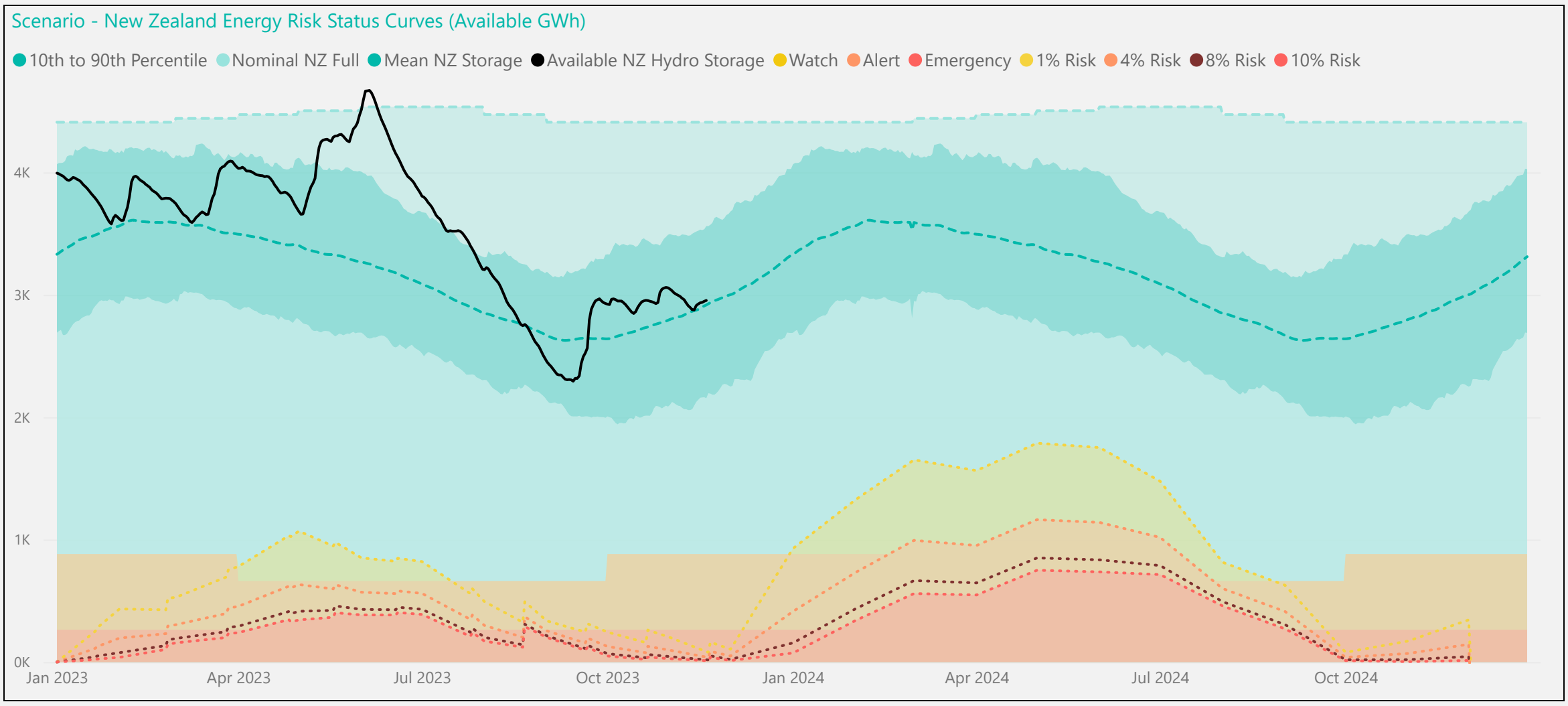
Gas Reallocation Scenario - Electricity Risk Curves

