Security of Supply Outlook – 23 October 2025

Transpower as the System Operator must provide information and short- to medium-term forecasting on all aspects of security of supply, and manage supply emergencies. This document provides the System Operator's assessment of the security of supply outlook into 2026 based on the latest Energy Security Outlook, New Zealand Generation Balance (NZGB), generation commissioning expectations, annual Security of Supply Assessment (SOSA), and observed operational conditions. We provide these updates four times per year.

In summary:

- The arrival of spring inflows has helped lift hydro storage above average levels for this time of year in all major hydro catchments (except Hāwea). The combined stored hydro, gas and coal position this year is ~24% greater than the same time last year which means increased energy storage for electricity generation relative to the same time last year. This increase is largely driven by increased coal stockpile at Huntly.
- National hydro storage is currently at 125% of historic mean levels for the time of year with South Island storage at 122% of historic mean. Storage levels across the major controlled hydro catchments are sitting above mean (Lakes Pukaki, Tekapo, Te Anau, Manapouri and Taupo) with only Hāwea currently below mean (as at 21 October 2025). Waitaki catchment snow storage is above historic mean levels for the time of year.
- This quarterly outlook incorporates our last monthly Energy Security Outlook (ESO) published at the end of September. None of the SSTs cross the ERCs in 2025 with the risk usually being low at this time of year to due spring inflows (as being observed currently). If the announced retirement of a Huntly Rankine unit proceeds there will be an increased energy risk in 2026. If all three Rankines (with sufficient fuel to operate them) remain in 2026, then the ERCs in 2026 drop significantly due to the reduced risk. The Commerce Commission's recently published draft determination was to authorise the Huntly deal which will help ensure all three Rankine units

(and sufficient fuel) remain.[1] We see this as an important step to help maintain security of supply considering the retirement of the Taranaki combined cycle generator at the end of 2025 and the uncertainties in future gas supply.

- Higher hydro storage levels in combination with decreasing spring demand have resulted in declining spot prices and reduced thermal generation. The Huntly Unit 5 generator is on outage to undertake planned maintenance, and Genesis has on sold its gas to some industrial users. When not on outage, the Huntly 5 generator can be available in three to five days if needed. This means that there could be less thermal generation available to respond during a spring cold snap. If a cold snap coincides with low winds, we could see capacity risks occur in early/mid-December when some planned transmission outages further restrict generation.
- In the next six months, around ~335 MW of additional generation capacity is expected to be commissioned (~113 MW of solar, 109 MW geothermal, 13 MW hydro), and the 100 MW Glenbrook battery (BESS)[2]. The newly commissioned Ruakākā BESS is operating, providing 100 MW of flexible capacity to the market. Relative to our SOSA 2024 and SOSA 2025 information, delays to some solar generation coming to market have been partially offset by some geothermal generation progressing earlier. Delays in new generation coming to market increases security risks, all else being equal.
- We have recently published our Security of Supply Forecasting and Information Policy (SOSFIP) draft amendment proposal for consultation. The draft proposal has been informed by the feedback we received to our Issues Paper consultation earlier in 2025. We consider the proposed amendments would help ensure the ERCs and SSTs remain fit for purpose as the electricity system transition progresses. Following our consultation, we will review submissions and cross-submissions and submit a final amendment proposal by the end of 2025 to ensure there is sufficient time for the Electricity Authority (Authority) to have the changes in place for Winter 2026.

