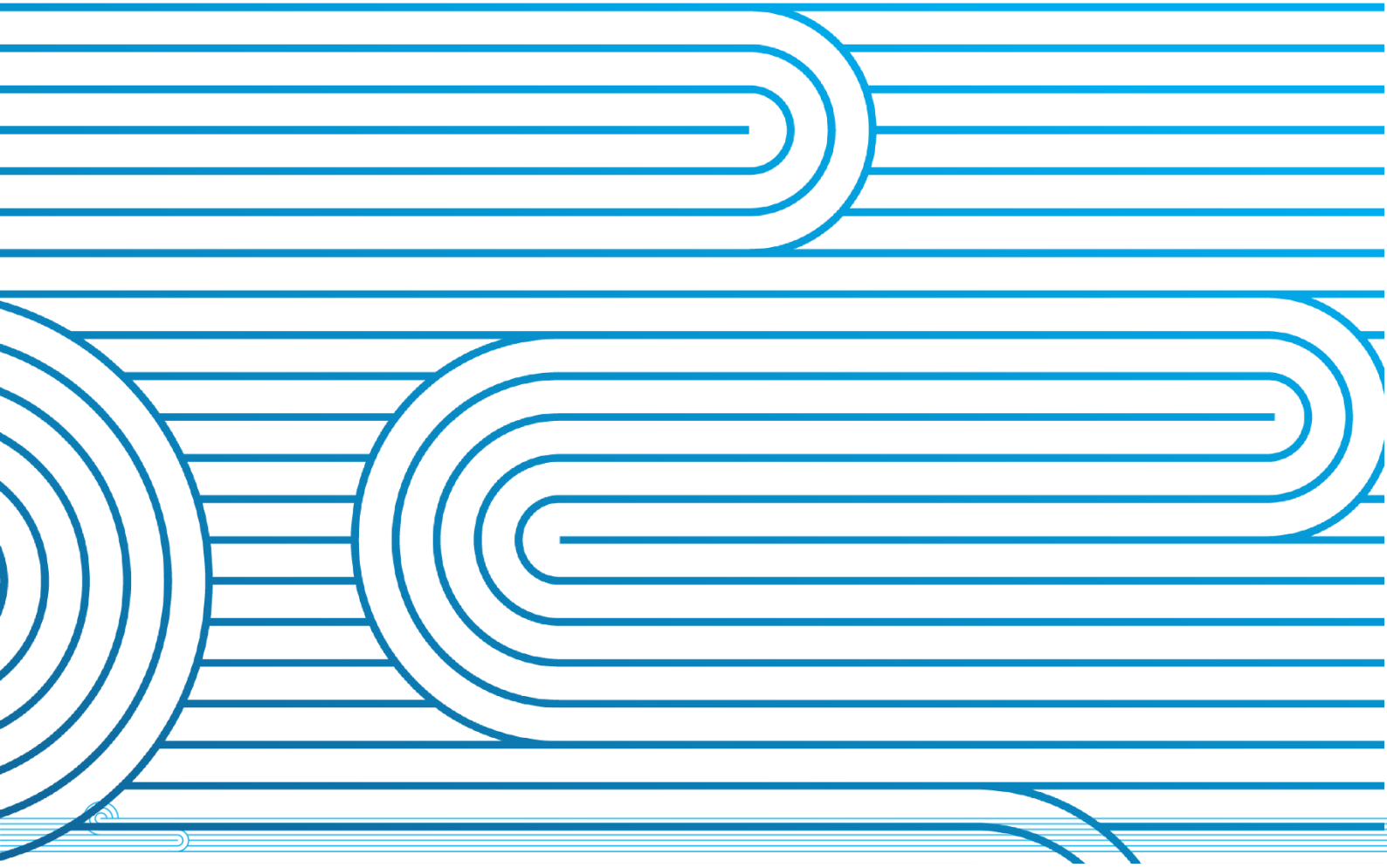


Monthly System Operator performance report

For the Electricity Authority

November 2024



Report Purpose

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 System Operator Service Provider Agreement (SOSPA):

12.3 Quarterly reports: The **Provider** must provide to the **Authority**, with each third self-review report under clause 3.14 of the **Code** during a **financial year**, a report on:

- (a) the **Provider's** performance against the performance metrics for the financial year during the previous quarter;
- (b) the actions taken by the **Provider** during the previous quarter:
 - (i) to give effect to the **system operator business plan**;
 - (ii) to comply with the **statutory objective work plan**;



- (iii) in response to **participant** responses to any **participant survey**; and (iv) to comply with any remedial plan agreed by the parties under clause 14.1(i);
- (c) the progress during the previous quarter of:
 - (i) the feasibility study into **cost-of-services reporting** referred to in clause Error! Reference source not found.; and
 - (ii) if agreed in accordance with clause Error! Reference source not found., the implementation of cost-of-services reporting; and
- (d) the **technical advisory hours** for the previous quarter and a summary of **technical advisory services** to which those **technical advisory hours** related.

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](#)



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Commentary



Key points this month

Operating the power system

- On 2 November both Clyde – Roxburgh circuits 1 & 2 tripped in close succession which created the potential for an electrical island to form in the lower South Island if the remaining Roxburgh – Naseby – Livingstone 220kV circuit was to trip also. System Operator procedures to manage this potential event were initiated, including communications with participants, safeguarding against loss of supply until the CYD-ROX 1 circuit was restored.
- *Control Room workload:* There has been a significant increase in workload on the control room staff due to the number and complexity of outages, combined with a high number of generator tests and IT change requests. There was a high number of instances of use of discretion predominately related to inflexible generation and low spot prices.

