Market Operations Weekly Report - Week Ended 8 March 2026

Overview

New Zealand hydro storage has decreased from 112% to 109% of the historic mean for this time of year, while renewable generation remained high last week at 95% of the weekly generation mix.

This week's insight looks at how the spring washer effect can arise, and how it caused price separation in the Hawke's Bay region.

Security of Supply

Energy

National hydro storage has decreased to 109% of the seasonal mean at the end of last week. South Island hydro storage decreased from 105% to 103% of the historic mean, and North Island storage increased from 179% to 180%.

Capacity

Residuals were healthy with the lowest residual of 653 MW occurring during the morning of Tuesday 3 March.

The N-1-G margins in the NZGB forecast are healthy through to the end of April. 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 increased from 726 GWh to 732 GWh for the week, and is in line with average demand at this time of year over the past three years. The highest demand peak of 5,532 MW occurred at 8:00am on Tuesday 3 February.

Weekly Prices

The average wholesale electricity spot price at Ōtāhuhu last week was $97/MWh, increasing from $84/MWh the week prior in response to increased demand, reduced geothermal generation and declining hydro storage. Wholesale prices peaked at $213/MWh at Ōtāhuhu at 7:30am on Wednesday 3 February.

Generation Mix

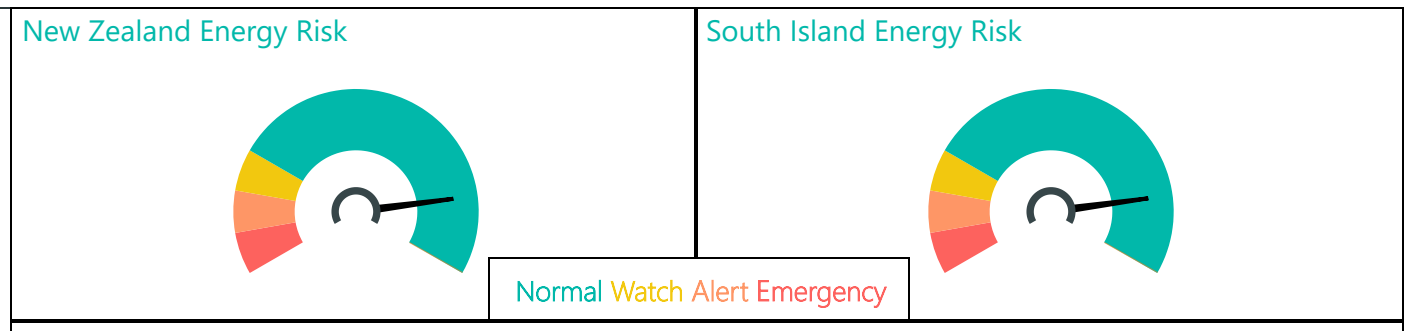
Wind generation has remained at its average share of 10% of the mix. Hydro generation increased to 59% of the mix, from 58% the week prior. Thermal generation decreased to 3% of the mix, below its yearly average of 8% of the mix. The geothermal share decreased to 25% of the mix from 26% the week prior, and solar contributed to 2% of the generation mix.

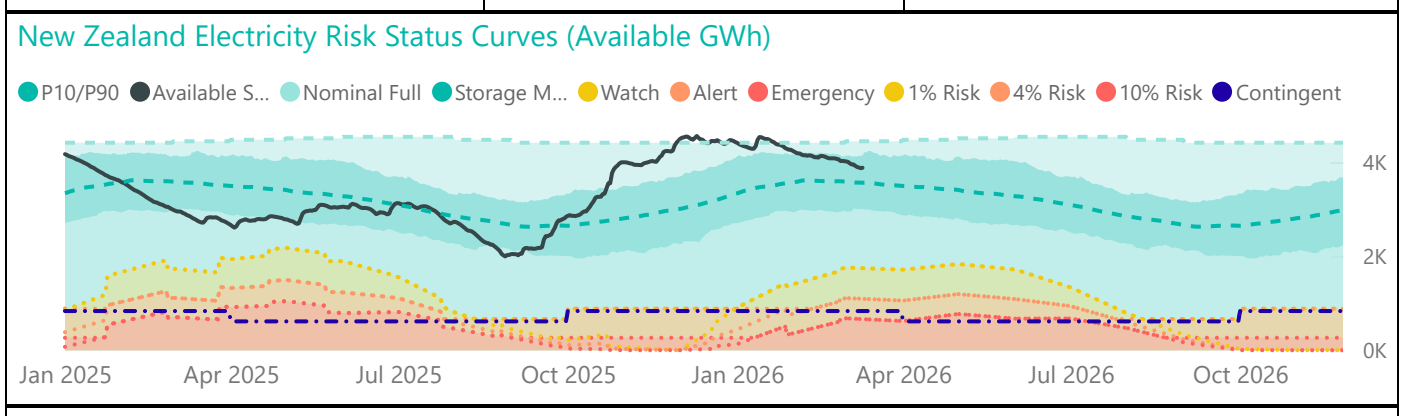
HVDC

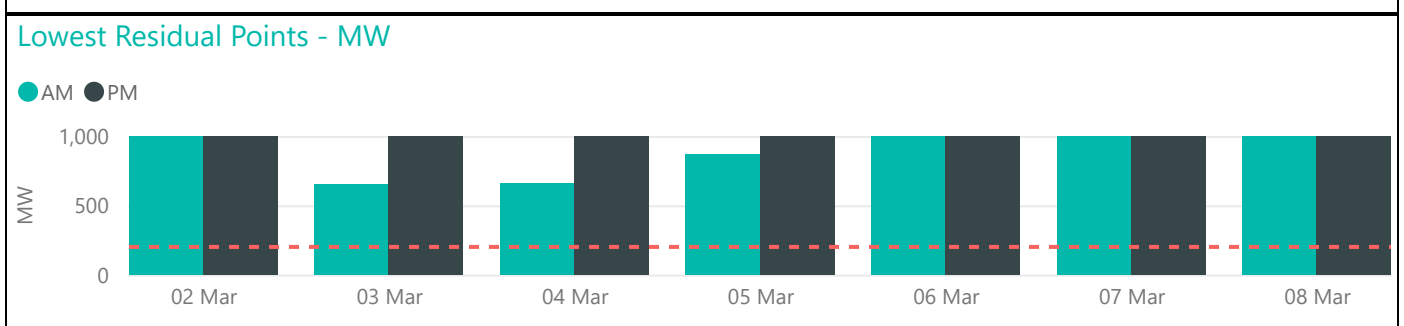
HVDC flow last week was predominantly northward with the exception of some brief periods of overnight low southward flow. These periods coincided with periods of high wind generation and lower North Island demand. In total, 71 GWh was transferred north and just 14 GWh was transferred south.

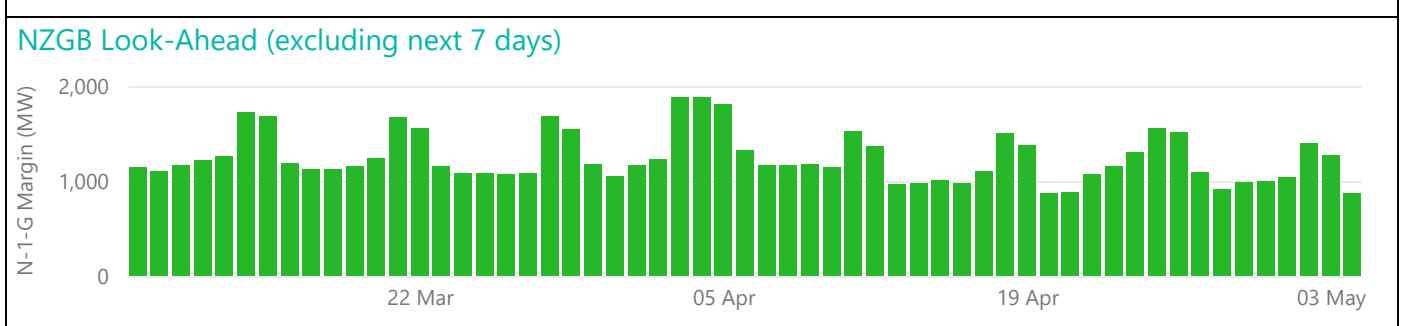
Surveys and Engagement

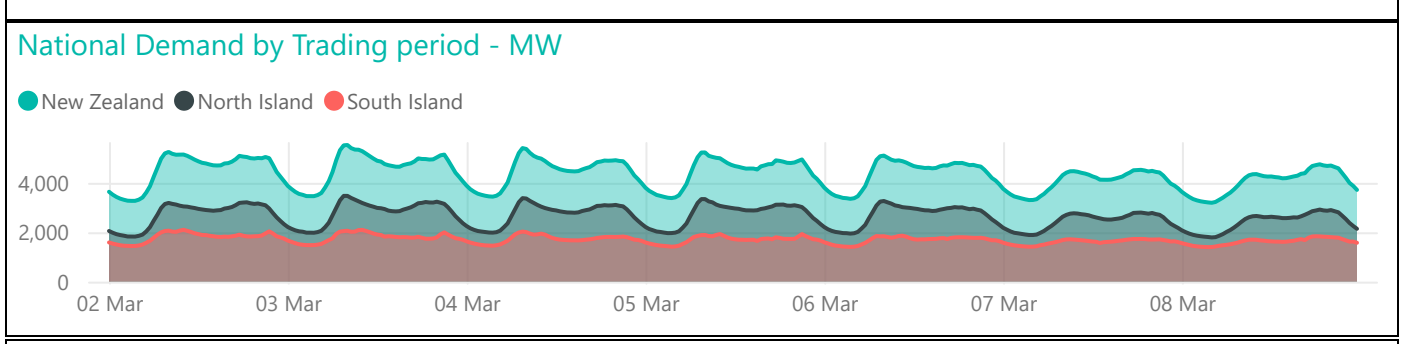
We have opened our Annual System Operator Participant Survey to provide an opportunity for participants to set out their expectations and help us understand how we are performing the system operator service. If you have not received the survey but would like to have your say, you can complete it here.

