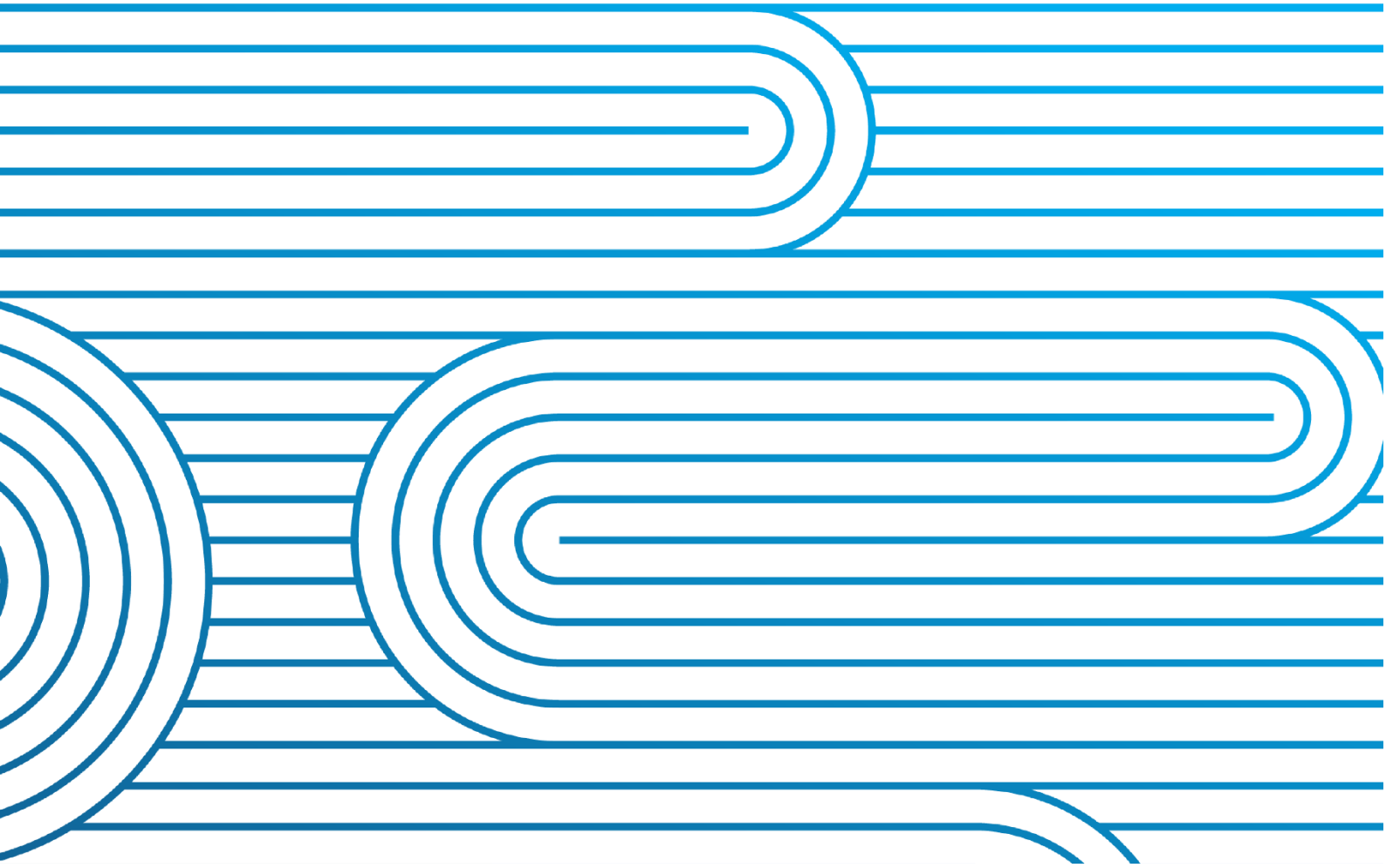
TRANSPOWER

Monthly System Operator performance report

For the Electricity Authority

Date: July 2025



This report is Transpower's review of its performance as System Operator in accordance with clauses 3.13 and 3.14 of the Electricity Industry Participation Code 2010 (the Code):

3.13 Self-review must be carried out by market operation service providers

*(1) Each **market operation service provider** must conduct, on a monthly basis, a self-review of its performance.*

*(2) The review must concentrate on the **market operation service provider's** compliance with—*

*(a) its obligations under this Code and Part 2 and Subpart 1 of Part 4 of the **Act**; and*

*(b) the operation of this Code and Part 2 and Subpart 1 of Part 4 of the **Act**; and*

*(c) any performance standards agreed between the **market operation service provider** and the **Authority**; and*

*(d) the provisions of the **market operation service provider agreement**.*

3.14 Market operation service providers must report to Authority

*(1) Each **market operation service provider** must prepare a written report for the **Authority** on the results of the review carried out under clause 3.13.*

*(1A) A **market operation service provider** must provide the report prepared under subclause (1) to the **Authority**—*

*(a) within 10 **business days** after the end of each calendar month except after the month of December:*

*(b) within 20 **business days** after the end of the month of December.*

(2) The report must contain details of—

*(a) any circumstances identified by the **market operation service provider** in which it has failed, or may have failed, to comply with its obligations under this Code and Part 2 and Subpart 1 of Part 4 of the **Act**; and*

*(b) any event or series of events that, in the **market operation service provider's** view, highlight an area where a change to this Code may need to be considered; and*

*(c) any other matters that the **Authority**, in its reasonable discretion, considers appropriate and asks the **market operation service provider**, in writing within a reasonable time before the report is provided, to report on.*

By agreement with the Authority, this report also provides monthly (rather than quarterly) reporting in accordance with clause 12.3 of the 2025 System Operator Service Provider Agreement (SOSPA):

*12.2 **Monthly reports**: The **Provider** must provide to the **Authority**, with each self-review report under clause 3.14 of the **Code**:*

*(a) a report on the progress of any **service enhancement capex project** or **market design capex project** that has commenced and has either not been completed or was completed during the month to which the report relates, including:*

*(i) to any actual or expected variance from the **capex roadmap** in relation to that **capex project**; and*

(ii) the reasons for the variance;

*(b) a report on **the technical advisory** services in accordance with the **TAS guideline;***