Security of supply

- *Electricity Risk Curves (ERCs):* The [November ERC and SST update](#) showed a reduction to the risk over the high risk period of 2025 mainly due to an increase in the modelled thermal fuels and the extended availability of TCC. No Simulated Storage Trajectories are crossing into NZ Watch or Alert status in 2025.
- *New Zealand Generation Balance (NZGB) potential shortfalls:* The [November NZGB update](#) is forecasting no potential shortfalls for the remainder of the year and no extended periods of low margins until May when considering firm generation only.
- *System Operator Rolling Outage Plan (SOROP) review:* Implementation of the new SOROP continues, with work on the operational information exchanged and templates with EDBs and work towards a presentation to participants on the new SOROP requirements.
- *Official Conservation Campaign (OCC) development:* We continue refinement of OCC preparation activities including planning for an education workshop with participants.
- *2025 annual Security of Supply Assessment (SOSA):* Our consultation in preparation for the 2025 SOSA was published, with the submission period to close in December.
- *Winter 2024 Security of Supply review:* We published our review of the performance of the electricity system and market over winter 2024. It includes a summary of changes implemented, the market response, lessons learned, future challenges, and how critical it is that participants continue to focus on fuel storage and availability.
- *Low Residual Situations review consultation:* We published our consultation on the management of Low Residual Situations posing a number of key questions for consideration. Submissions close in December followed by a short period for cross-submissions.
- *Pan-industry exercise 2025:* Planning is underway for the annual pan-industry exercise which is planned to occur in early 2025.

Investigations

- *Event Number 4500: 17 September 2024 – North Island:* Our causation report for this event has been submitted to the Authority.
- *Event Number 4477: 26 July 2024 - South Island:* We have concluded our investigations and currently finalising our event causation report for the Authority.
- *Significant incident investigation 20 June 2024 - Northland Loss of Supply:* We continue to work on actions identified in the independent and Authority's reports. We have been investigating opportunities to strengthen our regular engagement with industry participants.

Supporting asset owner activity

- *Outage coordination:* Generator and transmission outages are high as expected for this time of year. There is a large forward programme of planned upgrades and maintenance of various 220kV circuits. If market prices are insufficient to bring on the required generation to support these outages there is a risk they will be delayed, recalled, or cancelled at short notice. We have been working with the grid owner to identify priority outages consistent with the way we coordinate other participants outages to maintain security.
- *Generator commissioning and testing:* We continued our work to support five new generations sites, Contact's Te Huka Unit 3 (59MW geothermal at Tauhara), and Genesis' Lauriston solar farm (52MW at Ashburton) are currently commissioning; Lodestone's Te Herenga o Te Ra (38MW) and Ruawai (14MW) solar farms are to start commissioning in December; and Meridian's Ruakaka BESS (100MW) is to begin in January. We also have seven existing generation units with upgrades scheduled between now and January.
- *Demand commissioning and testing:* Modelling of the new Waitohe GXP for Lodestone's solar farm was completed, and we submitted a request for a determination of EDN0331 as a non-conforming GXP due to the difficulty forecasting the significant industrial load.
- *Ancillary Services activity:* The 2024 tender process has successfully completed for Black Start (South Island) and Over Frequency Reserves requirements. PowerNet interruptible load dispatch testing was successfully completed, and we are working with Simply Energy as they assume responsibility for the dispatch of Contact Energy's interruptible load service.

Commitment to evolving industry needs

- *Very low pricing operational challenges:* We've observed no negative impacts from changes we made to manage the challenges very low-priced generation, and remain on track to implement further enhancements to the market system in 2025.
- *Tie break situations:* Based on feedback received in our Evolving market resource co-ordination in Aotearoa New Zealand consultation we are doing more work to consider the need and options for "tie-break provisions" and expect to consult the market in 2025.
- *Electrical Industry Space Weather Working Group (EISWWG):* The industry working group continued to revise the industry response plan and continue to provide feedback to NEMA.
- *ENA Future Networks Forum:* We presented to the FNF Innovation Forum on the operational changes the System Operator is experiencing, and how we are preparing for the future.
- *System Security Forecast (SSF):* The significant work on the transient rotor angle stability scope for the SSF is now in final review with the report to be published in December.
- *System Operator Industry Forums:* Our fortnightly discussion on current operational and market issues were held on the 5 and 19 November.
- *Submissions preparation:* We submitted to the Authorities consultations on Intermittent Generation forecasting, Update to scarcity pricing settings, and the First steps in improving outage co-ordination; and are preparing a submission to the Proposed levy-funded appropriations 2025/26 consultation due in December

Risk & Assurance

- *Risk management:* We are finalising our November control self-assessment and an update to the System Operator Business Continuity Plan process is being prepared.
- *Business assurance audits:* We commenced the remaining three audits to be completed this year covering - Commissioning and decommissioning requirements, Managing national SCADA_EMS, and Electricity Risk Curves (ERC) modelling.

1 Operating the power system

System Events

2 November 2024- Managing a potential electrical island: At 16:02 Clyde – Roxburgh circuit 1 (CYD-ROX-1) tripped and soon after, at 16:11, CYD-ROX-2 tripped. This left the lower South Island connected only via the remaining Roxburgh – Naseby – Livingstone 220kV circuit. Consistent with System Operator procedures we prepared for a potential electrical island forming in the lower South Island by placing a constraint on the remaining circuits to limit export and arming an extra generator unit at Manapouri for over-frequency reserve. These actions mitigated the risk of loss of supply to consumers by ensuring an electrical island could form successfully should the remaining circuit have also tripped. A customer advice notice (CAN) was issued to industry informing them of these actions. The CYD-ROX 1 circuit was restored by 17:18 removing the potential electrical island risk. An update to the CAN was issued.

