

3 June 2022

Rebecca Osborne
Head of Grid Pricing Strategy
Transpower
By email to tpm@transpower.co.nz

Dear Rebecca

TPM BBC draft assumptions book cross-submission

1. This is a cross-submission from the Major Electricity Users' Group (MEUG) on the submissions of seven other submitters on the draft Assumptions Book.¹ MEUG members have been consulted in the preparation of this submission. This submission is not confidential. Members may lodge separate submissions.

Discount rate

2. MEUG agreed a 7% pre-tax real discount rate (DR) was a pragmatic initial assumption. However, there was a risk the actual DR used by market participants and the DR used by different government entities may be inconsistent.² Hence MEUG suggested a cross-agency and affected parties review of the DR rate was needed.
3. Manawa Energy, Meridian Energy, Northpower and Vector made submissions on DR. Those submissions were no at odds with MEUG's suggestion of a fundamental review of DR used by different parties for infrastructure. Vector at paragraph [5] supported the view there may be inconsistent use of DR:

"We also note Transpower proposes to use the 7% discount rate for their generation expansion model, OptGen. We are not clear that the discount rate used to calculate generation expansion should be the same as that used to allocate benefits. The former should be the WACC for a generator whereas the latter may be more about the social rate of time preference."

Improve accessibility to models and understanding sensitivity to key assumptions

4. Meridian Energy and Electra suggested how to improve accessibility to the models used by Transpower. MEUG agrees these suggestions should be considered. Refer:
Meridian energy (p1), "Meridian encourages Transpower to consider ways in which the modelling methodology and tools could be made more accessible, as has been

¹ Submissions at <https://www.transpower.co.nz/our-work/industry/transmission-pricing-methodology/tpm-consultations-2022>

² Consultation paper section 2.2.1.

done for the vectorised Scheduling, Pricing and Dispatch (vSPD) model that replicates the SPD tool used by the system operator.”

Electra (p3), “The assumptions and methodologies outlined in the Draft Assumptions Book are complex and require experts to analyse, interpret, and understand. Like our peers, we are resource constrained as we do not have the expertise internally, and external expertise is often conflicted.

While we use best endeavours to understand, contribute, and implement the TPM, our consumers face the risk that we have to accept transmission charges as fait accompli and simply pass through the increase as best we can. We don’t think that such an outcome is what Transpower intends or is in consumers’ long-term best interests.

We are not the only distributor to be in this position. We understand that most distributors are struggling to gain an expert understanding of the TPM. Accordingly, we request that Transpower release a customer benefit calculator that distributors can use to gain a detailed understanding of the derivation of BBCs.”

5. Several submitters noted the importance of sensitivity analysis³. MEUG understands Transpower agrees sensitivity analysis are important. The challenge is how to decide which scenarios to test. We may have further insights after considering the parallel consultation on the BBC for the Clutha Upper Waitaki Line Project.

Market scenario formation⁴

6. No other submitter commented on using the next MBIE update of the Electricity Demand and Generation Scenarios (EDGS). MEUG stands by the original submission on this point that the MBIE update of EDGS, once published, should promptly replace the initial scenarios developed by Transpower.
7. Not mentioned in our submission, but relevant to our preference MBIE modelling is used for market scenarios, is our expectation the next MBIE update of the EDGS will be a subset of a whole of energy market model and forecasting analysis. The Climate Change Commission models are referenced as a source for many assumptions in the draft BBC assumptions book. However, the Climate Change models were designed for a different purpose, and many of the assumptions and hence the outputs are now out of date. As part of MBIE implementing an Energy Strategy we foresee benefit in MBIE restoring its lapsed energy sector modelling capability to assist energy policy formulation as part of developing and implementing an Energy Strategy.

Continuously improve modelling methodology

8. MEUG agrees with the submission by Manawa Energy [1.2]:

“In a number of places in the draft assumptions book Transpower emphasises the need to avoid false precision in determining BBI allocations. We agree with that principle. However, the assumptions book uses a mixture of very detailed modelling assumptions, such as the full hydro inflow sequences for existing hydro plants, but on the other hand makes very high-level assumptions about other inputs, such as fuel

³ For example, Mercury Energy [p3].

⁴ Consultation paper section 2.3.1.

costs and the cost of carbon. We recommend that greater use is made of stochastic modelling for generation investment, capital cost of new technologies and cost of fuel.”

