

Weekly Market Movements - Week Ended 13 November 2022

Overview

National hydro storage remained steady at 147% of the historic average for this time of year. Prices have risen since the week prior as wind and run-of-river hydro generation decreased. In this week's insight we look at the record high renewable percentage from last week.

Security of Supply Energy

Hydro storage sits at 147% of average for the time of year, a 2% decrease on the week prior. South Island storage is at 150% of the historic average, a minor decrease from the week prior as high hydro generation barely outpaced above average South Island inflows.

Huntly Unit 5 is still on outage until 20 November, and Nga Awa Purua (136 MW geothermal) is on outage as of 12 November until 3 December.

Capacity

Residual generation continues to be healthy as we move into the warmer and lighter season with lower demand. The NZGB report for November 2022, covering the next six months, is available on the [NZGB website](#), and forecasts no shortfalls.

Electricity Market Commentary

Weekly Demand

Demand increased slightly on the previous week from 729GWh to 742GWh. Demand peaked 8am on Wednesday morning (9th November) at 5,337 MW. The evening peaks are starting to show the distinct summer pattern of two peaks, one when people get home, and one later as lighting load starts.

Weekly Prices

Wholesale prices increased from the previous week, up from \$9/MWh to \$50/MWh at Haywards as wind and run-of-river hydro generation decreased. Prices peaked at \$384/MWh in the North Island at 8am on Wednesday coinciding with the peak load for the week and when the HVDC was setting the risk. North Island sustained reserve prices were \$225/MWh. Due to planned HVDC equipment outages, island price separation occurred several times during the week.

Last week saw the first trading period to use a Price-Responsive Schedule Short (PRSS) in its final pricing calculation as the system was on Stand Alone Dispatch (SAD) due to a brief market system outage. This is a feature of Real-Time Pricing (RTP) that provides price certainty.

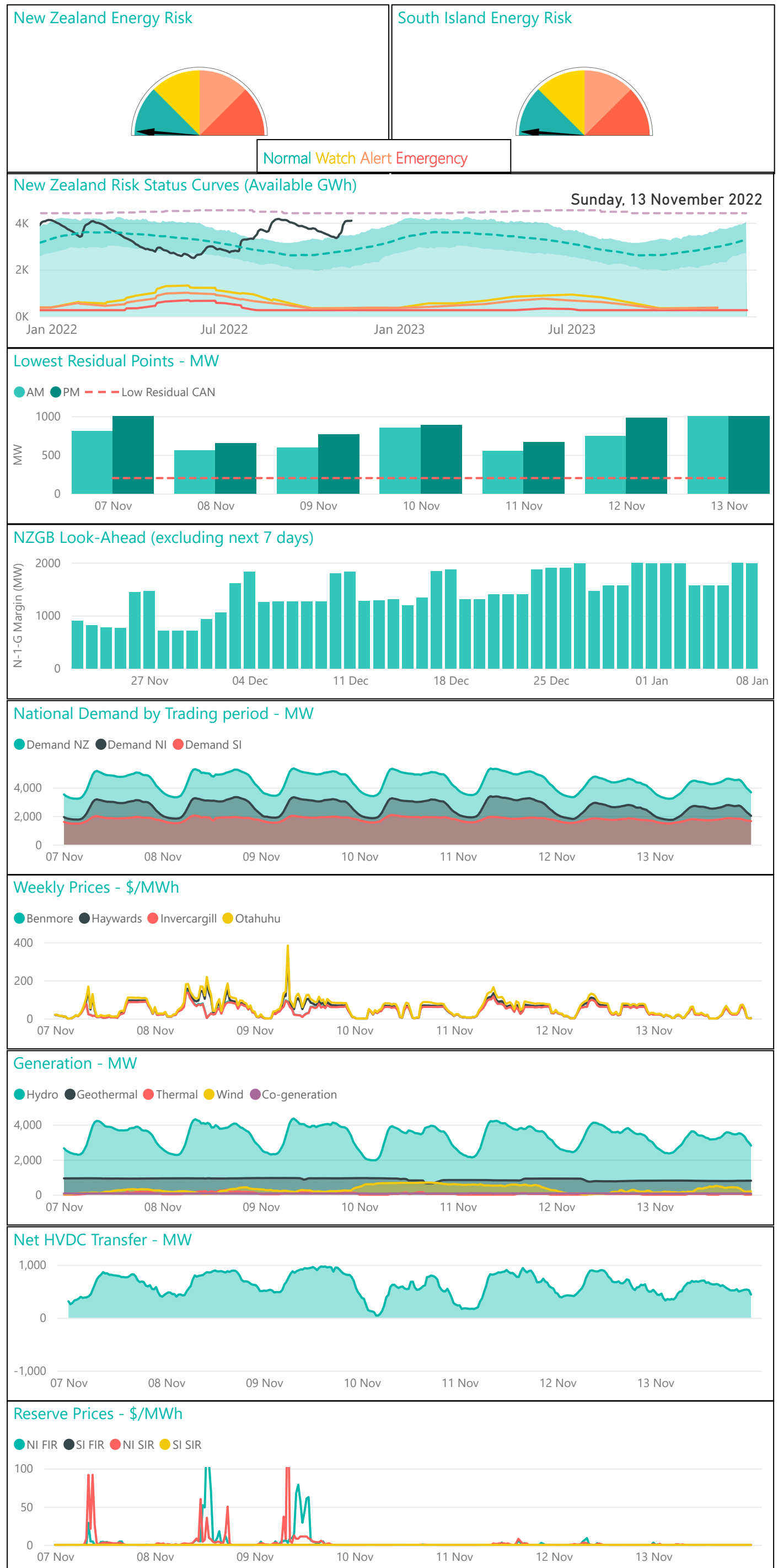
Generation Mix

Similar to the week previous, a large portion of the week was spent with no thermal generation other than co-generation plant. Renewable contribution to the generation mix was even higher than the week prior at 97%, up one percentage point on last week's record.

Wind generation decreased from 8.7% to 6.7% of the energy mix, while hydro generation increased to comprise 72% of the weekly generation mix. Low thermal generation at just 1% of the generation mix was due to Huntly Unit 5 still being on an outage until 20 November and, again, only one Rankine unit running for part of the week.

HVDC

The HVDC was in high north flow all week reflecting the high hydrological position in the South Island.