Control Room workload

Workload in the National Coordination Centre ramped up throughout November, including due to a combination of significant outages at the end of the month and extensive studies for complex outages in December. The real time coordination of a higher-than-usual number of generator tests and IT change requests further contributed to the increased load on the control room.

November saw a high number of instances of use of discretion by the coordinators. These were predominately due to inflexible generators having schedule output reduced due to low spot prices, and claiming inability to comply with economic dispatch due to plant safety (cl 13.82 (2)(a) of the Code). Further details are contained in Appendix A.

2 Security of supply

Electricity Risk Curves (ERCs): The November ERC and SST update was published on 26 November and is available [here](#). The update showed a reduction to the risk curves over the high-risk period of 2025 (an approximately 200 GWh decrease from February to June 2025). This reduction in risk was mainly due to an increase in the modelled coal stockpile, increased gas storage levels, as well as the availability of TCC in 2025. In previous ERC updates TCC was modelled to decommission in January 2025, but was updated to reflect Contact’s announcement that TCC would be operational in winter 2025. Despite two consecutive improvements to modelled thermal fuel capability, the ERCs are still fuel constrained. To realise this reduced risk situation, the appropriate modelled thermal fuel capability needs to be contracted by the industry. If less gas goes to thermal generators, or the coal stockpile level is not maintained going into Autumn and Winter, then the actual risk will more closely reflect what we were seeing in the September update. As of the November update, no Simulated Storage Trajectories (SSTs) are crossing into NZ Watch or Alert status in 2025.

New Zealand Generation Balance (NZGB) potential shortfalls: The November NZGB update is available [here](#). NZGB is forecasting no potential shortfalls for the remainder of the year regarding N-1-G. When considering firm generation only, there are no extended periods of low margins until May.

System Operator Rolling Outage Plan (SOROP) review: Implementation of the new SOROP continues, including work with participants on the information that would be exchanged regarding demand forecasts. Workstreams include automation of inputs for modelling, formatting of outputs to be fit

for publication and information provision to participants on their daily energy consumption. We continued to work with PowerCo on the operational information that would be exchanged with EDBs to facilitate rolling outages and are now finalising our template to test with Vector and Orion. A presentation to participants to explain the new SOROP requirements is planned for February.

Official Conservation Campaign (OCC) development: Following earlier work with our creative agency to develop new creative directions for an Official Conservation Campaign (OCC), we commissioned consumer research on two options. One concept was considered stronger with regards to its call to action and having the right level of urgency to initiate the desired consumer response. The preferred concept will require further refinement and a draft media (ad buying) plan will need to be created for use in the event an OCC is required. Planning was advanced for a 27 February workshop with communications and consumer leads throughout industry to ensure we are prepared for a joined-up response around an OCC and rolling outages if necessary, including how we communicate with medically dependent consumers.

2025 annual Security of Supply Assessment (SOSA): On Monday 18 November we released a [consultation document](#) in preparation for our 2025 SOSA. Submissions were due on 9 December. The SOSA will provide a ten-year view (2025 to 2034) of the balance between supply and demand in the New Zealand electricity system. The purpose of this consultation document was to invite feedback from market participants on two areas of the 2025 SOSA prior to drafting:

- the proposed key reference case assumptions, and
- the sensitivities that we are proposing to apply (individually and combined) to the reference case.

Winter 2024 Security of Supply review: We released our [review](#) of the performance of the electricity system and market over 2024 winter and shoulder periods. It includes a summary of changes implemented in the electricity market prior to and during winter, and the market response to those changes. The paper also sets out the lessons learned from what was a very challenging winter and looks ahead to the challenges to come, including dry year and peak capacity risks. Importantly, it also makes clear how critical it is to Aotearoa's energy security in 2025 that market participants continue to focus on fuel storage and availability, including across controlled hydro storage and thermal fuel arrangements.

Low Residual Situations review consultation: We published our [consultation](#) on the management of Low Residual Situations. Feedback is sought on the threshold, process, notices, and communications used to coordinate Low Residual Situations and will help ensure the approach to managing them remains fit-for-purpose and is well understood by industry partners and stakeholders. We also asked for views on whether we should progress, potentially in 2025, a proposal to include some elements of the Low Residual Situation process in the Policy Statement. Submissions close midday on Wednesday, 11 December 2024, cross-submissions are due by midday on Wednesday, 18 December.

Pan-industry exercise 2025: Planning is well underway for the annual pan-industry exercise next year. Our recent review of the performance of the electricity system and market over winter 2024 made it clear that the tight supply conditions experienced this year could well persist into 2025. With that in mind, we are working alongside the Authority to use the exercise to build the sector's capability to implement rolling outages if necessary to manage an extended electricity supply shortage.

3 Investigations

Under-frequency event investigations

Event Number 4500: 17 September 2024 – North Island: On 20 November we submitted our under-frequency event causation report for this event to the Authority.

Event Number 4477: 26 July 2024 - South Island: We have concluded our investigations into the causer. An under-frequency event causation report is currently being finalised and will be sent to the Authority before the due date.

Significant incident investigations

20 June 2024 - Northland Loss of Supply: We continue to work on completing actions in response to both the Ray Hardy report and the Authority's report. One action completed this month was the review of our regular Operations Manager engagements with industry participants to look for opportunities to strengthen them.