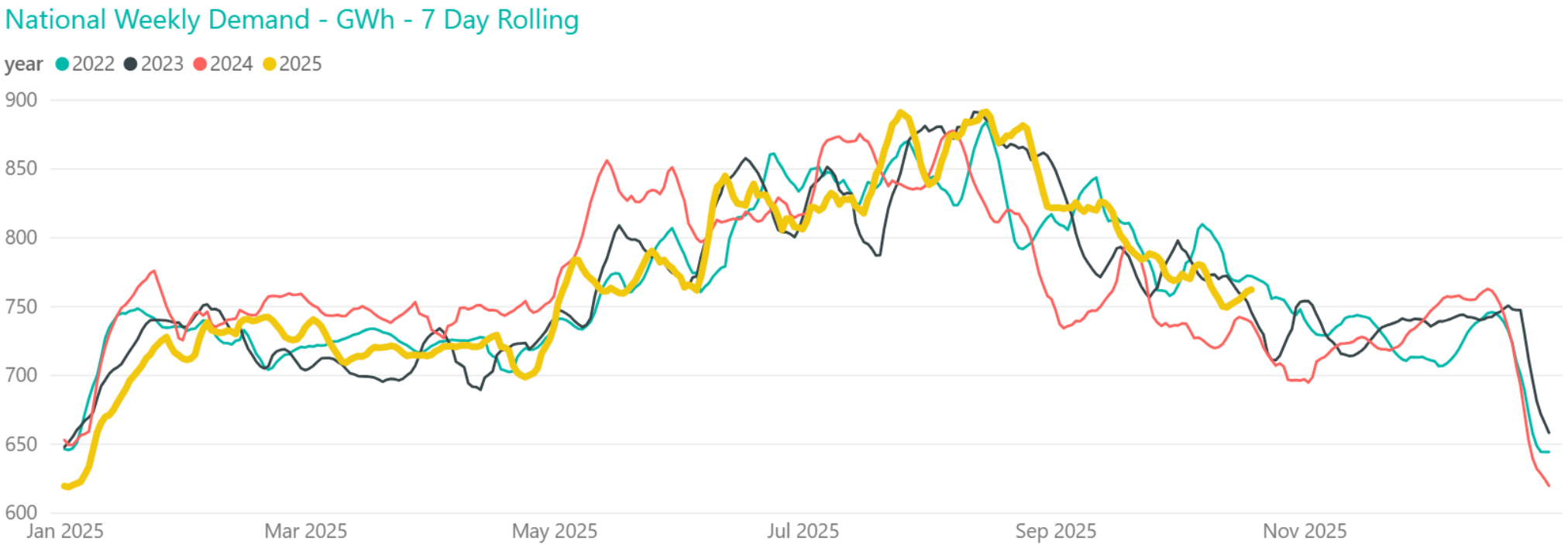
Demand outlook

Demand during winter 2025 peaked in mid-July and end-August as colder temperatures spread across the country. Demand has since dropped as spring brought warmer weather in September. The New Zealand Aluminium Smelter (NZAS) demand is now fully back having reached its normal operating maximum of 572 MW as at end of August.

Looking forward to the warmer spring and summer months we expect a drop off in demand with later peaks. Some new loads are expected to come online before winter 2026 with NZ Steel's Electric Arc Furnace expected to bring ~30 MW of load in Q1 2026. Fonterra will be

[1] See Genesis-Authorisation-Draft-Determination-29-September-2025.pdf
[2] Battery Energy Storage System

continuing with its electrification plans[3] at its various locations, which will see it further increase electricity consumption at its Whareroa and Edgecumbe sites from mid-late 2026. This follows on from its 20 MW electrode boiler installation at Edendale in late 2024.



Supply outlook

Aggregate hydro storage levels have returned to above average levels with increased inflows. As a result, hydro generation has increased and when combined with reduced demand has resulted in lower thermal generation and lower wholesale spot prices. While not currently running, Contact's TCC generator is available for the remainder of the 2025 calendar year, with its operation constrained to limited

[3] See Fonterra announces electrification plans to future-proof operations

operational hours, a five-day notice period to start up, and gas availability. Genesis' Huntly unit 5 (HLY5) generator is expected to be offline from 1 October to 31 December with its gas on sold to industrial gas users. It will be on outage from 28 October to 24 November for planned maintenance and otherwise would require 3-5 days' notice to start-up. Consequently, it is unlikely to be available for capacity shortfall events that can occur at shorter notices.[4]

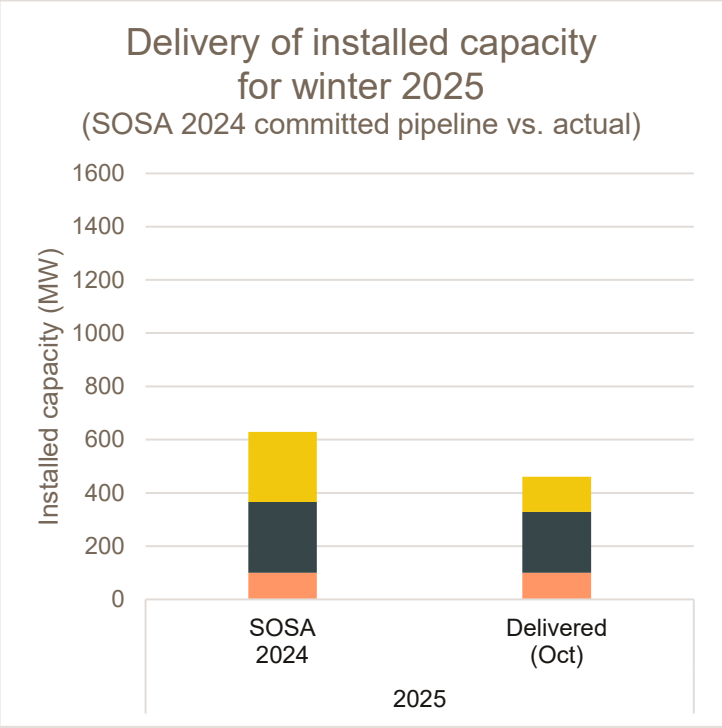
A key supply risk for 2026 is the ongoing availability of three Huntly Rankine units. The Commerce Commission's recent draft determination was to authorise the agreement between Genesis, Meridian, Mercury and Contact that would keep the third Rankine unit (HLY2) in service with a strategic coal stockpile level ahead of each winter which will initially be set to 600 kT to reduce security of supply risks.[5] The Commission's final determination is due by 16 February 2026.[6]

