

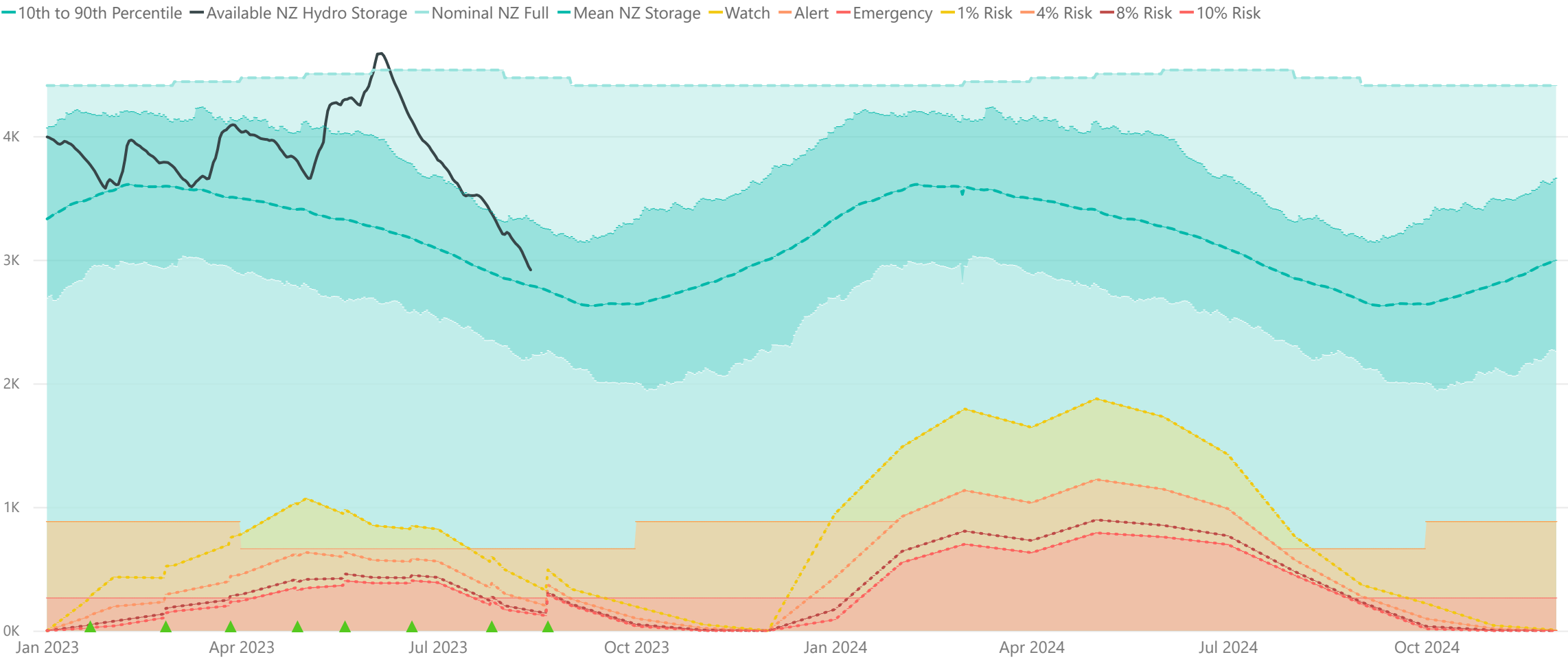


Electricity Risk Curves ERCs

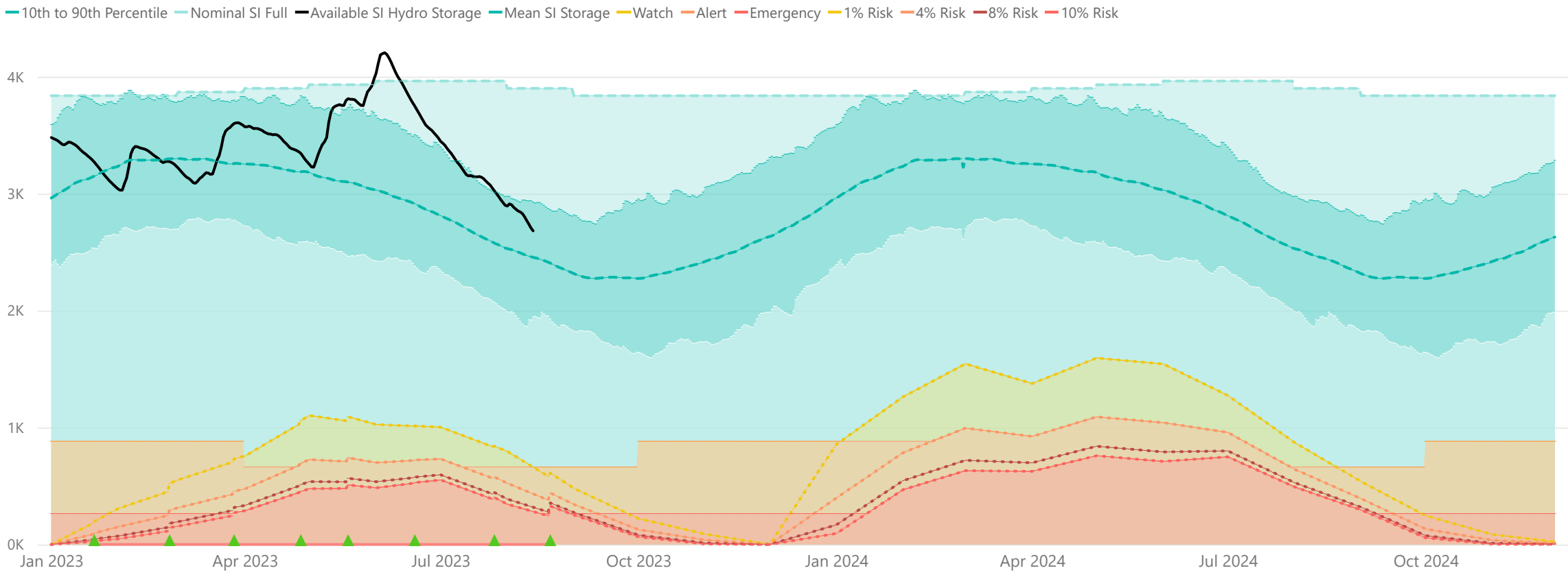
Update Date:
Monday, 21 August 2023

- The August 2023 ERC update was published on 15 August with the following updates:
- Planned generation outages have been updated. The most significant of these is the Huntly unit 5 outage, which is now expected to last until May 2024 (previously 31 August 2023). Outages were taken from POCP.
 - Subject to any typical operating constraints, three Rankine units at Huntly are assumed to be available as no long-term outage has been indicated on POCP.
 - Gas supply constraints mean that the Huntly unit 5 outage could release gas for use by other units if the market was acting to conserve hydro storage.
 - The peak of the ERCs in May 2024 has not materially changed, but the ERCs have increased for February and March 2024.

New Zealand Electricity Risk Status Curves (Available GWh)



South Island Electricity Risk Status Curves (Available GWh)



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

Triggers and actions of Watch/Alert/Emergency status are set only by the official base case curves (not scenario curves).

