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17 November 2026

Electricity Authority
Wellington
By email: operationsconsult@ea.govt.nz

Review of security of supply standards

Transpower welcomes the opportunity to respond to the Electricity Authority's consultation paper reviewing the security of supply standards.

The security of supply standards play an important role in our energy-only market design, serving as the primary indicator of whether expected medium-term market outcomes will efficiently meet the system's reliability needs. The reporting against the security standards[1] is undertaken by the system operator through its annual Security of Supply Assessment (SOSA) which is a key part of the security of supply assessment and reporting framework, as shown in Figure 1.

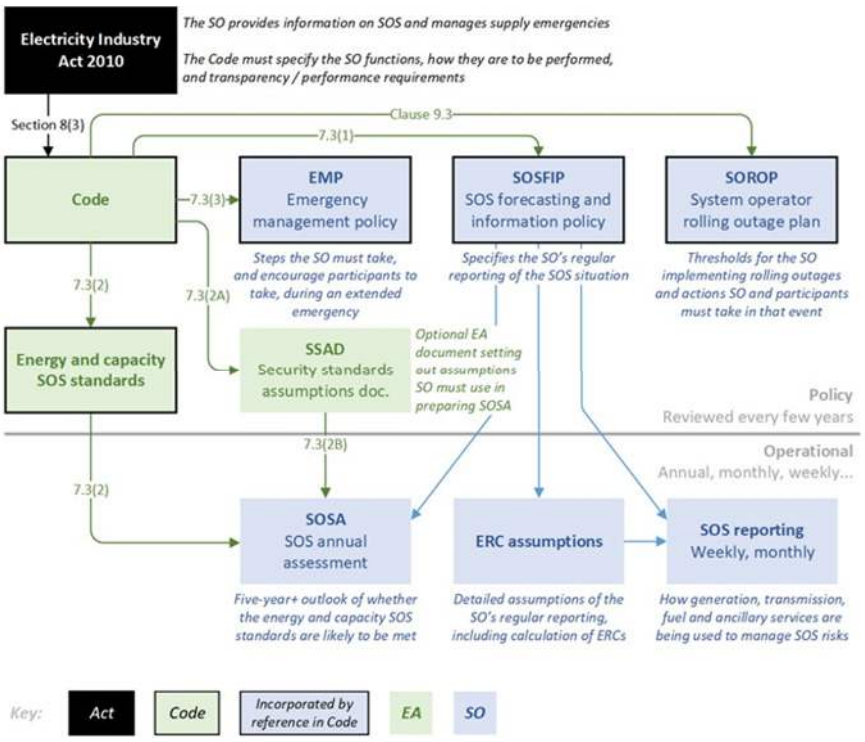


Figure 1: Security of supply key document inter-relationships

[1] The security standards are currently represented through a National Winter Energy Margin, a South Island Winter Energy Margin and a North Island Winter Capacity Margin.

System conditions are changing as domestic gas declines, thermal generation ages, weather-dependent renewables grow, and electrification and potential large loads increase demand.

Regular reviews of the security standards and SSAD keep metrics and assumptions aligned with technology, economics and reliability expectations. This maintains the framework's and SOSA's value in identifying risks and opportunities, supporting a secure, efficient transition amid uncertainty and economic growth dependent on reliable, affordable electricity[2].

We broadly agree with the changes proposed by the Authority. We recommend:

- Any proposed changes to the WCM should ensure it remains consistent with how energy and reserve resources are dispatched under the current wholesale electricity market settings where reserve shortfalls are prioritised ahead of energy during capacity constrained periods.
- The Authority should consider whether the security standards adequately captures sustained capacity and energy supply constraints over several days/weeks and long duration firming needs[3]. This could mean modifying existing security standards or adding new ones.
- We support removing SI-WEM if South Island risk remains assessed with transmission constraints accurately represented. The ESO covers the next two years; we propose further regional analysis within the SOSA through an Electricity Security Opportunities Statement.
- Additional risk information is published with the security standards (as part of the SSAD) which allows industry stakeholders to understand not only the average (expected) unserved energy but also other statistics like the 95th percentile of unserved energy risks and duration of these shortfalls. This will help convey to industry the potential unserved energy risks implicit in the efficient security standards.

Our detailed response to consultation questions is provided in Appendix A.

We will continue to work constructively with Authority staff on improvements to the security of supply framework and supporting policies, standards, and assumptions.

Yours sincerely



Ramu Naidoo
Head of Security of Supply and Forecasting

[2] In addition to information there needs to be sufficient incentives on market participants to invest and maintain an efficient reliability margin.

