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Transpower New Zealand Ltd
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Submitted via email to system.operator@transpower.co.nz

Orion submission - Security of Supply Forecasting and Information Policy Review

Introduction

1. Orion welcomes the opportunity to submit on the consultation paper 'Security of Supply Forecasting and Information Policy Review' ("SOSFIP").[1]
2. Orion owns and operates the electricity distribution infrastructure in central Canterbury, including Ōtautahi Christchurch City and Selwyn District. Our network is both rural and urban and extends over 8,000 square kilometres from the Waimakariri River in the north to the Rakaia River in the south; from the Canterbury coast to Arthur's Pass. We deliver electricity to more than 229,000 homes and businesses and are New Zealand's third largest Electricity Distribution Business (EDB).
3. We have reviewed the consultation paper, and our specific responses to the questions posed by the System Operator, as well as other feedback we consider appropriate to the consultation are set out in Appendix A.

Key submission points

4. Orion submits in support of the proposed scope of the SOSFIP review but recommends that the System Operator include section 13 (Thermal Fuel Supply Disruptions) given its direct relevance to thermal fuel capability assessments.
5. Regarding Meridian Energy's ("Meridian") proposed amendments, we seek clarification on how they would enhance energy adequacy and security of supply. The System Operator's consultation paper indicates that these changes could increase the potential risk of OCCs and rolling outages occurring. As New Zealand progressively electrifies, the economic impacts of such disruptions would be substantially magnified across commercial, industrial, and residential sectors.
6. We propose consideration of a resource (energy) adequacy reserve facility as an alternative strategic mechanism. This approach would establish an enduring capacity specifically designated to manage extended dry periods, providing certainty around fuel availability while equitably allocating costs across market participants. Such mechanisms have demonstrated effectiveness in several international jurisdictions while supporting long-term affordability and electrification objectives.

Concluding remarks

7. This submission is not confidential and can be publicly disclosed.

[1] Security of Supply Forecasting and Information Policy Review

8. If you have any questions or queries on aspects of this submission which you would like to discuss, please contact us on 03 363 9898.

Yours sincerely,

Connor Reich

Regulatory Lead – Electricity Authority

Appendix A: Security of supply forecasting and information policy (SOSFIP) review questions

Submitting organisation	**Orion New Zealand Limited ("Orion")**
Contact person	**Connor Reich**

Scope of the review	
Q1	**Do you support our proposal to focus the scope of the review to: (i) section 6 (Determining the electricity risk curves) and (ii) (section 12 (Simulated storage trajectories) of the SOSFIP?**
Orion submits in support of the proposed scope of the review. Orion submits that the System Operator should consider extending the scope to include section 13 (Thermal Fuel Supply Disruptions), as this section directly relates to the consideration of "*physical vs. contracted thermal fuel capability in the ERCs*." Given the increasing influence of global geopolitical factors on energy markets and supply chains, reviewing the scenarios for potential thermal fuel supply disruptions and their impact on system security is essential. The assessment of thermal fuel risks should consider both domestic and international factors that could affect New Zealand's energy security.	
Q2	**Do you support the review considering the following matters:** **(a) physical vs contracted thermal fuel capability in the ERCs** **(b) the criteria the System Operator applies to its existing CSRB buffer discretion in the SOSFIP** **(c) determination and use of worst-case SSTs.**
Orion submits in support reviewing all three matters. We strongly support examining the distinction between physical and contracted thermal fuel capability in the ERCs, given the importance of thermal fuel in security of supply management during extended dry periods.	
Q3	**Are there other matters that should be included in the SOSFIP review?**
Please see our response to Q1.	
Q4	**Which of the potential matters for inclusion in the SOSFIP review do you think would be most important for helping better ensure security of supply?**
Please see our response to Q1.	

Q5	**Do any of the potential matters in the review have other potential impacts that should be taken into consideration? These might be impacts within the electricity market (on participant contracting and trading arrangements perhaps) or impacts on stakeholders other than market participants.**

Orion submits that there is an opportunity for the SOSFIP review to consider broader impacts, beyond the technical aspects of security of supply forecasting and information. The security of supply framework fundamentally influences market participant behaviour, investment decisions, and ultimately, the prices paid by consumers and businesses through New Zealand's economy.

