Market Operations Weekly Report - Week Ended 5 October 2025

Overview

New Zealand hydro storage remains above average at 108% of the mean for this time of year, with above average inflows offset by above average hydro generation. There were some periods of very low prices, particularly during periods of high wind generation.

This week's insight looks at the relationship between NIWA's Seasonal Climate Outlooks and quarterly hydro inflows.

Security of Supply

Energy

National hydro storage increased slightly to 108% of the historic mean for this time of year. South Island hydro storage increased from 102% to 104%, while North Island storage decreased from 137% to 132%.

Capacity

While capacity residual margins were high for most of last week, residual dropped to 300 MW on the morning of Thursday 2 October. We continue to monitor capacity closely during the spring shoulder season despite decreasing demand. Outages, reduced thermal unit commitment, and the possibility of cold snaps or large swings in wind generation mean that capacity can be tight despite much lower peaks than in winter.

The N-1-G margins in the NZGB forecast are healthy through to the end of November. 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 remained steady at 780 GWh. The highest demand peak occurred at 8:00am on Thursday 2 October at 5,871 MW.

Weekly Prices

The average wholesale electricity spot price at Ōtāhuhu last week increased to $65/MWh from $35/MWh the week prior. Wholesale prices peaked at $413/MWh at Ōtāhuhu at 8:00am on Thursday 2 October, as high-priced gas peakers were required to start up to support high loads with low wind generation and little slow-start thermal generation online.

Generation Mix

Renewable generation contributed 96% of the generation mix last week. Hydro generation contributed 62%, well above the 52-week average of 56%. Wind generation decreased from 13% to 9% of the mix. Thermal generation decreased from 5% to only 3%. Geothermal contributed 24%.

HVDC

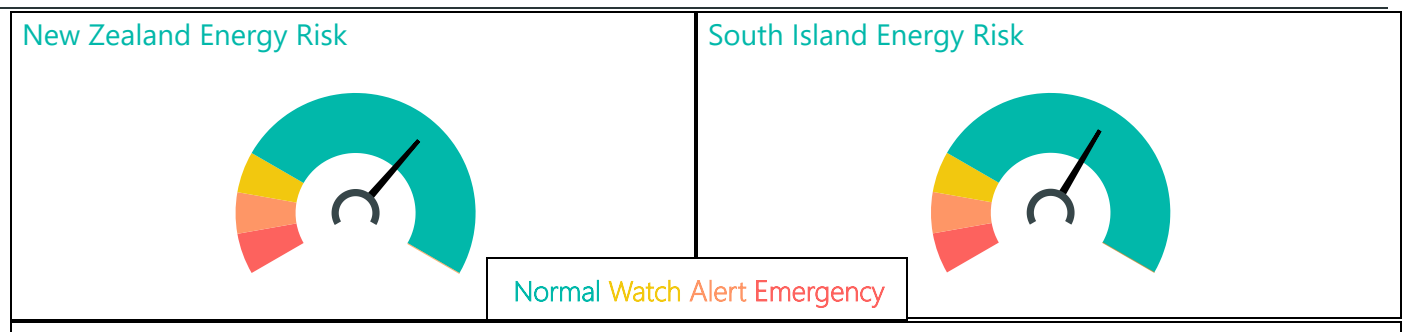
HVDC flow last week was predominantly northward, particularly on days with low wind generation. In total, 31 GWh was sent north and 5 GWh was sent south.

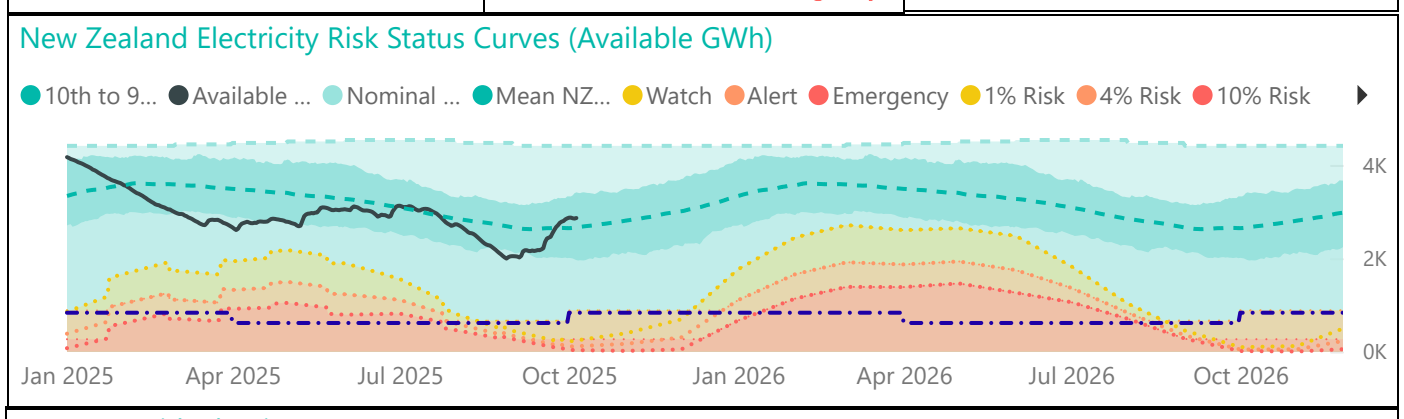
CACTIS Consultation Closed

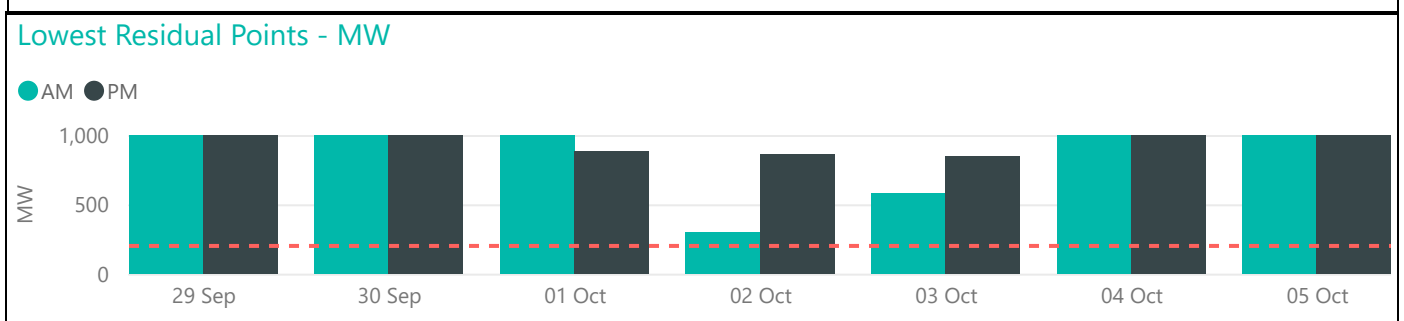
Consultation on the proposed Connected Asset Commissioning, Testing and Information Standard (CACTIS) closed on 29 September. Submissions were received from 15 organisations. These have been published on our website here.

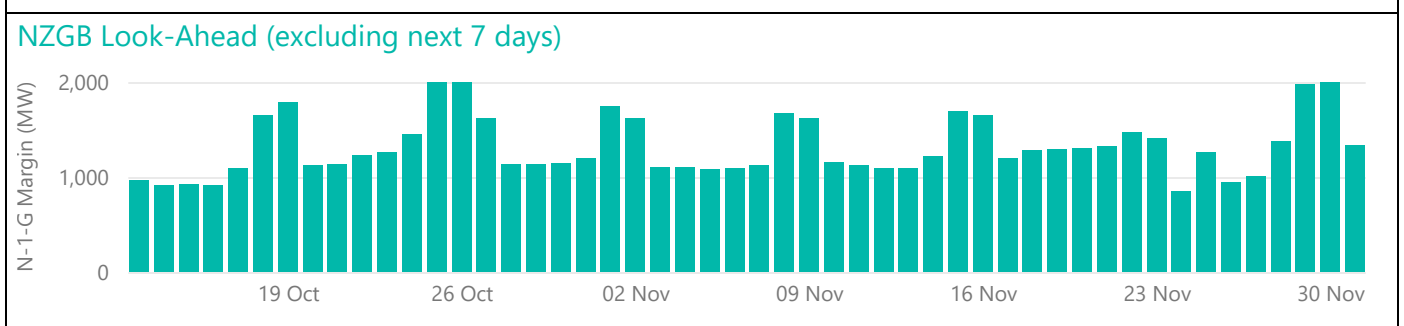
SOSFIP Consultation Open

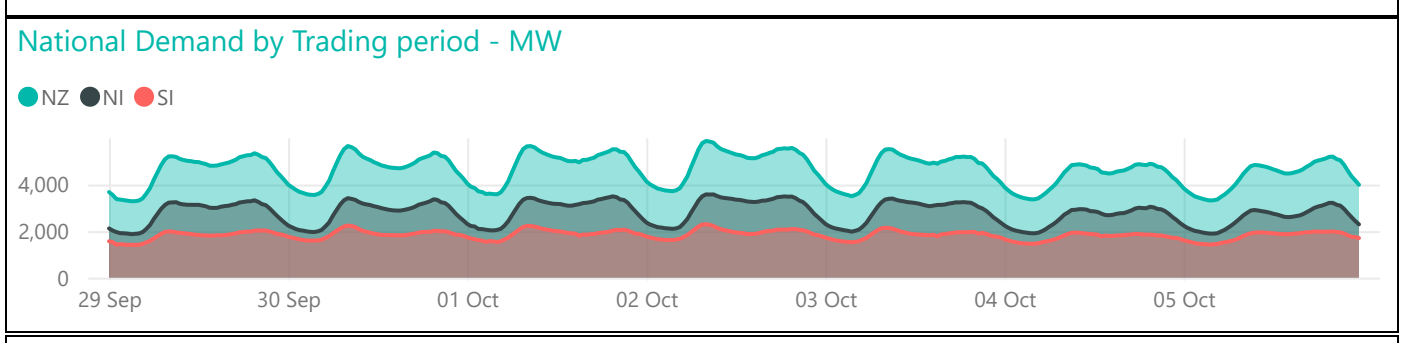
Consultation on a draft amendment to the System Operator Forecasting and Information Policy (SOSFIP) is now open. The closing date for submissions is 5pm on Tuesday 4 November 2025, with cross-submissions due by 5pm on Tuesday 11 November 2025.

