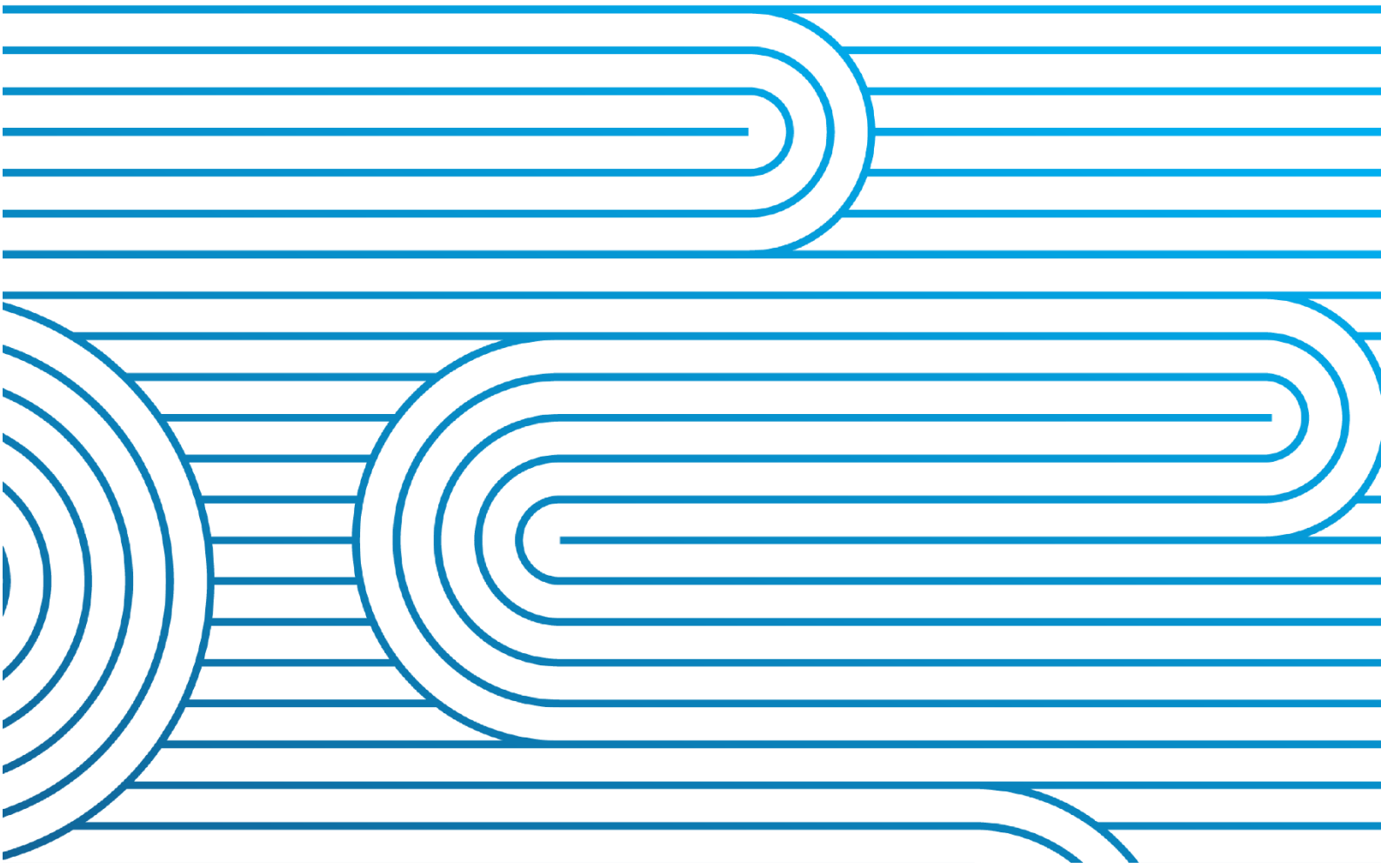
TRANSPOWER

Monthly System Operator performance report

For the Electricity Authority

Date: October 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

- *System Events:* There were a number of system events throughout October that are covered in this month's report. These included an unauthorised climber resulting in the Islington-Kikiwa 1 circuit being removed from service for 40 minutes, several HVDC outage, or reduced capability events, separate loss of supply events at Tekapo, at Stoke, and severe weather events resulting in the loss of supply to the Upper South Island on 23 October, and loss of supply to Hawke's Bay following a lightning strike on 28 October. The Hawke's Bay event led to a potential low residual situation later in the morning as a result of the loss of connection limiting the output of eight generators in the affected area. There were also two Under Frequency Events on 23 October.
- *Very low pricing challenges*: We have seen another period of very low-priced electricity offers similar to those observed in spring of 2024. This is as a result of high hydro storage, wind generation, and geothermal output, coinciding with periods of low demand. Changes made to the market system in March are behaving appropriately. We have also noticed some new operational challenges emerge this year for which we have implemented system updates and continue to manage operationally to address.