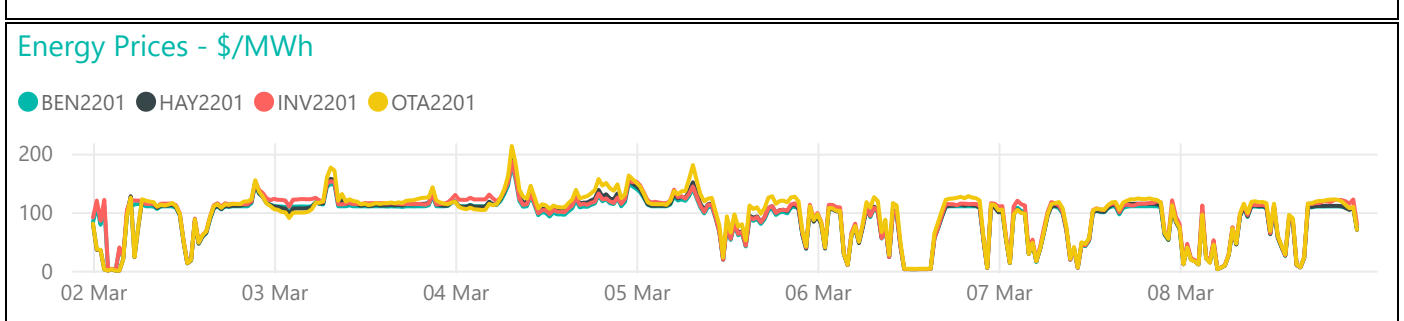


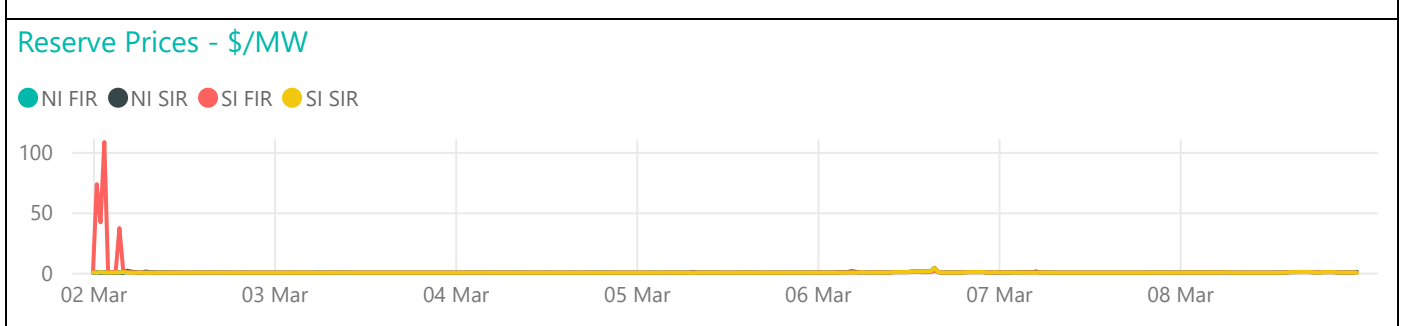


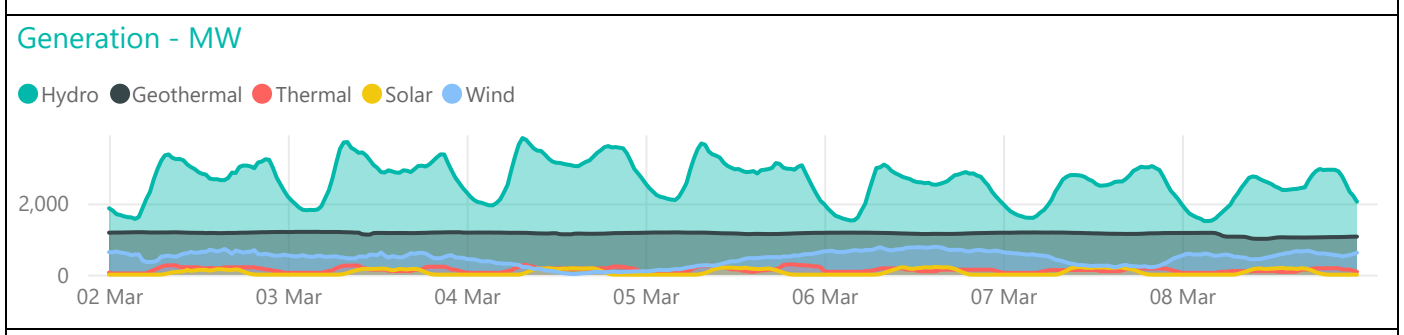


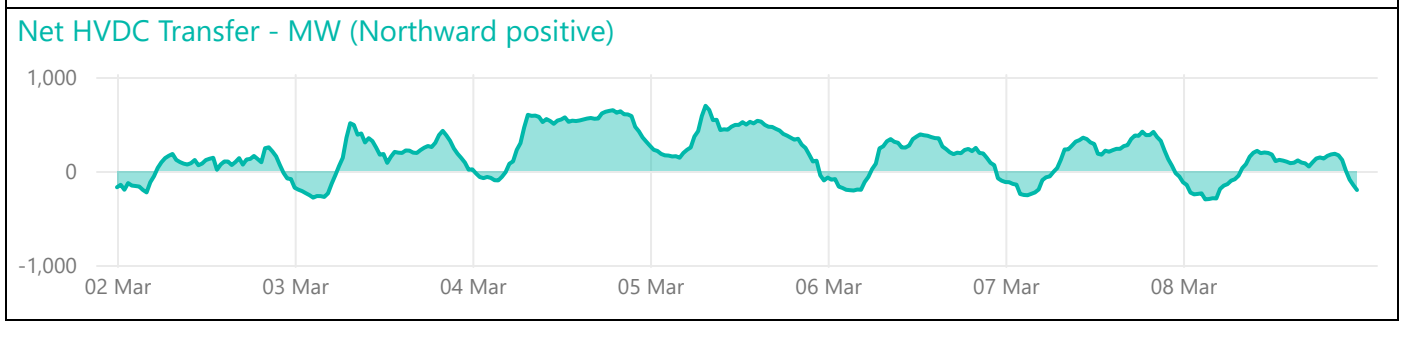






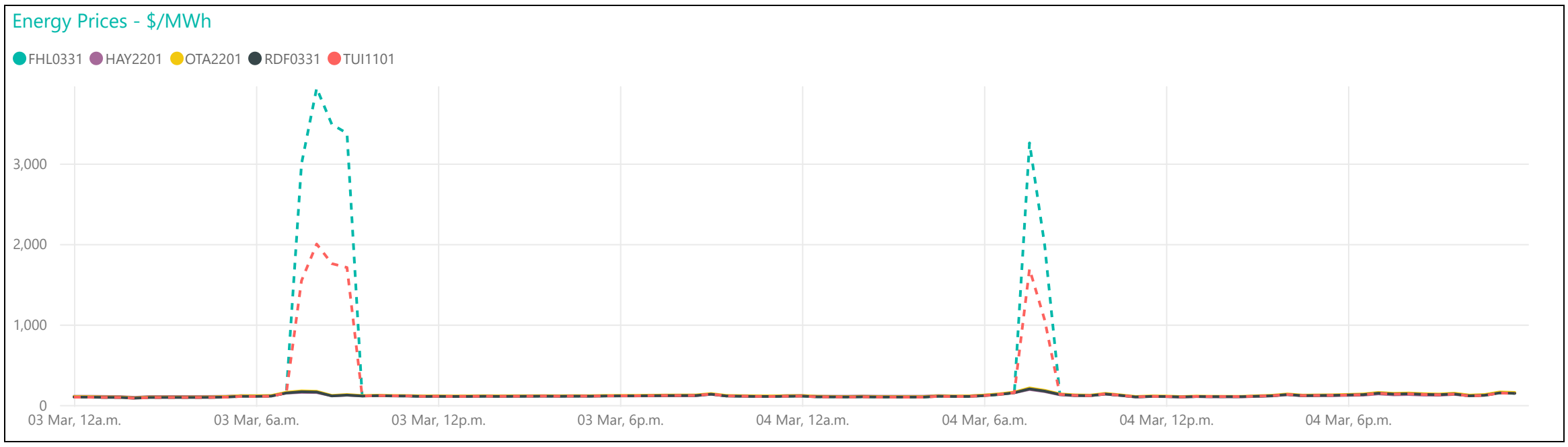






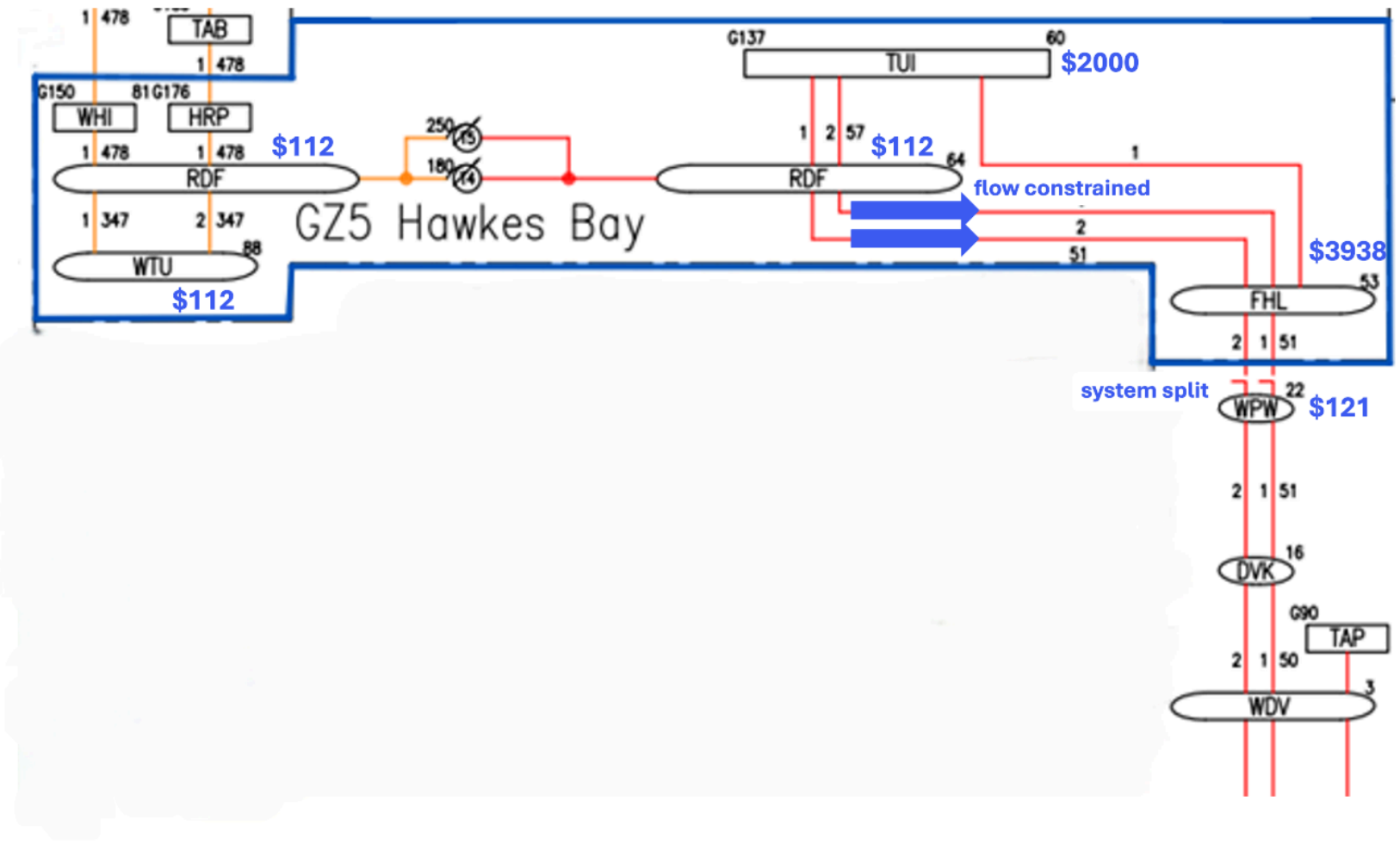
Weekly Insight - The Spring Washer Effect and High Hawke's Bay Prices

In this week's insight we take a closer look at how the spring washer effect can arise, and how it recently caused price separation in the Hawke's Bay region. During the past week, periods of high prices occurred in some areas of the Hawke's Bay region. The chart below shows the half hour average prices during the constrained periods at several nodes.



During real time, prices got even higher than the half hour average prices. At 9:25am on 3 March, the price at the Fernhill market node reached a peak of $3938/MWh and $2000 MWh at the Tuai market node. In comparison, the price at Redclyffe was $112/MWh which closely matched prices in other areas of the North Island (Haywards and Otahuhu). A similar situation arose on 4 March.

An annotated single line diagram* of the Hawke's Bay region is shown below which highlights the nodal prices for the 9:25am Real-Time Dispatch schedule on 3 March.



*The normal system configuration has an operational split between Fernhill (FHL) and Waipawa (WPW).

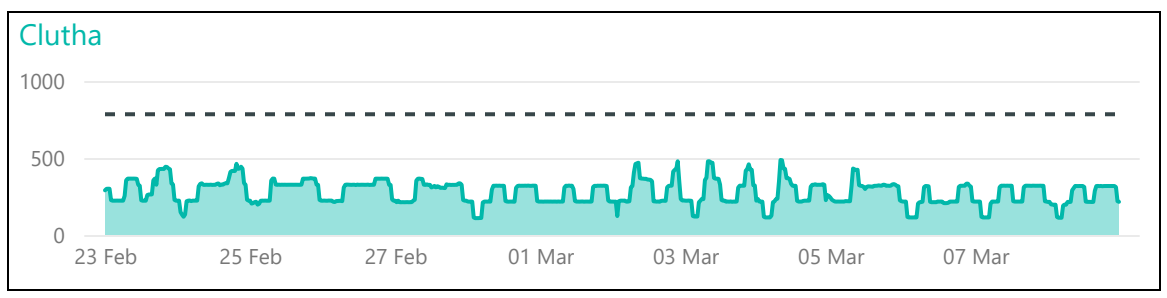