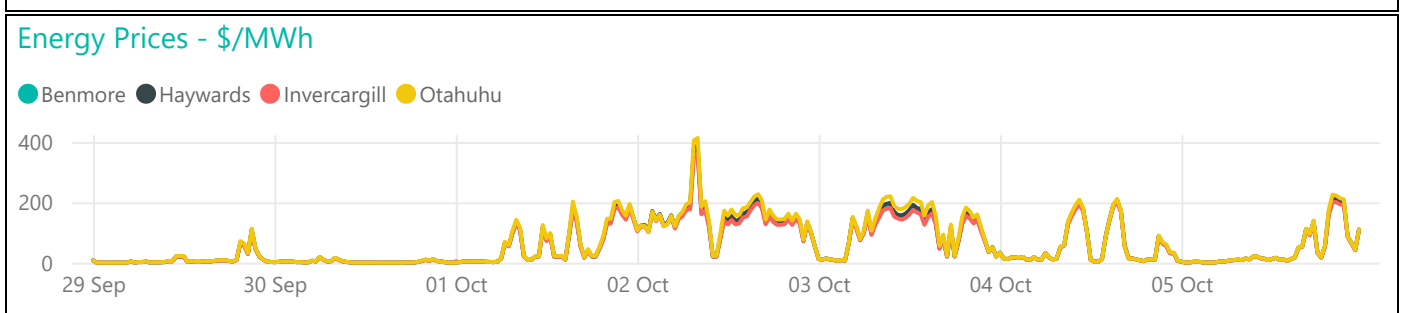


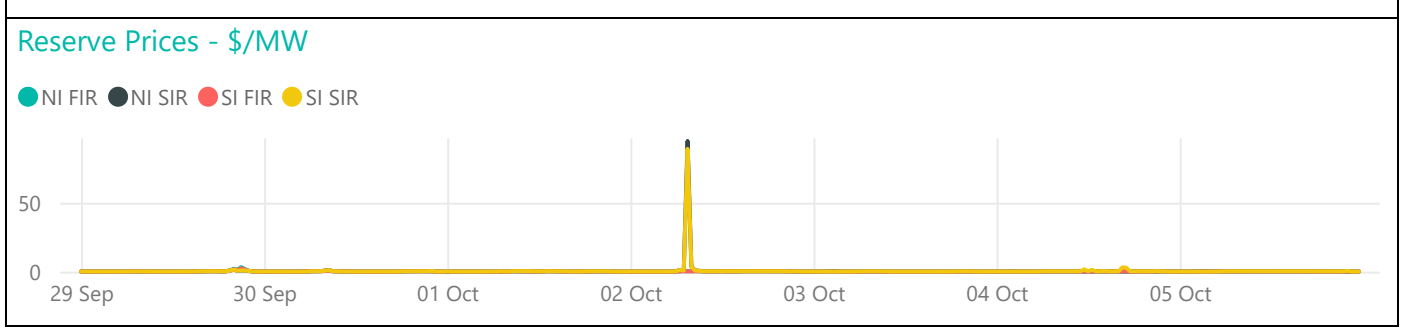


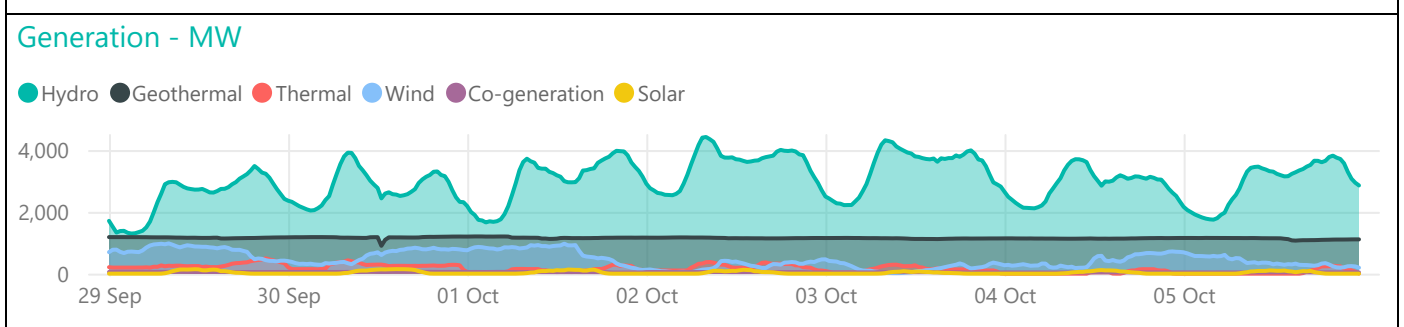


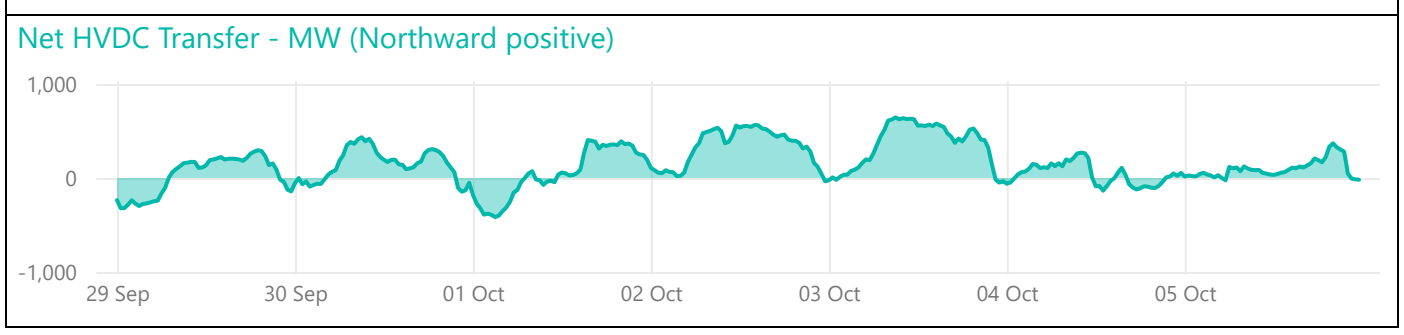












Weekly Insight - Relationship between NIWA's seasonal climate outlook and hydro inflows

Over the last 12 months the contribution of renewable generation to the New Zealand electricity supply mix has been on average 88%. With an increasing amount of renewable energy in the New Zealand electricity supply pipeline, security of supply is becoming more variable depending on the weather, meaning we are becoming more reliant on weather forecasts as a result.

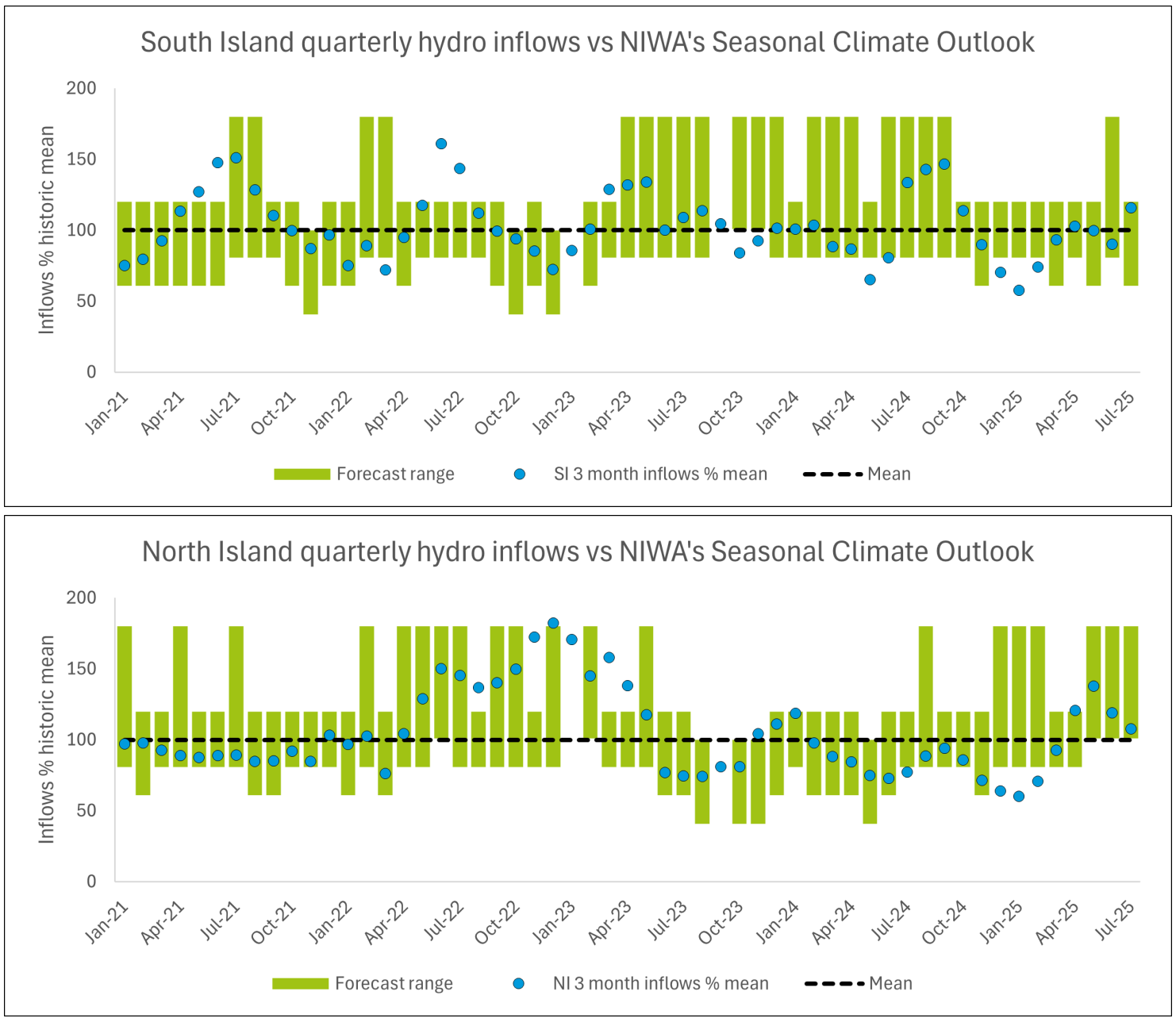
A forecast which the System Operator has found valuable for mid-term forecasting is the NIWA Seasonal Climate Outlook, which is released monthly and provides a general seasonal outlook for the quarter ahead. This includes approximate rainfall and temperature expectations and confidence.

In this week's insight, we looked into how these outlooks correlate with hydro inflows into our major controlled storage catchments. This compares inflows into our major controlled storage catchments from the last few years to historic inflow averages for three months at a time, and lines up the results with NIWA's predictions. Historic averages are for the period 1991-2020, in line with the range NIWA is using for their historic climatology comparison.