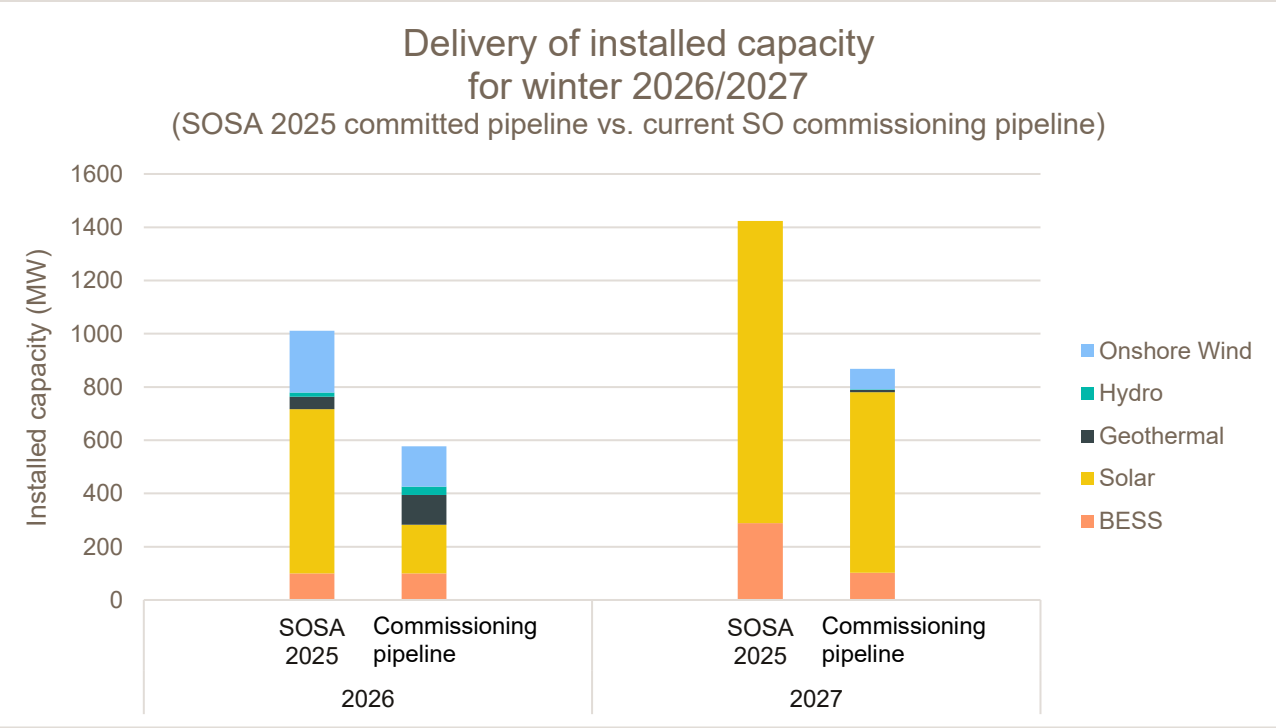
In the next six months, around ~335 MW of additional generation capacity is expected to be commissioned (~113 MW of solar, 109 MW geothermal, 13 MW hydro), and the 100 MW Glenbrook BESS. While we state capacity contributions, these technologies have quite different contributions to the peak and energy requirements of the system. Over the winter months the average[7] contribution from solar is ~16% of its installed capacity (compared, for example, to geothermal which typically operates at ~90% capacity factor). During peak demand periods on cold, dark winter evenings, solar (without BESS) makes no contribution whereas geothermal, hydro and BESS are firm (non-intermittent) generation sources and could generate up to their maximum. While the new solar generators are an important component of the new supply mix, they provide limited winter energy support and potentially very little during winter peak loads[8]. The Glenbrook BESS in addition to the newly installed Ruakākā BESS will help provide additional fast, flexible generation to help with managing capacity risks.

The charts below show new generation delivery against the committed ("stage 1") generation pipeline published in the 2024 and 2025 Security of Supply Assessments (SOSAs). Delivery of solar projects for winter 2025 and 2026 has been slower than the respective SOSA pipelines indicated but this has been partly offset with geothermal generation from the SOSA uncommitted pipeline becoming committed ahead of winter 2026. The net effect is there has been slower than expected growth in supply to meet the New Zealand Winter Energy Margin (NZ-WEM) in 2026 and subsequent years. The NZ-WEM for 2026 was raised as a key security concern by the 2025 SOSA and further delays in new generation coming online will exacerbate these security risks, all else being equal.