[3] The Authority in its issues and options paper on "Improving incentives for long-duration firming" raised the potential for alternative definition(s) for energy adequacy risks that should be monitored such as multi-week weather lulls, dry seasons, prolonged renewable droughts etc.

Appendix A– Submission form

Review of security of supply standards

Please email your submission to operationsconsult@ea.govt.nz by 5pm, Tuesday 17 November 2026

Name	Ramu Naidoo
Organisation	Transpower

Questions	Comments
Section 3: Security of Supply Standards in New Zealand's Electricity Market	
Q3.1. Do you consider that there are other changes in the electricity system context that the Authority should consider as part of the review of the security standards? If so, please explain these.	Yes. The Authority should consider whether the framework adequately captures sustained capacity and energy supply constraints over several days or weeks. This risk horizon sits between the short-duration peak-capacity risks assessed through the WCM and the seasonal energy risks assessed through the WEM. The Authority in its issues and options paper on "Improving incentives for long-duration firming" also raised the potential for alternative definition(s) for energy adequacy risks that should be monitored such as multi-week weather lulls, dry seasons, prolonged renewable droughts etc. We recommend that the Authority review the security standards to ensure these capture the required long-duration firming needs. This could mean modifying existing standards or adding new ones[4]. We think this approach would reduce effort, implementation time and market confusion.
Section 4: Winter Capacity Margin	
Q4.1. Do you support modelling additional capacity for the WCM as BESS rather than thermal generation? If not, what technology or mix of technologies should be assumed and why?	Yes. We support modelling additional capacity as BESS which is a credible source of new peak capacity for short-duration peaks and is more representative of likely investment than new thermal generation.
Q4.2. Do you agree with the proposed assumptions for how BESS would contribute to meeting peak demand? If not, what assumptions should be changed?	Yes. We agree with applying a 60% capacity factor to BESS when assessing its contribution to meeting winter peak demand. This is consistent with the System Operator's treatment of BESS in the SOSA. The 60% factor accounts for the energy-limited nature of BESS and its reduced availability across consecutive peak periods. We support applying this treatment consistently to existing and additional BESS in the WCM modelling.

[4] See our response to the Authority's paper on improving incentives for long duration firming. See TP Sub - Improving incentives for long-duration firming

Questions	Comments
Q4.3. Do you support the proposed shortage cost curve for the WCM modelling? If not, what changes should be made and why?	It would be preferable if the shortage cost curves used for the security standards were more closely aligned with the VOLL study to better reflect the increasing value of reliable electricity as a larger portion of the economy electrifies. In the interim, we broadly support the proposed shortage cost curve with the following suggestions. The Authority should test whether recent market outcomes could have provided ~200 MW of reserve shortfall for ~$6,500/MWh. This will help justify its assumption or update it if needed. Given reserve shortfall is included as part of the shortage cost curve, the Authority should ensure that it is consistent with the proposed separation of reserve requirements from the WCM.
Q4.4. Do you support separating reserve requirements from the WCM, so that the WCM represents surplus generating capacity after reserve requirements are met? If not, why not?	Our market design is a co-optimised energy and reserves market where the market settings allow for some reserve shortfall ahead of energy. The modelling of reserves and energy in the WCM should be consistent with its treatment in the market.
Q4.5. Do you agree with the list of sensitivities being tested for the WCM? If not, why not?	Yes. We agree with the proposed WCM sensitivities.
Q4.6. Do you have any suggestions for additions to the WCM sensitivities? If so, please explain your reasoning behind their inclusion.	Yes. We suggest testing a constrained operational capacity sensitivity, consistent with the approach used in the SOSA. This should test low contributions from wind and solar generation during winter peak periods, together with constraints on the timely commitment of slower-start thermal generation. This would assess the market coordination challenge of meeting peak demand during a dark, still winter period.
Q4.7. Are there any other changes to the WCM modelling approach, assumptions, or inputs that the Authority should consider? If so, please explain why.	No. We have provided feedback on specific issues in our responses above.
Q4.8. Do you have any comments on the WCM modelling results?	No comments.
Section 5: Winter Energy Margin	
Q5.1. Do you support modelling additional firm generation for the WEM as LNG-fuelled thermal generation? If not, what technology or fuel-cost assumption should be used and why?	Yes. LNG-fuelled thermal generation is an option considered by the government to provide reserve energy to manage dry year risk and would d be an option. The potential backup firm thermal generation resources are coal, gas and diesel. All three (or even a portfolio of options) could also be considered as alternatives. Testing a range of alternatives including renewable build as sensitivities is important to ensure the least cost alternative (portfolio) is being considered. Otherwise the risk is the energy margins could be inefficiently set too low as the cost of providing

