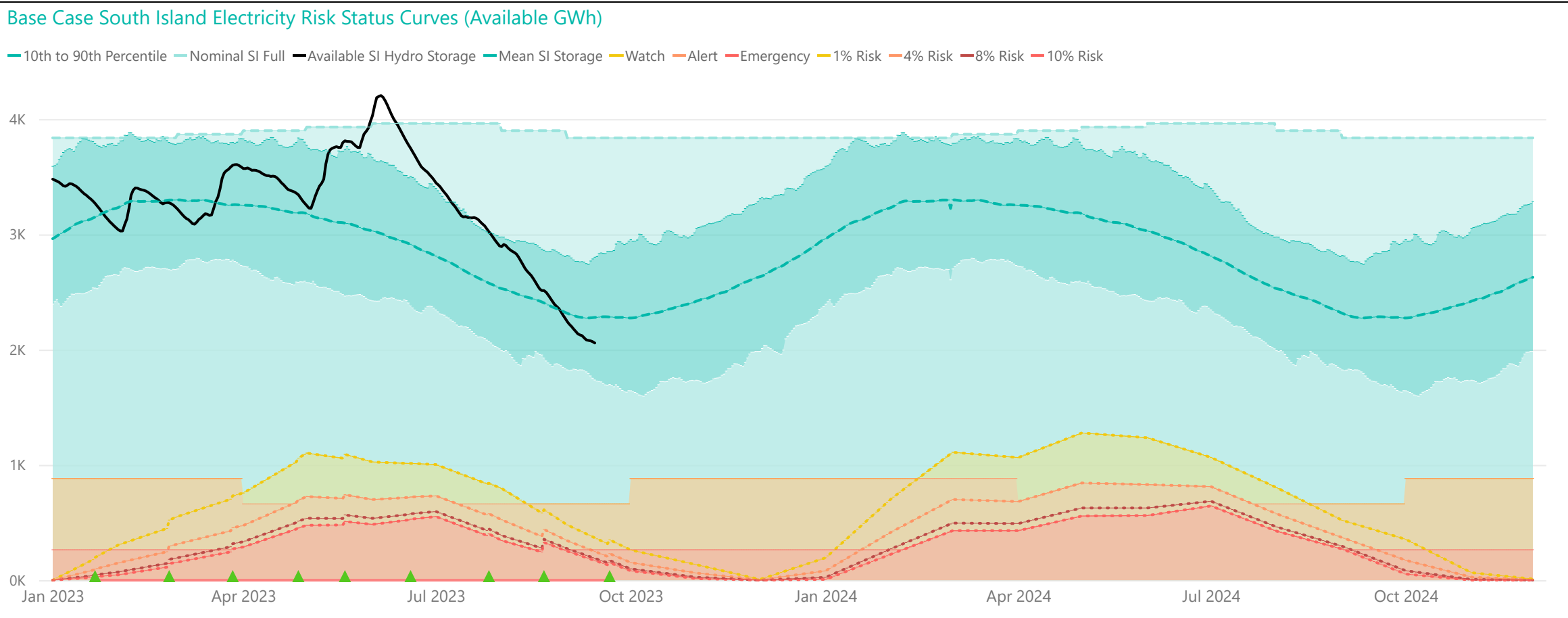
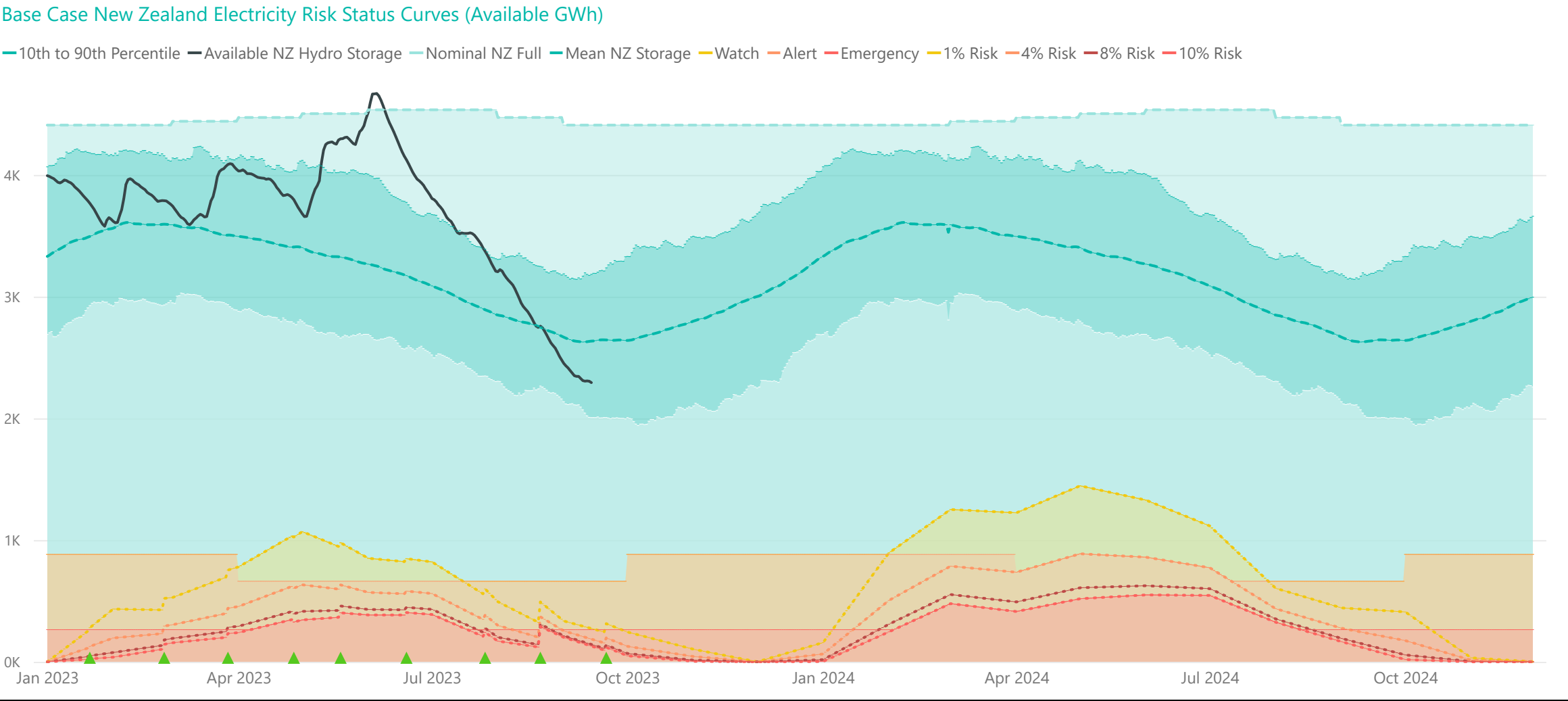