For the purposes of this analysis, NIWA's rainfall forecast categories have been approximated to correspond to the following percentages of average inflows:

	% mean inflows
Below	<100
Normal-Below	<120
Normal	80-120
Normal-Above	>80
Above	>100

This is the shaded orange portion on the plots below. Plotted in blue are the inflows into the controlled storage catchments (South Island on the top graph, and North Island on the bottom) over a rolling three months, as a percent of the historic mean for the same time of year. For example, the blue bar for January 2021 represents the inflows from January-March 2021 as a percentage of the average inflows through January-March from 1991 to 2020. Three months were chosen as the NIWA seasonal outlook generally covers the next three months, despite being updated monthly.



Most of the time the expected rainfall in the seasonal outlook appears to correspond to the inflows into the controlled storage catchments in both the North and South Islands.

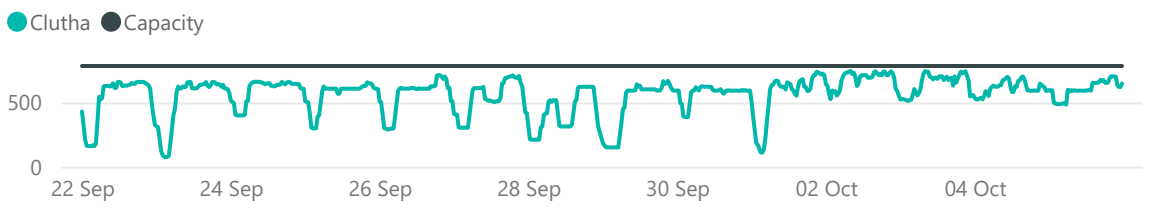
The observed inflows into the South Island storage catchments generally varies further from the seasonal outlook rainfall forecast compared to the North Island, but there is also a lot more storage with varying locations over the South Island.

The rainfall outlook for South Island has been higher than the observed inflows 11% of the time in the last five years, and lower 9% of the time. The rainfall outlook in the North Island has been higher than the observed inflows in only 6% of the outlooks in the last five years, and 8% of the outlooks have had a lower rainfall estimate than observed inflows. Keeping in mind inflows can also come from snow melt, and tributaries from regions further afield, it makes sense that the inflows into the North Island controlled storage catchment (Lake Taupo) is more in line with the expected rainfall in the seasonal outlook than in the South Island.

