Energy Resources Aotearoa
POWERING A BETTER NEW ZEALAND TOGETHER

energyresources.org.nz
energyskills.org.nz
energymix.co.nz
PO Box 25259, Wellington 6140

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Electricity Authority

via e-mail: operationsconsult@ea.govt.nz

Submission on Review of Security of Supply Standards

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. We welcome the Electricity Authority's ('the Authority') Review of Security of Supply Standards. Reliable and affordable electricity is essential to New Zealand's economic prosperity, and credible security standards are important for informing investment and managing risks.

3. We support the Authority's objective of updating the standards to reflect changing system conditions. However, the methodology must remain technology and fuel-neutral and recognise the different contributions that generation and storage technologies and fuels make to electricity security and reliability.

Key messages

4. Our submission focuses on three key messages:

   a maintain technology and fuel neutrality: security standards should not implicitly favour particular technologies or fuels or constrain investment in alternative sources of firming;

   b recognise the ongoing importance of gas-fired generation: gas provides both peak capacity and sustained energy during periods of low renewable generation, and domestic gas must remain a credible option alongside imported LNG; and

   c apply realistic and conservative assumptions to security and reliability: The standards must distinguish between short-duration capacity and

sustained energy adequacy, particularly during prolonged winter shortages.

Technology and fuel neutrality must underpin the standards

Relevant to Questions 4.1 - 4.2 and 5.1 - 5.2

5. We support updating the modelling methodology to reflect changes in New Zealand's electricity system. However, the use of particular technologies as representative investments (or fuels) should not result in security standards that implicitly favour those technologies or fuels.

6. The Authority proposes modelling battery energy storage systems ('BESS') as the marginal source of new peak capacity. Batteries have an increasingly important role in providing short-duration flexibility, but their ability to contribute to reliability depends on their storage duration, available charge and opportunities to recharge.

7. During prolonged winter shortages, particularly when hydro storage is low and renewable generation is constrained, BESS cannot necessarily provide the sustained energy required by the system. These limitations need to be reflected in the modelling.

8. Gas-fired generation provides a different and complementary form of reliability, with the ability to generate over extended periods where sufficient fuel is available.

9. **We recommend** that the Authority:

    a test alternative capacity technologies, including gas-fired peaking generation, rather than relying solely on BESS as the representative investment;

    b reflect the practical limitations of BESS during consecutive periods of system stress; and

    c ensure the methodology does not inadvertently favour one technology or fuel over another or discourage investment in alternative firming solutions.

10. The standards should identify the economically efficient level of reliability, leaving the market to determine the most appropriate mix of technologies to deliver it.

Gas remains essential to electricity security

Relevant to Questions 5.1 - 5.2 and 5.6 - 5.7

11. Gas-fired generation plays a critical role in New Zealand's electricity system, providing flexible capacity during peak demand and sustained energy during periods of low hydro inflows.

12. We welcome the Authority's recognition of thermal generation in the Winter Energy Margin methodology, including the proposal to model LNG-fuelled generation as a source of additional firm energy.

13. However, LNG should not be treated as the default or only credible source of future thermal fuel supply.

14. Domestic natural gas remains an important option for New Zealand. Its future availability will depend on investment, production and regulatory settings. The Authority's modelling should recognise the potential for new domestic supply, rather than assume continued decline is inevitable.

15. Domestic gas and imported LNG have different cost structures, infrastructure requirements and supply risks. Both should be assessed on a consistent basis, including realistic assumptions about fuel availability and delivered costs.

16. **We recommend** that the Authority:

    a model domestic natural gas alongside imported LNG [and biomethane??] as potential sources of energy;

    b include the full costs of LNG supply infrastructure and fuel delivery in appropriate modelling sensitivities;

    c recognise the contribution of existing thermal generation and the importance of maintaining fuel availability; and

    d avoid assumptions that could prematurely discount future investment in domestic gas production or gas-fired generation.

17. The objective should be to preserve fuel optionality and encourage investment in the most efficient sources of reliable energy.

Reliability assessments must reflect prolonged winter shortages

Relevant to Questions 4.1 - 4.2, 5.1 - 5.2 and 6.1 - 6.2

18. New Zealand's electricity system faces two distinct challenges: meeting peak demand and ensuring sufficient energy is available during extended periods of low hydro inflows.

19. These challenges require different solutions. Short-and long-duration flexibility is valuable, but it is not a substitute for sustained energy supply during a prolonged dry winter.

20. The Authority should ensure its modelling reflects the duration and severity of potential shortages, including consecutive periods of low renewable generation, constrained hydro storage and limited thermal fuel availability.

21. Forecasts are inherently uncertain, and major infrastructure projects are vulnerable to cost increases and delivery delays. Conservative assumptions are therefore appropriate when assessing future reliability.

22. **We recommend** that the Authority:

    a clearly distinguish between peak capacity and sustained winter energy requirements;

    b apply realistic assumptions to the availability, commissioning dates and costs of future generation and storage projects;

    c test scenarios involving delayed investment, constrained domestic gas supply and higher thermal fuel costs; and

    d align the standards with the Authority's long-duration firming work, the System Operator's Security of Supply Assessment ('SOSA') and the proposed Winter Energy Reliability Obligation ('WERO').

23. The standards should provide credible information that supports investment, rather than create false confidence in the availability of future capacity or energy.

Conclusion

24. Energy Resources Aotearoa supports the review and the Authority's efforts to improve the transparency and credibility of electricity security assessments.

25. Our main concern is that the standards must remain technology- and fuel-neutral, recognise the full contribution of gas-fired generation, and adequately reflect the risks of prolonged winter energy shortages.

26. New Zealand needs a diverse and resilient energy system. Security standards should support investment across the full range of firming options, rather than predetermine which technologies or fuels will provide future reliability.