AoB shadow prices resembled LRMC.</p> <p>This is unaffected by whether the AoB charge is applied to existing transmission investments or not.</p> <p>We also question the validity of the response given:</p> <ul style="list-style-type: none"> <li>• Under the Authority's proposed Guidelines omission of any proposed eligible investments would have been recovered through the residual.</li> <li>• Regardless, OGW could have discussed with the Authority what alternative charging it should model.</li> </ul>

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			<p>We note it is standard/good practice for CBA used as part of policy development to test alternative variations on the proposal, to help inform the optimal design.</p> <p>The Transpower TPM Operational Review, for example, quantitatively tested different HVDC options such as HAMI, SIMI and HAMI-SIMI hybrids. Absent this, there would have been no way of knowing whether the SIMI proposal was the best option.</p>
18	<p>How does OGW's calculation of net benefits account for the disincentive that an AoB charge on existing assets will place on parties (including generators) to invest in locations where they would benefit from (and incur AoB charges for) those investments?</p>	<p>This was not quantified in the CBA, for the following reasons: a) it is almost impossible for distribution businesses to change locations, hence there is no efficiency loss stemming from the application of this price signal to this group of transmission customers; and b) we assumed that many of the existing transmission assets servicing generators and very large transmission connected customers, will be captured by the existing definition of assets under the AoB charge. Further to this, the revised proposed Guidelines we reviewed in December 2016, provide Transpower with the flexibility to further extend the coverage of the AoB charge beyond the set of historical assets provided for in the original TPM proposal, if doing so would further promote the Authority's statutory objective.</p>	<p>This response highlights two issues.</p> <ol style="list-style-type: none"> <li>1. The OGW CBA does not consider potential adverse effects/inefficiencies that could arise from the Authority's TPM proposals. That is, it does not quantify the detriments and benefits to the extent possible.</li> <li>2. It is a good example of OGW not actually answering the question they have been asked.</li> </ol> <p>Stakeholders have raised legitimate concerns about beneficiaries-pays applied to a select set of relatively new assets sending a locational signal that it is better to locate generation plant in areas where transmission assets are comparatively older.</p> <p>This was reflected in the question, and the reference to electricity generators. Despite the question being coached in relation to generation the answer related to EDBs.</p> <p>In our view, the situation is further complicated by implying the AoB applies to many of the existing assets servicing generators (and this could be expanded by Transpower), but this fails to acknowledge the point of the question. In some locations, potential new generators will incur higher transmission charges simply because of the age of the assets/AoB discriminating between old and new assets.</p> <p>The other thing this response alludes to when it states "it is almost impossible for distribution businesses to change locations,</p>

E-mail No.	Question	OGW response	Transpower comment
			hence there is no efficiency loss stemming from the application of this price signal to this group of transmission customers" is that the AoB charge is intended to be a lump-sum tax, not an LRMC price, and therefore unavoidable.
	Why did OGW's calculation of net benefits adopt different assumptions in relation to the probability of Huntly remaining open – assuming 100% for deterring additional investment in (and use of) substitutes for transmission, but only 50% for sending network cost signals to investors in generation?	As we stated in our CBA for the proposal in the second issues paper, only the Scenario 1a result (Huntly stays), <i>“which is based on information provided by the Authority and is assumed to reflect the most realistic forward-looking demand-driven investment programme - has been used in the base CBA where a load LRMC is required to undertake a calculation”</i> . Whereas Scenario 1a and 1b (Huntly stays and Huntly goes) <i>“have been used to calculate two separate amounts for the benefit stemming from the co-optimisation of transmission and generation – which, as discussed elsewhere in this report, have been averaged under our base case”</i> . The key reason for making this differentiation was simply due to materiality of the impact of this decision on the results. The decision around Huntly was much more material, in the context of the assessment of the “More efficient generation” benefit, because it changes the amount of new generation that gets built as well as the LRMC, hence it has a large impact on the results. Conversely, it is not overly material in the context of the assessment of “future investment in services or equipment that may otherwise be substitutes for transmission services”, as it only has a marginal impact on the LRMC for load.	Our understanding of OGW's response is that it is acceptable for the modelling to be internally inconsistent, and for OGW not to correct the inconsistency, provided OGW doesn't consider the error to have a material effect.

## Appendix B: Commerce Commission Guidelines for Quantitative Analysis

<http://www.comcom.govt.nz/the-commission/commission-policies/guidelines-for-quantitative-analysis/>