Market Operations Weekly Report - Week Ended 20 September 2026

Overview

Hydro inflows remained strong this week with storage continuing to sit well above the average for this time of year at 139%. Solar generation reached a new record of 15 GWh with Kōwhai Park coming online.

In this week's insight we look at the influence Battery Energy Storage Systems are having in the reserve market.

Security of Supply

Energy

National hydro storage remained steady at 139% of the historic mean. South Island storage decreased slightly from 150% to 148% and North Island storage remained at 81%.

Capacity

Residuals last week were healthy. The lowest residual of 866 MW occurred on Monday 14 September during the evening peak.

The N-1-G margins in the NZGB forecast continue to increase with healthy levels through to mid 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 decreased slightly last week to 779 GWh compared to 806 GWh the week prior. The highest demand peak occurred at 6:30 pm on Wednesday 16 August at 5,963 MW.

Weekly Prices

The average wholesale electricity spot price increased at Ōtāhuhu to $48/MWh from $39/MWh in the previous week. Prices peaked at $220/MWh at 7:00 am on Monday 14 September with price separation between the North and South Islands, coinciding with low North Island wind generation.

Periods of both intra-island and inter-island price separation occurred throughout the week. The South Island price separation between Invercargill and Benmore was a result of the planned Aviemore-Benmore-1 outage.

Generation Mix

There was little movement in the generation mix last week from the week prior. Hydro generation last week decreased slightly to 61% of the generation mix from 62% the week prior, slightly above its yearly average of 60%. Wind generation increased from 10% to 11% last week. Geothermal generation sat around its annual average of 24%. Solar generation was shy of 2% and thermal was just above 1% of the mix.

HVDC

HVDC flows last week was entirely northward. In total 116 GWh was transferred north.

Consultations and Engagement

Ancillary Services Procurement Plan

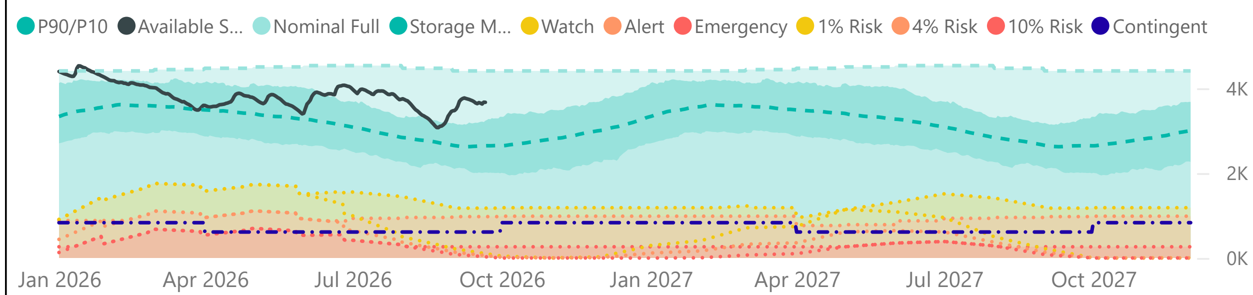
We are proposing updates to the Ancillary Services Procurement Plan (ASPP) to implement the new Emergency Reserve ancillary service. We're inviting feedback on this plan through to 25 September. You can read more here.

New Zealand Energy Risk

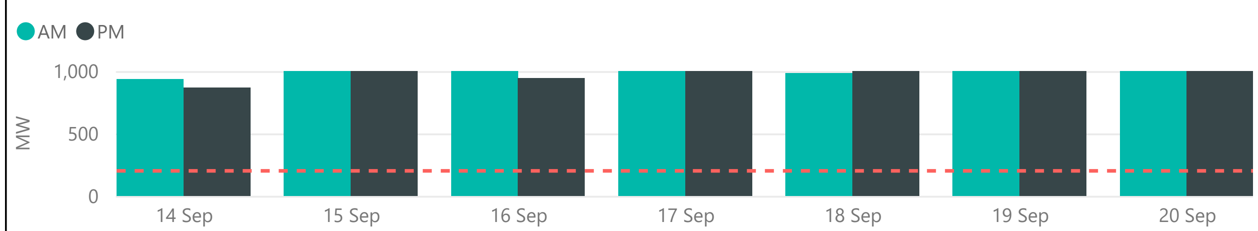
South Island Energy Risk

Normal Watch Alert Emergency

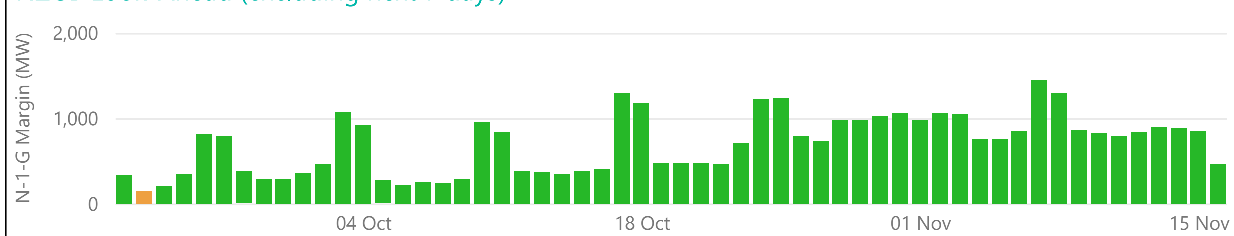
New Zealand Electricity Risk Status Curves (Available GWh)



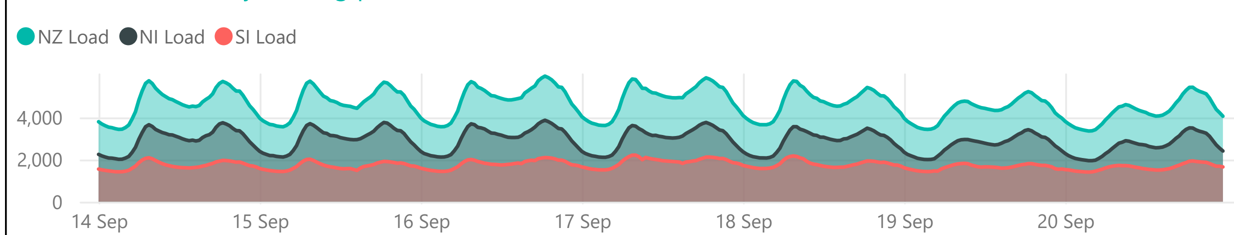
Lowest Residual Points - MW



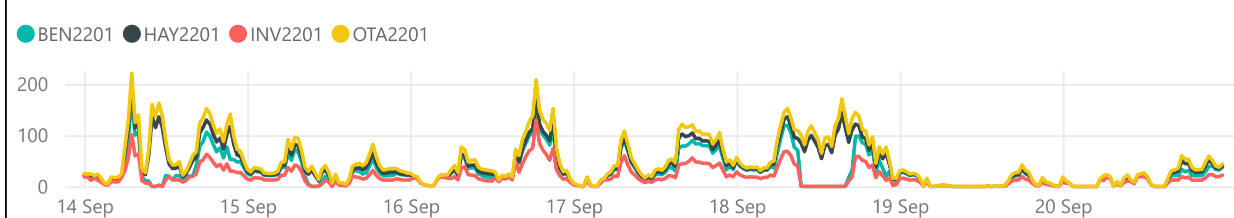
NZGB Look-Ahead (excluding next 7 days)



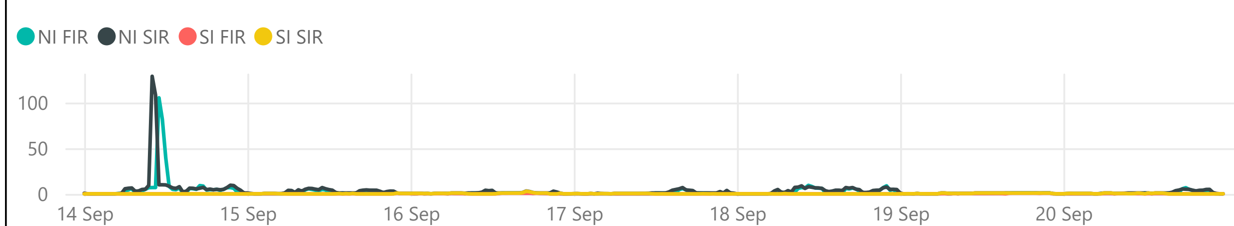
National Demand by Trading period - MW



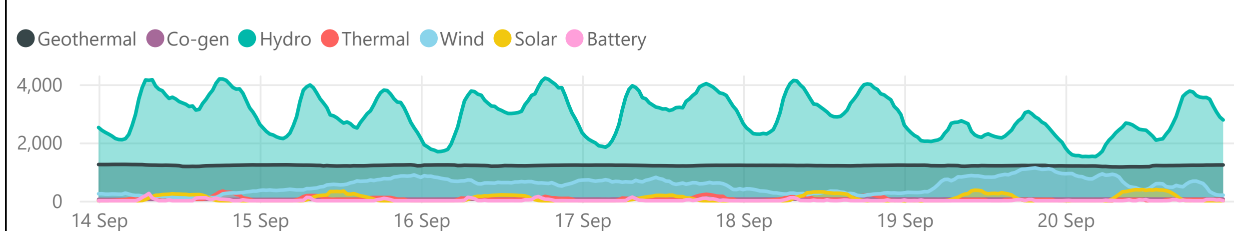
Energy Prices - $/MWh



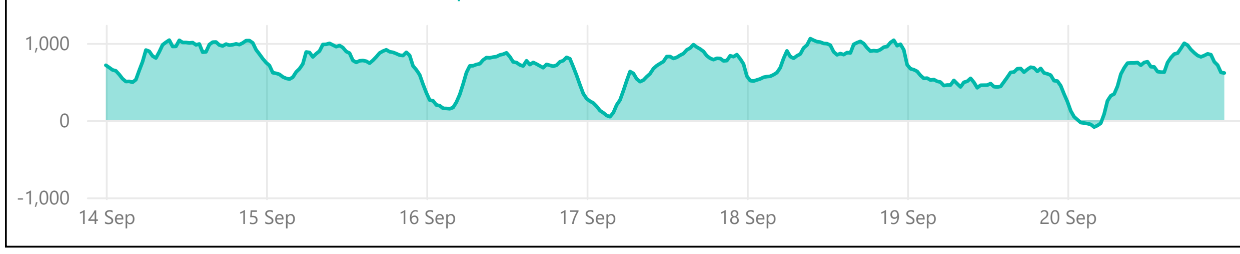
Reserve Prices - $/MW



Generation - MW



Net HVDC Transfer - MW (Northward positive)



