Market Operations Weekly Report - Week Ended 17 August 2025

Overview

New Zealand hydro storage remains below average, at 83% of the mean for this time of year. Capacity margins were relatively healthy last week with over 700 MW of residual during all peak demand periods.

This week's insight provides an overview of the difference between conforming and non-conforming grid exit points.

Security of Supply

Energy

New Zealand hydro storage remains below average for this time of year, dropping sharply from 90% of the historic mean to 83% over the past week following inflows that were lower than average. South Island hydro storage dropped from 84% to 78% of historic mean and North Island storage decreased from 128% to 117%.

Capacity

Capacity margins were relatively healthy last week with residual at all peaks exceeding 700 MW. The lowest residual occurred on the morning of 14 August, at 733 MW. This coincided with the highest demand peak during the week.

The N-1-G margins in the NZGB forecast are healthy through to mid October. Within seven days we monitor these more closely through the market schedules. The latest NZGB report is available on the NZGB website.

Electricity Market Commentary

Weekly Demand

Total demand last week decreased slightly from 884 GWh the week prior to 876 GWh. The highest demand peak occurred at 7:30am on Thursday 14 August, at 6,843 MW which was 45 MW lower than the previous week's highest peak.

Weekly Prices

The average wholesale electricity spot price at Ōtāhuhu last week increased to $196/MWh from $161/MWh the week prior in line with low wind generation and increased thermal. Wholesale prices peaked at $293/MWh at Invercargill at 5:30am on Monday 11 August.

Generation Mix

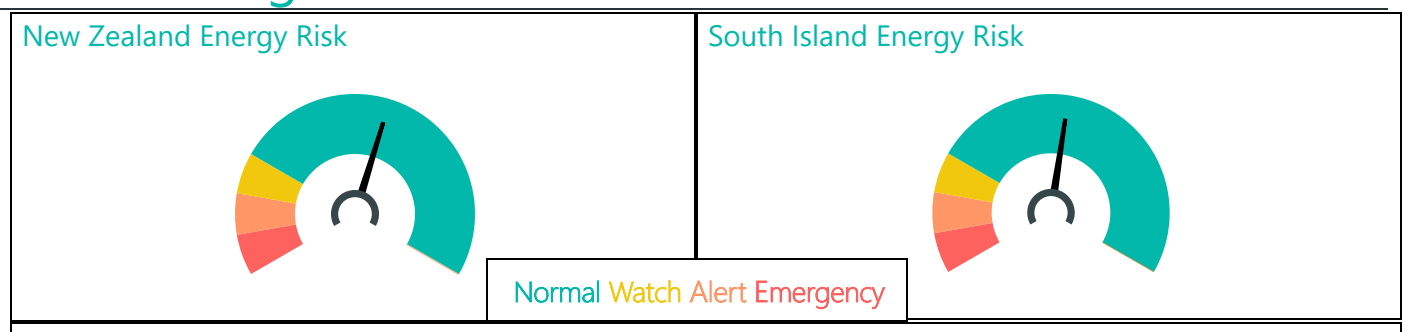
Hydro generation contributed 60% of the generation mix last week, 1% higher than the previous week. Wind generation decreased from 9% to 4% of the mix, significantly below its average contribution. Thermal generation increased from 9% to 12% with lower wind generation. The geothermal share remained close to its average level at 22% of the mix.

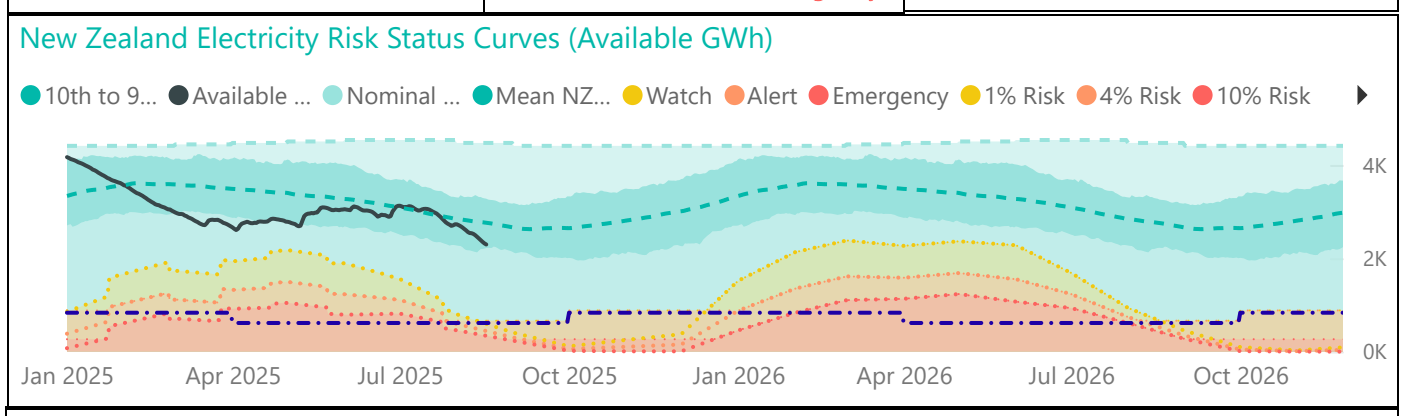
HVDC

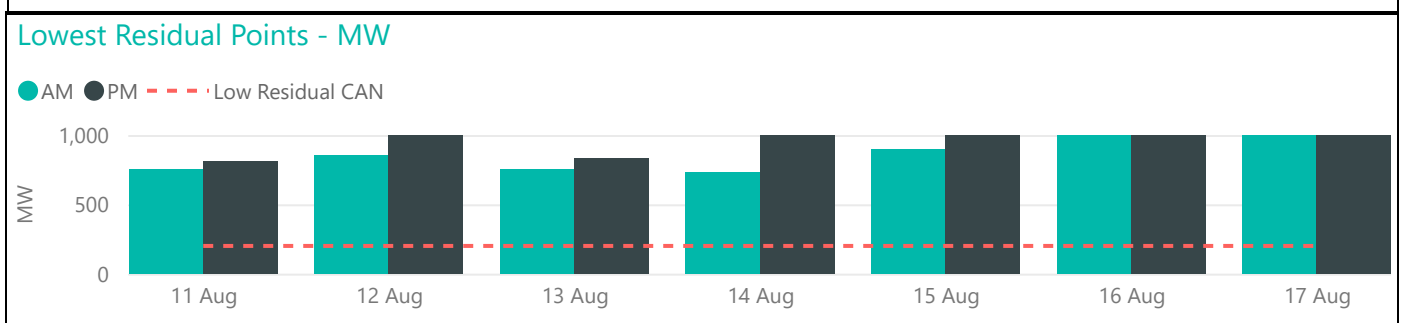
HVDC flow last week was predominantly northward with overnight periods of southward flow coinciding with periods of lower North Island demand. In total, 47 GWh was sent north and 5 GWh was sent south.

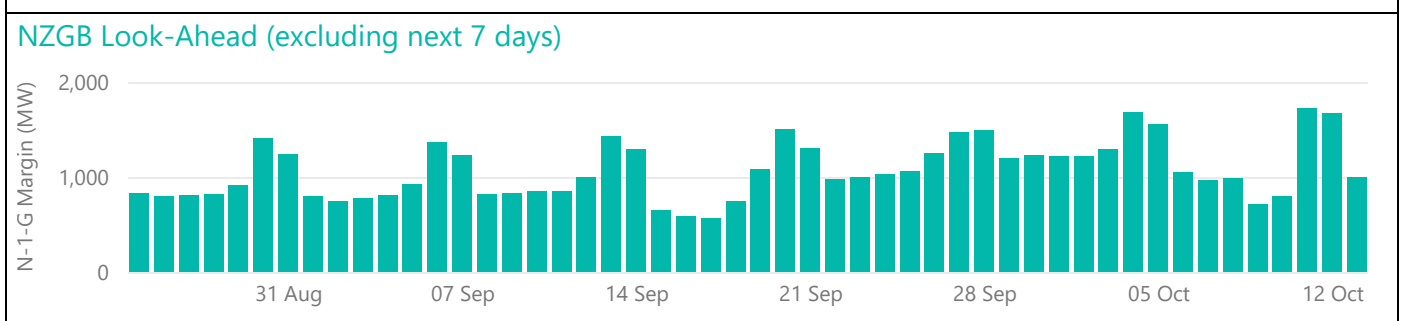
Evolving market resource co-ordination: Tie-breaker provisions consultation

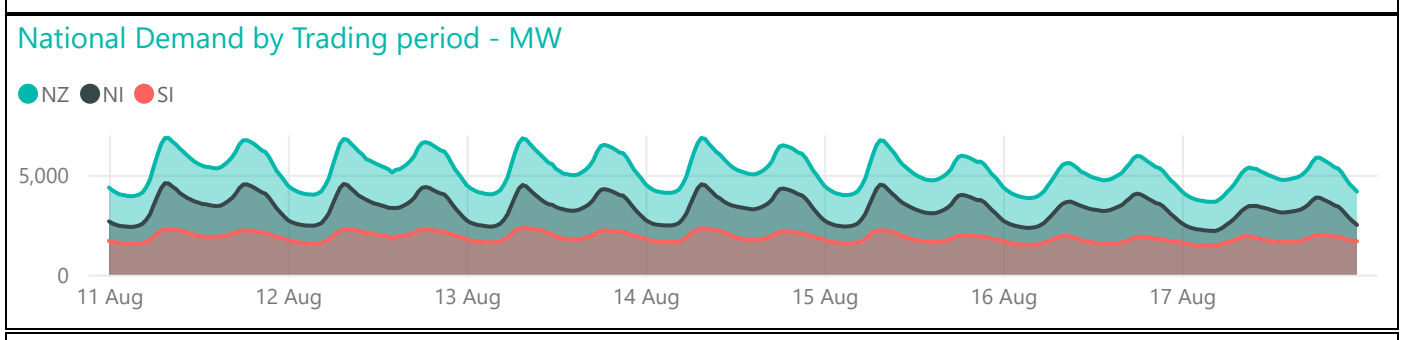
On 14 July, Transpower in its role as System Operator published a consultation asking for feedback on how tie-breaker situations should be resolved for multiple competing generator offers in the wholesale electricity market. See consultation pack here. We received 7 submissions to our consultation which are available on our website. We are now in a period of cross submissions which closes at 5pm this Thursday 21 August.