The review should consider:

1. **Investment signal efficacy**: The SOSFIP and related security of supply mechanisms collectively create signals that influence generation investment. The review should evaluate whether the current combination of instruments and mechanisms is effectively driving and supporting the business case for new generation capacity. As New Zealand transitions toward more intermittent renewable generation, ensuring these signals produce timely investment in sufficient capacity to reliably balance supply and demand at reasonable prices becomes increasingly important.
2. **Economic impacts of price volatility**: High electricity prices during periods of constrained supply can have significant impacts on New Zealand's broader economic output. The review should consider whether security of supply mechanisms should explicitly incorporate consideration of price impacts, not just physical adequacy of supply. While price signals are an important mechanism for managing demand and incentivising supply, excessively high prices during scarcity events can have disproportionate economic impacts that may not be efficiently addressed through market mechanisms alone.
3. **Price volatility and hydrology forecasting**: The review may benefit from examining the relationship between hydrology forecasts and market behaviour within the broader context of price volatility. Recent market experience demonstrates significant price fluctuations: over the 2024 winter period, wholesale prices rose from approximately $300/MWh to over $800/MWh before declining dramatically to as low as $1.1/MWh in early September.[2] While these fluctuations stem from multiple factors, the review could assess whether current forecasting mechanisms and market participant responses to hydrology predictions are aligned with security of supply objectives.

Meridian's proposed amendments to contingent storage access	
Q6	**What are your initial views on the merits of Meridian Energy's proposed amendments to contingent storage access? What do you consider the effect of the proposed amendments would be on security of supply and other outcomes?** **Please explain your rationale and provide any evidence to support it.**

[2] Electricity Authority - Eye on Electricity, 23 October 2024.

Orion submits that we have not conducted detailed analysis of Meridian's specific proposal. However, we would like to understand how or whether the proposed amendments would increase energy adequacy and therefore enhance security of supply.

We are concerned about the potential greater risks of Official Conservation Campaigns (OCCs) and rolling outages. As noted by the System Operator, "*if contingent storage were used earlier in a dry sequence, the nation's electricity supply would hinge to a material degree on the reliable fuelling and operating of aging thermal plant*. *If that plant failed, there would be no water in reserve to support the system while that plant is restored. If there is less thermal generation backup fuel and contingent storage has already been used up, there is more potential for OCCs and rolling outages to be needed to buy time for inflows to arrive*."[3]

The economic and social costs of extended OCCs and rolling outages would be substantial. These are worst-case scenarios for New Zealand's electricity system, with impacts exceeding typical supply disruptions. As New Zealand increasingly electrifies across commercial, industrial, and residential sectors, the impact of OCCs and rolling outages will increase by orders of magnitude.

Recent electricity supply disruptions demonstrate the significant economic costs of even localised outages:

- **Northland tower collapse (2024)**: The economic cost to Northland due to the loss of power supply was estimated at more than $37.5 million using the Value of Lost Load (VoLL) set out in the Code, with other estimates suggesting losses as high as $60-80 million.[4]
- **Penrose fire (2014)**: The Electricity Authority estimated the economic loss to customers during this Auckland outage was between $47 million and $72 million (in 2014 dollars).[5]

As New Zealand's transitions toward greater electrification as part of our decarbonisation strategy towards achieving net zero greenhouse gas emissions by 2050, any policy changes that increase the risk of system-wide supply disruptions must be evaluated with caution.

Q7	**One of the impacts of Meridian Energy's proposals could be to permanently remove the System Operator's CSRB buffer discretion in the SOSFIP. Is there merit in making changes to the System Operator's CSRB buffer discretion in the SOSFIP and/or making changes to the criteria the System Operator uses to exercise this discretion?**

Orion submits there is merit in clarifying criteria for exercising CSRB buffer discretion, but without conducting further analysis, we would not support permanently removing this discretion.

Q8	**Are there alternative options and/or variations to Meridian Energy's proposed amendments we should consider? If so, please describe the alternative and why it would be preferable.**

[3] Security of Supply Forecasting and Information Policy Review, paragraph 106(b), page 30.
[4] Electricity Authority Report Northland tower collapse, page 7.
[5] RNZ - Blame laid for major power cut

Orion submits that an alternative approach worth considering is a resource (energy) adequacy reserve facility or service. This could enhance longer-term security of supply issues, while potentially addressing some of the concerns that appear to motivate Meridian's proposal.