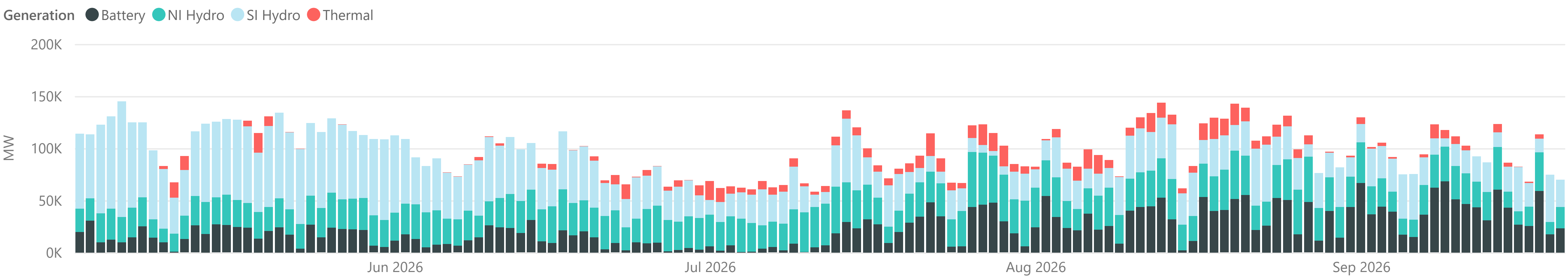
Weekly Insight - Influence of Battery Energy Storage Systems in the reserve market

In recent months, we have observed a shift in the cleared instantaneous reserve (IR) mix. This follows the contracting of Glenbrook Battery Energy Storage Systems (GLB BESS) from 15 July to provide interruptible load and generation reserve. This week's insight takes a closer look at these changes, and the influence BESS is having in the reserve market.

IR is a critical power system resource on both the supply and demand sides that can be used to immediately restore system frequency following an event on the power system. BESS have fast ramp rates that make them ideal for providing this into the market. They can offer interruptible load (IL) to quickly reduce BESS demand when it is charging, and generation reserve to rapidly increase output when it is discharging. When the BESS is charging, both interruptible load and generation reserve can be cleared in the same dispatch. This flexibility to offer both interruptible load and generation reserve makes BESS highly competitive in the reserve market.

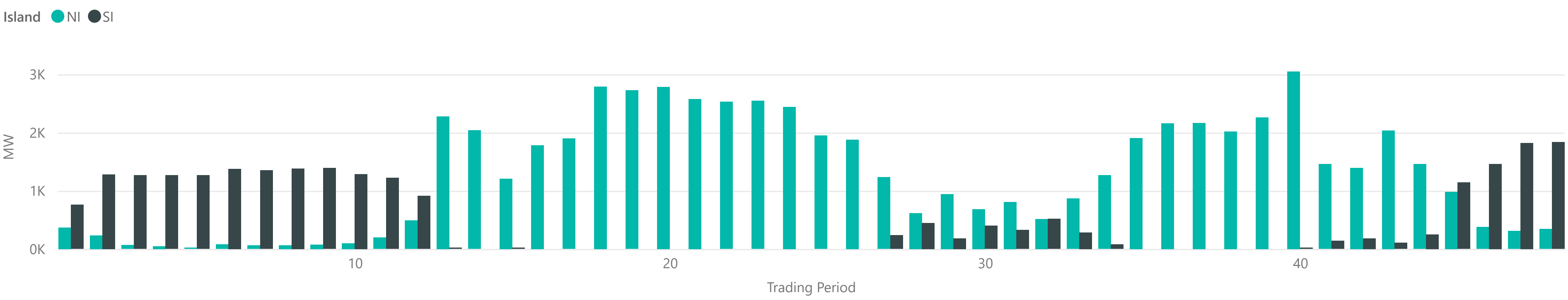
BESS also typically offer generation reserves at a much lower price compared to hydro and thermal, resulting in them being cleared more readily by the Scheduling, Pricing, Dispatch (SPD) solve. The figure[1] below shows an increase in cleared BESS reserve from July 2026 – which coincides with the contracting of GLB BESS for IR.

Cleared Generation Reserve 1 May to 20 September 2026



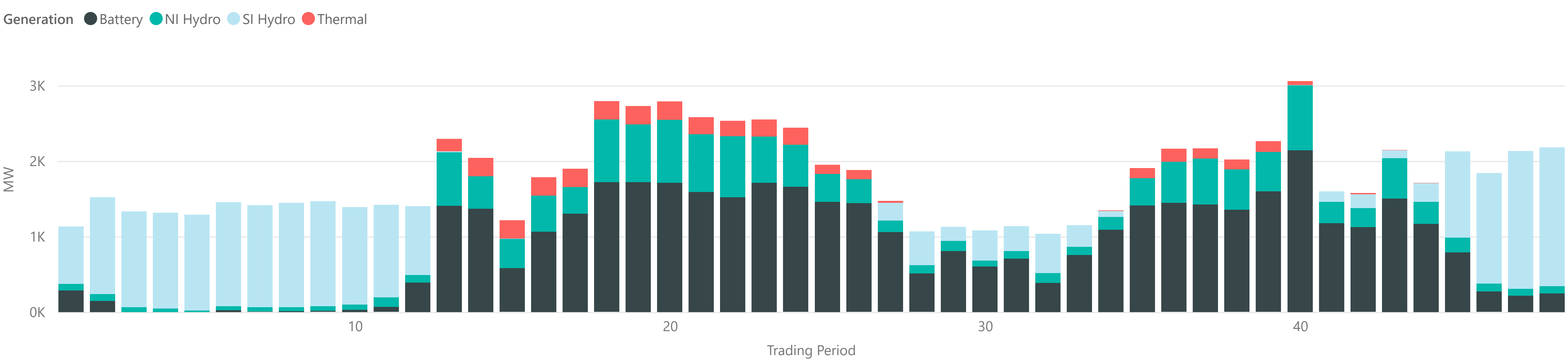
As all BESS are in the North Island, with this offer behaviour, we have seen trading periods where no South Island reserve offers have been cleared. The figure[1] below shows the cleared reserves by trading period on 15 September 2026. The figure identifies consecutive trading periods where generation reserves were all procured from the North Island.

Cleared Reserves by Island 15 September 2026



Taking a closer look at the generation reserve mix in the figure[1] below, we can see that the situation was influenced by BESS offers. For trading periods 13 to 44, a large proportion of generation reserve from BESS was cleared, resulting in the total reserve procurement to be all or predominately from the North Island. Contrastingly, for trading periods 1 to 12 and 45 to 48, less BESS reserve was offered into the market. This resulted in a greater proportion of hydro reserves being cleared, and total reserve procurement was predominately from the South Island.

Cleared Reserves by Generation 15 September 2026



So how does the Scheduling, Pricing and Dispatch (SPD) solve for this to happen?

SPD solves for the least cost solution to retain power system security. It identifies the largest single risk (risk setter) for the North Island and South Island and schedules reserve to cover it as a contingency. When no reserves were procured in the South Island and the island reserve price was zero, the risk setter in the South Island could be covered by reserve sharing from the North Island via the HVDC.

This solution is also driven by high DC north transfer, and the DC contingent event is the binding risk in North Island. In this scenario, all reserves to cover the DC risk must be procured from the North Island. In some cases this is also enough to cover the South Island risk via reverse sharing.

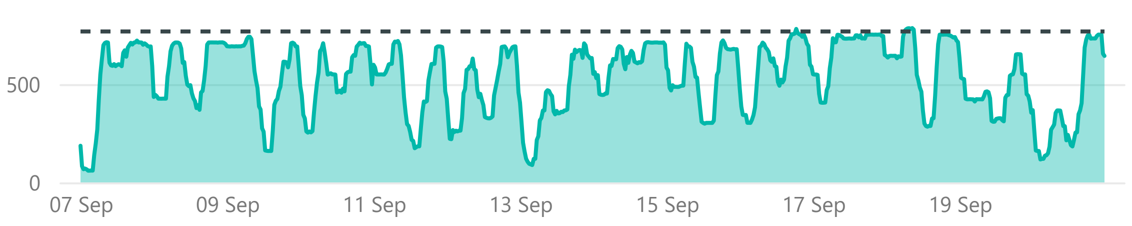
For more information on reserve sharing via the HVDC see this past insight.

[1] Sum of cleared reserve MW across all real time dispatch cases within the trading period.

