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POWERING A BETTER NEW ZEALAND TOGETHER

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Transpower

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Submission on issues paper – *Security of Supply Forecasting and Information Policy Review*

Introduction

1. Energy Resources Aotearoa is New Zealand's peak energy sector advocacy organisation. We represent participants from across the energy system, providing a strategic sector perspective on energy issues and their adjacent portfolios. We enable constructive collaboration to bring coherence across the energy sector through and beyond New Zealand's journey to net zero carbon emissions by 2050.

2. This is our submission on Transpower's issues paper - *Security of Supply Forecasting and Information Policy Review*, ('the SOSFIP').

3. For this submission, we refer to 'firming' as a shorthand for flexible resources, which could be new flexible generation, natural gas or other fuel fired peaking plant, other storage, grid-scale batteries or long duration energy storage.[1]

4. Recently we submitted on a similar issue to the Electricity Authority ('the Authority') about lack of *additional* firming to support the increasing intermittency of the system. We repeat that sentiment in this submission and provide once more a summary of views supporting this in *Appendix One: Views on future electricity demand and the need for new thermal fast-start capacity*. Relying on hydro alone for long-term flexibility is a sub-optimal outcome.

Key messages

5. We agree the review is timely and that Transpower is correct to focus on short term energy needs for firming our renewable generation capacity. However, electricity needs fuel, therefore the medium to long term focus must be on finding more fuel to cover our risks of a dry year blackout.

[1] For example, see Highview Power: https://highviewpower.com

6. This review is heavily focused on accessing more of the contingent hydro-electric supplies of energy when we have a weather issue, with a new trigger point to be determined. This approach to dry year cover will effectively run the tank dry. This only shifts or delays the underlying problem. The core weakness of the options presented is that they only seek to *reallocate* existing energy available and do not induce *additional* capacity. This is a common theme in other electricity market consultations occurring now.

7. Attention must be drawn to the problem of accessing reliable non-weather dependent fuel, like natural gas, and new firming capacity to firm new weather-dependent generation so this situation can be avoided in future.

Solving short-term problems within a longer-term strategic framework

8. We agree the market is going to become more volatile when we have more renewables in the system. It is important that we do not continue to lurch from winter to winter with short term solutions for backing up our weather-dependent generation.

9. While we welcome accessing more hydro this year, we need to set this in a longer-term strategic context. We acknowledge recent statements by the Chief Executive of Transpower that we require multi-fuel facilities to see us through future winters. This might mean that coal continues to be used interchangeably with other renewable energy sources, plus hydro contingencies and gas, for years to come.

10. Using more of our hydro capacity, as proposed, may deliver short term energy security but something will need to fill the gap in firming capacity over the longer term. The solution proposed to run down the lakes will ease pressure over winter but could introduce market distortions that deter demand for new firming.

11. Adding fuel to the fire, we are concerned that proposed changes to the SOSFIP are happening the same time as the urgent code change by the Authority to introduce scarcity pricing and thermal fuel information disclosure. The impacts of these on thermal generators could be unforeseen and long lasting.

12. If these proposed changes were to become permanent system changes with resulting price signals favouring hydro storage holders, we might see some short-term relief but we will worsen the underlying problem by allowing the system participants to become reliant on contingent hydro storage. This is the worst-case scenario and a sub-optimal outcome. New Zealanders are effectively being asked to do more with less, rather than growing our energy system.

13. Thermal plant, like gas, is a superior product for security of supply. However, constraints on gas supply are not likely to improve in the short term. There

needs to be an intervention to reduce sovereign and investment risks – see our submission on Entrant Generators.

The 2025 SOSFIP proposals rely on hydro but should not ignore the need for thermal firming

14. We argue that we need *more* thermal firming in the short- and long-term, and we are not alone in this view. Appendix One provides a summary of views about future electricity demand and the need for more fast-start thermal generation. Estimates vary widely about future demand which illustrates the need for system settings to retain optionality and respond to changing circumstances.

15. The key takeaway from Appendix One is that nearly all recent electricity system modelling has confirmed an economic role for thermal firming in their generation 'stacks'.

16. Thermal (gas) operations are under pressure. The supplies of gas have been declining – our 2P petroleum reserves have been falling year on year since 2023.[2] Adding to the pressure, every few years gas operations need 'breaks' for maintenance and turnarounds, thus adding to the demand for flexible thermal firming when some plant is out of action.

17. Major gas peaking plants are scheduled for retirement in 2026 (TCC and one of three Rankine units - the other two in the early 2030s if there is no further investment). Methanex has a scheduled 'turnaround' in 2027 and have turned down production for the past two winters to offer firming gas for our electricity system. To our best knowledge, no new thermal peaking plant is in the pipeline.

18. In our view, Transpower has a role to play in securing electricity by taking a long-term strategic view of the system. Transpower must use every influence in its power to encourage more thermal firming so that New Zealand can confidently invest in renewable energy and avoid the risk of blackouts.

A long-term solution for security of supply

19. We believe Transpower may have a role in setting market expectations for thermal firming, such that more generation is incentivised to lessen the burden on our hydro-electric storage. This could be through a required level of firming connected to our growing level of intermittency risk from renewables. The Authority would enforce this, and the market would have to respond by bringing additional firming capacity online.