The concept of a resource (energy) adequacy reserve service differs from the current generation reserve, instantaneous reserve, and sustained instantaneous reserve definitions in the Code. These are designed to focus on system frequency management and address Contingent Events through short-duration (<15 minute) responses. A resource (energy) adequacy reserve would provide enduring capacity specifically designated to manage extended dry periods, and other prolonged energy security challenges. In other words, this proposed mechanism would establish a continuous, standing capability rather than a responsive measure activated only after triggering events have occurred.

Such a mechanism would incorporate centralised coordination of dedicated reserves (fuel and/or storage), equitable cost allocation across participants, technology-neutral frameworks, and clear market integration protocols. By creating certainty around fuel availability during extended dry periods, it may potentially also mitigate investment risk. The advantage of this approach lies in its ability to coordinate diverse resources efficiently, provide certainty of energy availability, and potentially support long-term affordability and electrification objectives.

Resource adequacy mechanisms have been successfully implemented in several jurisdictions. California Independent System Operator's (CAISO) program requires a 17% Planning Reserve Margin (increased from 16% in 2024), which is the additional capacity Load Serving Entities must procure beyond their share of the peak demand forecast.[6]

Shorter-term prioritisation/Winter 2025 considerations	
Q9	**Are there any potential matters for inclusion in the SOSFIP review that, if practicable, should be prioritised and fast-tracked for completion prior to Winter 2025?**

Orion submits that improved communication protocols for security of supply events could be established in the near term. There is not an established protocol for distributors to communicate with all retailers during security of supply events (EIEP5A is designed for planned outages).

While Transpower has done commendable work in developing and sharing communication responsibilities during security of supply events through its recent Industry Exercise Webinars, implementation still requires effective coordination and collaboration between 29 EDBs and approximately 40 retailers.

Establishing clearer and more formalised protocols for this multi-party coordination would enhance the management of potential shortages, particularly regarding communication with medically dependent consumers.

Q10	**Are there other shorter-term changes that could be made to lower the risk of energy shortages during Winter 2025? What are the pros and cons of making these potential changes and which agency would be best placed to consider them?**

[6] Please refer to NESO - Resource Adequacy, CAISO - Resource Adequacy, and MISO Energy - Resource Adequacy for more information about resource adequacy. These frameworks demonstrate how formalised resource (energy) adequacy mechanisms can successfully complement market-based approaches and ensure security of supply.

No comment.

Any other comments:

Orion submits the following additional matters should be considered alongside the SOSFIP review, with the caveat that they likely will not be incorporated into a review scheduled before Winter 2025:

1. **Load management developments**: In the future, EDBs and retailers will likely both play roles in coordinating residential demand response during tight supply situations. The Electricity Authority has indicated that in the long-term, they expect to see more controllable load shift from "EDB-only" control to "shared" control of load with retailers and others.[7] The Electricity Networks Aotearoa's Future Network Forum has been working with both retailers and distributors to develop a common Load Management Protocol (LMP). The LMP aims to provide a common set of terms for how retailers and EDBs coordinate their controllable load management activities in instances of network and grid emergencies.[8]
2. **Review of Part 8 of the Code:** We recommend that the SOSFIP review acknowledge interconnections with Part 8 of the Code, and specifically:
    - **Battery Energy Storage Systems (BESS) integration**: Part 8 requires revision to accommodate the unique characteristics of grid-scale and distributed battery storage systems.[9] As BESS deployment accelerates across New Zealand's electricity system, these assets represent a critical resource for managing security of supply risks, yet the capability of an ESS when it is acting as generation, load, or is idle remains inadequately defined within the Code.
    - **Role of aggregators**: The System Operator should consider advising the Electricity Authority to accelerate its review of Part 8 to establish clear regulatory pathways for aggregators of distributed energy resources. Current Code provisions do not adequately accommodate these emerging market participants, limiting the potential contribution of aggregated resources to system security and flexibility. Expanded regulatory definitions and market arrangements under Part 8 would enable more effective integration of these capabilities.

[7] Update to scarcity pricing settings, paragraph 3.101, page 23.
[8] Further information about the Future Network Forum and the common LMP can be found here: https://www.ena.org.nz/our-work/working-groups-and-forums.
[9] Part 8 Code amendment proposal – Part 1, paragraph 9.14, page 45.