Market Operations Weekly Report - Week Ended 31 August 2025

Overview

The decrease in New Zealand hydro storage was arrested with inflows from a recent storm. However, it remains below the 10th percentile for this time of year at 77% of the seasonal mean. South Island storage is lower at 73% of the seasonal mean.

In this week's insight we look at the effect of time-of-use plans on power usage peaks.

Security of Supply

Energy

New Zealand hydro storage remains below the 10th percentile for this time of year. Storage remained at 77% of average due to the recent storm cycle bringing some inflows. South Island hydro storage dropped slightly from 74% to 73% of historic mean and North Island storage increased slightly from 103% to 104%.

Our August monthly Energy Security Outlook was published last week.
The risk curves have not changed substantially since the July update. Our scenario shows that retaining all three Huntly Rankine units significantly reduces the energy risk in 2026.

Capacity

Capacity margins were extremely healthy last week with residual at all peaks exceeding 1,100 MW. The lowest residual occurred on the morning of 25 August, at 1,105 MW. This was due to high thermal commitment and increased wind.

The N-1-G margins in the NZGB forecast are healthy through to late 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 significantly from 881 GWh the week prior to 821 GWh, which was similar to what we have previously seen at this time of year. The highest demand peak occurred at 7:30 am on Monday 25 August, at 6,334 MW which was 610 MW lower than the previous week's highest peak. This was due to higher temperatures.

Weekly Prices

The average wholesale electricity spot price at Ōtāhuhu last week decreased to $148/MWh from $218/MWh the week prior in line with wind generation returning to the 52-week average. Wholesale prices peaked at $398/MWh at Invercargill at 8:30 pm on Friday 26 August due to a grid constraint.

The Ruakākā battery has added significant reserve capacity to the market which has helped keep reserve prices low in recent weeks. A spike in South Island Fast Instantaneous Reserve price occurred on 31 August at 1:30 am to $57/MWh. This was caused by the HVDC setting the risk during south flow.

Generation Mix

Hydro generation contributed 53% of the generation mix last week, lower than the previous week and the average for the past 52 weeks. Wind generation increased from 6% to 9% of the mix, matching its average contribution. Thermal generation remained similar at 13%. The geothermal share increased slightly from its average of 22% to 23% of the mix.

HVDC

HVDC flow last week started mostly northward with overnight periods of southward flow before later in the week transitioning to mostly southward flow. Southward flow was caused by South Island hydro generation reducing and wind generation increasing. In total, 19 GWh was sent north and 18 GWh was sent south.

CACTIS Consultation Open

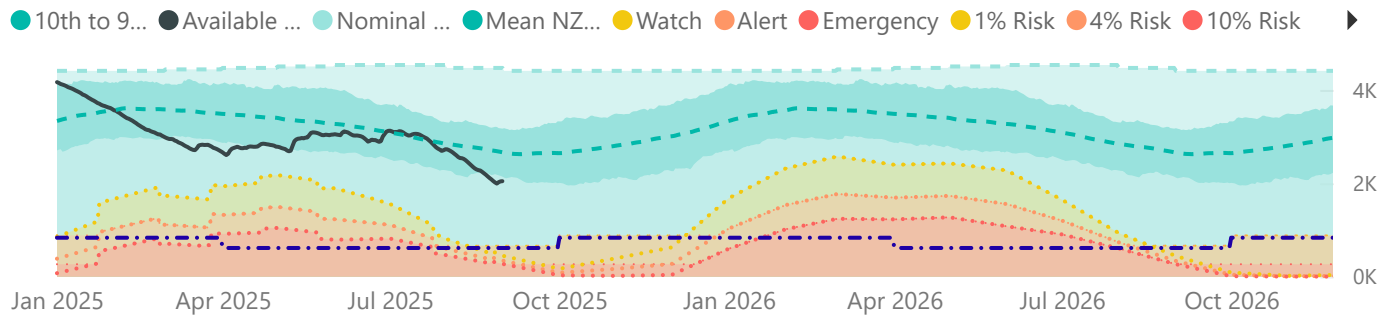
Consultation to seek feedback on the proposed Connected Asset Commissioning, Testing and Information Standard (CACTIS) opened on 1 September. The closing date for submissions is 29 September. More information on this consultation can be found here.

New Zealand Energy Risk

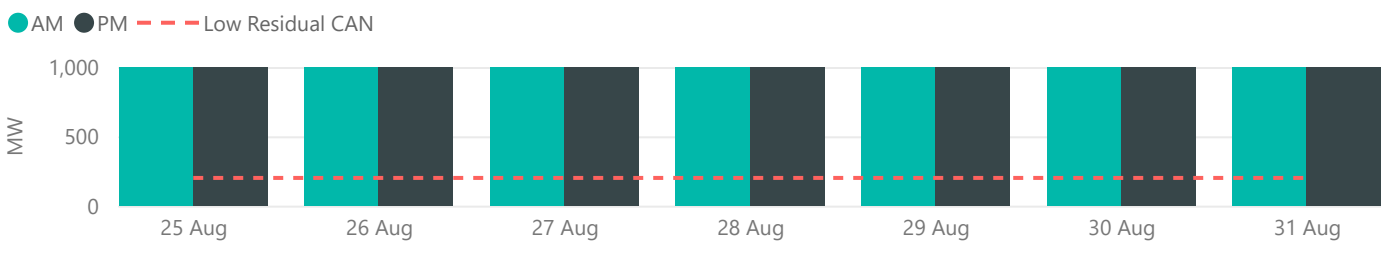
South Island Energy Risk

Normal Watch Alert Emergency

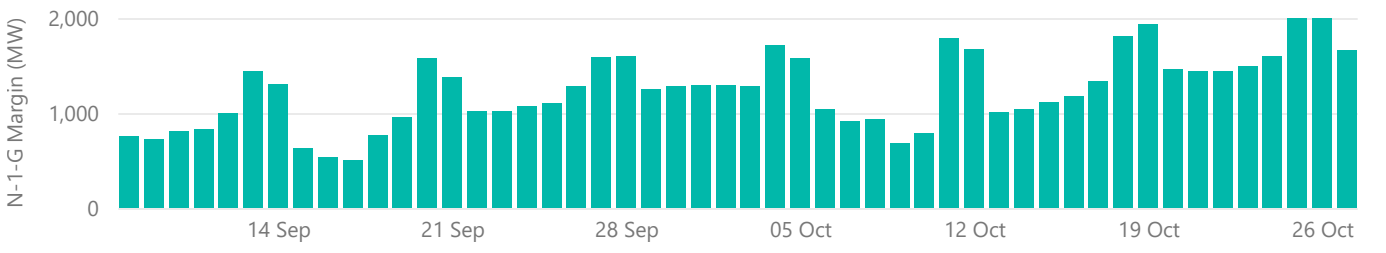
New Zealand Electricity Risk Status Curves (Available GWh)



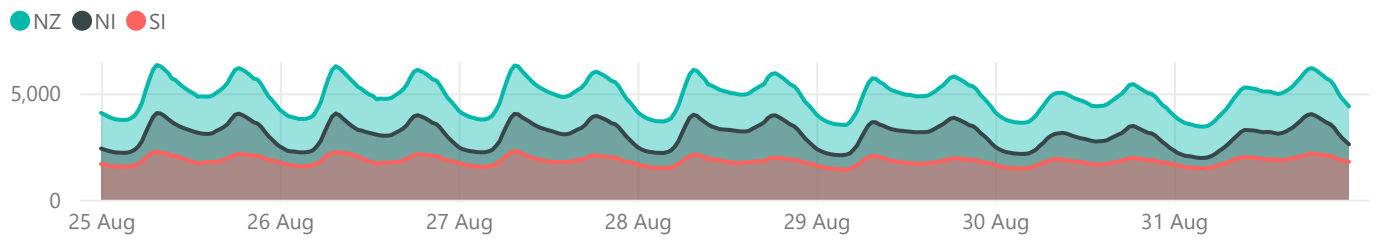
Lowest Residual Points - MW



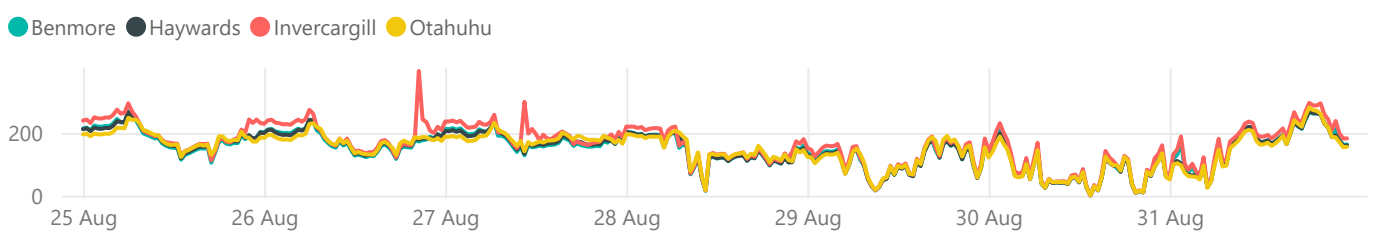
NZGB Look-Ahead (excluding next 7 days)