[4] This is discussed further in our capacity assessment. See Genesis extends Unit 5 outage to support gas consumers | Genesis NZ
[5] This is in addition to an operational stockpile which Genesis has indicated would be between 350 and 550 kT. See here.
[6] See Genesis Energy Limited, Contact Energy Limited, Meridian Energy Limited, and Mercury NZ Limited (the Gentailers) | Commerce Commission
[7] Average contribution is an indication of its energy contribution.
[8] Solar with BESS could be used to store solar energy for later use during peak load periods.

Initiated projects in the SO commissioning pipeline due to be commissioned by winter 2027 do not yet match what was indicated in the 2025 SOSA. However, given commissioning lead times, initiated commissioning projects do not at this stage account for all potential generation projects that may eventuate by winter 2027. If the commissioned projects for 2027 also end up falling behind the SOSA committed pipeline for 2027, then it will mean lower security margins into winter 2027 (relative to that signalled in the 2025 SOSA[9]), all else being equal. We will continue to track how new project commissioning compare against the SOSA pipeline in upcoming outlooks.

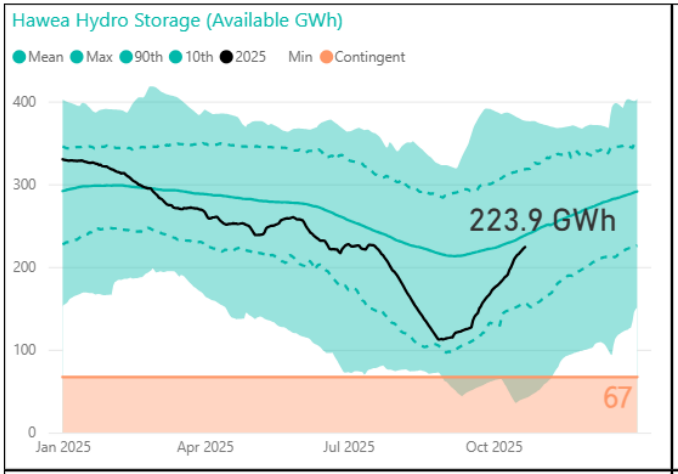


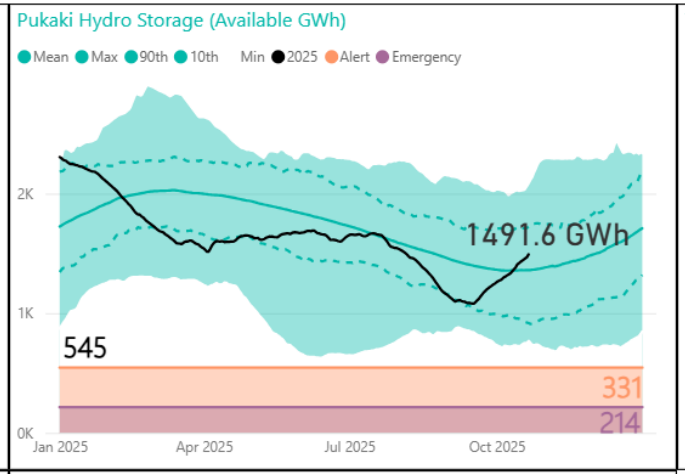


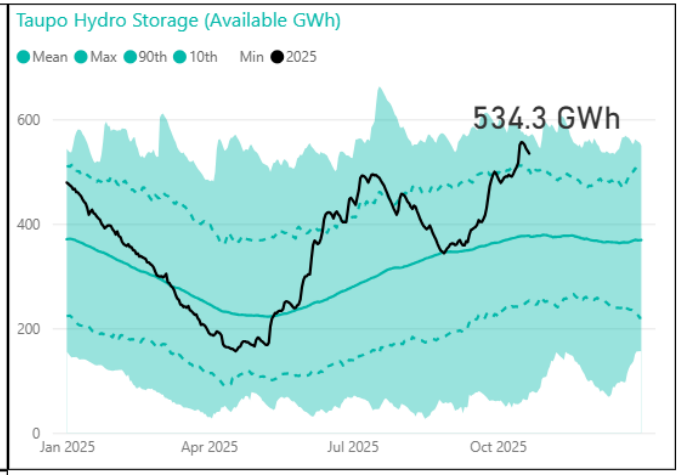
[9] The 2025 SOSA indicated winter energy margins recovering above the standards in 2027. See 2025 SOSA - Final Report.pdf