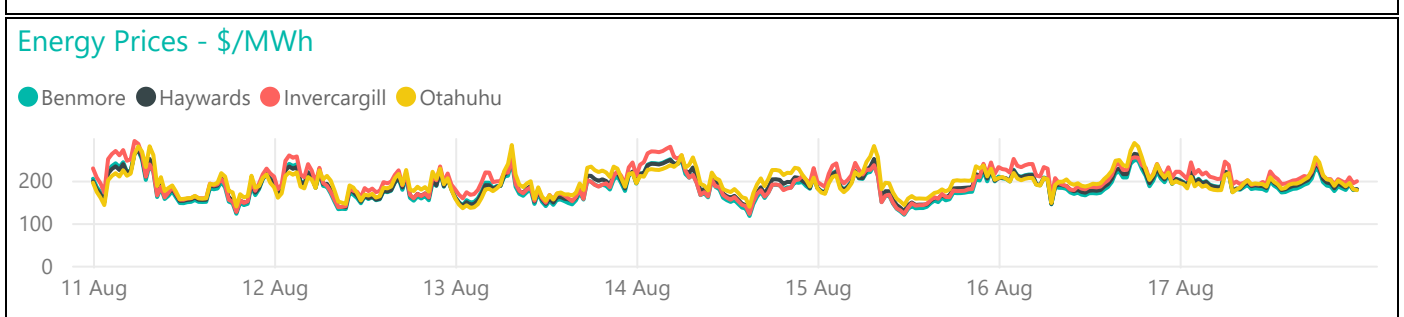


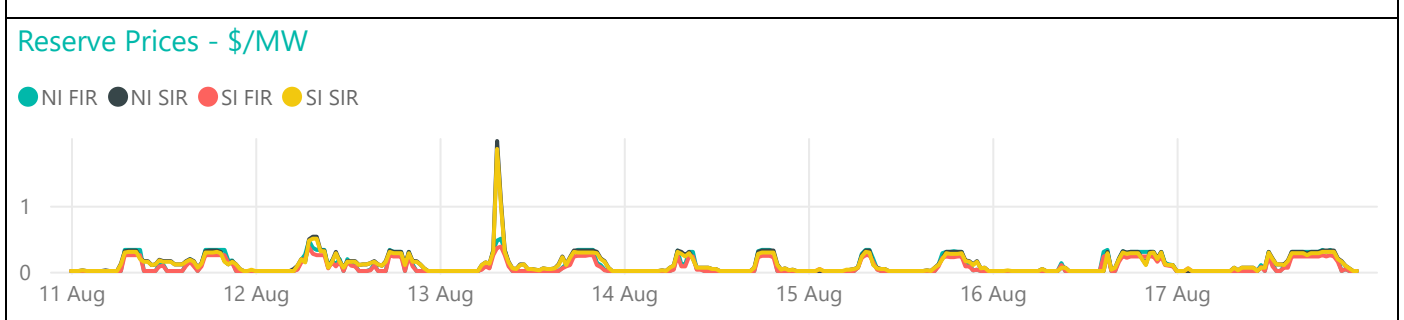


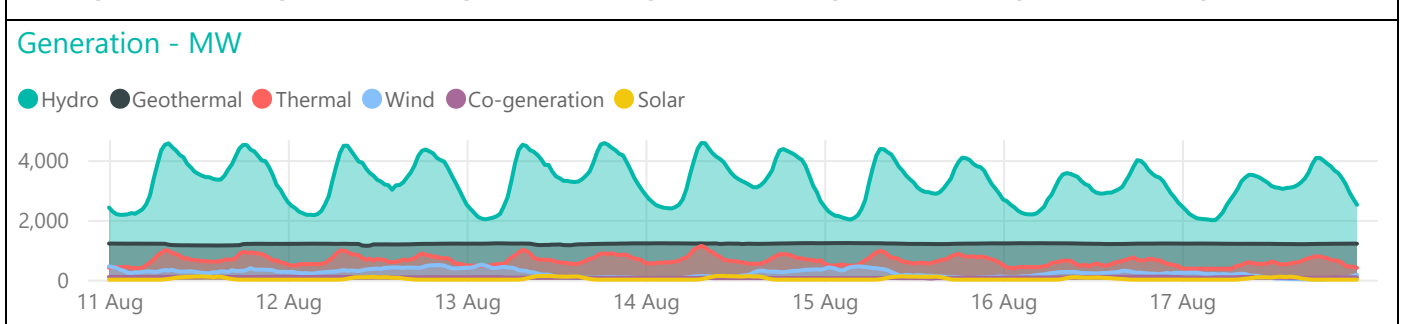


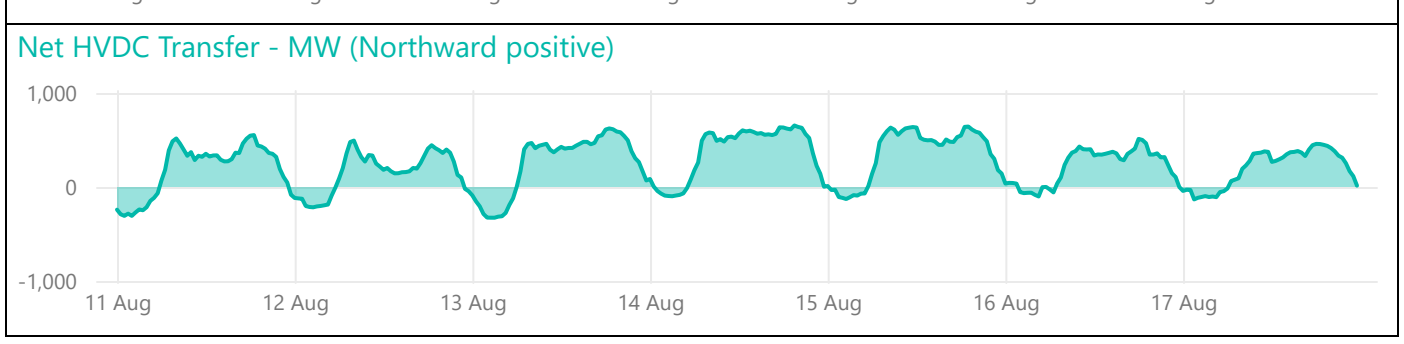








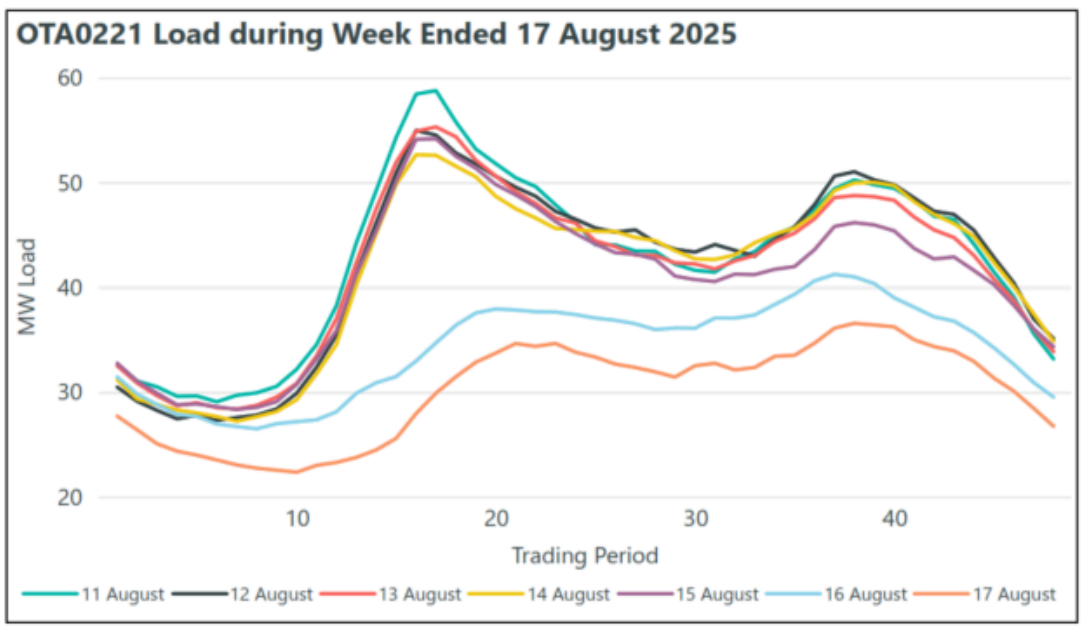


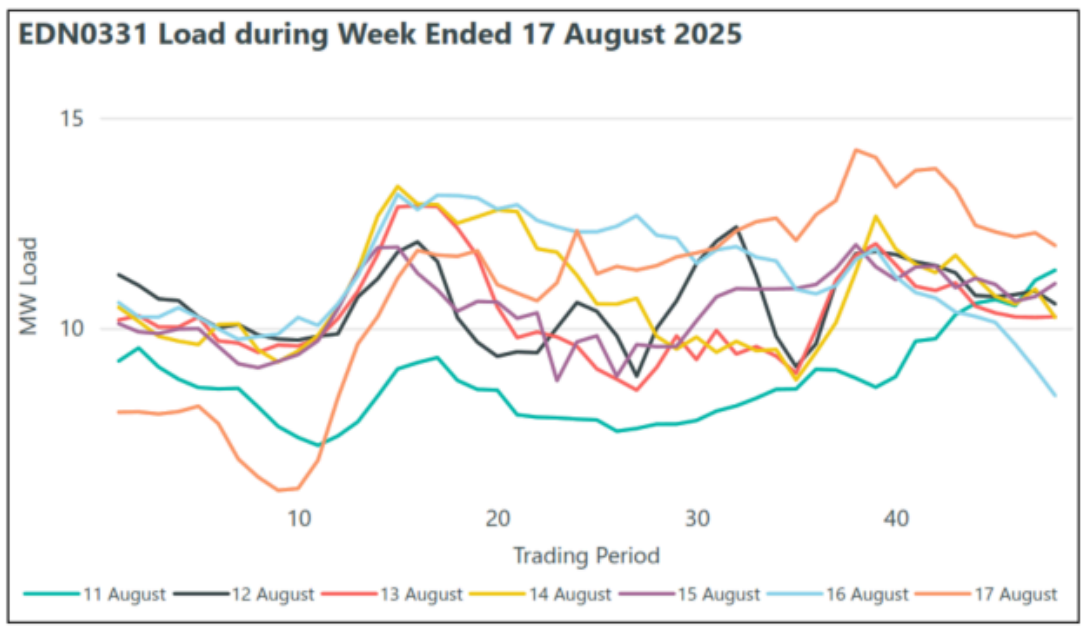


Weekly Insight - Difference between conforming and non-conforming grid exit points

Earlier this month the Electricity Authority reclassified the grid exit point (GXP) at Edendale (EDN0331) from conforming to non-conforming. The classification will come into effect on 8 September 2025. This week's insight provides an overview of the difference between conforming and non-conforming GXPs.