4 Supporting Asset-owner activity

Outage coordination

Generator and transmission outages are increasing, as is typical for this time of year. Over October and November there have been up to 2,000MW of generation on outage and between 60 to 80 outages per week. Factoring in these outages, NZGB indicates that there is sufficient capacity over the next 200 days to meet a 90th percentile demand under all scenarios although tight points may exist if slow start thermals are not operating, when wind is low and demand is high.

There is a large programme of planned upgrades and maintenance on a number of 220kv circuits from December through to April. These outages are likely to require Huntly slow start generation to maintain N-1 security in the upper North Island. Given high levels of hydro storage, and low prices this generation will likely require constraints to bind to create the regional price incentives, if these price incentives are insufficient to bring the generation on there is risk outages will be delayed, recalled, or cancelled at short notice putting upgrades or critical maintenance at risk. We have been working with the grid owners to identify priority outages should one or more need to be delayed/recalled/cancelled at short notice. This is consistent with the way we work with other participants and our role to co-ordinate industry outages to maintain security.

Generator commissioning and testing

Power Systems and Markets teams are working with the following generators who are commissioning or expecting to connect in the next 3 months:

- Contact's Te Huka Unit 3 (59MW geothermal at Tauhara) undergoing commissioning, due to complete in January 2025.
- Genesis' Lauriston solar farm (52MW at Ashburton) undergoing commissioning, due to complete in December 2024.

- Lodestone’s Te Herenga o Te Ra solar farm (38MW at Waiotaha) to begin commissioning in December, due to complete January 2025
- Lodestone’s Ruawai solar farm (14MW) to begin and complete commissioning in December 2024.
- Meridian’s Ruakaka BESS (100MW) to begin commissioning January 2025.
- We also have seven generation units with upgrades scheduled between now and January, including a series of AVR upgrades for Atiamuri, Whakamaru and Manapouri.

Demand commissioning and testing

New Waitohe GXP (33kV): Markets team completed modelling of the new GXP for Lodestone’s solar farm ahead of future development plans from Horizon to take supply at 33kV.

Other Markets team modelling completed: outage branch mapping at TAB GXP (33kV), and temporarily swapped an ARI unit from South to North bus.

Edendale load forecast: Demand at EDN0331 GXP is estimated to be as high as 80% industrial load, primarily to supply the Fonterra Edendale dairy factory, making it difficult to accurately forecast. Fonterra has recently commissioned a new 20MW electrode boiler, materially increasing the electrical demand. This new asset is flexible in its operation making the load at EDN0331 increasingly unforecastable by our load forecast tool. On 4 November we submitted a request for a determination of EDN0331 as a non-conforming GXP, receipt of which was acknowledged by the EA. As at the end of November we await further response.

Ancillary Services activity

PowerNet interruptible load (IL): Interruptible load capability tests are continuing which will inform the contracted reserve quantities. Dispatch testing has also been successfully completed and model deployment to the market system is planned.

Simply Energy: Simply Energy will assume responsibility for dispatch of the interruptible load previously sent to Contact Energy. We are working with Simply Energy to set up their new dispatch system.

Ancillary Services Tender: The 2024 tender evaluation process has successfully completed with four new contracts executed to support Black Start (South Island) and Over Frequency Reserves requirements. A two week extension to the existing contract of a fifth provider has been agreed so a minor change in the contract terms of their new agreement can be finalised and executed in early December.

Interruptible Load: The following table provides an overview of interruptible load testing for October:

	Number of sites	Additional quantities in MW
Annual testing	16 sites	
Additional resource		

Over-Frequency Reserve: The following table provides an overview of over-frequency testing for October:

	Number of sites overdue
Four yearly end-to-end relay testing	2
Two yearly control and indication testing	1
Circuit breaker testing	20

Black Start: Black Start testing at Aviemore was successfully completed on 2 November, including the use of the Grid Owner’s remote synchronisation functionality at Waitaki. Including remote synchronisation as part of the testing provides the System Operator additional assurance of the performance of this critical capability.

5 Commitment to evolving industry needs

Very low pricing operational challenges: As detailed in the October report we have experienced operational challenges arising from increased quantities of very low-priced (\$0/MWh and \$0.01/MWh) generation in the market. We continue to monitor the impact of the changes we made in October, with no negative impacts on frequency or security observed in November. We do note market conditions have changed since August and September when the issues arose.

We remain on track to implement further enhancements to the market system (in early/mid-2025) for better real-time management of IG dispatch when IG plant is setting the risk, especially when actual output falls below dispatch levels. In the longer-term, to reduce the risks on system security and frequency, we are investigating options to reduce the risk of rapid ramping of IG when constraints are removed.

Tie break situations: In section 4.2.2 of our consultation paper [Evolving market resource co-ordination in Aotearoa New Zealand](#) we described the need for the creation of “tie-break provisions”. Submitters agreed the issue described needed to be addressed but there was no consensus on how to do so. In line with our [Market Resource Coordination Consultation Responses](#) paper we have engaged with the Authority on this topic, proposing a technical solution that would implement SPD constraints to reduce impacted generator's output proportional to their offers. We also agreed with the Authority to engage with participants on the proposed solution through a Policy Statement review, tentatively planned for March/April 2025. The consultation will discuss the various options proposed by submitters to preliminary questions posed in our Evolving Market Coordination paper from July 2024. Our preferred option appears to be the most economically efficient and operable solution among those proposed, and is technically similar to that implemented in the Singapore electricity market.

Electrical Industry Space Weather Working Group (EISWWG): The industry working group continued to revise the industry response plan and also provided feedback to NEMA on their national response plan.