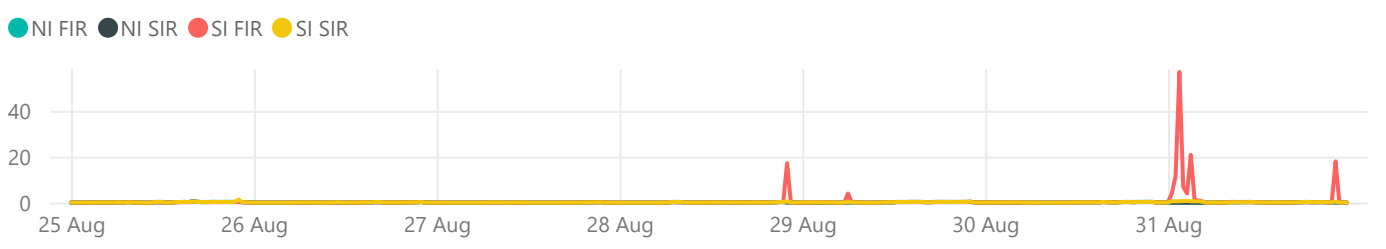
National Demand by Trading period - MW



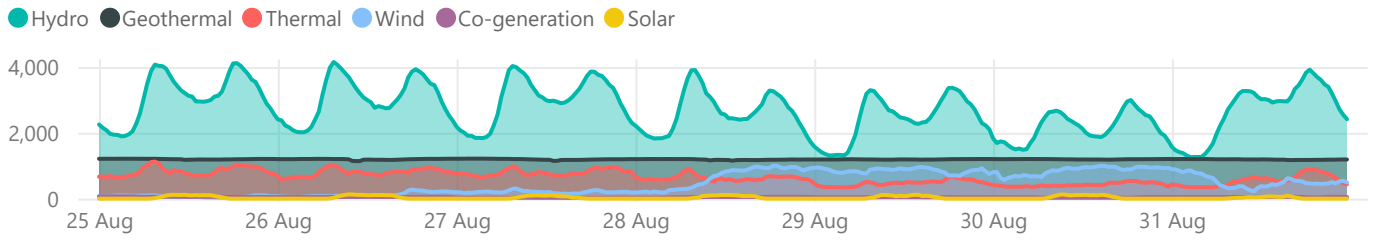
Energy Prices - $/MWh



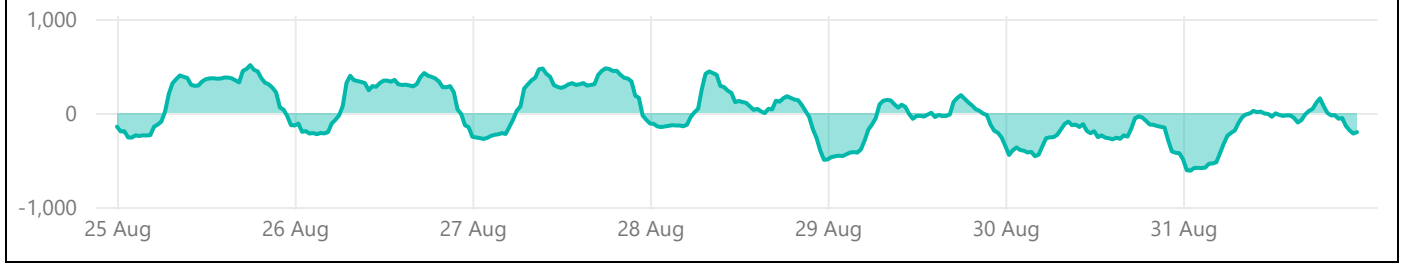
Reserve Prices - $/MW



Generation - MW



Net HVDC Transfer - MW (Northward positive)



Weekly Insight - Time-of-Use Plans and Their Impact on Power Usage

The introduction of time-of-use plans have changed the way New Zealanders use electricity, especially as many try to get the most out of the free period. Most time-of-use plans begin offering their cheaper or free prices at 9pm. A large load surge can be seen within 10 minutes of 9pm across most or all conforming GXPs. An example of this is shown in Figure 1.

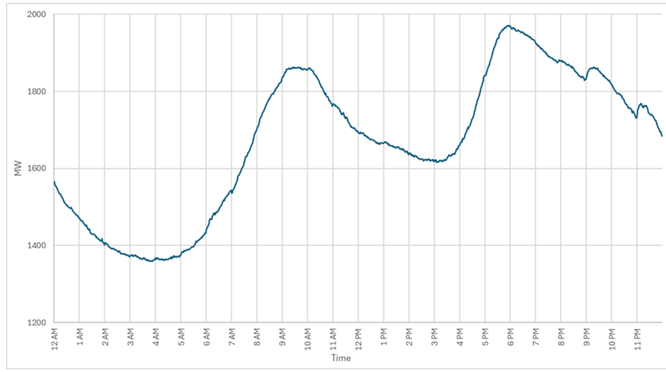


Figure 1: An example of a South Island load profile with a large load surge at 9pm and 11pm.

Another load surge can be seen at 11pm which is when ripple control is turned off by the Electricity Distribution Businesses (EDBs). This occurs well after the peak and has existed for decades. The prominence of the 9pm load surge is generally similar in both the North and South Islands. However, during the summer, the North Island sees a much larger surge than usual and is noticeably higher than in the South Island. Overall, surges are more pronounced in summer and less significant in winter due to sunset times drawing closer to 9pm and lighting being switched on at this later time. These patterns are shown in Figure 2.

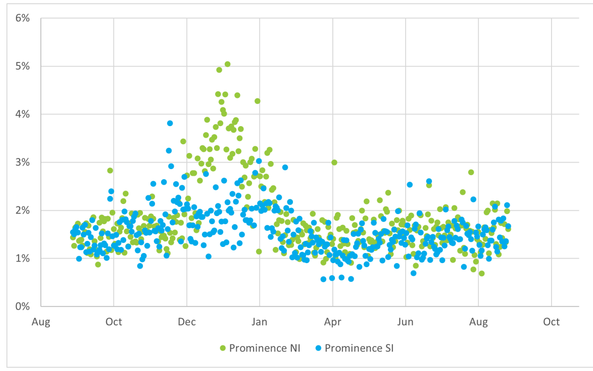


Figure 2: The prominence of the 9 pm load surge for 2024/2025 in the North and South Island.

The prominence of the 9pm load surge was calculated by finding the maximum load during the 9:00pm – 9:30pm period and dividing it by the minimum load during the 8:30pm – 9:00pm period. Large prominence caused by the switching of Tiwai potlines and other outliers have been removed.
The time-of-use plans have changed what the "off-peak" hours are in summer. Lower demand now tends to start after 10:00pm, once New Zealand electricity users stop running extra appliances and start turning off lights. In winter, lower demand tends to start after 8pm. Because the plans begin at 9pm, during summer, there were three instances in the South Island and two in the North Island where the daily load peaked in the 9:00pm – 9:30pm period. An example of this is shown in Figure 3.

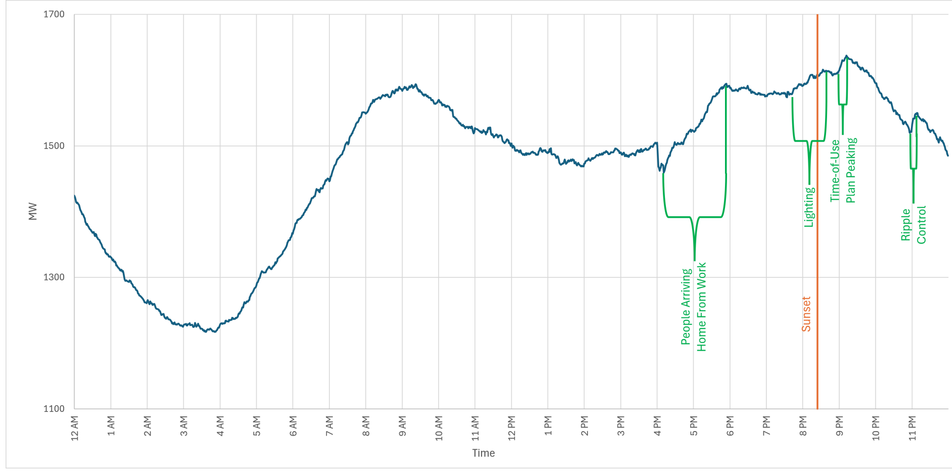


Figure 3: An example of peak South Island load occurring in the 9:00pm - 9:30pm period.

The 9:00pm – 9:30pm period was, or was close to, the peak load more in the South Island than in the North Island. This is especially obvious in winter. When compared to the same period in 2014 to 2015 (before the introduction of time-of-use plans), the 2024/2025 period saw a significant increase in 9pm – 9:30pm North Island load compared to the daily max during summer. The effect on the South Island was more muted. This can be seen in Figure 4.

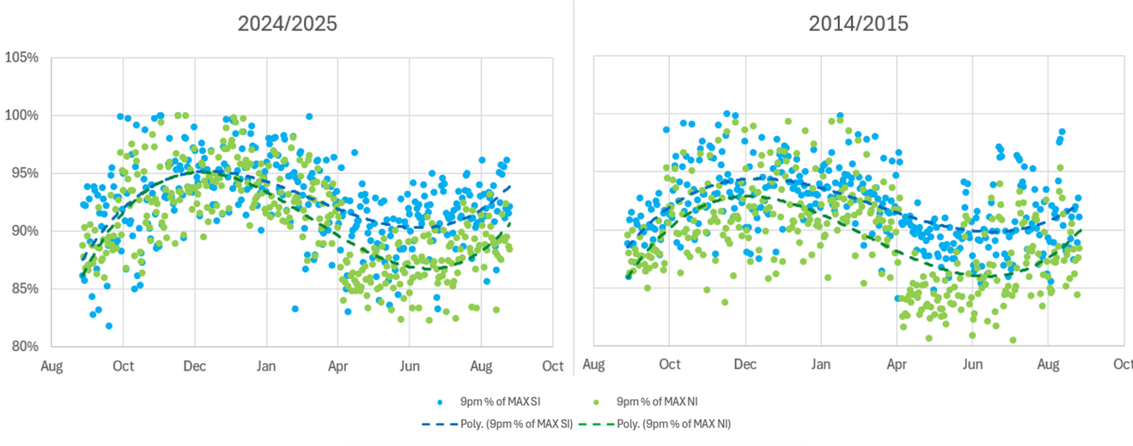


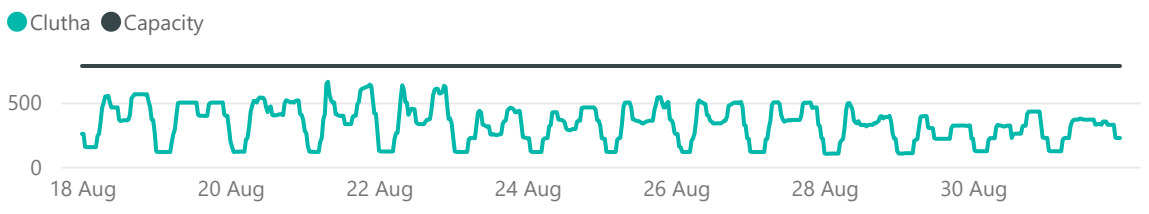
Figure 4: The percentage of the 9:00pm - 9:30pm load compared to the daily peak load for the North and South Island in 2024/2025 and 2014/2015.

