TRANSPOWER

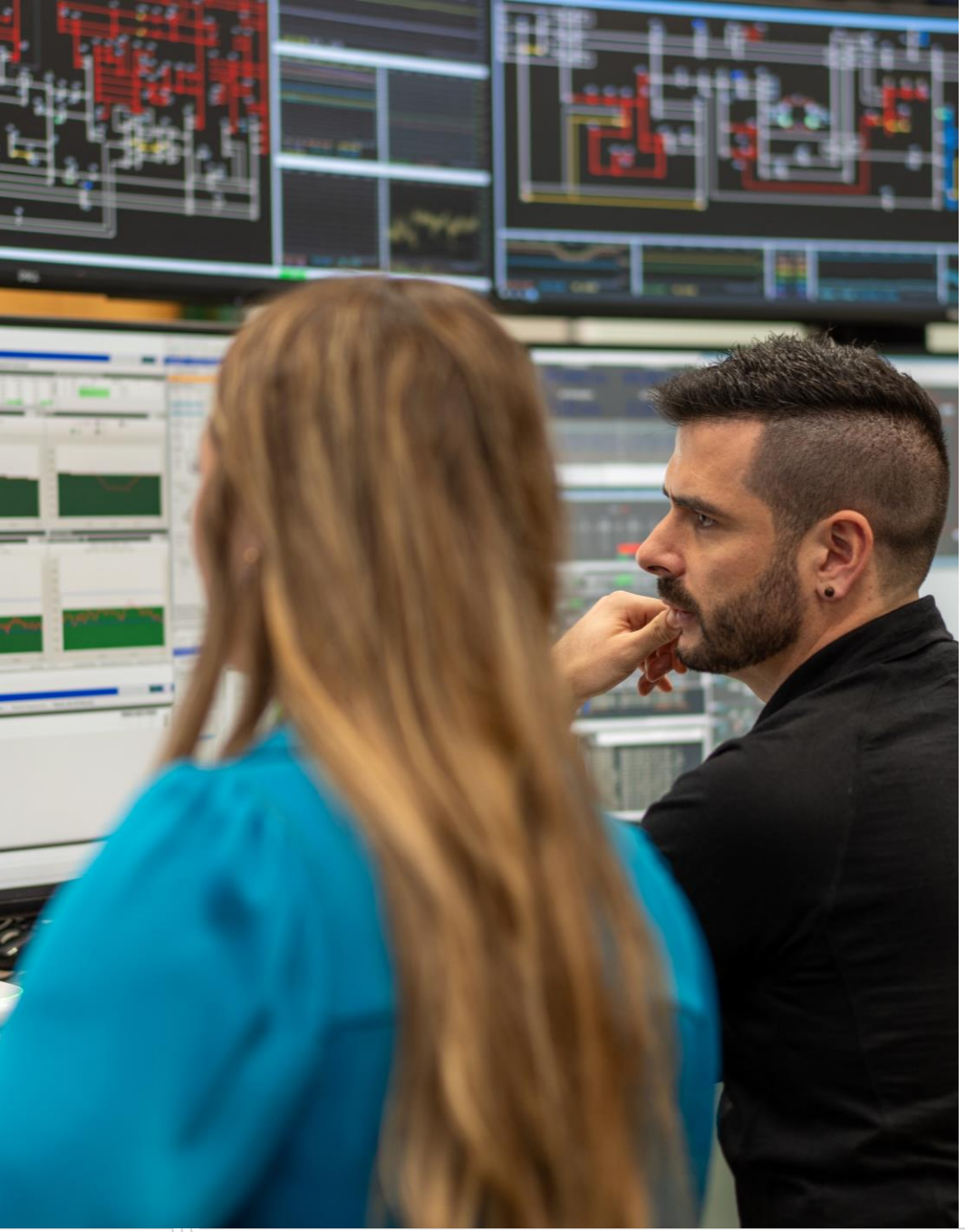
System Operator Industry Forum

5 August 2025

Today’s agenda

Market and Operational updates

- Key messages
- Market update
- NZGB update
- Outage update
- Operational update
- Standby reserve shortfall notices
- Consultations, publications and events



Key Messages

- Nationally hydro storage is continuing to decline, with South Island storage below mean.
- Temperatures have dropped and Winter load is picking up, at times we are relying on slow start thermal units to meet high peak demand.
- Continued focus on fuel (both hydro and thermal) and asset availability is needed to reduce energy and capacity risk for the remainder of winter.

Market update

Energy: National hydro storage

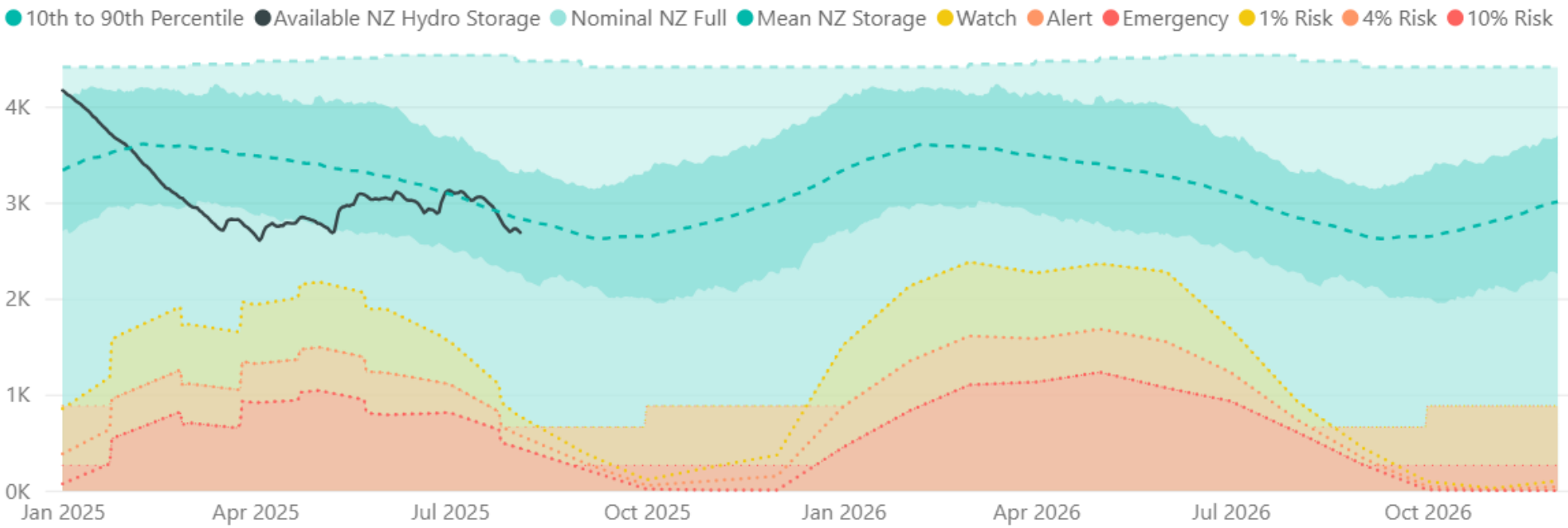
National hydro storage has declined and now sits below average for this time of year.

	Hydro storage level (% of mean ▲/▼)		
	New Zealand	South Island	North Island
Last forum	101%	95%	154%
Now	94% ▼	88% ▼	140% ▼