(c) *the actions taken by the **Provider** during the previous month:*

(i) *to give effect to the **system operator business plan**, including to comply with the **statutory objective work plan**;*

(ii) *in response to participant responses to any participant survey; and*

(iii) *to comply with any remedial plan agreed by the parties under clause 14.1(i);*

(d) *the **technical advisory hours** for the previous quarter and a summary of **technical advisory services** to which those **technical advisory hours** related; and*

(e) *in the report relating to the last month of each quarter, the **Provider's** performance against the **performance metrics** for the **financial year** during the previous quarter.*

System Operator performance reports are published on the Electricity Authority website in accordance with clause 7.12 of the Electricity Industry Participation Code 2010 (the Code):

7.12 Authority must publish system operator reports

*(1) The **Authority** must publish all self-review reports that are received from the **system operator** and that are required to be provided by the system operator to the **Authority** under this Code.*

*(2) The **Authority** must **publish** each report within 5 **business days** after receiving the report.*

Following the end of each Quarter, a system performance report is published on the Transpower website

Contents

Key points this month

Operating the power system

- On 7 July, at Kopu a service provider operating on behalf of Transpower's grid business incorrectly closed a disconnector for which the process to rectify ultimately resulted in a loss of supply to Powerco of approximately 24 MW for 13 minutes.
- On 11 July, Mt Maunganui (MTM) T3 tripped resulting in a loss of supply to Powerco of approximately 54 MW. Powerco was able to back feed the approximately 15 MW from Te Matai (TMI). T3 was returned to service, and supply was restored to Powerco.
- On 11 July, Northward flow on the HVDC reduced rapidly from approximately 200 MW down to 70 MW with frequency in the North Island falling to 49.24 Hz, resulting in an under-frequency event, the cause of which is under investigation.
- On 11 July, Network Tasman lost its second feeder at Stoke (STK), with the first feeder having tripped earlier in the day due to stormy conditions in the area. This resulted in a loss of supply of approximately 25 MW to Upper Tākaka.
- On 12 July, Horizon Energy experienced a loss of supply of approximately 6.6 MW due to Waiotahe (WAI) feeder 2722 tripping. The suspected cause was bird strike.
- On 15 July, Edgecombe – Waiotahe – 2 tripped resulting in a loss of connection to Lodestone Energy's 23 MW solar generation.
- On 21 July during the morning peak, real-time residual generation within gate closure reduced to 65 MW. Action taken included application of a discretionary constraint to ensure Whirinaki (WHI) generation remained on over the morning peak
- On 30 July, an earthquake occurred off the east coast of Russia. The System Operator assessed the threat against *Tsunami Risk Management processes*. No action was required.
- On 30 July, at WAI early morning there was a loss of connection to Lodestone Energy's Te Herenga o Te Rā solar generation and 6 MW loss of supply to Horizon Energy.

Security of supply

- *Security of supply forecasting and information policy (SOSFIP) review:* We continued to progress the analysis phase of the SOSFIP review through July. We have started to draft our consultation materials and are on track for the consultation to commence in late September. Authority staff have been kept updated on our progress through our fortnightly meetings.
- *Energy Security Outlook (ESO):* The July Energy Security Outlook published on 28 July showed a decreased risk in August 2025 and January to August 2026. No SSTs cross the Watch curve in 2025 but 93 cross the Watch curve in January to July 2026. A scenario with 3 Rankines retained in 2026 results in no SSTs crossing the Watch curve.
- *Quarterly Security of Supply Outlook:* Our latest quarterly Security of Supply outlook was published on 21 July, highlighting hydro storage levels have returned to seasonal averages nationally, though below average in the South Island, easing immediate energy risks for winter 2025. Sustained careful management of hydro storage, thermal fuels and assets remains essential to continue to mitigate Winter risks. Capacity risks persist, underscoring the need to accelerate investment in flexible resources such as battery storage, peaking generation, and demand response to ensure system reliability through 2026 and beyond.
- *Industry Exercise 2025:* We have been working with the Authority on a draft lessons learned document that is expected to be published in August.
- *New Zealand Generation Balance (NZGB):* NZGB is showing healthy capacity margins through the rest of winter. However, to meet a high peak demand periods the system will rely on wind generation and slow start unit commitment until late August.

Investigations

- *21 April 2025 – Huntly generation trip:* We have sent the causation report the EA. We will await their determination of the causer of the event.
- *11 July 2025 HVDC event:* We are currently investigating the causer of the event.
- *20 June 2024 – Northland loss of supply:* We remain on track to close out the one remaining action in response to both the Ray Hardy report and the Authority's report.

Supporting Asset-owner Activity

- *Generator commissioning and testing:* Ranui's Twin Rivers Solar Farm (25 MW connected to Top Energy), and Solar Bay and Maungaturoto Solar Farm Project's 'Golden Stairs' Solar Farm (17.6 MW connected to Northpower) are due to begin commissioning in September 2025.
- *Ancillary services activity:* An updated version of the draft Ancillary Services Procurement Plan was submitted to the Authority on 11 July. The new document will come into effect from 7 August

Commitment to evolving industry needs

- *System Security Forecast:* We are preparing additional studies on Transient Rotor Angle Stability (TRAS) to publish to the wider industry in August.
- *Electrical Industry Space Weather Working Group (EISWWG):* The working group published the latest version of their industry response plan and met to discuss initial findings of a detailed power system study undertaken by the Grid Owner.
- *Electricity Networks Aotearoa (ENA):* Our representative attended weekly FNF meetings in July concerning the capabilities, roles, and functions needed to enable distributed flexibility ("TSO:DSO").
- *Outage co-ordination:* We are in the process of turning asset owner feedback into a work plan to guide development of POCP and NZGB.
- *Evolving markets resource co-ordination – tie-breaker provisions:* On 24 July we published our consultation paper on "tie breaker" situations. Submissions are open until 14 August.

Risk & Assurance

- *Risk management:* We have prepared an updated Risk Register that covers around 45 risks, categorised by the five threats included in the System Operator bowtie. This will be presented to the Authority's MOC in August.
- *Business assurance audits:* We have agreed with the Authority on the topics of the four business assurance audits for 2025/26. The selected topics cover preparedness for space weather events, Black Start test planning, managing rolling outages during a Security Supply event, and SFT testing component of the SCADA EMS environment refresh.
- *Compliance and Impartiality:* We are progressively sharing more information with the Authority around how we manage compliance and impartiality, to provide added assurance and transparency. In this report we have included a new and more detailed section on Impartiality, and we will be looking to do more going forward.