Security of supply

- *Energy Security Outlook (ESO):* The October ESO indicates a significant decrease in risk for 2026 primarily due to the updated assumption that all three Huntly Rankine units will remain in service. This reflects the Commerce Commission's determination to authorise the agreements between the gentailers. National hydro storage increased rapidly through the month to 141% due to high inflows in all catchments, lower demand with warmer spring temperatures, and high average wind generation. While most capacity margins were healthy, residual capacity fell to 300 MW on two mornings with low wind and only one Rankine offered. A low residual CAN was issued due to the loss of connection to Hawke's Bay affecting generation in the region. In real-time the lowest residual was 256MW.
- *New Zealand Generation Balance (NZGB):* The latest NZGB indicates healthy capacity margins through the rest of spring. However, due to the limited availability of Huntly 5 from October to the end of December there is an approximately 250 MW drop in firm capacity. This firm scenario indicates that right up to the end of December we are relying on the market to co-ordinate its slow start thermal to meet periods of high demand, supported by the occurrence of high wind generation when available.
- *Security of Supply Forecasting and Information Policy (SOSFIP) review:* Our SOSFIP review draft amendment proposal consultation ran through October. Feedback received will be considered as we finalise our proposal in November.
- *Security of Supply Assessment (SOSA) 2026:* We have published our 2026 SOSA reference case assumptions and sensitivities consultation which runs to late November. We also commenced the generator survey.

Investigations

- *11 July 2025 – HVDC event:* On 1 October, we sent our engineering investigation and causer reports to the Authority.
- *23 October 2025 – Upper South Island loss of supply:* investigation has commenced in preparation of the Moderate Event report.
- *28 October 2025 – Hawke's Bay loss of supply:* investigation has commenced in preparation of the Moderate Event report.

Supporting Asset-owner activity

- *Asset Owner Forum:* We ran a well-attended asset owner forum in October focused on the proposed Connected Asset Commissioning, Testing and Information Standard. The forum helped build understanding of the CACTIS with key industry participants and stakeholders.
- *Outage co-ordination:* Average weekly outages lifted to 60-80 per week for October which is usual for this time of year. We continue to monitor the Grid Owner's outage optimisation performance with improved packaging of projects up 8%, short notice outage requests (SNORs) down 15%, and outage congestion managed 100% within the System Operator's preferences.
- *Generator commissioning and testing:* Through October we continued our work to support new generation commissioning in the coming months including Twin Rivers Solar Farm near Kaitaia (25 MW), 'Golden Stairs' Solar Farm at Maungaturoto (17.6 MW), Taiohi Solar Farm at Rangiriri (22 MW), Lodestone's Whitianga Solar Farm (24 MW), Mercury Energy's Ngatamariki geothermal expansion near Taupo (54 MW), Eastland Generation's 'TOPP2' geothermal station at Kawarau (52 MW), and Contact Energy's Glenbrook BESS (100 MW).
- *Ancillary services activity:* The annual tender process opened on 9 October running through to early November. We continue work with providers to disaggregate Hawke's Bay Instantaneous Reserves, and progress engagements with LastMyle, Envex, and Simply Energy.
- *Black Start Test:* In conjunction with Genesis Energy, we completed a successful Black Start test of the Tokaanu power station including remote dummy synchronisation.

Commitment to evolving industry needs

- *SO Strategy*: In October, we produced a first draft engagement document detailing key trends and drivers on the power system and electricity industry and began planning for targeted engagement with stakeholders to begin in November.
- *Policy Statement Review:* We have continued to progress our draft for the upcoming Policy Statement review, including proposed updates to the Security (Risk and Emergency Management), Dispatch, and Compliance policies.
- *Evolving markets resource co-ordination - Tie-breaker provisions*: We have provided the Authority with a draft of our decision paper in response to the July tie-breaker consultation, along with a draft Code change proposal aimed at reducing the need for discretion in the control room when retaining inflexible plant during periods of very low prices. We have invited feedback from the Authority on both documents.
- *NEMA and GridEx exercises:* Through October we undertook preparatory activities for our involvement in the NEMA space weather exercise, and the Transpower coordinated GridEx exercise which rehearses participants response to, and recovery from a cyber and physical system threat scenario.

Risk & Assurance

- *Risk management:* We are completing the final interviews for the current 6-monthly control self-assessment with the subject matter experts mitigating key operational risks, covering five out of our ten of our critical controls planned for this year.
- *Business assurance audits:* The black start test planning audit interviews are complete and the paper is being drafted by our external auditors.

1 Operating the power system

1.1 System events

Event Date	Event Name	Event Activity
4 October 2025	Loss of supply at Stoke (STK)	On 4 October at approximately 13:49 STK circuit breakers 92 and 102 tripped resulting in a loss of supply to Network Tasman of approximately 17 MW. By 14:48 supply was restored.
9 October 2025	Unauthorised Climber	Islington-Kikiwa 1 circuit was removed from service for safety reasons for approximately 40 minutes after reports of an unauthorised climber on a tower outside of Christchurch. Police and local Service Provider attended but no climber was found by the time they arrived.
21 October 2025	Loss of supply at Tekapo (TKA)	On 21 October at approximately 11:38 TKA G1 tripped resulting in a loss of supply to Alpine Energy of approximately 3 MW. TKA was islanded at the time due to a planned outage of ABY-TKA-1. Genesis was able to dead-start the TKA bus while the area was still islanded, restoring supply by 12:45.
21 October 2025	HVDC Pole 3 Reduced Capability	At approximately 18:30 a CAN was issued advising that the Grid Owner had offered HVDC Pole 3 in reduced voltage operation until 19:30. Pole 2 will remain in normal voltage. Subsequent CANs confirmed a return of Pole 3 to normal voltage at 20:00.
23 October 2025	Unplanned outage HVDC Pole 2	At approximately 09:31 a CAN was issued advising HVDC Pole 2 would be unavailable from 09:24 – 18:00 due to an unplanned outage. Pole 3 will remain in service. A subsequent CAN was issued notifying the return to service of Pole 2 at 10:20.
23 October 2025	HVDC Pole 2 Reduced Capability	At approximately 11:13 a CAN was issued advising the Grid Owner had offered HVDC Pole 2 in reduced voltage operation until 14:00. Pole 3 will remain in normal voltage.
23 October 2025	NI Under-frequency event	At approximately 10:12 frequency in the North Island fell to 49.02Hz resulting in an under-frequency event (UFE). A CAN was issued 23 October 2025 confirming the UFE and