Electricity Networks Aotearoa (ENA) Future Networks Forum (FNF): Market Services team presented to the ENA FNF Innovation Forum on 12 November. We covered the operational changes the System Operator is experiencing, and what we are doing to prepare for the future. Questions centred on the

changes in the hot water load control space; retailers installing their own controllers, EDBs opening up their control systems to retailers, and the Authority signalling they want to see all controllable load in the hands of retailers.

Meeting with Cambium/Plus Power: Markets and power system principals met with representatives from these businesses who are investigating investing in BESS in New Zealand. They were initially seeking information on system and market operation and later met with system planning principal engineers on connection requirements.

Meeting with Orion and the Electricity Authority: This meeting covered concerns that Orion raised on the impact of aggregated IL on AUFLS provision. Whilst aggregators have an obligation to provide information to AUFLS providers, this is generally not at a detailed feeder level. This is unlikely to impact the AUFLS provision for 2 to 3 years but will need consideration going forward.

System Security Forecast (SSF)

The work on the transient rotor angle stability scope for the SSF has been a significant undertaking and is now largely complete, with the report heading into its final technical review before we engage with relevant stakeholders and provide an advance copy to the EA. In December we will publish the transient rotor angle stability report and along with the SSF 2024 summary report.

Connecting with the industry

System Operator Industry Forums:

Our fortnightly discussion of current operational and market issues were held on the 5 and 19 November. Recent slide packs and recordings for forums within the last month are available on our website: [System operator industry forum | Transpower](#).

Weekly Market Movements:

- [3 November:](#) This insight discussed the [October 2024 Electricity Risk Curves](#) (ERCs) were published on Thursday 24 October, and showed a significant decrease to the status curves over the 2025 risk period
- [10 November:](#) This insight looked into the period of near 0 MW of wind generation on Wednesday 6 November
- [17 November:](#) This insight discussed North Island price separation and how spot prices can differ between nodes due to transmission losses, transmission constraints, and across the HVDC link as a result of reserves.
- [24 November:](#) This insight covered significant events that have impacted industrial load over the last decade.

Supporting the Authority

Intermittent Generation Forecasting consultation: We [submitted](#) as System Operator on this consultation. Key points included: the importance of our reliance on the outputs and performance of a centralised forecaster, the need for more information on contractual controls and the Authority's role in ensuring quality and accuracy, that we should not be liable for any downside operational risk associated with poor forecast quality, that further collaboration between the Authority and the System Operator will be needed, and that any system operator investment to enable the proposals will need to be funded.

Update to Scarcity Pricing Settings: We [submitted](#) as System Operator on this consultation. Key points included: support for the Authority’s proposal to raise the energy scarcity price setting and the default value for controllable load, support for the proposal to reduce the number of reserve scarcity tranches, concern that the proposed reserve scarcity price values are too low and system operator discretion will continue to be relied on, the importance of good trading conduct monitoring, our belief robust analysis is needed to ensure the trade-off between reduced system security and relying on AUFLS to cover a contingent event is assessed correctly, the need to frequently review the scarcity pricing settings, the potential need for price caps to create space between offer prices and scarcity prices, and the importance of the scarcity pricing settings to market outcomes.

First steps in improving outage coordination: On 8 November we [submitted](#) to the Authority on its outage co-ordination consultation. Transpower provided feedback under both its System Operator and Grid Owner roles. The proposal would have led to all Low Voltage network outages being submitted to the System Operator. Our submission clarified that without investment in tools, this level of information will be unworkable for both the System Operator assessing outages and asset owners planning outages.

Proposed Levy-funded appropriations 2025/26 consultation: We are preparing content for a Transpower submission to the Authority in support of its preferred Option 3 ((System operator and inflation uplift). Submissions close on 13 December.

Media interactions

We had one interaction with media in November. This was in response to an interview request by Radio New Zealand regarding space weather ahead of the release of NEMA’s response plan, which led to a [balanced and informative piece](#) highlighting our preparedness. The NEMA plan was released in early December and triggered further media attention - we were not contacted for comment.

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): User interface and API development in progress. Initial Database structure to accept Market system data is under review. Detail application design is being worked on. Test Environment has been built, handed over to and verified by the Test Engineers. Staging Environment build is in progress.

D&A Modernisation – Market System Data: Data ingestion and migration activities continue. Historical data migration is taking longer than originally planned due to the large volume of data

(over 100 billion rows of data). 70% of reports have been delivered and UAT is either complete or in progress on those reports. Training sessions have been delivered on SQL for Snowflake.

SCADA Habitat and EMP Refresh: The GE Technical SOW Phase is complete. Both Transpower and GE teams are progressing with customisation changes, and System Integration Testing is underway.

Credible Event Review: We have completed our final 2024 Credible Event Reviews as signalled in the [2024 Credible Event Review Scope](#) and invited feedback from the electricity industry from 18 November to 9 December on the remaining three reports:

- The Interconnecting Transformer (ICT) Methodology and Updates;
- The Approach to Fault Ride-Through (FRT) non-compliance; and
- The 110 kV busbar fault review.

The final reports of all five Credible Event Reviews will be published in December.

7 Technical advisory hours and services

The following table provides the technical advisory hours for the month and a summary of technical advisory services to which those hours related (SOSPA 12.3 (d) refers).

TAS Statement of Work (SOW)	Status	Hours worked during Month
TAS 108 – AUFLS Transition	In progress	82.5
TAS 112 – Future Security and Resilience	In progress	139.5
TAS 113 - BESS Wholesale Market Enhancements	In progress	93
TAS 115 - Settlement of the market following publication of final prices for 9 Aug 202	In progress	114

Progress:

TAS 108 AUFLS transition: November studies for the December transition period were completed with no security issues. We have not observed any non-adherences during the November period. We are preparing for the AUFLS Quarterly Industry Meeting in December.