9. To the last sentence we would add carbon price assumptions (see also [17] to [21] below).

Demand assumptions⁵

10. MEUG agrees with the submission by Manawa Energy [1.2]:
“Paragraph 56 implies that historical data is used to determine the energy to peak correlation. This may be valid for traditional load, but with the transformation of the electricity demand with EVs, batteries, industrial heat etc. The nature of peak load in the future could materially impact BBC.”
11. Northpower had similar concerns in a section titled “Use of historic load to forecast future benefit” [p2]
“We are concerned that there appears to be an intention to use historical load to forecast future benefits, and to allocate future benefits to customers. We submit that Transpower needs to be more granular than this and consider both long term and step-change changes in demand, as opposed to just assuming long term trends continue without any critical assessment.”
12. Like the preceding discussion on using more stochastic modelling, the methodology for forecasting demand should be considered for future improvement.

Gas price assumptions⁶

13. As noted in [7] above, the assumptions, models and outputs from the Climate Change Commission were for a different purpose that needed for the assumptions book and are now out of date. MEUG recommends the gas price assumptions are re-considered in consultation with the Gas Industry Company (GIC) and more detail consideration of recent Commerce Commission regulating gas transmission. The GIC is the appropriate gas sector regulator as it is a key stakeholder for and partner with MBIE in the implementation of a gas transition plan as announced in the Emissions Reduction Plan published 15th May. The decision to accelerate depreciation of regulated gas line assets from 1st October 2022 will increase delivered gas costs and affect gas demand.
14. Three recent events in the gas sector make the Climate Change Commission work and recommendations affecting the gas sector out of date. First Ara Ake published a report “Carbon Dioxide Removal and Usage in Aotearoa New Zealand.”⁷ This is a good summary of Carbon Capture, Utilisation and Storage (CCUS) and barriers to implementation in NZ. If some weighting is given to CCUS being implemented, then that may affect future gas demand supply and hence gas price predictions.
15. Second NZ Energy Corporation (NZEC) announced 25th May that analysis of seismic data for the Tariki gas field indicates more than 10PJ of gas can be stored.⁸ In comparison the Lake Onslow pumped hydro scheme will store about 18 PJ. NZEC say “We expect Tariki

⁵ Transpower draft BBC assumptions book section 2.3.3.

⁶ Ibid section 2.3.5.

⁷ Refer <https://www.araake.co.nz/insights/ccus/>

⁸ Refer <http://www.newzealandenergy.com/>

will have a greater storage capacity than Ahuroa” and a gas storage project could be developed between 15 and 24 months for as little as \$100m”. Having a second gas storage scheme in New Zealand would change the gas market and gas price predictions.

16. Third the Government Emissions Reduction Plan published 16th May did not agree with the aggressive recommendations by the Climate Change Committee to force the gas sector to be wound down. The effect on the gas market and future range of gas prices should be reviewed rather than rely on the work by the Climate Change Commission.

Carbon price assumptions⁹

17. The proposed carbon prices in the near term start at almost half the actual current price of carbon. This is unacceptable as it will materially affect near-term estimates of demand growth and the type of new generation entering the fleet.
18. The consultation paper reports the source for this assumption as the work by the Climate Change Commission. As noted in [7] above, that work, and outputs are now out of date.
19. We agree with the submission of Mercury Energy that commented on carbon price and other assumptions [p2]¹⁰:

“Mercury considers that these forecasts will change as current actual values and expectations about the future market conditions develop and evolve over time. We, therefore, propose that these forecasts should be a blend of current actual values that trend towards the industry’s expectation of the values in the long term. Furthermore, we propose that these forecasts should be updated annually.
20. Whereas work on reviewing the discount rate, accessibility to models and outputs, greater use of stochastic modelling, and forecasting the ratio of energy to peak discussed in the sections above can be considered after 1 April 2023, the carbon price assumptions along with gas price assumptions (see section above) must be reconsidered before the inaugural assumptions book is published.
21. Because of the need to have carbon price assumptions in the inaugural assumptions book, MEUG agrees with the suggestion by Vector [14], as an interim assumption subject to a full review post 1 April 2023, that:

“We [Vector] consider Transpower could apply the CCC methodology to current prices (i.e. draw a straight line from the CCC’s 2030 value to the current price), which would yield a much higher short-term path.”

Yours sincerely



Ralph Matthes
Executive Director

⁹ Consultation paper section 2.3.6.2.

¹⁰ Mercury Energy [p3] also made useful submissions on the risks of not updating assumptions regularly and therefore “significantly increase the risk that the new TPM charges will increasingly become less accurate as market conditions drift away from the numerical values included in the current draft assumptions book.”