The charts below compare load profiles last week at Ōtāhuhu (OTA0221), a conforming GXP we usually refer to in our weekly report, with EDN0331 which was recently re-classified as non-conforming.





Load at conforming GXPs follows a predictable pattern, which tends to be driven by heating or lighting in residential or commercial areas. On a typical weekday at a predominantly residential GXP, electricity demand starts with an overnight low, then peaks in the morning as people get ready for their day. Around the middle of the day demand drops off before peaking again in the evening when people come home and turn on their heating devices or start cooking. On weekends and public holidays, demand at conforming GXPs is usually lower with less commercial activity, and people following different routines at home. This can be seen in the lower load profiles on 16 and 17 August at OTA0221. A conforming load forecast can be determined by correlating historical load with historical weather patterns. This is used as a key input in calculating the market schedules.

In comparison, load at a non-conforming GXP has a less predictable pattern and is therefore more difficult to forecast by an external forecast model, as used for conforming loads. Typically, these GXPs supply large electricity users whose consumption patterns are driven by industrial processes, for example Fonterra's site at EDN0331. Non-conforming load is better understood by the industrial or agricultural purchasers at these locations, hence each purchaser of load is required to provide their own load forecast over the next 36 hours, submitted as nominated bids through the Wholesale Information and Trading System (WITS). Each bid at a non-conforming GXP is aggregated up to provide a total forecast of load at the GXP in half hour trading periods.

The total load forecast used in forming the market schedules includes both conforming and non-conforming load.

The table below provides a summary of the key differences between conforming and non-conforming grid exit points. The Electricity Authority has published its criteria for determining non-conforming and conforming GXPs, which is available here.

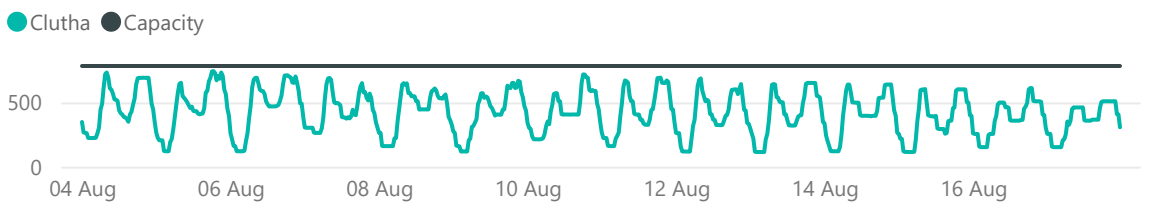
Conforming GXPs	Non-conforming GXPs
Demand pattern: Predictable daily demand. Forecasting: Forecasted by the System Operator. Bids: Purchasers do not need to submit nominated bids. They may submit difference bids to reflect expected deviations based on real-time price signals. [1]	Demand pattern: Unpredictable or irregular daily demand. Forecasting and Bids: Purchasers must submit their own forecast via nominated bids for market scheduling.

[1] If a Low Residual Customer Advice Notice (CAN) is issued, electricity distribution businesses (EDBs) are required to submit difference bids.