Event Date	Event Name	Event Activity
		subsequent investigation to be undertaken by the System Operator to recommend a causer to the Authority.
23 October 2025	NI Under-frequency event	At approximately 17:42 frequency in the North Island fell to 49.20Hz resulting in an under-frequency event (UFE). A CAN was issued 24 October 2025 confirming the UFE and subsequent investigation to be undertaken by the System Operator to recommend a causer to the Authority.
23 October 2025	Grid Emergency – Severe Weather Upper South Island [Moderate Event]	On 23 October several red rain and wind warnings were issued across the country. The resulting weather impacted many distribution assets in the South Island and Lower North Island. This severe weather event also impacted Transpower assets, with several circuit trippings along with damaged poles. At approximately 07:24 there was a loss of supply to Culverdon of approximately 11 MW. After this a verbal Grid Emergency was declared to place a split in the system by removing the Greymouth-Kumara 1 circuit, to safeguard against voltage collapse in the South Island for any further circuit trippings in the area. At approximately 07:45 the ISL-KIK-1 circuit tripped resulting in the entire supply to the Upper South Island being lost (noting other circuits north had previously just tripped and failed to auto reclose). Control room teams worked well together to enact our contingency plan and restore supply to the region within three hours.
28 October 2025	Grid Emergency – Loss of Hawkes Bay [Moderate Event]	At approximately 03:00 a lightning strike resulted in the loss of both Harapaki-Tauhara, and Whirinaki-Wairakei circuits, disconnecting the Hawkes Bay. Approximately 120 MW of supply was lost at Redclyffe, Whakatu, Fernhill, Tuai, and Whirinaki and with an associated loss of generation at Harapaki and Waikaremoana. A Grid Emergency was declared and our contingency plan enacted. All load and generation connections were fully restored by around 05:00.
28 October 2025	Potential Short Fall or Low Residual Situation	At approximately 06:56 a customer advice notice (CAN) was issued for a national potential shortfall or low residual situation between 07:30 – 09:30. This was as a result the earlier loss of connection to the Hawkes Bay area reducing output from eight generators totalling 250 MW. This reduction resulted in a

Event Date	Event Name	Event Activity
		forecast low residual of approximately 200 MW during this period. In real-time a residual of approximately 200 MW was maintained, with no impact to consumers.

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 97% 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.

Very low pricing challenges: Since September 2025, we have observed a sustained increase in the volume of very low-priced ($0/MWh and $0.01/MWh) generation offers in the market, similar to those observed between August and October 2024. The recent trend has been driven by increased hydro generation following high inflows, higher wind generation, and consistent baseload geothermal output. During periods of low demand, the combination of these factors has resulted in an oversupply of low-priced offers. While some thermal generation remains offline, intermittent generators (IGs) or groups of IGs have increasingly been setting the island risk.

In these situations, automatic constraints (commonly referred to as IG flags) are applied and dispatched to reduce IG output to match demand. In addition, manual constraints are required to allow inflexible generation to remain connected for reasons such as plant safety, resource consent obligations, or system security considerations, as some inflexible plants may need to remain offline for extended periods if fully dispatched off. The application of these manual constraints could result in IGs receiving IG flag to further reduce their output.

In March 2025, a series of changes were implemented to ensure the IG flag is not removed prematurely, addressing the risk of uncontrolled IG ramp up that had previously created challenges in maintaining system frequency and security. The enhancements included additional functionality in the market system to better manage IG dispatch in real time, particularly when:

- An IG or a group of IGs is setting the island risk, and
- Export generation from a region is at risk due to the potential loss of a transmission branch (commonly referred to as link risk).

Since implementation, we have observed that risk-setting IGs are generally dispatched correctly, e.g. ramping up by 15 MW per five minutes towards their Forecast of Generation Potential (FOGP) when constrained and responding appropriately to changes in energy and reserve prices.

However, some new challenges have emerged this year:

1. Unconstrained risk-setting IGs dispatched at their current output have, in some cases, been held back from increasing output or shown a gradual decline in dispatch over time. This

behaviour occurs because IGs tend to "hover" just below their dispatch level when responding to the IG flag.

2. Mixed risk-setting groups or link risk, comprising IGs and geothermal plants offered or managed by different participants, have complicated coordinated dispatch and risk management.

To address the first issue, in October 2025 we implemented a change introducing a 2 MW buffer to encourage unconstrained risk-setting IGs to be dispatched slightly above their actual output. This results in a gradual upward adjustment when wind resources are available. While dispatch remains limited by the generator's actual capability, this enhancement improves IG responsiveness and prevents progressive downward drift in dispatch levels. The approach is independent of how the FOGP is set, ensuring consistent behaviour across IGs. This change has further stabilised IG dispatch when they are risk-setting, and no negative impacts have been observed to date.

To address the second issue, we are continuing to improve consistent management of link risks between SPD and RMT.

Recent low demand periods and the past year highlight significant operational challenges arising from the growing penetration of intermittent generation and inflexible capacity. These conditions serve as an early warning of the complexities that will intensify as more intermittent resources connect to the power system. To maintain reliability and security, it is essential that market rules and obligations, operational tools, and dispatch processes continue to evolve to manage these emerging risks. We have highlighted in recent work or consultation submissions the need to review prioritisation of the FSR and elements of the market design programmes.