The high prices at Fernhill were due to binding security constraints on both of the Fernhill-Redclyffe 110 kV lines resulting in price separation in the area. In the market model, a constraint is said to be binding when security constraint limits are reached, reflecting the physical limits on the power system. In this case, it was protecting one of the Fernhill-Redclyffe circuits from overloading due to a trip of the parallel Fernhill-Redclyffe circuit. Due to Kirchoff's law, power will flow via all available paths in inverse proportion to their impedance with the marginal price at a given node determined by the price of supplying one more MW of power to that node. As a result, to supply one more MW of load at Fernhill, more expensive generation is required to be supplied from Tuai, and the amount of cheaper power entering Redclyffe needs to be reduced to avoid violating the constraints on the Fernhill-Redclyffe circuits.

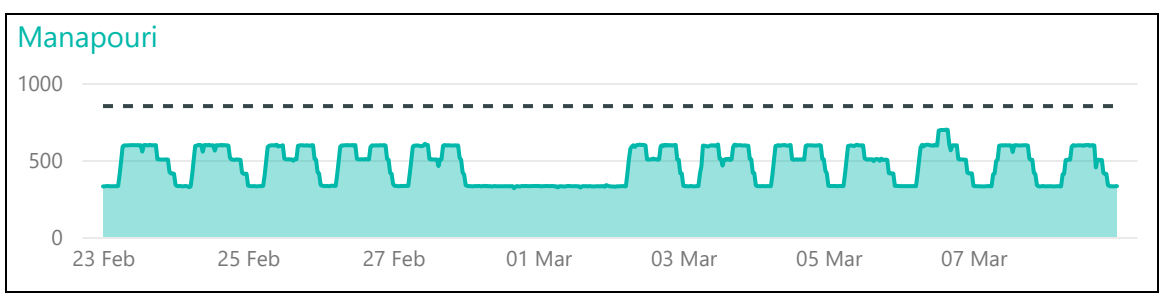
This outcome is called the spring washer effect because of the rising price separation as you move around the constraint. It is a long-standing feature of market design which clearly indicates to the market where generation or load reduction is most valuable (at higher prices) to ease the constrained grid.

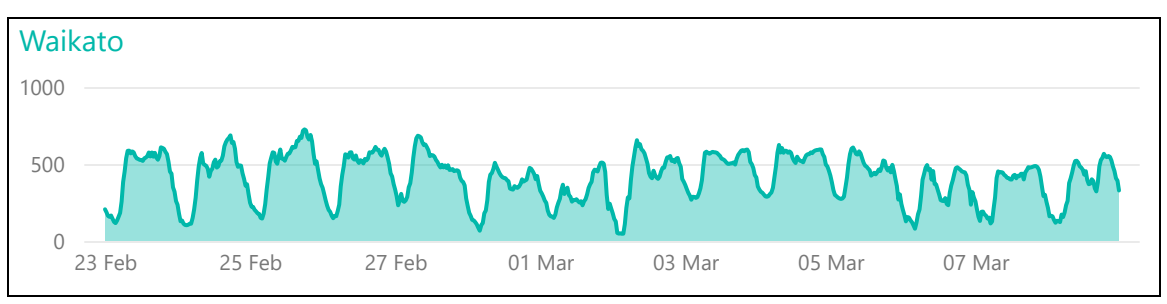
For a further explanation of the spring washer effect, please take a look at our short YouTube playlist

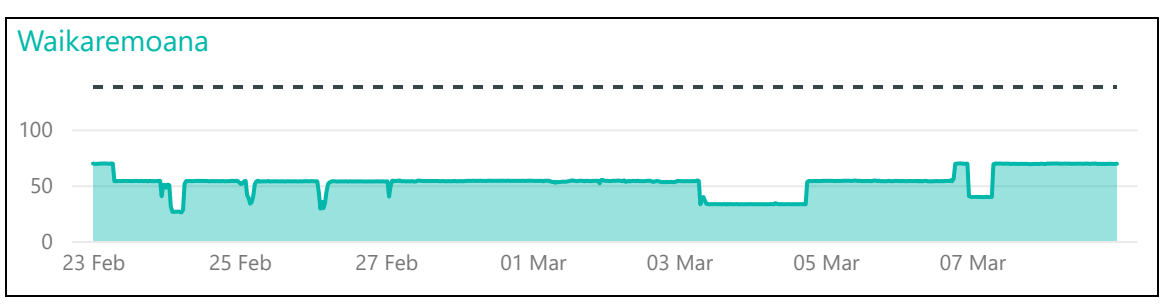
Generation Breakdown - Last Two Weeks

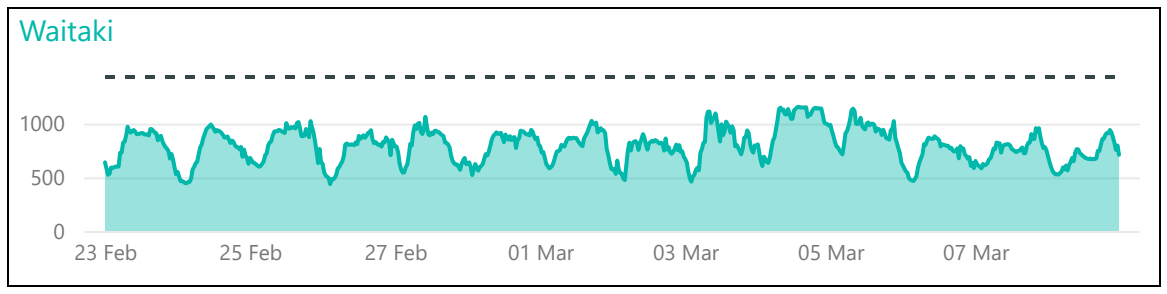
Measured in MW and displayed at trading period level for last 14 days