1 Operating the power system

1.1 System events

Event Date	Event Name	Event Activity
7 July 2025	Loss of supply at Kopu (KPU)	On 7 July at approximately 14:01, a service provider closed Kopu (KPU) disconnector 367 incorrectly. While this did not result in a loss of supply, a full station shut of KPU had to be planned later that day to open the disconnector safely. This was carried out at 23:34, resulting in a loss of supply to Powerco of approximately 24 MW for 13 minutes.
11 July 2025	Loss of supply at Mt Maunganui (MTM)	On 11 July at approximately 12:31 Mt Maunganui (MTM) T3 tripped resulting in a loss of supply to Powerco of approximately 54 MW. MTM T1 was on planned outage at the time, with a recall time of approximately 1.5 hours. Powerco was able to back feed approximately 15 MW from Te Matai (TMI). By 13:56, T3 was returned to service, and supply was restored to Powerco. T3 tripped due to a pressure relief protection operating.
11 July 2025	North Island under-frequency event	At approximately 13:04, Northward flow on the HVDC reduced rapidly from approximately 200 MW down to 70 MW with frequency in the North Island falling to 49.24 Hz, resulting in an under-frequency event. The System Operator is currently investigating the event to identify and recommend the causer to the Authority.
11 July 2025	Loss of supply at Stoke (STK)	On 11 July at approximately 16:08, Network Tasman lost its second feeder at Stoke (STK), with the first feeder having tripped at 13:57 earlier in the day. This resulted in a loss of supply of approximately 25 MW to Upper Tākaka. Both Network Tasman feeder trips were related to the stormy conditions, with conductor reported to be on the ground within their network. Supply was restored at 21:06 when the first feeder was returned to service.
12 July 2025	Loss of supply at Waiotahe (WAI)	On 12 July at approximately 06:59, WAI feeder 2722 tripped resulting in a loss of supply to Horizon Energy of approximately 6.6 MW. By 07:28 supply was restored to Horizon Energy. The suspected cause was bird strike.
15 July 2025	Loss of connect at Waiotahe (WAI)	On 15 July at approximately 11:24 Edgecombe – Waiotahe – 2 (EDG-WAI-2) tripped and successfully auto reclosed. However, WAI CB 1362 remained open as per design (anti islanding requirements)

Event Date	Event Name	Event Activity
		resulting in a loss of connection to Lodestone Energy's 23 MW solar generation. By 11:37 connection was restored.
21 July 2025	Low residual within gate closure	On 21 July at approximately 07:45 during the morning peak real-time residual generation within gate closure reduced to 65 MW, with prices peaking at approximately $3,875 in the North Island and $3,417 in the South Island. The forward schedules had forecast residual to remain above 200 MW, meaning the threshold for issuing a Customer Advice Notice was not met. Contributing factors for reaching 65 MW within gate closure included wind being 30-40 MW less than forecast, load being around 130 MW more than forecast and the bona fide removal of a 45 MW McKee (MKE) gas peaker at 07:00. Action taken included application of a discretionary constraint to ensure Whirinaki (WHI) generation remained on over the morning peak (noting it was cleared on merit order at 07:35). We also identified that if required, an additional 40 MW generation could be released by changing the South Island frequency keeper, and from new SCADA indications that Powerco had approximately 50 MW of controllable load available if needed.
30 July 2025	Loss of supply at Waiotahe (WAI)	On 30 July at approximately 01:16 WAI CB 2722 operated resulting in a loss of supply to Horizon Energy of approximately 6 MW. At the same time WAI CB 1362 operated as per design (anti islanding requirements) resulting in a loss of connection to Lodestone Energy's Te Herenga o Te Rā solar generation, however this was not generating given the time of day. By 02:37 supply was restored to Horizon Energy, however a connection was not restored to Lodestone Energy until 06:55 as during the night they were unable to be contacted on any of their provided communication channels. The cause was due to Grid Owner protection operating on voltage due to a feeder fault within Horizon Energy's network.
30 July 2025	Possible NZ wide Tsunami risk	On 30 July at 11:37 NEMA issued a national advisory of a "Large Pacific Earthquake Being Assessed" via its National Warning System. This was in response to a magnitude 8.0 earthquake which occurred off the east coast of Kamchatka Russia. Initially there was No Tsunami Threat to New Zealand identified by NEMA, however as the size of the earthquake was upgraded to an 8.7 (then further upgraded to an 8.8) a reassessment was completed. By 12:57 NEMA issued an advisory "Tsunami activity –

Event Date	Event Name	Event Activity
		expect strong and unusual currents and unpredictable surges at shore". The associated Tsunami Forecast Map indicated 0.3-1.0m threat level. This advisory remained in place until 13:58 01 August 2025. System Operator assessed the threat against *PR-DP-899 Tsunami Risk Management* and determined any potential system security impacts and possible mitigations. Given the threat level was forecast at 0.3-1.0m no action was required.

1.2 Market operations

Forecast v real-time residual variability: We monitor the variations between forecast and real-time dispatch conditions to determine if the 200 MW residual continues to provide sufficient coverage to cater for within trading period variations in demand and supply. The graph in Appendix B presents, for the last 24 months, the proportion of time within each month that a 200 MW residual was sufficient to cover the variation in load and intermittent generation between forecast (30 minutes ahead of real-time) and real-time.

In July more than 96% of the variability is covered by the 200 MW residual. This indicates that entering a trading period with at least 200 MW of residual provided a high chance of having sufficient market resources to meet the variability within the period.

2 Security of supply

Security of supply forecasting and information policy (SOSFIP) review: We continued to progress the analysis phase of the SOSFIP review through July to test key assumptions, ensure energy and capacity risks are appropriately captured as part of the Security of Supply reporting, consider any wider risk scenarios, and assess contingent storage and broader strategic options. This phase will continue through August. We have started to draft our consultation materials and are on track for planned industry consultation to commence in late September.

