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Submitted via email: system.operator@transpower.co.nz

DRAFT SECURITY OF SUPPLY ASSESSMENT 2026 CONSULTATION

Mercury welcomes the opportunity to provide feedback on Transpower's Draft Security of Supply Assessment 2026 (SOSA).

The SOSA provides an important 10-year view of New Zealand's electricity security of supply outlook. It is a useful input for market participants, policy makers and other stakeholders, and it helps frame public understanding of the risks and actions required to maintain electricity reliability through the transition.

Mercury supports market-led responses to security of supply risks. The market is already responding through new renewable generation, geothermal development, hydro refurbishment, batteries, demand response, long-term customer contracting, gas flexibility arrangements, and the Strategic Energy Reserve (SER) / Huntly Firming Option (HFO) arrangements. SOSA should support those responses by providing robust and transparent risk signals that reflect the system and operating environment of today.

Mercury broadly considers the Draft SOSA's conclusion that winter energy risk may emerge in the early 2030s to be reasonable. However, there remains time for the market to respond – as it already is. The final SOSA should present the results as a signal for timely investment and flexibility, not as an unavoidable shortage outcome. This distinction is important given the public and policy attention the SOSA receives.

Mercury considers that Transpower has made useful improvements in this Draft SOSA, including:

- more granular treatment of demand, including large step-loads;
- the final investment decision criterion and 75% likelihood threshold for supply projects;
- updated peak capacity contribution assumptions;
- recognition of the authorised SER / HFO arrangements in the Reference case treatment of the Rankines;
- inclusion of low gas, very low gas, high gas / LNG, reduced Rankine, low intermittent generation and constrained operational capacity sensitivities; and
- improved treatment of demand response.

In summary, Mercury's key remaining comments are:

- deterministic energy and capacity **margins should be supplemented by probabilistic reliability metrics**;
- North Island Winter Capacity Margin (NI-WCM) should be supplemented by probabilistic reliability metrics that **better capture residual demand risk during peak periods**, rather than relying solely on deterministic capacity margins;
- **include constrained operational capacity** in the Expected Future case or reported as a parallel headline case;
- future SOSAs should **better test correlated weather risk**, including low wind and solar coinciding with low hydro inflows, rather than relying on an expanding list of sensitivities;
- **contracted demand response and realistic load shifting** should be reflected more transparently;
- future SOSAs should include **cancelled-build or partial-build sensitivities**, distinct from delayed build; and
- reporting should clearly explain, at an aggregate and non-confidential level, the assumptions for gas availability, Rankine availability and strategic solid-fuel reserve readiness.

Our responses to Transpower's consultation questions are provided below.

If you have any questions, please reach out.

Yours sincerely

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Mercury

CONSULTATION QUESTIONS

Question 1: Do you have any comments/feedback on the results of the New Zealand Winter Energy Margin (NZ-WEM)?

Mercury broadly agrees that the NZ-WEM results indicate an emerging winter energy margin risk in the early 2030s. The result appears plausible, particularly given the sensitivity of the margin to gas availability, Rankine availability, high demand growth, delayed build and low intermittent generation output.

The results are a useful signal for timely market response, including new generation, firming, demand response, fuel arrangements and customer flexibility.

The SER/ HFO arrangement is a practical market response to dry year security risk. However, reduced Rankine availability remains a useful sensitivity. The SER/ HFO arrangements improve confidence, but do not remove residual risks around outages, fuel logistics and operational availability.

Mercury supports the inclusion of low gas, very low gas and high gas / LNG sensitivities. LNG is appropriately treated as one possible insurance option, alongside domestic gas arrangements, storage, demand response and new renewable and firming resources.

The low intermittent generation sensitivity is useful. Future SOSAs should consider whether WEM/WCM margins adequately reflect correlated weather risk, including low wind and solar coinciding with low hydro inflows or constrained hydro storage. The preferred way to address this, is through probabilistic measures, such as expected unserved energy or a re-evaluation of the margin methodology, rather than by adding further sensitivities.

Known, contracted demand response should be reflected transparently in WEM assessments.

Future SOSAs should supplement WEM margins with probabilistic metrics such as expected unserved energy.

Question 2: Do you have any comments/feedback on the results of the South Island WEM?

Mercury broadly agrees that the SI-WEM appears stronger than the NZ-WEM in the Reference case, but remains exposed to the same key risks: high demand growth, reduced thermal support, lower gas availability, delayed project delivery and low intermittent generation output.

The results reinforce the value of a balanced market response: South Island generation, long-duration demand response, HVDC capability, dry-year firming and flexible load.

Mercury supports Transpower's inclusion of South Island step-loads. Large loads can increase demand risk, but can also support new renewable investment where appropriately contracted.

The SER/ HFO arrangements support SI-WEM resilience by improving confidence that Rankine capacity and strategic solid-fuel reserves can support dry-year conditions.

Transpower should continue to explain the assumptions behind HVDC south transfer, including any operational limits that may affect the South Island's reliance on North Island surplus energy.

Question 3: Do you have any comments/feedback on the results of the NI-WCM?

Mercury considers the NI-WCM results are the area where further methodological development is most important. The constrained operational capacity sensitivity shows that peak capacity risks can emerge from 2026 even where the Reference Case appears adequate.