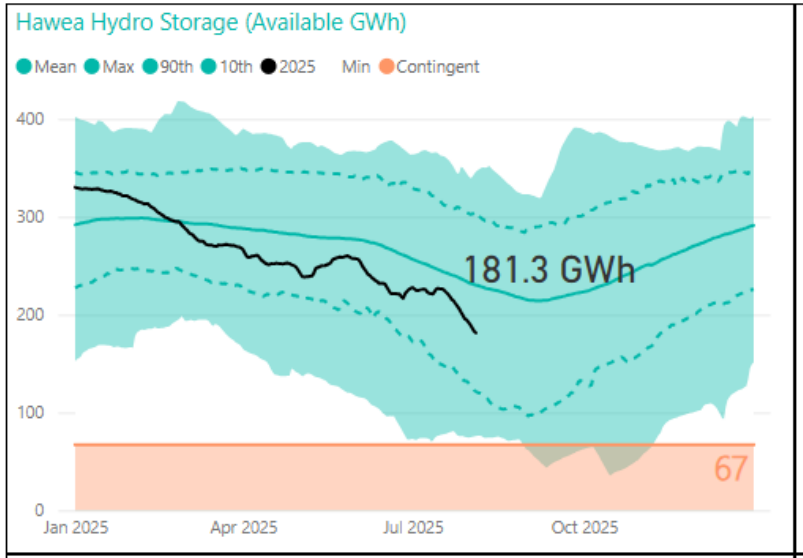
New Zealand Energy Risk

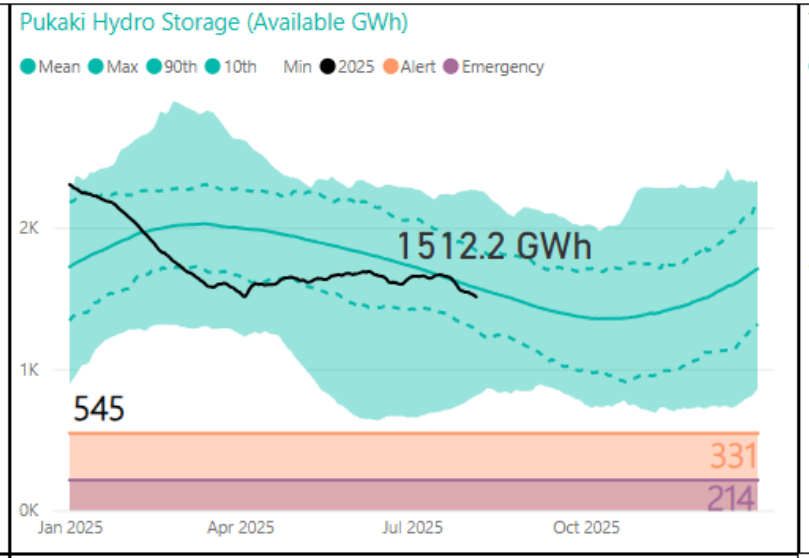
South Island Energy Risk

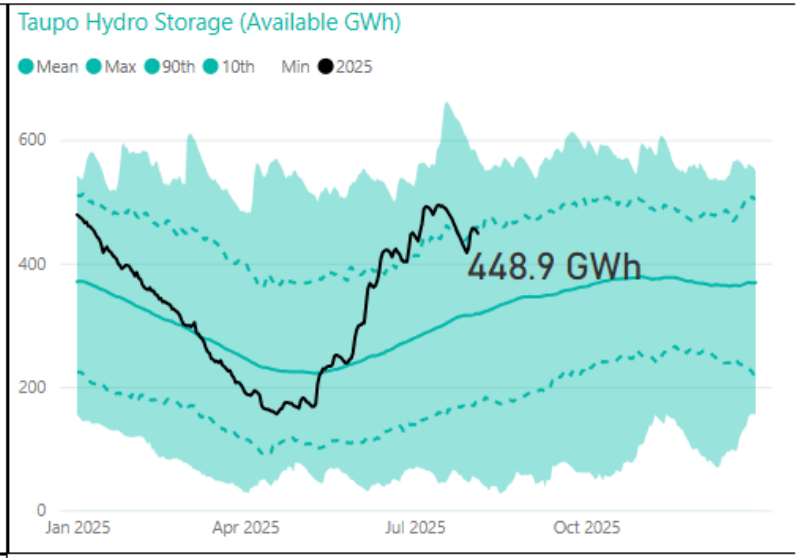
New Zealand Electricity Risk Status Curves (Available GWh)

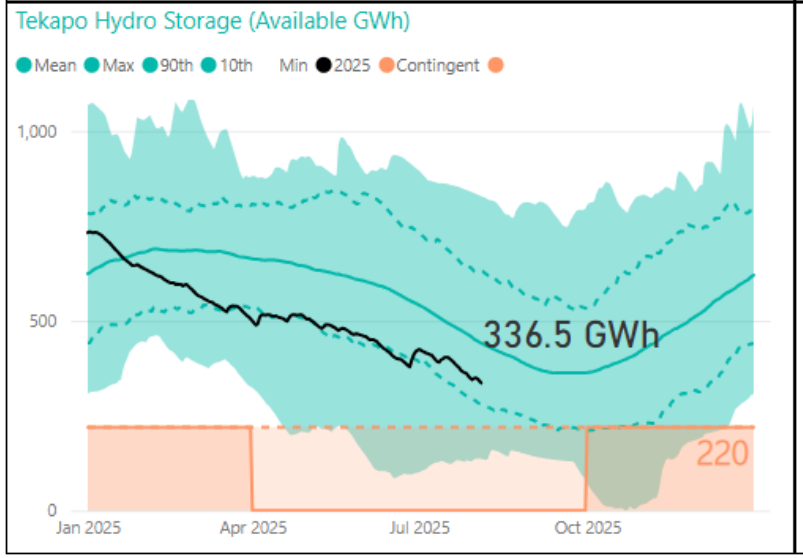


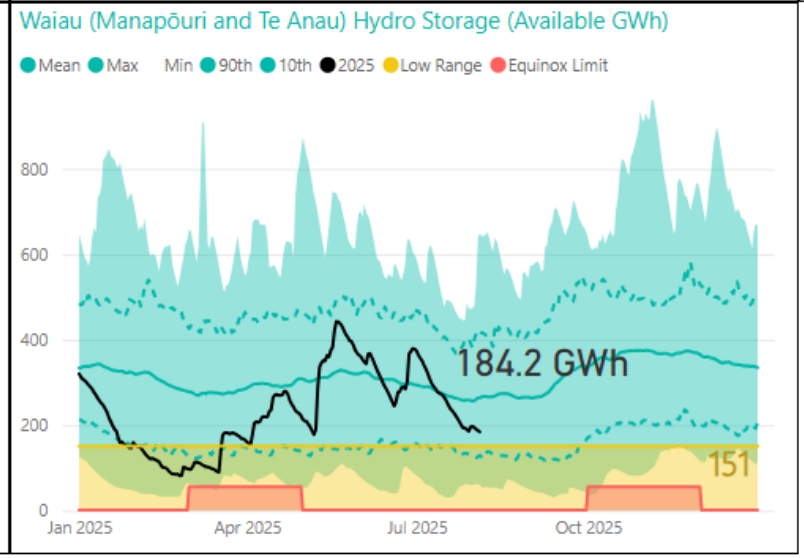
Hydro storage by catchment









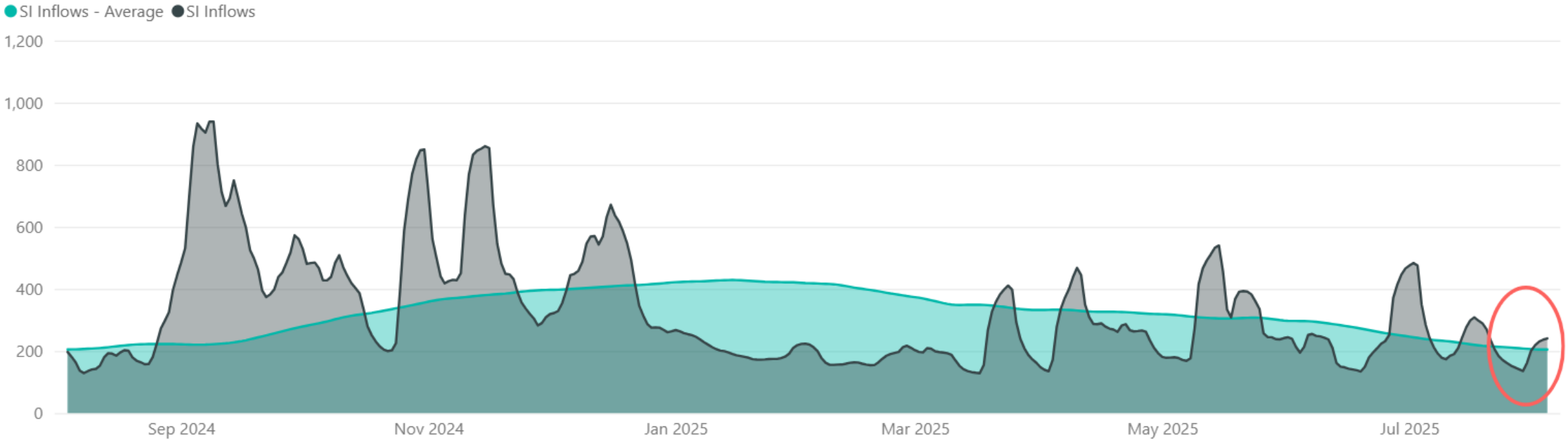


Lake	Current (%) avg
nz_controlled	94
si_controlled	88
hawea	79
pukaki	96
manapouri	75
te_anau	67
tekapo	76
taupo	141

Hydro inflows

Below average SI inflows, roughly average NI inflows

South Island Mean 7 Day Inflows (Available GWh)

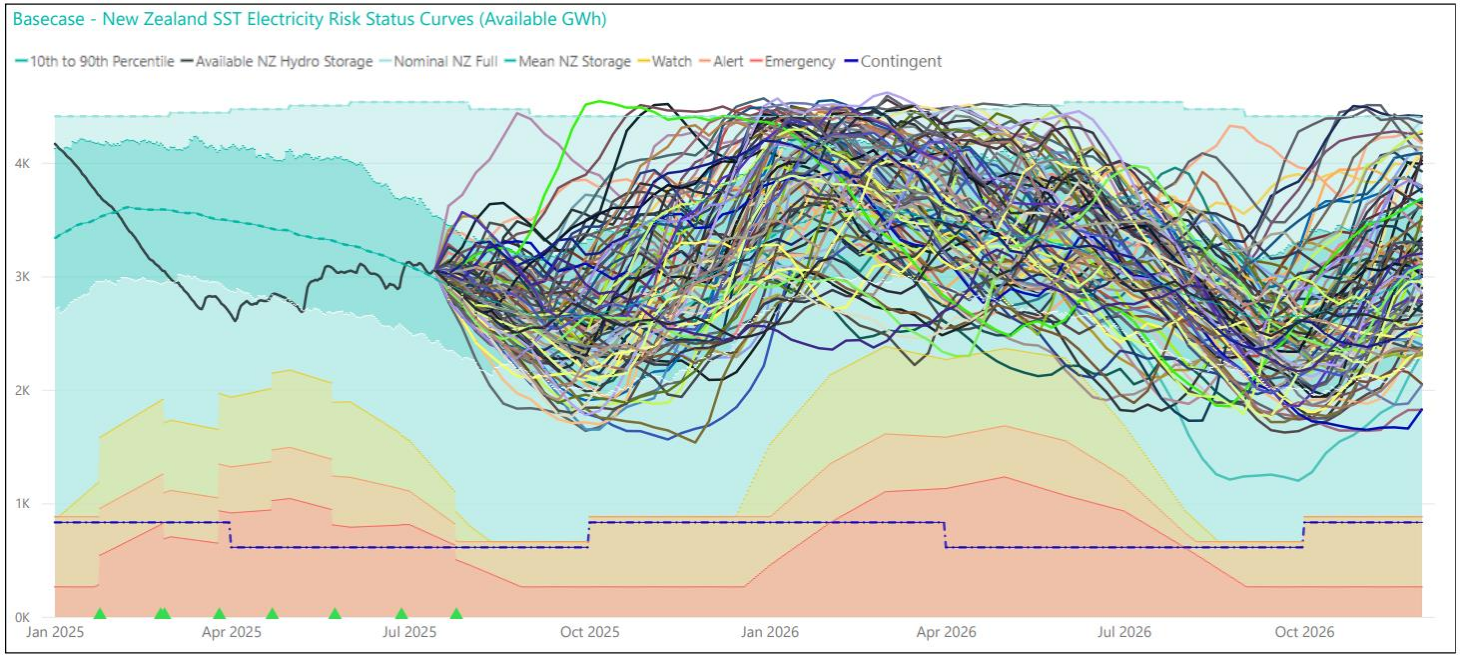


North Island Mean 7 Day Inflows (Available GWh)