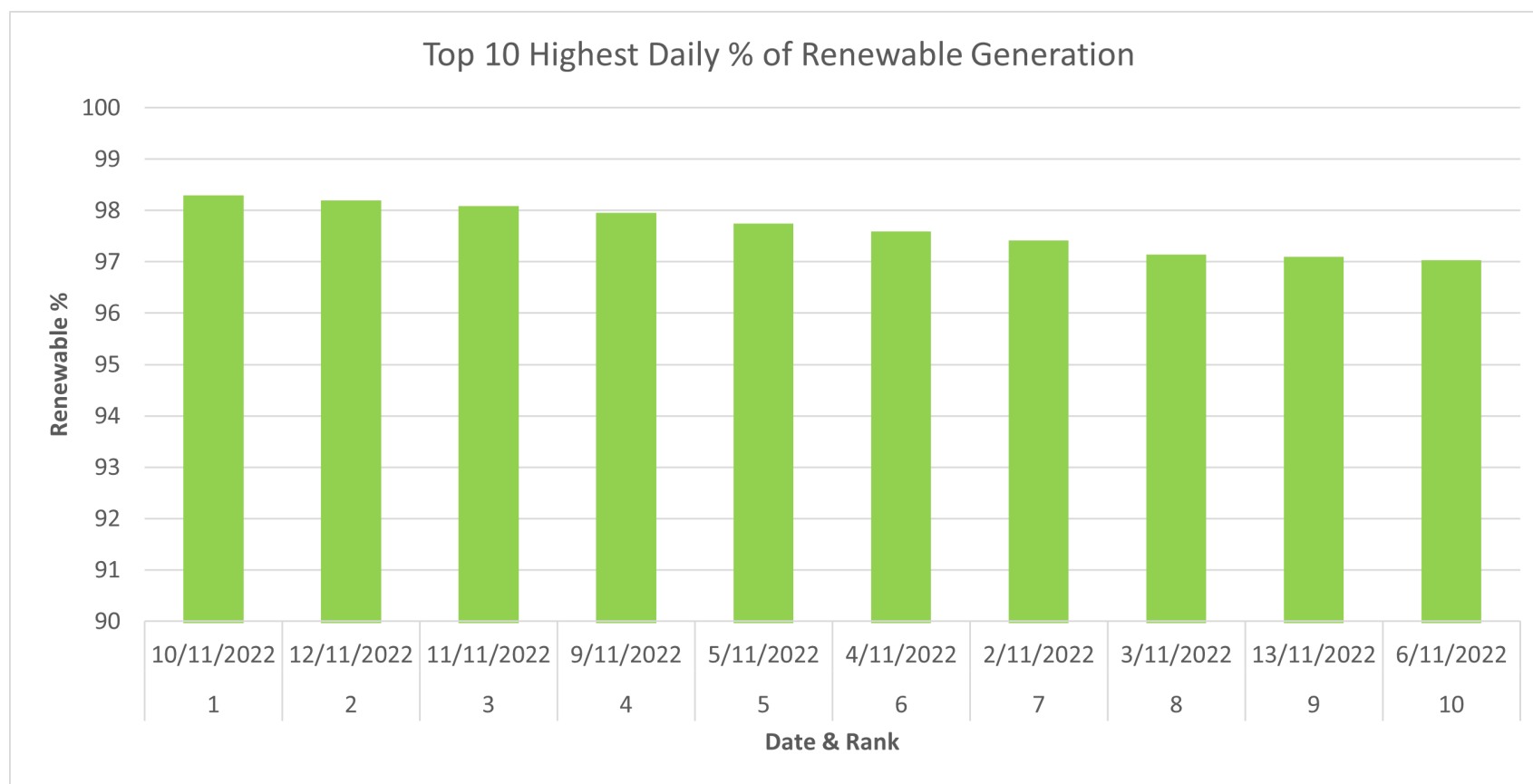
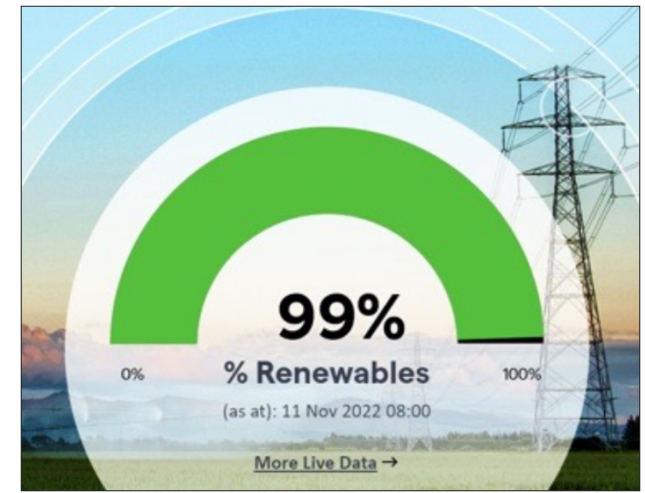


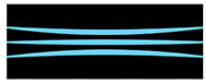
Record Renewables

With high hydrology, high wind and thermal units on outage, renewable generation broke multiple records last week. Weekly, daily and real-time percentages of renewables in the generation mix were the highest they have been in at least the past four years, reaching 99% Friday morning. The image to the right was taken from the Transpower [website](#), the first time it has ever reached this milestone.