Electricity Risk Curves ERCs

Thursday, 21 September 2023

- The September 2023 ERC update was published on 15 September with the following updates:
- Updated planned generation outages. This includes the Stratford Peaker outage which is expected to be removed from service until February 2025. Note the extended Huntly Unit 5 outage was captured in previous updates.
 - TCC generation availability is now modelled using estimated remaining operating hours, which could potentially provide more generation in 2024.
 - TCC generation capacity reduced to 320 MW as per POCP.



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.

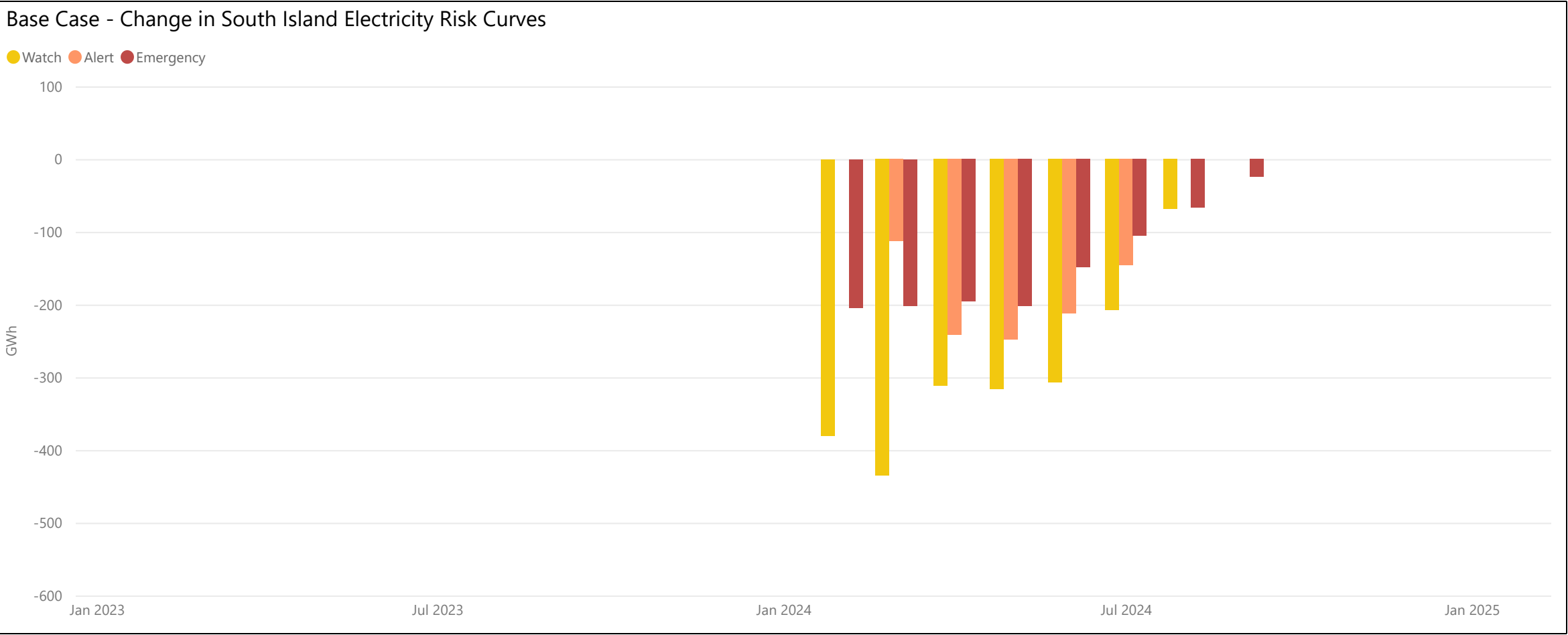
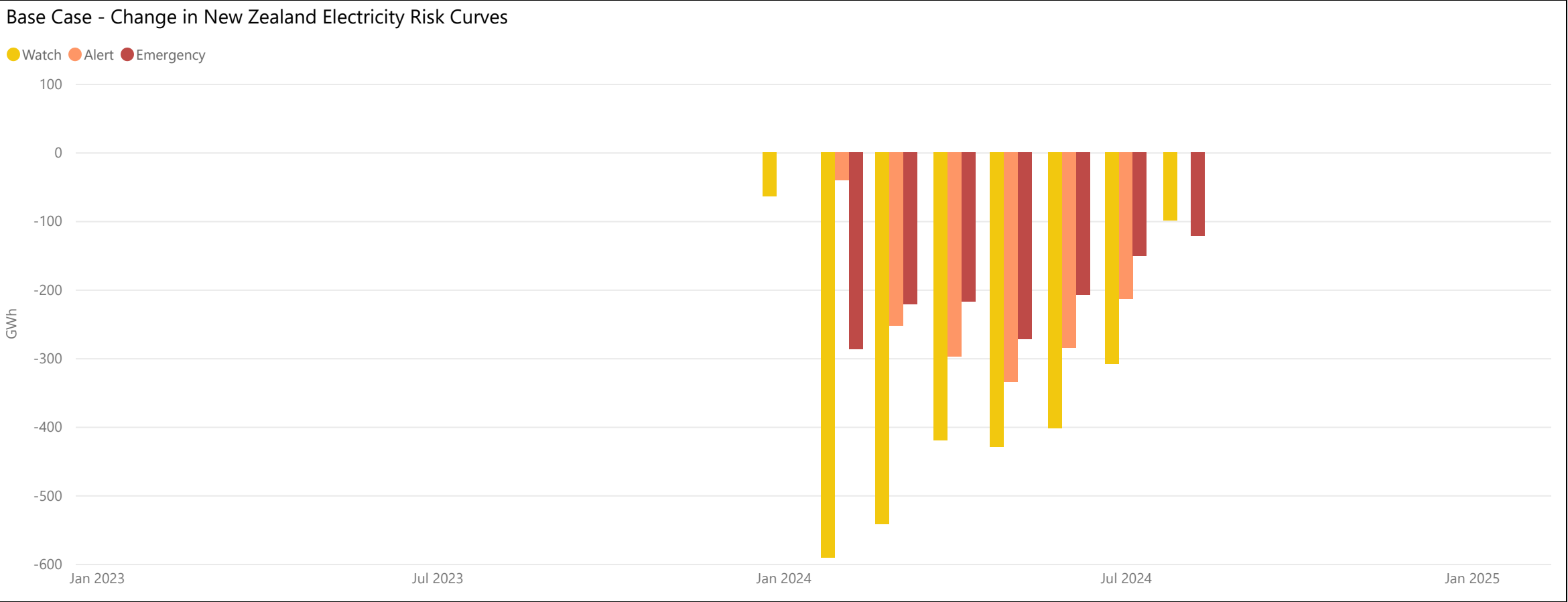


Changes in the Electricity Risk Curves From Previous Month

Thursday, 21 September 2023

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

There is a significant decrease in the curves this month, despite the loss of the Stratford Peaker. This is due to the change in assumption regarding the running hours of TCC, as there is potential for additional availability in 2024.