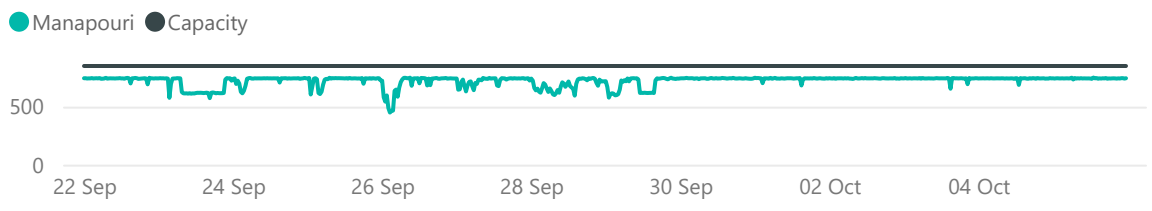
Generation Breakdown - Last Two Weeks

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

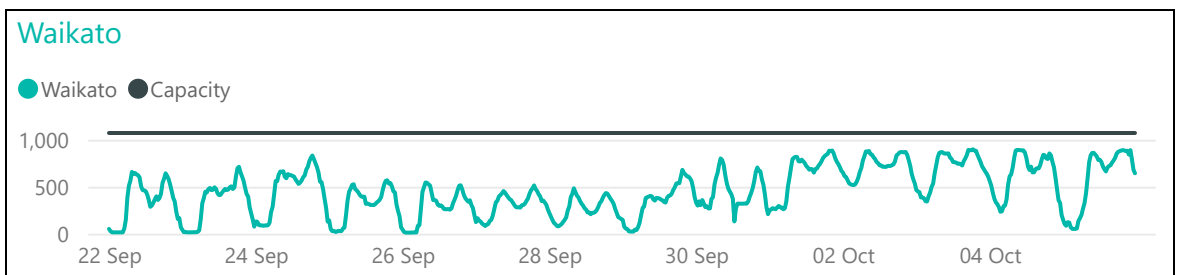
Clutha



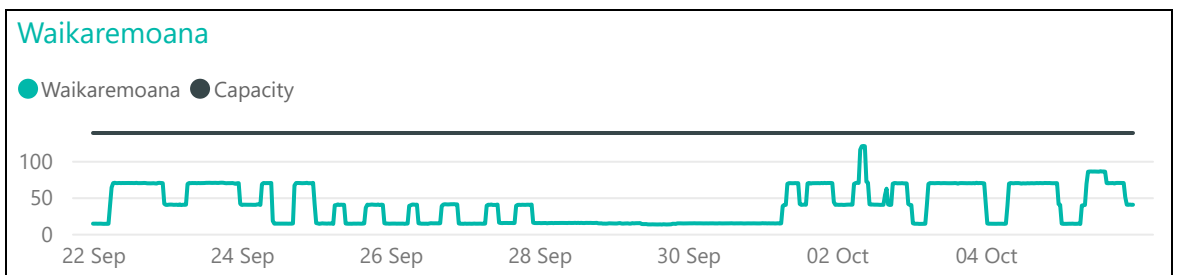
Manapouri



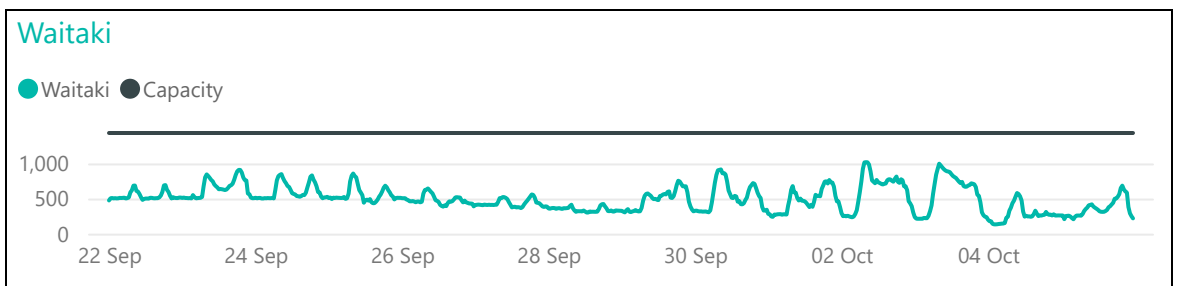
Waikato



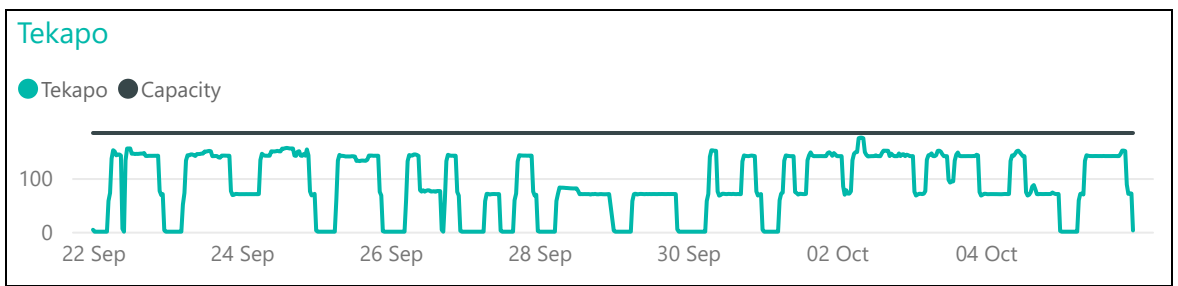
Waikaremoana



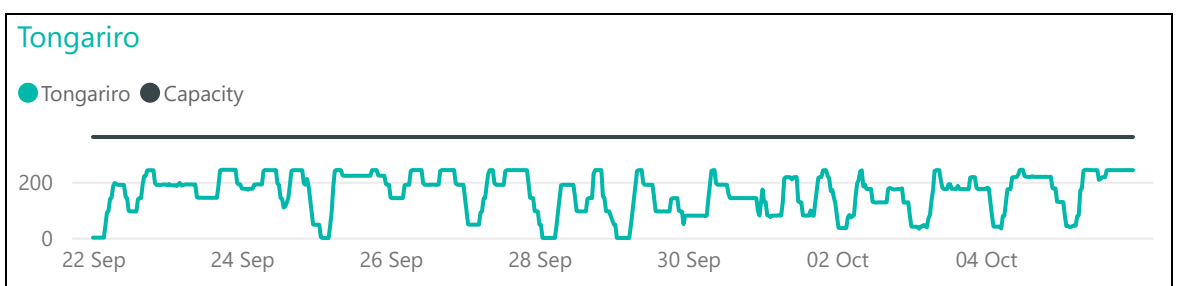
Waitaki



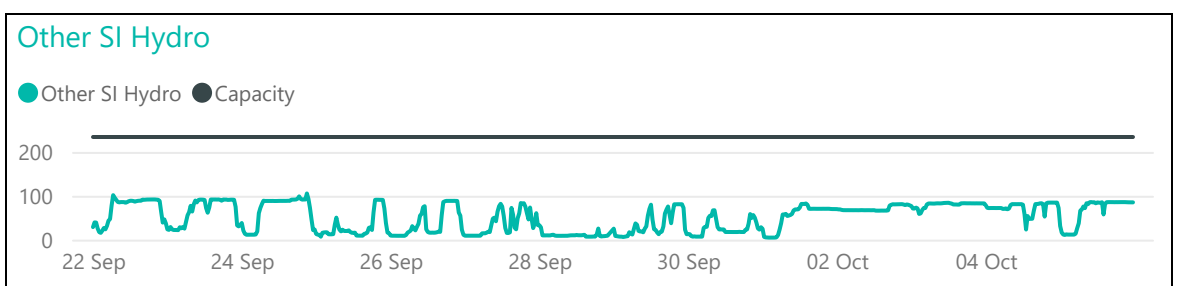
Tekapo



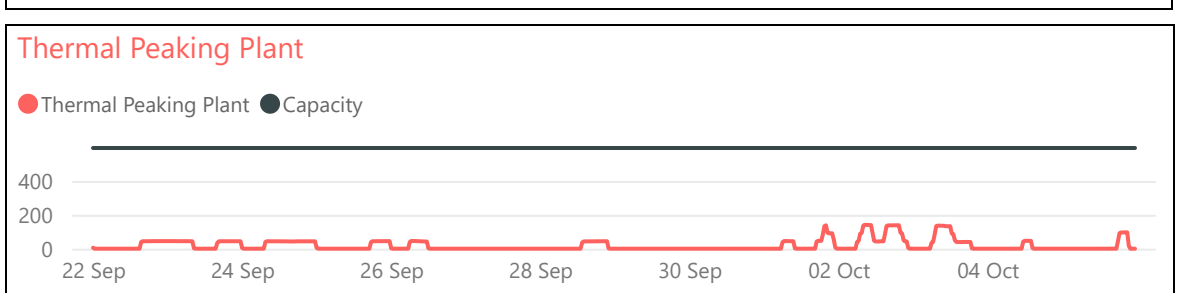
Tongariro



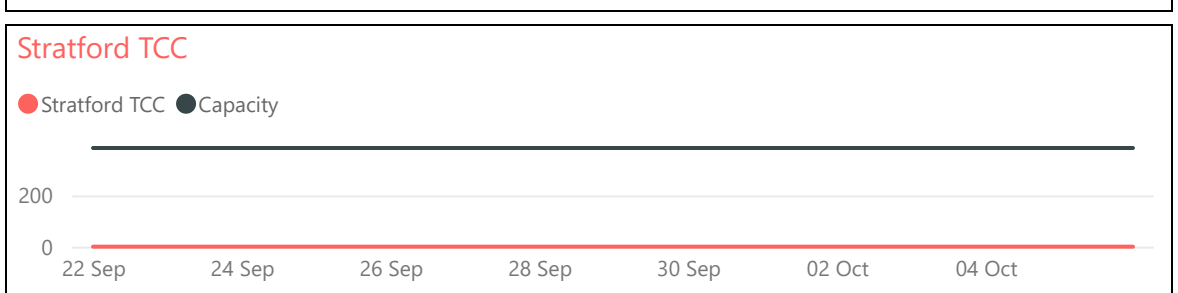
Other SI Hydro



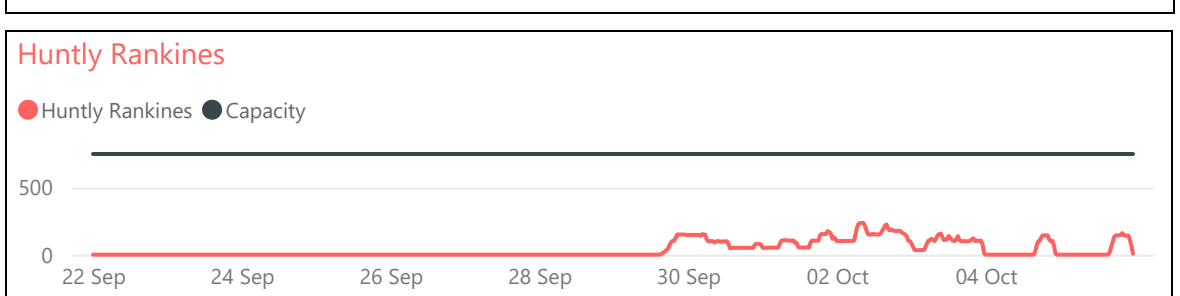
Thermal Peaking Plant



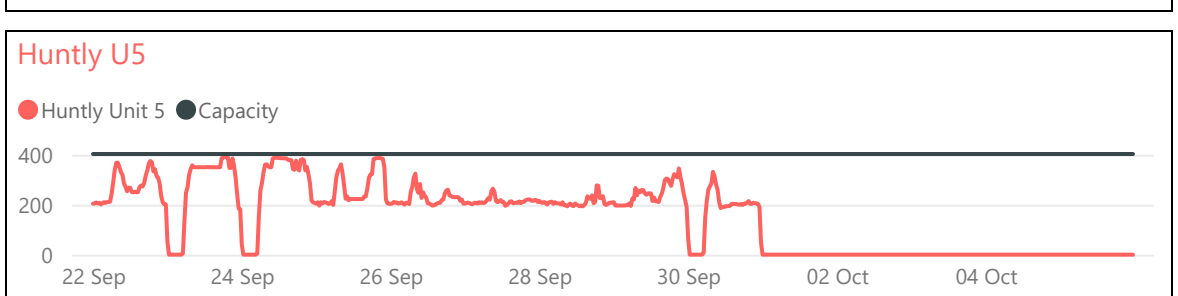
Stratford TCC



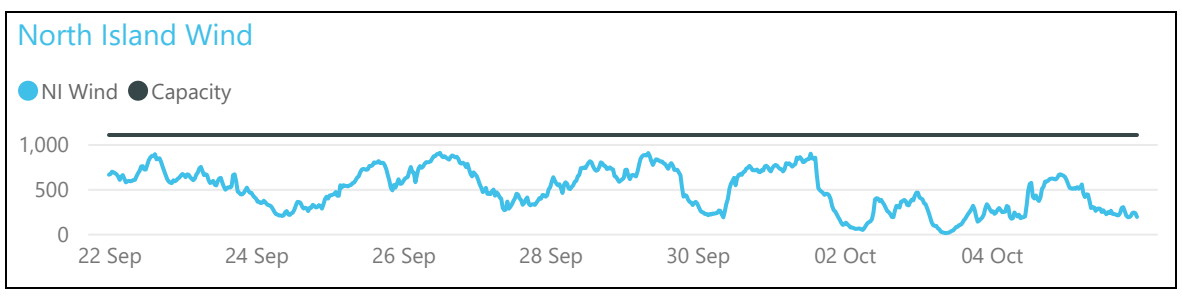
Huntly Rankines



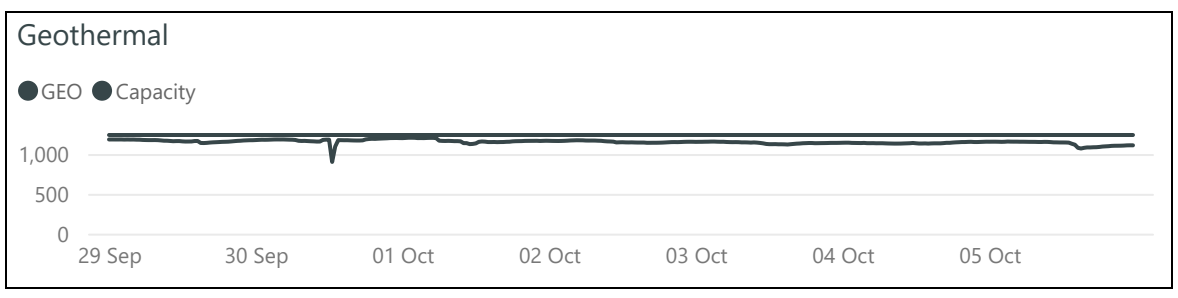
Huntly U5



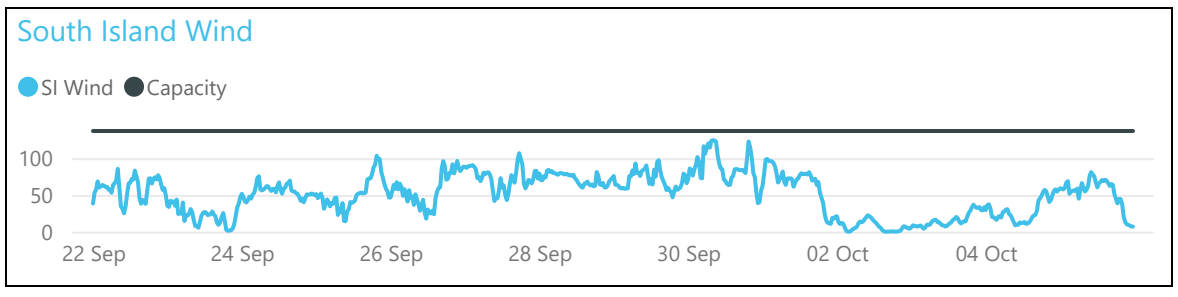
North Island Wind