2 Security of supply

Security of supply forecasting and information policy (SOSFIP) review: Our consultation on the draft SOSFIP amendment proposal ran through October. In support of the process, we presented an overview of the draft amendment proposal to the SRC on 14 October and held a special System Operator Forum on 21 October to present this to the industry. The consultation period for submissions ran until 4 November followed by a one week cross-submission period. We expect to submit out final amendment proposal to the Authority in early December.

Energy Security Outlook (ESO): The latest Energy Security Outlook published on 30 October showed a significantly decreased risk for 2026 relative to the base case outlook published in September. This is primarily because our updated assumptions allowed for all three Huntly Rankine Units to remain in service in our base case ESO, rather than one retiring in January 2026 as was modelled in our previous base case. This change reflected the Commerce Commission's draft determination (which is now final) to authorise the agreements between the gentailers to keep the third Rankine in service up to the end of 2035. We have still modelled a scenario where the third Rankine unit is retired, which increases the risk curves, consistent with previous monthly updates.

National hydro storage increased rapidly from 108% of the seasonal mean on 1 October to 141% on 1 November. This was due to high inflows in all catchments, lower demand with warmer spring temperatures, and high average wind generation. While most capacity margins were healthy, residual fell to 300 MW on the mornings of 2 and 6 October with low wind generation and the only slow-start thermal generation offered being one Rankine unit. The Loss of supply to Hawke's Bay on 28 October resulted in a national low residual CAN being sent due to loss of Hawke's Bay generation though the lowest residual in real time was 256 MW at 8:10 am.

New Zealand Generation Balance (NZGB) potential shortfalls: The latest NZGB update is available through our Customer Portal. The base case reflects the total installed capacity not on outage and currently indicates healthy capacity margins through the rest of spring. However, Huntly 5, which is normally operating in the market, has indicated it will have limited availability from October to end of December and will require 3-5 days to return to service. This has been captured in NZGB by removing it from the firm capacity scenario and replacing it with a single Rankine unit. This equates to an approximately 250 MW drop in firm capacity. This firm scenario indicates that right up to the end of December we are relying on the market to co-ordinate its slow start thermal to meet periods of high demand, supported by the occurrence of high wind generation when available.

Security of Supply Assessment (SOSA) 2026: We have finalised our SOSA 2026 reference case assumptions and sensitivities for consultation through November. This year we have proposed a 3-stage supply pipeline approach that incorporates a likelihood assessment, a fuel-agnostic approach to potential investments in thermal generation and to introduce a new Expected Future case that would represent the combination of Reference case sensitivities that reflects what we consider to be a most-likely outcome for the 10-year ahead modelled period. In parallel to the consultation period we have asked the Authority for its approval to incorporate the Grid Owner's committed investment in an HVDC STATCOM into the reference case without also having to model the SSAD HVDC assumptions unmodified. We have also commenced the generator survey to inform the supply pipeline. The survey will occur in parallel with the consultation process, earlier than in previous years, allowing time for any follow-up questions or data requests that may affect SOSA modelling.

3 Investigations

Under-frequency event investigations

11 July 2025 HVDC event: On 1 October, we sent our engineering investigation and causer reports to the Authority.

23 October 2025 Under Frequency Events: We have commenced our respective investigations into the two separate UFE's that occurred in the North Island on 23 October.

Significant incident investigations

23 October 2025 – Upper South Island loss of supply: We have commenced investigations into the loss of supply event to the Upper South Island which meets the threshold for a Moderate Event report.

28 October 2025 – Hawke's Bay loss of supply: We have commenced investigations into the loss of supply event to Hawke's Bay which also meets the threshold for a Moderate Event report.

4 Supporting Asset-owner activity

4.1 Outage Coordination

October outage numbers lifted to between 60 - 80 a week which is a typical profile during spring, summer and autumn.

Grid Owner outage optimisation: The System Operator continues to support the Grid Owner to implement its identified target state. The implementation is expected to be complete by February.

We now have visibility of the outage pipeline and can track performance followed up by routine meetings to engage the grid owner on planning issues and monitor tracking against overall goals.

We are supporting the Grid Owner and other asset owners by joining routine meetings between asset owners to help co-ordinate outages. Feedback from the System Operator engineers has been positive. We are also supporting the grid owner with investigating outage optimisation tools and see synergies with the System Operator's planning processes that may lead to overall industry efficiencies.

Following the Grid Owners Outage Optimisation project, we are tracking the Grid Owner's performance in three ways:

1. Increasing its packaging of work together - reducing the number of outages and their impacts, for the same amount of work.
2. Reducing the number of short notice outage requests (SNORs)– allowing the System Operator and the market to better co-ordinate and manage risks associated with Grid outages.
3. Manage outage congestion by smoothing the outage numbers by in any given week and starting on any given trading period – smoothing the workload in the System Operator controls room reducing risk.

Project outages that also have maintenance occurring are up 8%, SNORs are down 15%, and outage congestion is being manage 100% within defined System Operator preferences.

We continue to engage industry via our System Operator Industry Forums to highlight the top 10 market impacting outages over the coming 4 weeks.