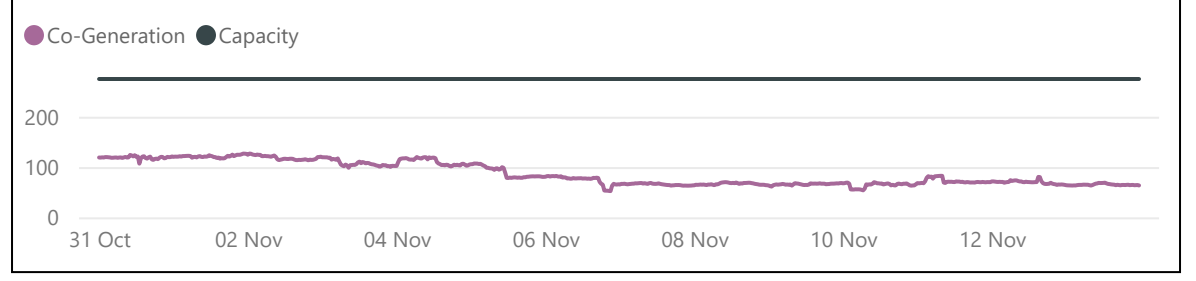
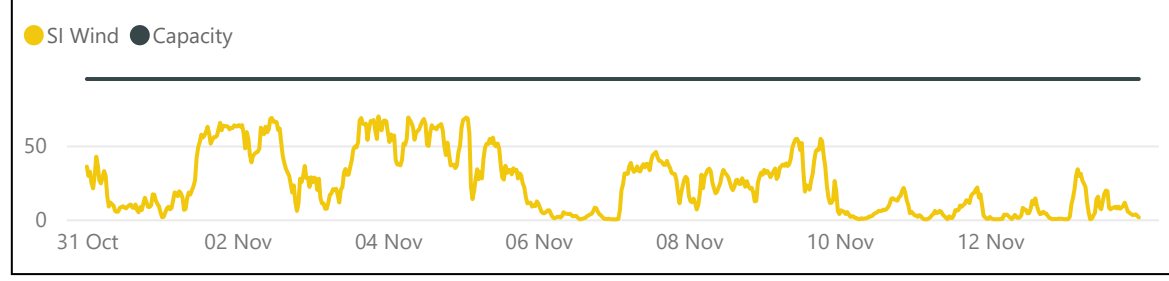
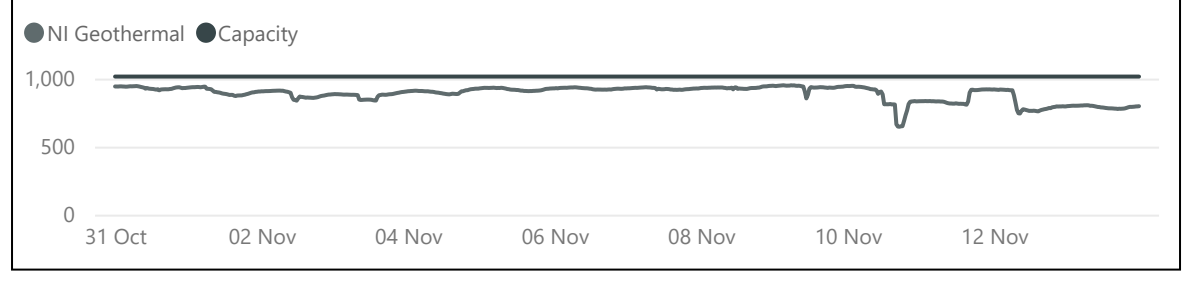
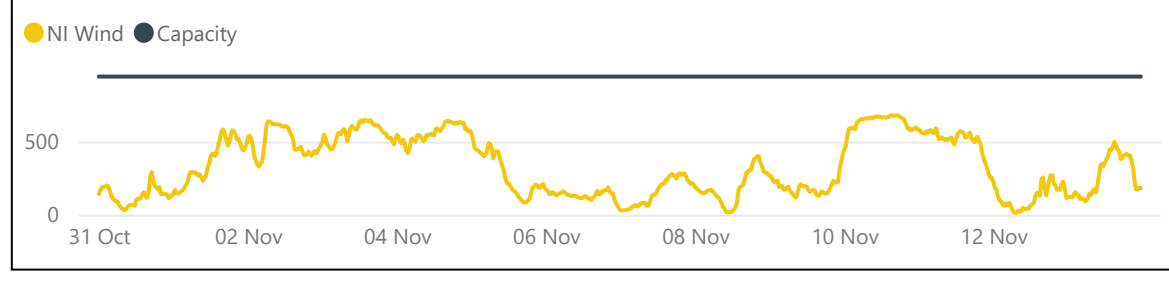
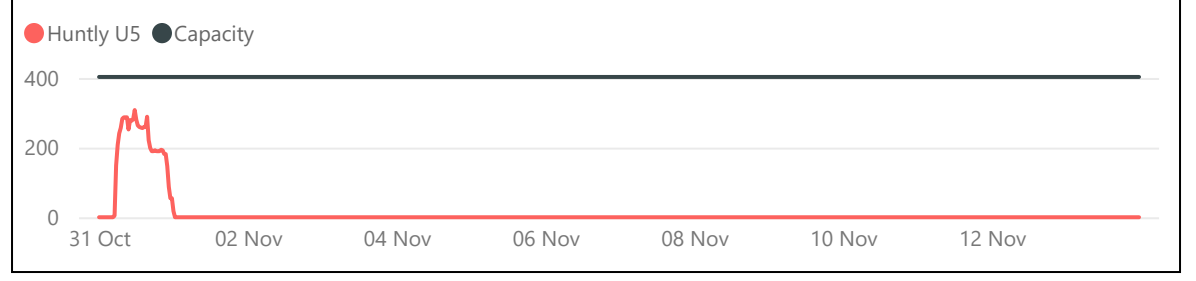
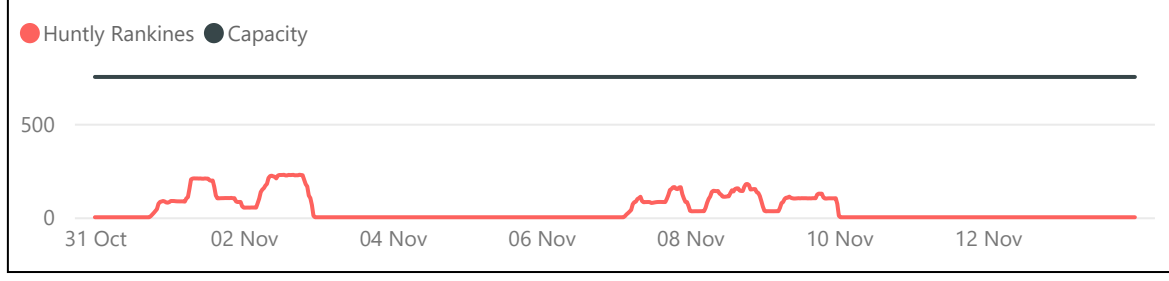
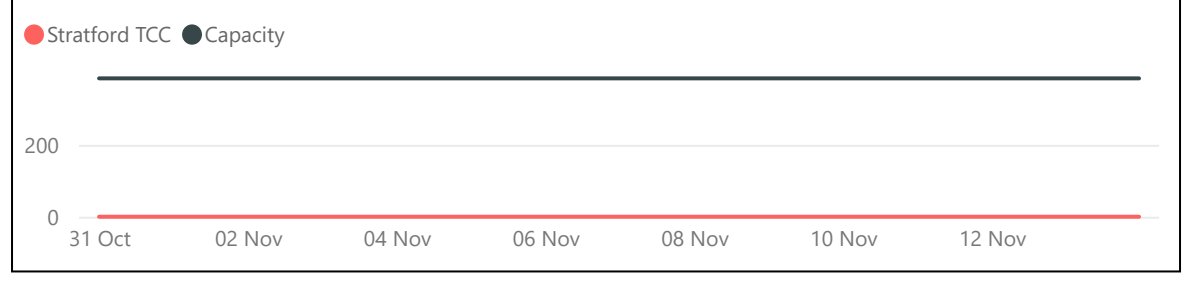
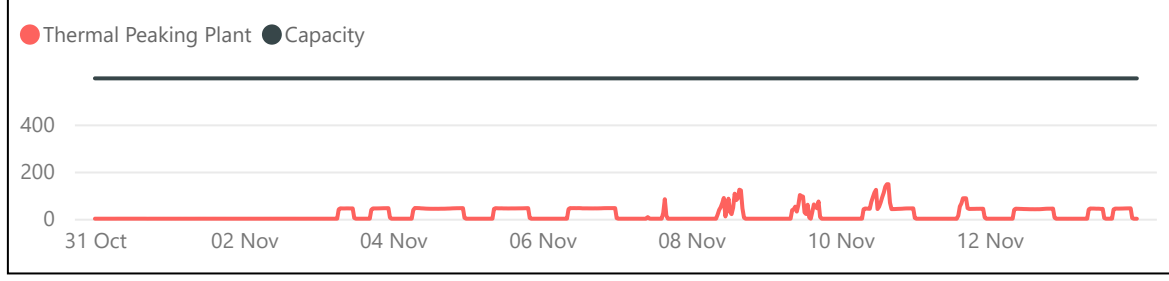
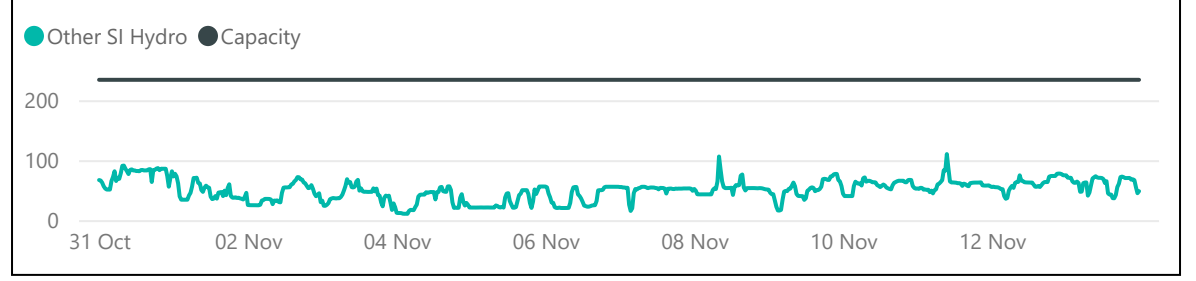
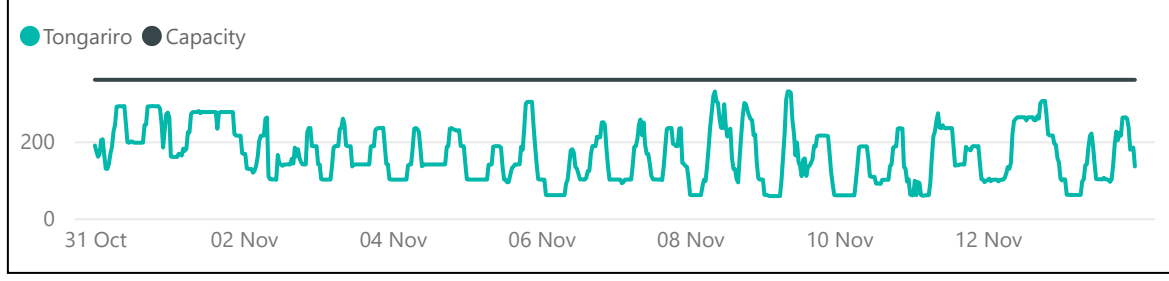
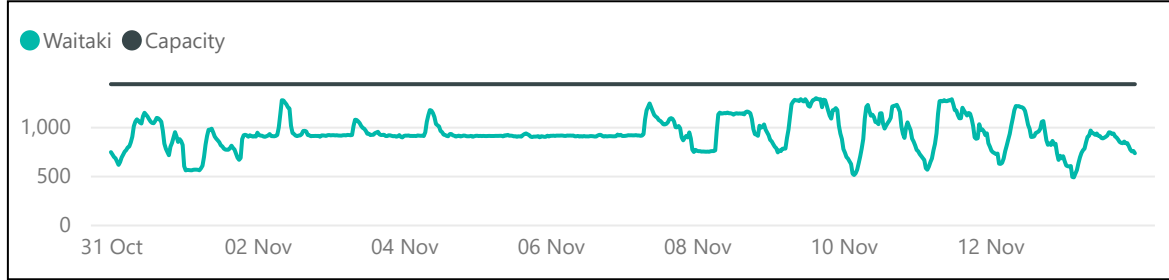
