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POWERING A BETTER NEW ZEALAND TOGETHER

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Submission on the Security of Supply Annual Assessment 2021

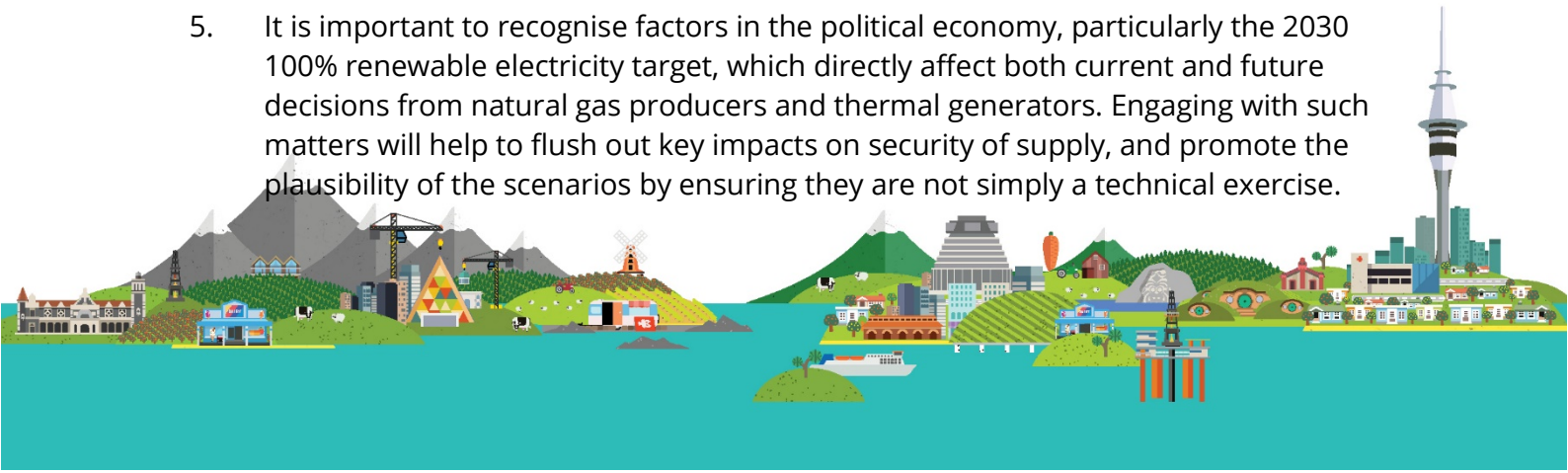
Introduction

1. Energy Resources Aotearoa represents people and firms in the energy resources sector, from explorers and producers to distributors and users of natural resources like oil, LPG, natural gas and hydrogen.
2. This document constitutes Energy Resources Aotearoa's submission to Transpower on the *Security of Supply Annual Assessment 2021* consultation document.
3. We greatly appreciate the extension granted to us and are pleased to be able to comment on the draft report.

Submission

Overarching comments

4. We commend Transpower for conducting this modelling and report, as security of supply is of crucial importance to New Zealand's economic and social well-being. Our overall impression, as expanded on in relation to specific questions, is that the report is overly optimistic in relation to natural gas supply and perhaps not as cognisant of the significant risks facing the natural gas sector over the coming decade – risks which greatly complicate commercial decisions and which can adversely affect security of supply.
5. It is important to recognise factors in the political economy, particularly the 2030 100% renewable electricity target, which directly affect both current and future decisions from natural gas producers and thermal generators. Engaging with such matters will help to flush out key impacts on security of supply, and promote the plausibility of the scenarios by ensuring they are not simply a technical exercise.



Question 1:

Do you agree that the set of scenarios and sensitivities when taken together represent a reasonable range of plausible futures?

Gas constrained scenarios

6. A key point is our concern that the Gas Constrained scenario is only used once while the other four scenarios assume that there is enough new supply projects that have already been consented – and could potentially be built - to maintain margins at the required level.

7. Given issues which we shall soon expound on, we consider it much more realistic to assume that gas is constrained as the default.[1] That is, switching it from being the outlier to being the base case is likely to yield more accurate and reasonable results.

Tiwai smelter closure

8. The modelling assumes, in all cases, that Tiwai aluminium smelter closes in 2024, which essentially (for the purposes of the model) assumes that less electricity generation is needed. We have two comments on this.