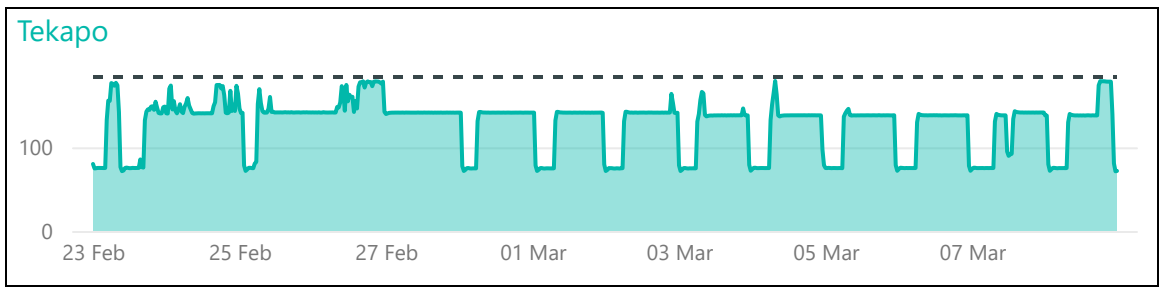


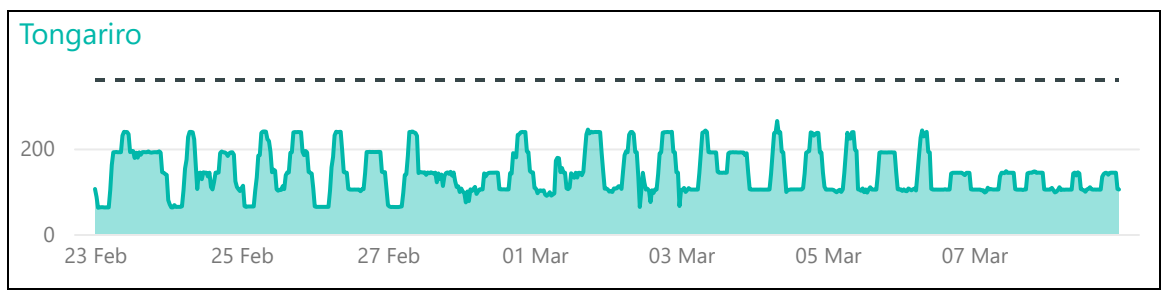


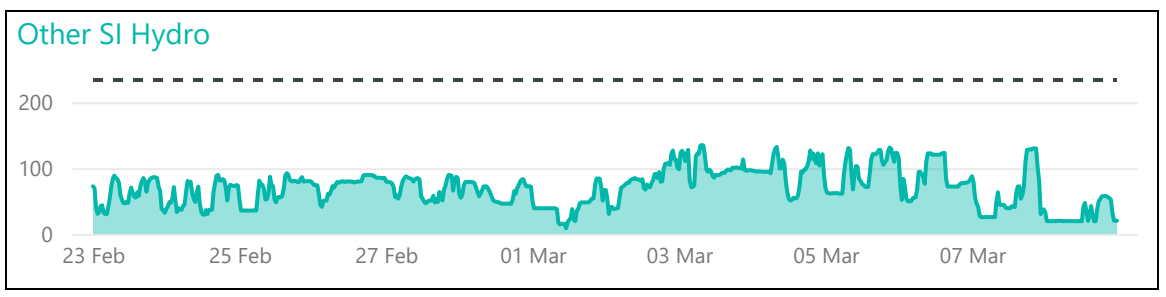


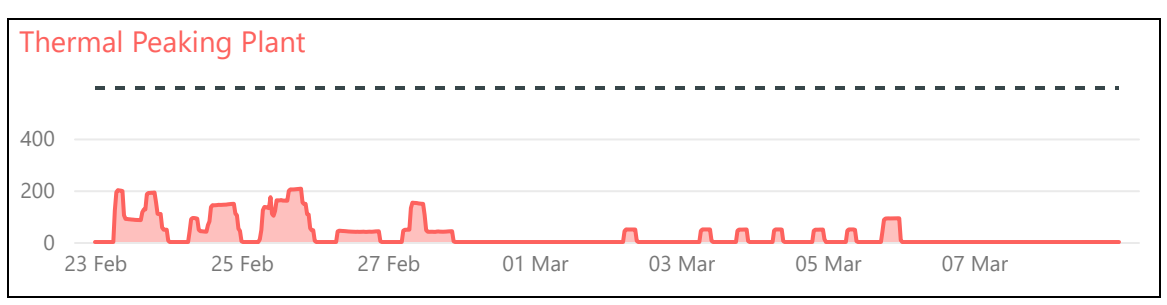


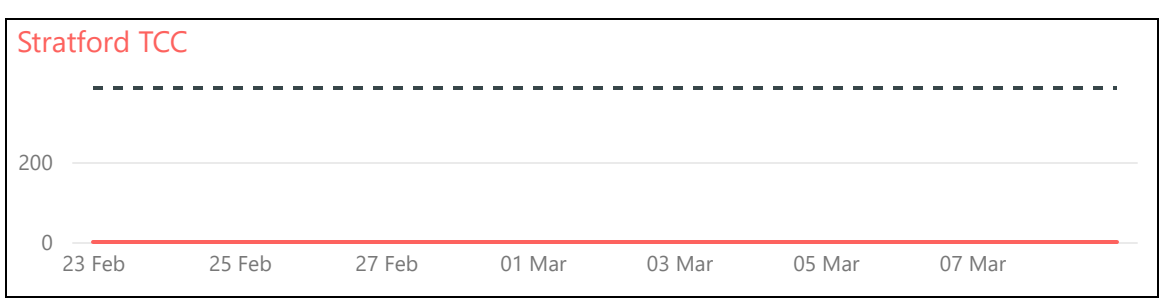


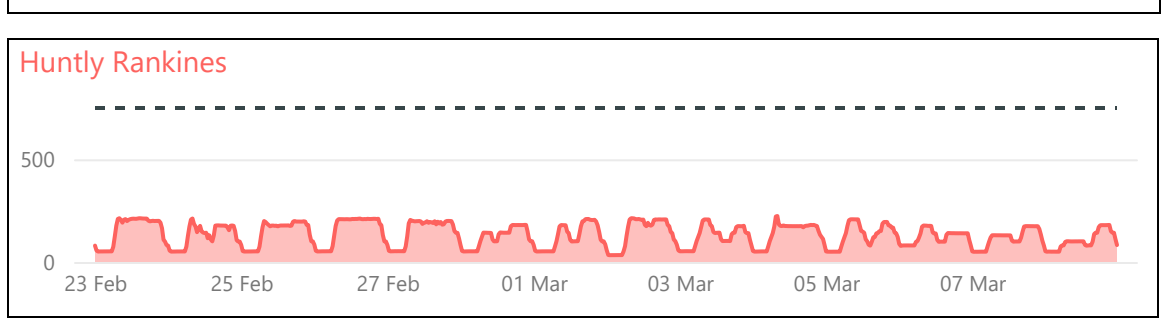


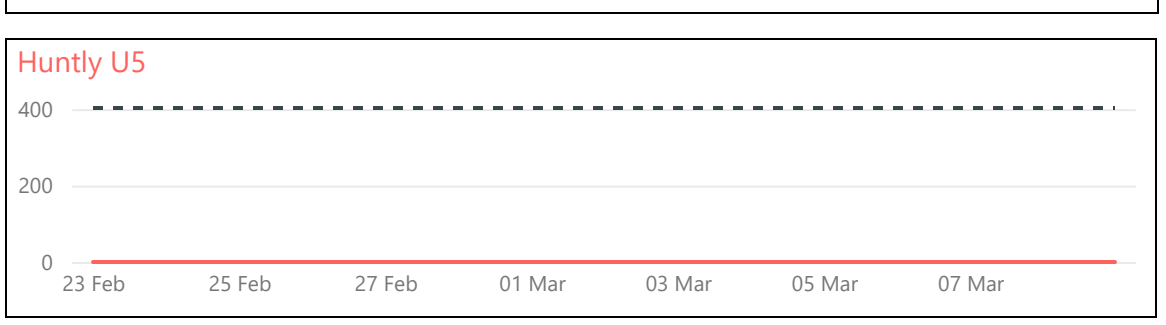


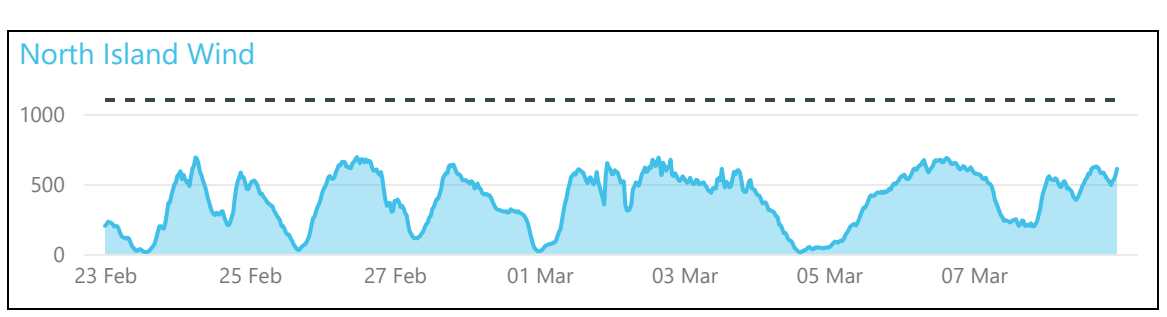


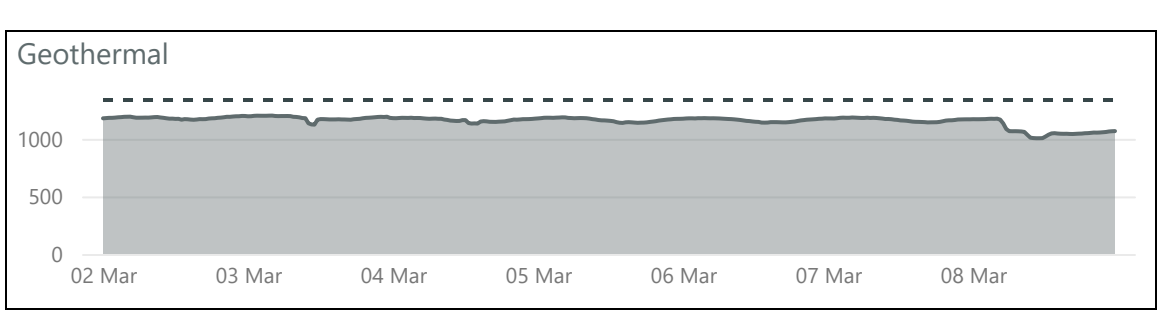


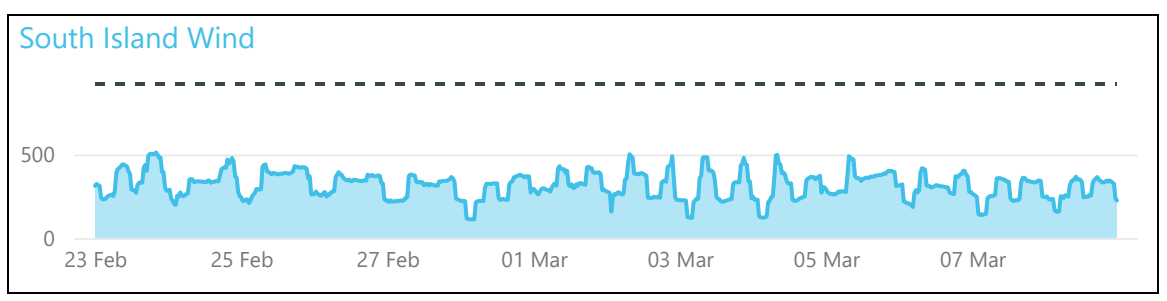