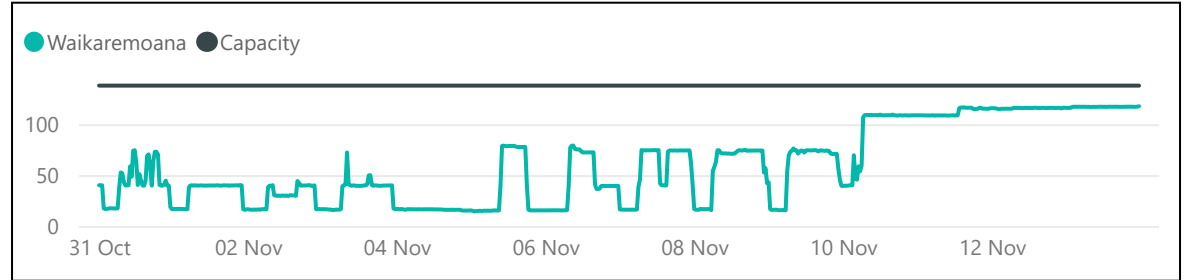
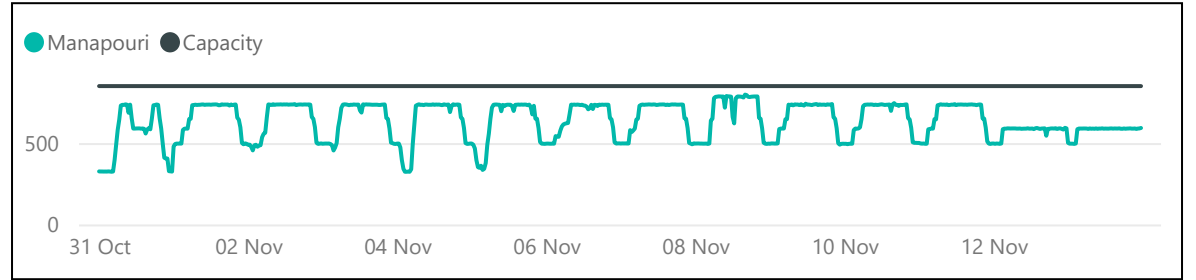
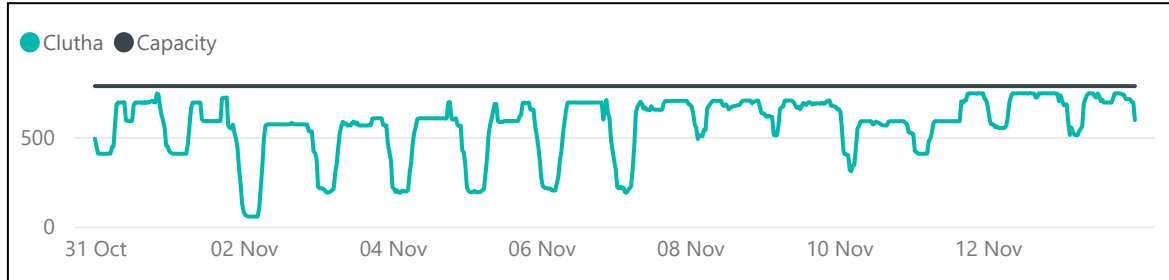
For four consecutive days, Wednesday through to Saturday, New Zealand's national electricity demand was supplied by 98% renewable generation - occupying the top four days of highest renewable generation percentage in the last four years. Furthermore, the top 10 days have all been this month, shown in the plot below.