9. First, to explore the impacts of plausible scenarios, it would be useful to have at least one scenario where Tiwai remains in operation for a longer period (and then to, in turn, have a sensitivity analysis if it runs for an even longer time). This would be distinct from the current approach of assuming closure in 2024 and only conducting sensitivity testing on it continuing until 2030.

10. Second, there is another sub-element important to considering the net impacts of closure of the Tiwai smelter. We consider the report and modelling should specifically look at what would happen if the smelter closes but, instead of electricity generation being reduced in turn, electricity demand remains stable due to a reallocation of the electricity to another large scale use, such as hydrogen production for example. We understand that Meridian and Contact Energy are actively seeking information from the market about potential new major users, so our scenario is not just academic.

Dry years

11. Dry year risk is a well-known risk factor in the New Zealand energy mix. Given the importance of mitigating dry-year impacts, it would likely be worth adding into the scenario work consideration of consistently dry hydrology.

[1] We agree that a good proxy for this is to assume the 620MW and 360MW of 'new supply installed capacity' is not installed in 2023 and 2026 respectively.

Combined impacts

12. One plausible and impactful scenario that is not presented in the graphs of the reports is where the above three elements combine (obviously there are few possible permutations). For example, what will the security of supply outlook look like in a world that is gas constrained combined with:

    a. the Tiwai smelter continuing to operate beyond 2030 (or where the smelter closes but the electricity is used up by a new industrial user); and/ or

    b. consistent dry hydrology.

Explorative questions

13. There may be other questions which Transpower may want to consider to help inform its thinking about the plausible range of scenarios. Whether this can be included in modelling in the current process is of course up to Transpower, but the following points may be helpful to inform thinking going forward and to help think through the consequences of firms acting on the above policy settings and direction of travel.

14. Below are some "what would happen if?" scenario-based questions (the converse of each question could also be asked):

    c. what if the Lake Onslow pumped hydro project is committed to but not built by 2030 or, for whatever reason, not built at all despite an intention for it be completed?;

    d. what if the current or future government chooses not to accept the Climate Change Commission's recommend concerning the 100% renewable electricity target and shifts away from a hard-line policy?;

    e. what if the current or future government decides the Lake Onslow project is unnecessary or amends its terms of reference to allow hydrocarbons a role in firming electricity?; and

    f. what if the ban on new petroleum exploration permits is amended or repealed?

15. Asking the 'what if' questions to explore foreseeable outcomes should shine a light on the severity of the situation that we may find ourselves in. Although not strictly within Transpower's remit, it would likely highlight the value of widening policy parameters to increase optionality, so as to avoid path dependence and the foreclosure of options leading to regrets later on.

Question 2:

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

16. The 'new supply' tab in the *SoS Annual Assessment 2021 – Supplementary Data* spreadsheet specifies that 620MW and 360MW of 'new supply installed capacity' will be installed in 2023 and 2026 respectively.

17. We are unaware of any such plans for new development. We are unclear whether, in the modelling, this is assumed to be wholly new or whether it is replacement of older thermal generation units. As discussed in our response to Question 4, even if there are new generation assets that were planned, government policy (and specifically the goal of 100% renewable electricity by 2030) is now so damaging to investment in gas generation that assuming this may be implausible and should be carefully considered before being relied upon.

Question 3:

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

18. The graph keys do not always describe all the aspects of the graph. Sometimes key aspects of a graph are described only in previous paragraphs but not in the key and this reduces the accessibility of the graphs. We suggest making the keys inclusive by defining all elements of the graphs.

19. From our reading, Table 6 on page 43 appears to be about sensitivity testing for thermal generation (a concept we support), but it is unclear to us how it fits into the scenarios. Although possible we have simply misunderstood it, we recommend Transpower consider whether that section and its interface with the scenarios is presented as clearly as it needs to be.

Question 4:

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

The 10-year outlook

20. This document provides a 10-year view (2021 to 2030) of the balance between supply and demand in the New Zealand electricity system. While of course by chance, the 10 year horizon is convenient as it does not cross the date by which the Government intends for all electricity generation to be 100% renewable. Aside from the implications for current investment decisions arising from that policy target which we have already covered, we note that the next assessment which looks beyond 2030 will be in an even more gas constrained world where the challenges will be even more real.

The changing investment climate

21. The investment climate for new natural gas development has rapidly changed and is being greatly influenced by government policy settings.

22. The gas market is tight and will remain so into the medium term and even the long term unless the upstream petroleum sector (i.e. natural gas producers) invests capital. Investment of capital is contingent upon at least two important factors:

    a. predictable and stable settings; and

    b. reasonable confidence that downstream counterparties will be around in New Zealand long enough to justify the investment.