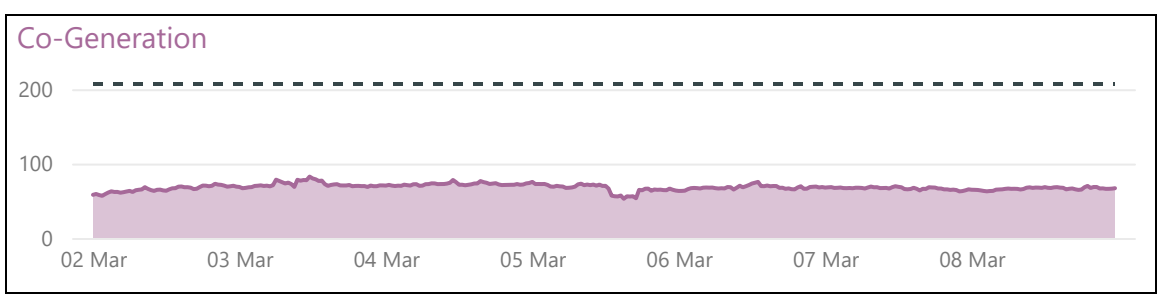


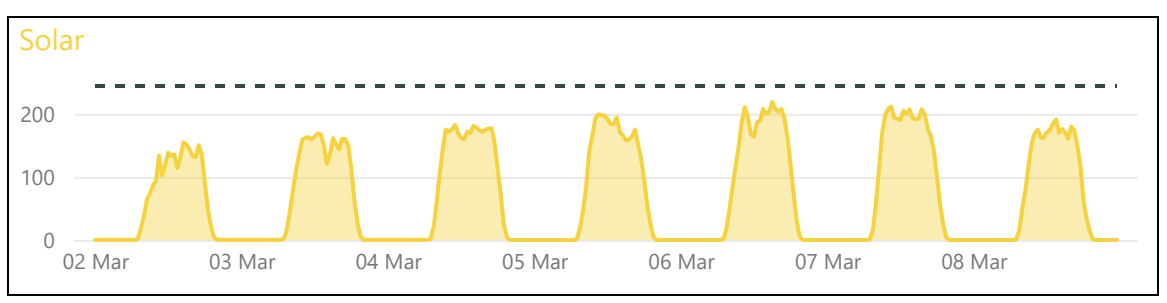


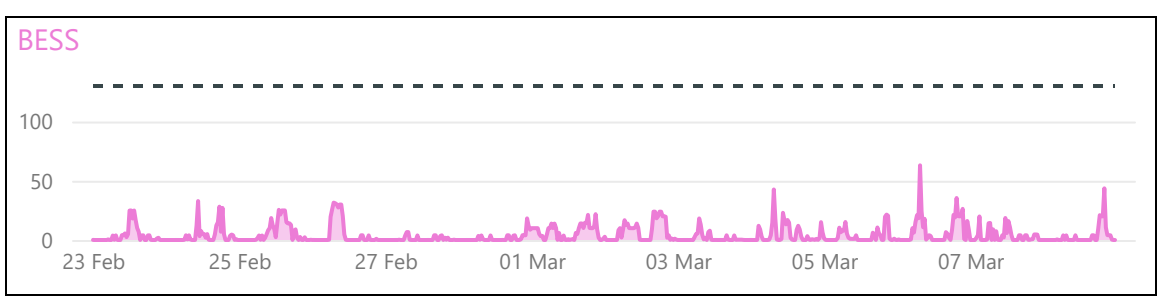






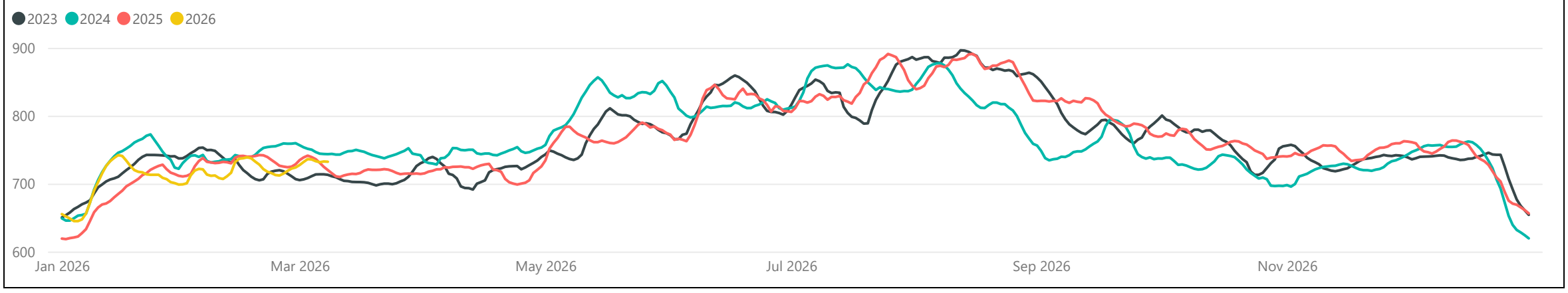




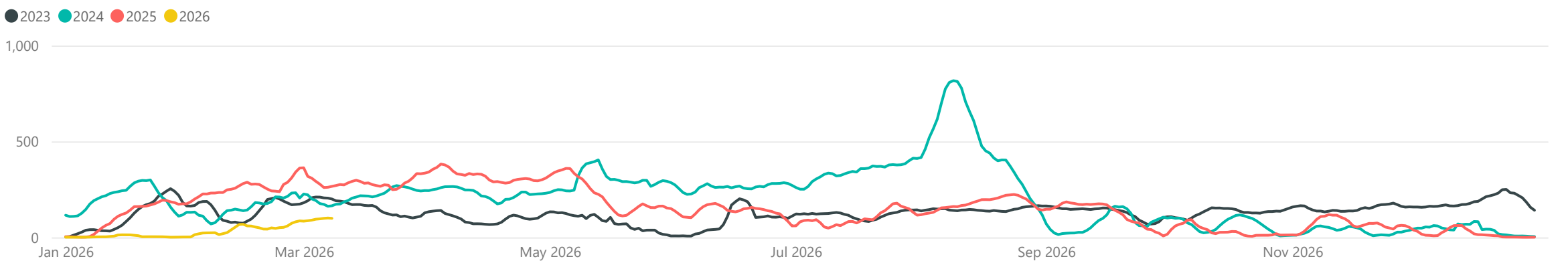


Weekly Profiles

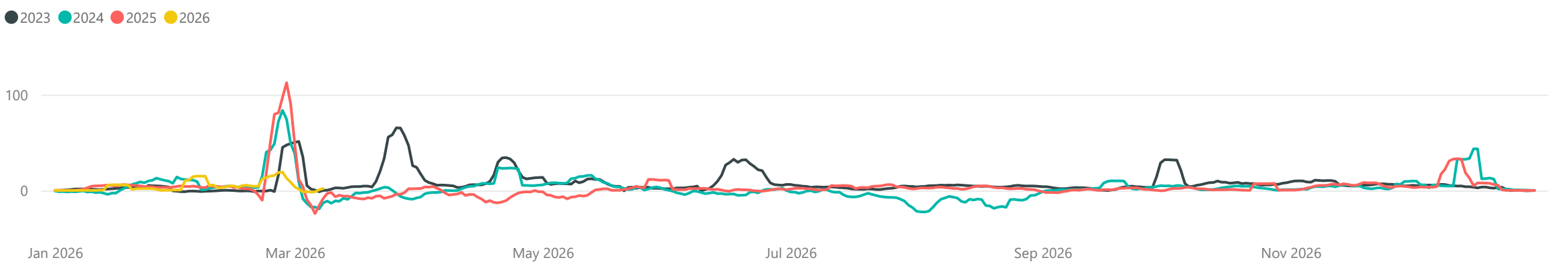
National Weekly Demand - GWh - 7 Day Rolling



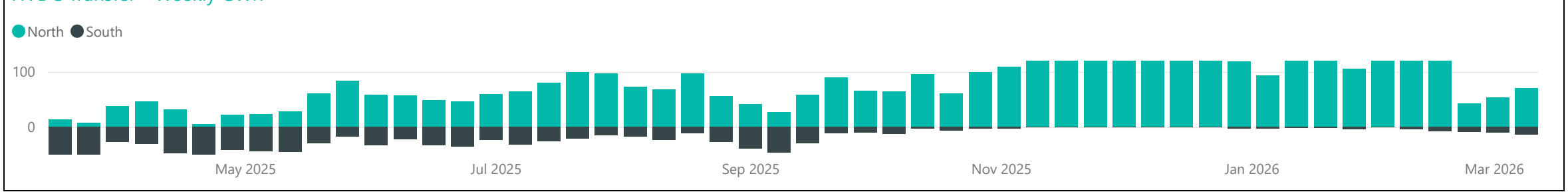
OTA2201 Weekly Rolling Average Spot Price - $/MWh