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:

- Rānui's Twin Rivers Solar Farm near Kaitaia (25 MW connected to Top Energy) began a staged commissioning in September 2025.
- Eastland Generation's Te Ahi O Maui geothermal generation station at Kawerau (24 MW connected to Horizon) has moved from their existing 11kV connection to a 220kV connection in September with commissioning of their nearby 'TOPP2' geothermal station (52 MW) due to start in December 2025.
- Solar Bay and Maungaturoto Solar Farm Project's 'Golden Stairs' Solar Farm at Maungaturoto (17.6 MW connected to Northpower) is due to begin commissioning in November 2025.
- New Power's Taiohi Solar Farm at Rangiriri (22 MW connected to WEL Networks) began commissioning in October 2025.
- Lodestone's Whitianga Solar Farm (24 MW connected to Powerco) is due to begin commissioning in November 2025.
- Mercury Energy's Nga Tamariki expansion near Taupo (addition of a new 54 MW geothermal unit) is due to begin commissioning in November 2025.
- Contact's Glenbrook BESS (100 MW at GLN) next to the NZ Steel mill is due to begin commissioning January 2026.

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

In addition, we are working with NZ Steel on the commissioning of their STATCOM and Arc Furnace at Glenbrook and with Fonterra Whareroa load. We are currently working with NZ Steel and the

customer team on their operational communications and encouraging NZ Steel to progress their planning of compliance-related commissioning and testing.

Fonterra Whareroa Load – HWA1102 as non-conforming: In mid-2026, Fonterra will become a direct connect customer at Hāwera with their Whareroa dairy factory. We expect the majority of embedded generation at this site to cease, with processing demand of up to 80 MW. As the variability of these large industrial process loads is not forecastable by the System Operator, we have written to the Authority to propose that this node be classified as non-conforming without waiting for up to a year's worth of data. The Authority are supportive of our proposal to proceed with a redetermination request, and we continue to work with them to progress this.

4.3 Ancillary Services activity

Ancillary Services Tender: This year we are tendering and recontacting for Instantaneous Reserves, Frequency Keeping (Back-up single FK and Multiple FK), and North Island Black Start services. The Tender opened on 9 October, closing in early November. Tender responses will be collated, and a committee is set to meet in mid-November to determine successful providers.

Commissioning support: We have completed the transfer of dispatch of reserves (contracted through Contact Energy) from Contact to Simply Energy.

Disaggregation of Interruptible Load (IL) at Kawerau and in Hawke's Bay: The disaggregation of Interruptible Load (IL) in the Kawerau and Hawke's Bay regions progressed in October. We deployed changes in late October to disaggregate Simply Energy's IL in the Hawke's Bay region. We will continue to work with EnelX on disaggregating their IL in the region.

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	6 sites	10.776 MW FIR	11.131 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	3
Two yearly control and indication testing	20
Circuit breaker testing	25

Frequency Keeping: One station in the South Island remains unavailable to provide frequency keeping because of failed testing. We are working with the provider to ensure that the format of the test data is adequate. Once confirmed, the provider will carry out re-testing.

Black Start: On Saturday 18 October in conjunction with Genesis Energy we completed a successful Black Start test of the Tokaanu power station including remote dummy synchronisation. We are

continuing our analysis of the test data and waveform recordings as we prepare our final engineering report.

5 Commitment to evolving industry needs

SO Strategy development: In October, we produced a first draft engagement document detailing key trends and drivers on the power system and electricity industry, and have been planning for targeted engagement with stakeholders to begin in November.

Policy Statement review: We have been preparing our draft for the upcoming Policy Statement review, including proposed updates to the Security (Risk and Emergency Management), Dispatch, and Compliance policies.

NEMA and GridEx: In October, we undertook preparatory activities for our participation in two upcoming exercises scheduled for November. The first exercise, conducted in collaboration with NEMA, will address space weather scenarios. The second, GridEx, offers E-ISAC members and partner organisations a structured forum to rehearse their responses to, and recovery from, coordinated cyber and physical security threats and incidents.

Evolving markets resource co-ordination - Tie-breaker provisions: We have provided the Authority with a draft of our decision paper in response to the July tie-breaker consultation, along with a draft Code change proposal aimed at reducing the need for discretion in the control room when retaining inflexible plant during periods of very low prices. We have invited feedback from the Authority on both documents.

Electricity Networks Aotearoa (ENA) Future Networks Forum (FNF): The Authority has confirmed to the ENA FNF TSO/DSO working group (we are a member) its intention to create a roadmap for Future System Operation (FSO) activities and to include the FSO roadmap within the FSR work programme roadmap refresh. The Authority intends to include the no/low risk/regrets actions identified in submissions, studies of overseas progress, and work undertaken on this topic in New Zealand (i.e. the DSO report prepared by Baringa for ENA). The Authorities pragmatic decision and intended approach is in line with many submissions to the FSO consultation, including Transpower's.

Connecting with the industry

System Operator Industry Forums: Our fortnightly discussions on current operational and market issues were held on 14 and 28 October. Recent slide packs and recordings for forums within the last month are available on our System Operator Industry Forum webpage. We also held a special forum on 21 October to present the key points from SOSFIP draft amendment proposal to the industry.

Asset Owner Industry Forum: We held a well-attended asset owner forum with generators, developers, distributors and consultants focusing on the proposed Connected Asset Commissioning, Testing and Information Standard. This involved building understanding of the CACTIS with the industry and discussing submission feedback. The Authority also attended and presented.