The trends highlight how consumers respond to pricing signals and are willing to adjust their behaviours accordingly. Time-varying pricing was recently made a requirement for large retailers by the Electricity Authority.

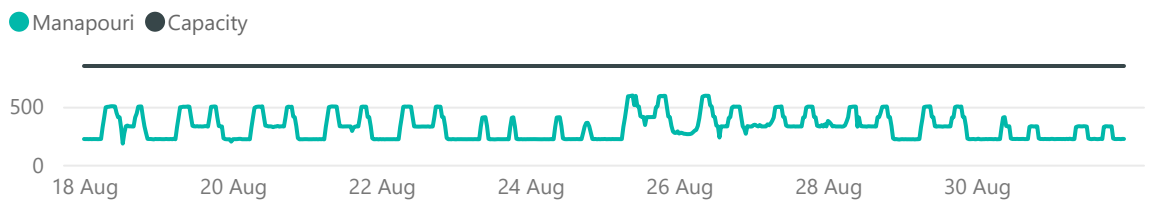
Generation Breakdown - Last Two Weeks

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

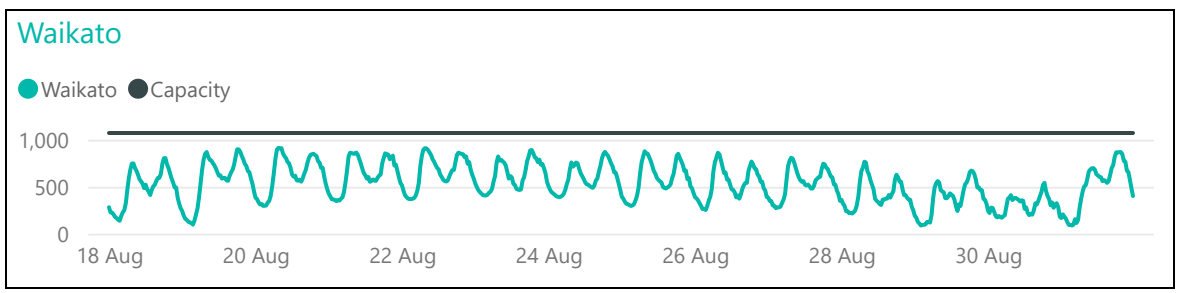
Clutha



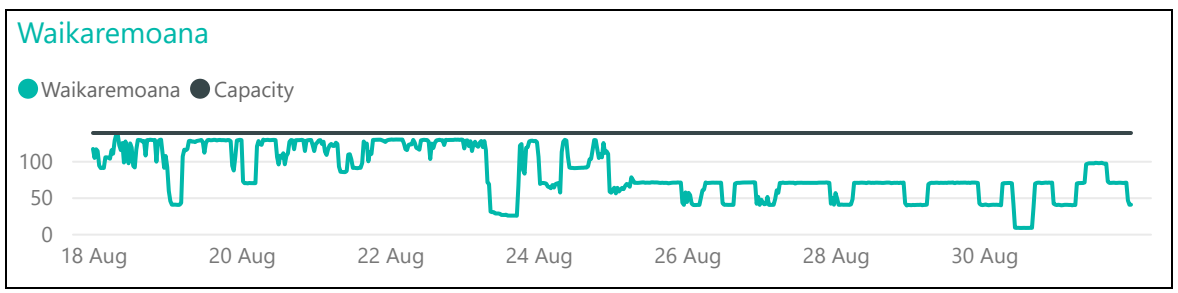
Manapouri



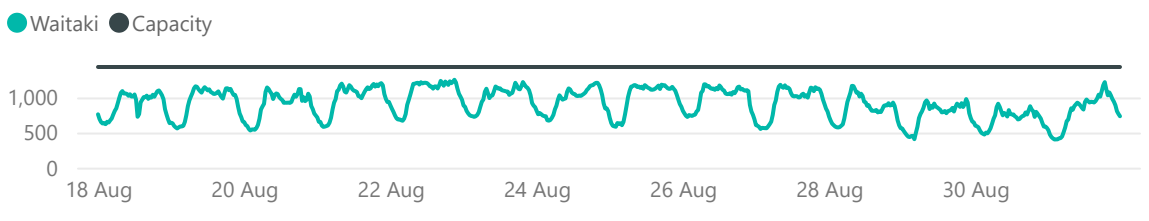
Waikato



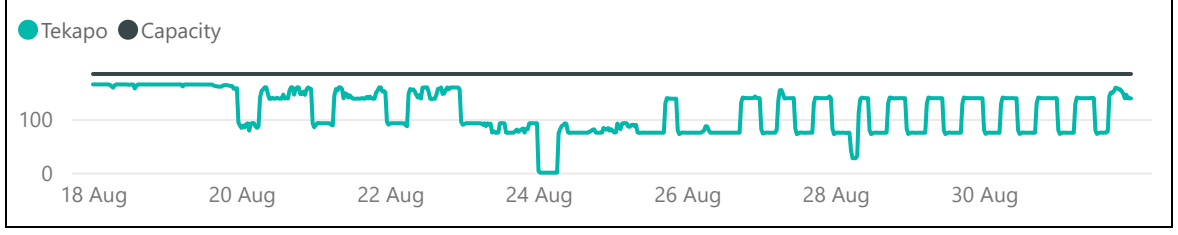
Waikaremoana



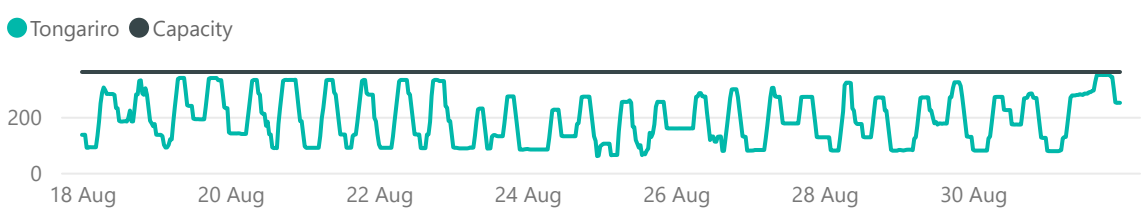
Waitaki



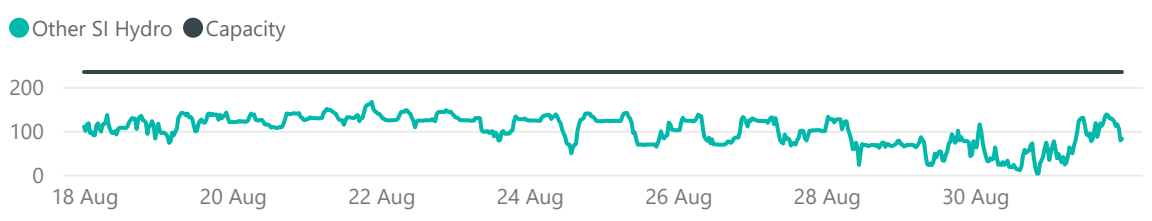