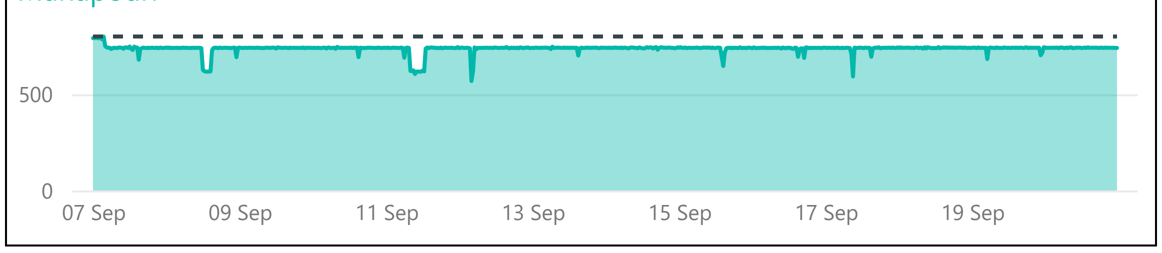
Generation Breakdown - Last Two Weeks

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

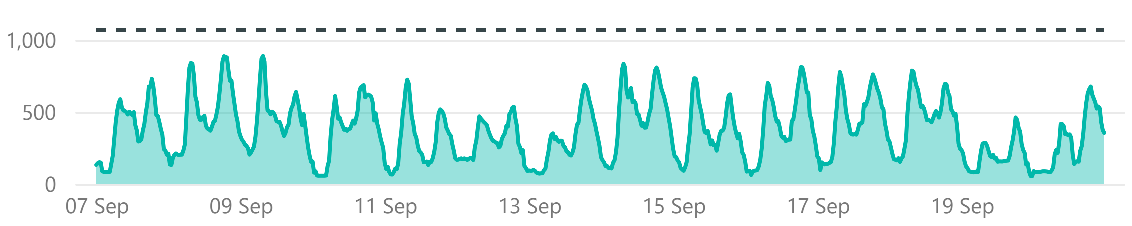
Clutha



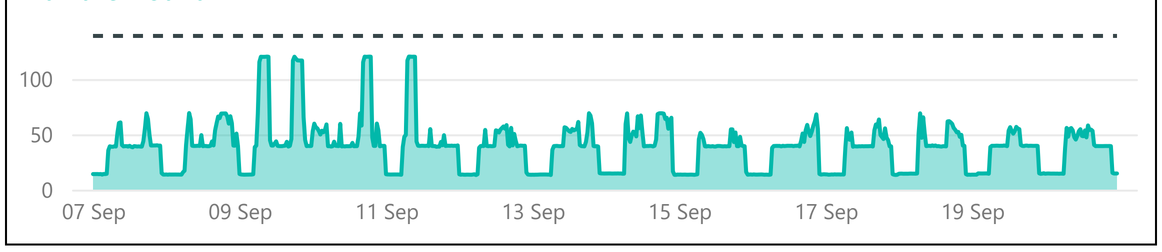
Manapōuri



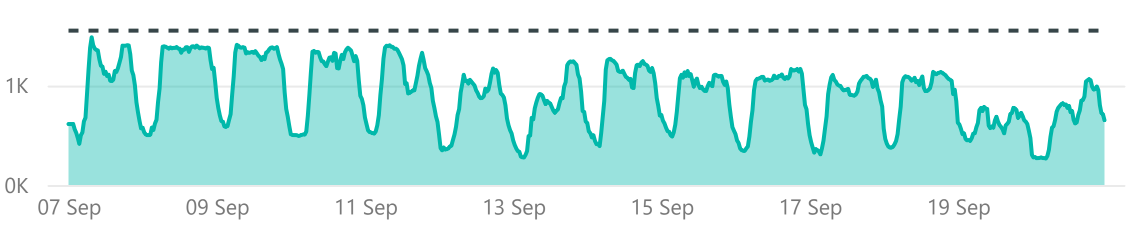
Waikato



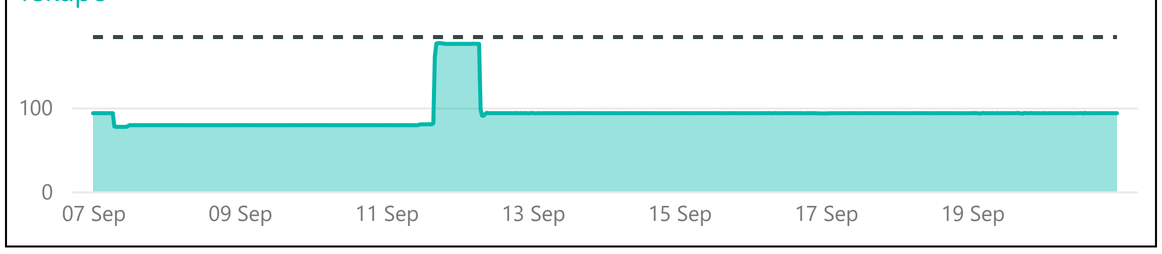
Waikaremoana



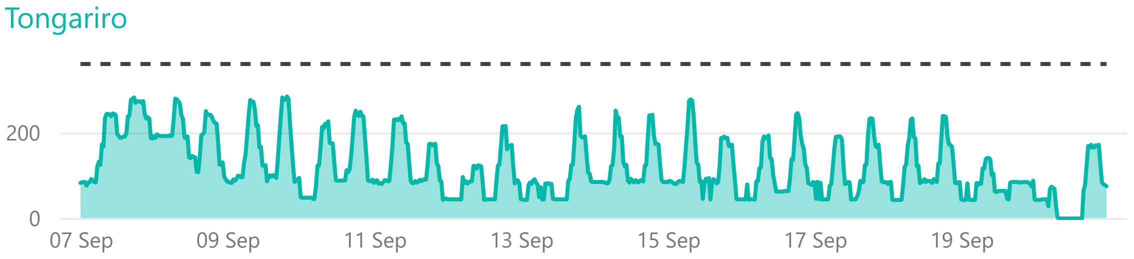
Waitaki



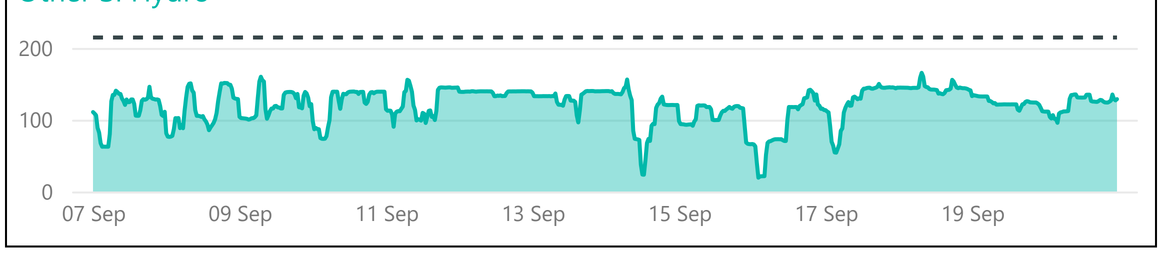
Tekapo



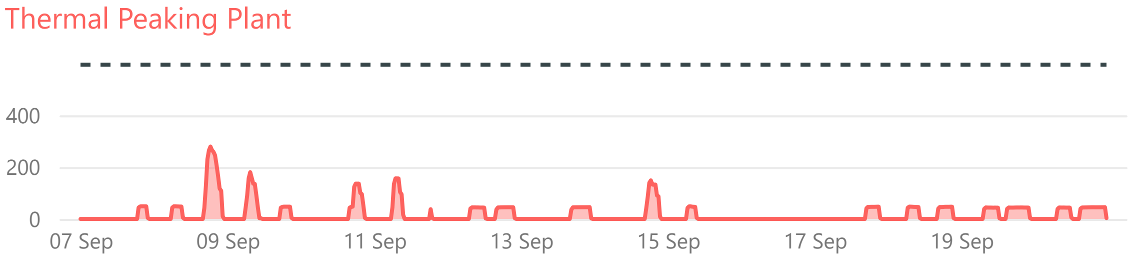
Tongariro



Other SI Hydro

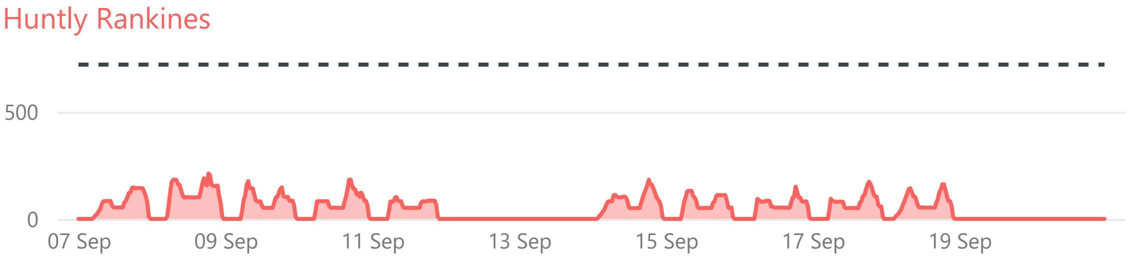


Thermal Peaking Plant

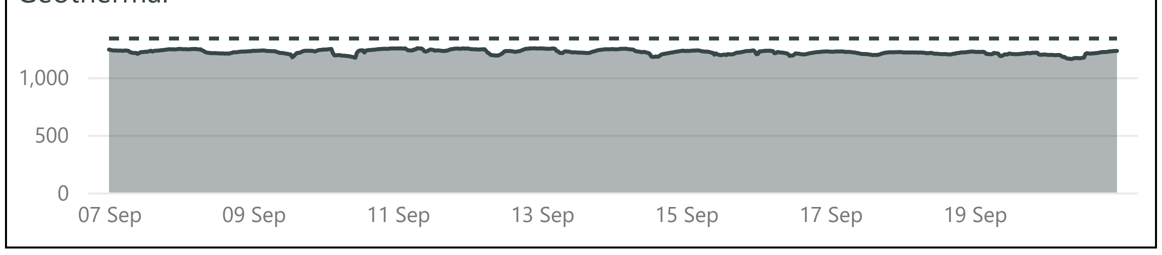


Huntly U5

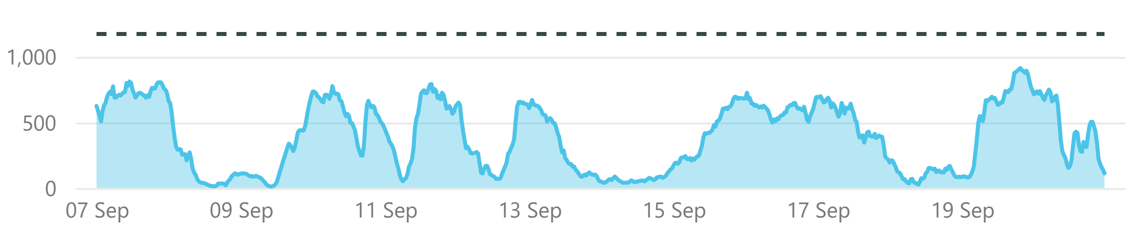