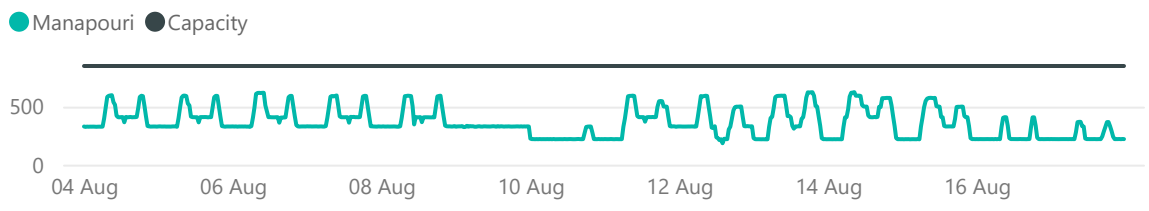
Generation Breakdown - Last Two Weeks

Measured in MW and displayed at trading period level for last 14 days

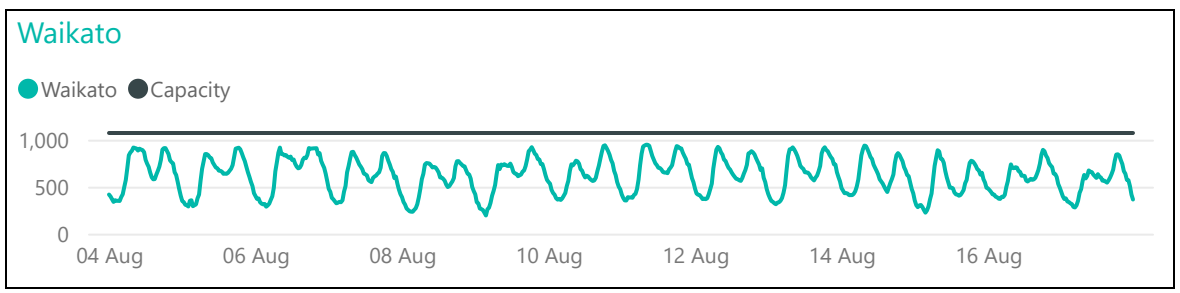
Clutha



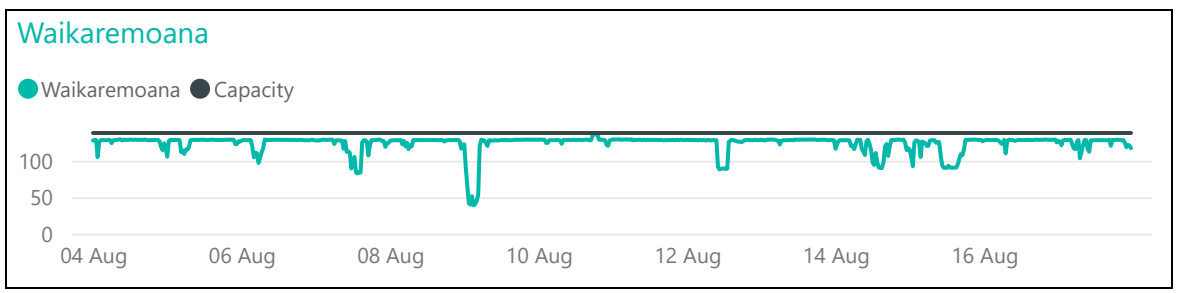
Manapouri



Waikato

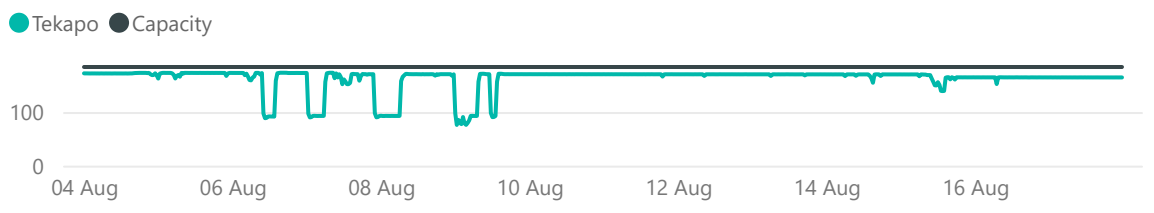


Waikaremoana

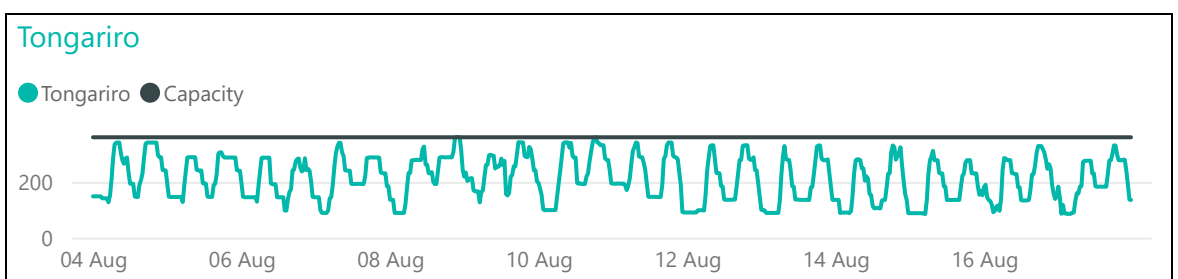


Waitaki

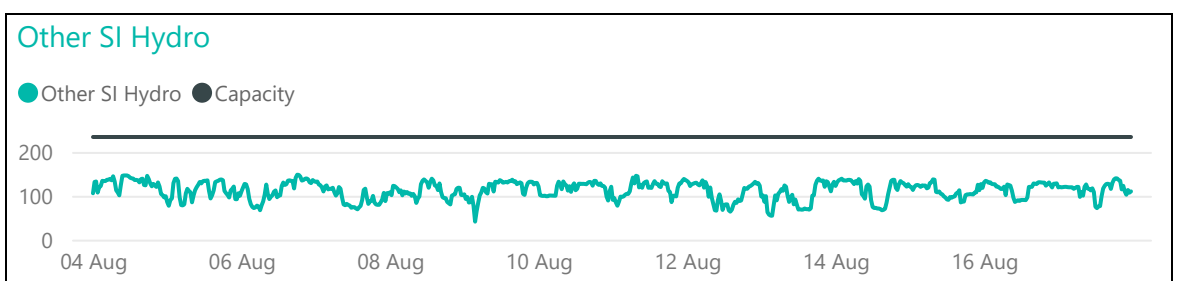
Tekapo



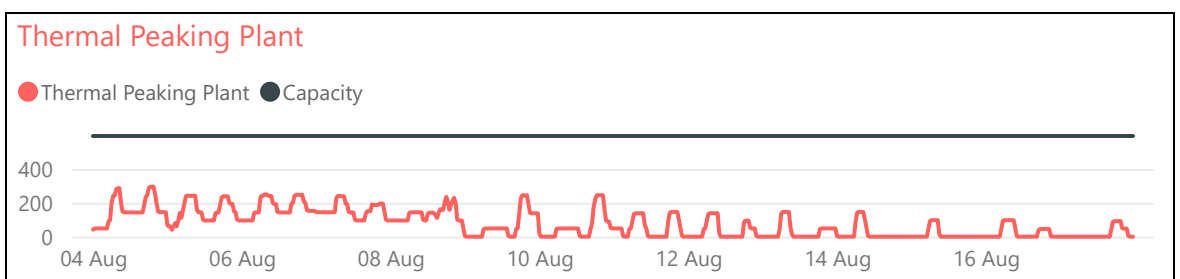
Tongariro



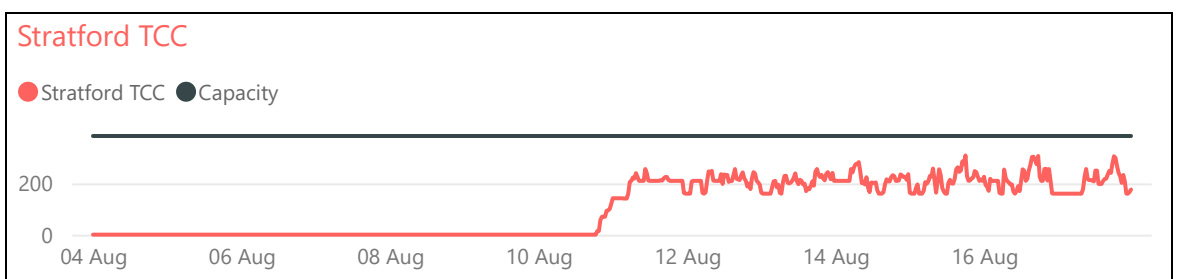
Other SI Hydro



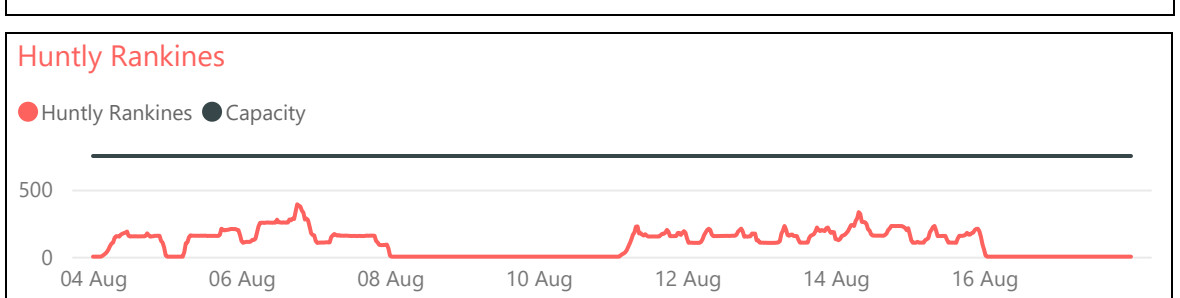
Thermal Peaking Plant



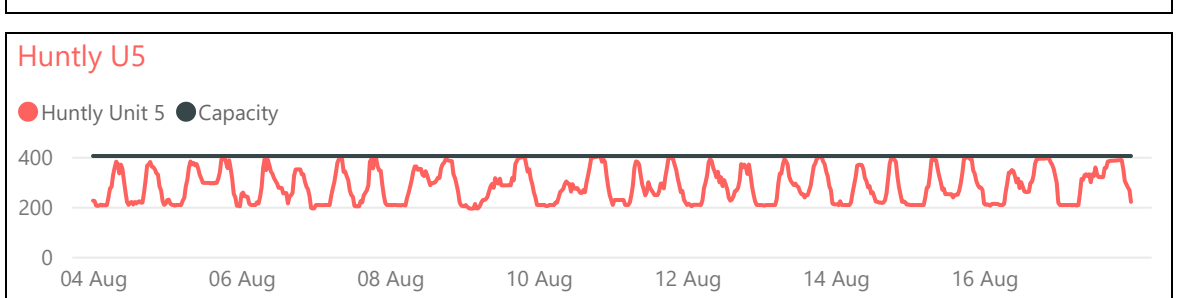
Stratford TCC



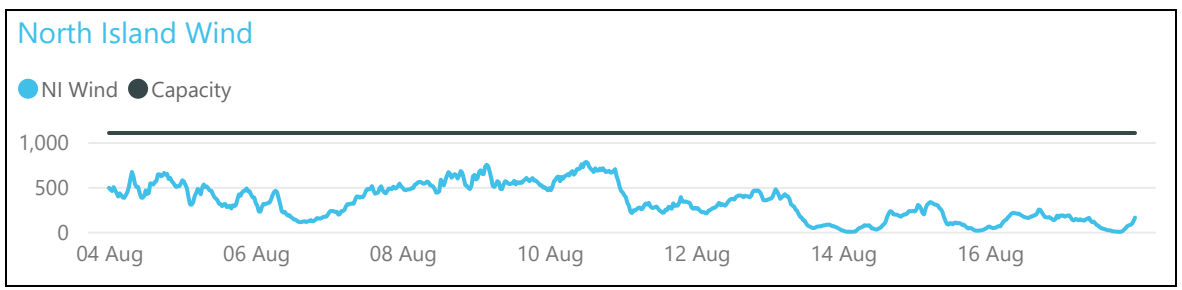
Huntly Rankines



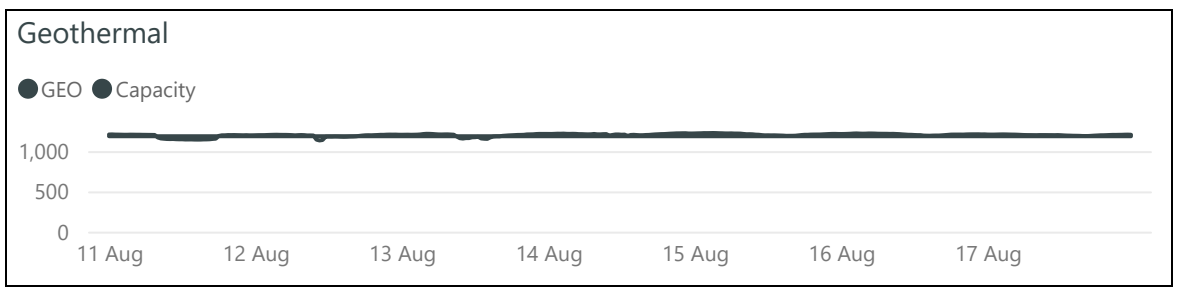
Huntly U5



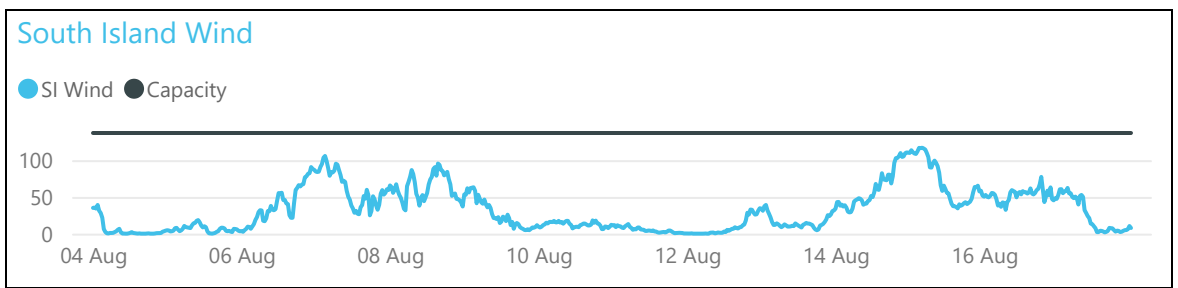
North Island Wind