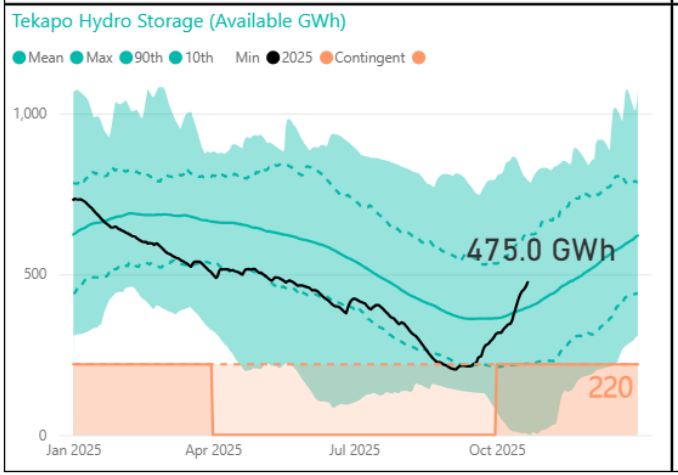
National hydro storage

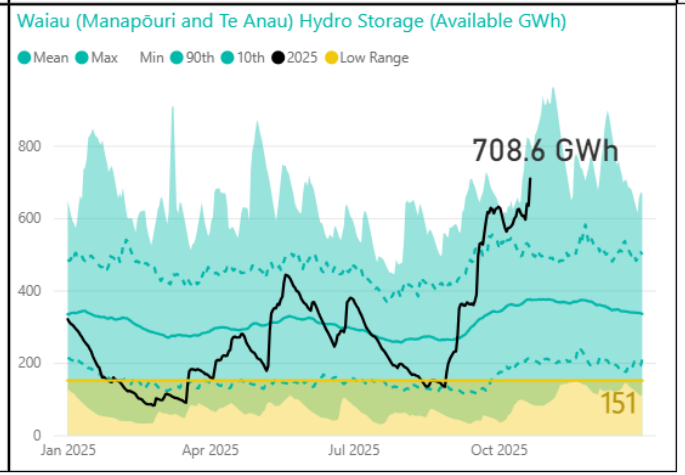
Increasing hydro inflows after winter have helped restore national controlled storage back above average levels for this time of year with national controlled storage sitting at 125% of historic mean levels as at 21 October. Of the major controlled hydro catchments only Hāwea is still below mean (but trending upwards). South Island controlled storage is at 122% of average.







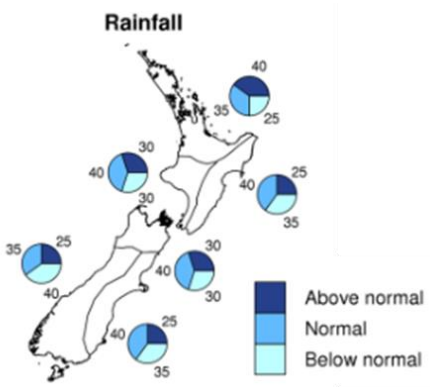




Lake	Current (%) avg
nz_controlled	125
si_controlled	122
hawea	94
pukaki	110
manapouri	191
te_anau	187
tekapo	120
taupo	142

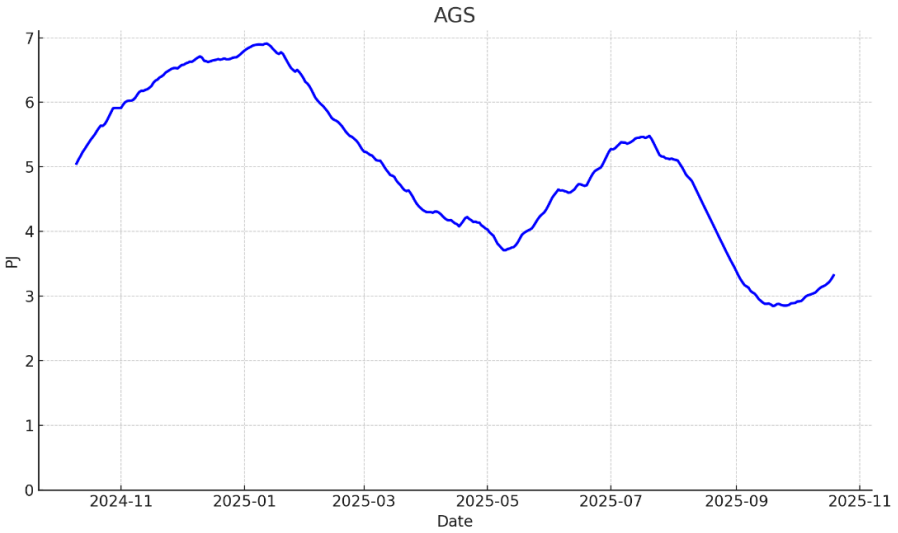
We are mindful of factors that could impact controlled hydro storage levels, including:

- NIWA's middle scenario forecast (as at 20 October) is for some rainfall over the next 35 days in regions of the South Island with major hydro catchments. The forecast for the next three months (October-December) has a higher chance of normal to below normal rainfall in the west coast of the South Island and normal to above normal in the North Island.
- Meridian's snowpack estimate shows an above average contribution (for this time of year) from Waitaki snow storage ahead of spring 2025.[10]