July ERCs & SSTs

Major changes this update:

- Increased forecast gas production and storage
- Increase in firm coal imports and coal stockpile
- Updated outages and commissioning dates

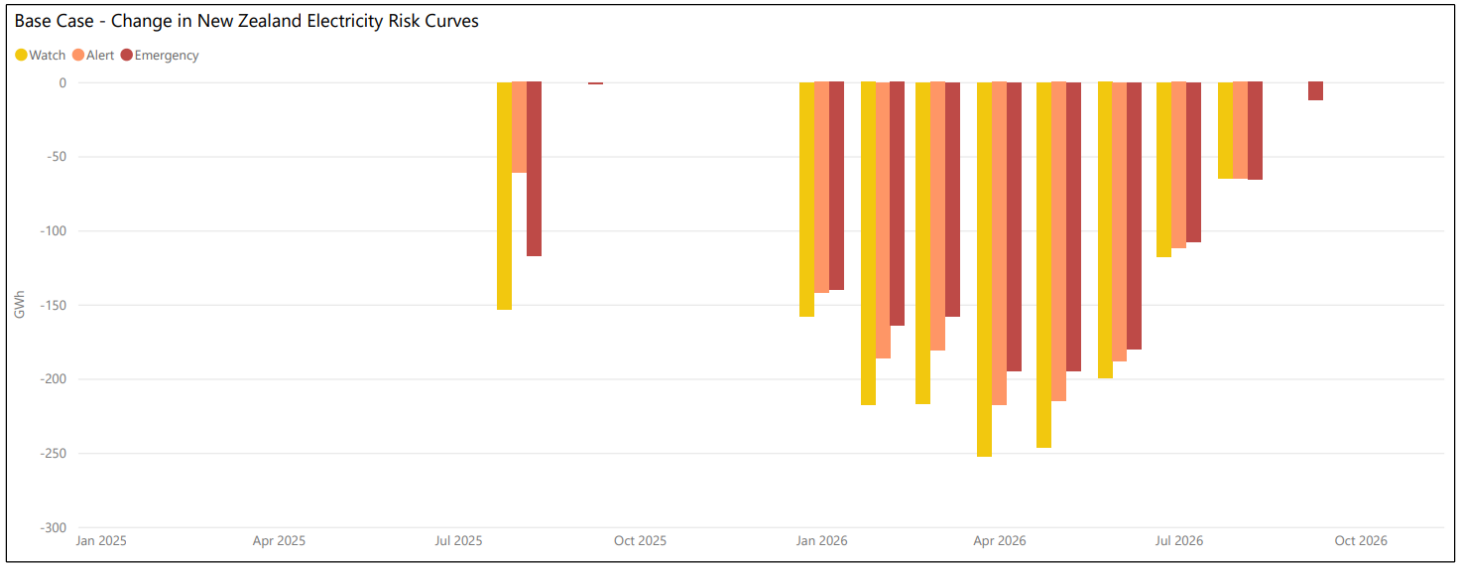


SSTs (93 total) crossing NZ:

	Watch	Alert	Emergency
2025	0	0	0
2026	5	0	0

Decreases of up to:

- ~250 GWh Watch (April 2026)
- ~200 GWh Emergency (April 2026)



July ERCs & SSTs

Scenario – Rankine remains 2026

- This scenario assumes the Rankine will be available and that coal is imported at the maximum physical import capability

Major changes (relative to base case):

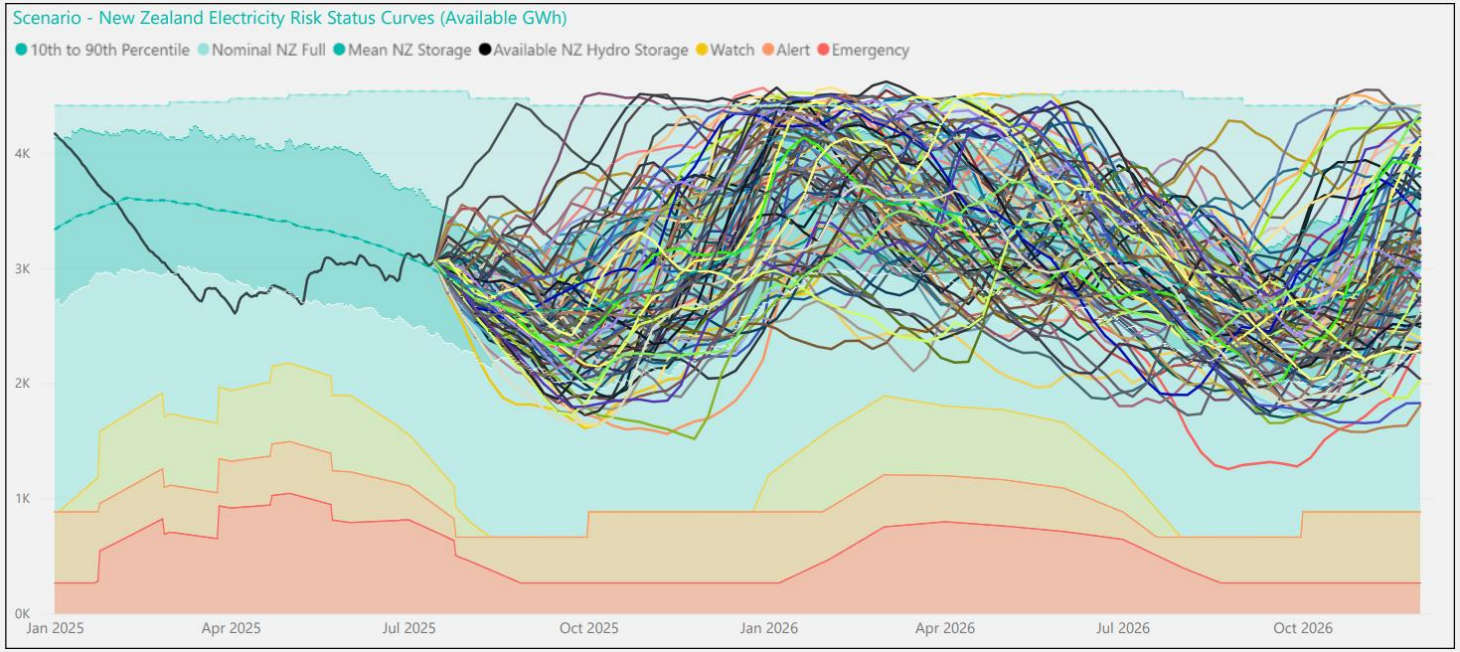
- Decreased Watch, Alert and Emergency curves in 2026
- No SSTs cross any of the curves in 2025 or 2026

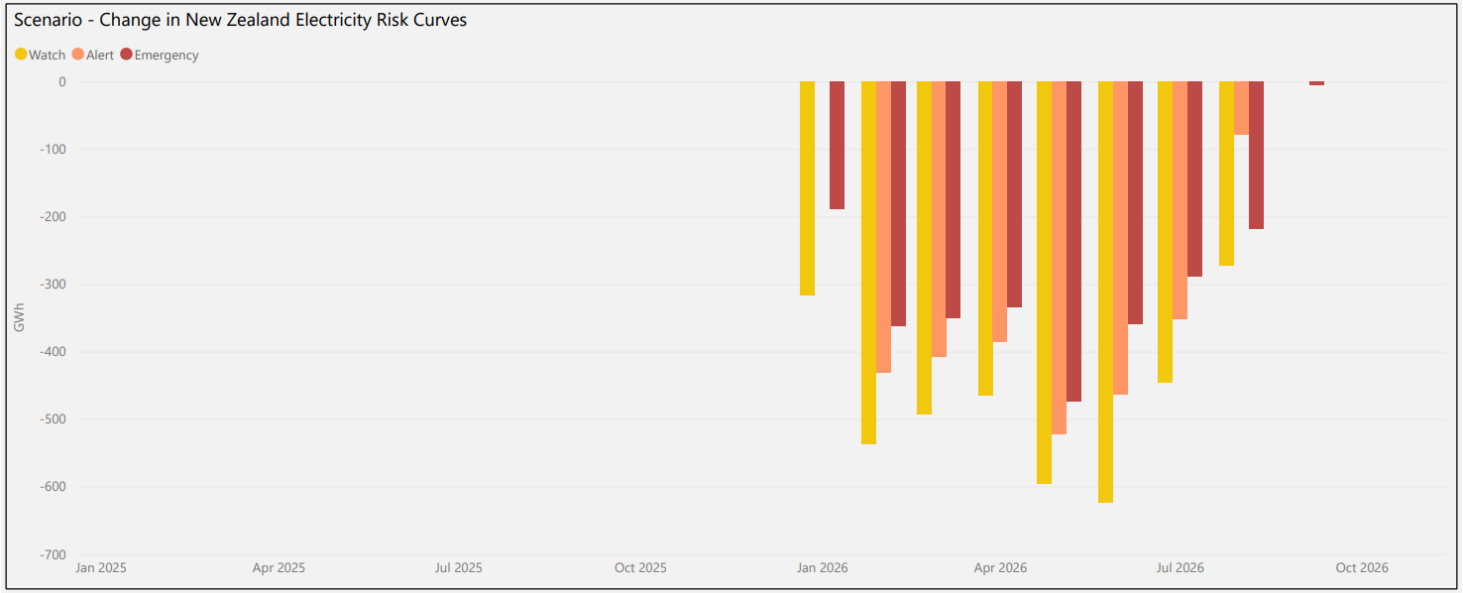
SSTs (93 total) crossing NZ:

	Watch	Alert	Emergency
2025	0	0	0
2026	0	0	0

Decreases of up to:

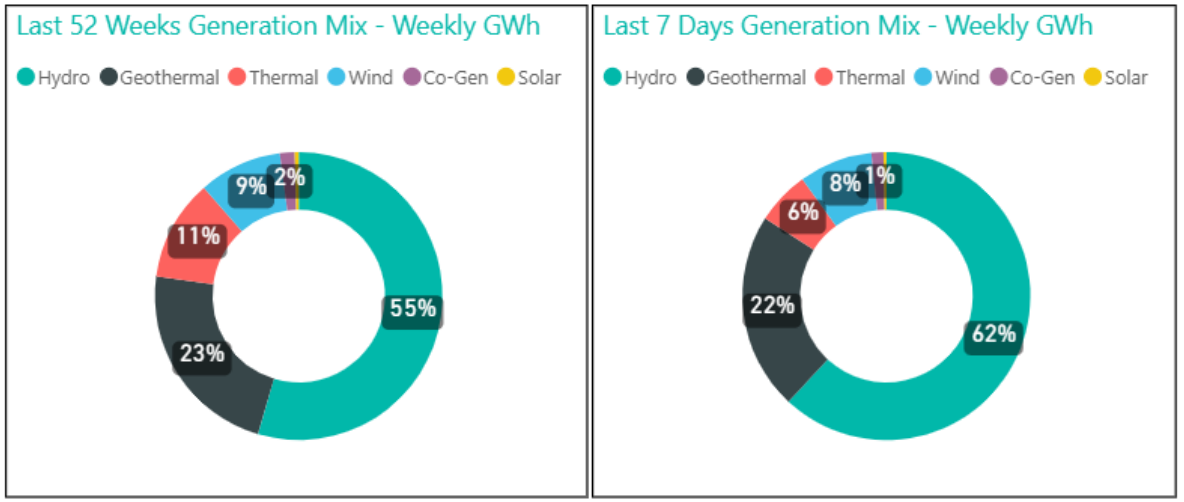
- ~623 GWh Watch (June 2026)
- ~473 GWh Emergency (May)

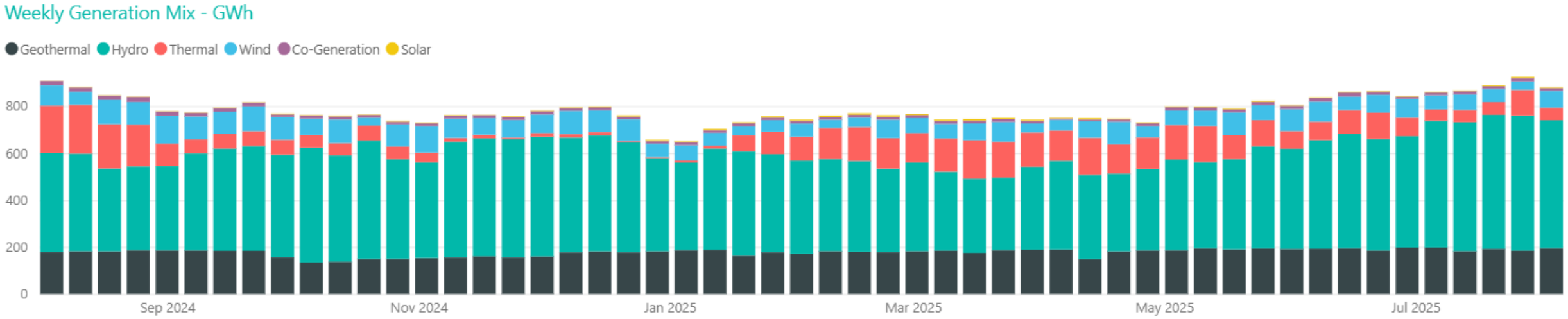




Generation mix

- Hydro generation remains above average.
- Low thermal share with low average prices.
- Wind and geothermal contribution just below average at 8% and 22% respectively.

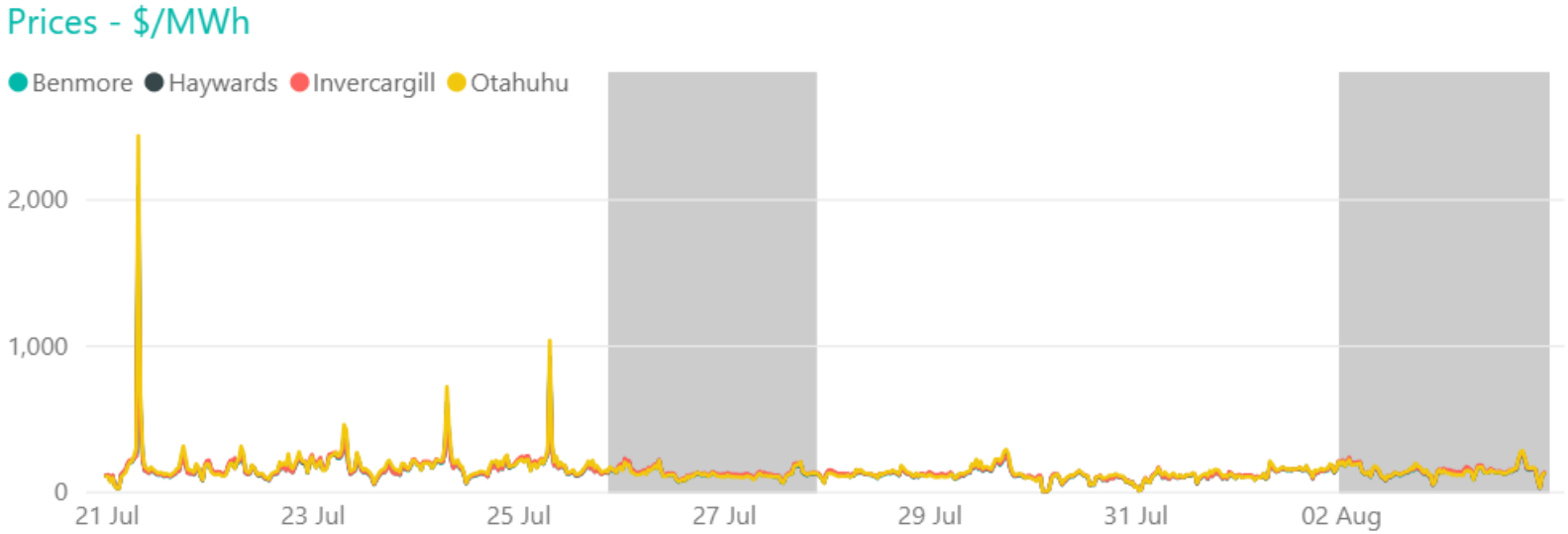


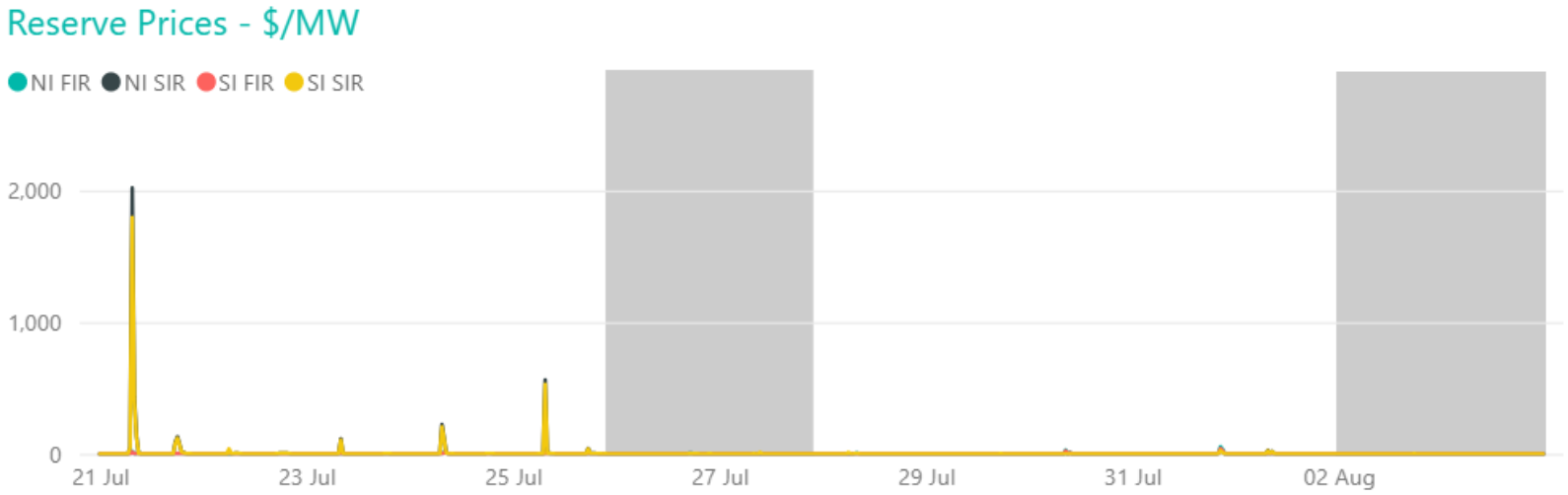


Pricing

- Average Ōtāhuhu price was $126/MWh last week, and $169/MWh the week prior.