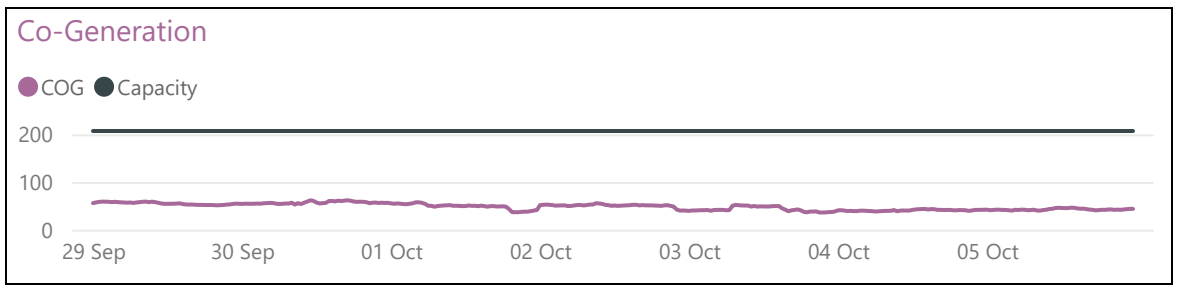
Geothermal



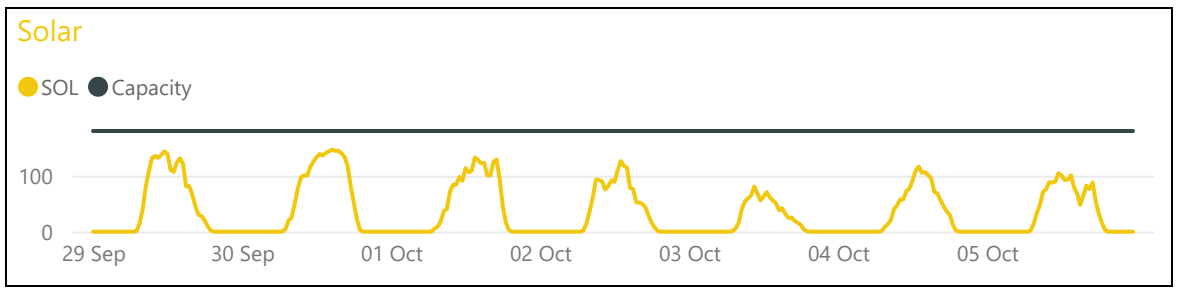
South Island Wind



Co-Generation

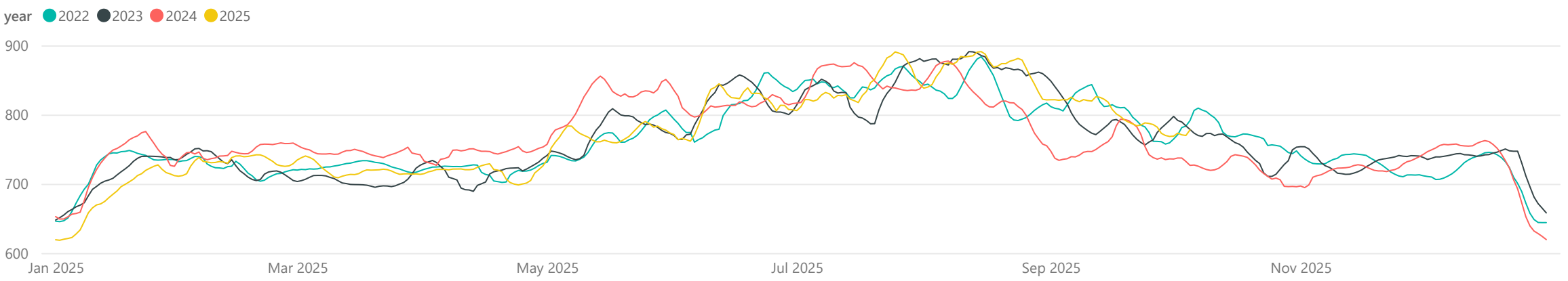


Solar

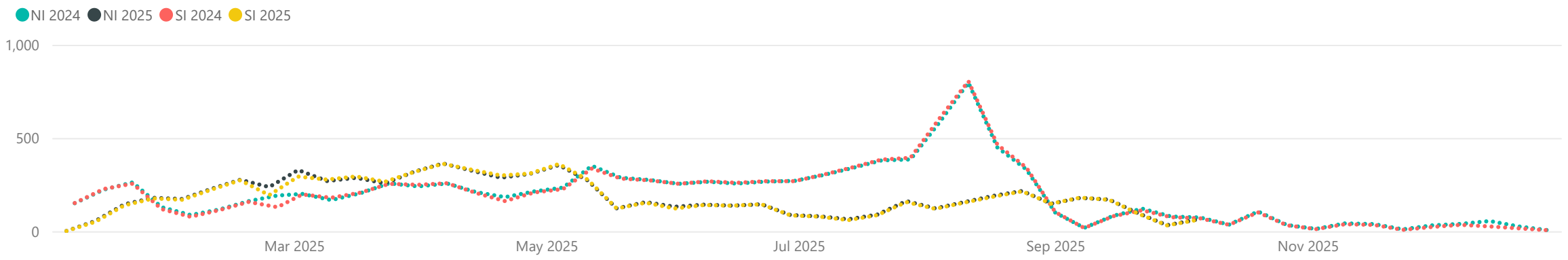


Weekly Profiles

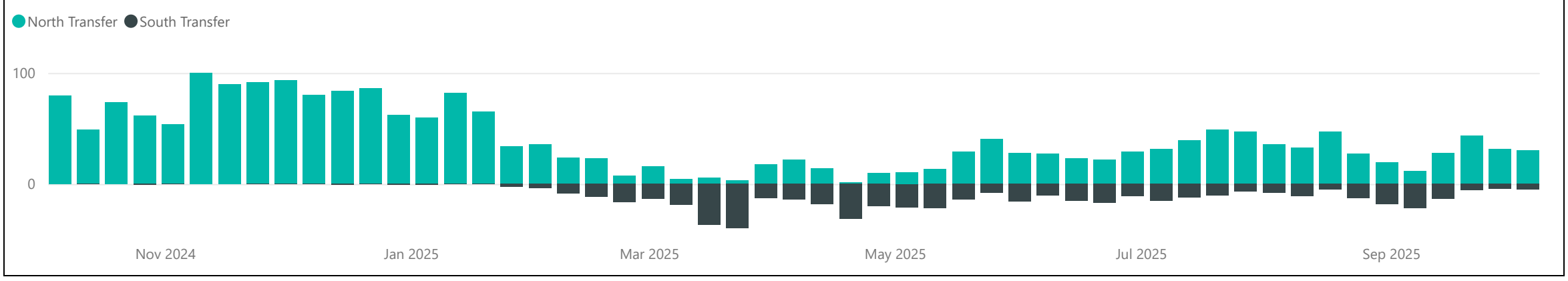
National Weekly Demand - GWh - 7 Day Rolling



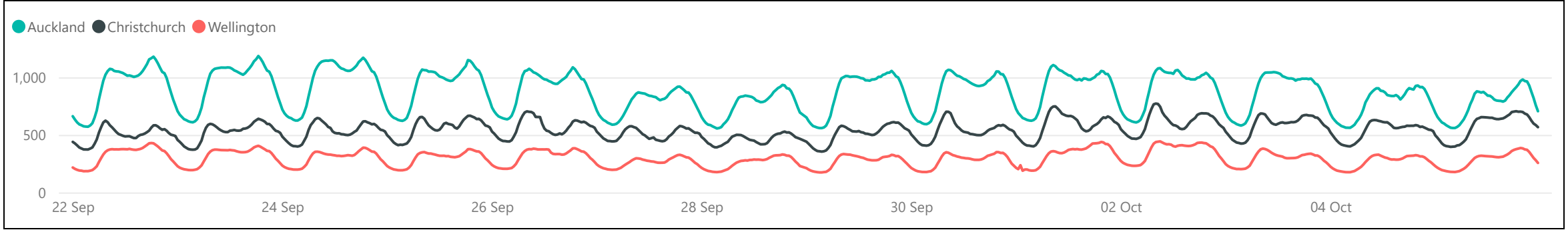
Weekly Spot Price - $/MWh



HVDC Transfer - Weekly GWh

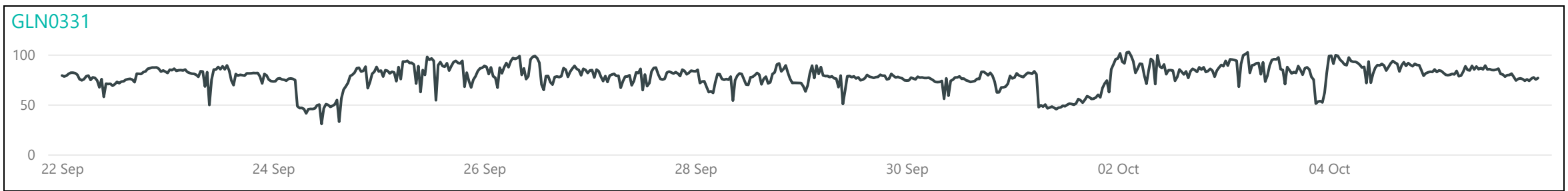


Conforming Load Profiles - Last Two Weeks *Measured in MW shown by region*



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

GLN0331



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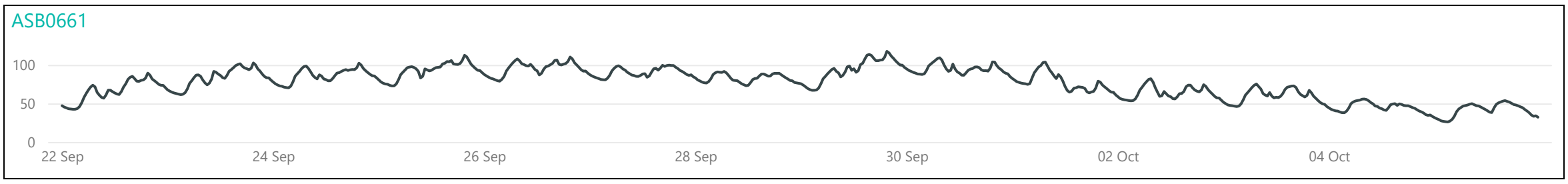

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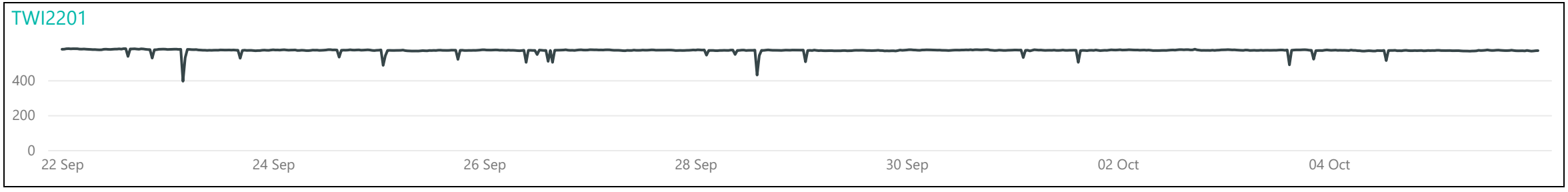
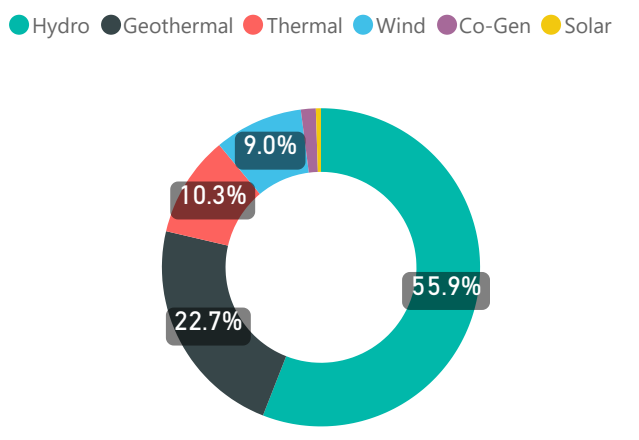