23. Unfortunately, there is a cacophony of negative signals which add significant risk (especially for the next cycle of investments which may see production beyond 2030) for those considering investing in natural gas projects including the development of contingent resources. 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.

24. As presented fully in Appendix One, key issues in the current political and policy environment which compound uncertainty and risk for gas producers are:

    a. the 100% renewable electricity target;

    b. a possible ban on new gas connections;

    c. phasing out fuel fossils in process heat;

    d. the NZ Battery Project and Lake Onslow pumped hydro concept;

    e. the end to new petroleum exploration permits outside Taranaki; and

    f. retrospectively implementing perpetual liability on Crown Mineral permits in the context of decommissioning.

25. If we assume that:

    a. the goal of 100% renewable electricity by 2030 is maintained, and gas producers and thermal generators act as if it will remain a goal (by either not investing in long-lived assets or raising prices to recover costs over a shorter timeframe);[2]

    b. the Government either directly intervenes in the market to achieve 100% renewable electricity by 2030 or firms act in anticipation of such a possibility;

    c. the ban on new petroleum exploration permits remains in place; and

    d. if the Lake Onslow pumped hydro scheme is committed to being built

    then we expect that gas producers will identify that they do not have a role beyond 2030 and they will act accordingly. This would mean gas exits the

[2] The Gas Industry Company's *Gas Market Settings Investigation Consultation Paper* makes this point succinctly on page 30, stating: "As well as the need for ongoing upstream investment, the thermal generation assets themselves require upgrading and recertification from time to time. Such work

electricity sector, which (aside from the collateral damage) means the actual challenge becomes ensuring enough electricity is generated in a reliable and affordable manner. That is to say, the challenge shifts to the electricity sector due to a supply gap arising from the premature exit of gas from electricity generation.

Summary

26. Given changing conditions, driven in our view largely by Government policy, one cannot simply assume that natural gas supply will meet demand. This needs to be more thoroughly explored in the modelling through a more pervasive use of the gas constrained conditions, especially in concurrence with possible extension of the Tiwai smelter beyond 2030 or large-scale industrial redeployment of that electricity meaning the burden on thermal generation is not, in fact, reduced.

requires significant capital expenditure and is only viable if the plant is expected to be operating for a reasonable period of time following that investment."

Appendix one: Description of key issues compounding risk

1. This appendix expands on the brief list of key issues in the current political and policy environment which compound uncertainty and risk for gas producers and thermal generators:

    a. **the 100% renewable electricity target:** the government policy of 100% renewables has been 'doubled down' upon through removal of the 'normal hydrological year' qualification and brought forward from 2035 to 2030. This policy appears to be becoming an absolute goal which sends strong negative signals to thermal generators and their gas producers that they will shortly have no role or place. This leads to a significant risk that such firms either exit or limit investment due to a lack of confidence in the future

    b. **a possible ban on new gas connections:** the Climate Change Commission's recommendation to ban new natural gas and LPG connections is demand-destruction by regulatory fiat and represents both another ban and more focus on particular fuels;

    c. **phasing out fuel fossils in process heat:** this new 'hard phase-out' language and policy direction reinforces the myopic focus on fuels and technology rather than net emissions;

    d. **the NZ Battery Project and Lake Onslow pumped hydro concept:** having this government project on the horizon as a possibility will have a major chilling effect on investment into new generation (both thermal and renewable) because it threatens to impair private assets by filling the market with nomically cheap electricity (we say nominally as in reality the multitude of economic costs are real and socialised);

    e. **the end to new petroleum exploration permits:** the ban on new petroleum exploration permits outside onshore Taranaki and the manner in which it was made significantly added to sovereign risk. It has put parameters around the existing sector meaning it is now operating with a closed and contracting system. Some may consider that the exploration ban is not relevant to the current energy shortage as today's gas deliverability issues are not caused by it directly. That is possibly true in a narrowest sense, but the ban certainly becomes relevant in terms of how firms (across the wider energy system) respond to the current situation; and

    f. **retrospectively implementing perpetual liability on Crown Mineral permits:** Crown Minerals legislation, recently introduced, will implement retrospective legislation to institute a perpetual liability regime on permit holders and will also require financial assurance in the event of environmental issues post-decommissioning. The poor policy process (i.e. being implemented without prior public consultation) and retrospective nature is chilling for business and shows that the rules of the game can be changed at any time.