TAS 112 - Future Security and Resilience (FSR): During November we have continued working with the Authority team supporting them developing the Cost Benefit Assessment (CBA) to help inform the decision paper covering on the frequency and voltage management options. We have progressed with the other priority areas under the TAS, including the GXP power factor studies and the BESS AOPOs literature review, and have progressed planning for an additional priority area being the generation commissioning incorporated document by reference.

TAS 113 - BESS wholesale market enhancements: Work commenced after TAS SOW approval early November. The team is progressing Phase 1 assessing operational and system security risks and necessary safeguards associated with different levels of uncertainty in BESS final dispatch and considering further implications assessing several reduced gate closure options. The outcomes of the assessment are being documented in the draft report.

TAS 115 - 9th August 2021 UTS decision: Actions to settle the market now final prices are published for 9 Aug 2021; This work kicked off in November. Test environment set up is complete, and test of settlement processes is nearing completion – with Grid Constrained quantities shared with NZX, constrained amounts returned from NZX, and regular Ancillary Service (AS) process test complete (to inform NZX Hedge calculations and FTR Settlement). The final step of the Test Phase is test of the LCE Calculation - which will be completed in December (2024). Activities are running to schedule and coordination with NZX is running smoothly.

Scoped TAS initiatives closed after Authority reprioritisation of its work programme:

- TAS110 - Winter Initiatives Permanent Implementation – Interim and long-term implementation to be addressed as part of Market Design project in FT25/26.

8 Risk & Assurance

Risk Management

We are finalising our November control self-assessment round. An update to the System Operator Business Continuity Plan process is being prepared based on the Corporate Incident Response BCP. We are coordinating with Corporate Risk to use their material where possible, while acknowledging the specific industry role of the System Operator.

Business assurance audits

We have kicked off the Terms of Reference for the remaining three audits to be completed this year:

- Audit 50: Commissioning and decommissioning requirements (Power Systems)
- Audit 51: Manage a national SCADA_EMS (Grid & System Operations)
- Audit 52: Electricity Risk Curves (ERC) modelling (Market Services)

9 Compliance

FOGP Participant Self Breaches: We have looked into an issue on 15 November that required intervention from our control room. For the [REDACTED] trading period ([REDACTED]) on [REDACTED], the last FOGP submitted for [REDACTED] before the trading period was [REDACTED] MW. Actual generation during the trading period was much less ([REDACTED] MW trading period average) which caused an operational issue because branch flows were substantially different from what had been expected based on the forecast. Our control room contacted [REDACTED] about this at the time. We emailed [REDACTED] noting the reporting requirements of 13.86A(2) of the Code. [REDACTED] have confirmed that they will be reporting this in their standard process to the Authority.

Other Participant Self Breaches: We followed up on our observations during the approved [REDACTED] [REDACTED]. [REDACTED] output began to deviate and did not follow Dispatch between approximately [REDACTED]. [REDACTED] have confirmed that they plan to report this to the Authority as a potential non-compliance.

System Operator compliance activity for this period is set out in the table below:

Event number	Event date	Event Description	Update	Date sent to EA
4275	11/04/22	<p>VSAT node breaker modelling for TWI - Southland voltage stability constraint impact</p> <p>On 5 June 2024 the Authority filed a notice of formal complaint with the Rulings Panel in respect of Transpower in its role as System Operator.</p> <p>The complaint alleges Transpower, as a result of errors in the system operator’s voltage stability assessment tool (VSAT), failed to correctly apply security constraints between 28 January 2022 and 13 April 2022.</p>	Currently going through the Rulings Panel process.	Ongoing

10 Impartiality of Transpower roles

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.

System Operator Open Conflict of Interest Issues		
ID	Title	Managed by
40	<p>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. The item documents the actions necessary to ensure impartiality in these circumstances; these items will be monitored to ensure their continue effectiveness.</p>	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 SO Compliance & Impartiality Manager to ensure their continued effectiveness.	Corporate Counsel, Compliance and Impartiality
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AraAke Trial: The System Operator and Grid Owner are collaborating on the FlexPoint platform. As the only impact of this collaboration to date is increased visibility of information in system operator control rooms and to external parties – there are currently no actual or potential conflicts of interest identified. There is nothing in or resulting from the trial that is of benefit to the Grid Owner over and above other participants. We will continue to monitor the trial from an impartiality perspective.

11 Performance metric and monitoring

Our system operator performance against the performance metrics for the financial year as required by SOSPA 12.3 (a) will be provided in the final monthly report each quarter

12 Cost of services reporting

The cost of services reporting for 2023/24 will be delivered to the Authority by the end of the financial year.

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 12.3 (b).

We note that re-prioritisation of our resources to support the system operator and Authority Northland loss of supply investigations, the 2024 security of supply situation and the SOSPA3 process has constrained our capacity to progress our work on these activities to planned timelines.