Tekapo



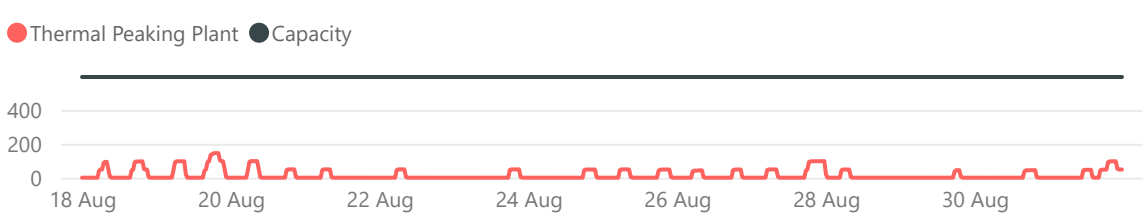
Tongariro



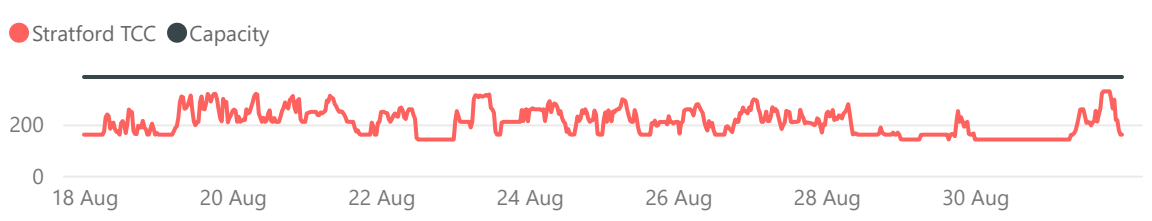
Other SI Hydro



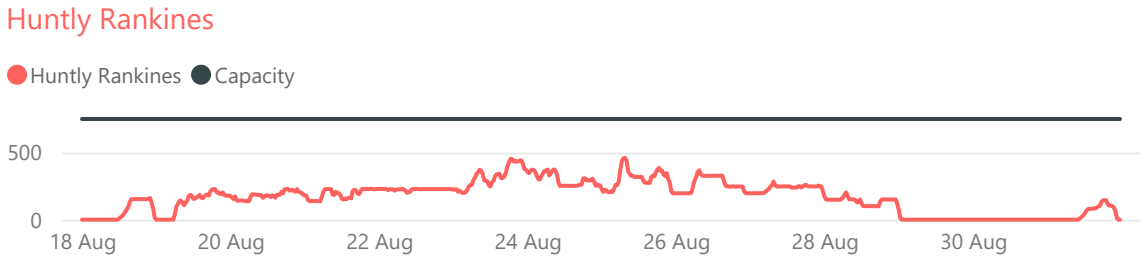
Thermal Peaking Plant



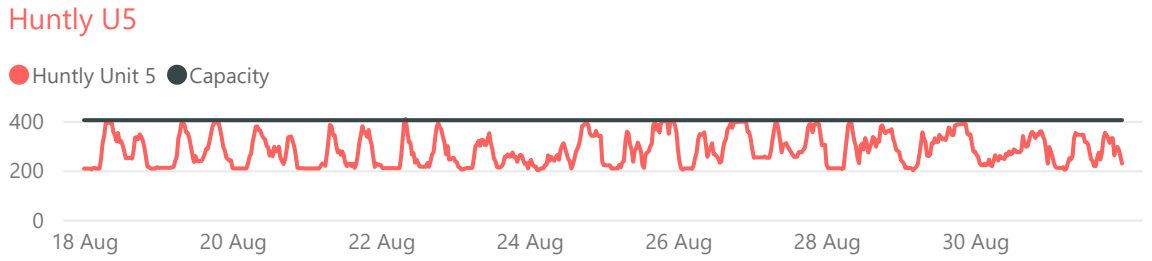
Stratford TCC



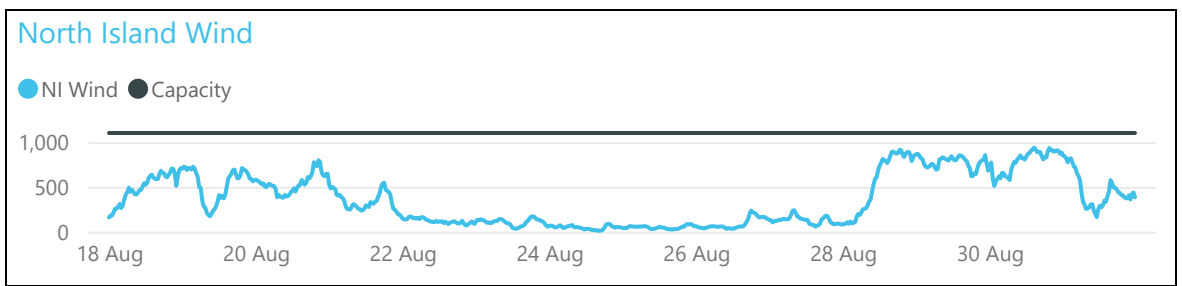
Huntly Rankines



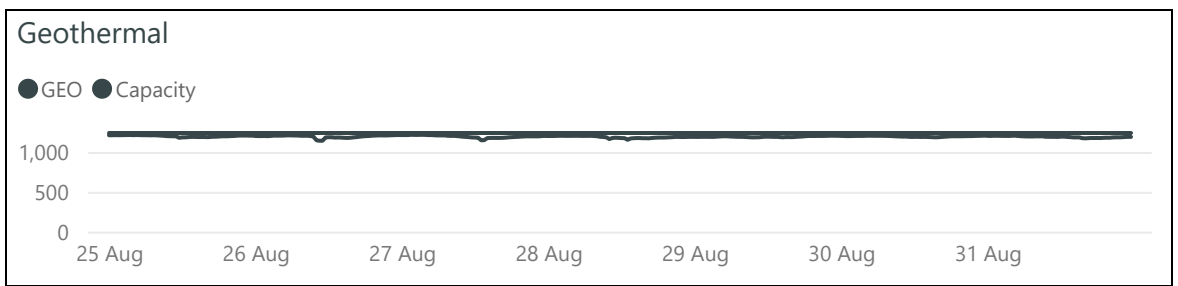
Huntly U5



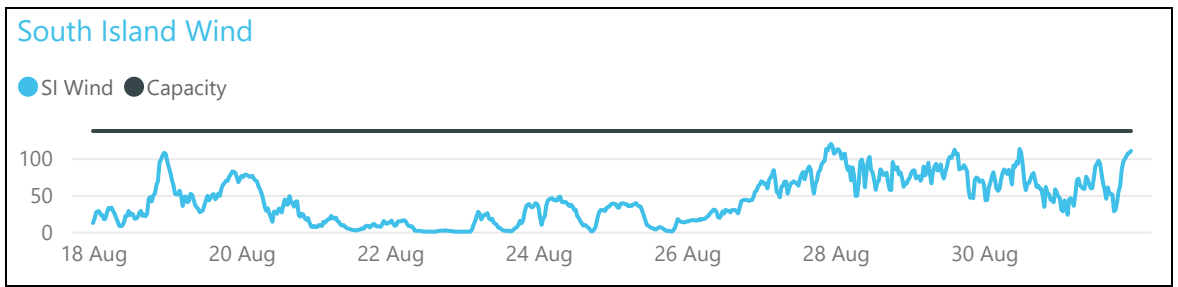
North Island Wind



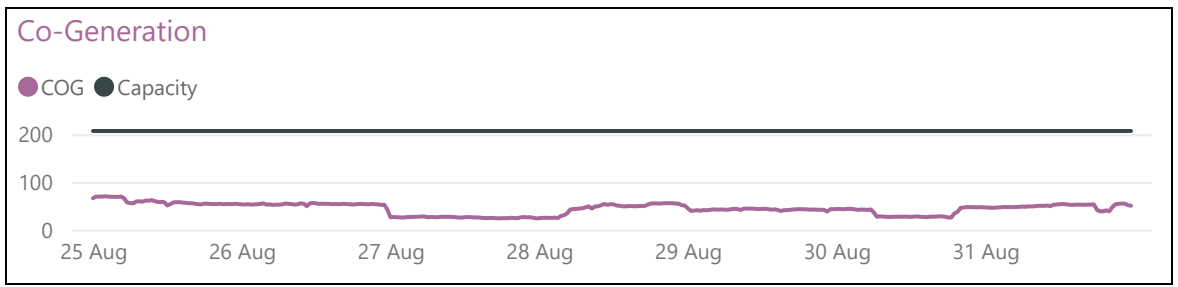
Geothermal



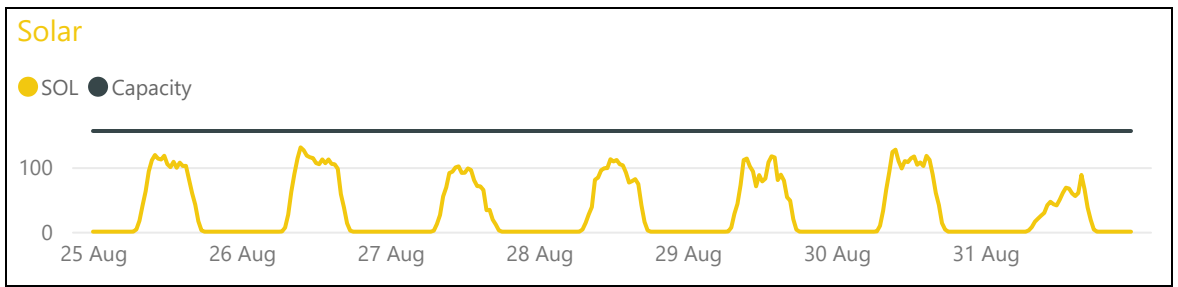
South Island Wind



Co-Generation

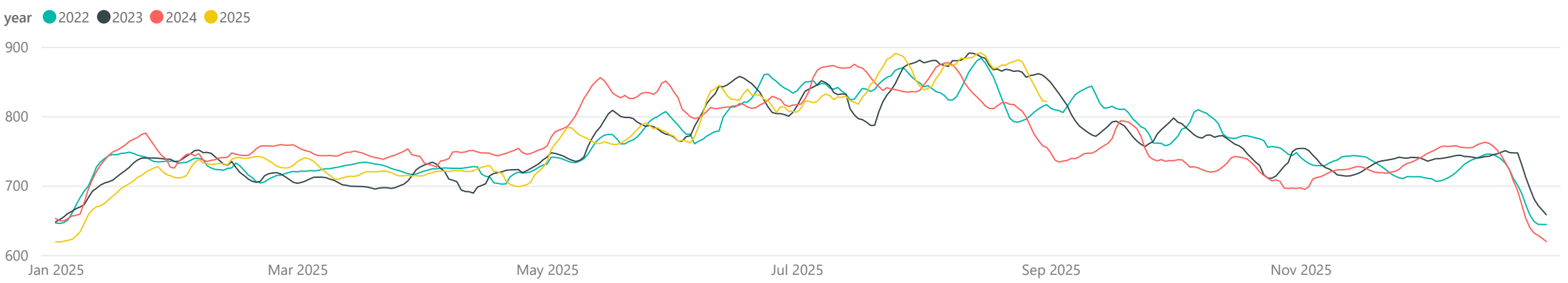


Solar