Energy Security Outlook (ESO): The July Energy Security Outlook published on 28 July showed a decreased risk in August 2025 and January to August 2026. The decrease in risk is primarily due to higher gas storage and coal stockpile levels, and a slight increase in near term forecast gas production. No SSTs cross the Watch curve in 2025 but 93 cross the Watch curve in January to July 2026. This update continued to assume one Rankine is unavailable from January 2026. We also studied a scenario where all three Rankine units remained available. This had the effect of reducing the risk curves such that no ERCs cross SSTs in 2026. (Note the announcement on 4 August of a 10 year agreement between Genesis, Mercury, Meridian and Contact to establish a strategic energy reserve which will ensure three Rankine units are available to run is subject to Commerce Commission review before it can be confirmed).

National hydro storage decreased from 101% to 94% of the historic mean for this time of year despite reasonable inflows, with high demand drawing on the use of hydro storage. Thermal commitment was low most of July as steady hydro levels saw lower wholesale market prices.

July saw demand levels increase, particularly over peak periods – we had 4 of the top 10 peak demands occur last month (including a new third highest peak on the morning of Friday 25 July). Despite high peak demand, residual generation remained mostly healthy, although there was a period where it got down to approximately 65 MW in real time as noted in the events section above.

Quarterly Security of Supply Outlook: Our latest quarterly Security of Supply outlook was published on 21 July, highlighting hydro storage levels have returned to seasonal averages nationally (while remaining below average in the South Island) due to increased thermal generation, demand response, and inflows, easing immediate energy risks for winter 2025. However, sustained careful management of hydro storage and thermal fuels and assets remains essential to mitigate risks from low inflows and unplanned outages. At the same time, capacity risks persist where there is reduced thermal generation commitment and growing reliance on intermittent sources, underscoring the need for accelerated investment in flexible resources such as battery storage, peaking generation, and demand response to ensure system reliability through 2026 and beyond.

Industry Exercise 2025: We have been working with the Authority on a draft lessons learned document that is expected to be published in August.

Winter risk communications: We continue to use our SO Industry Forums to update industry on winter risks. Our approach is now well-established and we are ready to use pan-industry communications channels if and when necessary.

New Zealand Generation Balance (NZGB) potential shortfalls: The latest NZGB update is available through our Customer Portal. NZGB is showing healthy capacity margins through the rest of winter. This is in part due to generators taking planned outages outside of winter and off peak times. There have also been few unplanned generator outages during this time. However, the modelling does continue to show that to meet a high peak demand period we will be relying on high wind generation and/or the market to co-ordinate slow start unit commitment until late August.

Beyond winter, the next period of low margins that will require the market to co-ordinate to maintain high load will be late November early December. This is due to a Wairakei ring outage that can constrain over 400 MW of generation.

3 Investigations

Under-frequency event investigations

21 April 2025 – Huntly generation trip: We have sent the causation report the Authority. We will await their determination of the causer of the event.

11 July 2025 HVDC event: We are currently investigating the event to identify and will recommend the causer to the Authority.

Significant incident investigations

20 June 2024 - Northland loss of supply: We have nearly completed our actions in response to both the Ray Hardy report and the Authority's report. There is one outstanding action which is due end of this calendar year. It involves assessing contingency plans for other regions to determine where relaxed security standards can be provided during an event.

4 Supporting Asset-owner activity

4.1 Outage Coordination

Following the typical seasonal outage profile, average weekly outages have dropped in July to around 50 per week compared to 60 – 70 in the two months prior. Due to lower outage numbers and favourable generation profiles there were very few constraints as a result of planned outages, reducing market impact.

We have started the rolling 1 month outage plan, that will in due course push out to 4 months. The team are identifying opportunities to optimise work and reducing the number of outages for the same amount of work, saving switching costs, planning costs and reducing risks associated with switching. It is early days in the process, but 10 outage bundling opportunities have been captured so far.

Following System Operator feedback, the Grid Owner Short Notice Outage requests (SNORs) have reduced by 10% since the start of the year and better engagement with the system operator is occurring through the planning processes. This is providing a more efficient process for both the system operator and the Grid Owner while also providing the Market a greater level of certainty.

Towards the end of July we became aware of the likely short notice removal from service of Haywards synchronous condensers 2 and 3 for 9 months. This will reduce HVDC the power transfer limit by 100 MW, but during November, due to other concurrent outages of HVDC plant, there will be one week with HVDC power transfer limit reduced to 600 MW, noting at the same time Huntly 5 is also on outage. We will be raising risks with relevant asset owners to help them re-evaluate their outage plans and signalling the impact this outage will have on the operation of the power system in the System Operator Forum.

4.2 Generator commissioning and testing

The Power Systems and Markets teams are working with the following generators who are commissioning or expecting to connect in the next 6 months:

- Ranui's Twin Rivers Solar Farm (25 MW connected to Top Energy) is due to begin commissioning in September 2025.
- Solar Bay and Maungaturoto Solar Farm Project's 'Golden Stairs' Solar Farm (17.6 MW in Northpower' network) is due to begin commissioning in September 2025.
- Eastland Generations 'TAOM' geothermal generation (24 MW) is due to move from their existing 11kV connection at Kawerau to the 220kV connection at Kawerau in September, ahead of their new 'TOPP2' geothermal generator (52 MW) starting in October 2025.
- New Power's Taiohi Solar Farm (22 MW connected to WEL Networks) is due to begin commissioning in October 2025.
- Contact's Glenbrook BESS (100 MW at GLN) is due to begin commissioning November 2025.
- Lodestone's Whitianga Solar Farm (24 MW connected to Powerco) is due to begin commissioning in November 2025.
- Mercury Energy's Ngatamariki expansion (addition of a new 54MW geothermal unit) is due to begin commissioning in November 2025.

We are also working with existing generators to commission maintenance and upgrade projects.

Demand commissioning and testing

Edendale load forecast: The Authority has indicated they have almost completed their review of our request for a redetermination of Edendale (EDN0331) GXP as non-conforming. The decision is expected in August.

4.3 Ancillary Services activity

- LastMyle is now connected to our systems, and we will work with them to test dispatch and finalise the review of their proposal.
- Meridian's Ruakākā BESS is now contracted to provide Instantaneous Reserves (IR).
- We are reviewing a proposal from Envex for offering Interruptible Load (IL) and if feasible we will work with them as they get connected to our systems.
- We are working with Contact to bring a unit back into the reserves market after being on an extended outage.
- We are working with Simply Energy to transfer dispatch of reserves (contracted through Contact Energy) from Contact to Simply
- We have discussed disaggregating Hawkes Bay interruptible load for Enel-X and Simply/Contact out from the rest of their portfolio and will be implementing changes prior to the end of the year.