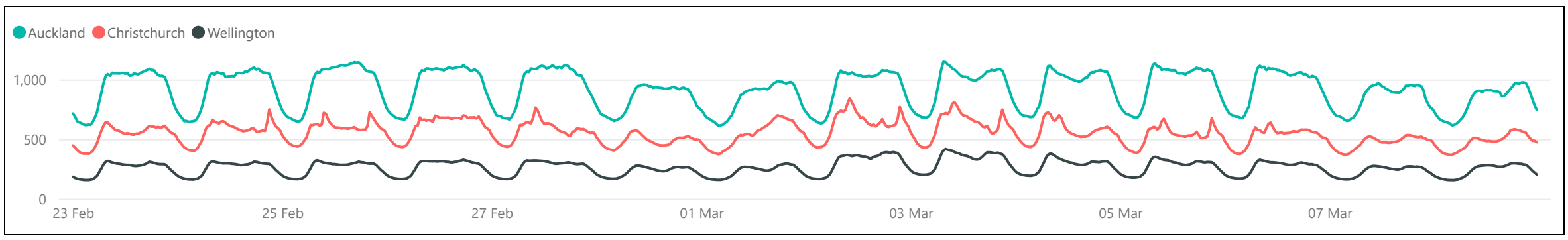
Weekly Rolling Price Separation (HAY2201 - BEN2201) - $/MWh



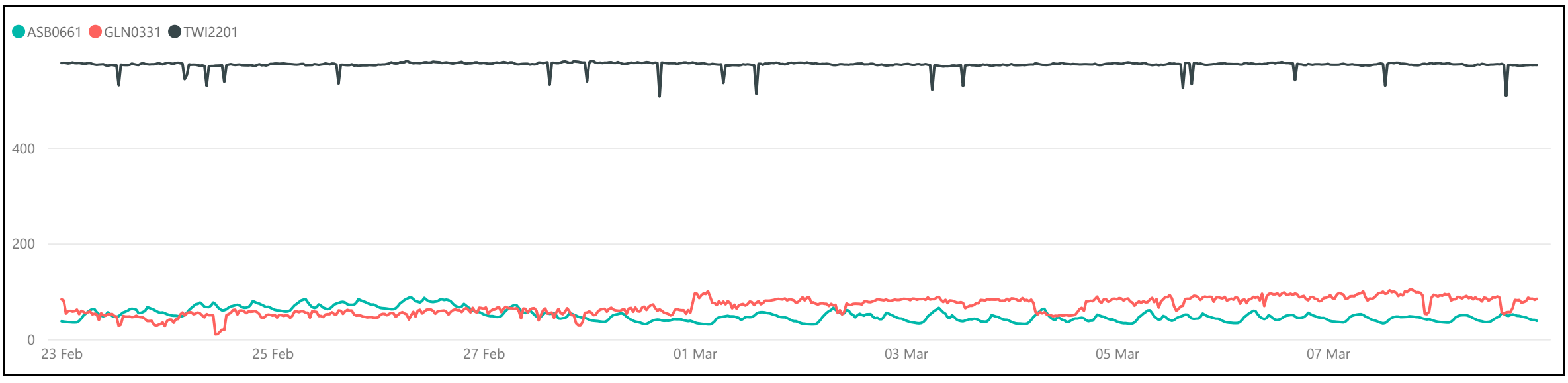
HVDC Transfer - Weekly GWh



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



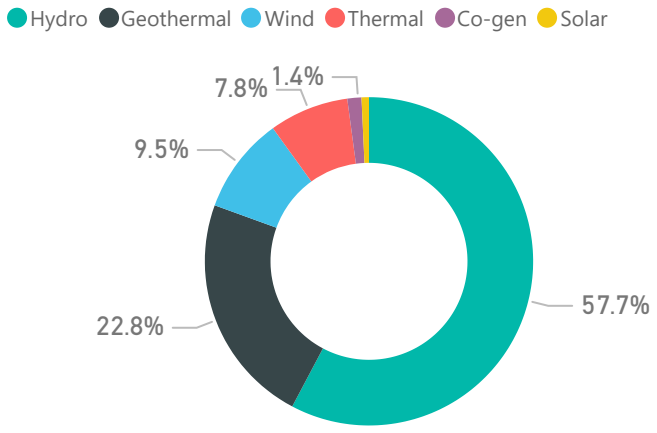
Non-Conforming Load Profiles - Last Two Weeks *Measured in MW shown by GXP*