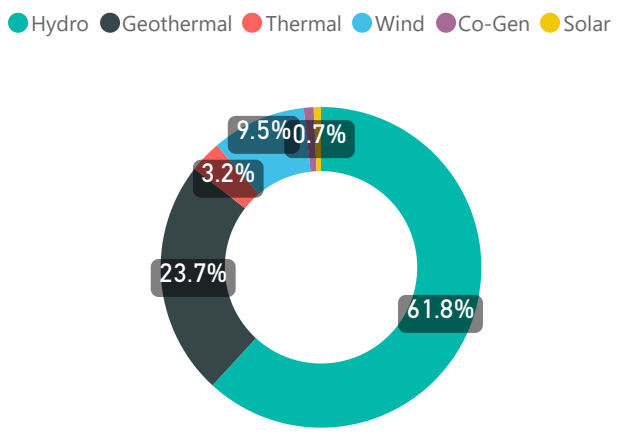
TRANSPOWER

Generation Mix

Last 52 Weeks Generation Mix - Weekly GWh



Last 7 Days Generation Mix - Weekly GWh



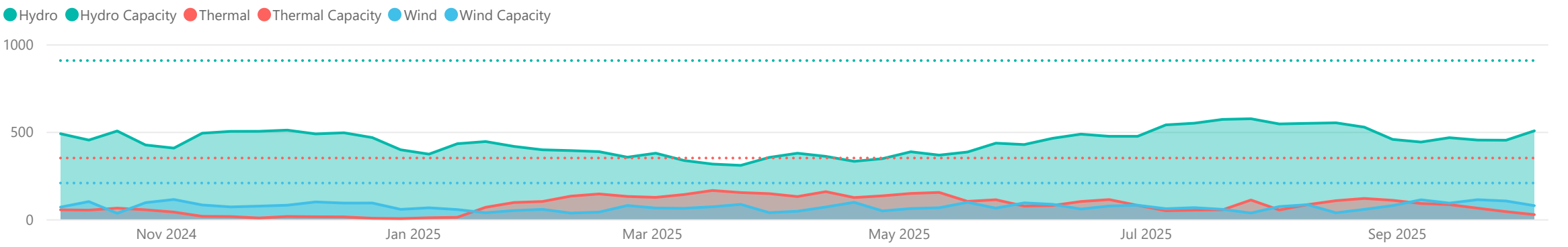
Average Metrics Last 7 Days

Renewable Percentage	CO2e Tonnes/Week	CO2e g/kWh
96%	36,250	43.8

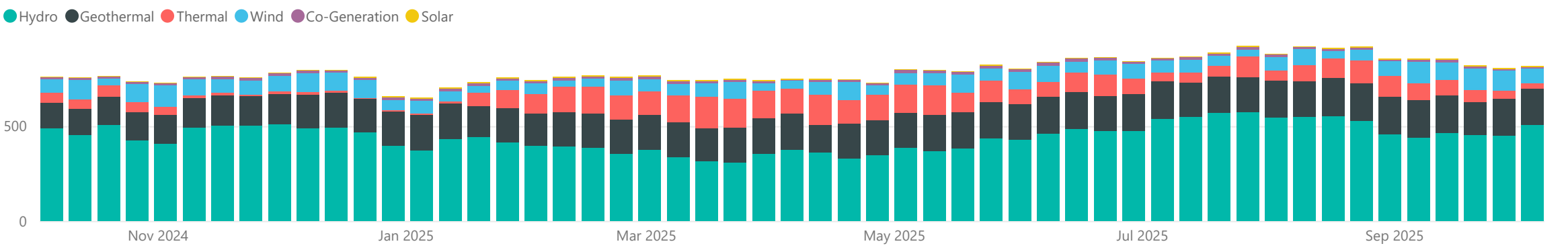
Average Metrics Last 52 Weeks

Renewable Percentage	CO2e Tonnes/Week	CO2e g/kWh
88%	66,943	84.4

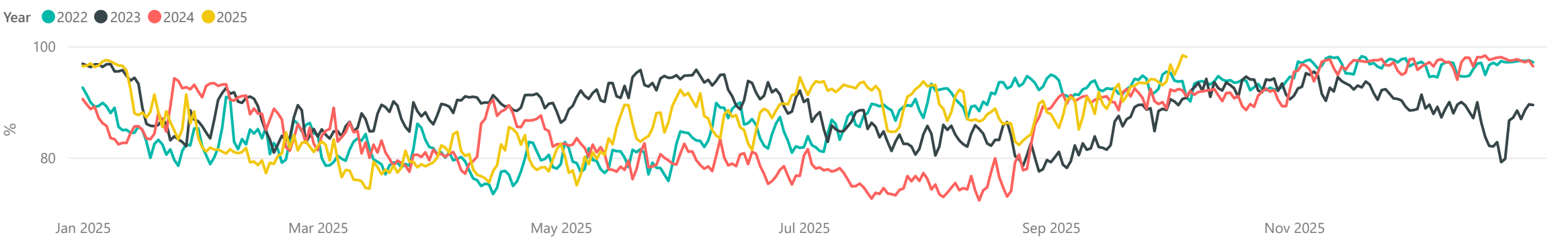