Questions	Comments
	energy reserves would being overestimated relative to the cost of shortfall.
Q5.2. Do you agree with the proposed base-case fuel assumptions for existing peaking plant, the Rankine units, Unit 5, and any new dry-year reserve generation? If not, what assumptions should be changed?	Yes. These assumptions should be updated when the WEM is determined to reflect the latest information on domestic gas availability, thermal-fuel arrangements, plant availability and LNG infrastructure.
Q5.3. Do you support including contingent storage in the WEM modelling framework? If not, why not?	Yes. We support including contingent storage in the WEM modelling framework. Contingent storage is a source of energy available during elevated risk levels consistent with the current security of supply framework[5].
Q5.4. Do you agree with applying a penalty cost to contingent storage so the model uses it only when lower-cost options have been exhausted? If not, how should contingent storage be treated?	Yes. We agree with this approach and testing a range of penalty costs.
Q5.5. Do you support the proposed changes to the WEM shortage cost curve, including the treatment of contracted NZAS demand response? If not, what changes should be made and why?	As discussed above for the WCM, it would be preferable if the shortage cost curves used for the security standards were closer aligned with the VOLL study to better reflect the increasing value of reliable electricity as a larger portion of the economy electrifies. We broadly support the proposed changes to the WEM shortage cost curve, including treating contracted NZAS demand response separately from uncontracted demand curtailment. Contracted demand response should be represented using the relevant contract terms and expected availability. The valuation of voluntary demand curtailment should also be consistent with the incentives provided through an Official Conservation Campaign. As outlined in our submission[6] on the Minimum Weekly Amount, an appropriate balance is needed so that conservation campaigns do not weaken incentives for participants to manage dry-year risk through firming and other commercial arrangements.
Q5.6. Do you agree with the list of sensitivities being tested for the WEM? If not, why not?	Yes. We agree with the proposed WEM sensitivities. They cover the main uncertainties affecting the result, including fuel availability and costs, contingent-storage penalties, demand, thermal availability, hydro assumptions and shortage costs.

5 Access to contingent storage at Lakes Hawea and Tekapo are currently based on the Alert risk meter status defined by the System Operator. From 2026 to 2028, contingent storage in Lake Pukaki can be accessed under normal operation (without an Alert risk meter status).

6 TP-Feedback EA MWA.pdf

Questions	Comments
Q5.7. Are there any other changes to the WEM modelling approach, assumptions, or inputs that the Authority should consider? If so, please explain why.	Yes. The WEM modelling should preserve the relationship between hydro inflows and wind and solar generation. As intermittent generation increases, modelling these inputs independently could create weather combinations that may misrepresent winter energy risk. Using wind and solar profiles from the same historical weather years as the hydro inflow sequences would retain the observed joint conditions without assuming a particular correlation.
Q5.8. Do you support removing the SI-WEM? If not, what role do you consider the SI-WEM should continue to play, and why?	We support removing the SI-WEM provided we can assess the South Island risk through analysis that explicitly accounts for transmission constraints and regional supply-demand conditions. The System Operator considers that this analysis could be provided through more detailed regional risk assessments of the SOSA which the system operator proposes doing through an Electricity Security Opportunities Statement.
Q5.9. Are there circumstances where you consider the SI-WEM could provide a useful signal that would not be captured by the NZ-WEM or other security of supply monitoring? If so, please explain.	As discussed above, the assessment of South Island risk is still needed but needs to accurately account for constraints on the transmission network. This is currently achieved through the ESO for the next two years. We propose to assess the South Island risk through further regional risk analysis as part of the SOSA process through an Electricity Security Opportunities Statement.
Section 6: Security Standards Assumptions Document	
Q6.1. Do you support the proposed interim changes to the SSAD for the 2027 SOSA, including clearer frameworks for generation pipeline assumptions and demand forecasting? If not, what changes should be made and why?	Yes. We support the proposed interim changes to the SSAD to provide clearer frameworks for generation pipeline assumptions and demand forecasting. This should improve the consistency and transparency of the SOSA.
Q6.2. Do you have any suggestions for additional matters that could be added to the SSAD for the 2027 SOSA? If so, please explain what these are and why these should be added.	Yes. The SSAD should provide further information on the security-of-supply risks associated with security margins (at, above and below the efficient standard). The current SSAD indicates the expected level of unserved energy at these different levels at, above and below the standards. In addition to these the SSAD should also include further statistics of the modelled unserved energy such as: - P50, P95, P100 unserved energy level - P50, P95, P100 duration of unserved energy These additional statistics would help users understand the implications of the standards and being above and below the standards. This would help support clearer communication of emerging security-of-supply risks and reinforce the SOSA's role as New Zealand's established assessment of long-term capacity and energy adequacy.