Thermal fuels

The latest publicly[11] reported Huntly coal stockpile is 1,053 kT (as at 28 September), which is sufficient to produce ~2,125 GWh of electricity from the Rankine generators. This is enough coal to fuel a Rankine generator operating at full output for ~368 days (Rankine days). In its draft determination, the Commerce Commission noted the strategic reserve stockpile will initially be set at 600 kT and needs to be maintained at the target level ahead of each winter (600 kT is equivalent to ~1210 GWh which is the energy from one 240 MW Rankine at full capacity for ~210 days). This is in addition to an operational stockpile which Genesis will hold to support its customers which it has indicated would be between 350 and 550 kT[12].



Ahuroa gas storage is currently (at 19 Oct) 3.3PJ, which is ~45% of full (~52 Rankine days or ~305 GWh of electricity generation).

Diesel-fired generation is largely used to provide fast-start, flexible generation during peak load periods (i.e. peaking generation). As such, diesel-fired generators are not expected to run for extended periods

[10] As reported by Meridian on 18-October-25 (Snow storage | Meridian Energy)
[11] The Authority has been publishing on its website aggregate information on thermal fuels to increase its transparency in the market. See Thermal fuel information | Electricity Authority
[12] See here.

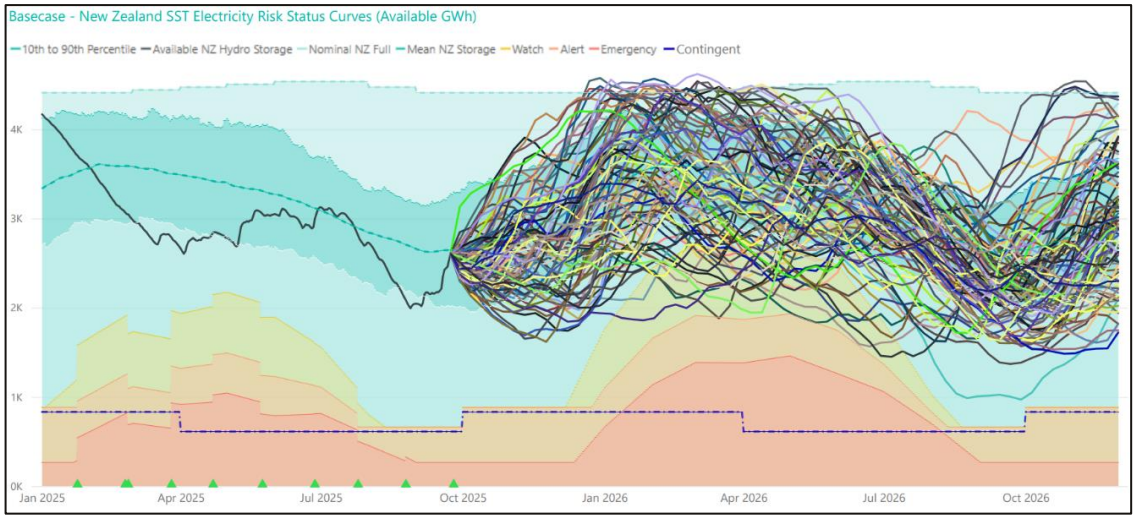
of time. There was ~3.86ML of stored diesel available for electricity generation as at 28 September. This is equivalent to ~14 GWh or ~2.4 days of running a Rankine unit at full output.

Energy Security Outlook

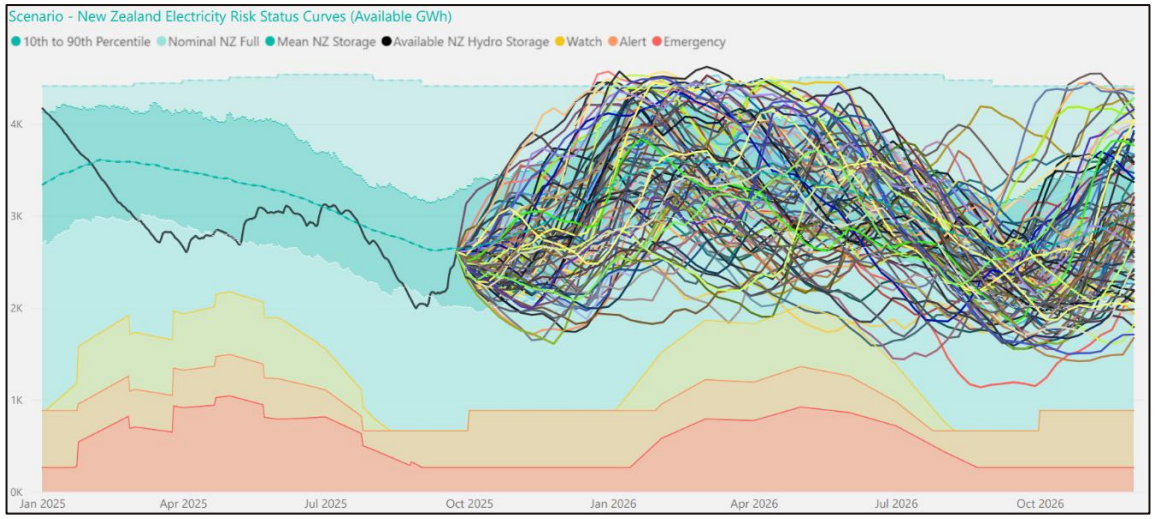
Our latest Energy Security Outlook update was published on 25 September.[13] This shows the risk curves for spring 2025 set by the Alert and Emergency floor (based on the level of contingent storage). This is primarily due to the expectation of spring inflows (rain and snowmelt) resulting in lower hydro risks with high chance of inflows.