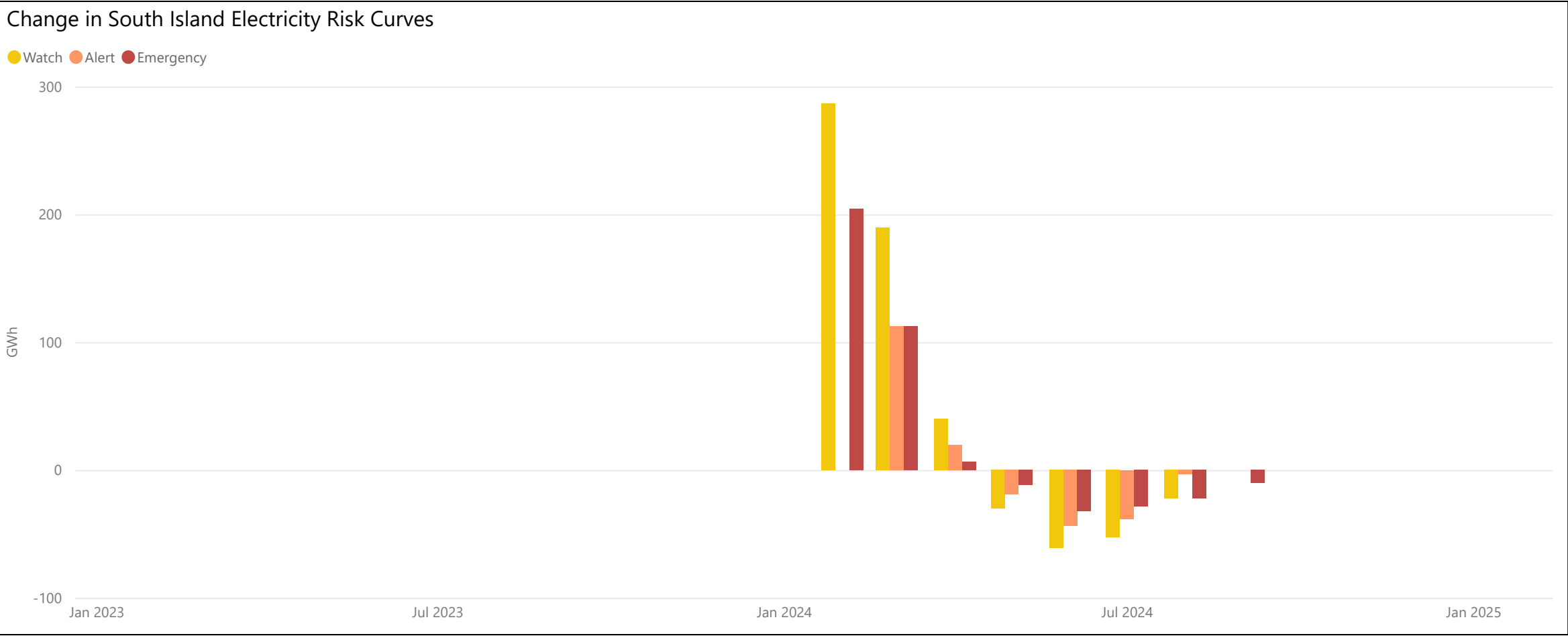
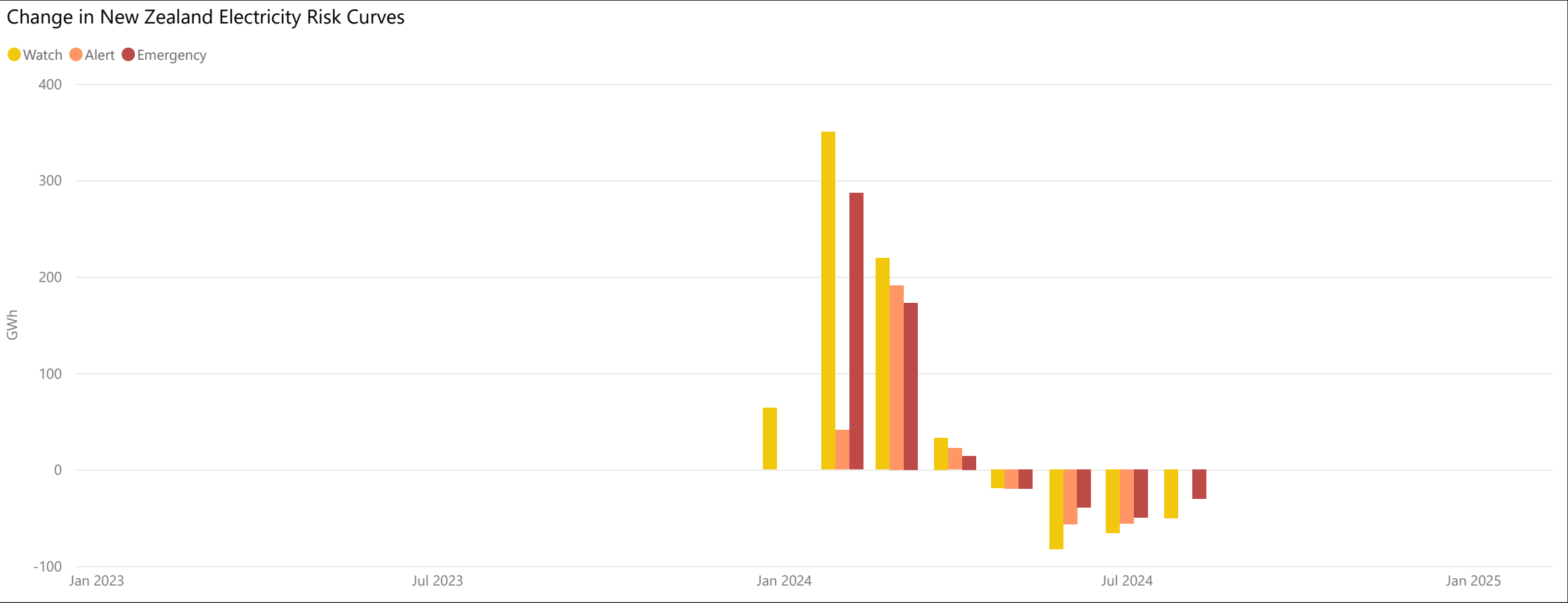
Note: The floor is equal to the amount of contingent hydro storage that is linked to the specific electricity risk curve, plus the amount of contingent hydro storage linked to electricity risk curves representing higher levels of risk of future shortage, if any. The buffer is 50 GWh.