Ancillary Services Procurement Plan Review: An updated version of the draft Ancillary Services Procurement Plan was submitted to the Authority on 11 July incorporating some minor formatting and proofreading feedback from the Authority. The Authority approved the updated version and the new procurement plan will come into force on 7 August. We have commenced implementation of the changes, starting with updates to the existing Ancillary Service contracts in preparation for the next tender round later this year.

Ancillary Services Optimisation initiative: The initiative is underway with our discovery and analysis approach now developed and agreed. An introductory email has been sent to service providers inviting them to participate in a customer survey. The feedback from this survey will be used to identify what's working well and where we can improve which will help inform the solutions we develop in the next phase.

Disaggregation of IL at Kawerau and in the Hawke's Bay: We are discussing with reserve providers the need to disaggregate IL within the Hawkes Bay and Kawerau regions. The system operator is experiencing issues related to the management of risk when the energy export from areas/regions is capable of setting the CE risk.

Interruptible Load: The following table provides an overview of interruptible load testing activity by the number of sites tested and associated additional quantities for those sites.

	Number of sites	Additional quantities in MW	
Annual testing	0 sites	N/A	
Additional resource	0 sites	0 MW FIR	0 MW SIR

Over-Frequency Reserve (OFR): The following table provides an overview of OFR testing activity.

	Number of sites overdue
Four yearly end-to-end relay testing	4
Two yearly control and indication testing	22
Circuit breaker testing	27

Frequency Keeping: One station in the South Island remains unavailable to provide frequency keeping as a result of failed testing. Testing is tentatively planned for late August.

Black Start: Planning is underway for testing at Tokaanu Power Station in October 2025.

5 Commitment to evolving industry needs

Evolving markets resource co-ordination - Tie-breaker provisions: On 24 July we published our consultation paper seeking industry feedback on how "tie breaker" situations should be resolved for multiple competing generation offers at the same location in the wholesale electricity market. This will help the market to resolve situations where there is an oversupply of very low-priced generation, which is becoming more common as renewable energy grows. The consultation includes a proposed tie-breaking solution and alternative options. Our paper was picked up by Energy News and has also been publicised via Transpower's LinkedIn channel. Submissions are open until 14 August.

System Security Forecast: We are preparing additional studies on Transient Rotor Angle Stability (TRAS) to publish to the wider industry in August. We initially expected TRAS to be a concern under low Tiwai (TWI) loads, but we are now seeing some instabilities for significant (low probability faults). For the first time we have assessed the stability with increased Inverter-Based Resource (IBR) penetration and low inertia scenarios. We are sharing results with some directly affected generators. The next step to mitigate TRAS risk would involve constraining some generation under certain scenarios.

Electrical Industry Space Weather Working Group (EISWWG): The working group published the latest version of their industry response plan and met to discuss initial findings of a detailed power system study undertaken by the Grid Owner along with an update on the development of a Geomagnetic Induced Current (GIC) blocker. There was also ongoing engagement with NEMA, including participation in exercising parts of their response plan. The next NEMA exercise is scheduled over four days in early November.

Electricity Networks Aotearoa (ENA) Future Networks Forum (FNF): Weekly FNF meetings concerning the Capabilities, Roles, and Functions needed to enable distributed flexibility ("TSO:DSO") were attended by the System Operators representative in July. The focus of these meetings was primarily to assist the Authority with their thinking on performing a CBA on the three models (Total TSO, Total DSO, hybrid) presented in their "The future operation of New Zealand's power system" consultation. The Authority staff were very appreciative of the insights provided in these meetings.

Staff attended the ENA FNF Innovation Forum on 29-30 July to better understand the impact of increased EV and CER/DER (PV and BESS) penetration on their networks. We were able to share a relevant international experience on Operationalising DER with several attendees. An agreement to organise a reciprocal control room visit with Orion was also enabled because of attending.

Grid Owner Outage Optimisation: The System Operator is supporting the Grid Owner to implement its identified target state. Four Grid Owner initiatives are being progressed:

- Increase outage quantity in the annual outage plan. A workshop was held between works scheduling and outage planning teams to define process changes and approach for delivering the 26/27 annual outage plan with increased outage numbers.
- Create a process to agree and implement a rolling 4 monthly locked down plan. In July we locked down the August monthly plan using our new optimisation dashboard. Governance has been set up to support the implementation and is expected to kick off in September. We have now started working through locking down September's plan. We expect the Grid Owner to be locking down 4 months ahead by the end of December.

The System Operator supports these initiatives as they will result in longer Grid Owner outage lead times and certainty. This will enable better, more certain cross-industry outage planning and co-ordination.

Outage Co-ordination: Over July the System Operator utilised asset owner (including the Grid Owner) feedback on where it can improve tools and processes to develop a work plan for improving outage co-ordination tools POCP and NZGB, and where we might also progress information or process improvements.

Connecting with the industry

System Operator Industry Forums: Our fortnightly discussions on current operational and market issues were held on 8 and 22 July. Recent slide packs and recordings for forums within the last month are available on our System Operator Industry Forum webpage.

Market Operations Weekly Reports: Our Market Operations Weekly Reports provide information to assist interested parties' understanding of the current security of supply situation[1] and other market events. These reports also include a Market Insight each week covering a topic of interest to the industry. The reports we published this month, and the Market Insight in each are as follows[2]:

- 6 July: Significant Wind Fluctuations on the System.
- 13 July: Tekapo A electrical islanding
- 20 July: Energy Supply from Different Renewables
- 27 July: Contribution to peak demand from different renewable generation types

5.1 Supporting the Authority

Emergency Reserve Scheme (ERS): Following the completion of the previous TAS 118, providing preliminary feedback to the Authority on their early work on the ERS, we engaged with Authority to scope the next phase of work. TAS 122 will examine high level design and implementation requirements of a Minimum Viable Product that can be in place for winter 2026. In parallel, the Authority have commenced consultation on an ERS concept, to which we will prepare a submission commenting on merit and feasibility.

Monitoring static Forecast of Generation Potential (FOGP) values: We met with the Authority Compliance Team about how we could assist with monitoring static FOGP values (i.e. where they are not being revised as required). We have offered to include monitoring of static FOGP values as part of the System Operator monthly monitoring process. This will allow the System Operator to identify any historical offers in each month when intermittent generation (IG) FOGP has not changed for extended periods.