Huntly Rankines



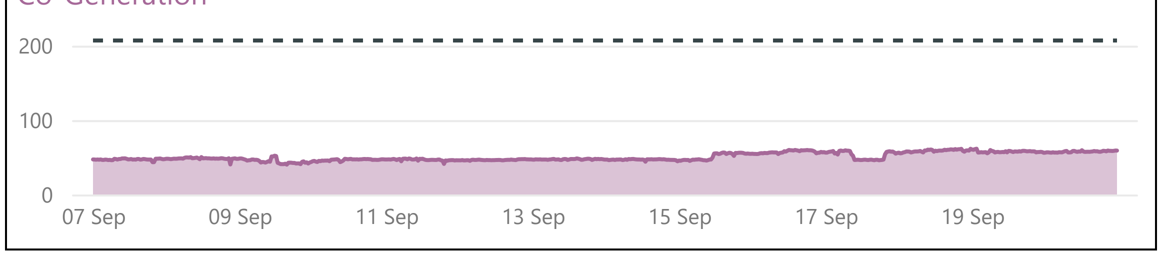
Geothermal



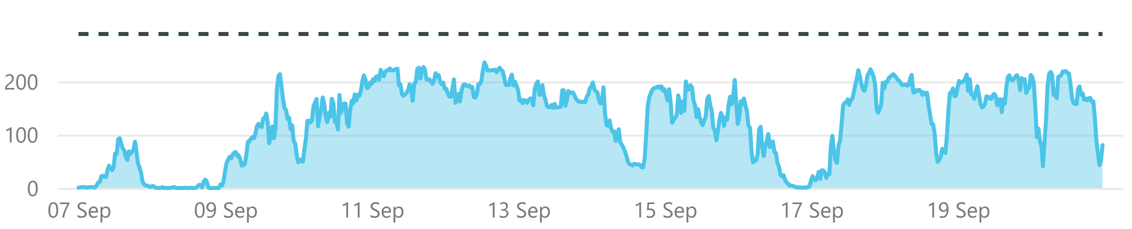
North Island Wind



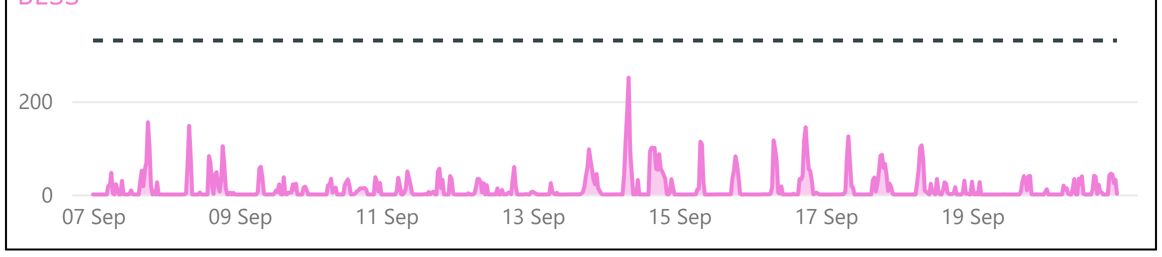
Co-Generation



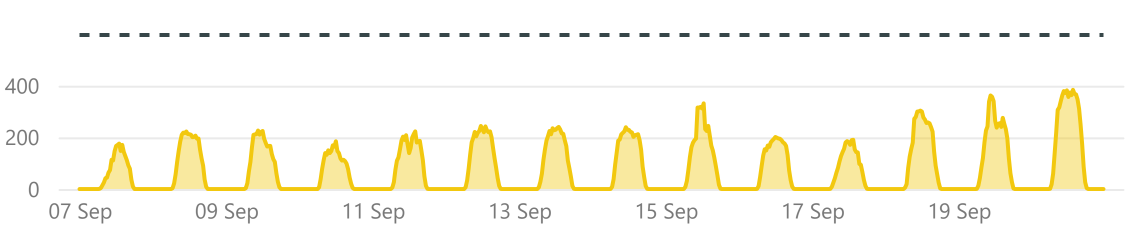
South Island Wind



BESS

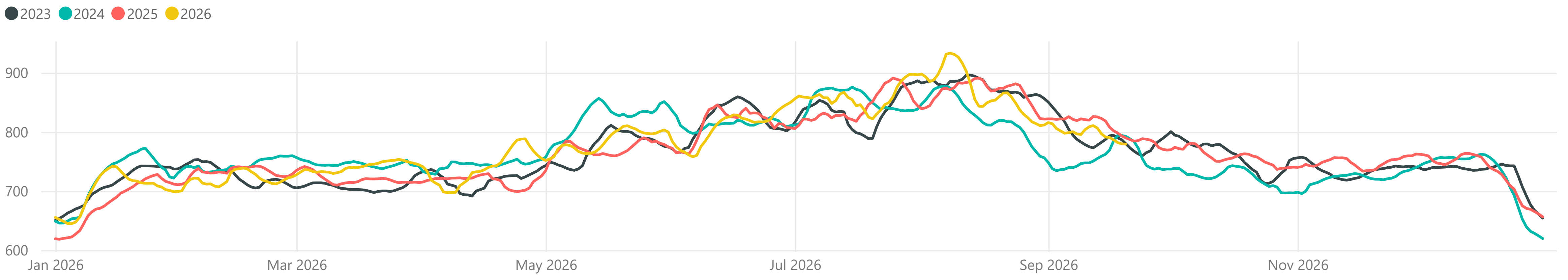


Solar

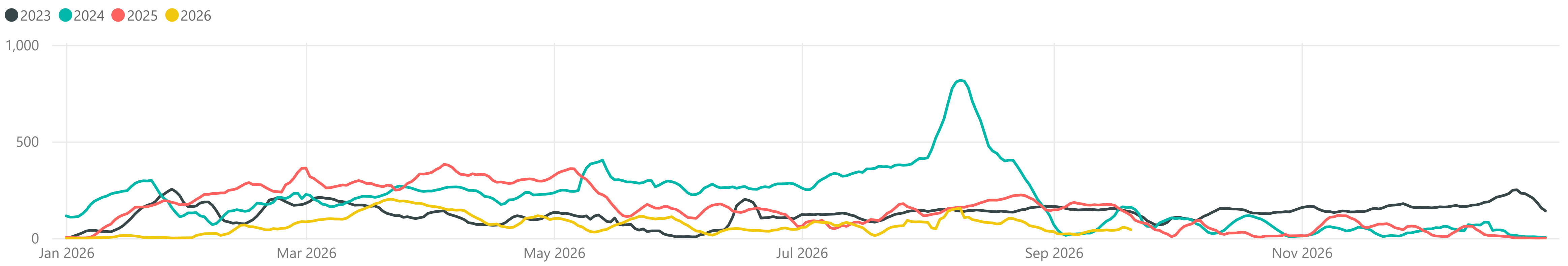


Weekly Profiles

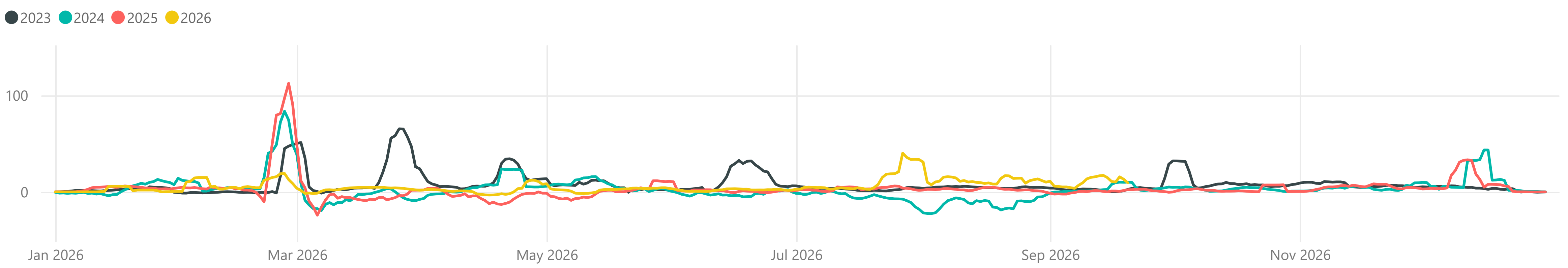
National Weekly Demand - GWh - 7 Day Rolling



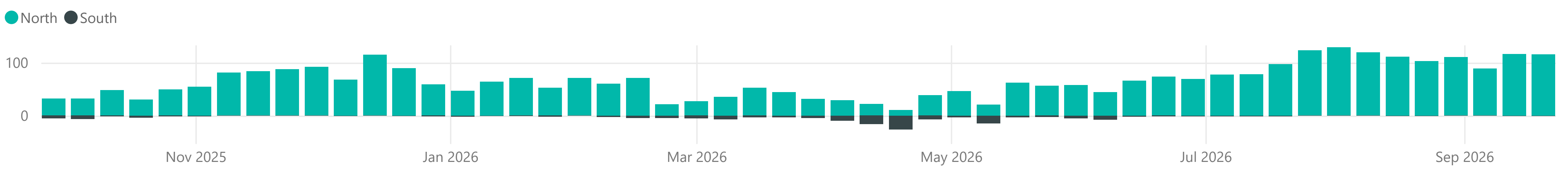
OTA2201 Weekly Rolling Average Spot Price - $/MWh



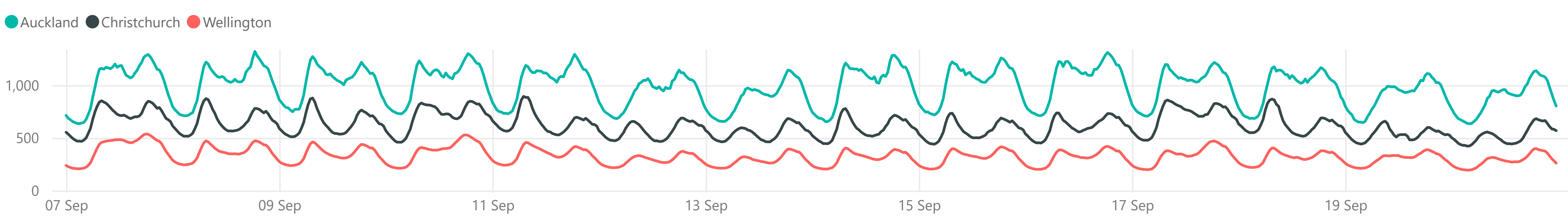
Weekly Rolling Price Separation (HAY2201 - BEN2201) - $/MWh



