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19 May 2020

Dr Brent Layton
Chair
Electricity Authority
Level 7, Harbour Tower
WELLINGTON

Cc: Hon Dr Megan Woods

Dear Dr Layton,

EXPERT COMMENTS ON INFORMATION PAPER – REVISED CBA FOR THE 2019 TPM GUIDELINES PROPOSAL

Introduction and overview

On 17 April 2020, the Electricity Authority (**the Authority**) published an information paper setting out its revised cost benefit assessment (**CBA**) for the Transmission Pricing Methodology (**TPM**) guidelines it proposed in 2019.

Our longstanding view is that stakeholders, like ourselves, who are adversely affected by structural reform of this kind are entitled to expect both that the benefits and costs will be appropriately assessed and that there is clear headroom between the benefits and costs.

We asked:

- HoustonKemp to review the revised CBA and assess the reasonableness of its estimates; and
- John Culy to consider the appropriateness of the modelling approach the Authority has used.

A copy the advice we received from both HoustonKemp and John Culy is attached. Both sets of advice have been prepared in compressed time frames as we understand the Authority is keen to make a decision in the current quarter.

HoustonKemp's advice

HoustonKemp's advice is that while some improvements to the modelling of grid use have been made it still holds significant concerns around the robustness of assumptions and approach employed by the Authority in relation to its assessment of the benefits of more efficient grid use.

HoustonKemp also find inconsistencies in the Authority's estimates of reduced transport losses and benefits[1], an unjustified exclusion of distribution costs[2] and insufficient evidence for the claims of benefits associated with increased investment scrutiny and certainty[3].

Of significance, HoustonKemp's advice highlights the degree to which the Authority's analysis continues to quantify a transfer from generators to consumers as an efficiency benefit, contrary to usual practice.

> *"…We previously explained that estimating the benefits of the Authority's reform as the change in consumer surplus will overestimate benefits to society because it will include as a benefit a very substantial transfer between consumers and generators.[4] This problem continues to affect the revised estimates of benefits presented in the Authority's information paper, which remain vastly overstated."*

The Authority's explanation of its treatment of transfers in the information paper is considered by HoustonKemp to be incorrect as *"both a matter of principle and by reference to the results of the Authority's modelling."* Using the Authority's grid use modelling results in a more principled way, HoustonKemp determined the more likely total present value grid use benefit is $132 million, rather than the Authority's estimate of $772 million in the central scenario. HoustonKemp goes on to note that:

> "*That is, approximately 83 per cent of the Authority's estimate of the change in consumer surplus in the 'Central' scenario is comprised of a transfer from generators to consumers*."

However even once the substantive impacts of transfers have been removed from the estimate of net benefits, HoustonKemp identifies that it is likely that the remaining estimate has been affected by the limitations of the Authority's modelling approach – a matter which John Culy has further investigated for us.

John Culy's review

John Culy's review of the appropriateness of the modelling approach has identified many mechanical issues and inconsistencies in the analysis which has been undertaken, as reflected in the questions he has provided to the Authority to date.

More fundamentally John's review goes beyond the conservative critique provided by HoustonKemp and has begun to "look under the hood" during which he identified:

- There are basic computational errors in the modelling which "*As a rough estimate… could amount to the order of $300m to $500m NPV in the total surplus*"; and
- There are also basic errors with the statistical modelling of nodal price differentials. For example, the WKM/HAY ratio has highly erratic behaviour in the model. John estimates that "*…this erratic behaviour caused around a $340m additional benefit to the proposal*".

John's advice goes further to note the additional issues with the modelling work:

- The underlying data contains a number of out of date views around generation investments and uses old cost data. For example, the model includes some generation that is no longer being considered and excludes some generation that is currently under consideration;
- The modelling doesn't properly incorporate the recent MBIE, ICCC and Transpower scenarios which explore more electrification option and a move towards 95% renewables; and

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[1] HoustonKemp advice notes that the Authority's updated CBA ascribes a $95 million benefit from what are said to be "*reduced transport losses and constaints*" arising from a $35 million of transmission investment brought forward. For the reasons outlined in its advice this benefit also is not credible.

[2] The HoustonKemp advice highlight the continued exclusion of increased distribution costs from the CBA. This cannot be justified when the benefits of those investments are included in the analysis.

[3] In addition HoustonKemp suggest that two further benefits: a benefit of $49 million from increased scrutiny of investments and a benefit of $31 million from increased regulatory certainty be removed from the assessment as there is insufficient evidence to support a quantitative assessment.

[4] HoustonKemp, *Review of the cost benefit and options analysis of the EA's proposed TPM guidelines*, 30 September 2019, pp 43-46.

- The model is unable to account for the impact of greaterly increased intermittent supply. A key CBA issue is the proposed removal of peak interconnection charges. However the analysis does not extend to the level of supply of new flexible backup (peakers, grid batteries, pumped storage etc) required to ensure supply reliability at peak times when wind/solar/hydro is very low once old base load thermal are replaced with renewables. This is a significant omission.

We also note that:

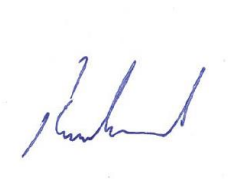
- the modelling is not fit-for-purpose. The use of a non-industry standard modelling framework doesn't enable generation or dispatch outcomes to arise that would align with optimal outcomes (as established using industry standard optimisation tools[5]). We are concerned by the Authority's reluctance to use the modelling tools that it already has which would give a more robust assessment of the impacts of this proposal; and
- the overall CBA results are impacted by underlying modelling assumptions that do not pass a basic sense check. For example, HoustonKemp notes that the modelling assumes that generators would offer capacity into the wholesale market over the period from 2022 to 2049 based on the offer curves that prevailed over the period from 2015 to 2017. The effect of this assumption is that the present value of electricity generators' revenues reduce under the Authority's TPM proposal by $376 million relative to the status quo. We do not think it is remotely credible to assume that new generation entry will occur under these circumstances.

Overarching conclusion

HoustonKemp and John Culy's advice leads us to conclude that this latest CBA is no more robust than its predecessors which the Authority withdrew. It is clear that the benefits of the reforms are substantially lower than the Authority's headline number and there is no reason to consider that this is a positive CBA that justifies progressing with the reforms.

We are aware of the pressure on the Authority to complete this reform but firmly believe that proceeding without addressing these issues will mean the reform has an unstable foundation, and as a consequence will not endure. This will not be in the long term interests of consumers or the industry as we plan and implement a significant energy transition.

Kind regards



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[5] For example, GEM or vSPD which the Authority already has in-house.