Over the whole week, the total renewable contribution to the generation mix was 97% - another record (see page 5). For much of the week, the only non-renewable contribution to the generation mix was co-generation, which is a by-product of some large industrial processes.

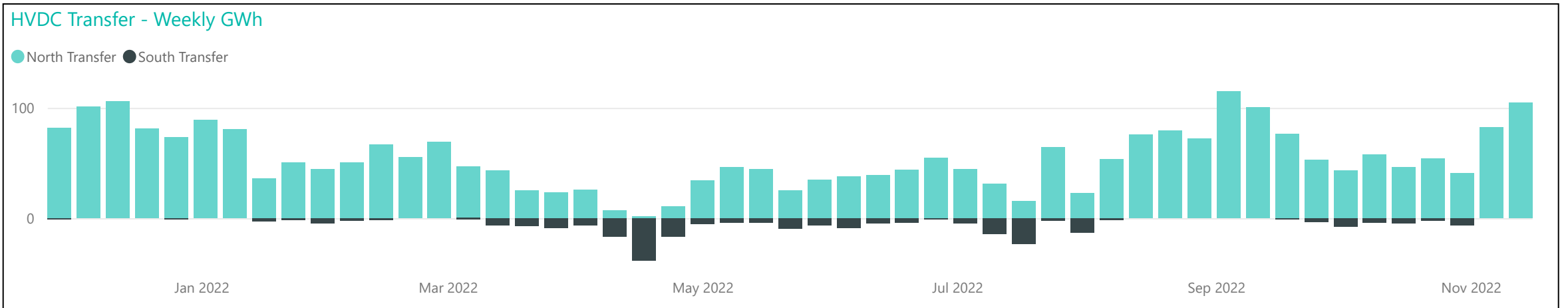
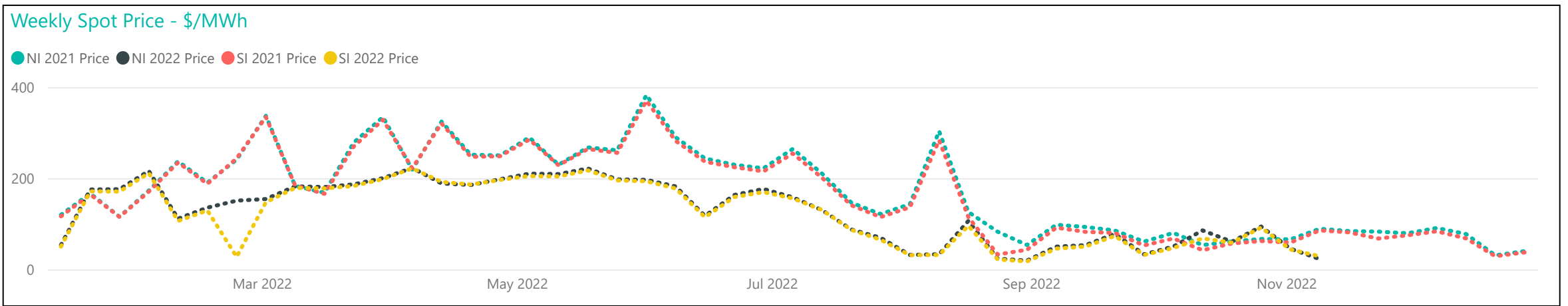
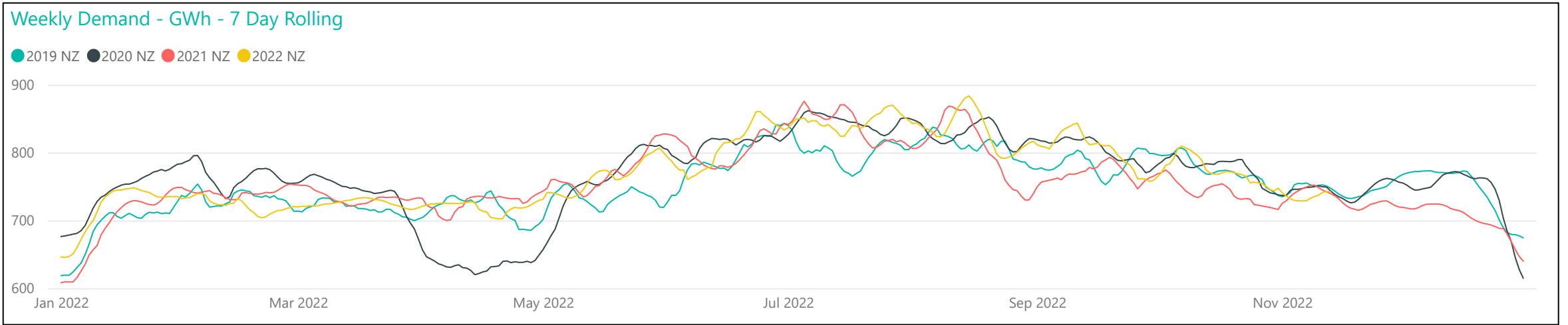




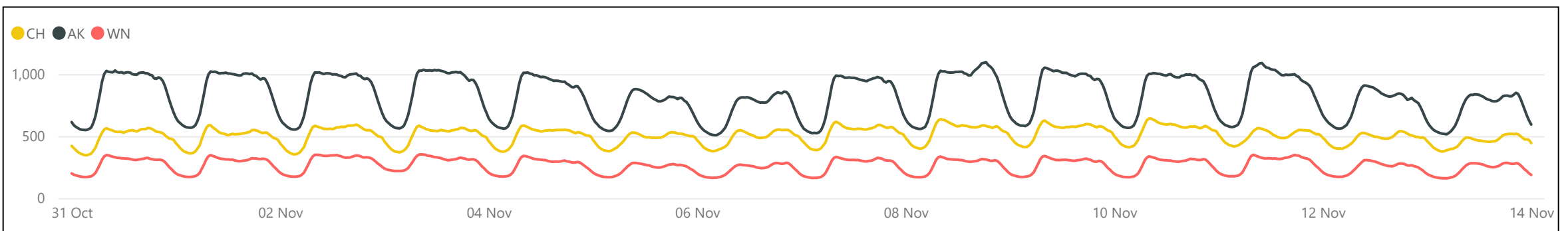
3. Generation Breakdown - Last Two Weeks *Measured in MW and displayed at trading period level for last 14 days*



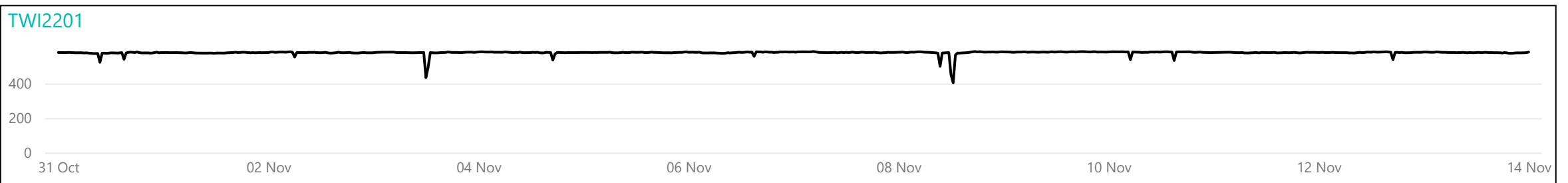
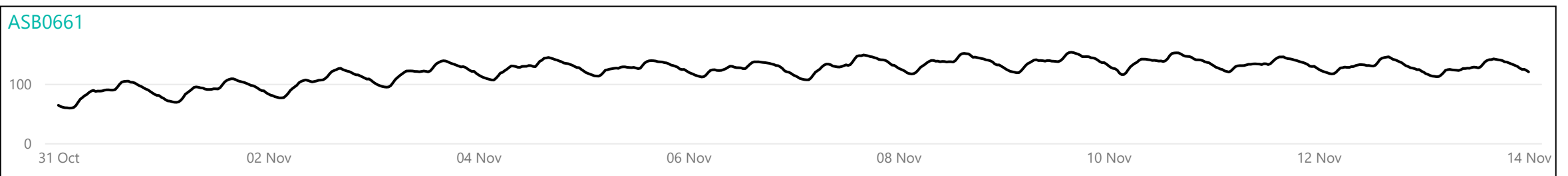
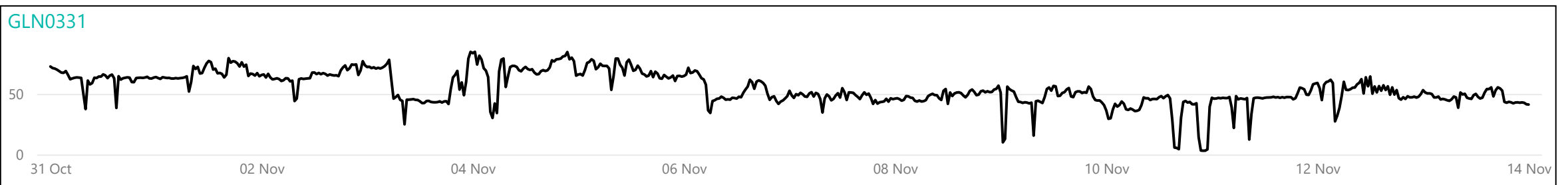
4. Weekly Profiles