Weekly Generation Mix vs Capacity - GWh



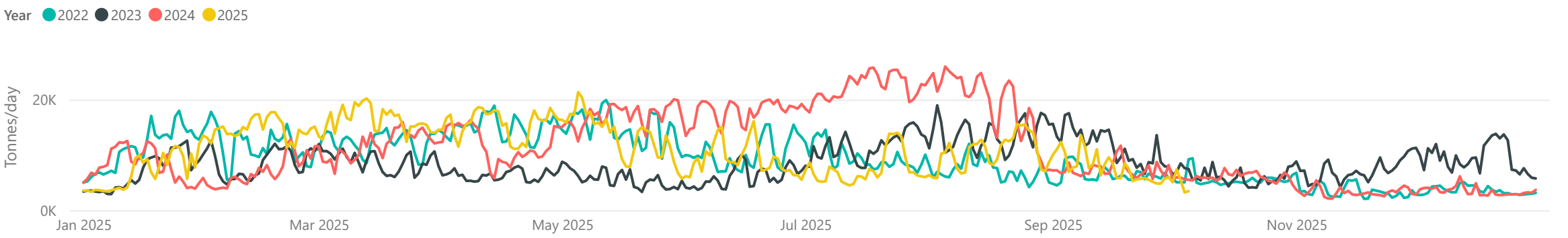
Weekly Generation Mix - GWh



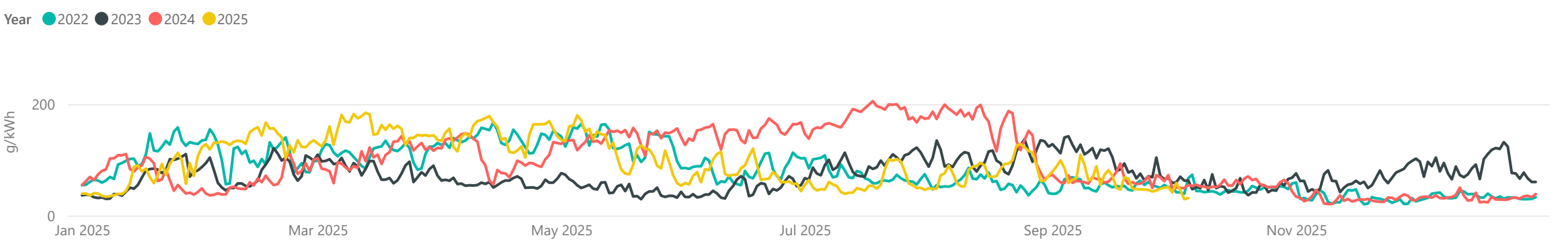
NZ Renewable Percentage



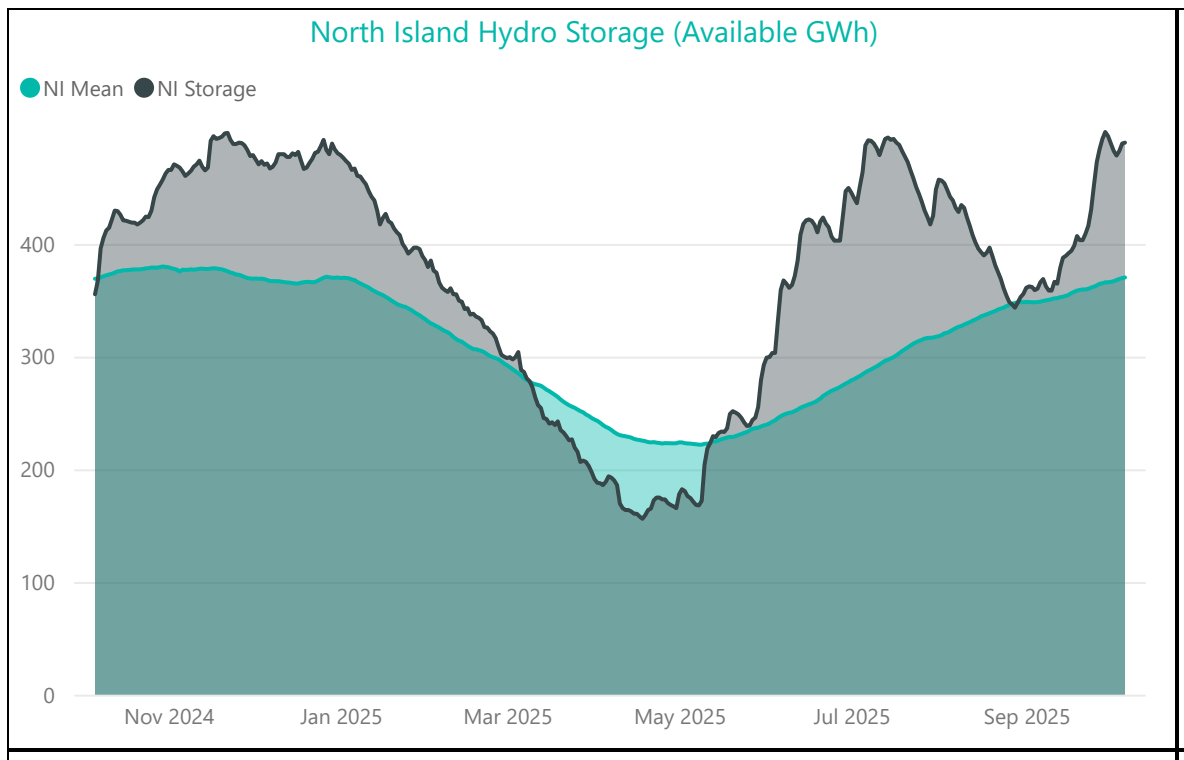
CO2 Tonnes/Day

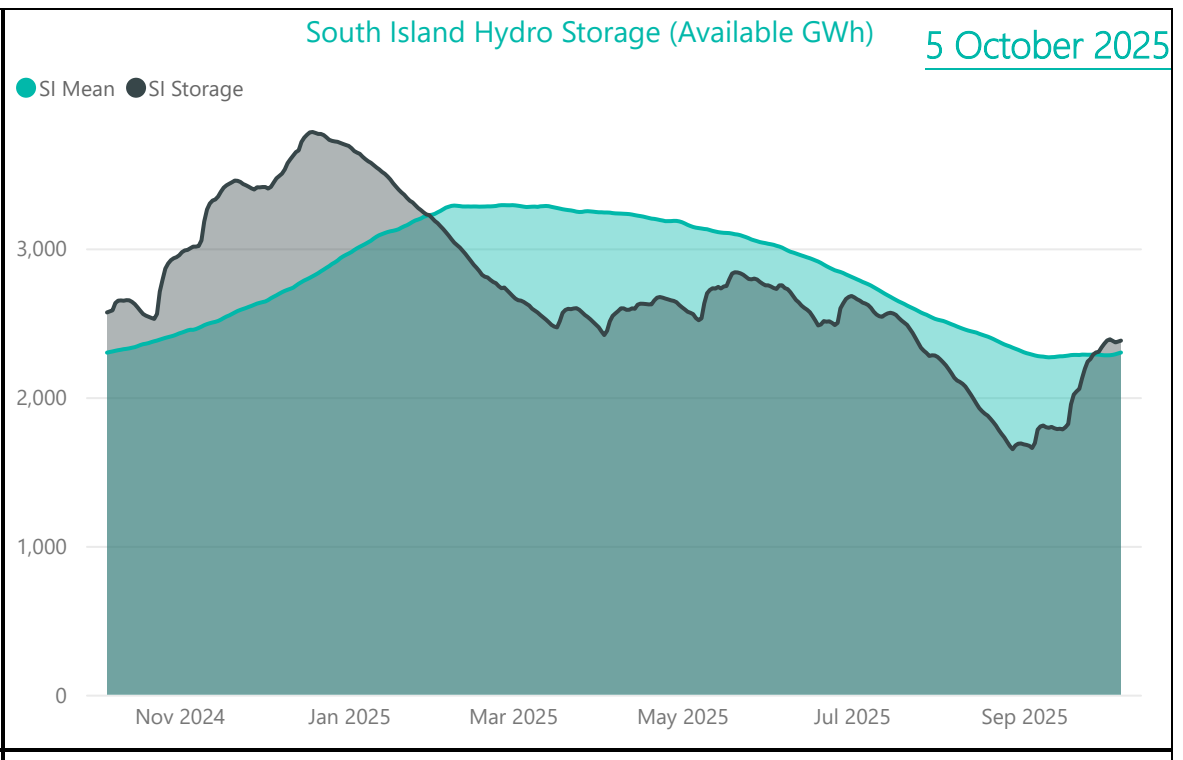


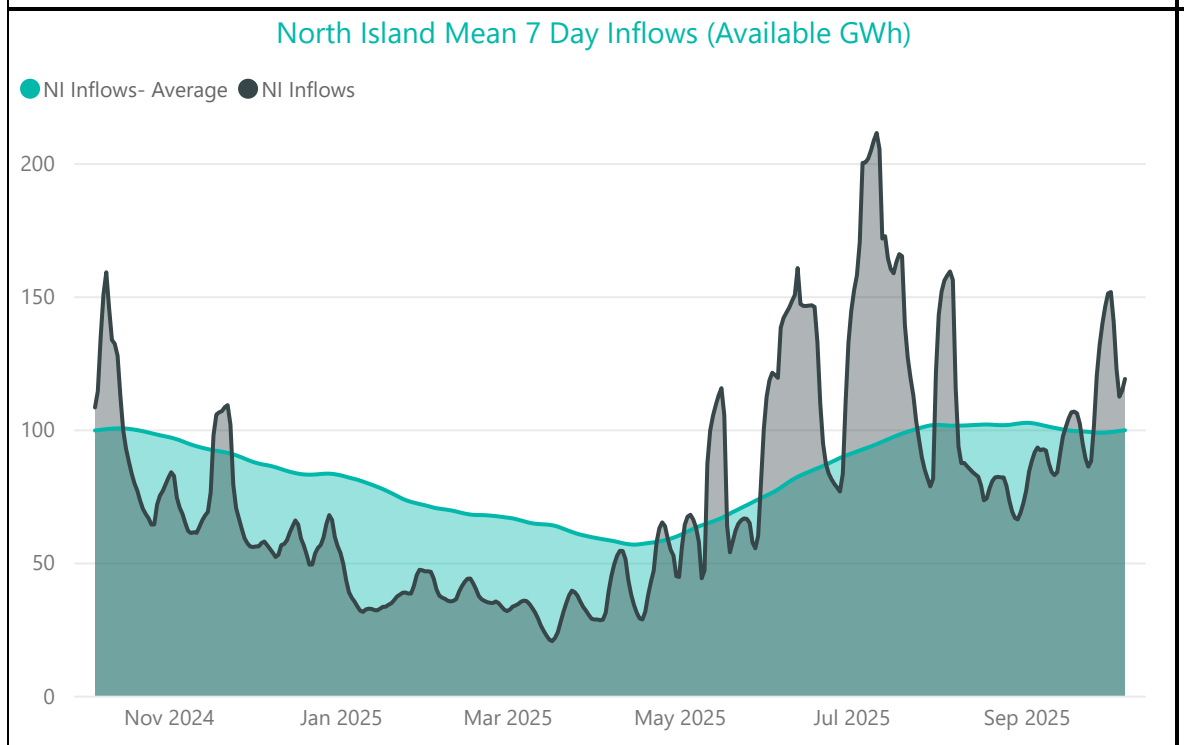
CO2 g/kWh

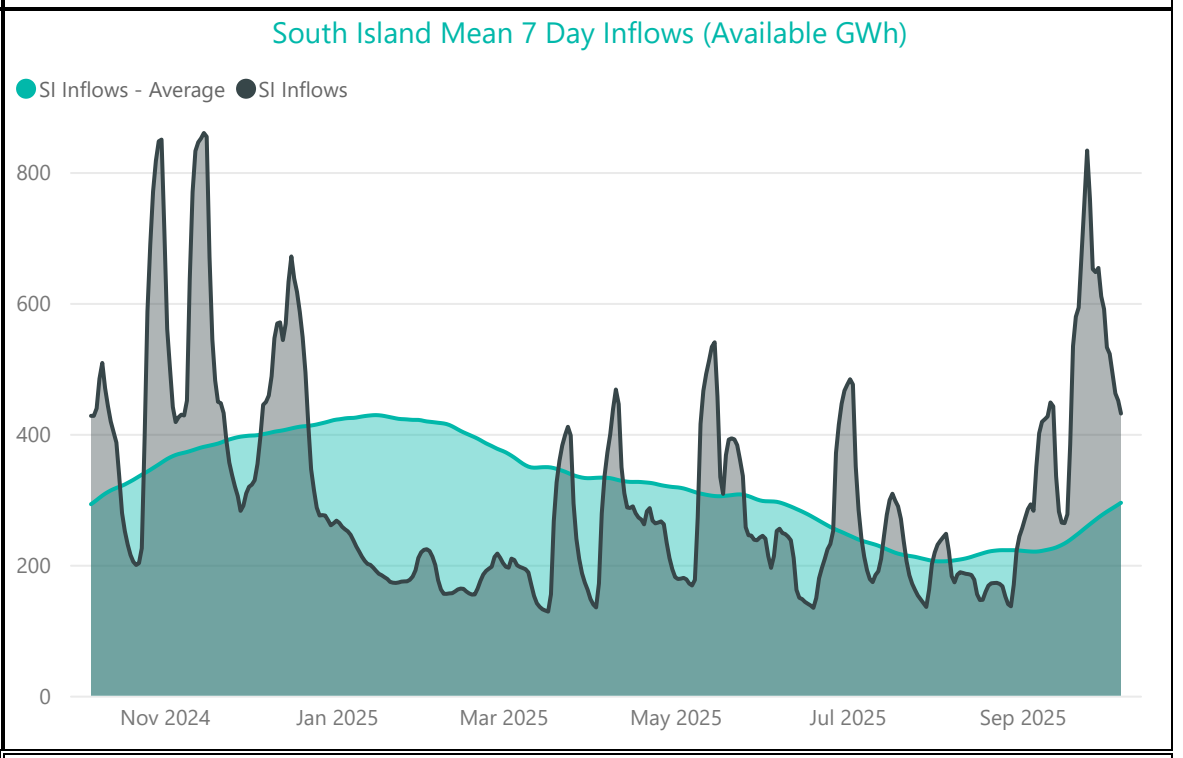


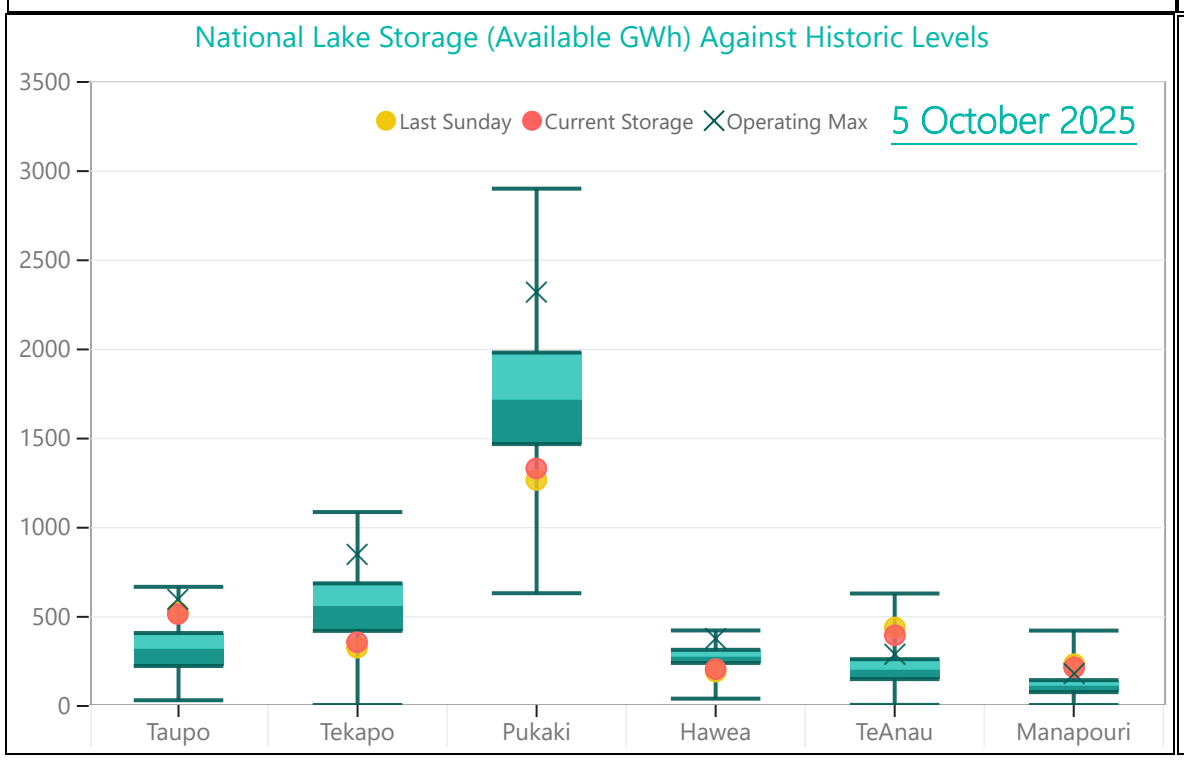
Hydro Storage

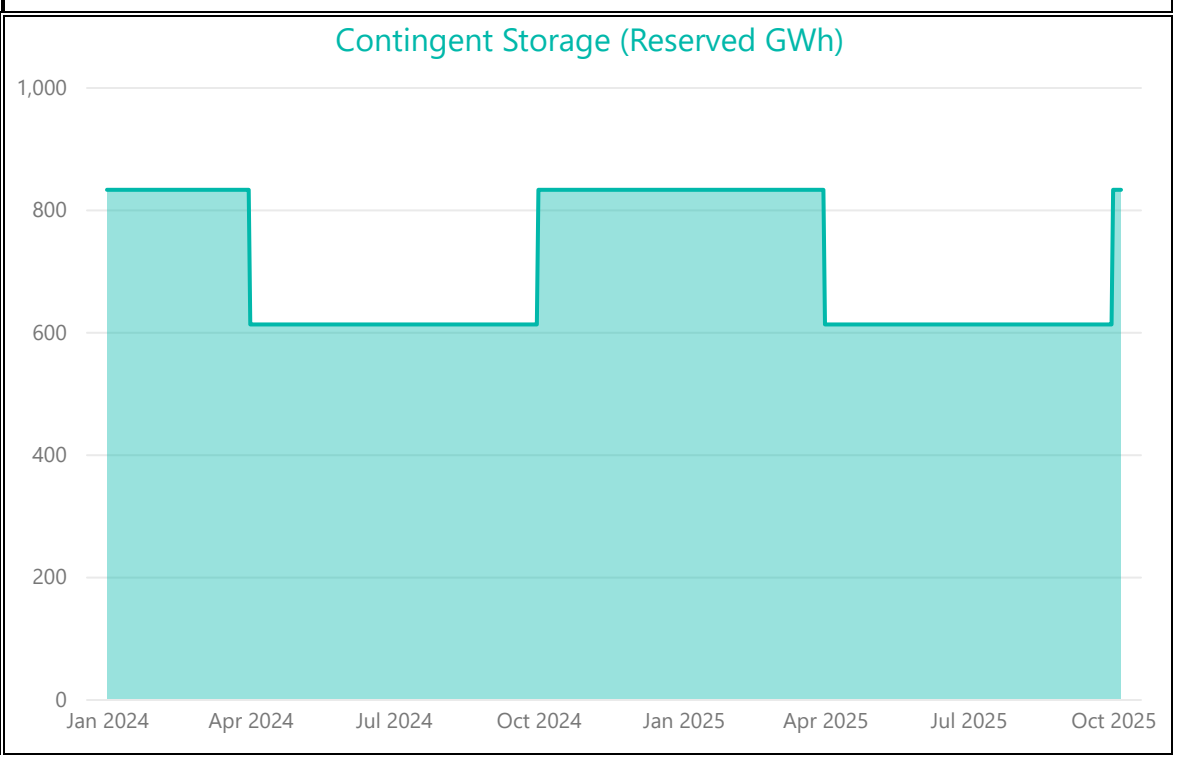