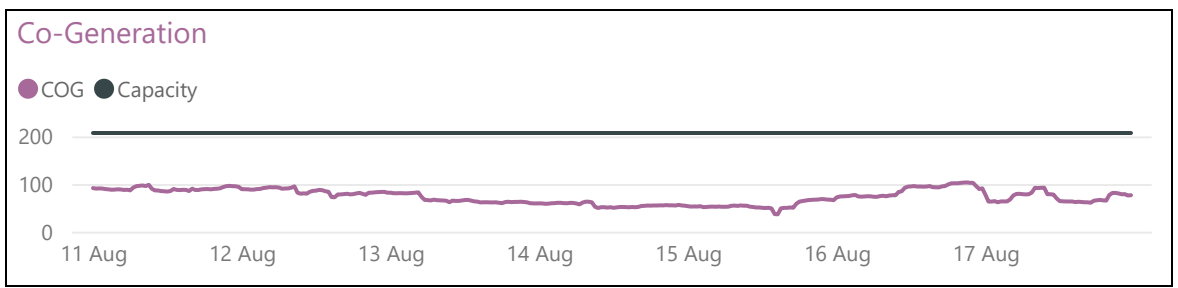
Geothermal



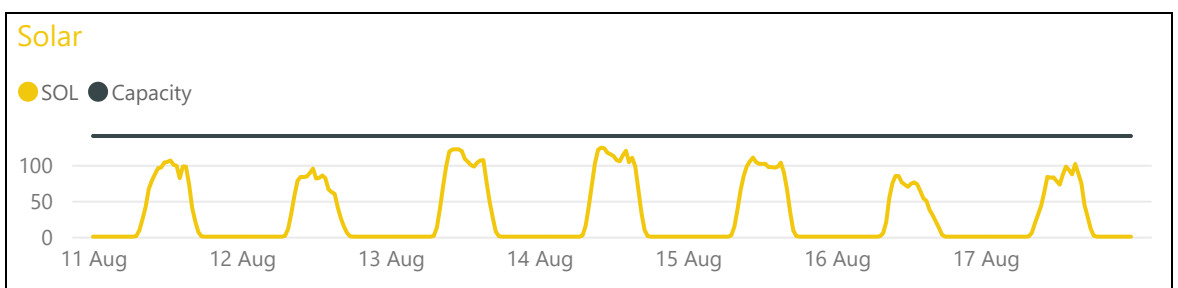
South Island Wind



Co-Generation

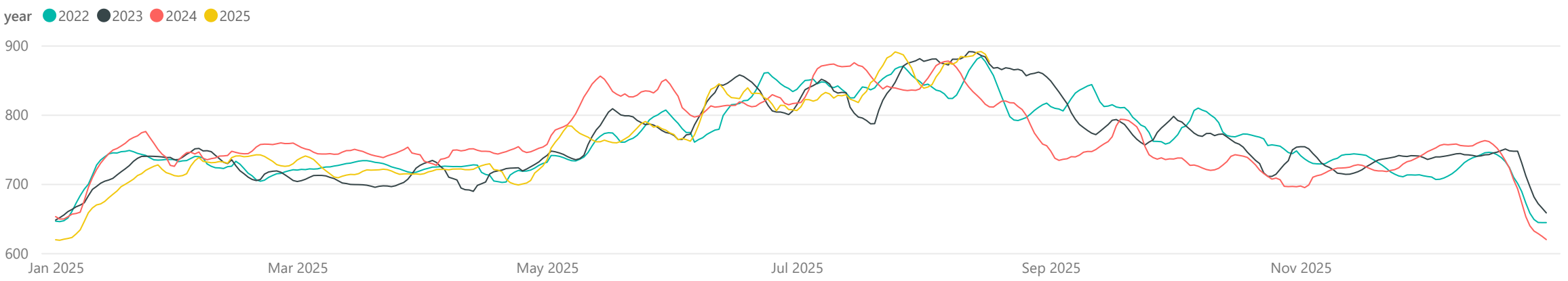


Solar

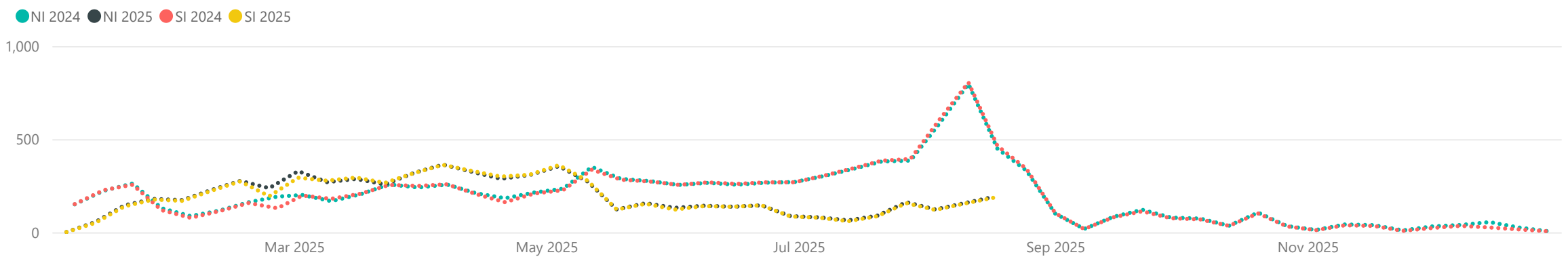


Weekly Profiles

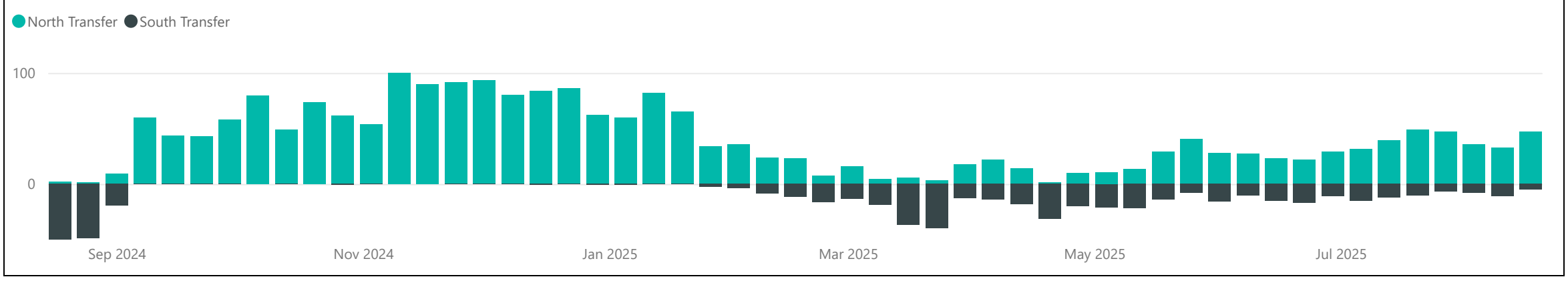
National Weekly Demand - GWh - 7 Day Rolling



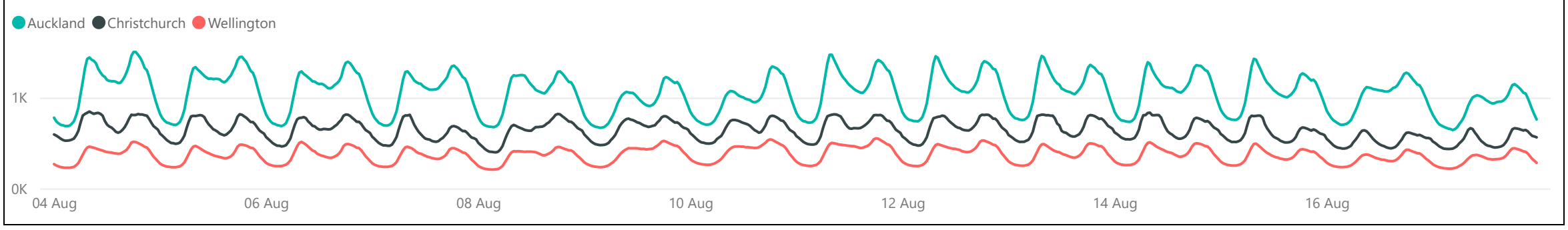
Weekly Spot Price - $/MWh



HVDC Transfer - Weekly GWh

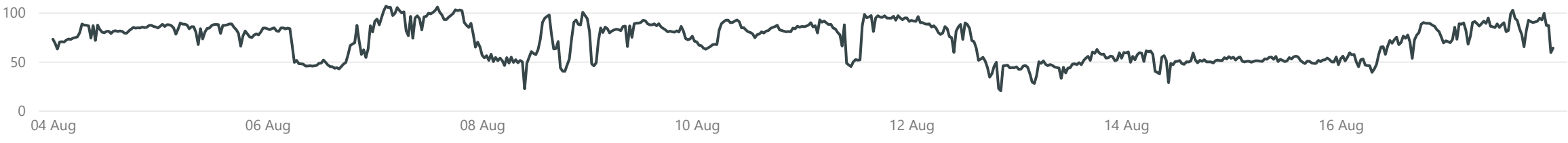


Conforming Load Profiles - Last Two Weeks *Measured in MW shown by region*



Non-Conforming Load Profiles - Last Two Weeks *Measured in MW shown by GXP*

GLN0331



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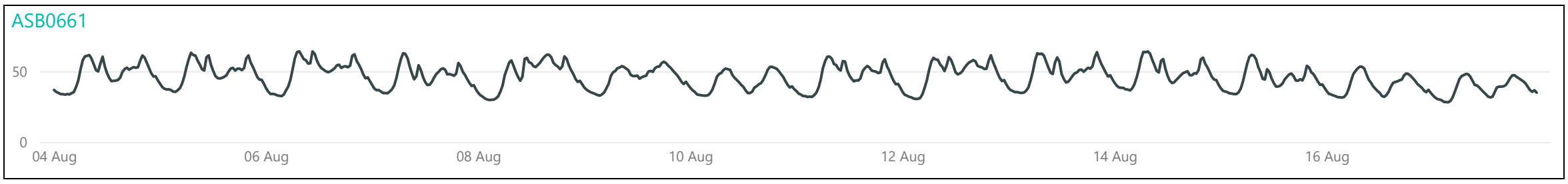

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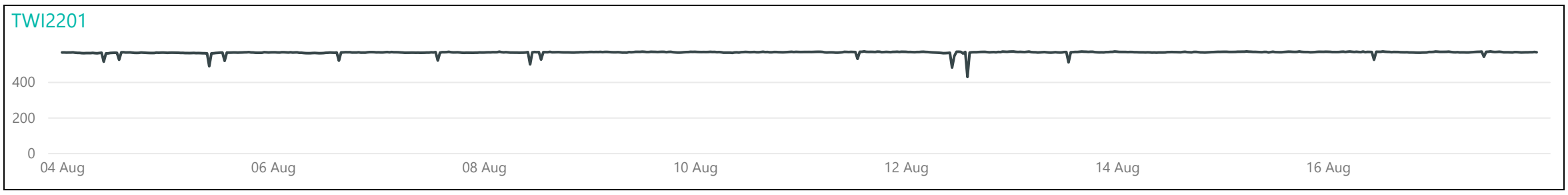
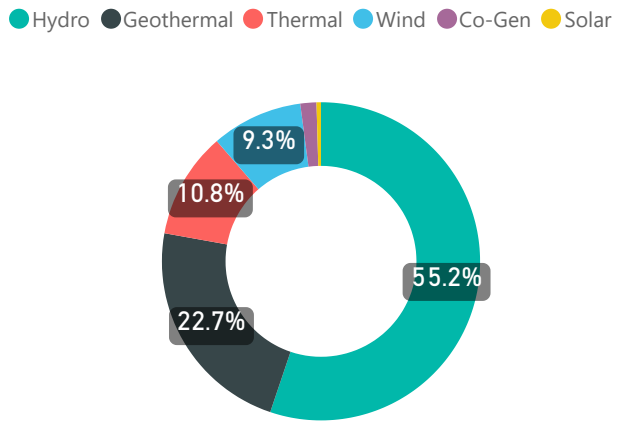