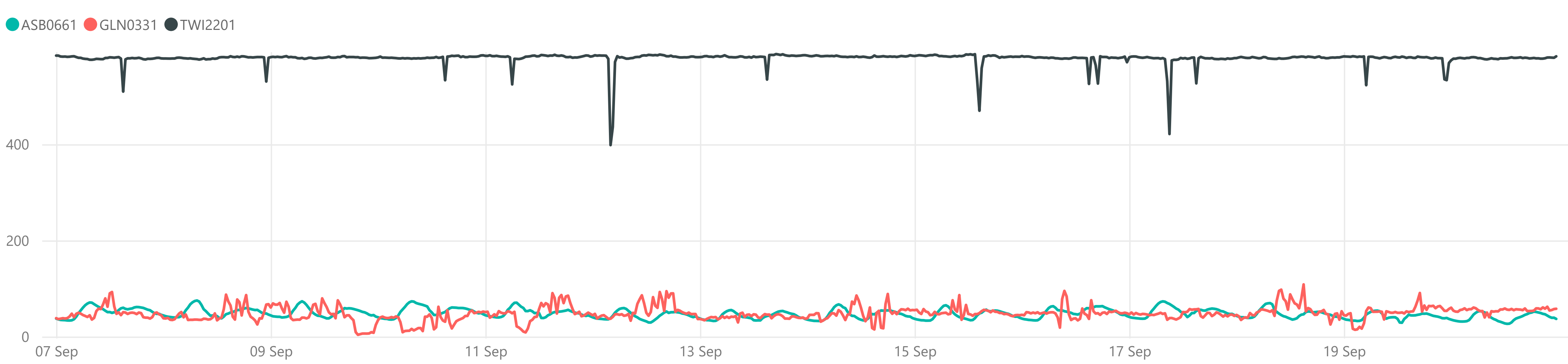
HVDC Transfer - Weekly GWh



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

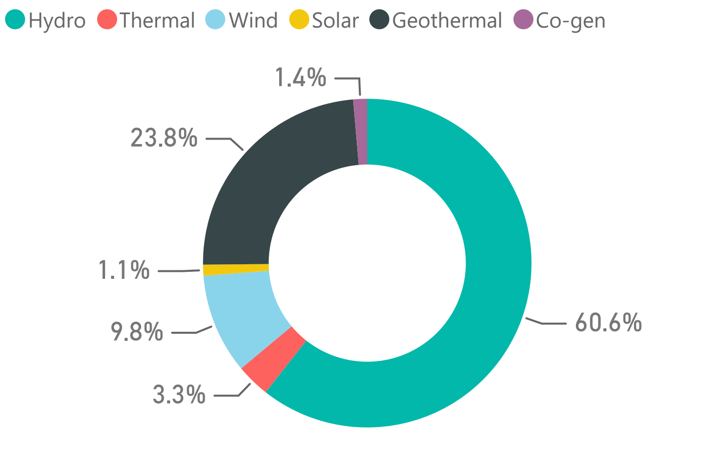


Non-Conforming Load Profiles - Last Two Weeks *Measured in MW shown by GXP*

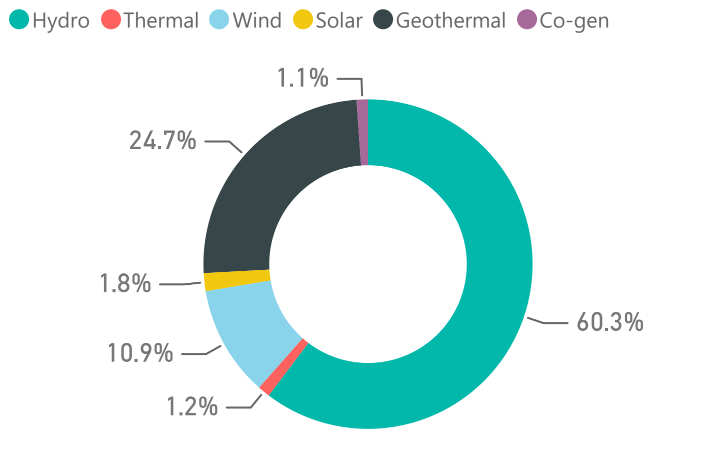


Generation Mix

Last 52 Weeks Generation Mix - Weekly GWh



Last 7 Days Generation Mix - Weekly GWh



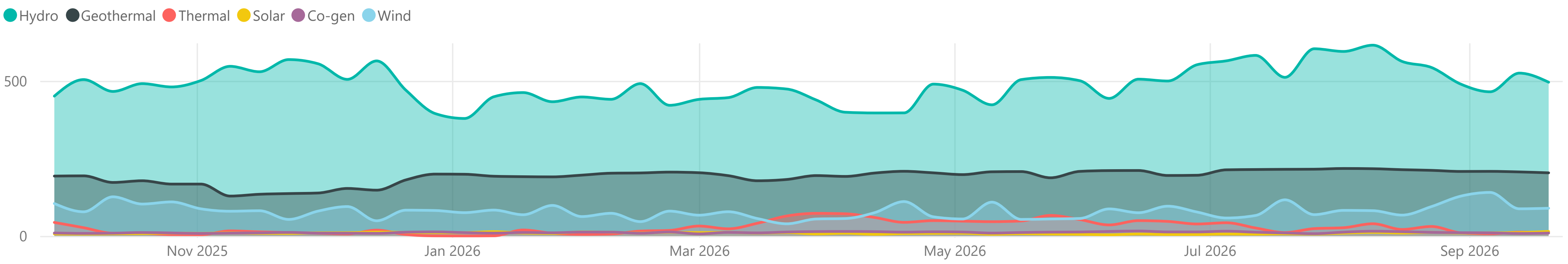