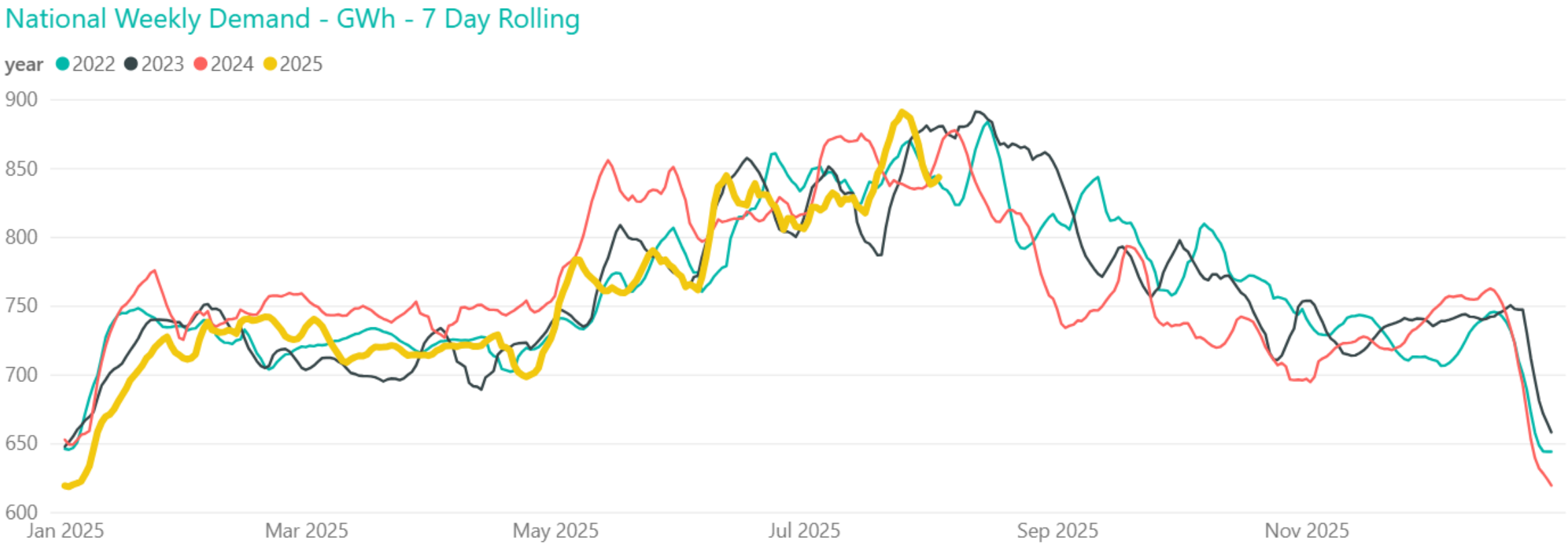
- Wholesale prices peaked at $2,431/MWh at Ōtāhuhu on 21 July during a period of low wind and tight residual in real-time.





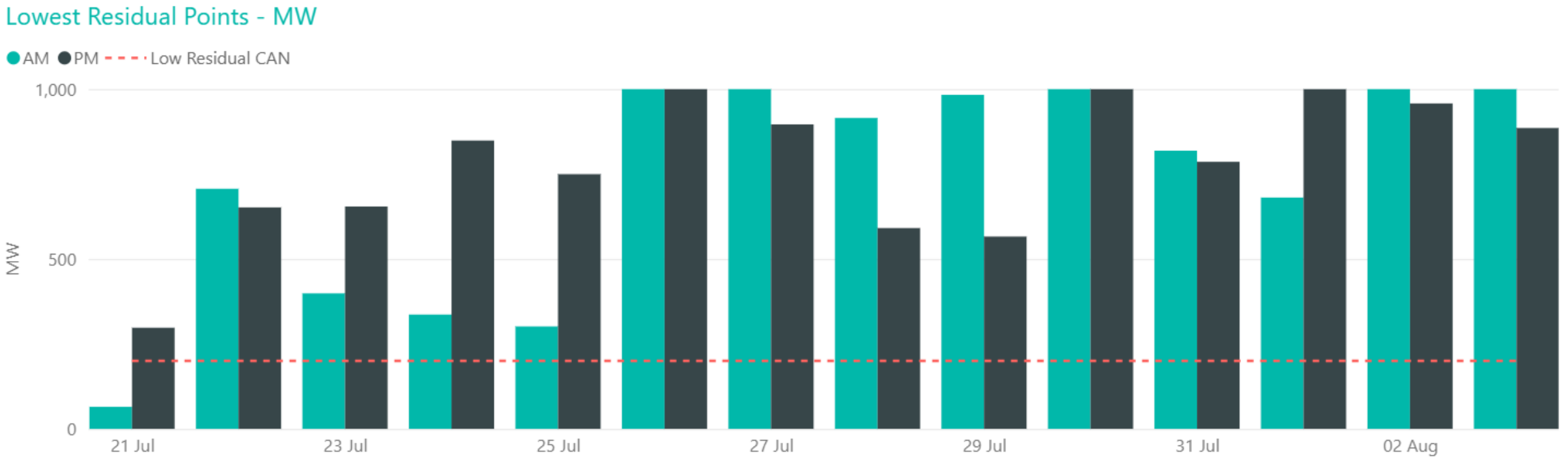
Demand

- Demand has increased since the previous forum.
- Temperatures dropped significantly last week, highest weekly demand since 2022.
- 842 GWh last week, down from 886 GWh the week prior.

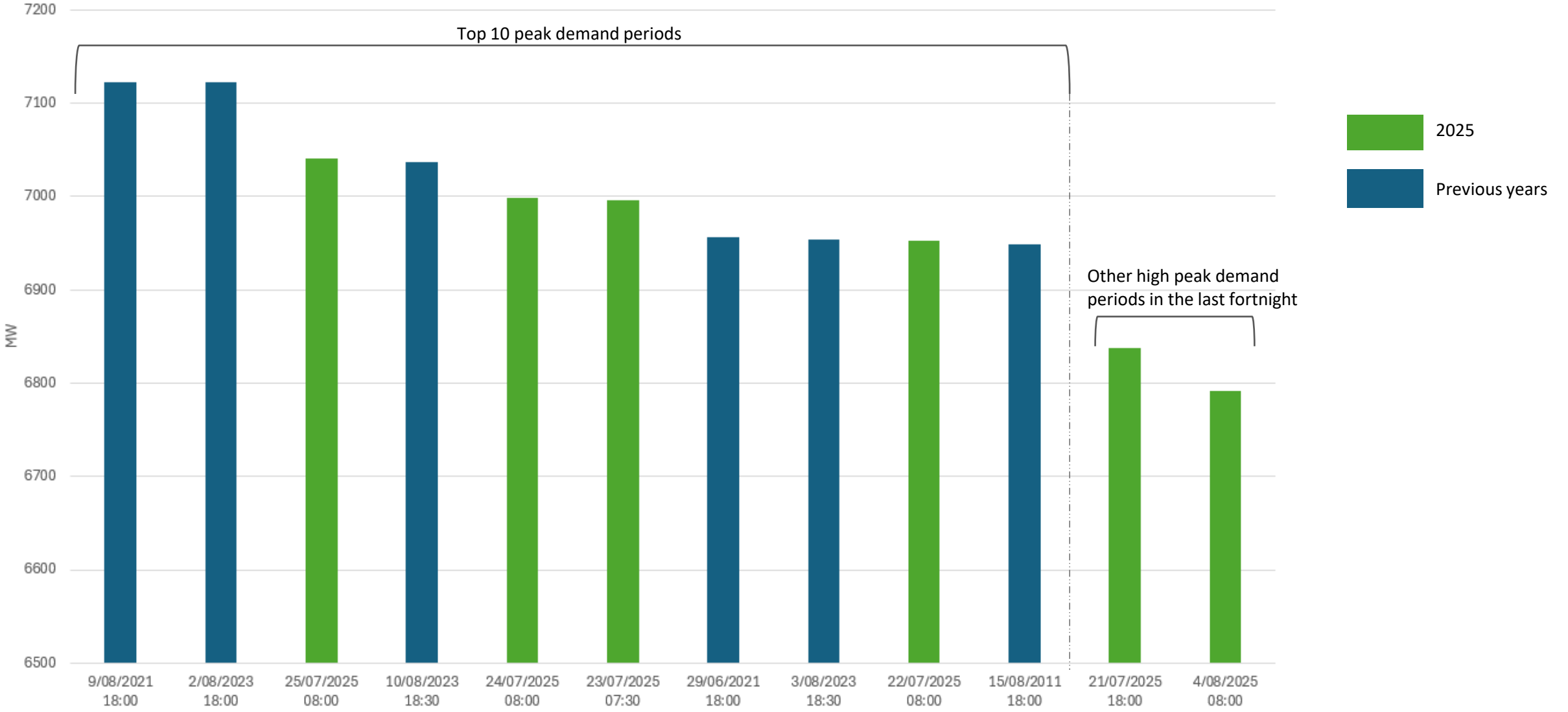


Capacity residual margins

- Residuals have been dropping with significantly colder temperatures, very high load, and sometimes low thermal unit commitment.
- Lowest residual was 65 MW on Monday 21 July, coinciding with the highest load of the year up to that point.