The increase in the risk curves in 2026 is largely due to the announced exit of the Huntly Rankine unit by Genesis, which if it occurred, reduces the amount of backup thermal generation to support the system during extended low inflow periods. In 2026, 31 of the 93 SSTs cross the Watch curve. To highlight the impact on the energy risks in 2026, we analysed a scenario assuming all three Huntly Rankine units were available in 2026. If this occurred and there was sufficient coal to enable their operation during extended dry periods, the risk curves in 2026 reduce (compared to 2025 and compared to the two Rankine scenario) with only four SSTs briefly crossing the Watch curve in 2026. This highlights the importance of three Rankines (with sufficient fuel) being available for

Two Rankines Available



Three Rankines Available



[13] The Energy Security Outlook (ERCs and SSTS) are published on our webpage and stakeholders can subscribe to be notified when updates are published: Energy security outlook | Transpower. The ERCs and SSTs use updated generator commissioning information so would include the effect of delays discussed in the Supply Outlook section.

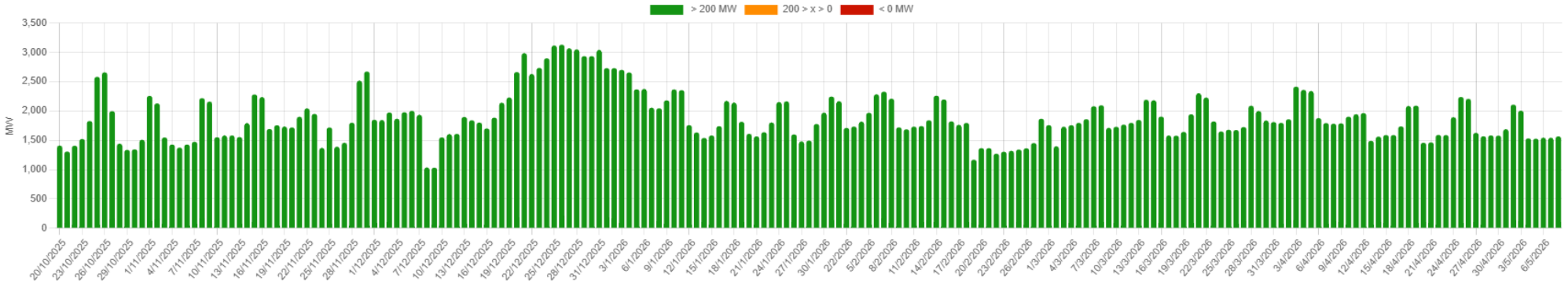
2026 to manage dry year risks. As such we are pleased to see the Commerce Commission draft determination is to authorise the agreement that would see the third Rankine unit remain in service.

Capacity outlook

The softening demand over spring and summer creates opportunities to maintain plant in preparation for next year. As noted in our previous outlooks "shoulder" months can also bring cold snaps and tightening supply-demand conditions if there is lots of supply on outage.

The New Zealand Generation Balance (NZGB)[14] provides a forward assessment of the potential generation margins 200 days ahead based on a P90 forecast peak demand,[15] asset outage information provided by asset owners, and considering different generation availability and demand scenarios. The figures below show NZGB margins for two scenarios as at 20 October. The scenarios are described before each figure.

The NZGB scenario below is where all generation not planned to be on outage is available during peak load periods (based on a P90 load forecast and covering the "N-1" risk).[16] Based on current information the forecast residual generation margins over the 200 days to start-May 2026 is likely to be sufficient to cover peak national demand assuming the market co-ordinates the available generation and commits sufficient generation capacity.