Mercury supports Transpower's inclusion of the constrained operational capacity sensitivity. This sensitivity is important because it better reflects the operational challenge of meeting peak demand where wind output is low, solar contribution is limited or zero, and slow-start thermal plant is not fully committed.

This supports Mercury's view that NI-WCM should place more weight on residual demand / net demand across a range of credible operating conditions. The highest-risk period may not be the highest gross demand period; it may be a lower demand period with very low wind and little or no solar.

Over time, this issue may be better addressed through probabilistic reliability metrics or a re-evaluation of the margin methodology, rather than by adding further standalone sensitivities.

Mercury considers this sensitivity should be given more prominence. It should either be included in the Expected Future case or reported as a parallel headline capacity-risk case in future SOSA and quarterly Security of Supply Outlook reporting.

Mercury also recommends continued review of battery capacity contribution assumptions, particularly where batteries are energy-limited and winter peak risks may extend across more than a short two-hour period.

The NI-WCM security standard should be reviewed to ensure it remains fit for purpose. The Draft SOSA notes that the current standard reflects an historical cost-benefit assessment allowing up to 22 hours per annum of energy or reserve shortfall before additional peaking investment was considered economic. That calibration should be re-tested against contemporary consumer expectations, electrification reliance and the changing risk profile of the system.

The peak load shifting already assumed in the NI-WCM should be clearly identified. Where market-led flexibility from time-of-use pricing, retail flexibility products and other forms of demand response is expected to be greater than assumed, this should be reflected through the increased demand response case rather than a new standalone sensitivity.

Question 4: Do you have any comments/feedback on the Expected Future case?

Mercury supports the intent of an Expected Future case, provided it is clearly framed as Transpower's current view of a plausible or central risk case, rather than a forecast. Given the uncertainty across demand, gas, project delivery, fuel availability and operational conditions, Transpower should consider a more neutral description.

Mercury considers the use of medium demand and low gas supply is a reasonable starting point, given current uncertainty around gas availability and the material impact gas supply has on winter energy margins.

However, the Expected Future case is incomplete for capacity risk. Because it uses the same assumptions as the Reference case for NI-WCM, it provides no additional insight into the constrained operational capacity risk.

Mercury recommends that the constrained operational capacity sensitivity be included in the Expected Future case, or that Transpower publish a parallel Expected Future capacity-risk case.

The proposed progress reporting against the Expected Future case in the existing quarterly Security of Supply Outlook should include tracking of key leading indicators , including project delivery, large load connections, gas availability, thermal fuel availability, demand response, and operational capacity risks.

Mercury would support Transpower presenting a small suite of central risk indicators rather than relying on a single deterministic Expected Future case. This would better reflect the range of plausible security of supply outcomes.

Question 5: Do you have any further comments/feedback on the SOSA 2026?

Mercury acknowledges the useful improvements Transpower has made since consulting on the Reference case and sensitivities. These include improved demand granularity, updated peak capacity contribution assumptions, the 75% likelihood threshold for likely projects, the final investment decision criterion for committed projects, and inclusion of the constrained operational capacity sensitivity.

The Security Standards Assumptions Document (SSAD) needs to be reviewed regularly. Much has changed since the SSAD was last substantially updated (circa 2011). Significant amounts of variable renewable generation have been added to the system. Gas supply has become much more constrained. New energy limited sources of capacity (batteries) have been added, and time of use tariffs have become more prevalent. These all mean that interactions between different sources of generation and load have changed and become more complex. In addition, the NI-WCM standard needs to be tested to ensure it remains aligned with consumer expectations and the level of reliability required in a more electrified economy. The relatively simple energy and capacity margins are unlikely to capture this complexity and should be re-evaluated taking into account the increased complexity of the system.

Mercury welcomes Transpower's review of peak capacity factors for SOSA 2026 and is pleased that these have been re-evaluated. However, the methodology used for the analysis will probably need to evolve as the contribution from wind and solar increases. The current methodology calculates the contribution of wind and solar at the time of the demand peaks. However, the highest demand on firm generation may not be at demand peaks, but where demand is high and this coincides with low variable (wind and solar) generation. Therefore, a methodology where the net demand on firm generation (demand minus variable generation) is calculated and these are re-sorted and compared to the sorted demand would, in our view, give a more accurate view of the contribution of variable generation to meeting security at system peaks.

Mercury recommends that future SOSAs distinguish between project cancelled-build or partial-build sensitivity, distinct from delayed build. Project delay and project non-delivery are different risks, and both are relevant to assessing the adequacy of the supply pipeline.

Mercury recommends that future SOSAs should consider time-of-use / load-shifting. Retail pricing reform and flexibility products may materially affect winter peaks over the assessment horizon.

Mercury remains of the view that energy and capacity margins should not be the only measures used to describe security of supply. Probabilistic reliability metrics, including expected unserved energy, would give stakeholders a better understanding of risk as the system evolves.

Mercury is not seeking an ever-expanding list of SOSA sensitivities. As the system becomes more complex, the priority should be to improve the margin methodology and add probabilistic reliability measures so key risks are reflected in the core assessment.

The final SOSA should continue to clearly explain that falling below the lower security standard does not mean shortage is expected. It is a signal that additional investment, firming, demand response or other market response would efficiently improve reliability. This distinction is important given the public and policy attention the SOSA receives.