Peak demand

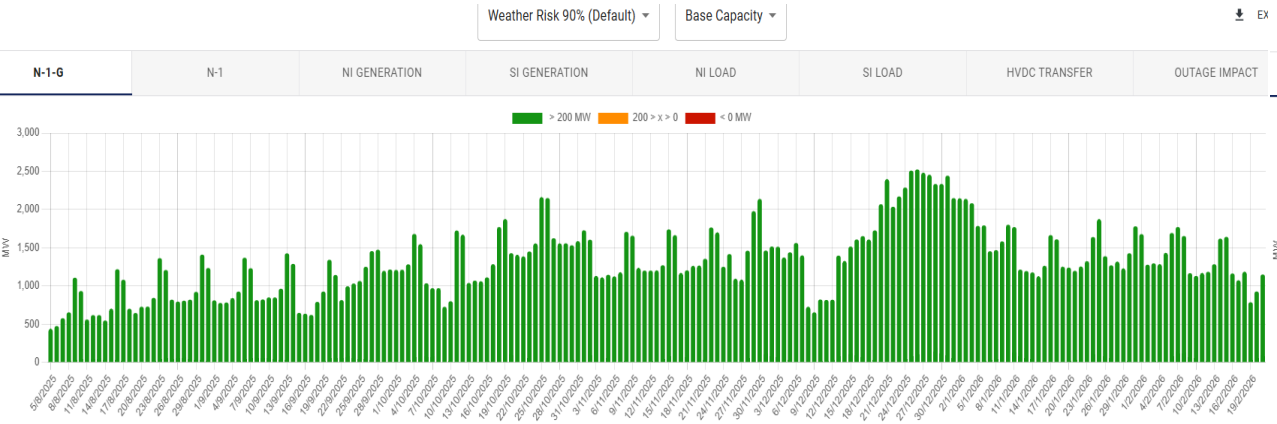

Top 10 peak demand periods
Other high peak demand periods in the last fortnight
MW
7200
7100
7000
6900
6800
6700
6600
6500
9/08/2021 18:00
2/08/2023 18:00
25/07/2025 08:00
10/08/2023 18:30
24/07/2025 08:00
23/07/2025 07:30
29/06/2021 18:00
3/08/2023 18:30
22/07/2025 08:00
15/08/2011 18:00
21/07/2025 18:00
4/08/2025 08:00
2025
Previous years

NZGB update

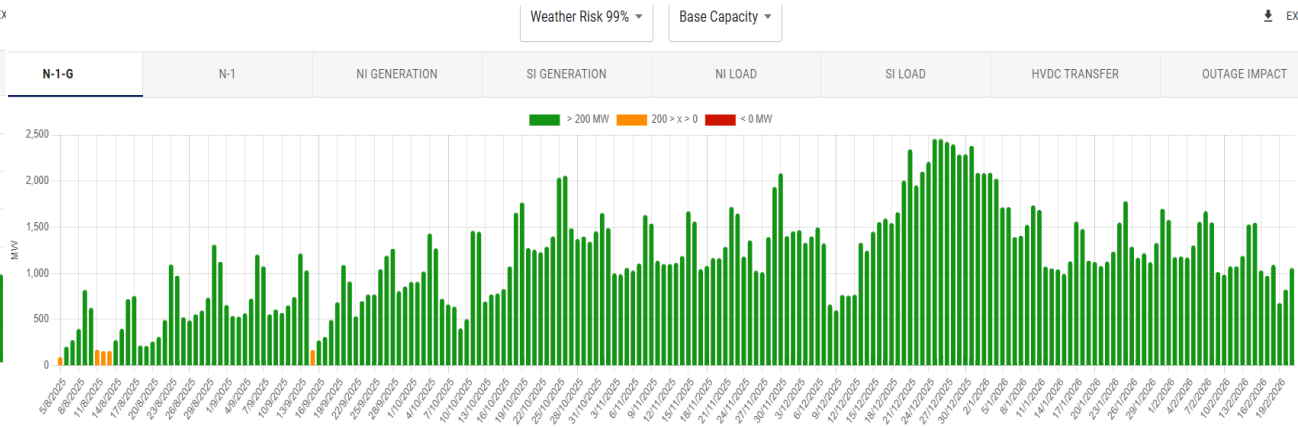
NZGB update: base capacity N-1-G

- N-1-G margins are currently showing healthy values
- Under the 99th percentile load, which we would expect under a winter cold snap, the margins drop to low values close to zero

Base case capacity at 90%
- ***This triggers the CAN process***
- Assumes all generation available in POCP is offered
- It uses 20% of total wind capacity



90th percentile load

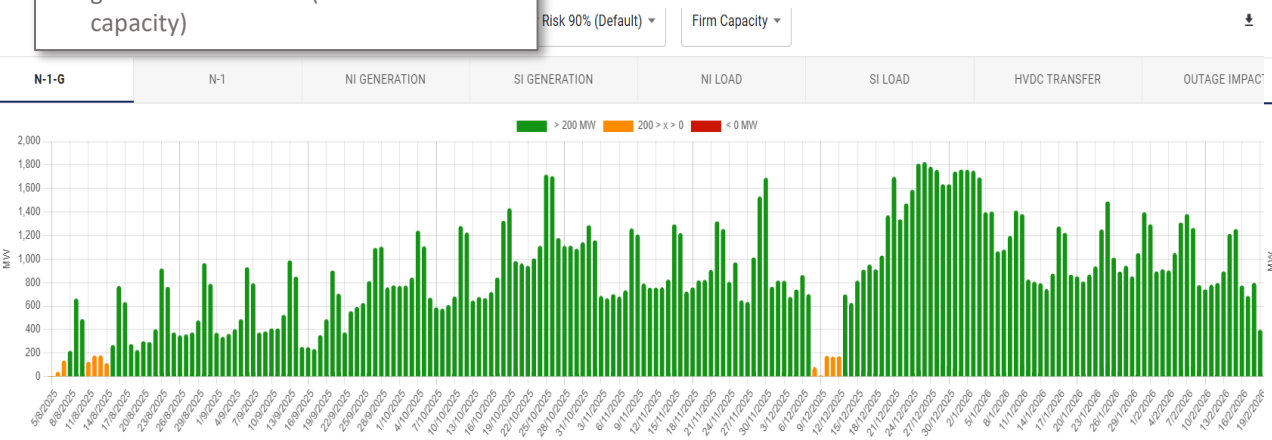


99th percentile load

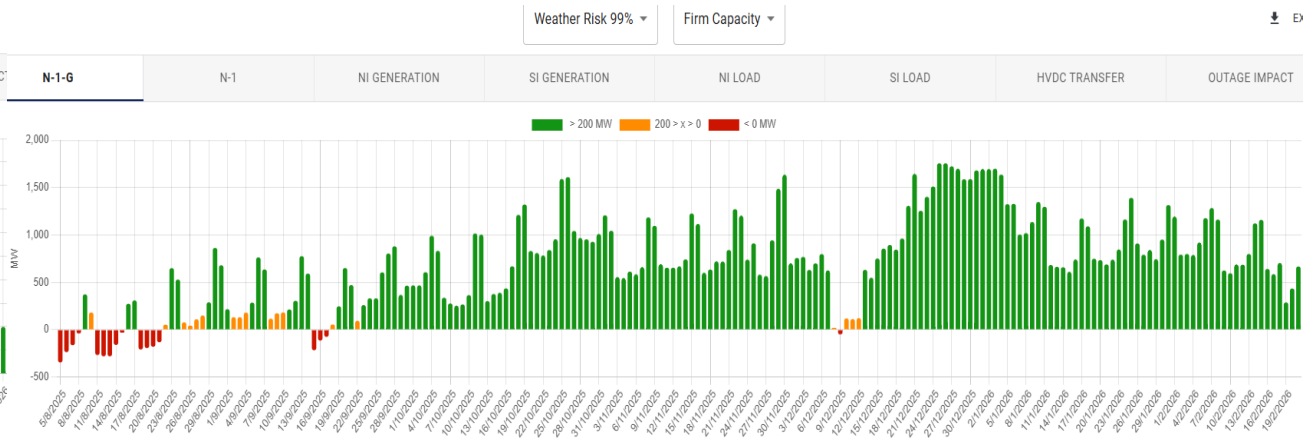
NZGB update: firm capacity only N-1-G

- Firm capacity scenario reflects units that historically operate for at least 90% of AM & PM peaks
- The potential shortfalls and low margin periods highlight the potential reliance on these units to be available to cover N-1-G
- This means we are relying on the market to coordinate especially slow starting thermal units, to get through peak load periods

Firm capacity removes
- TCC (-360MW) all months,
- 1 HLY Rankine over winter months June to November, and 2 Rankines over the remaining months
- It uses the lowest 10th percentile generation for wind (8% of total capacity)



90th percentile load



99th percentile load

NZGB update: Information

Additional generation type added to NZGB:

- BESS is now included with the first two sites added
  - Rotohiko
  - Ruakākā

Recommendations from SO:

- Avoid further outages on periods with low margins
- Market coordination is required from industry to ensure available generation capacity remains high to cover potential cold snaps
- Keep POCP updated with scheduled or tentative outages
- Keep the WDS up to date with the latest offers
- Any other information on plant availability, please get in touch with SO

Outage update

Outage Assessments on POCP

System Operator published 4 outage assessments on POCP for the following outages:

Outage	Date
Islington-Tekapo-B 1	01 September – 7 September
Ashburton-Islington 1	08 September– 12 September
Ashburton-Islington 1	15 September – 19 September
Islington- Norwood 1	29 September – 03 October

The outage assessments highlight some upcoming tighter periods due to transmission outages reducing the post-contingent voltage stability margin.