Changes in the Electricity Risk Curves From Previous Month

The changes to the Watch/Alert/Emergency curves compared to last month are shown below.

The main change this month is an increase to the Watch and Emergency curves in February and all three curves in March of 2024.

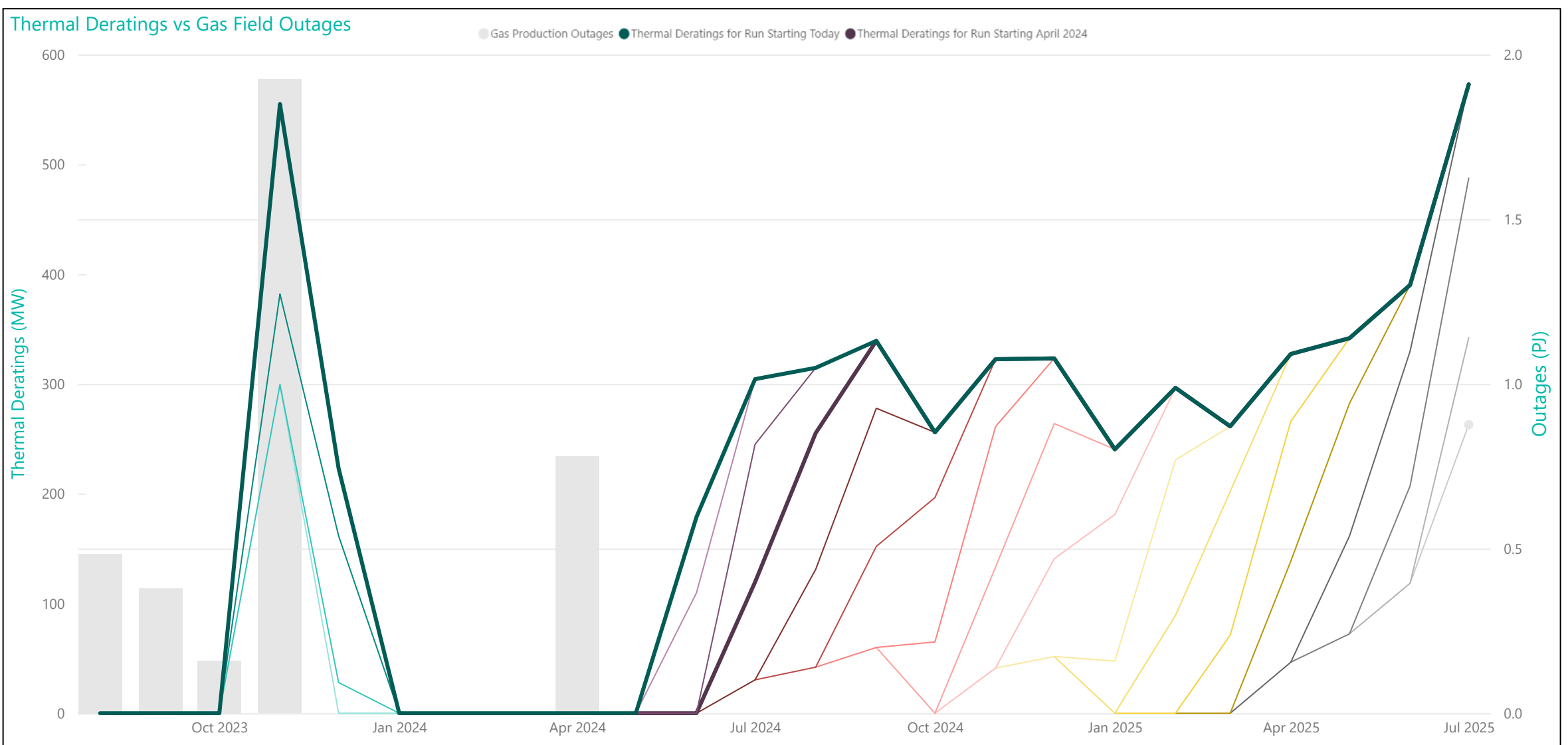




Thermal Deratings

The thermal deratings and key considerations for the August 2023 ERC update are below:

- There is still a high existing coal stockpile and high levels of gas storage.
- There are significant thermal deratings in November 2023 reflecting the large gas production outage, however this has minimal effect on the risk curves as inflows are historically much greater in summer. There are relatively high thermal deratings throughout the second half of 2024, after gas storage has been depleted.
- In April 2024, for example, emergency gas storage drawdown could sustain thermal generation at or near maximum capacity for three months in the event of low hydrology. After this storage is depleted, deratings increase to ~340 MW by September 2024 which is almost the capacity of TCC. Note that these deratings could change if gas production forecasts are updated or formal agreements around gas reallocation are made.
- As gas supply is constrained throughout most of 2024 (accounting for TCC decommissioning), having TCC remain would have minimal impact on the risk curves for 2024 as it could not be supplied for an extended period of time.

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Simulated Storage Trajectories (SSTs)

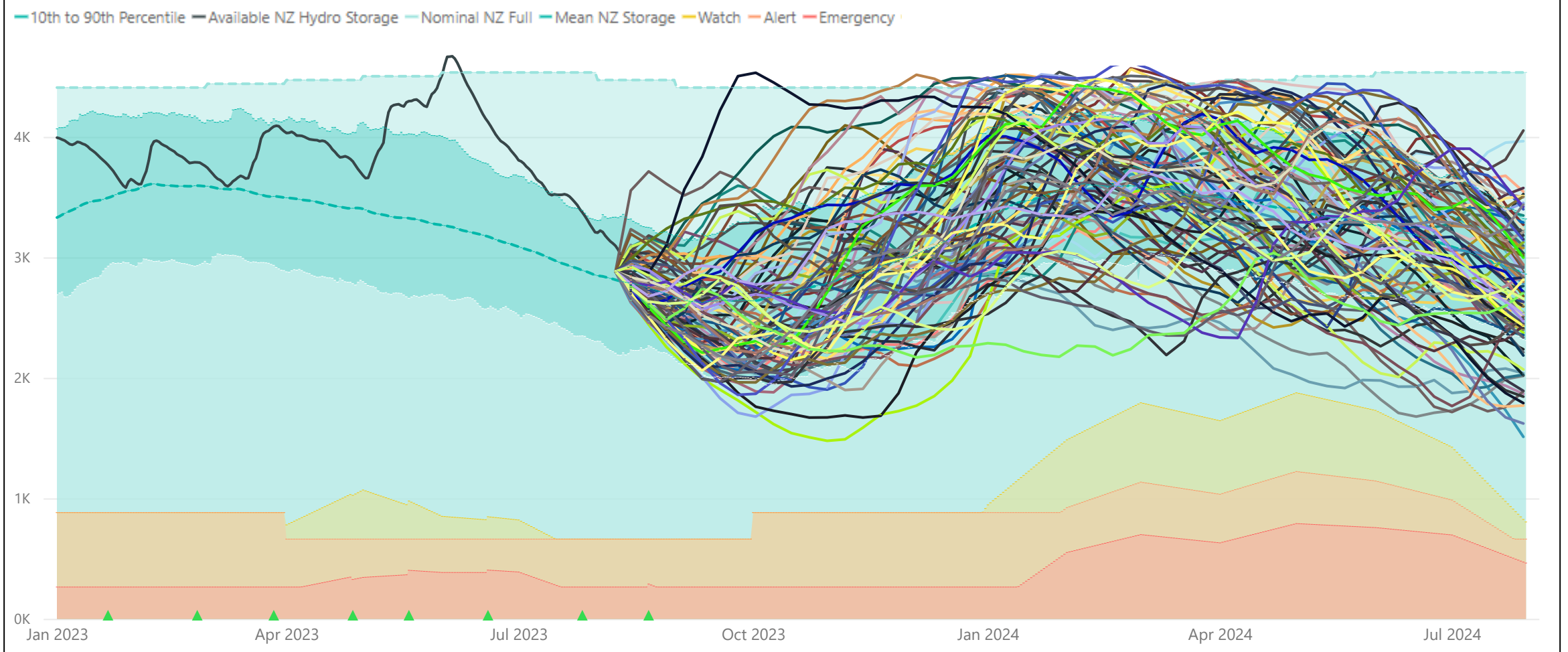
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The July SST update is shown below:

- There is an above average starting storage value
- None of the SSTs cross below the Watch status curve

New Zealand SST Electricity Risk Status Curves (Available GWh)



South Island SST Electricity Risk Status Curves (Available GWh)