SOSPA transition update: As the SOSPA3 negotiation phase ran right to the end of June the completion date for several SOSPA2 2024/25 deliverables was extended to 31 July through agreed transitional arrangements. Through July the System Operator and the Authority finalised and agreed the 2025/26 Statutory Objective Work Plan, the Education and Engagement Plan, the System Operator Business Plan, Business Assurance Audit plan, and the Performance Metrics and Incentives Agreement which contains the System Operator's KPI measures for the 2025/26 financial year. We also commenced work on the new System Operator strategy the development of which will include consultation with participants and other industry stakeholders.

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[1] As required by the Security of Supply Forecasting and Information Policy section 11, incorporated by reference into the Electricity Industry Participation Code 2010

[2] Past Market Operations Weekly Reports including our weekly insights can be viewed on our website,.

MFK Enhancements: We continue to scope the TAS investigation into multiple frequence keeping (MFK) enhancements with the Authority, aiming for commencement in Q2 FY26. The work will investigate whether MFK is suitable for managing intra-dispatch variability caused by IG and the impact it might have on how frequency needs to be managed as IG grows.

Intermittent generation central forecasting project: We corresponded with the Authority to highlight to them a gap in the gazetted Code and conditions of approval for use of alternative forecasts which if left unchecked meant there was no obligation concerning the frequency with which offers would be updated to the System Operator. The Authority acknowledged the issue and has advised they are updating the approval conditions for using an alternate forecast to include updating offers to the System Operator every 30 minutes. DNV has been selected by the Authority as the new central forecaster and we have worked with the Authority to provide technical advice and support to ensure the successful implementation of the hybrid intermittent generation forecasting arrangement, that came into effect on 31 July 2025.

5.2 International Engagement

During July staff attended two relevant webinars hosted by Energy Systems Integration Group (ESIG). One covered Minimum System Demand Issues and Impacts of High Distributed PV experienced by and presented by AEMO, and the other Unlocking DER Flexibility: Grid services, Value Stacking, and Market Integration jointly presented by ESIG and the Global Power System Transformation Consortium (GPST). The presentation by AEMO revealed some interesting and highly relevant issues which are nascent in New Zealand due to the much lower CER/DER penetration;

- Minimum system load – polices and operational practices to operate the system securely and insight to the realities of trying to control residential PV systems at scale,
- Solar shake-off, an observation were more residential PV systems are 'shaken-off' the system than expected by a system event,
- Effort required to enforce compliance with inverter standards at scale, 6 year programme involving EDBs, OEMS, and regulators.
- Power system models, long timelines to get models improved using better data.

Notes from this session have been widely shared internally within the Operations Division and with the Transpower Strategy and Regulatory team. They will also be shared with Authority staff working on the FSR Programme.

Notes from the ESIG/GPST webinar have yet to be shared but insights gleaned include:

- Value stacking is largely theoretical even in systems with high CER/DER penetration – owners tend to participate in one or two services only. Several theories why this may be the case.
- Observation most CER/DER is participating with the distribution or retail services and not the wholesale market(s).

These notes will also be shared with Authority staff once finalised.

5.3 Media interactions

We did not issue any media releases during the month. Grid and System Operations Manager Matt Copland was interviewed for a story on 1News about how New Zealand leads the world in solar storm preparedness. We also had a number of inquiries for background and context on our security of supply reporting, none of which led to stories.

6 Project updates

Progress against high value, in-flight market design, service enhancement and service maintenance projects are included below along with details of any variances from the current CAPEX plan.

6.1 Market design and service enhancement project updates

There are no market design or service enhancement projects in-flight.

6.2 Other projects and initiatives

Ancillary Services Cost Allocation System (ASCAS): This project is delivering a new software (ASCAS) replacing previous end-of-life tech vital to accurate information sharing with the Authority and NZX. The project remains on schedule. The delivery plan for the second milestone has been shared with the business and feature delivery is tracking to the plan.

SCADA Habitat and EMP Refresh: This project is to upgrade critical components of the SCADA system and Market Solvers, to ensure operational integrity of the System Operator's market system tools into the future. System integration testing is progressing well following the completion of factory testing. The go-live date has been moved from December 2025 to March 2026, with cutover beginning on 2 March and SCADA going live on 4 March. This revised timeline has been approved by the Project Governance Board. Operational training is scheduled, and business change communications will begin this month.

Control room of the future (CRoF): This month we continued to support the development of System Operator strategy and preparing for engagement with internal and external stakeholders as appropriate.

7 Technical advisory hours and services

TAS Statement of Work (SOW)	Status	Hours worked during month
TAS 108 – Extended Reserves implementation	In progress	9.0 (SME)
		9.0 (PM)
TAS 121 – Future Security and Resilience	In progress	122.0 (SME)
		28.0 (PM)

Progress:

TAS 108 Extended Reserve Implementation 23/24 – Extended Implementation: Transition activities with Wellington Electricity and Unison are proceeding as expected, with no transition issues raised.

However, Wellington Electricity did identify a concern regarding the accuracy of post-event data provision at two of its sites. Having discussed with the System Operator, Wellington Electricity is currently exploring one of the proposed solutions.

TAS 121 FSR Workstream - Part 8 of the Code - Common Quality Requirements: In parallel with finalising the TAS scope of work (SOW), the System Operator FSR team began work aligned with the FY25/26 scope. The SOW was finalised once necessary updates to comply with the new SOSPA3 terms had been incorporated. Throughout August, the team will continue to support the Authority by providing technical input and reviewing consultation submissions, including those related to frequency and voltage management Code consultations.

8 Risk and assurance

8.1 Risk Management

We have prepared an updated Risk Register to present to the Authority at the MOC meeting on 13 August. This covers around 45 risks, categorised by the five threats included in the System Operator bowtie. The next step is to develop the register further by adding comment on mitigating actions and controls, trends and speed of onset. We will continue to carry out regular testing of the register and provide reporting to the Authority.

8.2 Business assurance audits

2025/26 Business Assurance Audit Plan, including business planning for 2026/27 and 2027/28: We have identified four business assurance audits for 2025/26. In addition, this year we have provided the Authority with a list of indicative business assurance audits for the following two financial years. The list was created following a discussion with Authority staff on 16 June and the agreement, subject to the SOSPA 3 contract transitional arrangements, was signed on 29 July 2025.