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[2] This is due to underinvestment. Contrary to popular opinion, gas is available underground, but the economics of getting gas out of the ground have not stacked up These are due to what we call 'above-ground factors'. Investors are too afraid of political flip-flops and environmental policies that seek to undermine energy security by focusing on gross emissions rather than net emissions. Only government can change this situation.

20. We wholeheartedly support renewable generation as an environmentally conscious solution to our energy needs. However, for years we have been plagued by politics and policies that have stymied investment in our natural resources, such as gas, to back up the risks associated with renewables. This has made it difficult to invest in renewables and driven up weather-driven prices. Coal, and demand response from the likes of Methanex and Tiwai have provided a much-needed buffer in recent years, but with electricity demand increasing every year we need a long-term solution for growth.

21. We need a solution that can depoliticise the choice of fuel for firming and attract long-term investment in generation. There needs to be a central market-making mechanism for matching firming capacity with new renewable generation in a way that does not simply reallocate existing capacity or exclusively rely on the gentailers. We believe Transpower is well-placed to offer such a solution.

22. As System Operator, Transpower should have a plan to increase fuel for electricity to secure the system more strategically. We urge Transpower to consider:

    a short term fixes that at a minimum, only changing the trigger point for one 12-month period, so that effects can be monitored and evaluated before they risk becoming entrenched; and

    b long-term options that encourage more and new generation to enter the system. This could include (with further consultation) requiring an annually adjusted base level of flexible generation and letting the market come up with the supply. We acknowledge this is an example of a quite radical measure but it would address the core problem.

Concluding comments

23. We encourage Transpower to continue the good practice of inviting this kind of early discussion on an issues paper as a system leader.

24. Security of supply for electricity is a complex issue. We support a short-term focus on drawing more generation from our hydro-electric supplies but stress that this can only deliver short-term energy security. Transpower, as System Operator, has a responsibility to grow our energy supply and demand a base level of firming that is proportional to the risk introduced by renewables.

Appendix One: Views on future electricity demand and the need for new thermal fast-start capacity

Date	Report	Total electricity demand	New thermal peaking capacity
Jul 2024	MBIE's Electricity Demand and Generation Scenarios[1] Reference and growth cases	Reference: 62.1 TWh in 2050 Growth: 71.7 TWh in 2050	Reference: 800 MW by 2050 Growth: 900 MW by 2050
May 2023	Concept Consulting's report for the Electricity Authority[2]	50 TWh in 2032	***None, at least until 2032***
Apr 2023	EnergyLink's Role of Gas in Electricity and Industry[3] Low demand and high demand cases (note these only run to 2038)	Low demand: 46 TWh in 2038 High demand: 54 TWh in 2038	Low demand: 200 MW by 2035 High demand: 320 MW by 2035
Oct 2022	BCG's The Future is Electric[4] Preferred pathway (Smart System Evolution)	54 TWh in 2030 77 TWh in 2050	200 MW by 2030 400 MW by 2040 600 MW by 2050
May 2021	BusinessNZ Energy Council's TimesNZ 2.0[5] Kea and Tui scenarios	Kea: 45 TWh in 2030 75 TWh in 2050 Tui: 54 TWh in 2030 83 TWh in 2050	Kea: 200 MW by 2030 1,830 MW by 2050 Tui: 400 MW by 2030 1,770 MW by 2050
May 2021	Climate Change Commission's *Inaia Tonu Nei*[6] Demonstration pathway	50 TWh in 2035 66 TWh in 2050	200 MW by 2035
Mar 2020	Transpower's *Whakamana I Te Mauri Hiko* base case[7]	55 TWh in 2035 70 TWh in 2050	400 MW by 2035

Note: *in many cases this new capacity is offset, at least partially, by the decommissioning of existing slowstart capacity). Note that these reports use different reference periods and timeframes, so these figures are not necessarily directly comparable. Relevant years are noted to assist.*

1 Additional thermal peakers are especially required under the Growth and Reference scenarios with between 0.8 and 0.9 GW more thermal peaking capacity required by 2050 compared to the other scenarios. Electricity Demand and Generation Scenarios: Results summary July 2024 page 41.

2 https://www.ea.govt.nz/documents/3147/Appendix_C_-_Concept_Consulting.pdf

3 https://www.energyresources.org.nz/dmsdocument/243

4 https://www.bcg.com/publications/2022/climate-change-in-new-zealand

5 https://times.bec.org.nz/

6 https://www.climatecommission.govt.nz/public/Inaia-tonu-nei-a-low-emissions-future-for-Aotearoa/Inaia-tonu-nei-a-low-emissions-future-for-Aotearoa.pdf

7 See Transpower's *Whakamana I Te Mauri Hiko* report, available at https://tpow-corp-production.s3.ap-southeast-2.amazonaws.com/public/publications/resources/TP%20Whakamana%20i%20Te%20Mauri%20Hiko.pdf?VersionId=FljQmfxCk6MZ9mIvpNws63xFEBXwhX7f