Average Metrics Last 7 Days

Renewable Percentage	CO2e Tonnes/Week	CO2e g/kWh
98%	27,908	33.7

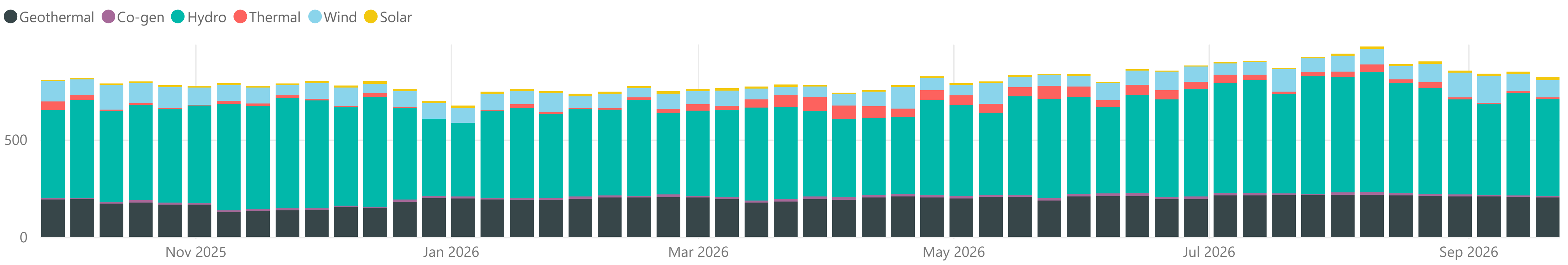
Average Metrics Last 52 Weeks

Renewable Percentage	CO2e Tonnes/Week	CO2e g/kWh
95%	33,952	41.5

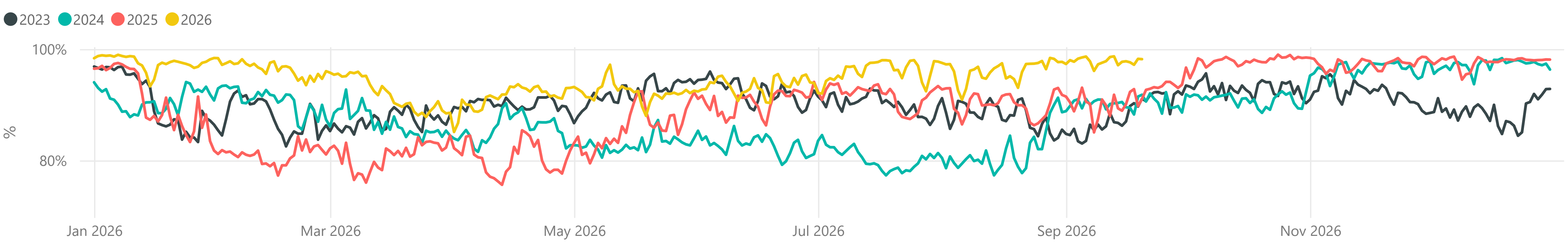
Weekly Generation Mix - GWh



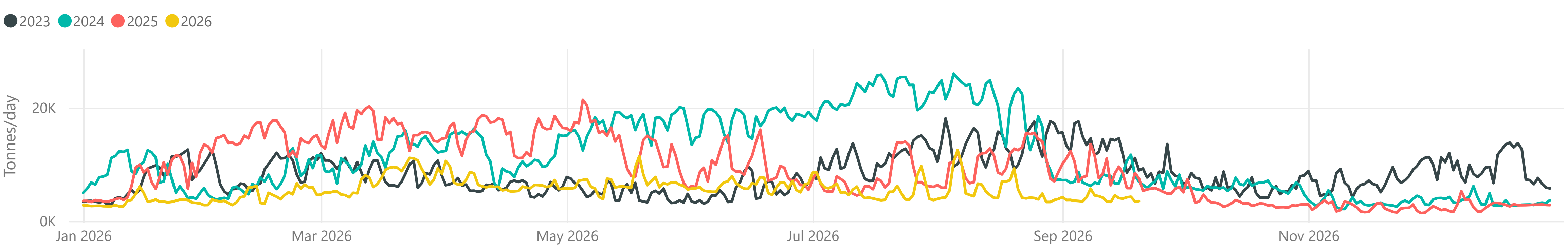
Weekly Generation Mix - GWh



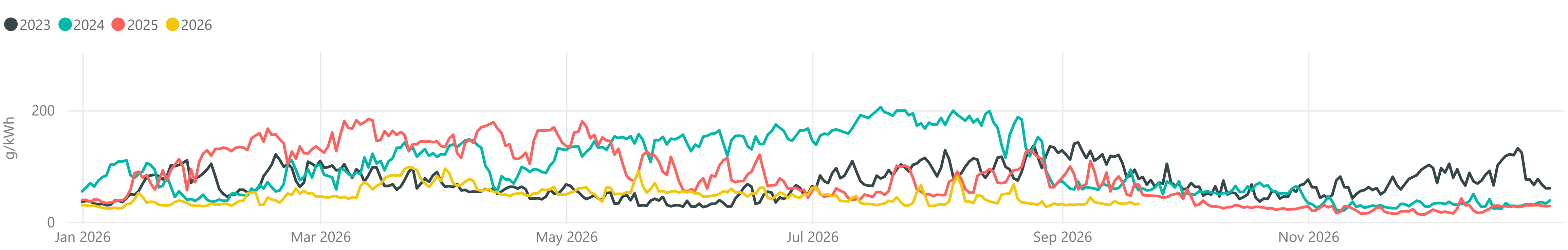
NZ Renewable Percentage