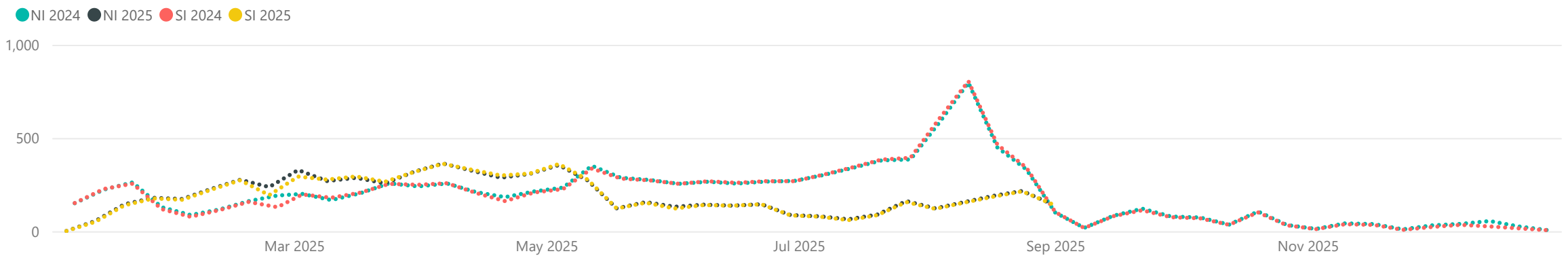


Weekly Profiles

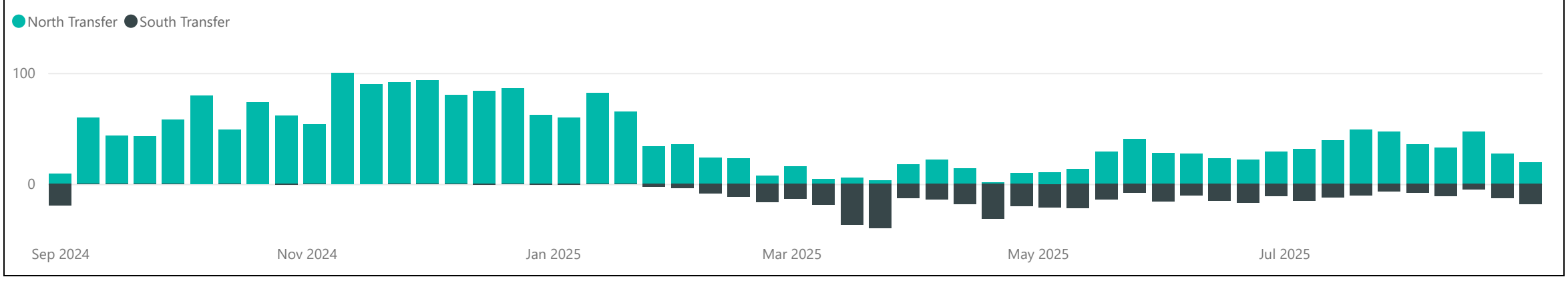
National Weekly Demand - GWh - 7 Day Rolling



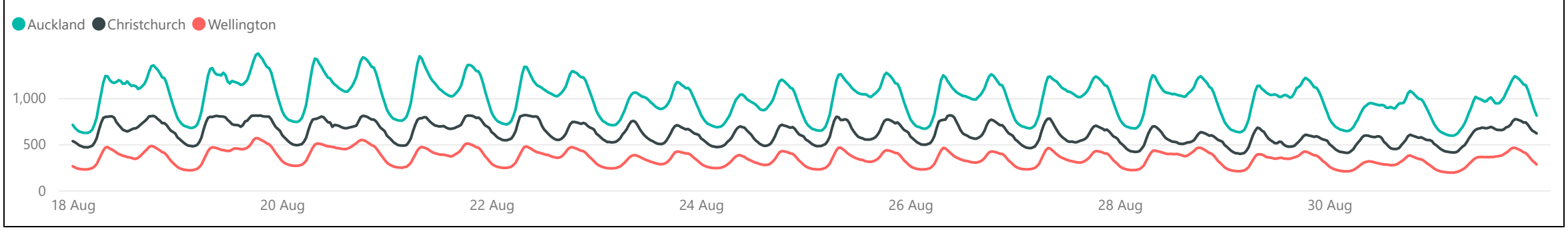
Weekly Spot Price - $/MWh



HVDC Transfer - Weekly GWh

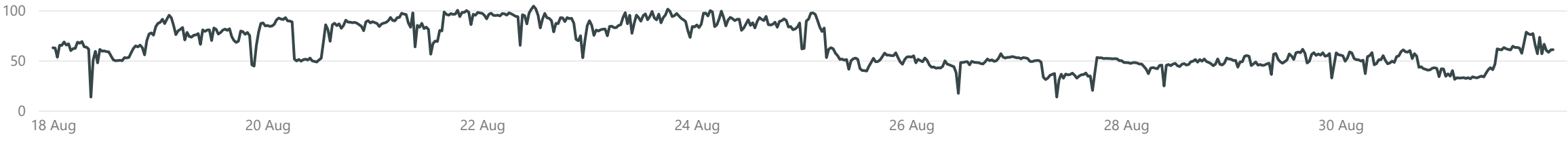


Conforming Load Profiles - Last Two Weeks *Measured in MW shown by region*



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

GLN0331



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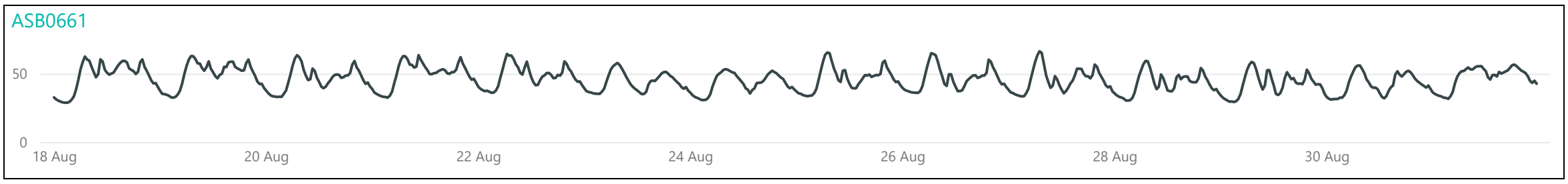

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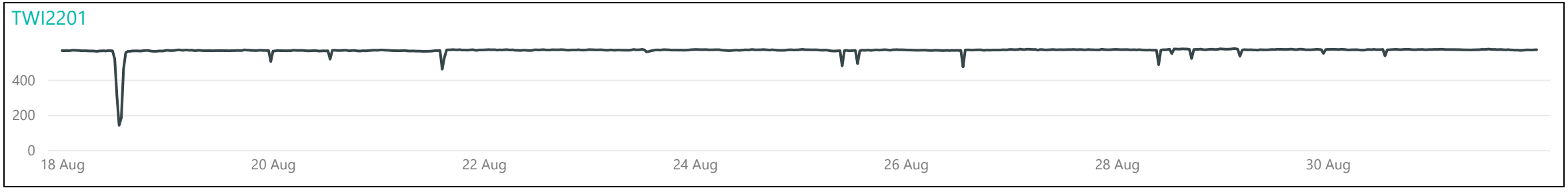
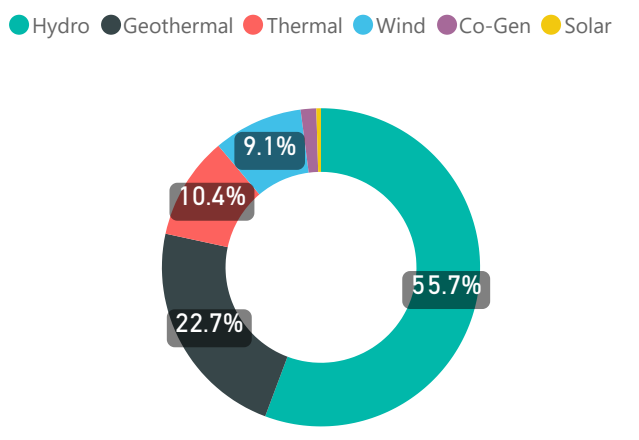