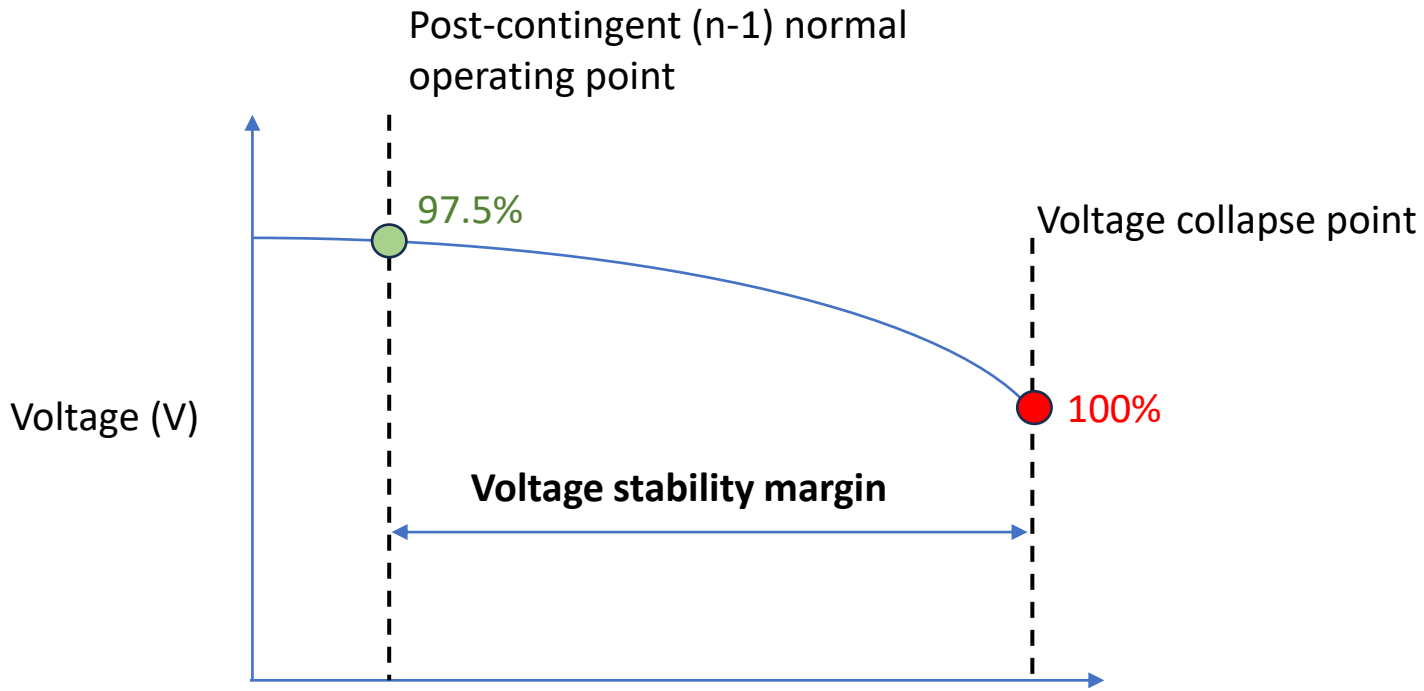
4 associated CANs were published to notify industry of these assessments.

Next steps

Transpower will be in touch with the relevant industry participants to obtain any agreements required to maintain the voltage stability margin within limits (through our usual processes)

Voltage stability margins

- The power system is usually operated to 97.5% of the voltage stability limit (*voltage collapse point below*)
- In other words, the Voltage Stability Margin is 97.5% of the voltage stability limit
- If this margin is exceed (>97.5%), the power system is at risk of potential voltage collapse

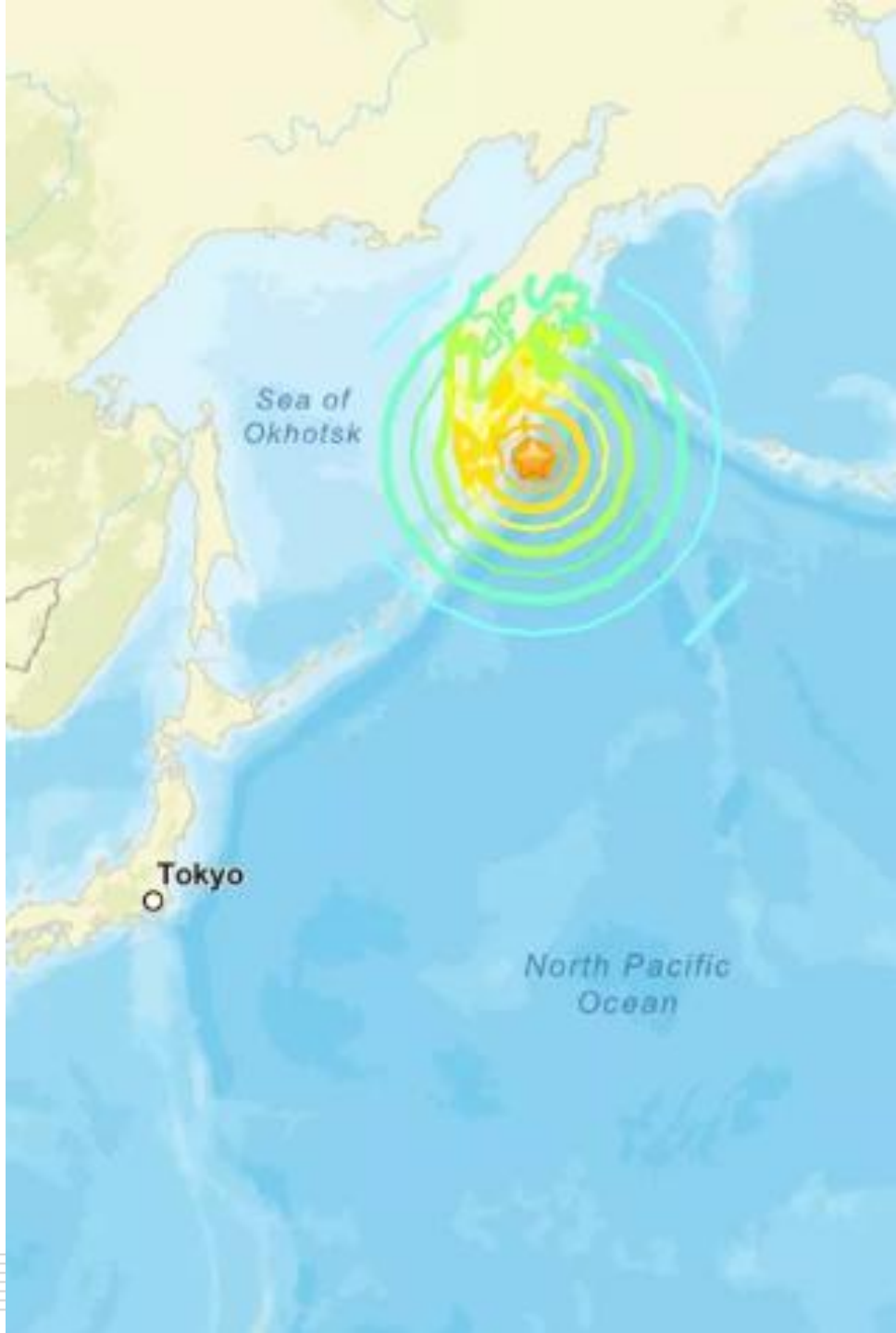


Simplified P-V curve

Operational update

Tsunami Risks

- 8.8 Magnitude Quake in North Pacific on 30-July
- Tsunami warnings issued by NEMA for New Zealand
- Key risk areas include Tiwai Point, Bream Bay/Marsden, HVDC cable terminations at Oteranga Bay and Fighting Bay
- Procedures for managing these low lying Transpower Assets include:
  - Arm OFR for a loss of Tiwai Smelter load
  - Reclassifying HVDC Bipole as a Contingent Event risk
  - System splits in Northland to minimise the impact of a loss of BRB/MDN
- No pre-event action taken, but NEMA alerts were monitored closely



Standby Reserve Shortfall Notices

Standby Reserve Shortfall Notices

- Energy - if we had the "N-1" event can we restore energy post-event?
- Capacity - if we had the "N-1" event can we restore energy AND reserves ("N-1") post-event?
- Earlier signal of potential risks than low residual
- Will tend to be more SRC notices than low residuals – issued from 36 hours out based on triggers:
  - > 100 MW for capacity shortfalls
  - > 1 MW for energy shortfall

Forecast Standby Reserve shortfall for 05-Aug-2025, 06-Aug-2025

W wits@nzx.com
To **CAN Energy Traders**

Reply | Reply All | Forward
Tue 5/08/2025 6:38 AM

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If there are problems with how this message is displayed, click here to view it in a web browser.