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

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

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]:

- 26 October – Managing recent severe weather events
- 19 October – High renewable share in recent weeks
- 12 October – Significant solar fluctuations on the system
- 05 October – Relationship between NIWA's seasonal climate outlook and hydro inflows

5.1 Supporting the Authority

Emergency Reserve Scheme (ERS): We have completed TAS 122, which produced a concept design for a minimum viable product (MVP) ERS. Four options were considered that would have made use of existing processes and systems. The chosen option, utilising FlexPoint combined with the Dispatch Notified Load mechanism, is the only option which would satisfy the Authority's stated objectives. Despite this, there are significant risks associated with the proposal including the risk of being unable to deliver the scheme by Winter 2026. Subsequent conversations with the Authority have highlighted these risks and Authority staff are considering the potential to relax some requirements and for alternative regulatory options that may permit a more rapid delivery of an ERS proof-of-concept. We are also mindful that low residual situations increasingly are an all-year challenge, arising through a coincident combination of asset outages, low intermittent generation, prevailing low spot prices leading to slow-start thermal unit commitment challenges and seasonally-cold weather snaps increasing peak demand.

MFK Review: In late October we received a signed-off scope of work for TAS 120, which will look at utilising the Multiple provider Frequency Keeping system (MFK) for managing variability of intermittent generators between '5-minute' dispatches. The work will commence in November and is planned for completion by July 2026.

FSR Programme: We have been actively working with the Authority in preparing their Code amendment decision papers following the Authority's consultations on Frequency Management, Voltage Management and Information Sharing Requirements. We have also progressed the review of CACTIS submissions and drafting the proposed CACTIS for delivery to the Authority in early December. Alongside we have progressed analysis of BESS and hybrid asset owner obligations.

Intermittent generation central forecasting project: Throughout October, we have been working with the Authority and EMS to develop a real-time curtailment data feed that will enable DNV to incorporate curtailment information into its forecasts. We are currently in a period of managing oversupply, with intermittent generators or groups of them often setting the island binding risk. We continue to attend monthly meetings with the Authority and DNV to provide operational feedback and insights to support ongoing forecast improvements.

Improving network visibility for low voltage networks: We contributed to the Transpower submission on the Authority's consultation on this topic. We noted the opportunity for this workstream's outcomes to align with the Government's objective of increased efficiency and standardisation across EDBs, and the link between this consultation and the Authority's Future System Operation (FSO) workstream.

SOSPA transition update: Work is still needed to finalise the review of the Joint Work Planning Team (JWPT) Terms of Reference (ToR) and TAS Guideline. Due to resource constraints at the Authority the parties have rescheduled engagement to finalise and agree these documents into November.

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

5.2 International Engagement

Malaysia Delegation visit: On 1 October, representatives from the System Operator hosted a study visit from Malaysia where preparations are underway to establish a wholesale electricity market. The group included representatives from the Ministry of Energy Transition and Water Transformation, Energy Commission (regulator), Single-Buyer along with consultant advisors the Lantau Group.

APEx Annual Conference 2025: Between 27-29 October we attended the GO 15 and APEx joint conference in Seoul, hosted by KPX. Transpower had worked with the APEx board to invite Kennie Tsui, CEO of the NZ Geothermal Association, to speak on one of the panels. This allowed NZ's expertise in geothermal to be showcased. Transpower also lead a panel on demand side challenges and specifically, data centre growth, and the massive increase in demand being seen in long term forecasts. Numerous System Operator contacts were made across CAISO, ERCOT, KPX and MISO which we expect to increase our ability to leverage international learnings.

5.3 Media interactions

On 7 October, we issued a media release inviting submissions on our System Operator Security Forecasting and Information Policy consultation. There was no media coverage following the release.

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 will deliver new software (ASCAS) to replace previous end-of-life technology which is vital to accurate information sharing with the Authority and NZX. The project remains on schedule. Milestone 2 deployment is planned for early November. User acceptance testing is underway in advance of the release. A planning exercise is being undertaken for the remaining 3 major releases.

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 and User Acceptance Testing have achieved full coverage, with completion pending resolution of two critical defects. Simulation, Non-Functional, and Security Testing are in progress, and the upgraded environment for Parallel Operations is being built.

The Business Change Management Plan is approved, the Transition Plan is under review, and stakeholder engagement continues to ensure alignment and timely communication of upcoming changes.

Control room of the future (CRoF): We continue to support the development of System Operator strategy and as a part of this preparation to engage with external stakeholders, the GSO leadership visited Airways Air Traffic Control Centre and KiwiRail Control Centre to learn from other adjacent sectors and consider implications for CRoF. October was also a big month for engaging with our

Grid & System Operations teams on CRoF through interactive poster sessions at the two team forums. In addition, we heard from Artificiality on AI, and how this could evolve in control rooms, and where some early work is happening, including outage optimisation by CAISO.

7 Technical advisory hours and services

TAS Statement of Work (SOW)	Status	Hours worked during month
TAS 108 – Extended Reserves implementation	In progress	6.5 (SME) 2.5 (PM)
TAS 120 – Multiple Frequency Keeping (MFK) Review	In progress	7.0 (SME) 6.0 (PM)
TAS 121 – Future Security and Resilience	In progress	543.25 (SME) 30.75 (PM)
TAS 122 – Investigation into implementation options for an MVP Emergency Reserve Scheme	In progress	49.0 (SME) 13.5 (PM)

Project Progress:

TAS 108 Extended Reserve Implementation 23/24 – Extended Implementation: Unison transition work is completed as planned in October 2025. Project Close-out report will be submitted in November 2025.

TAS 120 - Multiple Frequency Keeping (MFK) Review: The SOW for this TAS was reviewed by the Authority and a revised start date of 28 October 2025 from 6 October 2025, with subsequent amended milestone dates was approved. The amended dates were due to the extended review time required. The TAS work commenced on 28 October with Stage 1, exploration and options assessment.