The audits agreed for 2025/26 are:

- Preparedness for managing space weather events
- Black Start test planning
- Managing rolling outages during a Security of Supply event
- SFT testing component of the SCADA EMS environment refresh

9 Compliance

[redacted]

We are completing our 2024 AUFLS compliance report for both NI and SI following submission of the data from providers. This involves assessing compliance of AUFLS blocks armed during 2024 and assessing whether the provision for each island was sufficient to arrest frequency and avoid subsequent over-frequency. We have provided lists of all providers who failed to meet the deadline

for submission to the Authority and are presenting preliminary findings to the Authority in early August.

10 Conflicts of Interest

We have two open items in the Conflict of Interest Register (below). These are being actively managed in accordance with our Conflict of Interest procedure.

ID	Title	Managed by
40	General System Operator/Grid Owner dual roles: This is a general item that will remain permanently open to cover all employees with a dual System Operator/Grid Owner role. This item documents the actions necessary to ensure impartiality in these circumstances; these items will be monitored to ensure their continue effectiveness.	Corporate Counsel, Compliance and Impartiality
41	General relationship situation: This is a general item that will remain permanently open to cover all potential conflicts of interest arising under a relationship situation. This item documents the actions necessary to prevent an actual conflict arising and will be monitored by the System Operator Compliance & Impartiality Manager to ensure their continued effectiveness.	Corporate Counsel, Compliance and Impartiality

11 Impartiality of System Operator

This new section covers specific activity this month that involved internal information barriers in place, the separation of key roles and functions, and oversight by Corporate Counsel, Compliance and Impartiality.

HVDC Cable replacement and Control Systems MCP planning: We have considered and identified no immediate (actual or perceived) conflicts of interest that would prevent us from working with the GO as they procure assets and design the control system that have a high level of national importance. In our role as SO we are particularly interested in a GO solution that works from both a market efficiency and operability aspect. The GO is procuring an asset that will impact us operationally and we have the expertise to inform their process for a better outcome for the power system and New Zealand. That is the only benefit to both the SO and the GO of this collaboration. We have also assessed future risks which we will continue to monitor for as the project proceeds through to the next stages.

HVDC Runback: At 13:04, Friday 11 July 2025, Northward flow on the HVDC reduced from approximately 200 MW down to 70 MW triggering an Under Frequency Event (UFE) - frequency

dropped to 49.24 Hz. All interruptible load was restored by 13:22 – a total 18 minutes for restoration of interruptible load. There was otherwise no loss of supply. There was some market impact, which we are assessing. This event will involve investigation of actions and decision making by both the System Operator and the Grid Owner. At this stage, we have not identified any other parties involved. The Code requires the System Operator to investigate a UFE and to provide a report to the Authority on whether, in the System Operator's view, the under-frequency event was caused by a participant and if so, the identity of the causer. We have therefore started this investigation process. We have written to the Authority (21 July 2025) explaining how we will manage the conflict of interest that this presents, and our investigation approach.

This approach involves us running a separate and independent SO engineering investigation with internal information barriers in place. There is also the separation of key roles and functions as with any investigation where SO control room actions may be involved. We intend to share with the Authority our full engineering report together with our UFE causer report. We expect that our full engineering report could inform any decision by us or the Authority to commence any further/more detailed investigation.

South Island AUFLS Compliance: During July we continued to work with the Authority on AUFLS testing compliance in the South Island. Following our letter to the Grid Owner concerning AUFLS testing compliance in the South Island on 23 June, we received a letter and schedule in response on 28 June. This initial schedule anticipated completing testing of AUFLS feeders in 2028 which, in our view as System Operator, was not acceptable. During July we met with the Grid Owner compliance representatives to discuss testing approaches and to explain our concerns. On 23 July the Grid Owner formally submitted an accelerated plan. This second plan sees the most significant testing completed by March 2026. We have accepted this plan, shared it with the Authority and will monitor progress against it.

AUFLS 2024 Compliance Assessment: The 2024 Compliance Assessment mentioned above includes compliance by the Grid Owner.

12 Performance metric and monitoring

Our System Operator performance against the performance metrics for the financial year as required by SOSPA 12.2 (e) will be provided in the final monthly report each quarter.

13 Actions taken

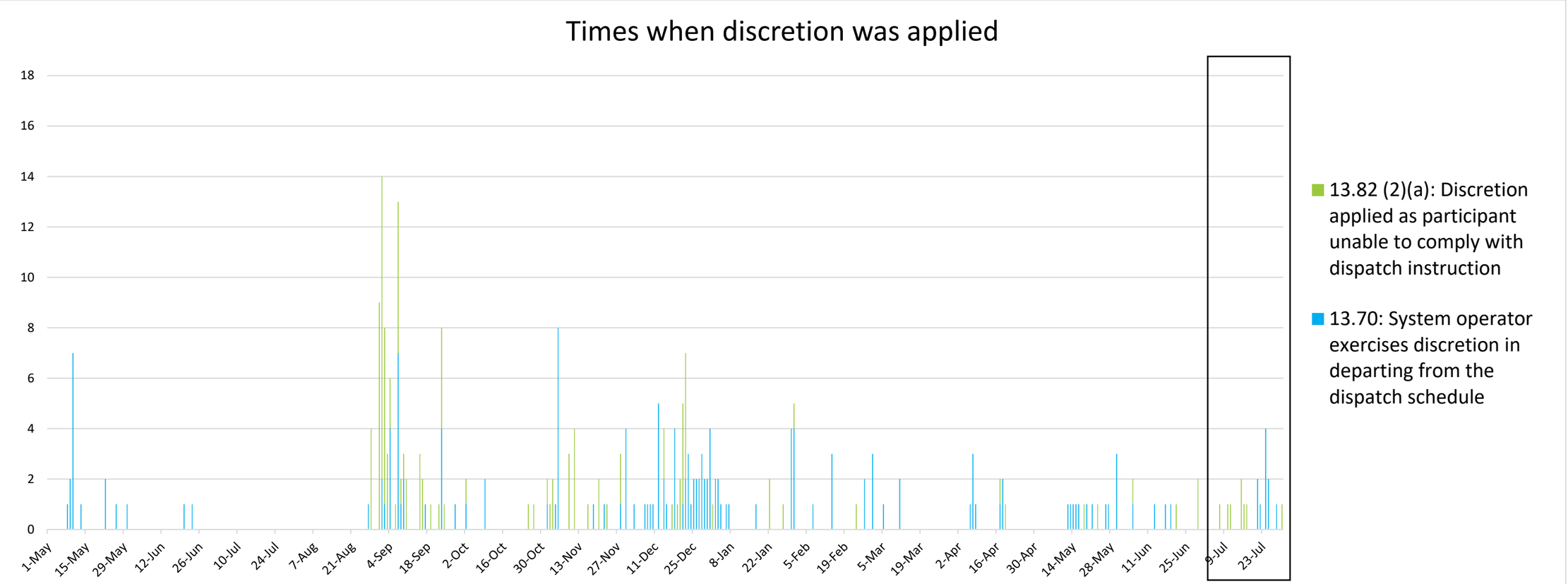
The following table contains a full list of actions taken this month regarding the System Operator business plan, statutory objective work plan, participant survey responses and any remedial plan, as required by SOSPA 12.2 (c).

