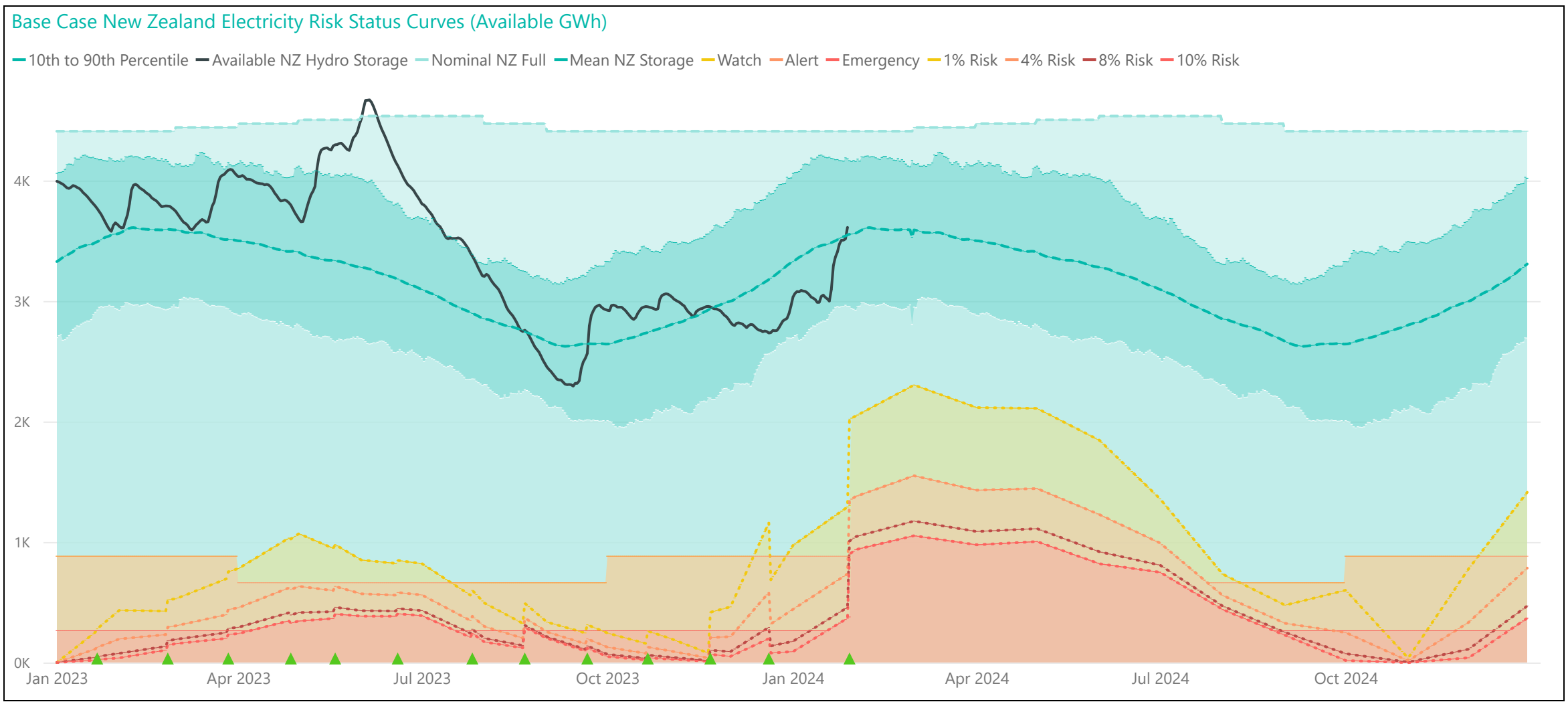
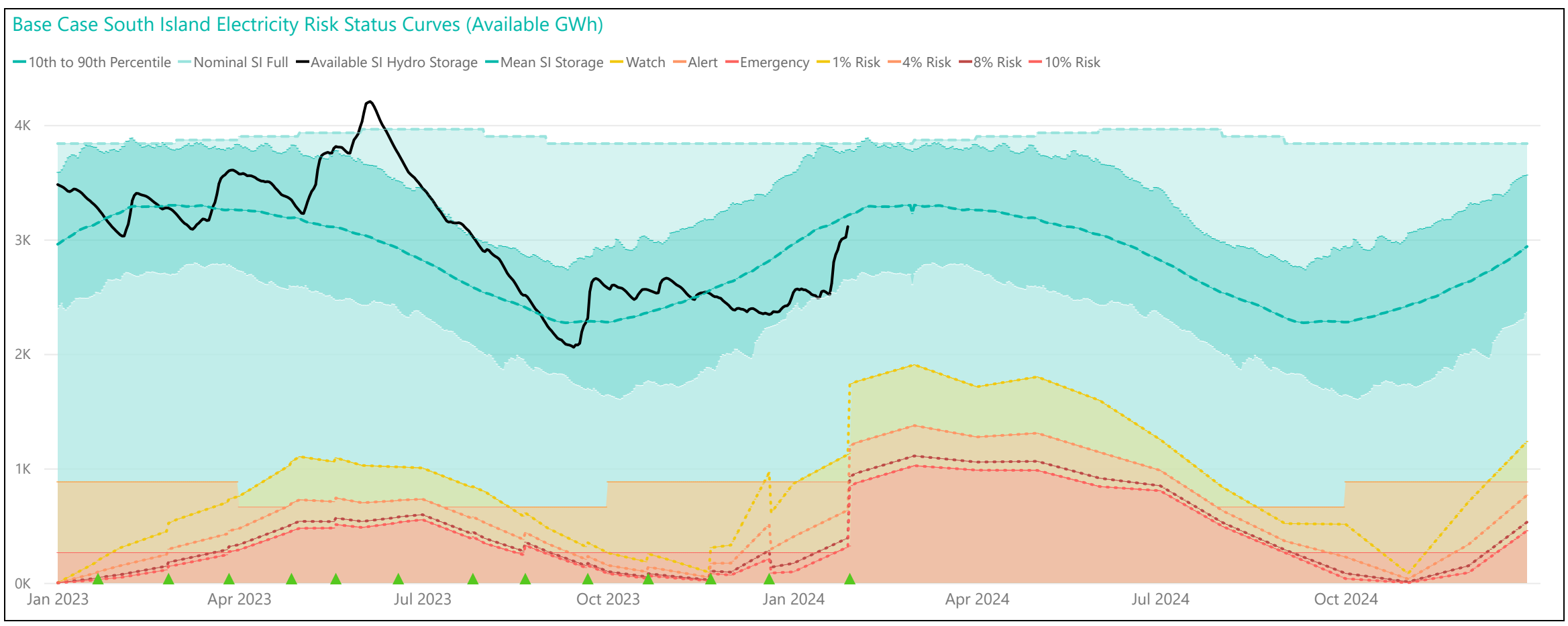
Base Case - Electricity Risk Curves ERCs