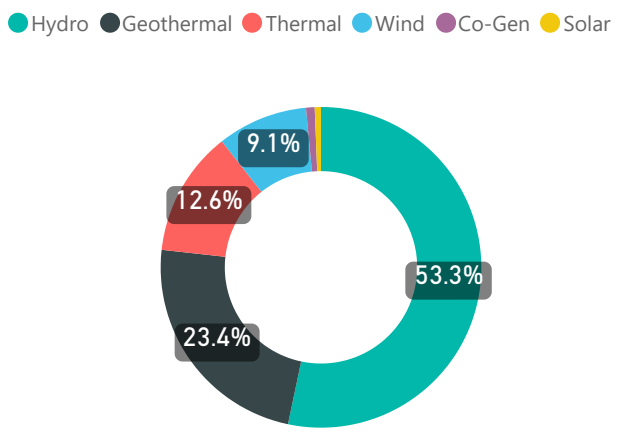
TRANSPOWER

Generation Mix

Last 52 Weeks Generation Mix - Weekly GWh



Last 7 Days Generation Mix - Weekly GWh



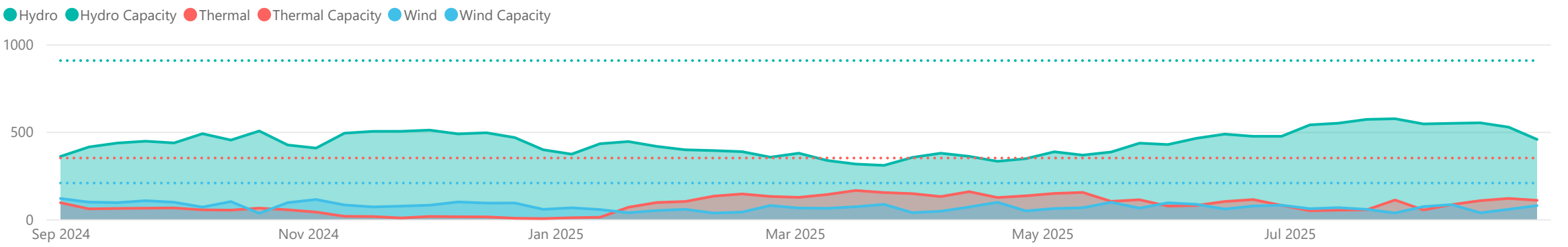
Average Metrics Last 7 Days

Renewable Percentage	CO2e Tonnes/Week	CO2e g/kWh
87%	78,109	91.1

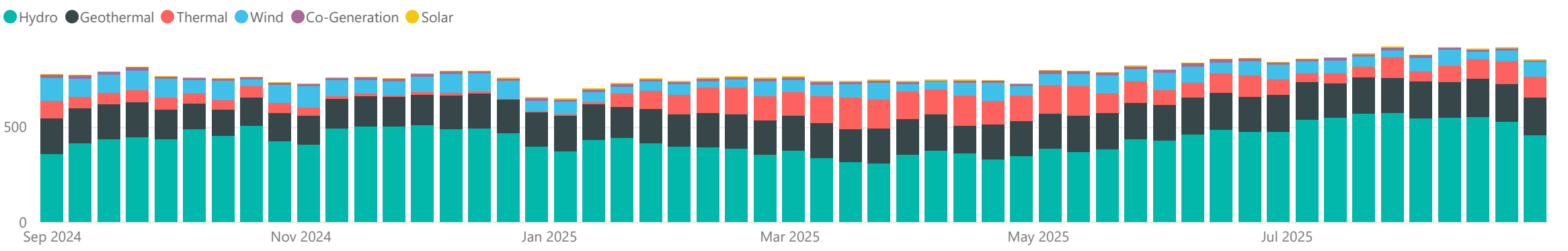
Average Metrics Last 52 Weeks

Renewable Percentage	CO2e Tonnes/Week	CO2e g/kWh
88%	66,810	84.6

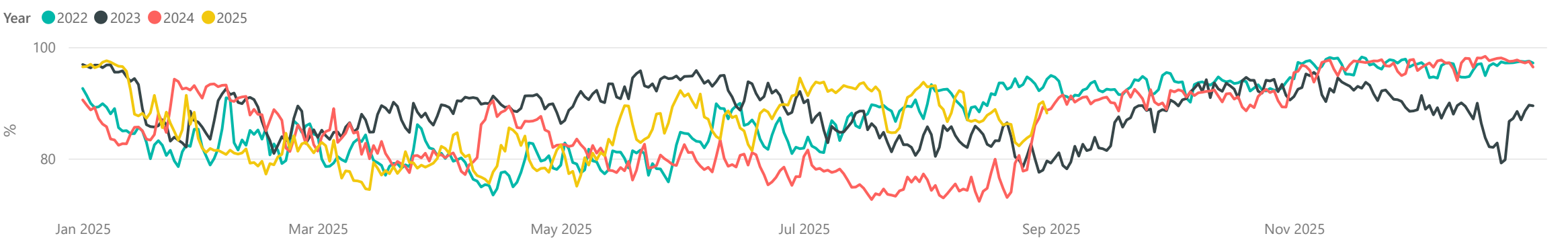