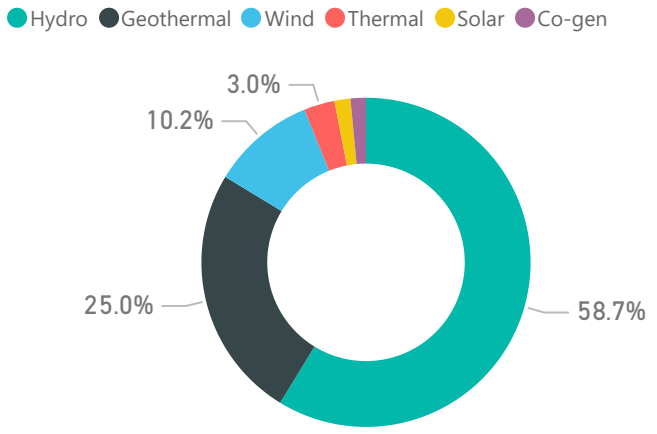
TRANSPOWER

Generation Mix

Last 52 Weeks Generation Mix - Weekly GWh



Last 7 Days Generation Mix - Weekly GWh



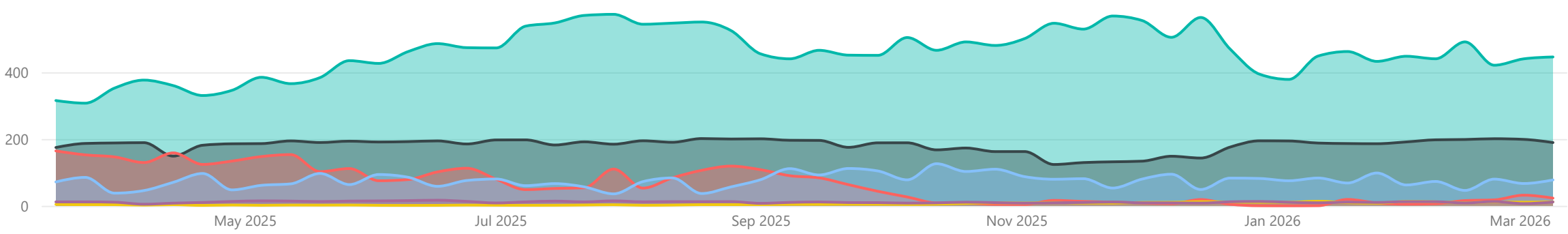
Average Metrics Last 7 Days

Renewable Percentage	CO2e Tonnes/Week	CO2e g/kWh
95%	33,790	37.2

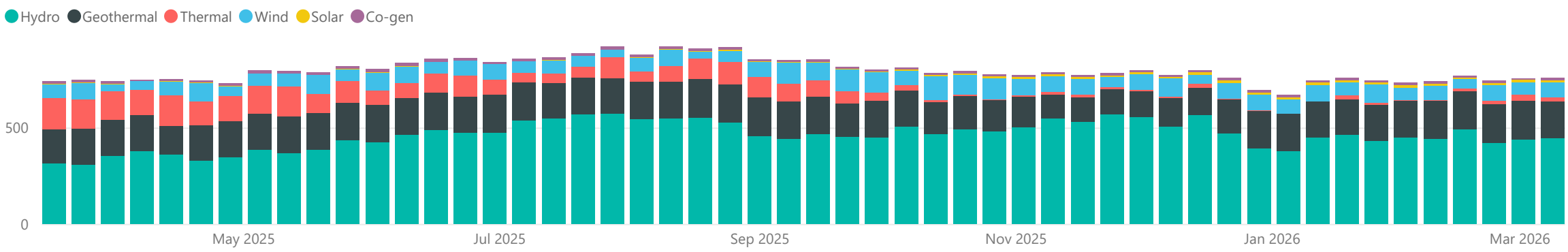
Average Metrics Last 52 Weeks

Renewable Percentage	CO2e Tonnes/Week	CO2e g/kWh
91%	54,733	68.2

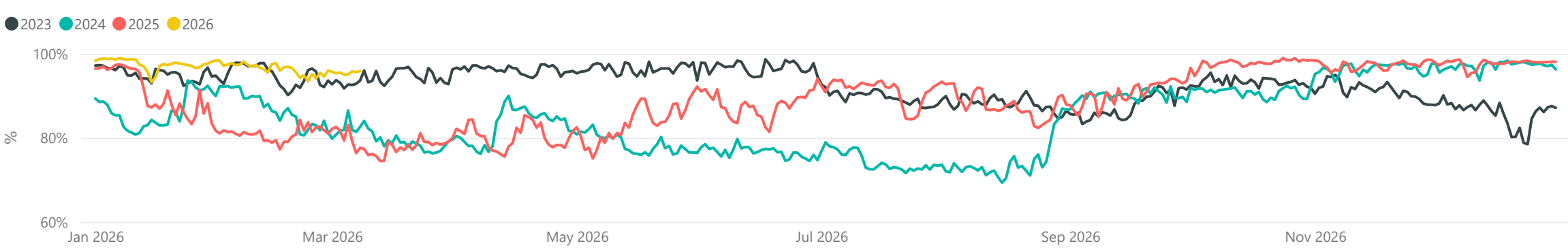
Weekly Generation Mix - GWh



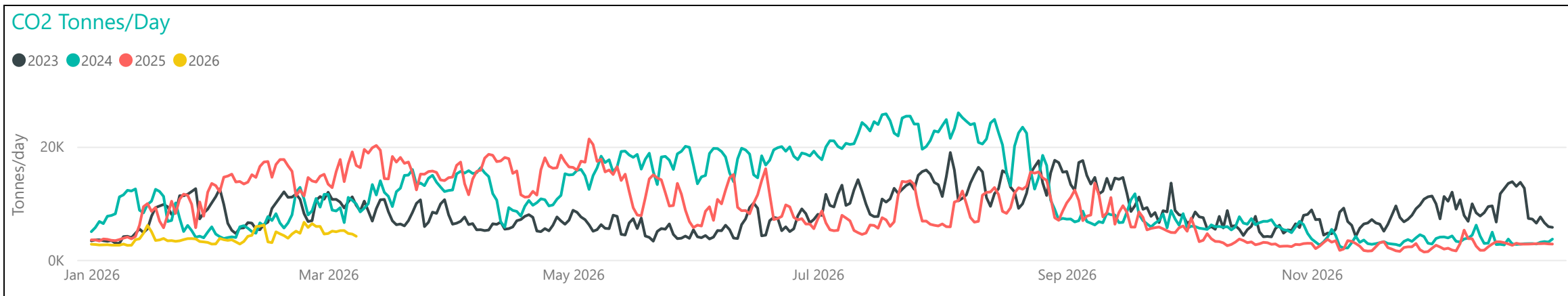
Weekly Generation Mix - GWh