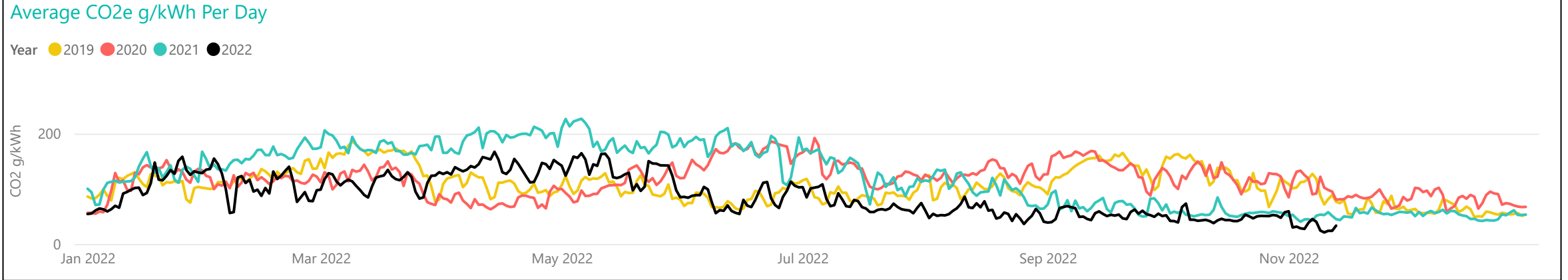
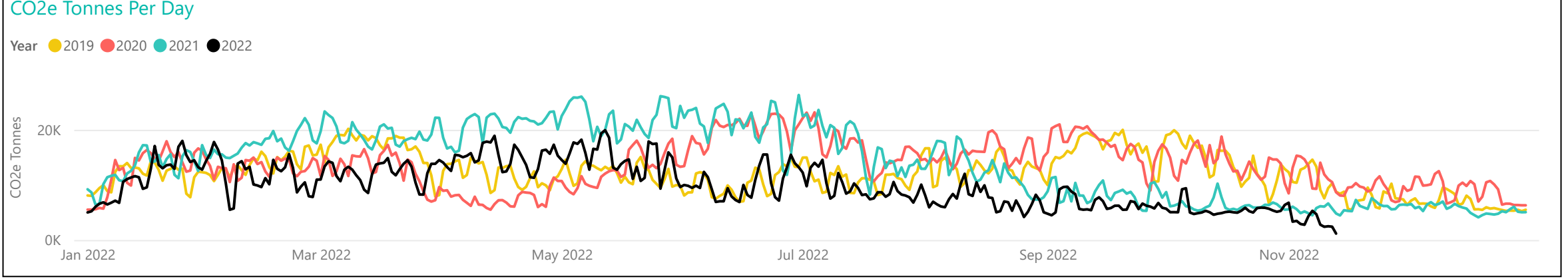
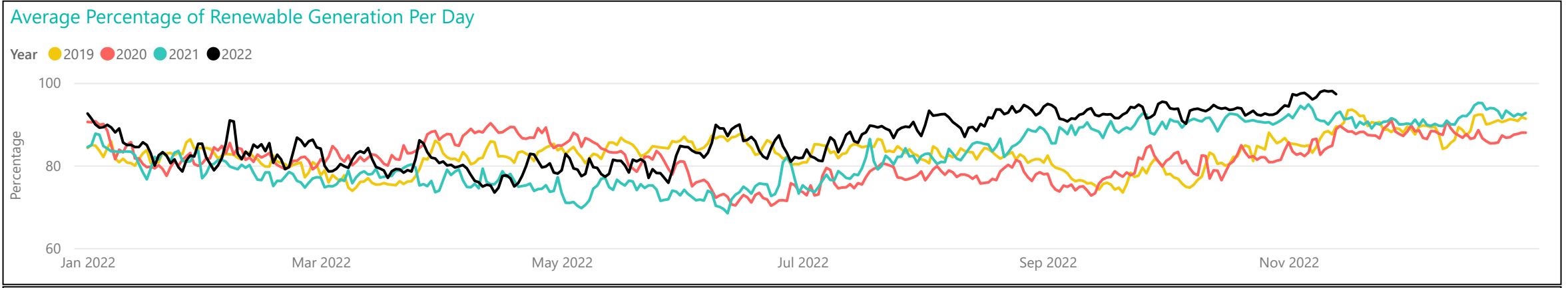
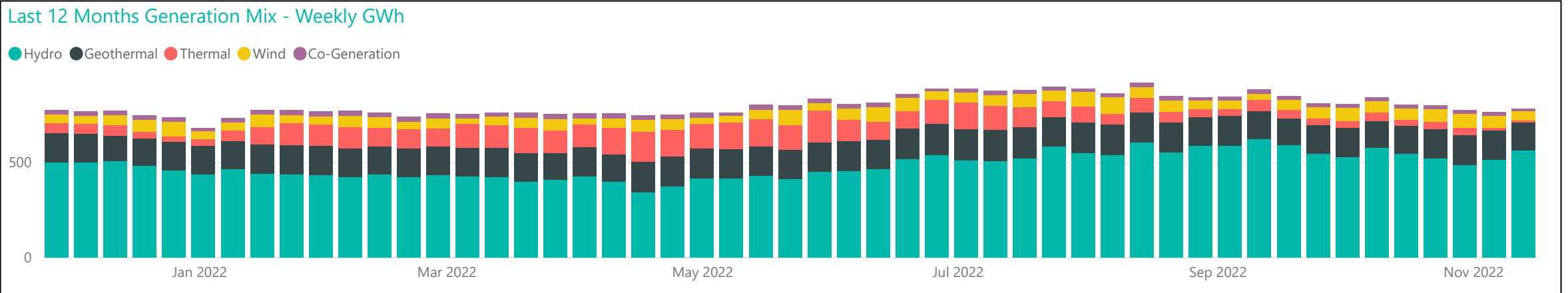
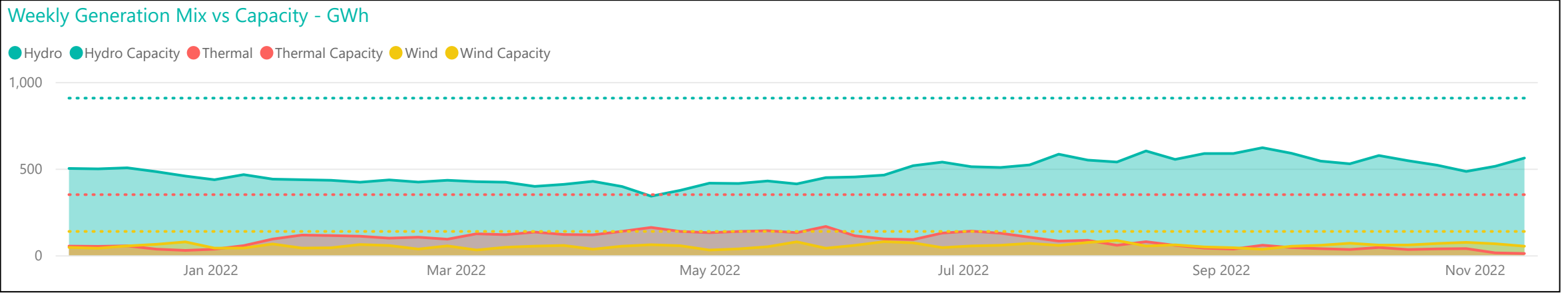
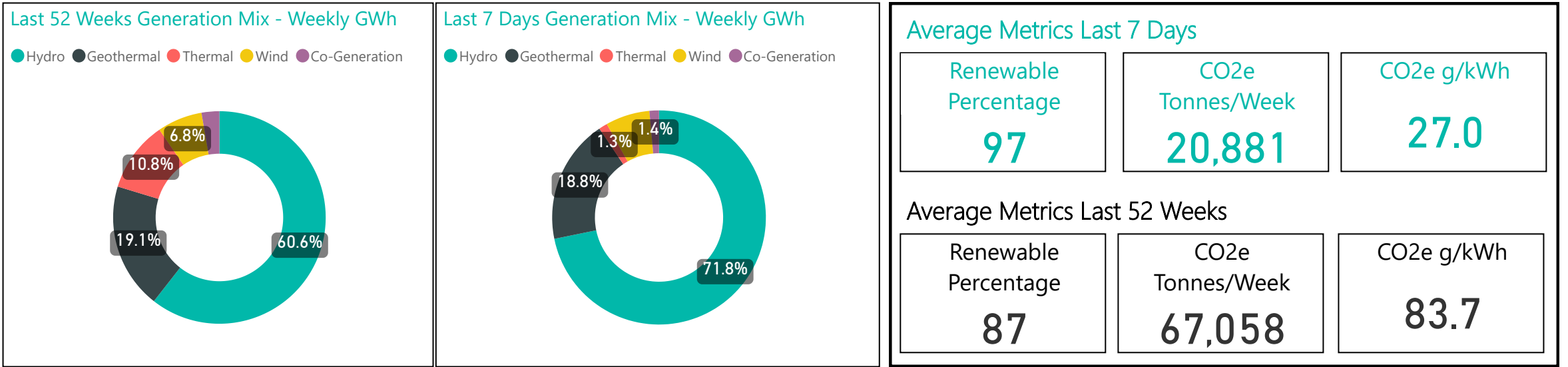
Conforming Load Profiles - Last Two Weeks *Measured in MW shown by region*