Weekly Generation Mix vs Capacity - GWh



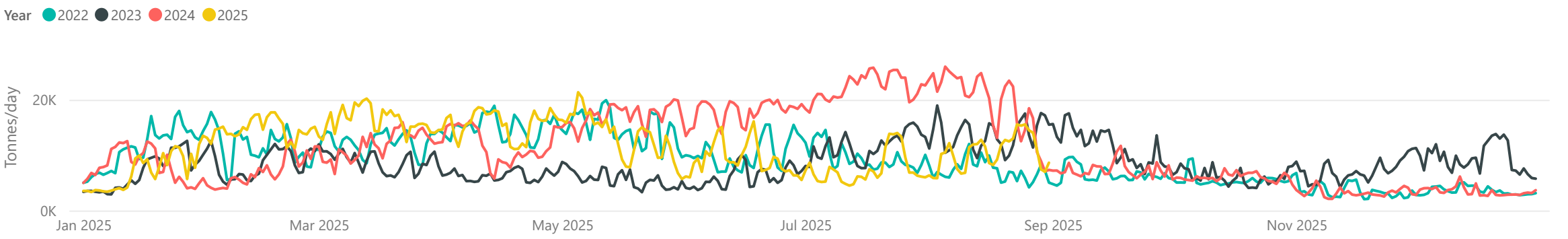
Weekly Generation Mix - GWh



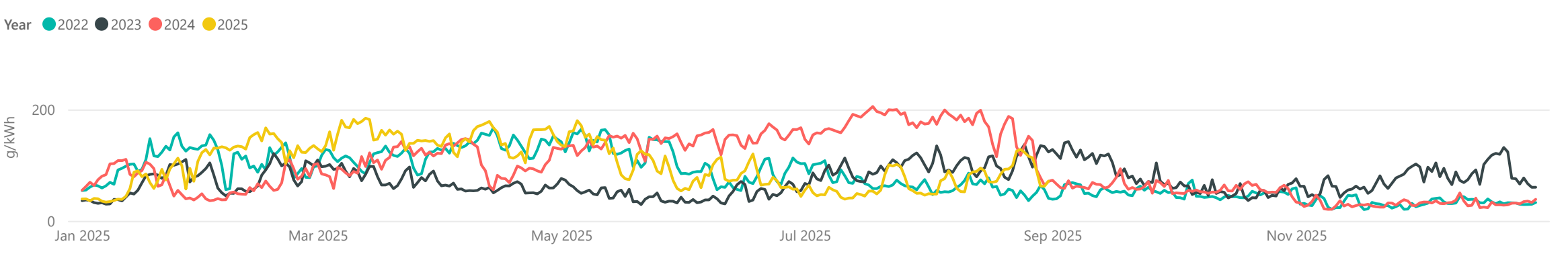
NZ Renewable Percentage



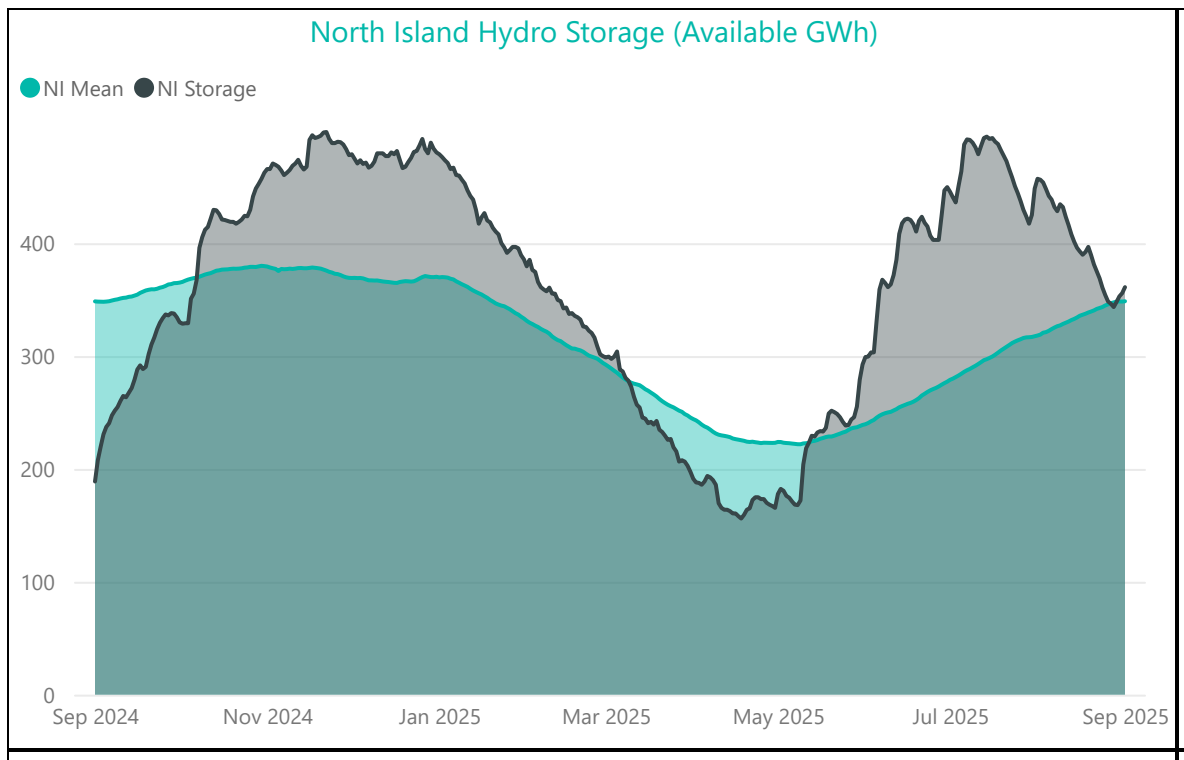
CO2 Tonnes/Day

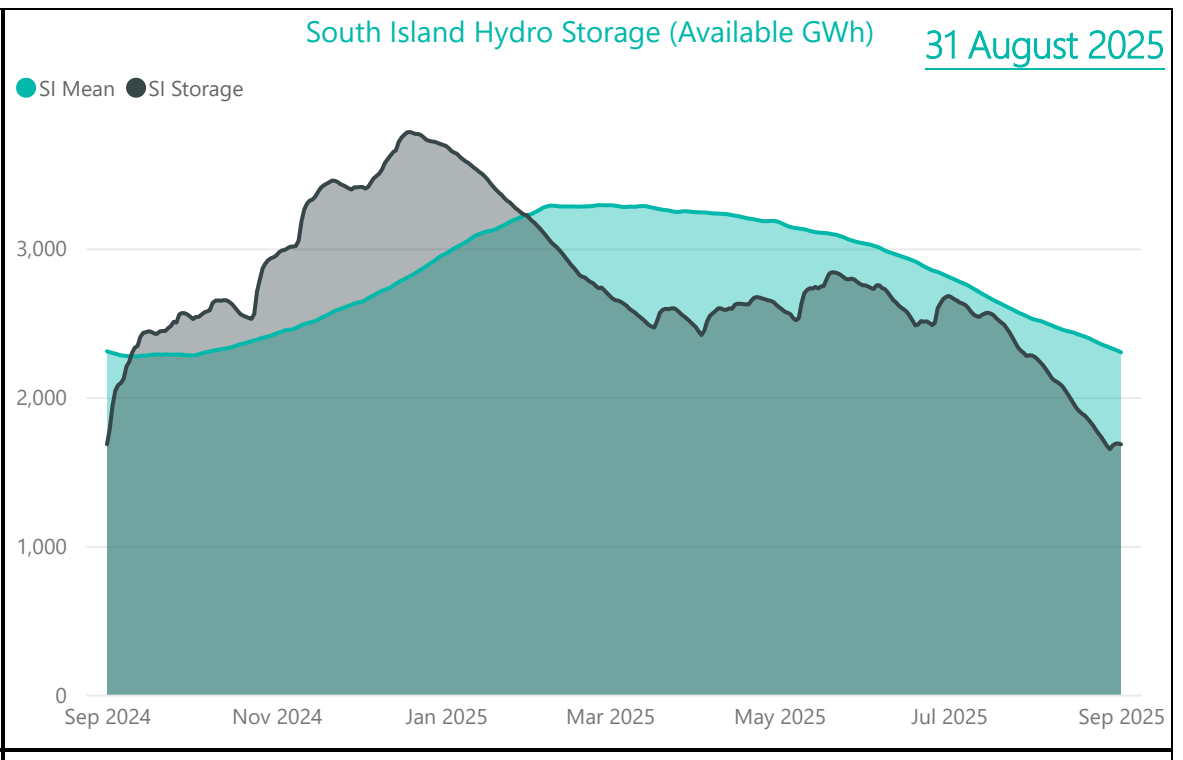


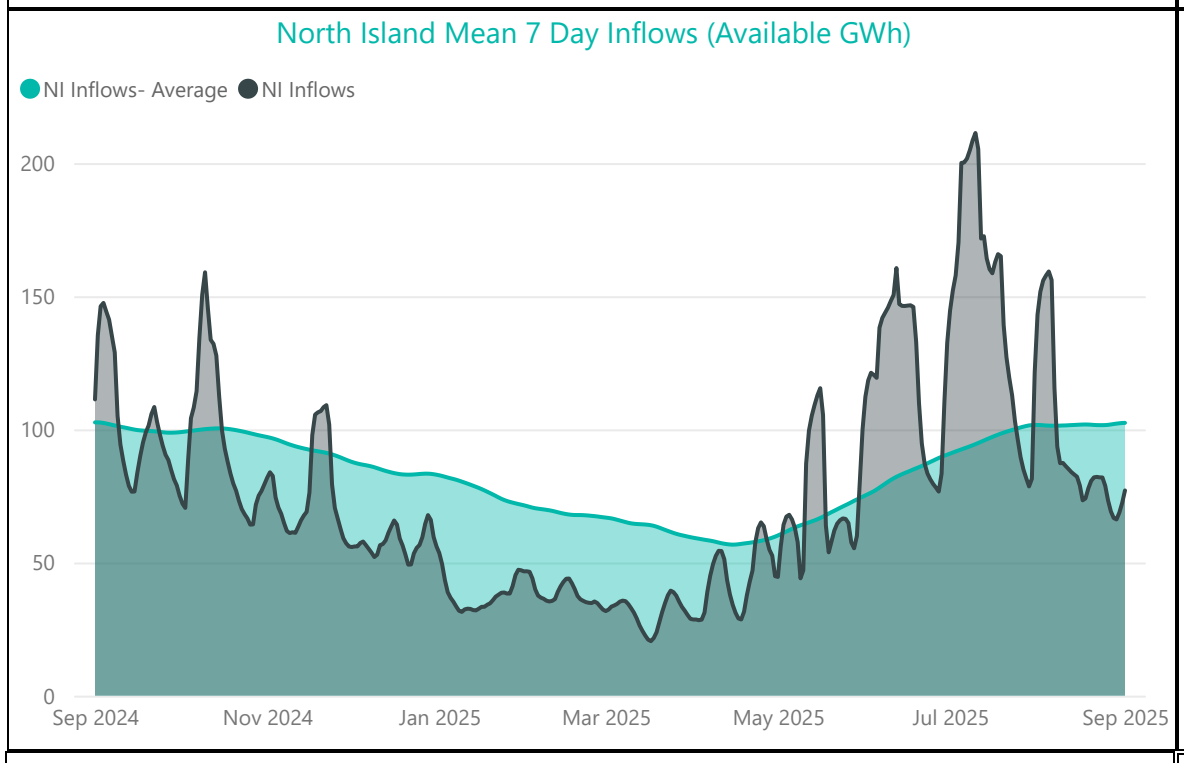
CO2 g/kWh

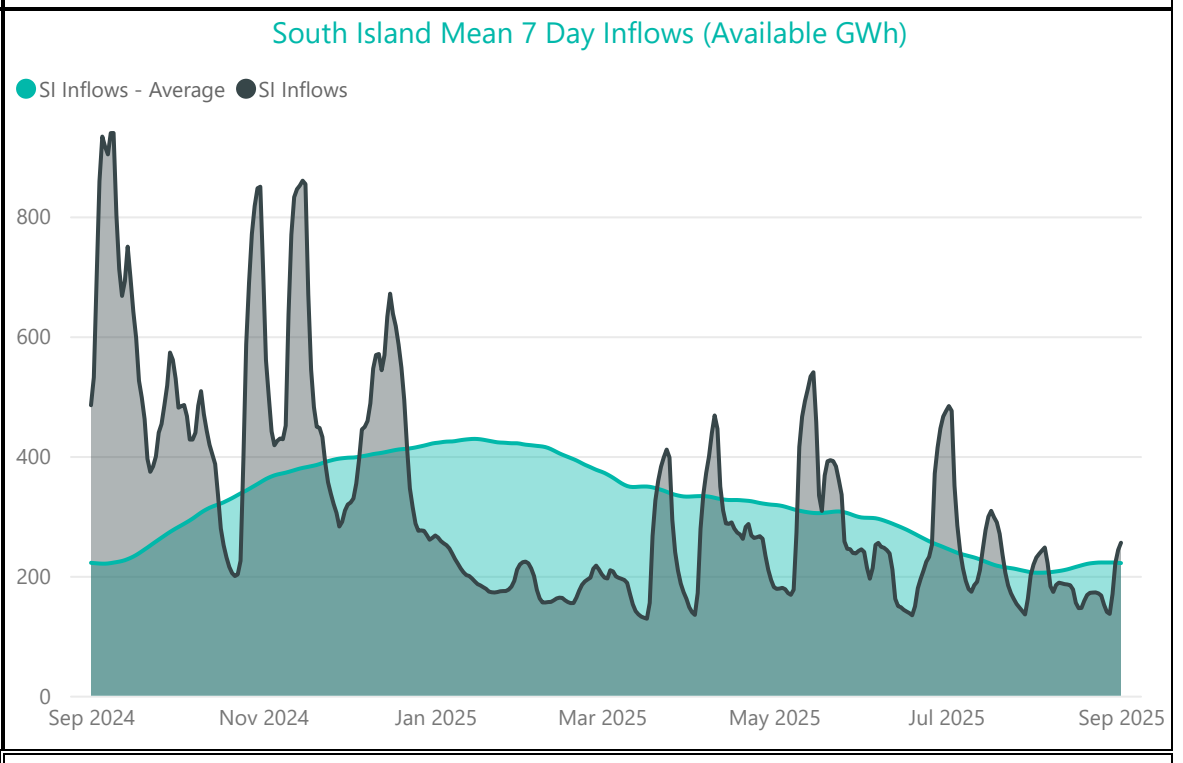


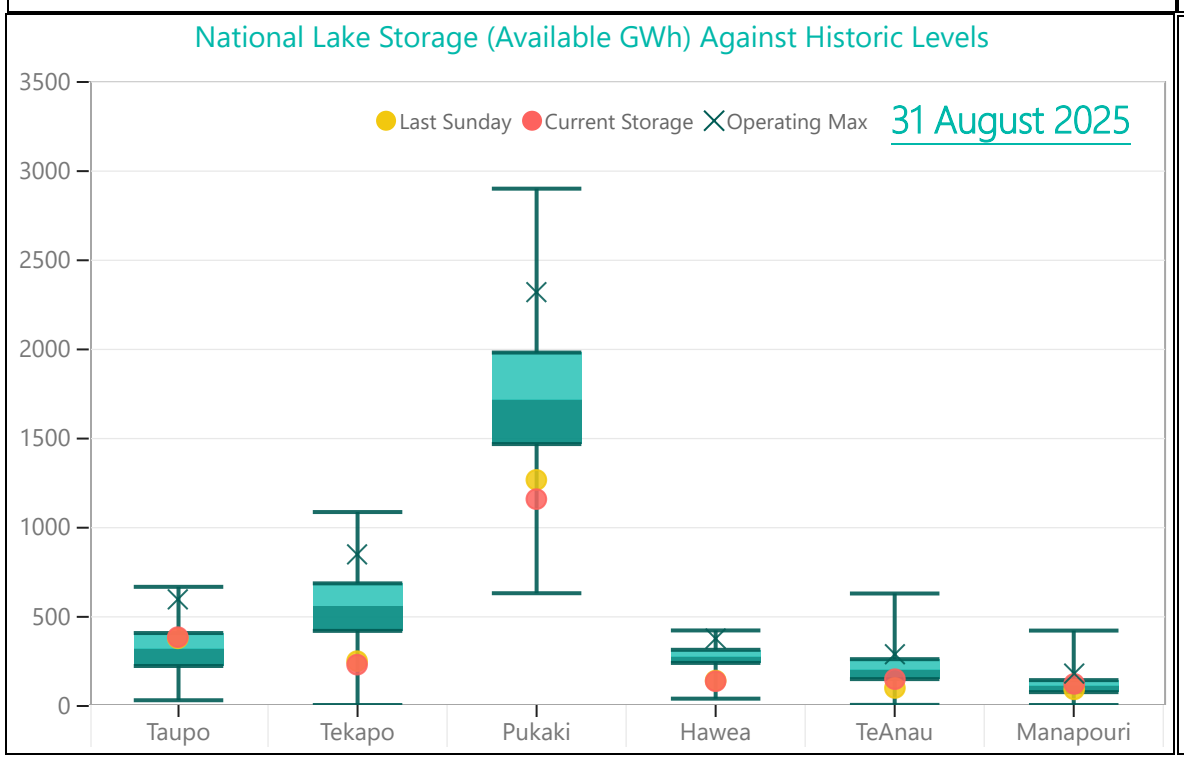
Hydro Storage

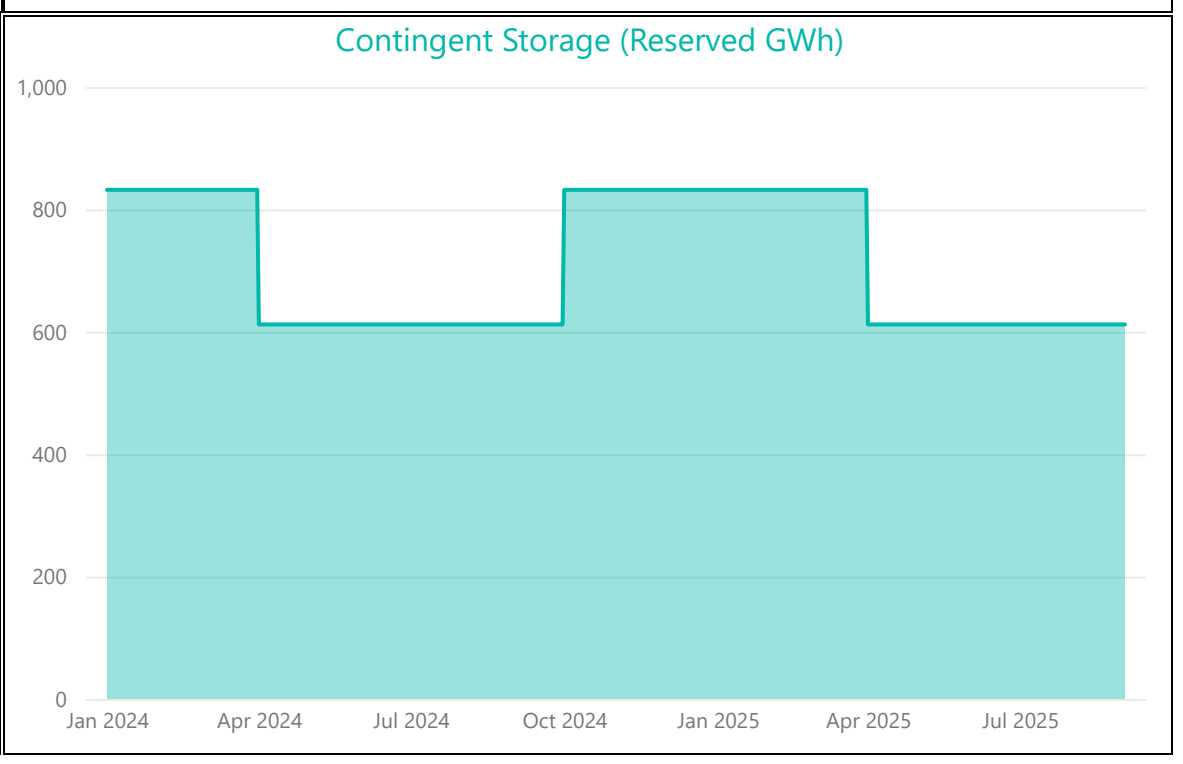