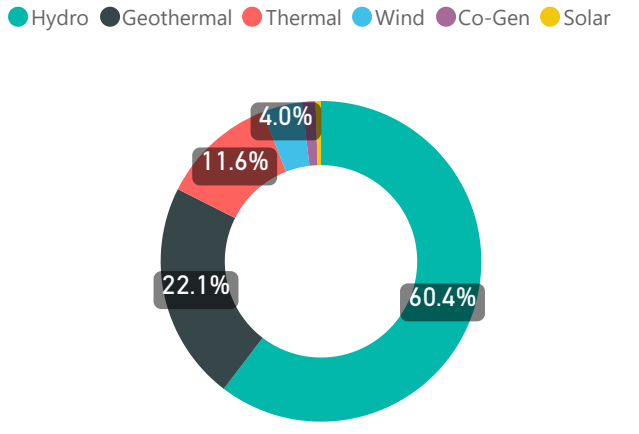
TRANSPOWER

Generation Mix

Last 52 Weeks Generation Mix - Weekly GWh



Last 7 Days Generation Mix - Weekly GWh



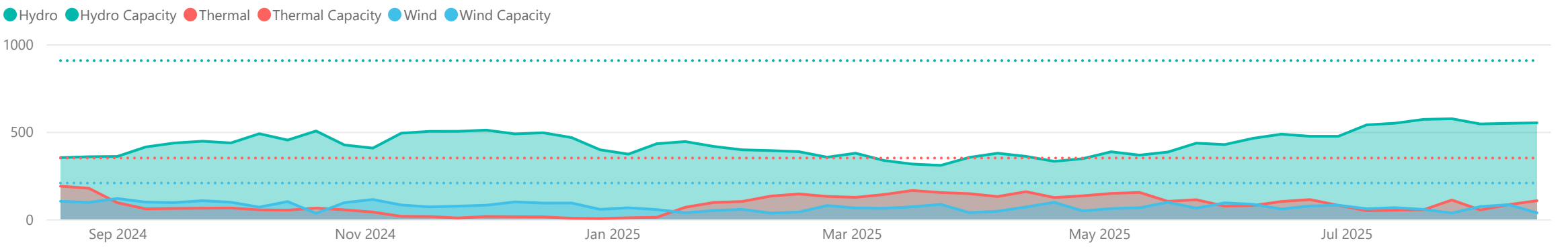
Average Metrics Last 7 Days

Renewable Percentage	CO2e Tonnes/Week	CO2e g/kWh
87%	76,490	83.3

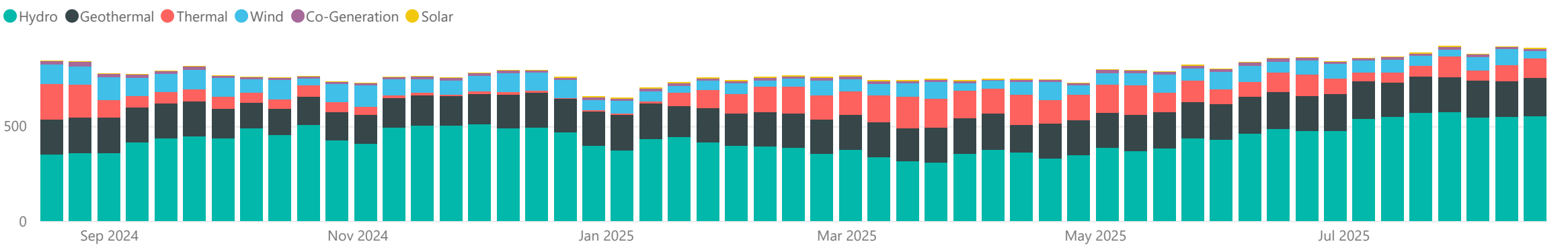
Average Metrics Last 52 Weeks

Renewable Percentage	CO2e Tonnes/Week	CO2e g/kWh
88%	67,678	85.9

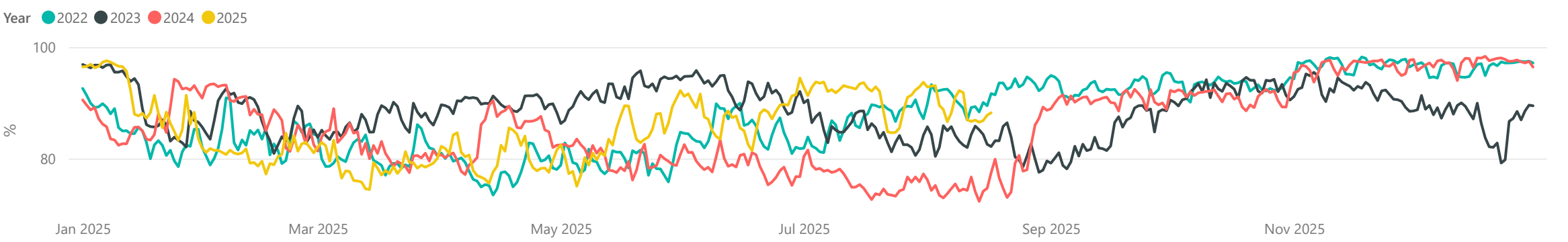
Weekly Generation Mix vs Capacity - GWh



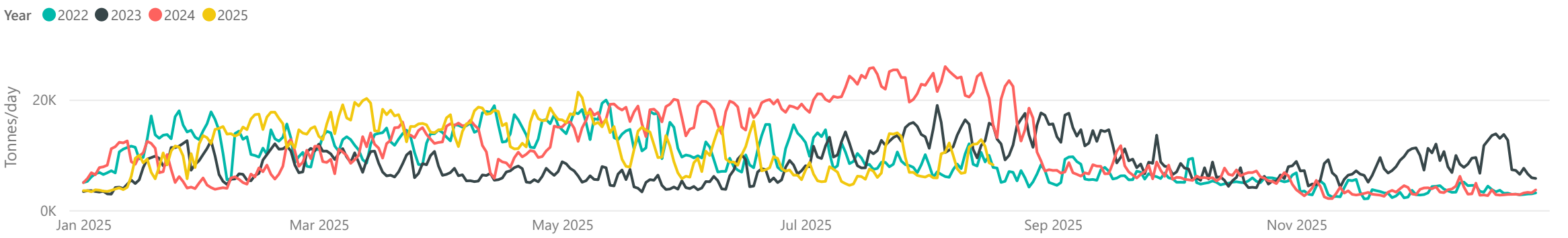
Weekly Generation Mix - GWh



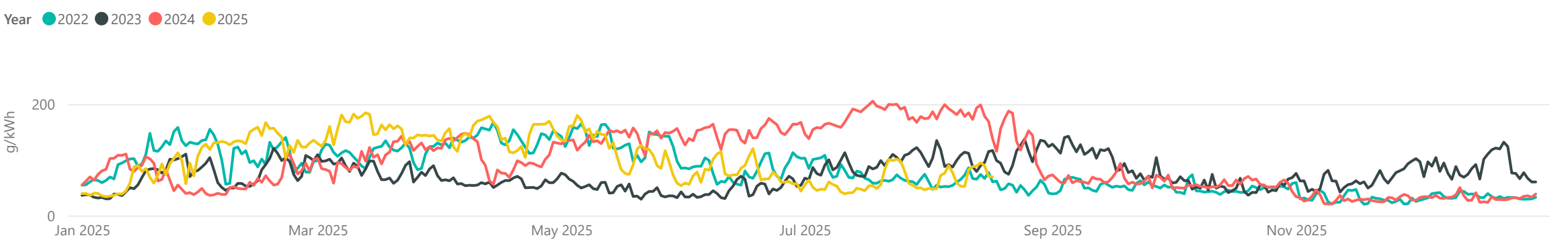
NZ Renewable Percentage



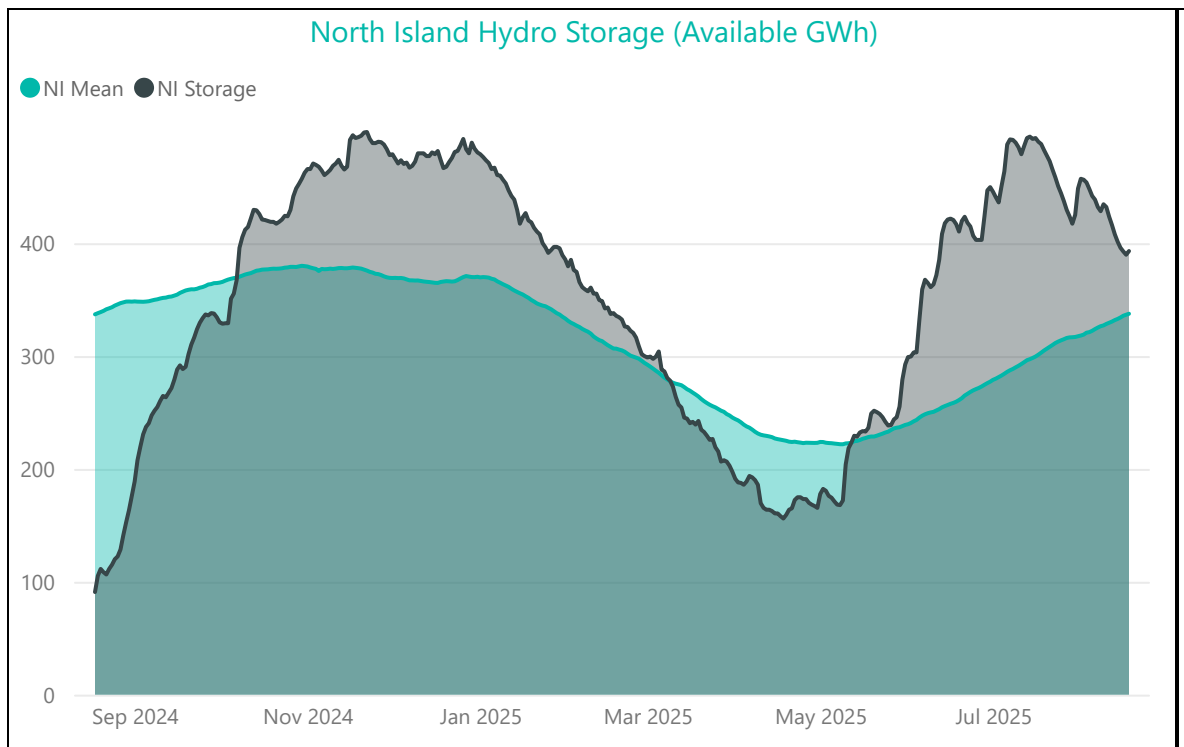
CO2 Tonnes/Day

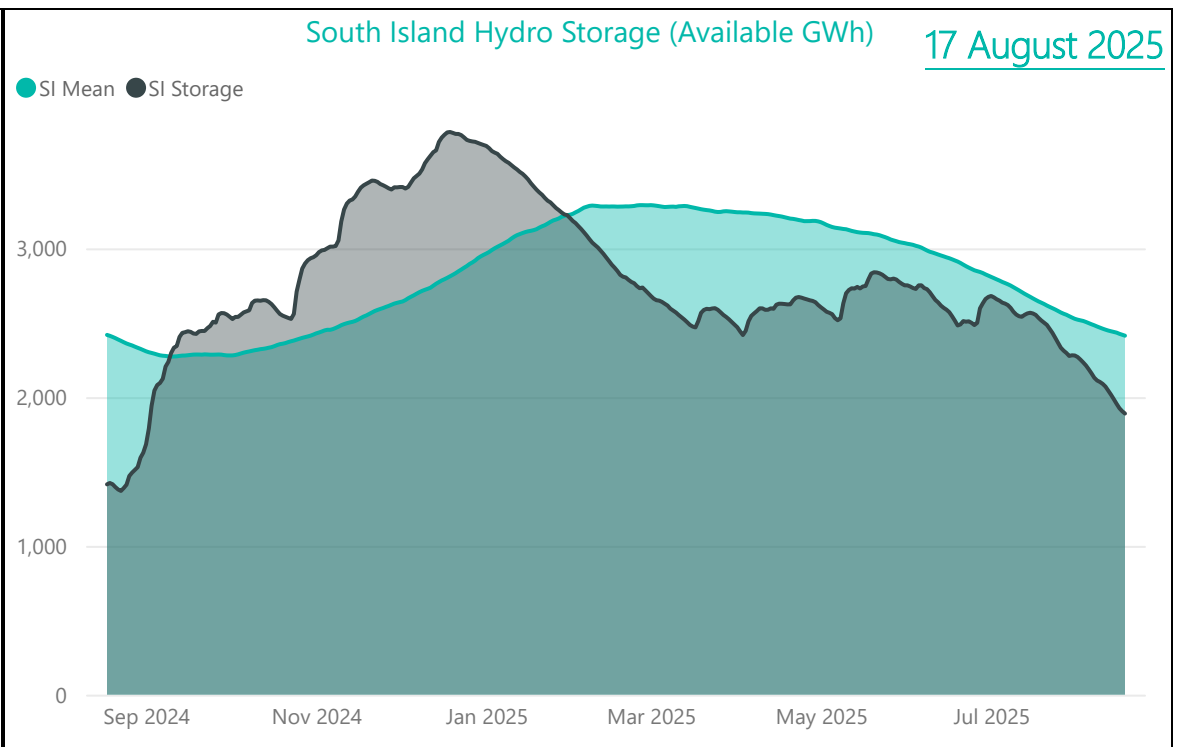


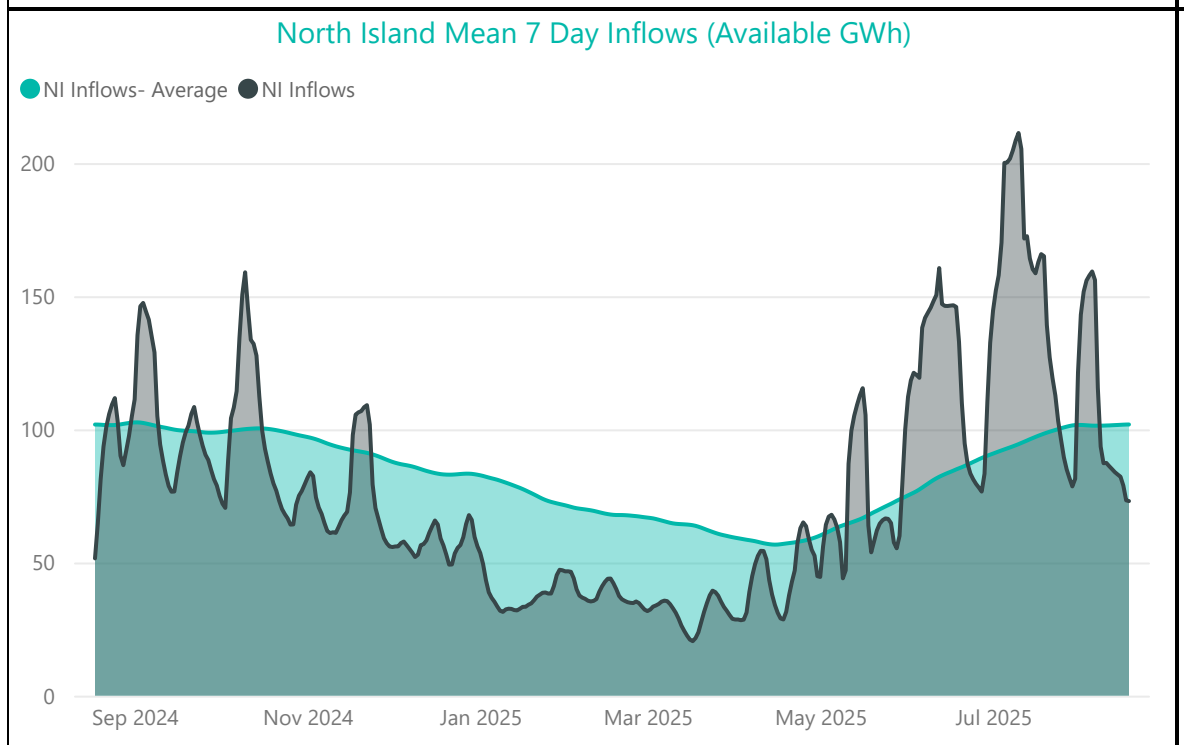
CO2 g/kWh

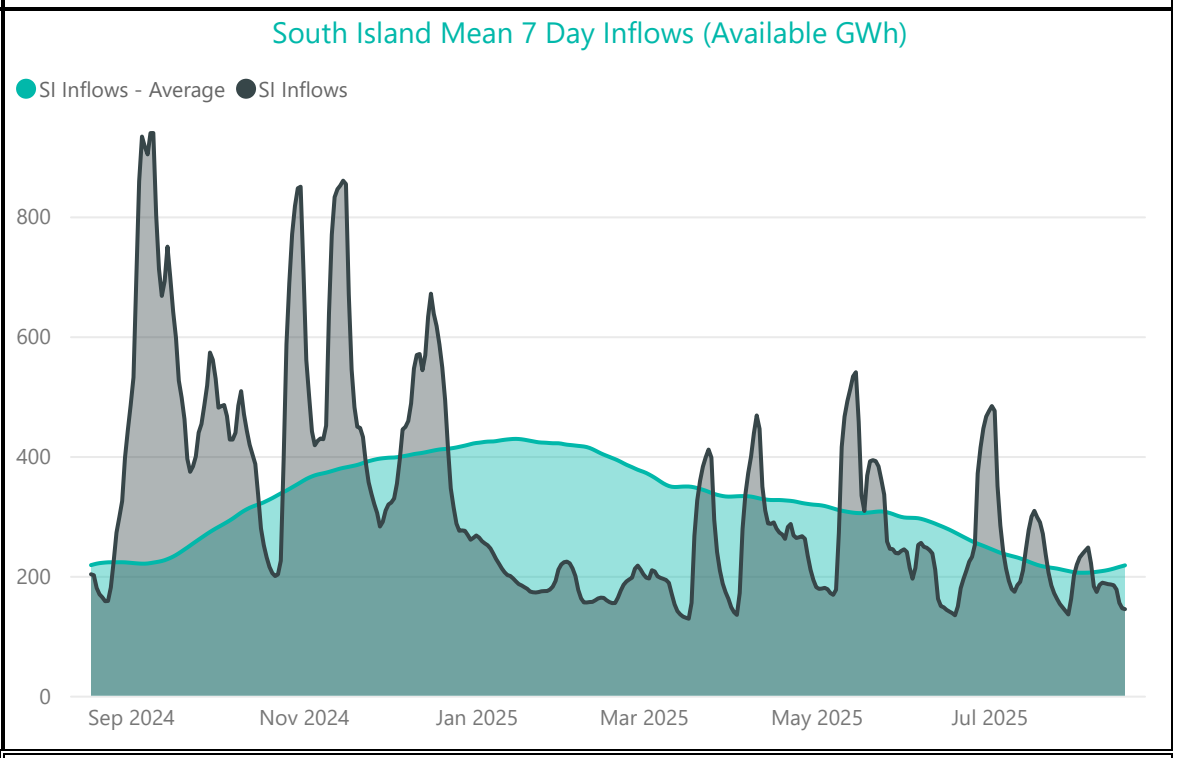


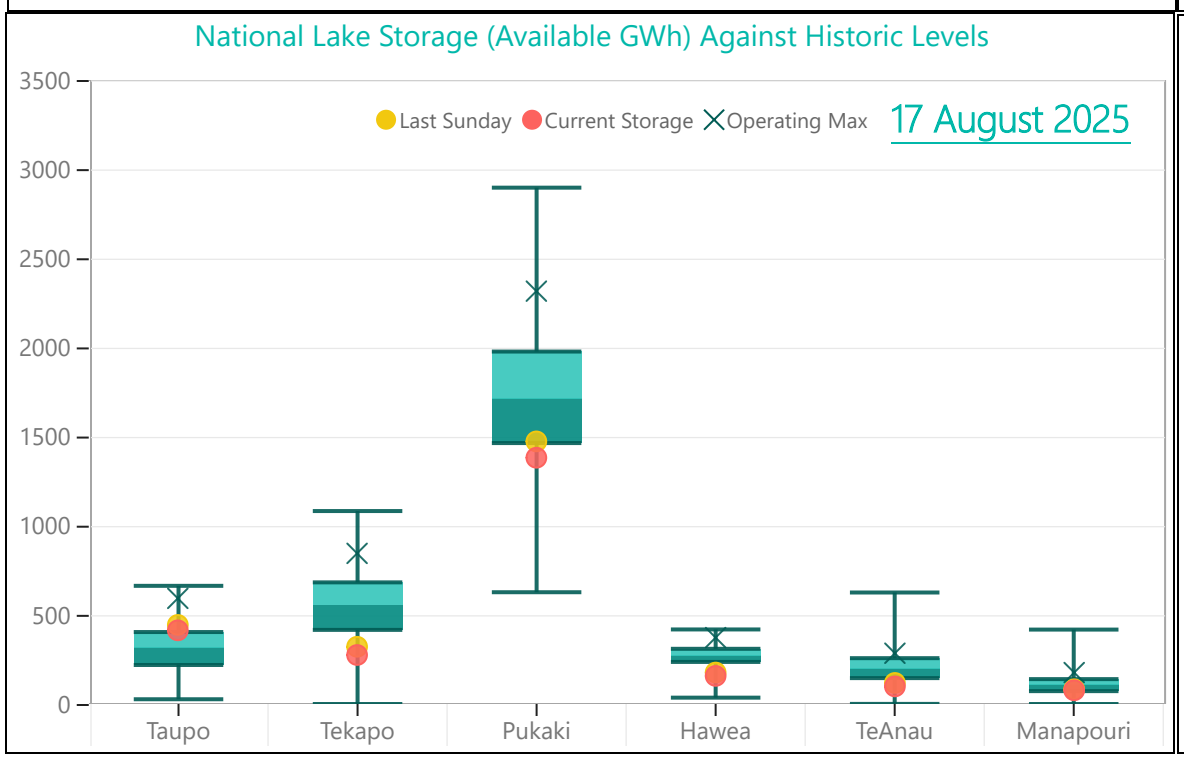
Hydro Storage