For further information on security of supply and Transpower's responsibilities as the System Operator, refer to our webpage here: https://www.transpower.co.nz/system-operator/security-supply

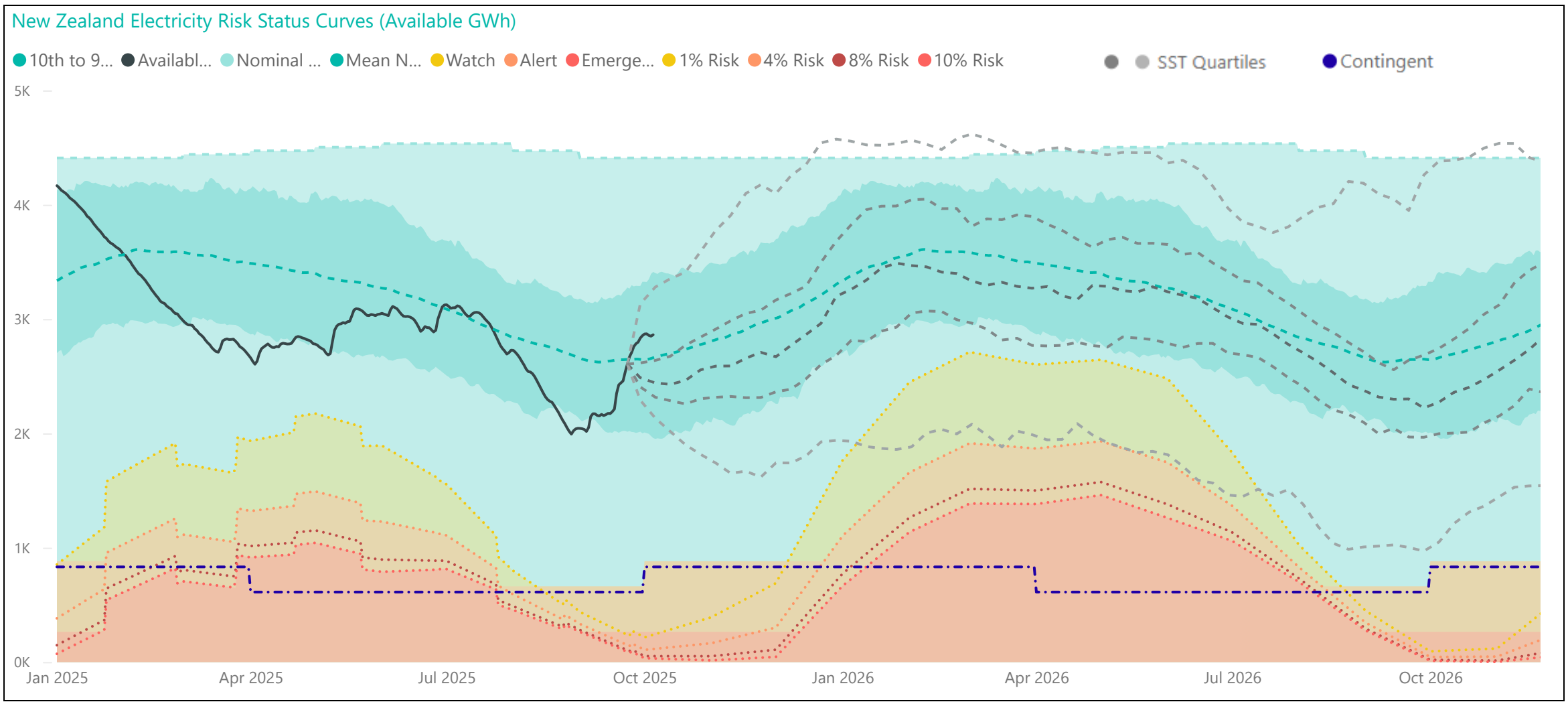
For any inquiries related to security of supply contact market.operations@transpower.co.nz

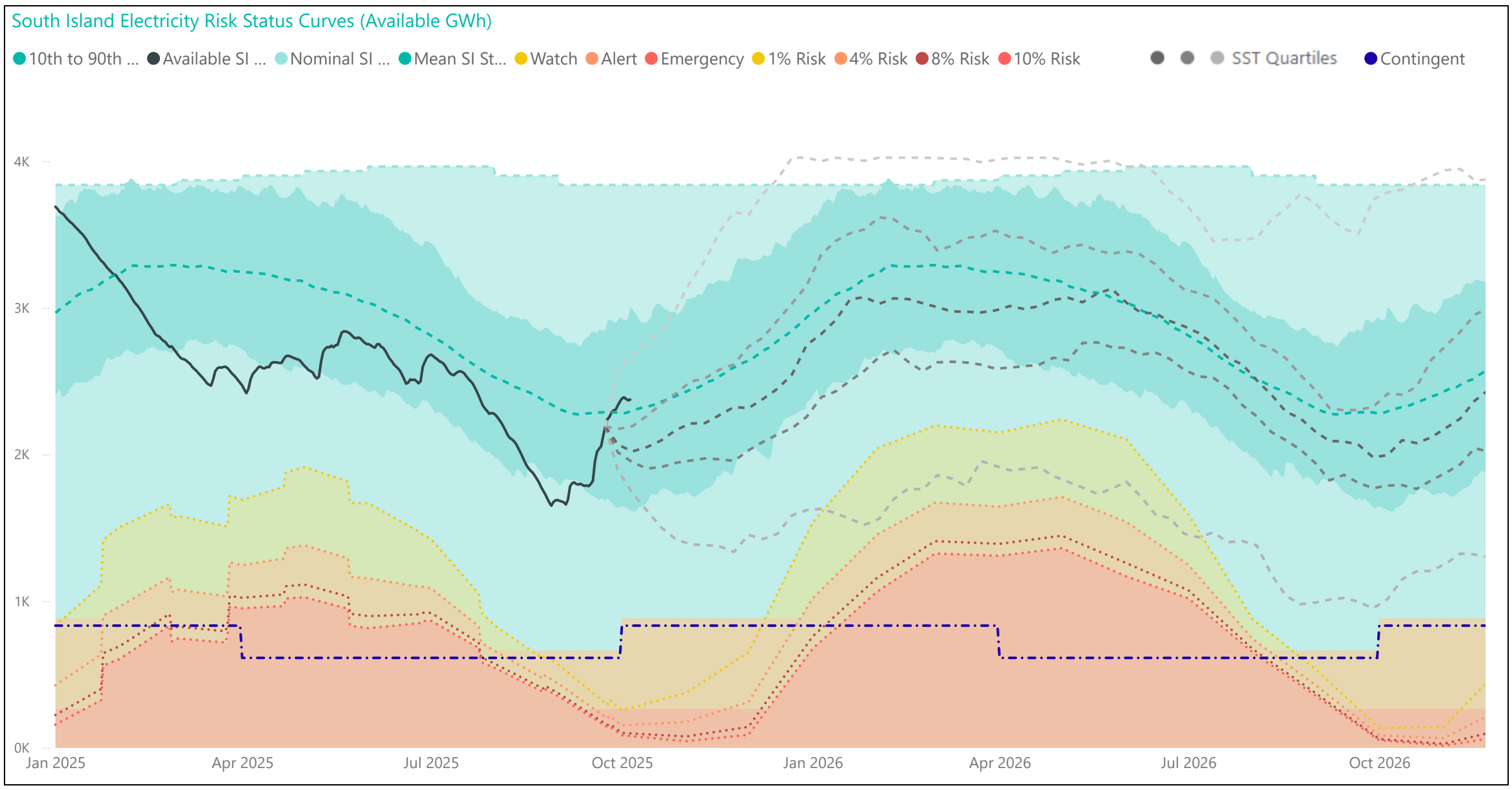
Hydro data used in this report is sourced from *NZX Hydro*.

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).