

26 May 2023

Transpower

By email: system.operator@transpower.co.nz

Submission on the draft Security of Supply Annual Assessment 2023

Introduction

1. Energy Resources Aotearoa is New Zealand's peak energy advocacy organisation. Our purpose is to enable constructive collaboration across the energy sector through and beyond New Zealand's transition to net zero carbon emissions in 2050.
2. This document constitutes our submission to Transpower on the draft *Security of Supply Assessment 2023* (the Assessment).

Overarching comments

3. We commend Transpower for conducting this modelling and report. Security of supply is of crucial importance to New Zealand's economic and social well-being – and this will be even more so as we increasingly electrify more sectors of our economy (process heat and transport) through the low-emissions transition.
4. We support Transpower's finding that New Zealand needs additional flexible generation capacity and/or demand response in the near term to alleviate increasing winter capacity risks. Like Transpower, we are agnostic as to where this additional capacity or demand response comes from, but the reality is that natural gas peaking is highly likely to be a significant part of the solution.
5. We draw to your attention a recent independent report we commissioned from Energy Link, which may be a useful input to Transpower's ongoing assessments. The Energy Link report used a representative range of scenarios from Energy Link's price path model to explore the potential role of natural gas in the electricity system out to 2038. It contains useful insights about the additional gas fast-start peaking capacity that will be required across a range of demand scenarios, and the likelihood of gas supply being sufficient to meet this. It finds that up to 320 MW of new fast-start gas peaking capacity could be required over the next 15 years.

6. You can access the report at the links below:

- Summary report: <https://www.energyresources.org.nz/dmsdocument/242>
- Full report: <https://www.energyresources.org.nz/dmsdocument/243>

Responses to questions

Question 1: Do you agree with the demand and supply assumptions presented in the report?

Gas supply and capacity related sensitivities

7. In our submissions on previous assessments, we argued that under current policy settings it is much more realistic to assume that gas supply and/or thermal capacity is constrained as the default (i.e., as part of the Reference Case).¹
8. While this has not been adopted, we welcome the inclusion of a wider range of sensitivities that nonetheless highlight the gas supply/flexibility and thermal capacity risks (to North Island winter capacity margins in particular). Figure 16 shows the winter capacity gap that emerges in at least the 2024-2026 period, and possibly longer, if more thermal generation is decommissioned and new thermal capacity is constrained.
9. We note that Figure 8 of the Draft Appendices shows ~300 MW of new thermal generation capacity in 2025 in the Reference Case. We are unaware of any such plans for new development under existing policy settings. Even if these are planned, we suggest policy settings (particularly the 100% renewable electricity by 2030 target) are so damaging to investment in gas generation that assuming this may be implausible. We suggest Transpower revisits this point.

Dry years

10. Dry-year risk is a well-known risk factor in the New Zealand energy mix. Noting that the Reference Case assumes hydro generation based on average historic inflows over the historic record, it would be worth considering a supply-side sensitivity for consistently dry hydrology in the ten-year assessment period.² The independent Energy Link report referenced above explored this kind of sensitivity and it (predictably) reveals significant implications for supply and demand.

Lake Onslow

11. The Assessment notes it does not include a Lake Onslow sensitivity because the project would not be commissioned until 2037, outside the ten-year horizon for

1 See our 2021 submission here: <https://www.energyresources.org.nz/dmsdocument/194>

2 If it is the case, an alternative might be to more fully explain how a dry year is already built into some of the other model components, as appears to be the case for gas supply in the Reference Case and low gas supply sensitivity.

this work. A decision to proceed with Lake Onslow in the next few years, though, should be expected to significantly affect supply-side investment decisions well ahead of 2037. We suggest Transpower could consider incorporating this into its analysis – or specifying how the existing sensitivities (such as constrained thermal generation) could be considered proxies for the ‘Lake Onslow effect’ on investment confidence throughout the coming decade.

Question 2: Do you have any comments with respect to the presentation of the assessment results? Is further information or analysis required?

12. N/A

Question 3: Do you have any other comments on the content of the report?

13. We acknowledge the Security of Supply Assessment is primarily a technical exercise. It should be emphasised, however, that factors in the political economy – particularly the 100% renewable electricity by 2030 target, and the ongoing NZ Battery (Lake Onslow etc) project – directly affect commercial decisions by natural gas producers and thermal generators. Engaging with these matters will help to paint a more fulsome picture of risks to the winter capacity margin and inform a more productive debate about how to minimise them.
14. As we noted in our 2021 submission, a cacophony of negative policy signals has continued to undermine investment confidence in the upstream and in new thermal generation.³ The upstream petroleum sector operates with significant technical and commercial risks as it is, so adding political and policy risk compromises a key factor that has traditionally made New Zealand’s sector attractive to invest in.
15. The very credible potential impact of these negative policy signals is that gas exits the electricity sector in an accelerated timeframe, which – consistent with Transpower’s sensitivity analysis – creates a hugely challenging energy supply gap (both in energy and capacity terms) within the ten-year assessment horizon. For more on the potential energy gap that emerges from a disruptive transition, see our September 2022 *Fuelling the Energy Transition* report here: <https://www.energyresources.org.nz/assets/Uploads/Fuelling-the-Energy-Transition-Full-Report.pdf>

Concluding remarks

16. Thank you for the opportunity to provide input and commentary on this critically important work. Transpower’s annual assessments provide a sober and credible picture of the supply and demand risks facing New Zealand’s electricity sector.
17. We agree that, provided the pipeline of new renewable generation continues to eventuate, the contribution of thermal generation in maintaining margins above

3 See page 5 of our 2021 submission: <https://www.energyresources.org.nz/dmsdocument/194>

the security standard can progressively reduce over time. However, the analysis also shows that it continues to play a critical role in winter capacity, pointing to the need for some additional fast-start gas peaking (in combination with demand response and other resources). Our focus is ensuring policy settings are amended to acknowledge and enable this reality.