For further information on security of supply and Transpower's responsibilities as the System Operator, refer to our webpage here: https://www.transpower.co.nz/system-operator/security-supply

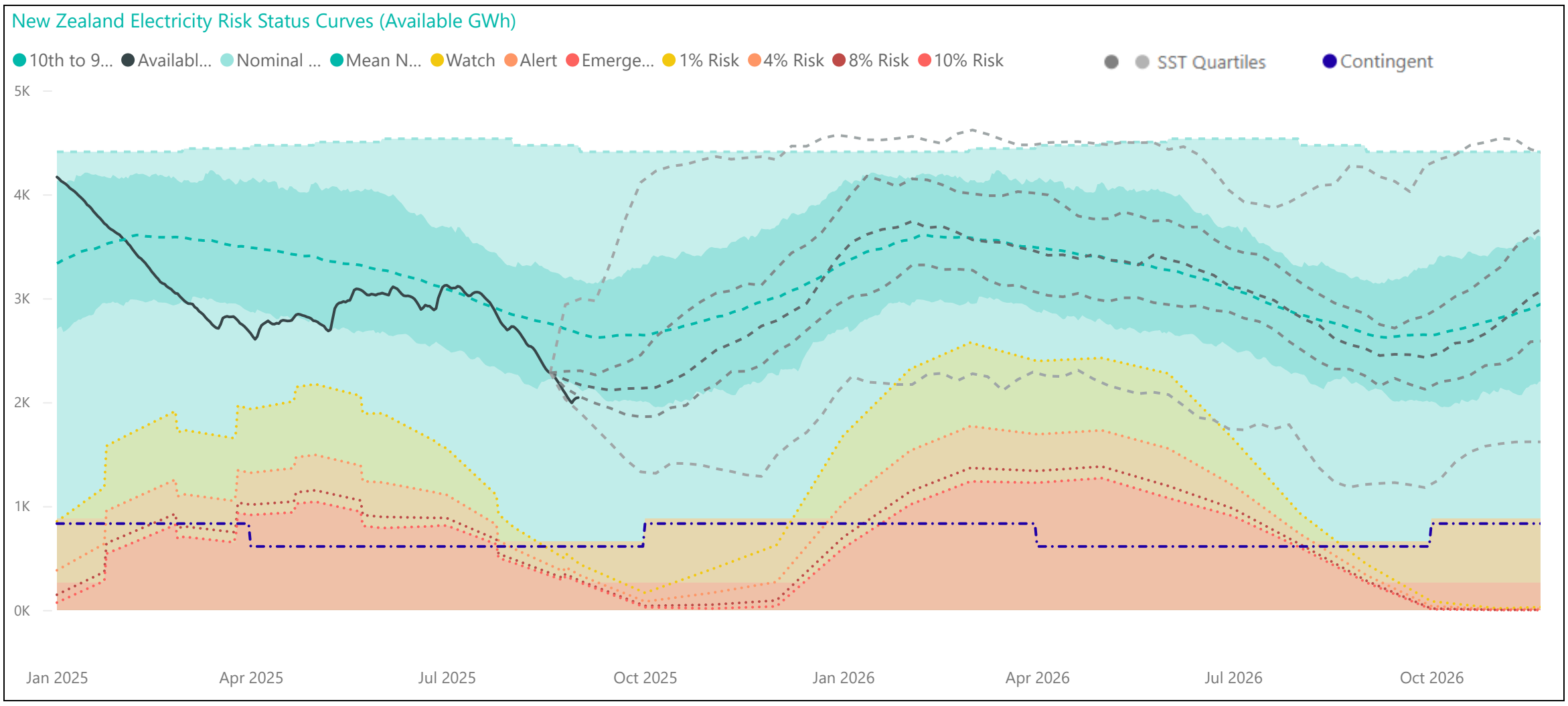
For any inquiries related to security of supply contact market.operations@transpower.co.nz

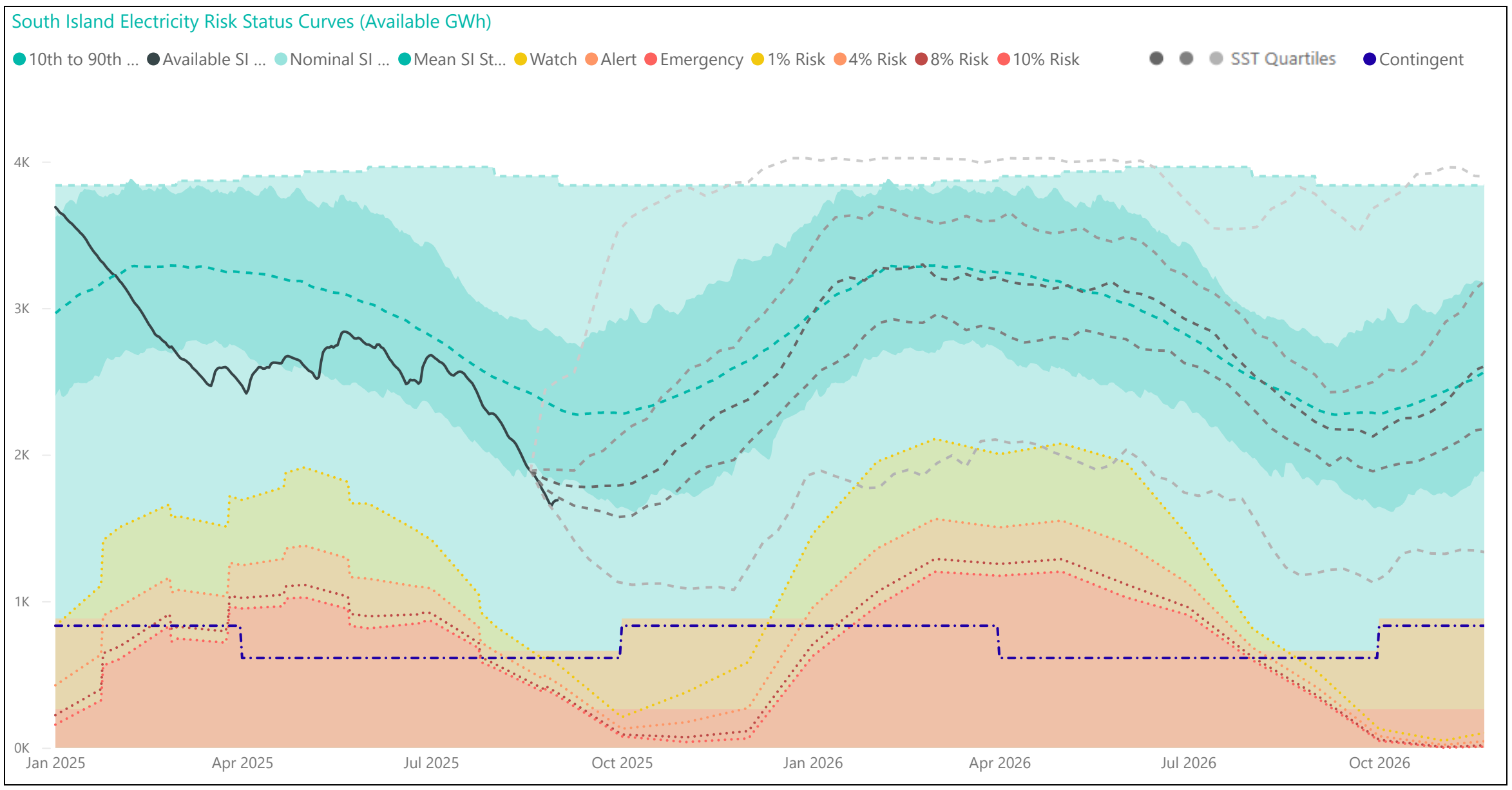
Hydro data used in this report is sourced from *NZX Hydro*.

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).