Monday, 29 January 2024

The January 2024 ERC update was published on 29 January with the following updates:

- Planned generation outages.
- Gas production forecasts for major gas fields. There was a decrease in total gas production forecast over 2024 compared to the assumptions used last month.
- Forecast gas consumption and production profiles based on recent data.
- Treatment of partial station outages.





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).

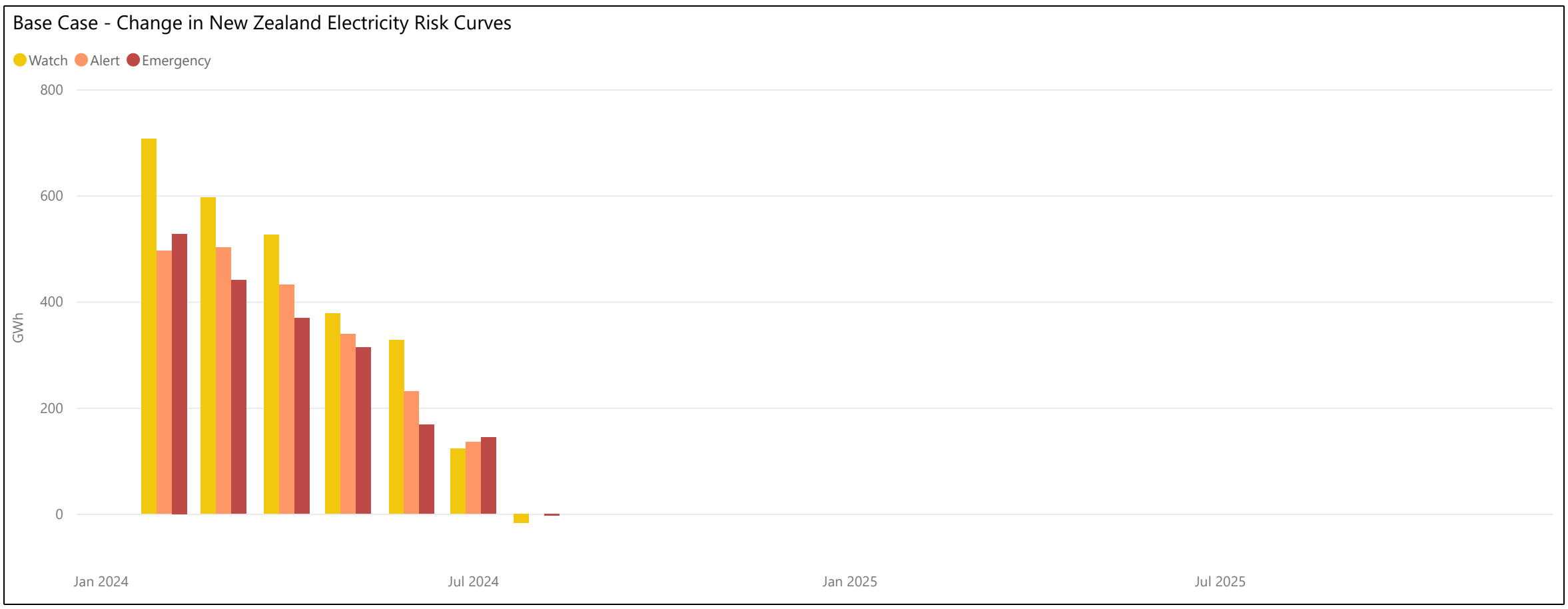
Note: The floor is equal to the amount of contingent hydro storage that is linked to the specific electricity risk curve, plus the amount of contingent hydro storage linked to electricity risk curves representing higher levels of risk of future shortage, if any. The buffer is 50 GWh.

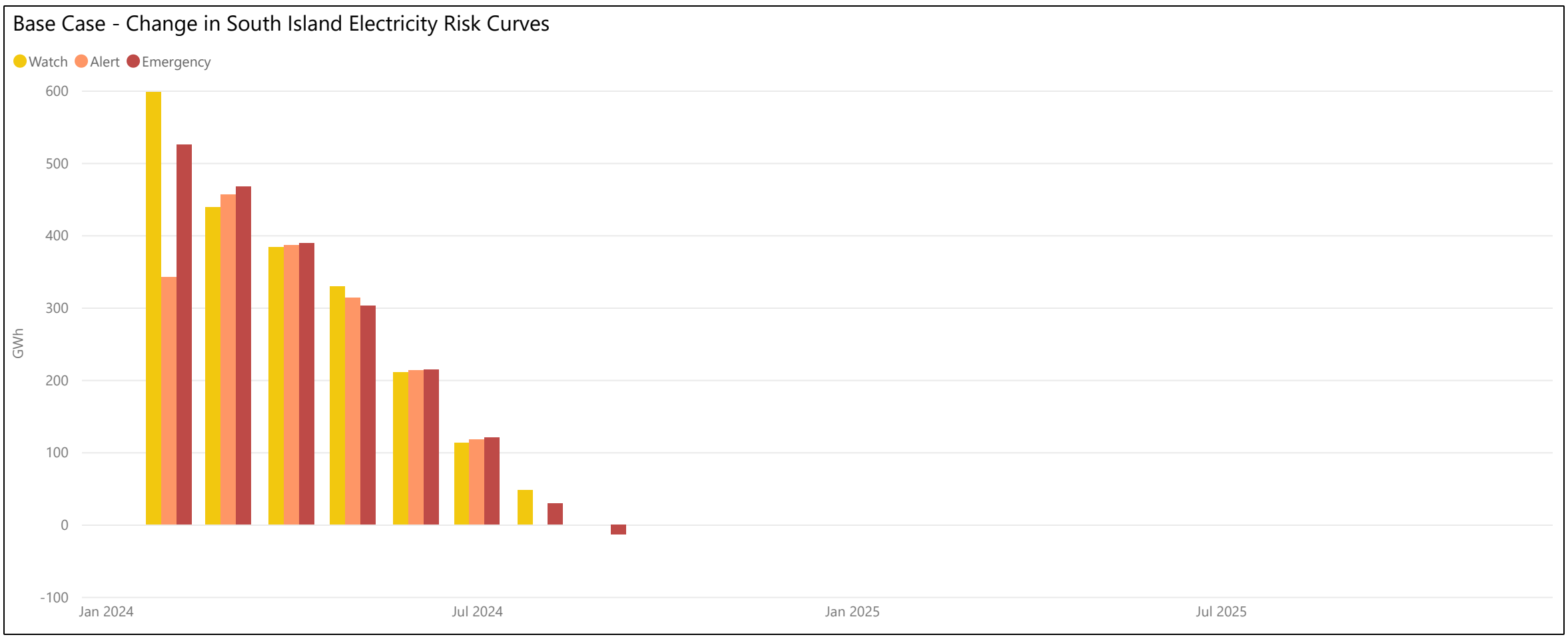
Base Case - Changes in the Electricity Risk Curves From Previous Month