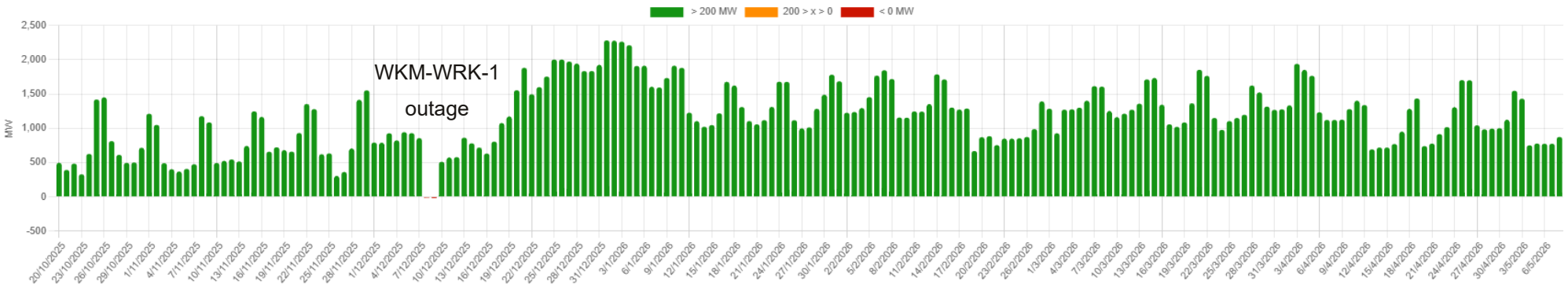
Our NZGB tool allows participants to assess the impact on the power system's capacity to meet peak demand should downside risks be realised (for example unplanned outages, commitment of fewer slower-start thermal generators, different levels of forecast demand), as

[14] See here Customer Portal - NZGB (transpower.co.nz)

[15] A P90 load forecast represents the 90th percentile load that we could expect to see on any given day.

[16] Running the system to cover "N-1" risk is normal market operation. The market is cleared to supply the demand and the reserve requirements (largest contingent event risk on the system).

outlined in the scenario below. As hydro storage recovers back to above average levels, the wholesale spot price has reduced resulting in less slow-start thermal units being committed to the market.[17] If we had a sudden onset of colder weather, low wind generation and with insufficient time to bring on these slower-start thermal units then we could see increased capacity risks during 8-9 December during a planned WKM-WRK transmission outage which limits generation export.



While energy has been a key challenge this year with record low inflows at the start of this year, peak capacity risks are ever-present and will become more acute if fewer thermal units are committed. Capacity risks will persist until there is sufficient investment in flexible resources such as BESS, demand response and peaking generation. The Ruakākā BESS is now operational and the Glenbrook BESS is expected online in Q1 2026. These will help meet this system need - as would investment in other BESS in the supply pipeline. Genesis is also exploring potential for additional fast-start generation capacity at its Huntly power station, which if progressed will increase the flexibility of the generation fleet.[18]

System Operator planning for 2025/2026

The System Operator has been and is continuing to work on multiple initiatives for better managing upcoming security risks. These include:

- Improvements to the ERCs framework to better support industry coordination of security of supply: We are currently consulting on proposed changes to the SOSFIP. The proposed changes include (a) Review of thermal fuel assumptions, (b) Updating time-to storage

[17] Including the Huntly 5 unit not available at short-notice as discussed earlier.

[18] See Genesis exploring new generation plant for Huntly site | Genesis NZ

projections, (c) Adjusting the Watch curve trigger, (d) Minimum duration for Alert status, (e) Improving the linkage between energy and capacity risks, (f) Considering of wider risks when considering scenarios, (g) Updating of the Alert contingent storage buffer and (h) Retaining our CSRB buffer discretion. Details of the consultation are available here: System Operator - SOSFIP review consultation - October 2025.pdf. In progress.

- Engaging with key hydro generators, particularly those with contingent storage arrangements, to ensure our assumptions about operational constraints due to low lake levels remain correct. Ongoing
- Continuing our work to implement the new System Operator Rolling Outage Policy (SOROP) expected to be implemented before Winter 2026. In progress
- Supporting the Authority to implement the hybrid intermittent generation forecasting arrangement, to take effect on 31 July 2025. Completed
- Undertaking our review of winter 2025 to assess the performance of the electricity system and market and understand what worked well and any learnings going forward. In progress
- Preparing the SOSA 2026 Reference Case and Sensitivities consultation. In progress
- On 1 October 2025 the Government announced its decisions following the 2025 review of the New Zealand electricity system.[19] These include a decision to "work with Transpower, as the System Operator, to ensure [its] security-of-supply assessments are fit for purpose for our evolving energy system."[20] We will work with the Government and its nominated agencies to respond to this decision. Our view is that the SOSFIP amendment proposals we are consulting on, and progressing our annual SOSA engagement, are consistent with the Government's expectation. We will continue to work with MBIE to support their implementation of the review recommendations. In progress

[19] Securing New Zealand's energy future | Beehive.govt.nz
[20] Ministerial Services briefing template