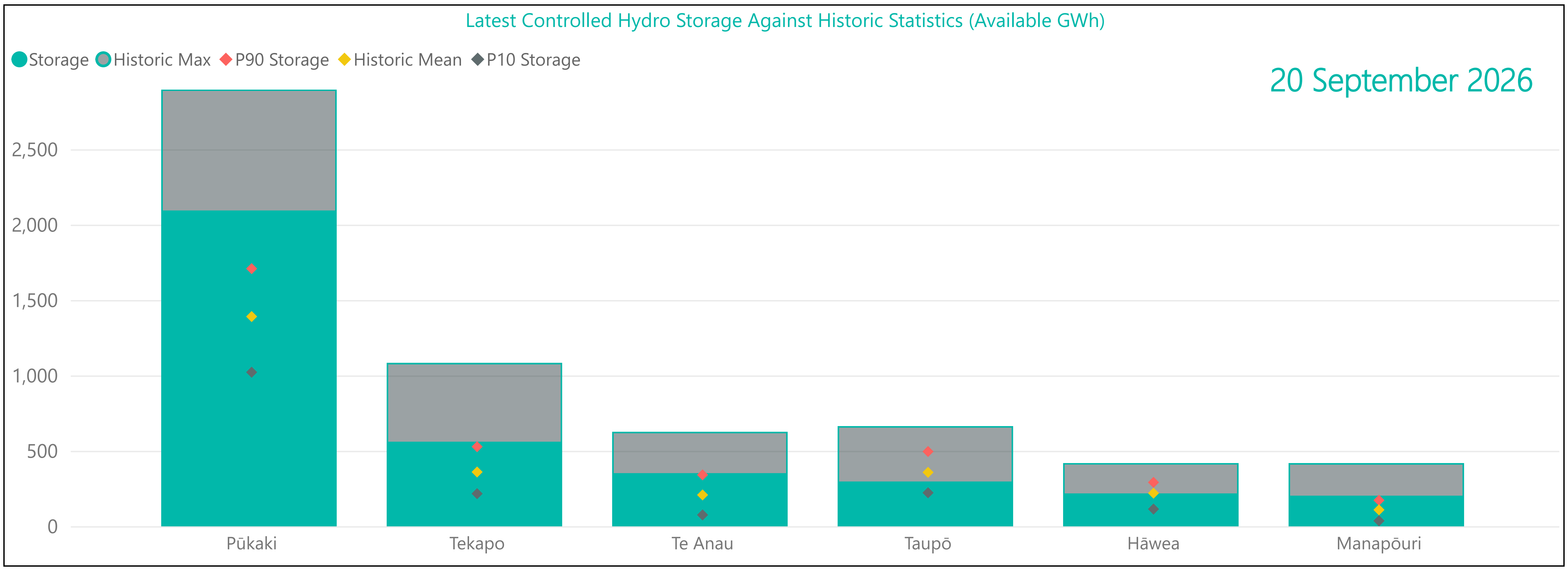
CO2 Tonnes/Day

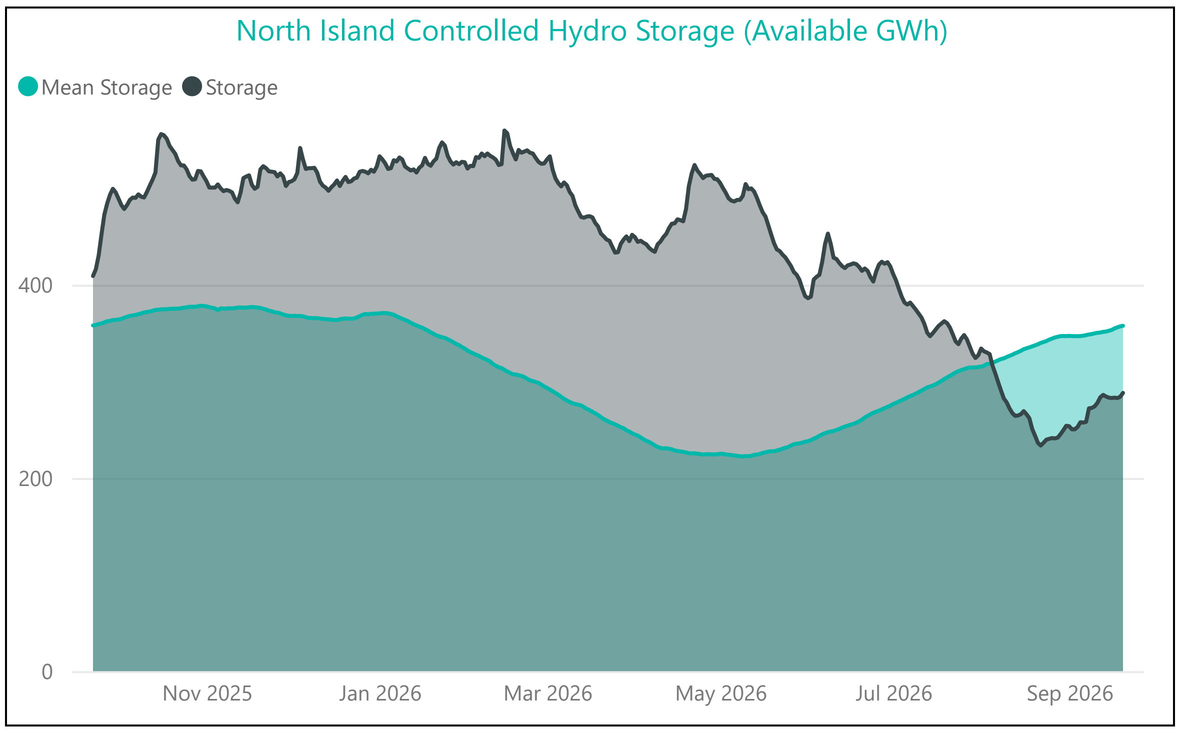


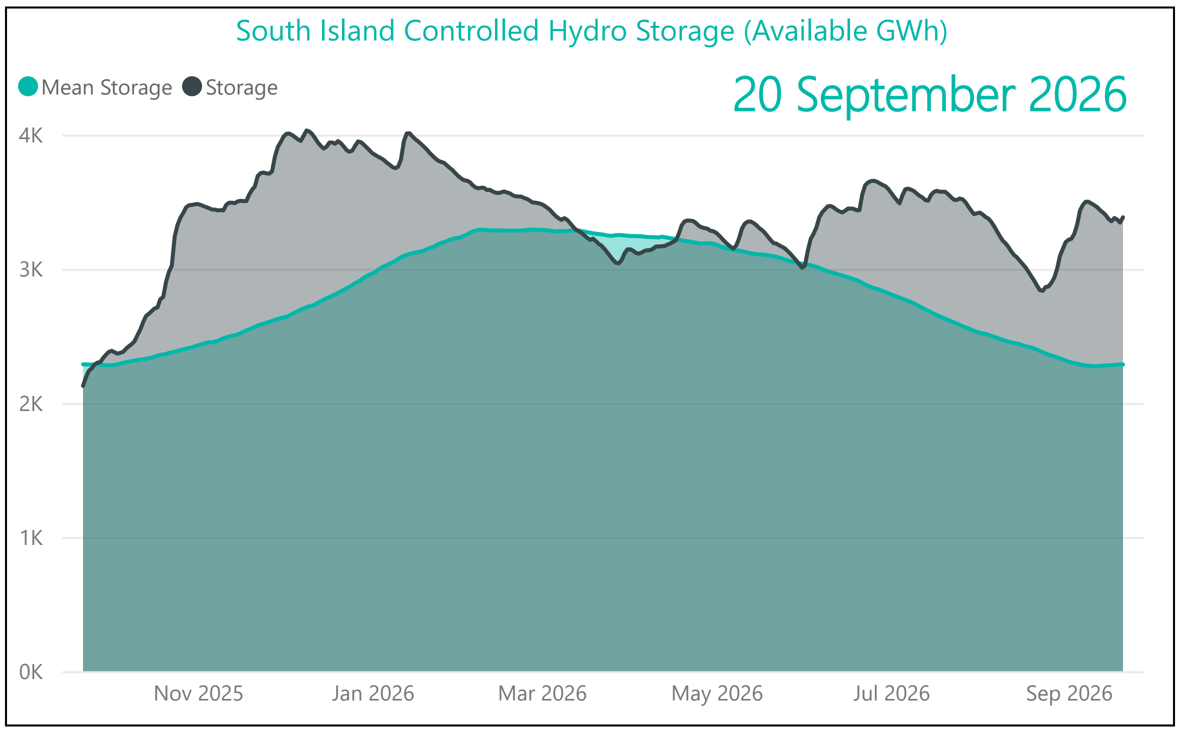
Average CO2 g/kWh

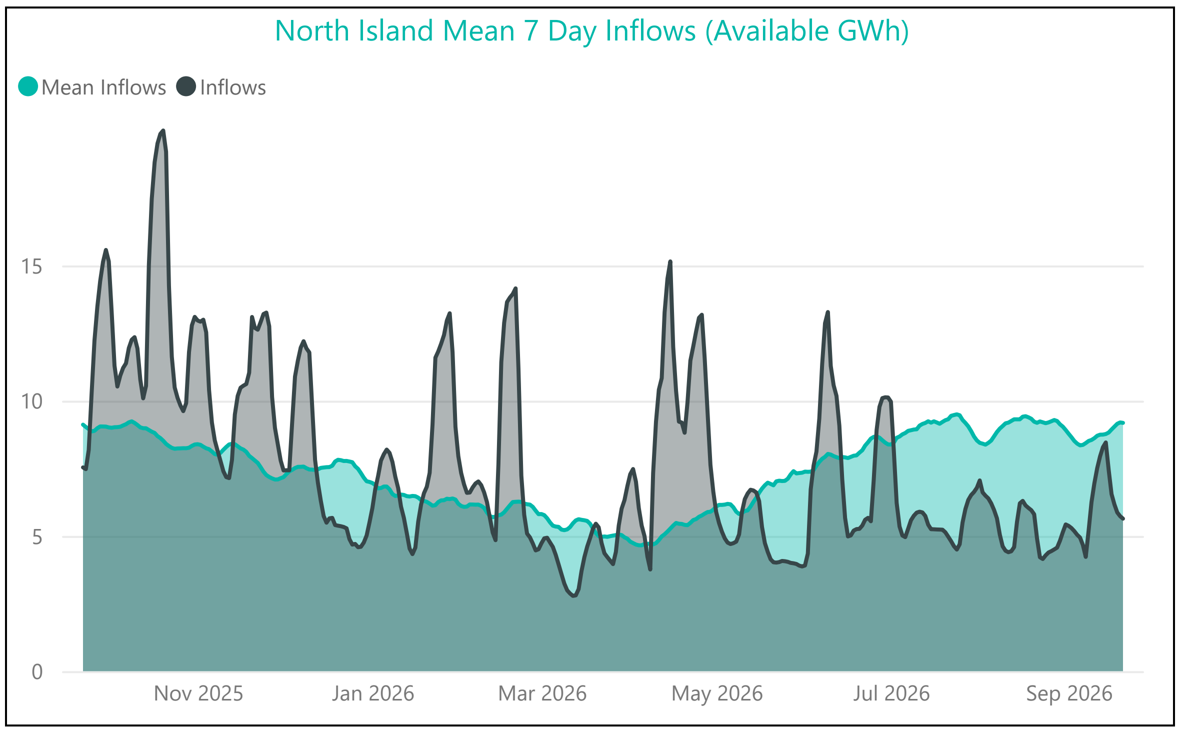


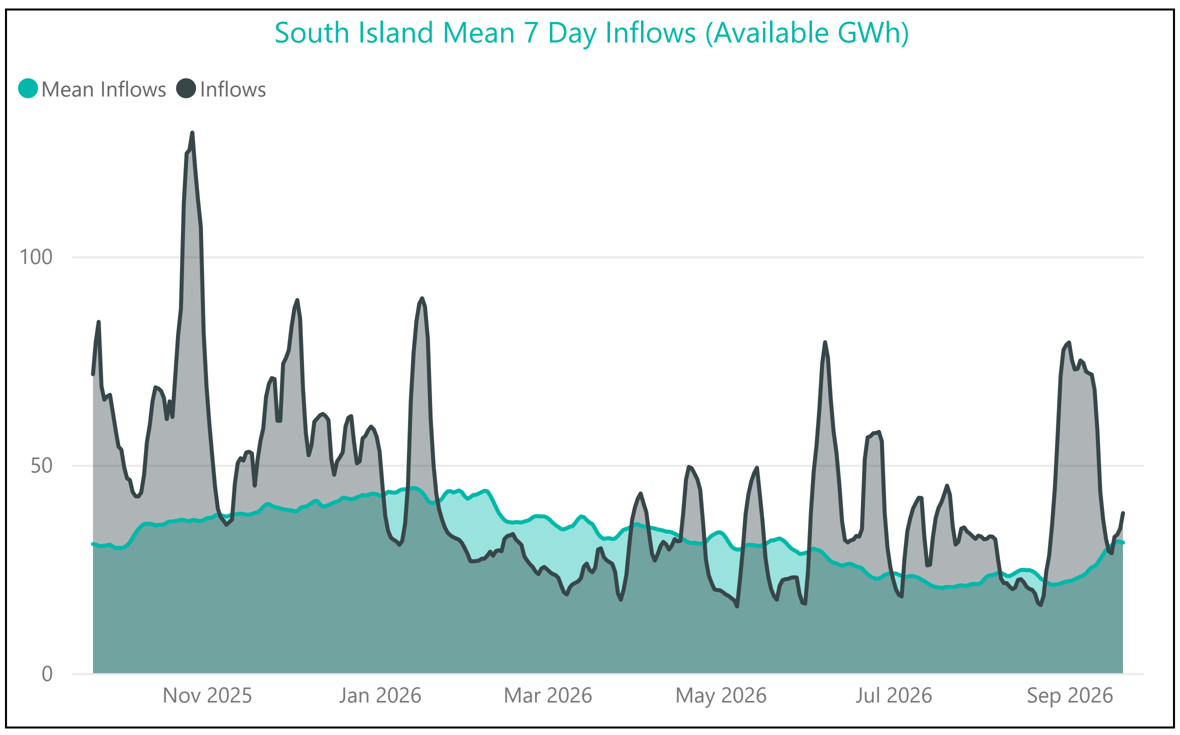
Hydro Storage











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

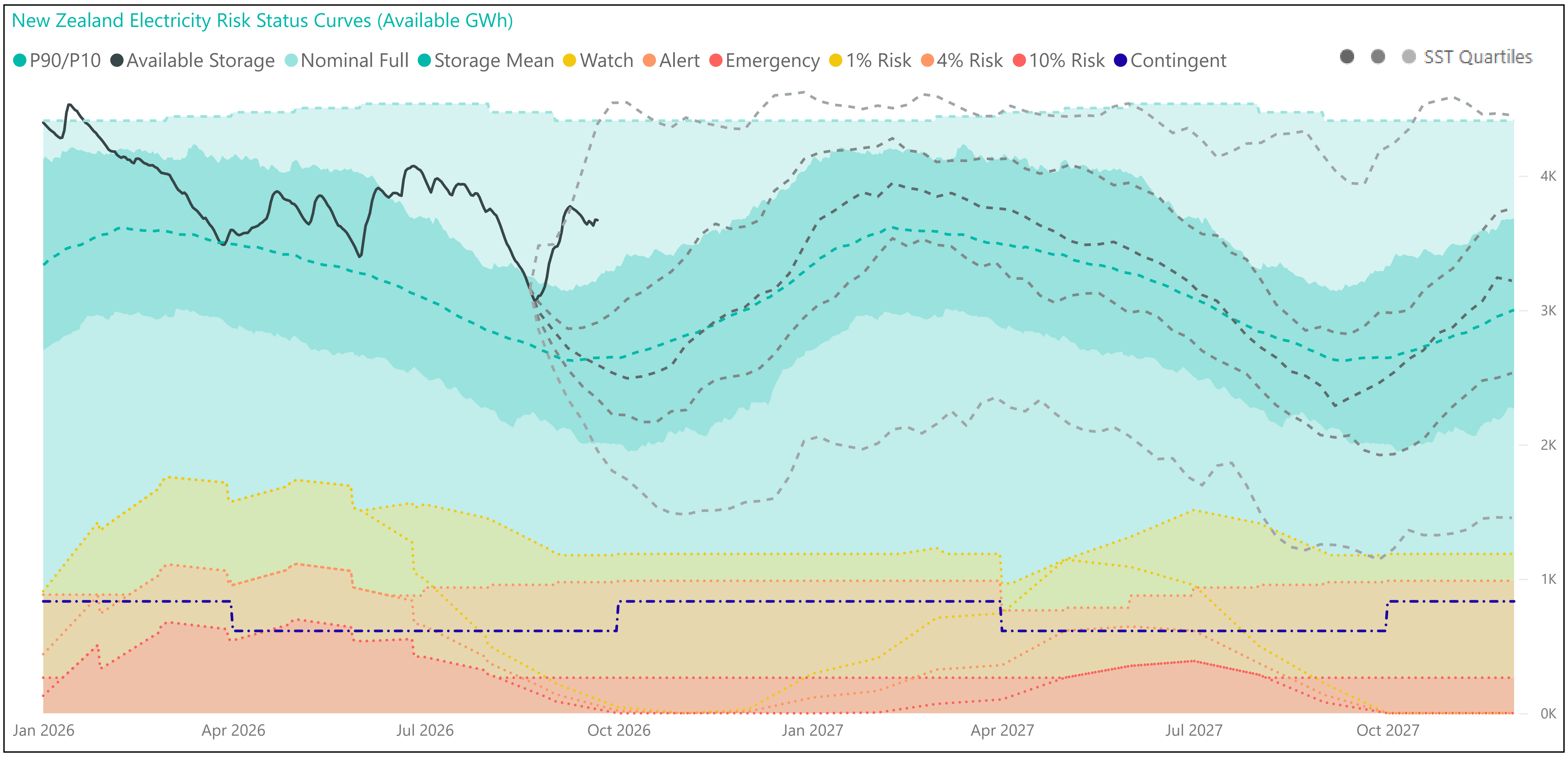
For any inquiries related to security of supply contact market.operations@transpower.co.nz