Items of interest	Actions taken
(i) To give effect to the **System Operator business plan** strategic initiative	***Undertake a full review of the System Operator strategy informed by stakeholder consultation.*** We are commencing the SO Strategy work with preliminary project planning and environment scan.

Items of interest	Actions taken
	Support security of supply for the future power system by delivering the SOSFIP review. We are undertaking a review of the SOSFIP, which is currently planned for consultation to commence in late September. ***Support future-focused market developments through white papers, consultation processes and cross-industry forums*** We contributed to three Transpower submissions on Authority consultations • Voltage-related Code amendments proposal • Our future is digital: Transitioning to a smarter, more connected, and data-driven electricity system • Rewarding industrial demand flexibility ***Develop and begin implementation of system health, tool and modelling roadmap.*** We have begun an investigation of our power system health monitoring requirements. The first stage involves understanding the current state, future requirements. This will inform the monitoring aspects of the roadmap. ***Ensure our service keeps pace in an ever increasingly complex world by implementing Control Room of the Future roadmap.*** We continue to support the development of System Operator strategy and preparing for engagement with internal and external stakeholders as appropriate. ***Continue to deliver modelling process improvements and build maturity of modelling assurance and monitoring.*** As an extension of the quality assurance initiative, an end-to-end asset modelling process optimisation is now underway. The goal is to embed the foundational quality assurance tools, including the new framework, peer-review checklists, and a reporting dashboard to help monitor the health of the process.
(ii) To comply with the **statutory objective work plan**:	***System Operator Forecasting and Information Policy (SOSFIP)*** *Refer to update in business plan section above.* ***Policy Statement review*** We've started working with SMEs to finalise the scope of changes for the upcoming Policy Statement review, including proposed updates to the Security (Risk and Emergency Management), Dispatch, and Compliance policies. ***Ancillary Service Procurement Plan review***

Items of interest	Actions taken
	We submitted an updated version of the draft Ancillary Services Procurement Plan to the Authority on 11 July incorporating some minor formatting and proofreading feedback from the Authority. The Authority approved the updated version submitted and the new procurement plan will come into effect on 7 August. ***Reset SO Strategy*** *Refer to update in business plan section above.*
(iii) In response to participant responses to any **participant survey**	In response to feedback from the 2024-25 survey question "***SO industry fortnightly forums calls are good regular comms but there is no clear point of contact for other specific interactions.***" We understand the importance of having clear points of contact for specific interactions with the System Operator teams. We include relevant points of contact during our fortnightly forums, and we will endeavour to include clearer and more consistent communication channels in both these sessions and other industry-wide communications going forward To help direct queries efficiently, we have several dedicated mailboxes for different areas of the business: • General enquiries: Please contact system.operator@transpower.co.nz. Our team will ensure your query reaches the appropriate person. • Market Operations Team: Market.Operations@transpower.co.nz • Asset commissioning, testing, modelling, and studies: compliance@transpower.co.nz • System Operator Customer Portal: SOcustomerportal@transpower.co.nz We're committed to improving communication and making it easier to connect with the right people in the System Operator.
(iv) To comply with any **remedial plan** agreed by the parties under SOSPA 14.1	*N/A – No remedial plan in place.*

Appendix A: Discretion



System Operator applied discretion under cl 13.70 in 18 instances:

- 6 instances applied at Huntly (HLY) by traders in response to a 13.82(2)(a) due to HLY unit 5 being dispatched below minimum run.
    - 7 July, 1 instance
    - 10 July, 1 instance
    - 11 July, 1 instance
    - 15 July, 2 instances
    - 30 July, 1 instance
- 16 July, 1 instance applied at Kawerau (KAW) by traders in response to a 13.82(2)(a) as they were discretioned to minimum run.
- 17 July, 1 instance applied at Tauhara (TAB) by traders in response to a 13.82(2)(a) due to being dispatched below minimum run.
- 21 July, 2 instances applied at Whirinaki (WHI) as they were required to meet peak loads.
- 22 July, 1 instance applied at Te Mihi (THI) due to tripping.
- 6 instances applied at Whirinaki (WHI) to maintain generation connection for security reasons.
    - 24 July, 4 instances
    - 24 July, 2 instances
- 28 July: 1 instance applied at Argyle (ARG) by traders in response to a 13.82(2)(a) due to ARG – Kikiwa (KIK) outage.

Appendix B: Forecast v real-time residual variability

The below figure highlights the variability of the differences between 30-minute forecast values from the NRSS and 5-minute dispatch values from RTD. This variability is measured as the difference between the forecast requirements on non-intermittent generation (30 minutes ahead of time) versus the requirements on non-intermittent generation during real-time dispatch. Therefore in addition to load and intermittent generation forecast errors, the variations also capture the intra-trading period variability i.e. the difference between half-hour average quantities (as used in the forecast schedules) vs 5-minute quantities (as used in RTD).

We monitor the percentage of the time where the error between what has been dispatched and what is forecasted to dispatched is less than 200 MW. Last month, this error was less than 200 MW 96.76% of the time. This indicates that entering a trading period with ~200 MW of Residual provides a high chance of having sufficient dispatchable market resources to meet variability between the 30-minute ahead forecast and the requirements within the trading period. We monitor this variability and how it compares to the residual threshold to understand trends and inform any future updates of this threshold.