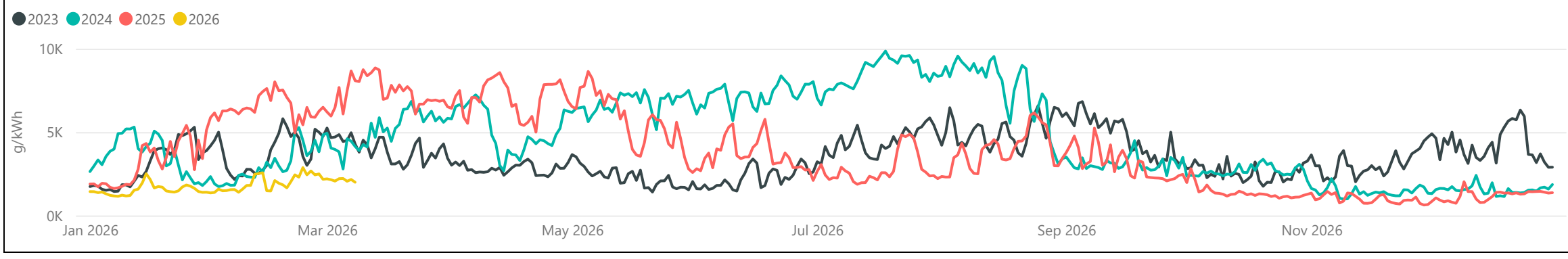
NZ Renewable Percentage



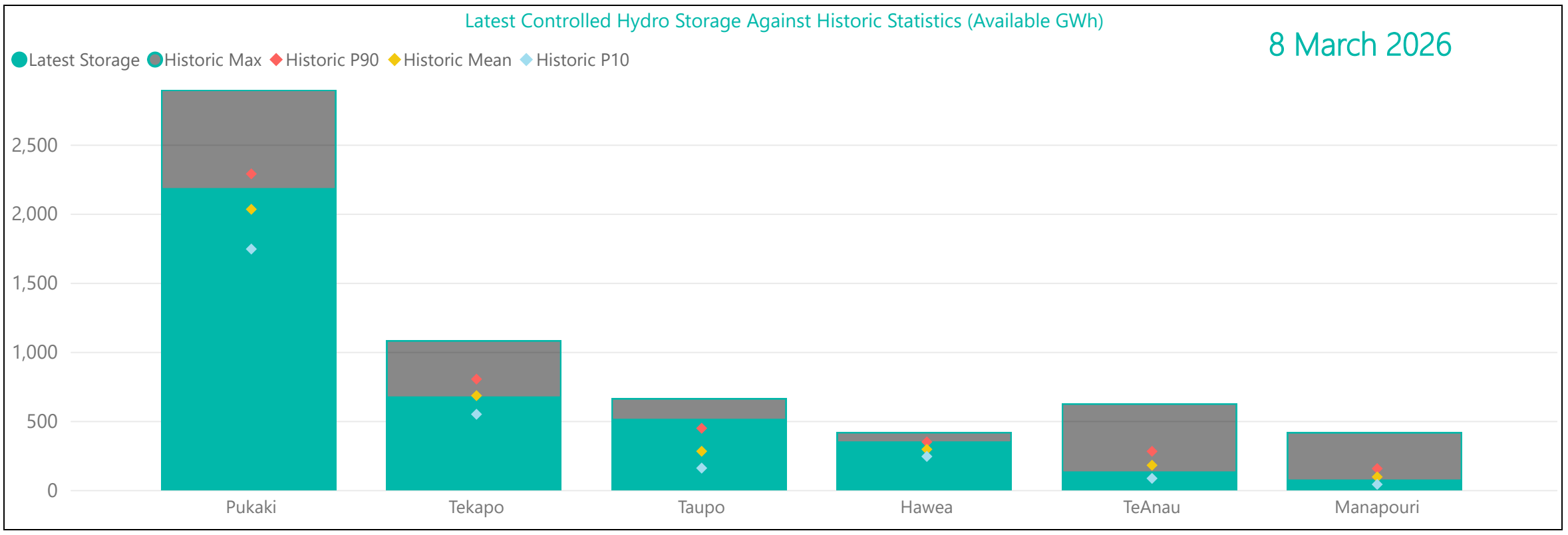
CO2 Tonnes/Day

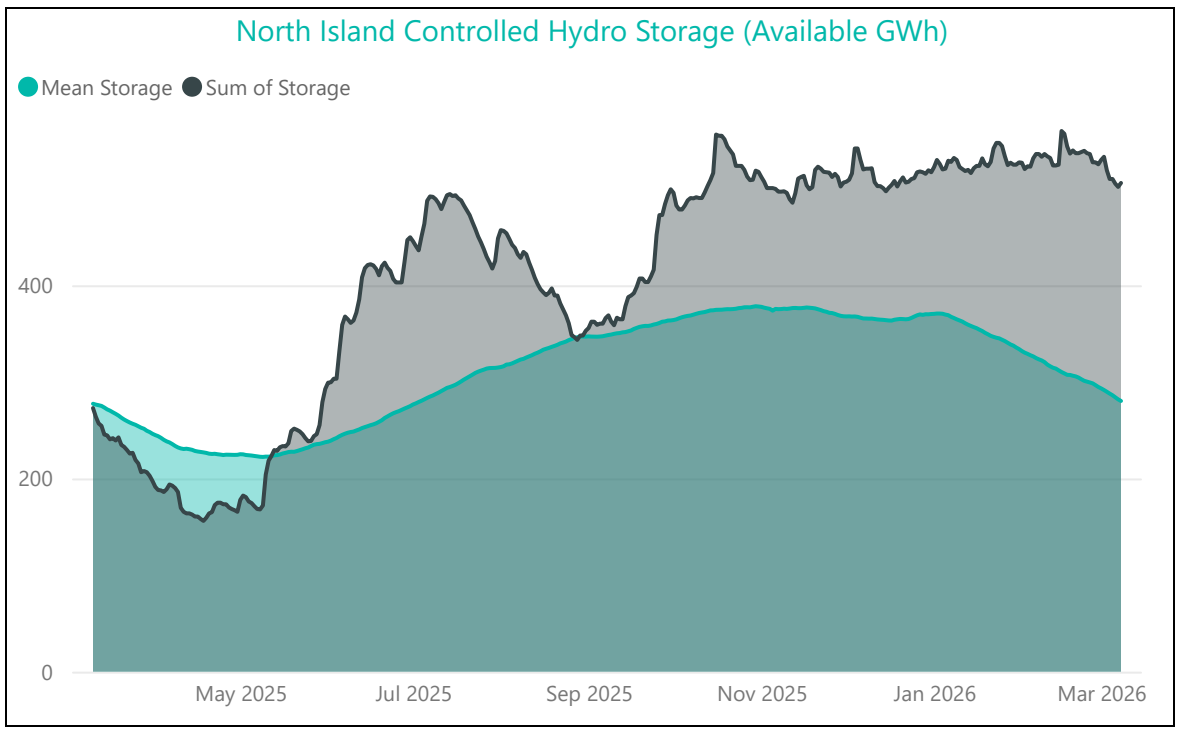


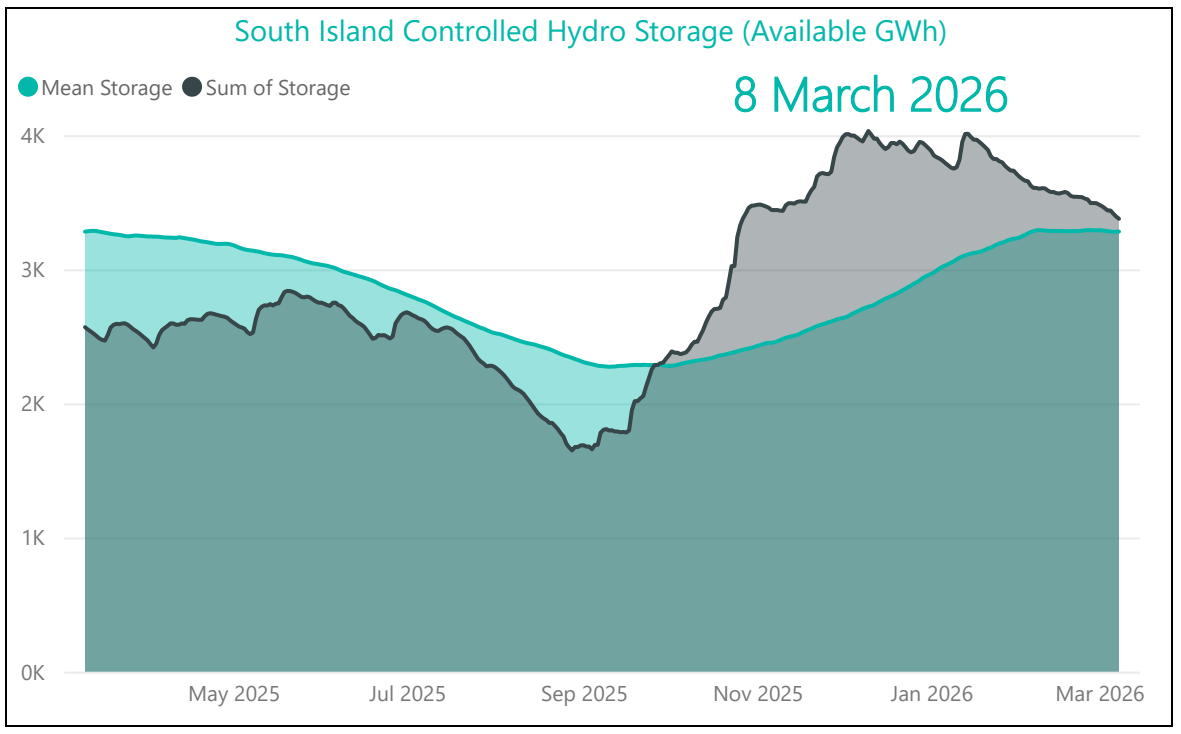
CO2 g/kWh

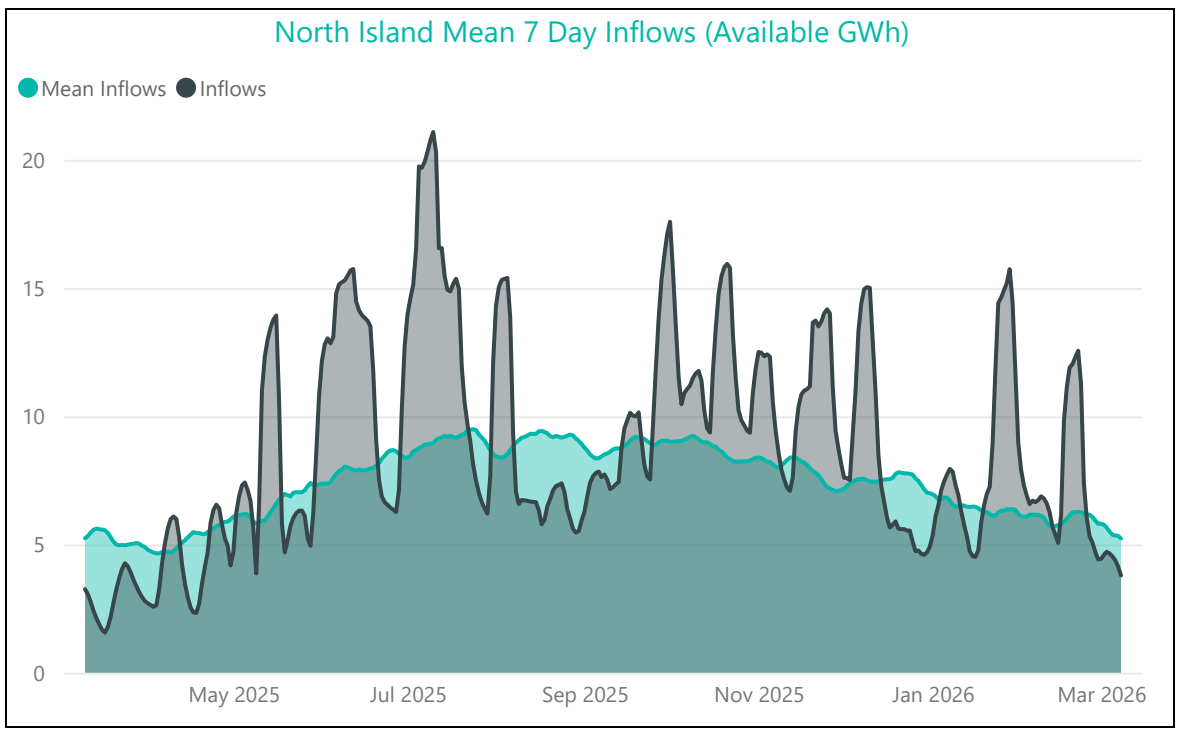


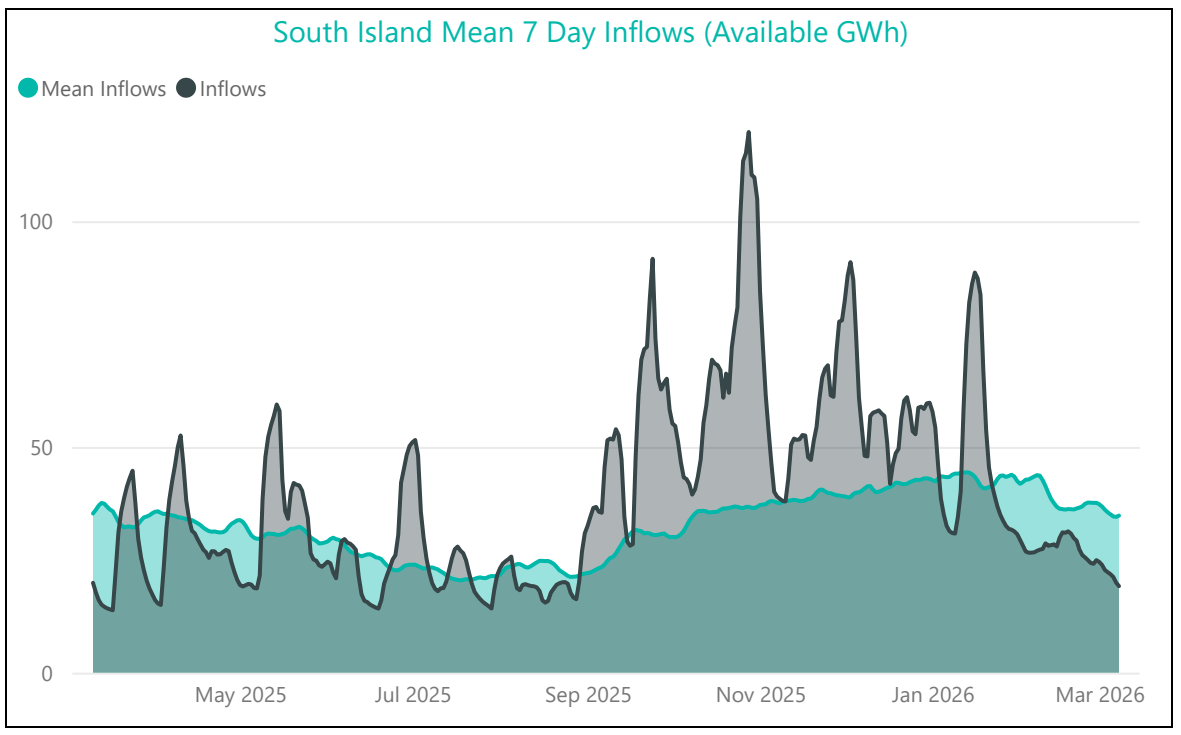
Hydro Storage











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

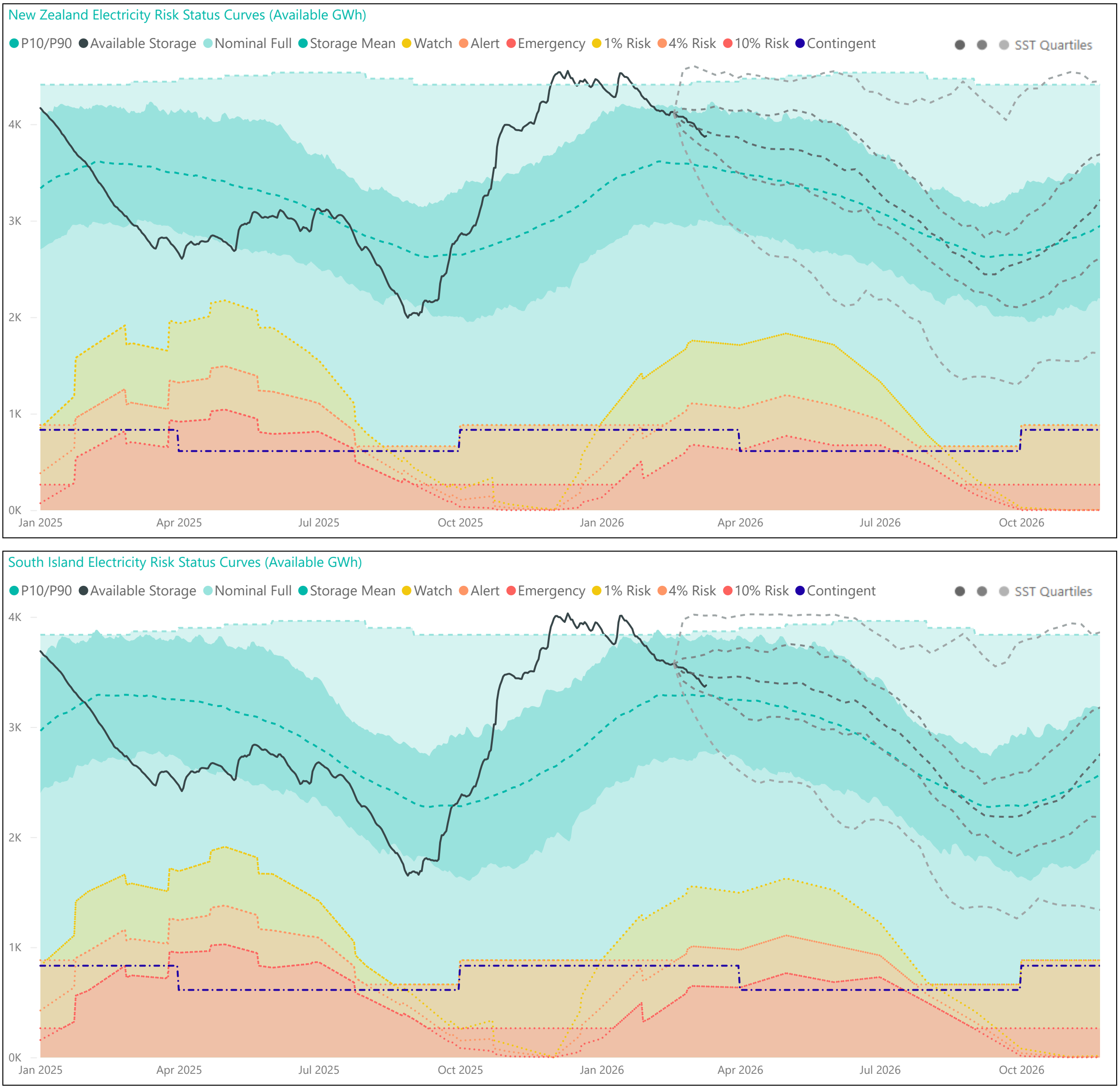
For any inquiries related to security of supply contact market.operations@transpower.co.nz

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).