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Forecast Standby Reserve shortfall for 05-Aug-2025, 06-Aug-2025

The System Operator advises participants that the Standby Residual Check (SRC) forecasts a Standby Reserve shortfall for the following trading periods:

			Energy Shortfall			Capacity Shortfall		
Market Day	**Time**	**Period**	**NI**	**SI**	**NZ**	**NI**	**SI**	**NZ**
05-Aug-2025	18:00	37			49.1			49.1
05-Aug-2025	18:30	38			18.2			18.2
06-Aug-2025	07:30	16			23.3			23.3
06-Aug-2025	08:00	17			123.9	120.5		130.3

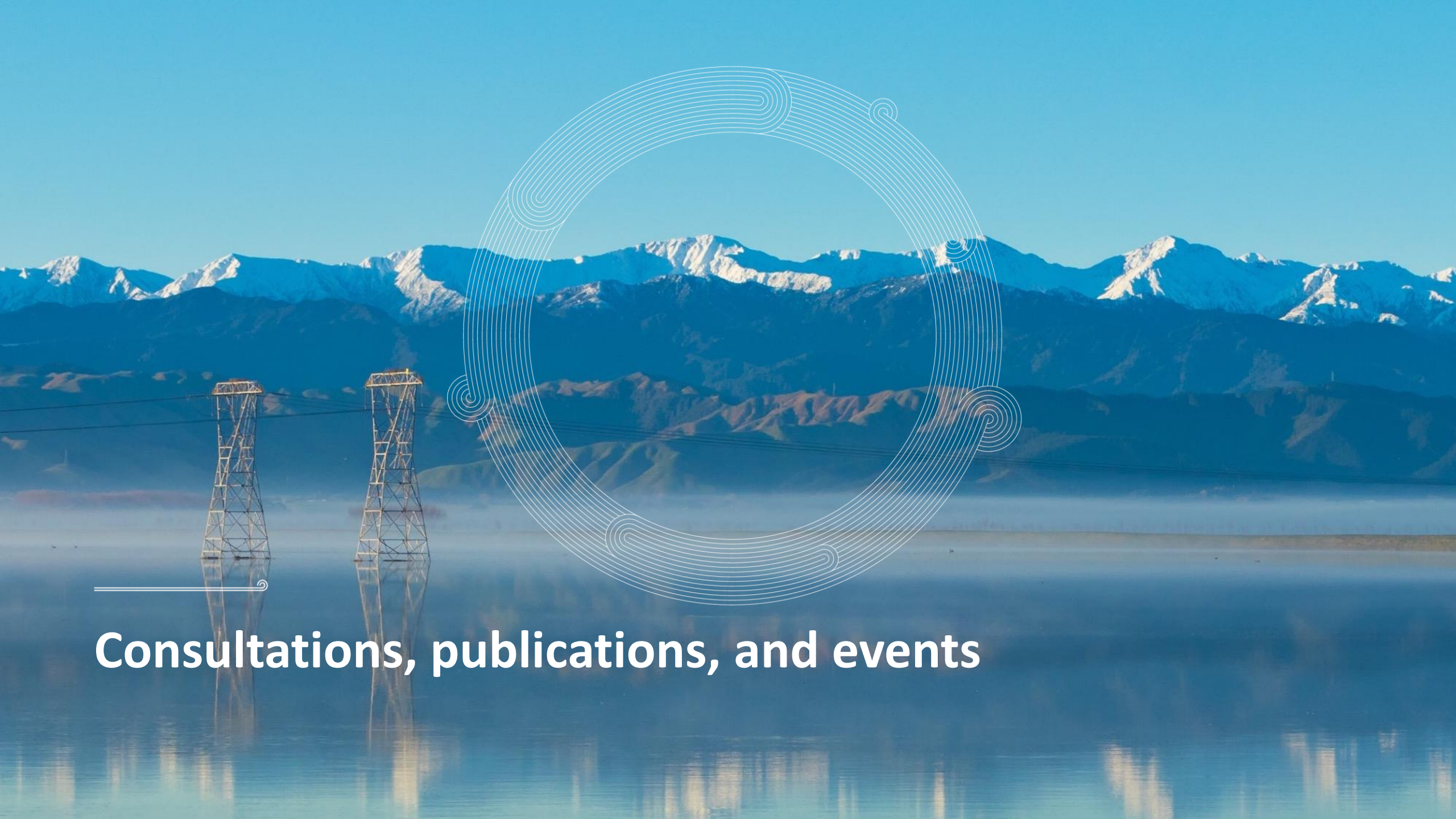
Schedule Details: NRSL 05-Aug-25 06:10:02

Following a contingent event:
- There may be insufficient generation reserve available for the System Operator to re-dispatch the system to a secure state (i.e. manage a subsequent contingent event).
- Demand management may be required

This situation can be alleviated by participants revising their demand and generation offers for those trading periods.

Note: Notices will only be sent where at least one trading period has a capacity shortfall more than or equal to 100MW, or at least one trading period has an energy shortfall more than or equal to 1MW.

Please check the WITS Standby Residual display for more details.



Consultations, publications, and events

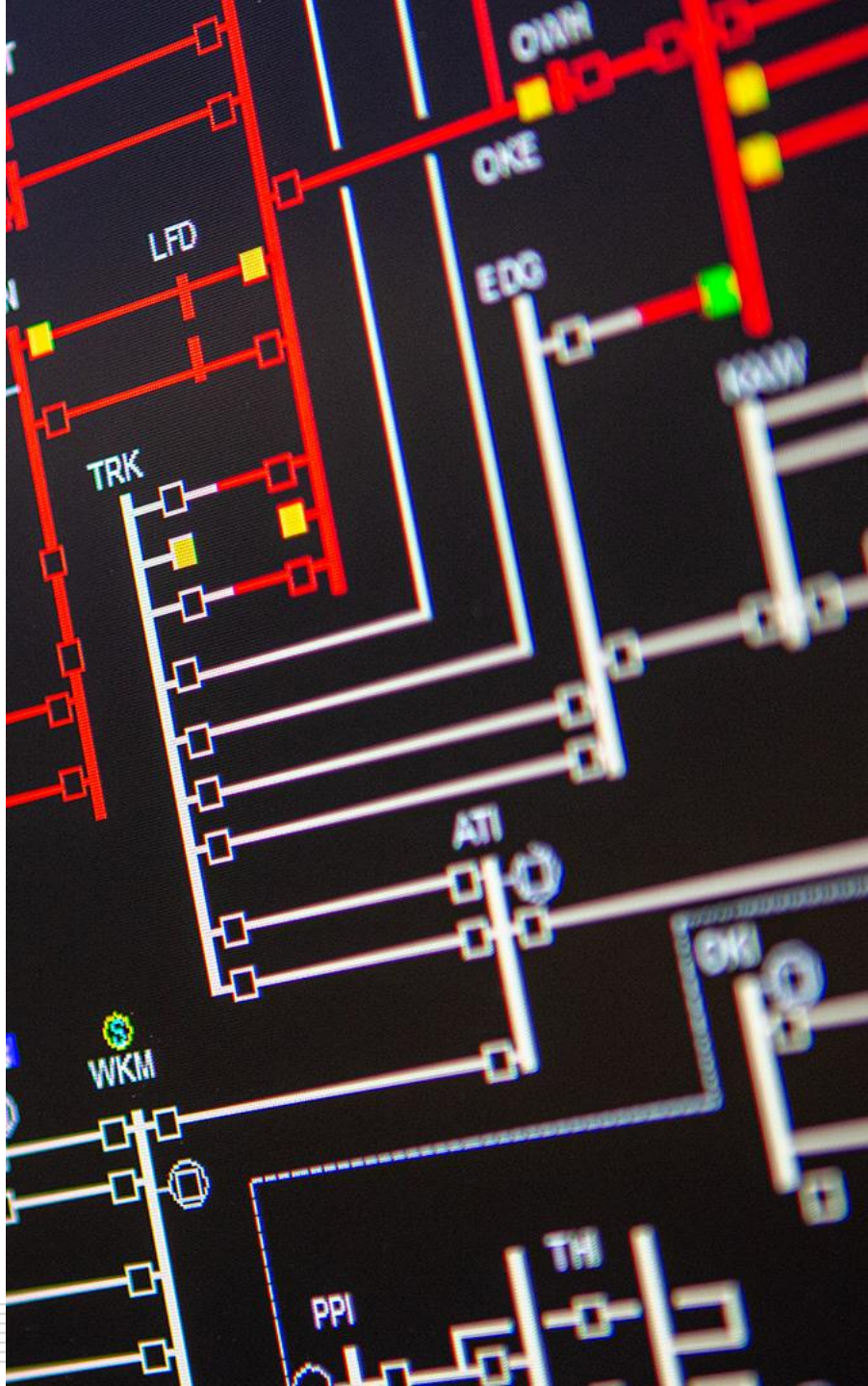
Consultations, publications, and events

Our consultation on **Tie breakers provisions** is currently open, submissions are due by Thursday 14 August, followed by a period for cross submissions.

The updated **Ancillary Services Procurement Plan** has now been approved by the EA following our recent review and consultation.

Our latest **Quarterly Security of Supply Outlook** and the **July Energy Security Outlook** are available on our website.

The **Hawke's Bay regional restoration workshop** is on this Thursday 7 August in Hastings.



Any questions
Please raise your hand