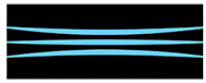


Non-Conforming Load Profiles - Last Two Weeks *Measured in MW shown by GXP*

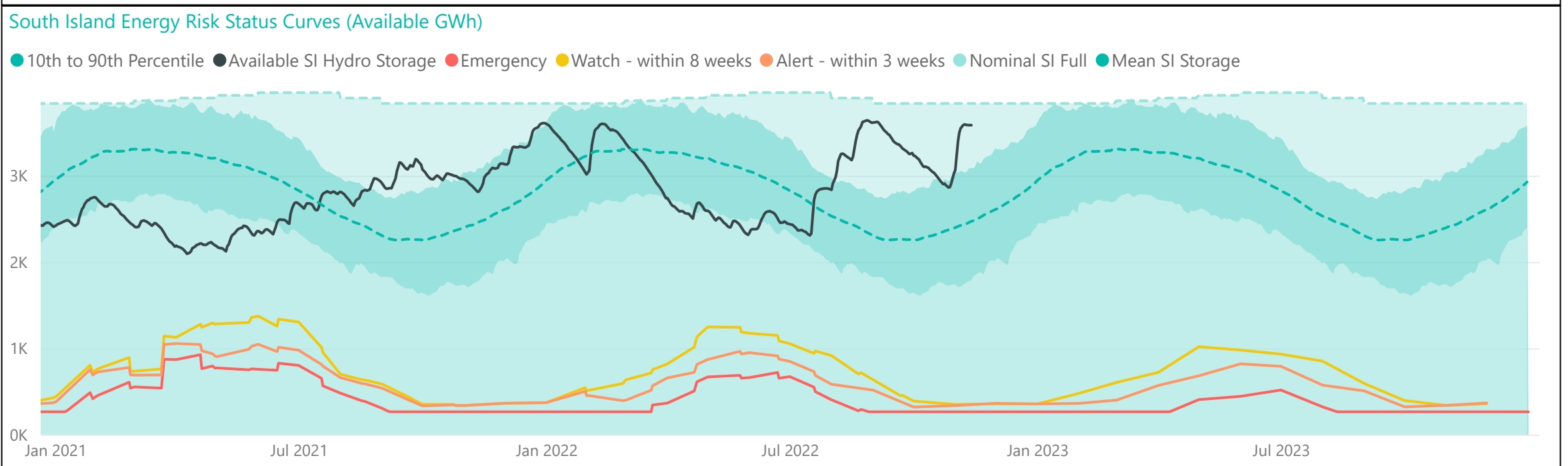
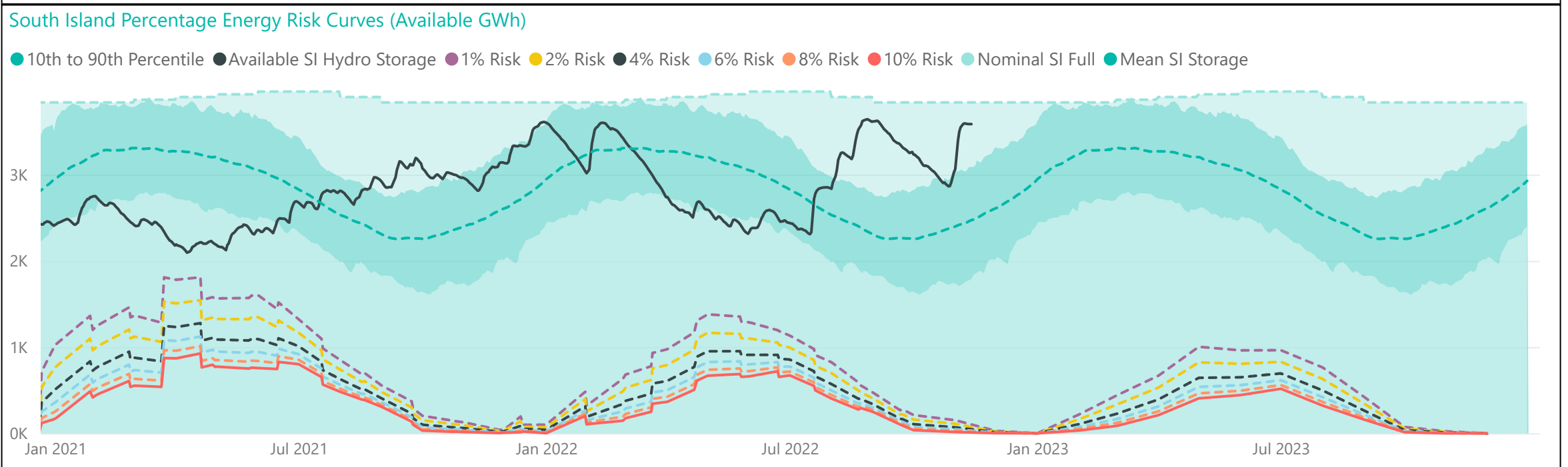
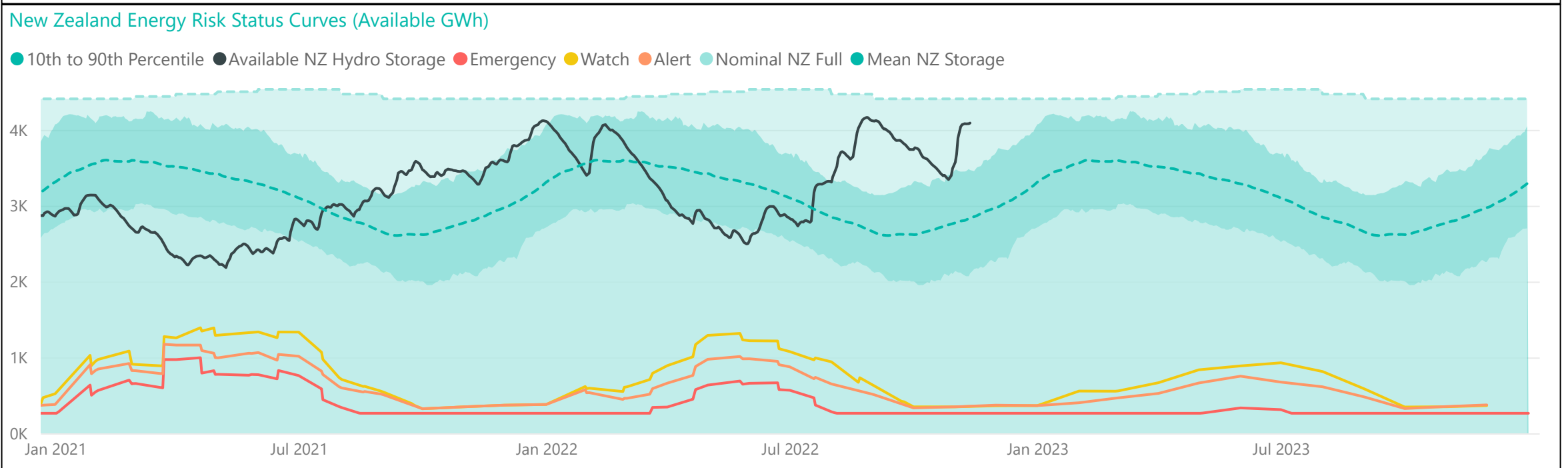
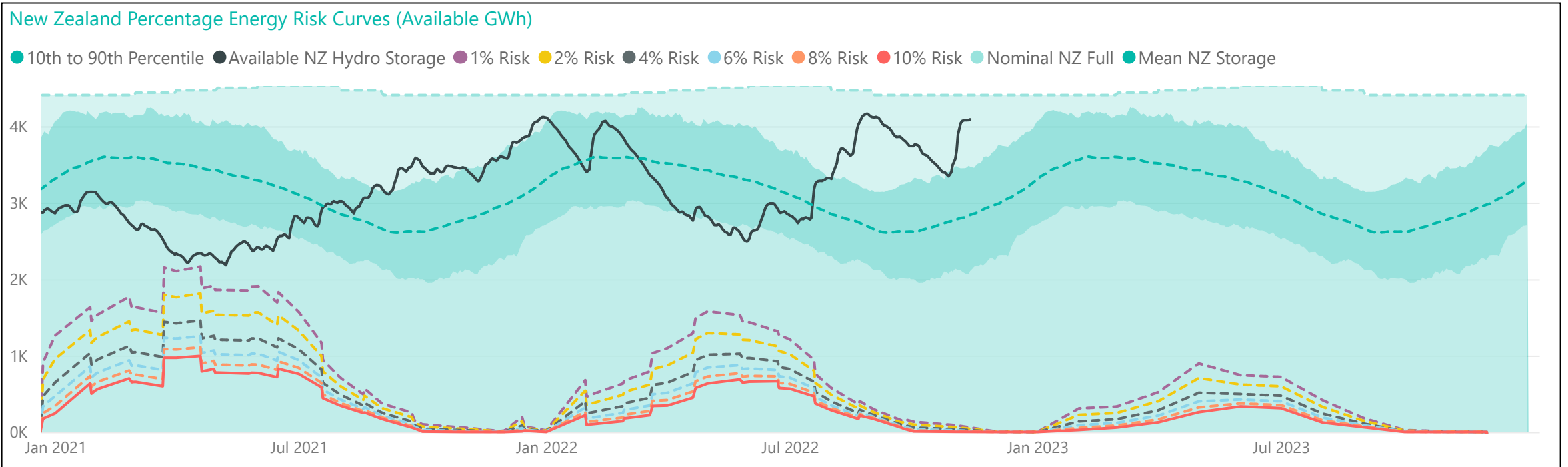