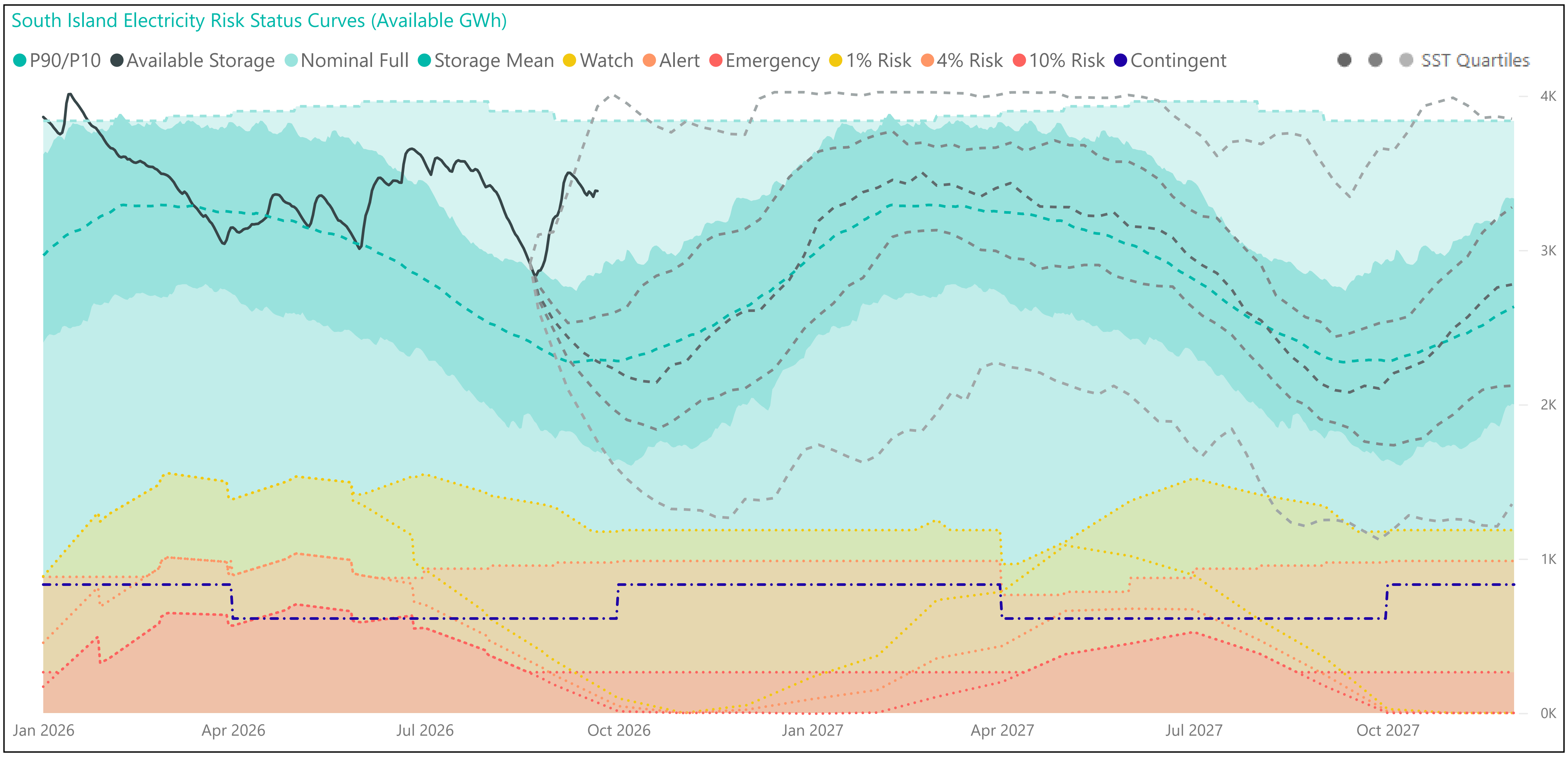
Hydro data used in this report is sourced from *NZX Hydro*.

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:

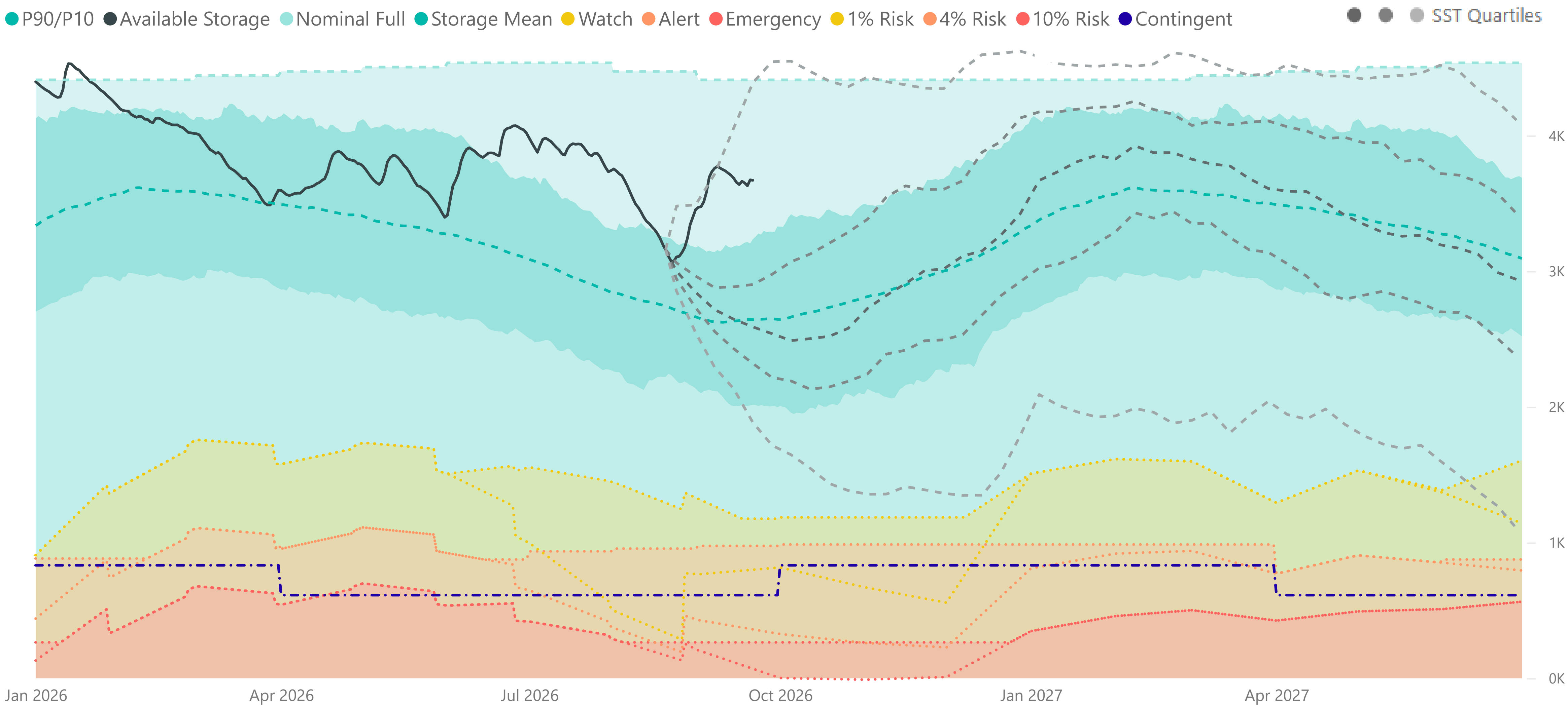
Watch Curve - The maximum of the one percent risk curve or the Alert curve plus the greater of the Watch adder or the worst-case simulated storage drop
Alert Curve - The maximum of the four percent risk curve and the floor and buffer
Emergency Curve - The maximum of the 10 percent risk curve and the 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, and the buffer as specified in the SOSFIP.

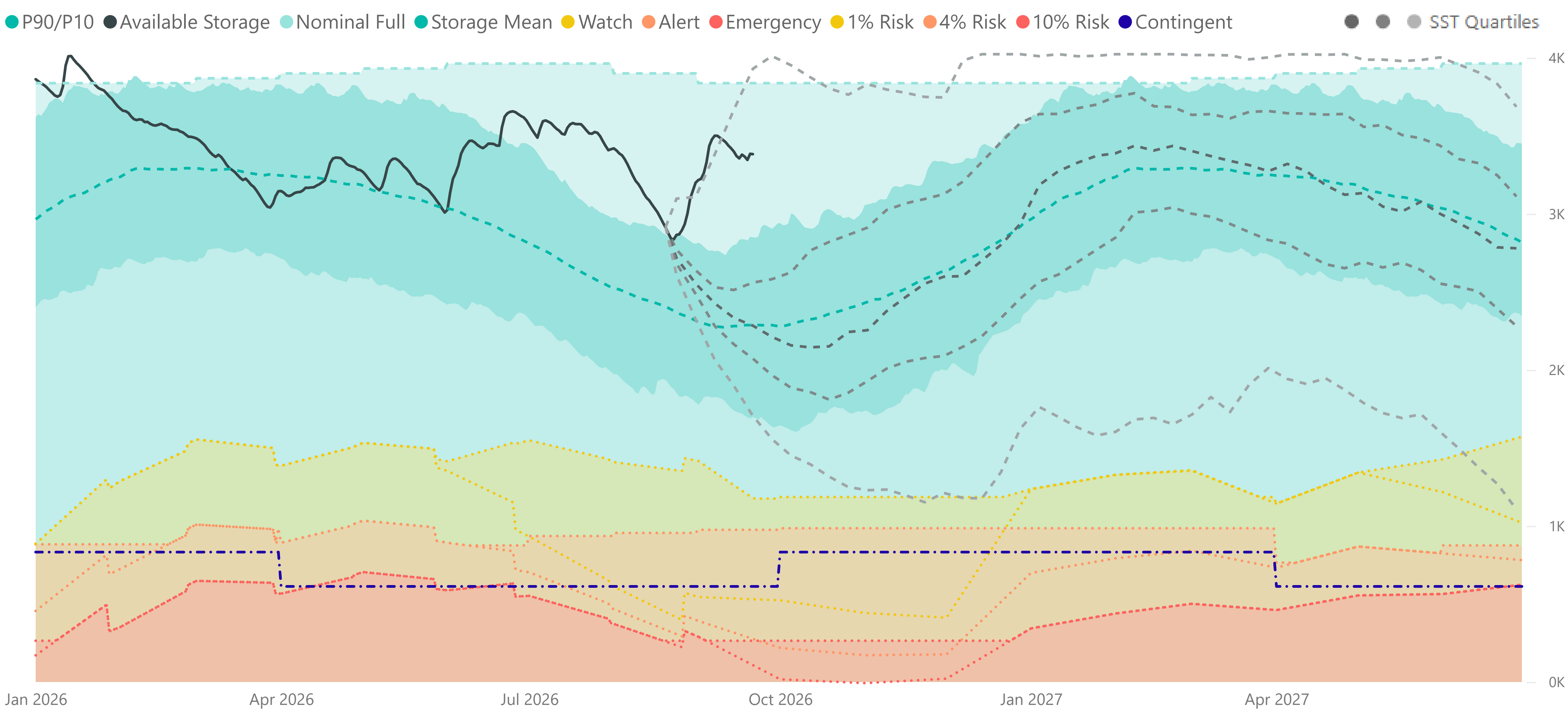
The dashed grey lines represent the minimum, lower quartile, median, upper quartile and the maximum range of the simulated storage trajectories (SSTs). These will be updated with each Electricity Risk Curve update (monthly).

Electricity Risk Curves - Contracted Fuel Case

Contracted Fuel Case - New Zealand Electricity Risk Status Curves (Available GWh)



Contracted Fuel Case - South Island Electricity Risk Status Curves (Available GWh)



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