TAS 121 FSR Workstream - Part 8 of the Code - Common Quality Requirements: In October, the System Operator finalised the CACTIS Summary of Submissions and Recommendations report and made progress on the draft CACTIS document, as well as the BESS/ Hybrid AOPOs arrangements investigation report. The team actively supported the Authority by providing commentary on the Code Amendment Proposals. Additionally, the System Operator hosted two key events: the FSR Common Quality Technical Group (CQTG) workshop and the annual Asset Owner Engineering

Forum. These sessions promoted engagement and discussion on CACTIS and related topics, helping to advance the workstream's objectives.

TAS 122 – Investigation into implementation options for an MVP Emergency Reserve Scheme: This unplanned project was completed ahead of schedule on 23 October, within budget. The main deliverable, the recommendations report on the preferred ERS MVP solution, was finalised after incorporating Authority's feedback on 23 October. The System Operator has requested an extension to begin pre-work on the FlexPoint implementation workstream, supporting potential ERS MVP uptake by Winter 2026. This extension has been agreed in principle, pending formal TAS change approval. Updated financials, hours, and milestones will be reflected in the next report following approval. Given this work was unplanned for the current year there is a risk prioritisation of it by the Authority will have implications for the wider System Operator work programme including other TAS initiatives.

8 Risk and assurance

8.1 Risk Management

We are completing the final interviews for the current 6-monthly control self-assessment with the subject matter experts mitigating key operational risks. This assessment covers five out of our ten of our critical controls, the remaining five will be assessed in May. The report will be presented to our management team for review in late November and finalised in early December.

We have provided a System Operator risk dashboard to the Market Operations Committee of the Authority Board for review and discussion. This first draft of the highlights key risks including risks that the System Operator does not have the tools or processes to securely manage a changing operating environment.

8.2 Business assurance audits

The black start test planning audit interviews are complete, and the paper is being drafted by our external auditors. The interviews for the second audit, preparedness for space weather events, are scheduled for early November. The terms for the SFT testing component of the SCADA EMS environment refresh audit are being reviewed.

9 Compliance

Participant breaches:

[redacted]

UFE Code Change: During October, we raised our concerns with the Authority about the 1 May 2025 Code change to the UFE "causer" definition which we believe has captured the System Operator as an unintended consequence. We noted the impact of this change on the role of the System Operator and the policy behind the causer regime which focuses on asset owners.

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 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.

- During October, we had further fact checking discussions with the Grid Owner regarding the HVDC Events of 26 June 2025 and 28 June 2025 which related to change to offer provisions. The System Operator conflict of interest protocols remained in place. The Grid Owner has confirmed that it has now made a decision to submit potential breach reports in relation to these events.
- On 1 October, we submitted to the Authority our UFE Causer Report and the accompanying engineering report for the HVDC ramp down event (11 July 2025). Our investigation involved reviewing the HVDC control settings under a specific bus configuration and reviewing Transpower internal operations procedures and communications, involving both the System Operator and Grid Owner. As well as reaching a recommendation on the causer, the investigation raised some procedural areas for further review around NCC and NGOC communications and decision-making processes. Given these areas cross both Grid Owner and System Operator operations, we commissioned an independent review to start early November and at the request of the Authority we will be sharing the independent report with the Authority. The Authority has also consented to the System Operator sharing its UFE Causer report and engineering report with the Grid Owner for the purposes of the independent review and that was shared with the Grid Compliance Manager on 10 October.