Item of interest	Actions taken
(i) To give effect to the System Operator business	Support future-focused market developments through white papers, consultation processes and cross-industry forums

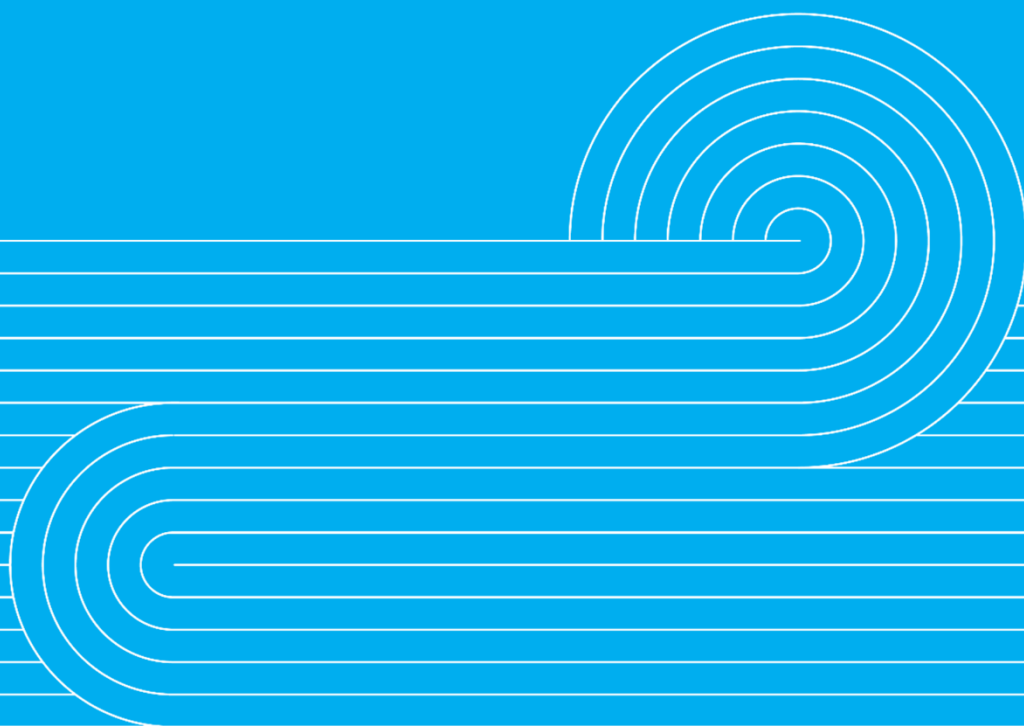
Item of interest	Actions taken
<p>plan strategic initiatives:</p>	<ul style="list-style-type: none"> • Actively participated in the Electricity Networks Aotearoa Future Network Forum's <i>Roles and Functions to enable distributed flexibility</i> project team weekly meetings. • Participated in a FlexForum workshop to discuss what solutions FlexForum would suggest to fill the holes in the value stack in the Energy Competition Task Force options • Continued to progress work with the EISWWG • Published our Low Residual Situation review consultation paper. • Published our completed Credible Event Reviews (three topics covered) for industry feedback • Published our 2025 Security of Supply Assessment: Reference Case Assumptions and Sensitivities for industry feedback <p>Develop a view of the information, market and standards required to operate the future electricity system to support the FSR work program</p> <ul style="list-style-type: none"> • Work continues to support the Authority's FSR programme, with the System Operator supporting the Common Quality Requirements workstream. The Authority has sought additional studies and input to determine the CBA to inform the frequency and voltage management options decision consultation paper, which the Authority is planning to consult on mid-2025. • The Asset Owner forum included a presentation and round table on modelling information required for commissioning. • The system operator participated in a meeting with a distributor to progress a trial of (T)SO/DSO data exchange to learn by doing. <p>Enhance quality assurance through delivery of the Modelling Quality Assurance Framework</p> <ul style="list-style-type: none"> • Discovery work is complete, and recommendations are being presented to the Compliance Committee. Efforts are now focused on implementing priority process improvements which will form key components of the overall framework. <p>Implement stage 1 of new enterprise business process management (BPM) capability for system operations</p> <ul style="list-style-type: none"> • The process architecture review and development are underway with the tool currently being piloted on generator commissioning to demonstrate best practises. Work is underway to provide a more strategic view of the consolidated business model. <p>Leverage data and analytics developments to improve our data modelling and reporting</p>

Item of interest	Actions taken
	<ul style="list-style-type: none"> Data ingestion of market system data into the new data warehouse is ongoing. User Acceptance Testing continues with solves and frequency keeping recently completed. <p>Deliver improvements to our generator commissioning management and assessment process</p> <ul style="list-style-type: none"> New and updated generation commissioning documentation drafted for review, incorporating feedback from the AO forum. New generation commissioning webpages on the Transpower website drafted, to be published early 2025. Engaged with GO to update their Generation Connection Guide to align with changes made to SO process.
<p>(ii) To comply with the statutory objective work plan:</p>	<p>Policy statement review (review due 1 November 2024)</p> <ul style="list-style-type: none"> We await the Authority's decision on our proposed amendments submitted for approval on 30 October. <p>AS procurement plan review (review due 8 June 2025)</p> <ul style="list-style-type: none"> Internal review process continues We have not received any Authority comment on the review scope shared in September. We intend to share the updated sections of the procurement plan once we have completed internal review, prior to submitting our pre-consultation documentation to the Authority. <p>Identify low residual / informational CANs (due 28 March 2025)</p> <ul style="list-style-type: none"> Completed Sept 2024, ongoing in each Quarterly System Performance Information report. <p>Low residual notices, threshold and process review (due April 2025)</p> <ul style="list-style-type: none"> Having received useful feedback from the Authority on the draft, we published our consultation on the management of Low Residual Situations. Feedback is sought on the threshold, process, notices, and communications used to coordinate Low Residual Situations.
<p>(iii) In response to participant responses to any participant survey:</p>	<p>Feedback from the managing security of supply risks 2024 survey</p> <p>In line with our commitment to continuous improvement, we conducted an industry survey after the low hydro events of winter 2024 to gather feedback on successes and areas for enhancement. We published our Winter Review 2024 in November, which includes a section addressing the feedback from this survey. You can find the full response here.</p>