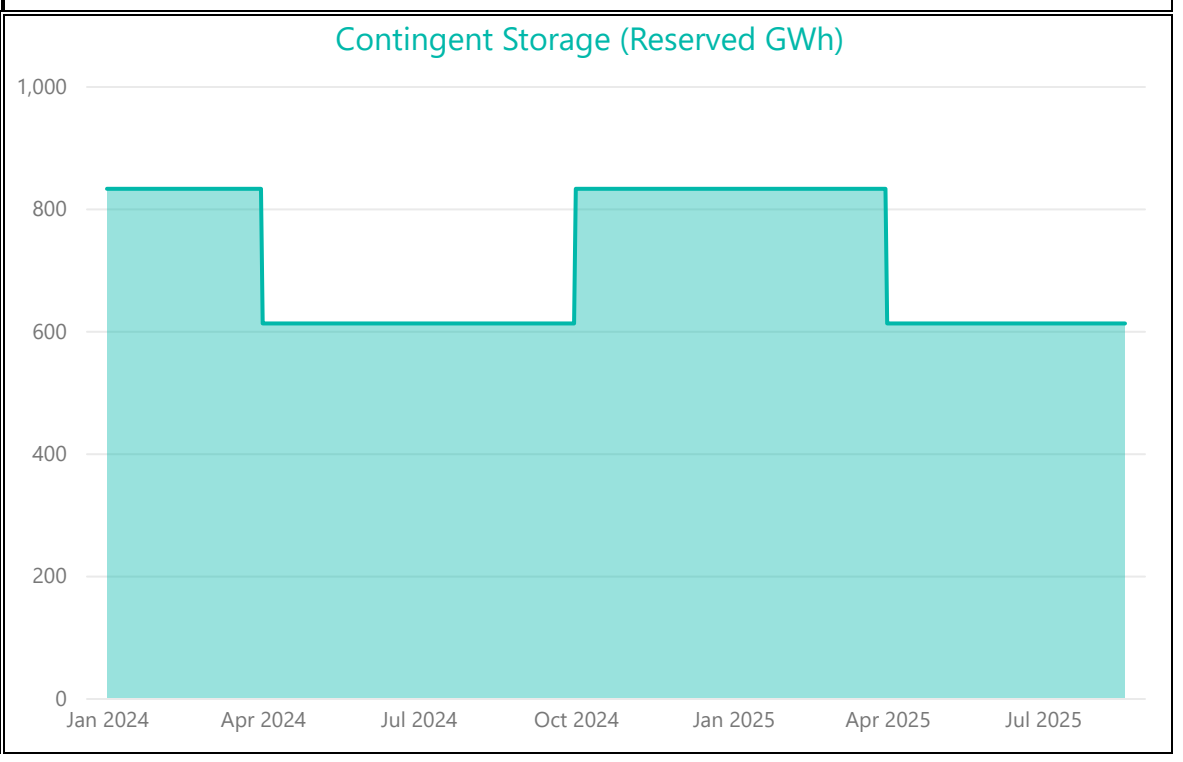












For further information on security of supply and Transpower's responsibilities as the System Operator, refer to our webpage here: https://www.transpower.co.nz/system-operator/security-supply

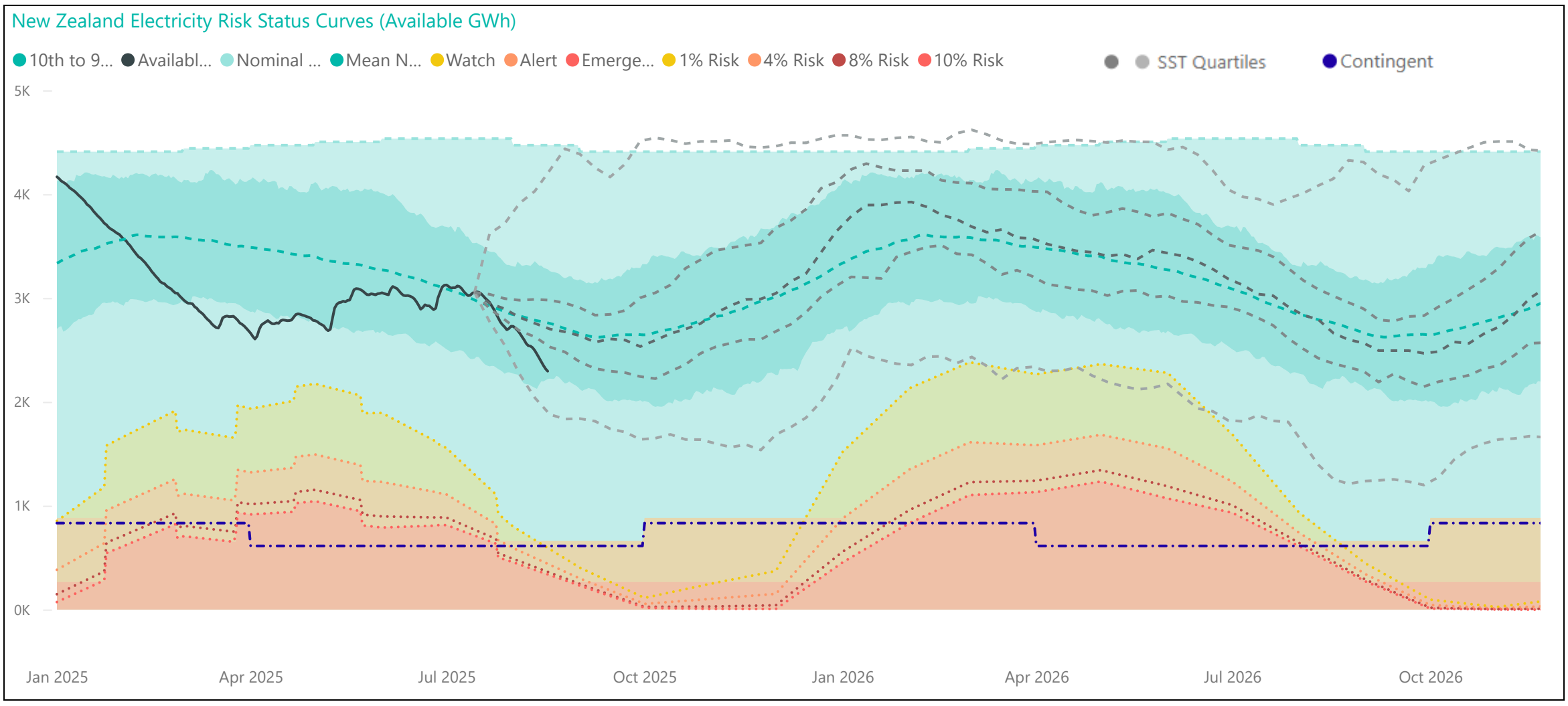
For any inquiries related to security of supply contact market.operations@transpower.co.nz

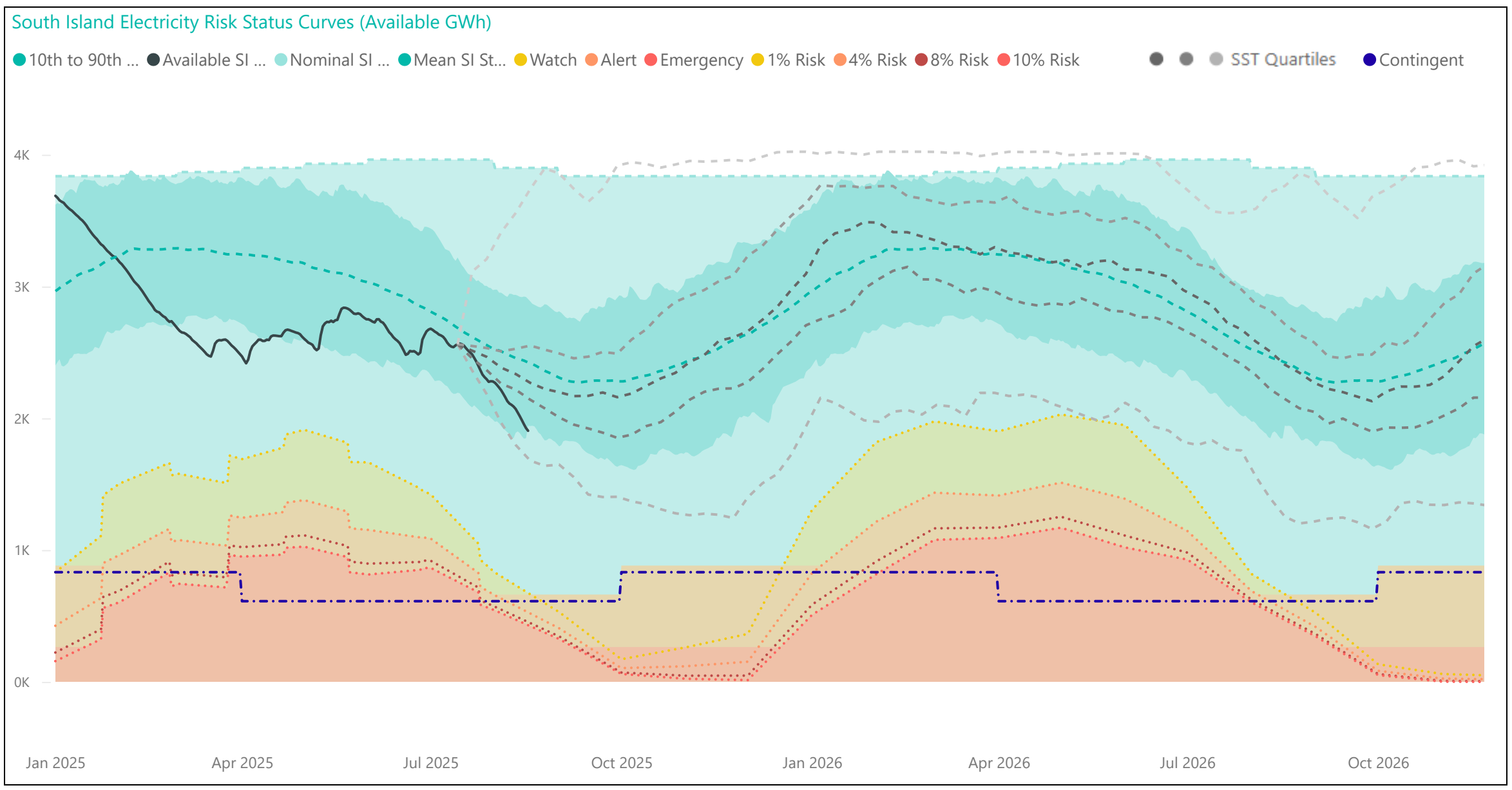
Hydro data used in this report is sourced from *NZX Hydro*.

Electricity risk curves have been developed for the purposes of reflecting the risk of extended energy shortages in a straightforward way, using a standardised set of assumptions.

Further information on the methodology of modelling electricity risk curves may be found here: https://www.transpower.co.nz/system-operator/security-supply/hydro-risk-curves-explanation

Electricity Risk Curves





Electricity Risk Curve Explanation:

Watch Curve - The maximum of the one percent risk curve and the floor and buffer
Alert Curve - The maximum of the four percent risk curve and the floor and buffer
Emergency Curve - The maximum of the 10 percent risk curve and the floor and buffer
Official Conservation Campaign Start - The Emergency Curve
Official Conservation Campaign Stop - The maximum of the eight percent risk curve and the floor and buffer

Note: The floor is equal to the amount of contingent hydro storage that is linked to the specific electricity risk curve, plus the amount of contingent hydro storage linked to electricity risk curves representing higher levels of risk of future shortage, if any. The buffer is 50 GWh.

The dashed grey lines represent the minimum, lower quartile, median, upper quartile and the maximum range of the simulated storage trajectories (SSTs). These will be updated with each Electricity Risk Curve update (monthly).