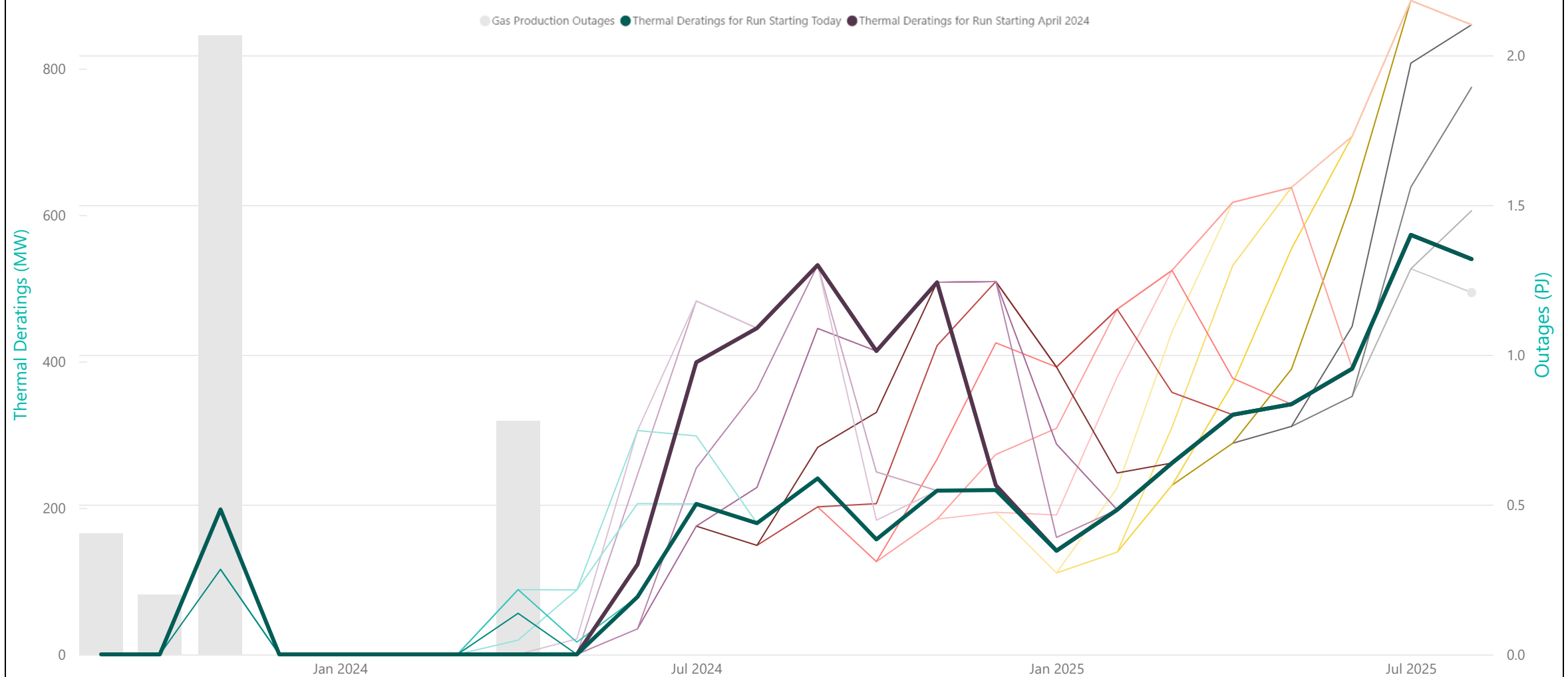
Thermal Deratings

Thursday, 21 September 2023

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

- The coal stockpile remains high enough to fuel a Rankine unit for ~12 months. Gas storage levels remain high enough to fuel TCC for ~3 months (ignoring draw down rates).
- The thermal deratings in November 2023 have dropped. There is still a large gas production outage, however, there are less thermal units available with the Stratford Peaker on outage, so a lower derating is applied.
- There are relatively high thermal deratings throughout most of 2024 and into 2025, however only after emergency gas storage has been depleted. 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 and into 2025, having TCC remain due to preserved running hours does not impact the the risk curves over this period. This can be seen through an increase in deratings in later run months, over the period of TCCs remaining running hours (e.g. April 2024).

Base Case - Thermal Deratings vs Gas Field Outages



Thermal Deratings (MW) by Run Month

[illegible]



Simulated Storage Trajectories (SSTs)

Thursday, 21 September 2023

The September SST update is shown below:

- There is now a below average start storage value.
- In winter 2024, one SST crosses the NZ Watch status curve, and two SSTs cross the SI Watch Status Curve