5. Generation Mix

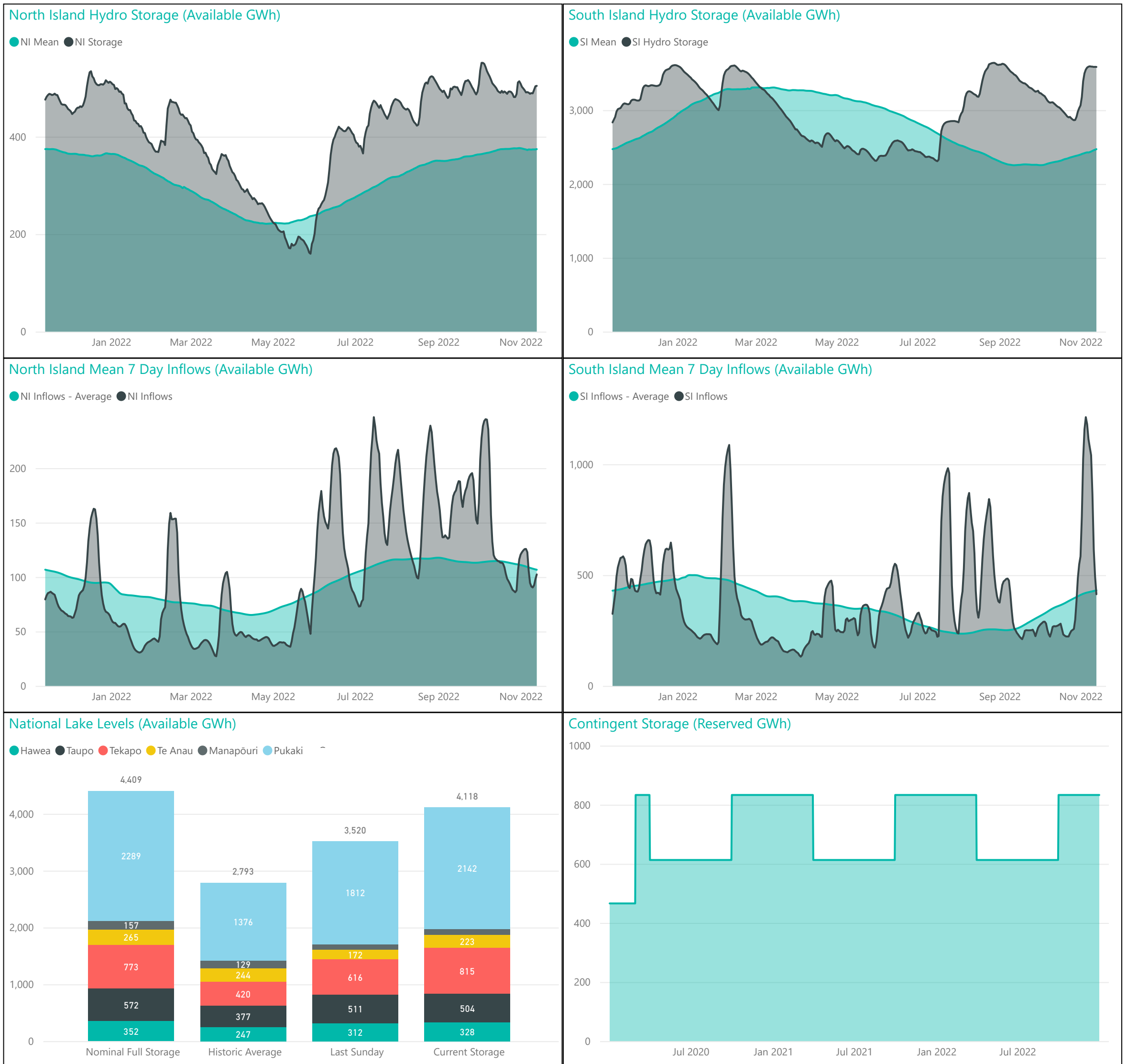




6. Energy Risk Curves



7. 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>