Item of interest	Actions taken
(iv) To comply with any remedial plan agreed by the parties under SOSPA 14.1	<i>N/A – No remedial plan in place.</i>

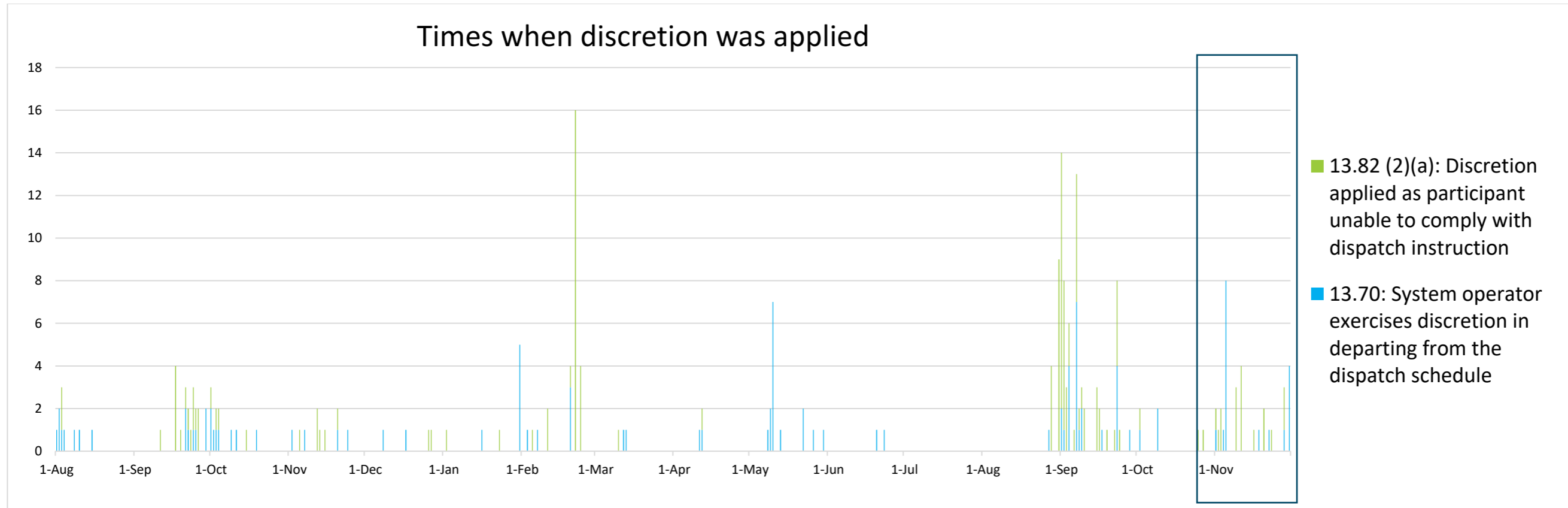


Appendix



Appendix A: Discretion

The graph below shows a recent trend of instances of discretion application. The individual instances of discretion application this month are summarised further below.



System operator applied discretion under cl 13.70 in 34 instances:

- 2 November 1 instance applied at Moawhango (MWO) to prevent oscillatory behaviour as forecast of generation potential (FOGP) was less than actual unconstrained output.
- 4 November 1 instance at Linton (LTN) unmanageable contingency violation overloading LTN transformer 3
- 5 November 8 instances in response to extended reduction line return:
 - 2 instances at Benmore (BEN), 2 instances at Ohau A (OHA), 2 instances at Ohau (OHB) B, 2 instances at Ohau C (OHC)
- 11 November 3 instances applied in response to a 13.82(2)(a) rule claim by traders unable to comply with lower dispatch kept on for security due to outages starting later that day
 - 2 instances at Kawerau (KAW), 1 instance at Nga Awa Purua (NAP)
- 18 November 1 instance at Argyle (ARG) in response to a discretionary constraint applied for switching
- 22 November 1 instance at ARG for the restoration of the ARG – Kikiwa (KIK) circuit
- 2 instances applied by traders in response to a 13.82(2)(a) rule claim by the traders as they were dispatched into its rough running range
 - 11 November 1 instance at Matahina (MAT)
 - 20 November 1 instance at Mangahao (MHO)
- 6 instances applied by traders as the site was unable to comply with dispatch due to plant safety
 - 9 November 2 instances in response to a 13.82(2)(a) rule claim by the trader at MAT
 - 11 November 1 instance in response to a 13.82(2)(a) rule claim by the trader at MAT
 - 20 November 1 instance in response to a 13.82(2)(a) rule claim by trader at MHO
 - 28 November 2 instances response to a 13.82(2)(a) rule claim by the trader at Huntly (HLY)
- 6 instances applied by traders as the site scheduled below its minimum run and discretioning to 0 would raise the marginal price providing the least cost solution
 - 1 November 1 instances in response to a 13.82(2)(a) rule claim by the trader at NAP
 - 3 November 2 instances in response to a 13.82(2)(a) rule claim by the trader at NAP

- 16 November 1 instance in response to a 13.82(2)(a) rule claim by the trader at NAP
 - 23 November 1 instance in response to a 13.82(2)(a) rule claim by the trader at Tauhara (TAB)
- 5 instances applied to model transmission risks, manual override was required to model NI CE correctly
 - 28 November 1 instance applied KAW - Ohakuri (OHK)
 - 30 November 4 instances applied KAW-OHK