Monday, 29 January 2024

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

There was a significant increase in the curves this month. The risk curves are at a similar level to what they were in the November update. The forecasted gas production has decreased on average by 8% across 2024 so there is lower gas availability for electricity generation.





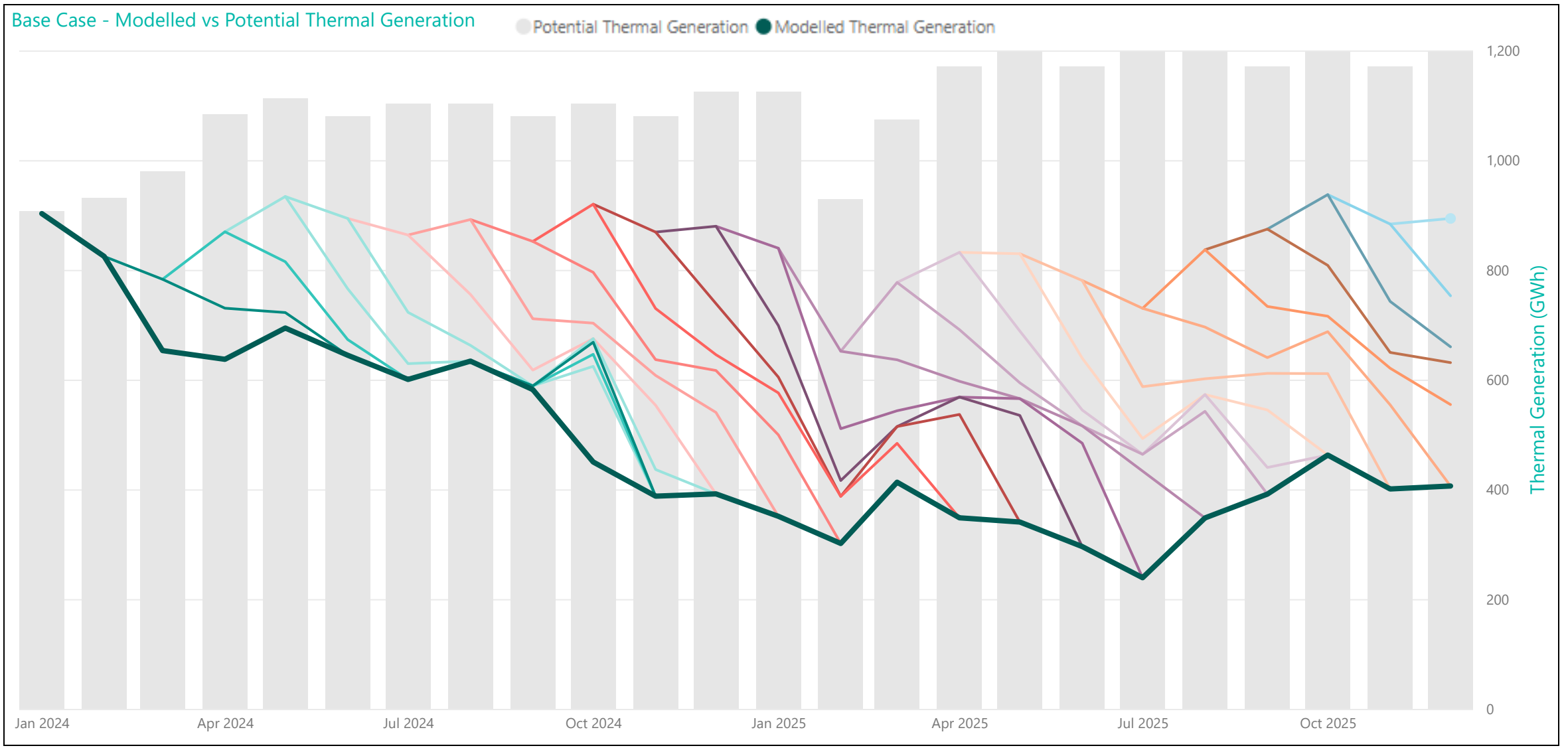
Base Case - Thermal Deratings

Monday, 29 January 2024

The thermal deratings and key considerations for the January 2024 ERC update are below:

- Gas deratings remain high throughout 2024 and 2025. These deratings mean there would be limited response from gas generation in a prolonged dry sequence, even if the units are available. Note that these deratings could change if gas production forecasts increase or formal agreements around gas reallocation are made.
- There are gas production outages in March and April 2024.
- 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 chart now shows the potential thermal generation based on available units and the modelled thermal generation based on gas availability for electricity generation.

Base Case - Modelled vs Potential Thermal Generation



Modelled Thermal Generation (GWh) by Run Month

Run Month	2024-01	2024-02	2024-03	2024-04	2024-05	2024-06	2024-07	2024-08	2024-09	2024-10	2024-11	2024-12	2025-01	2025-02	2025-03	2025-04	2025-05	2025-06	2025-07	2025-08	2025-09	2025-10	2025-11	2025-12
2024-01	903	825	653	637	694	644	600	634	582	450	388	392												
2024-02		825	783	730	722	644	600	634	589	668	388	392	351											
2024-03			783	870	815	673	600	634	589	646	388	392	351	301										
2024-04				870	934	766	629	634	589	624	388	392	351	301	413									
2024-05					934	894	723	663	589	675	436	392	351	301	413	348								
2024-06						894	864	755	617	675	553	392	351	301	413	348	341							
2024-07							864	892	711	703	608	540	351	301	413	348	341	296						
2024-08								892	852	796	636	617	499	301	413	348	341	296	239					
2024-09									852	920	730	645	576	387	484	348	341	296	239	348				
2024-10										920	869	739	605	387	515	537	341	296	239	348	391			
2024-11											869	880	699	416	515	568	535	296	239	348	391	463		
2024-12												880	840	511	543	568	565	484	239	348	391	463	401	
2025-01													840	652	636	597	565	516	433	348	391	463	401	406
2025-02														652	777	691	594	516	464	542	391	463	401	406
2025-03															777	832	689	545	464	573	440	463	401	406
2025-04																832	829	639	493	573	545	463	401	406
2025-05																	829	781	587	602	611	611	401	406
2025-06																		781	730	696	640	687	554	406
2025-07																			730	837	733	716	621	555
2025-08																				837	874	808	650	631
2025-09																					874	937	743	660
2025-10																						937	884	753
2025-11																							884	894
2025-12																								894

Base Case - Simulated Storage Trajectories (SSTs)

Monday, 29 January 2024

The January SST update is shown below:

- Start storage is back up at average.
- In winter 2024, 5 SSTs cross the NZ Watch Status Curve, and 1 SST crosses the NZ Alert Status curve in October.
- 2 SSTs cross the SI Alert Status Curve in October 2024.