12 Performance 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

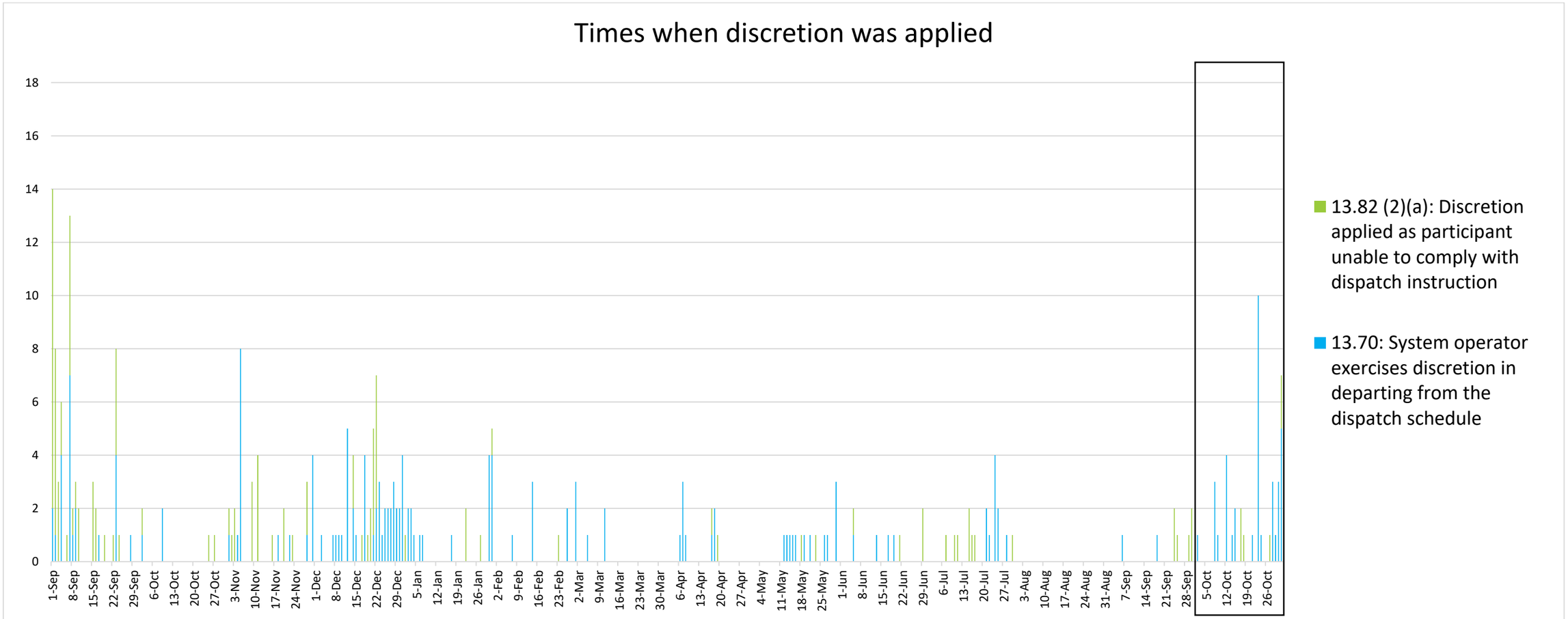
13 Actions taken

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 have continued our work on a refreshed System Operator Strategy. We have completed our first draft engagement document and are now planning for the first round of targeted industry engagement. **Support security of supply for the future power system by delivering the SOSFIP review.** We are currently undertaking a review of the SOSFIP, through October this has focussed on our draft amendment proposal consultation which received 6 submissions and will complete following a period of cross submissions. **Support future-focused market developments through white papers, consultation processes and cross-industry forums** No submissions or publications in the month of October. **Develop and begin implementation of system health, tool and modelling roadmap.** We continued our investigation of our power system health monitoring requirements. **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. **Ensure our service keeps pace in an ever increasingly complex world by implementing Control Room of the Future (CRoF) roadmap.** We continue to support the development of System Operator strategy and as a part of this preparation to engage with external stakeholders, the GSO leadership visited Airways Air Traffic Control Centre and KiwiRail Control

Items of interest	Actions taken
	Centre to learn from other adjacent sectors and consider implications for CRoF.
(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 are finalising the draft 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*** The Authority approved the updated version submitted and the new procurement plan came into effect on 7 August. We have been incorporating changes into our contract documents. ***Reset System Operator 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 "***SO is responsive to changing requirements, but change seems a little slow and hamstrung by red tape e.g. consultation requirements, EA code changes, software development.***" Thank you for your feedback and for acknowledging our responsiveness to changing requirements. We understand that some changes can feel slow due to essential consultation processes, compliance with Code requirements, and the complexity of software development. These steps are critical to maintaining transparency, stakeholder engagement, and system integrity. We are committed to improving efficiency and regularly review opportunities to streamline these processes. We have made an effort to increase coordination particularly with the Authority by using our regular operational meetings with them to discuss our plans towards proposing Code amendments, aligning with industry initiatives to reduce duplication, and optimising planning and approval cycles. Our goal is to balance speed with robust governance and quality outcomes.
(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 43 instances:

- 2 October, 2 instances applied at Stratford (SFD), as they were discretioned off as dispatched below minimum run and not required for security
- 8 October, 2 instances at Manapouri (MAN) due to Tiwai (TWI) extended potline
- 2 instances applied at Wairakei (WRK) due to security issues related to WRK T30 outage:
    - 8 October 1 instance
    - 9 October 1 instance
- 12 October 4 instances at Harapaki (HRP) due to resolving Tauhara (TAB)-WRK real time contingency analysis violations with Redclyffe (RDF) circuit breaker
- 3 instances applied at MAN due to TWI reduction line restoration:
    - 14 October 1 instance
    - 15 October 2 instances
- 17 October, 2 instances applied at TAB, traders in response to a 13.82(2)(a) as they were dispatched below minimum run
- 18 October, 1 instance applied at ROT, traders in response to a 13.82(2)(a) as they were unable to come off due to plant process
- 21 October, 1 instance applied at Glenbrook (GLN) due to RTD attempting to dispatch, node not offered in the market yet.
- 23 October 6 instances:
    - 2 instances applied at Argyle (ARG) and Stoke (STK) for restoration of upper South Island

    - 4 instances applied at SFD, Junction Road (JRD) and McKee (MKE) for security purposes post pole 2 trip
- 3 instances applied at Linton (LTN) for lower North Island voltage management
    - 23 October 2 instances
    - 24 October 1 instance
- 27 October, 1 instance applied at TAB, in response to a 13.82(2)(a) as it was dispatched down below minimum run
- 3 instances applied due to tripping:
    - 23 October, 2 instances applied at TAB
    - 28 October, 1 instance applied at Te Ahi O Maui (TAM)
- 28 October 3 instances applied:
    - 1 instance at TAB as had lowered their offer to reflect their new generation level after tripping
    - 1 instance applied at Whirinaki (WHI) as dispatched to minimum run during a low residual
    - 1 instance applied at LTN, TUR held on for voltage support
- 30 October 3 instances applied at TAB due to being dispatched down below minimum run.
- 31 October, 2 instances applied at KAW, in response to a 13.82(2)(a) as they were dispatched below minimum run
- 31 October, 5 instances:
    - 4 instances applied due to Kawerau (KAW) - Ohakuri (OHK) outage
    - 1 instance applied at Waitaki River (WTR) block for restoration of extended potline

Appendix B: Forecast v real-time residual variability

The below figure highlights the variability of the differences between 30-minute forecast values from the Non-response Schedule Short (NRSS) and 5-minute dispatch values from Real Time Dispatch (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 97.98% 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.