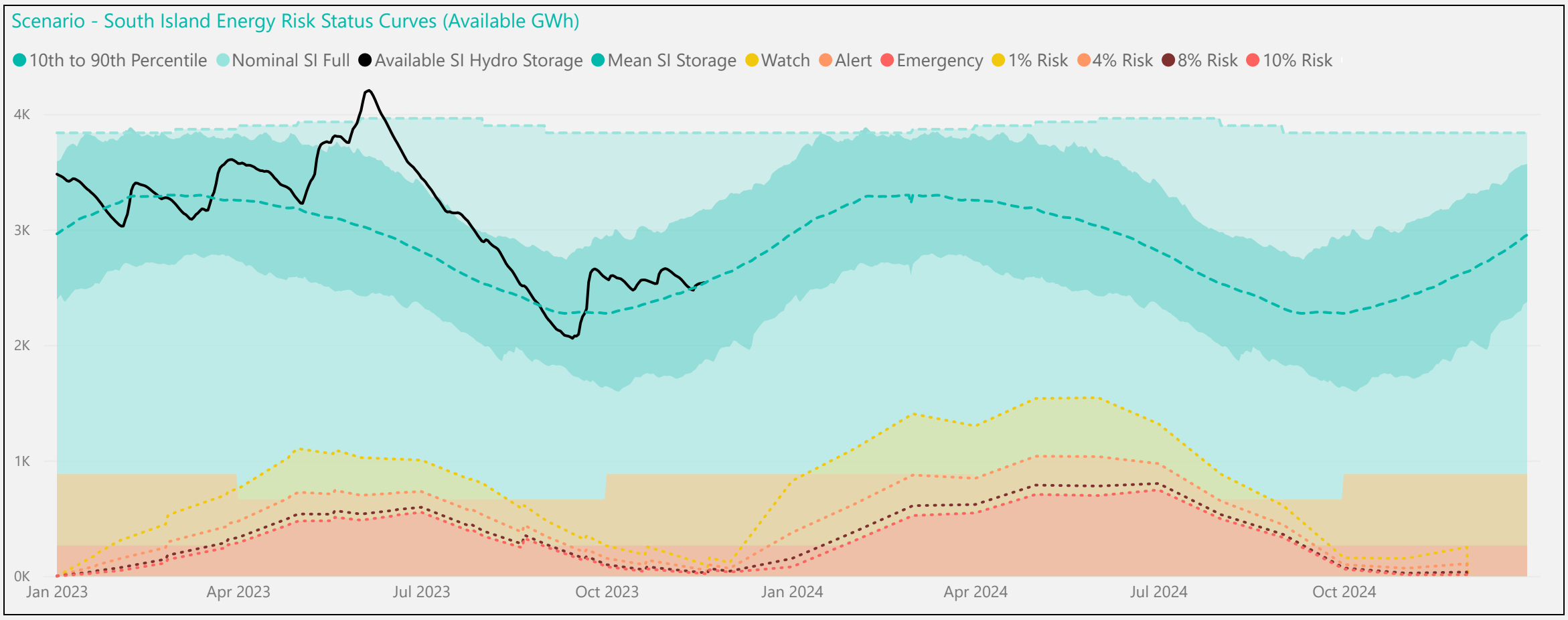
Our current base case Electricity Risk Curves (ERCs) include thermal generator deratings to reflect potential constraints to gas and coal supply in 2024 in the event of a security of supply dry year emergency. The base case deratings assume a baseline of ~20 TJ/day of gas demand reallocation from the petrochemical sector to electricity generation, and more if there is a formal agreement in place.

With the newly decreased gas production forecasts, we have run a scenario which assumes an increase in gas demand flex from the petrochemical sector to use for electricity generation (~80 TJ/day extra) over winter months (Jun-Aug). This scenario shows the impact an extra ~80 TJ/day of gas demand flex would have on the ERCs. While we consider this as a scenario, we are not aware of any formal agreements of this nature.

The November 2023 ERC Increased Gas Reallocation Scenario is shown below.
With ~100TJ/day of gas demand flex during winter 2024, the watch curve would move down by about 360 GWh at its peak (May 2024). This can be seen when comparing the plots below with the base case ERCs, or by looking at the changes in curves on the next page.

Note that this is separate to the Additional Rankine scenario which we have also run this month (both of these scenarios combined would decrease curves more significantly).

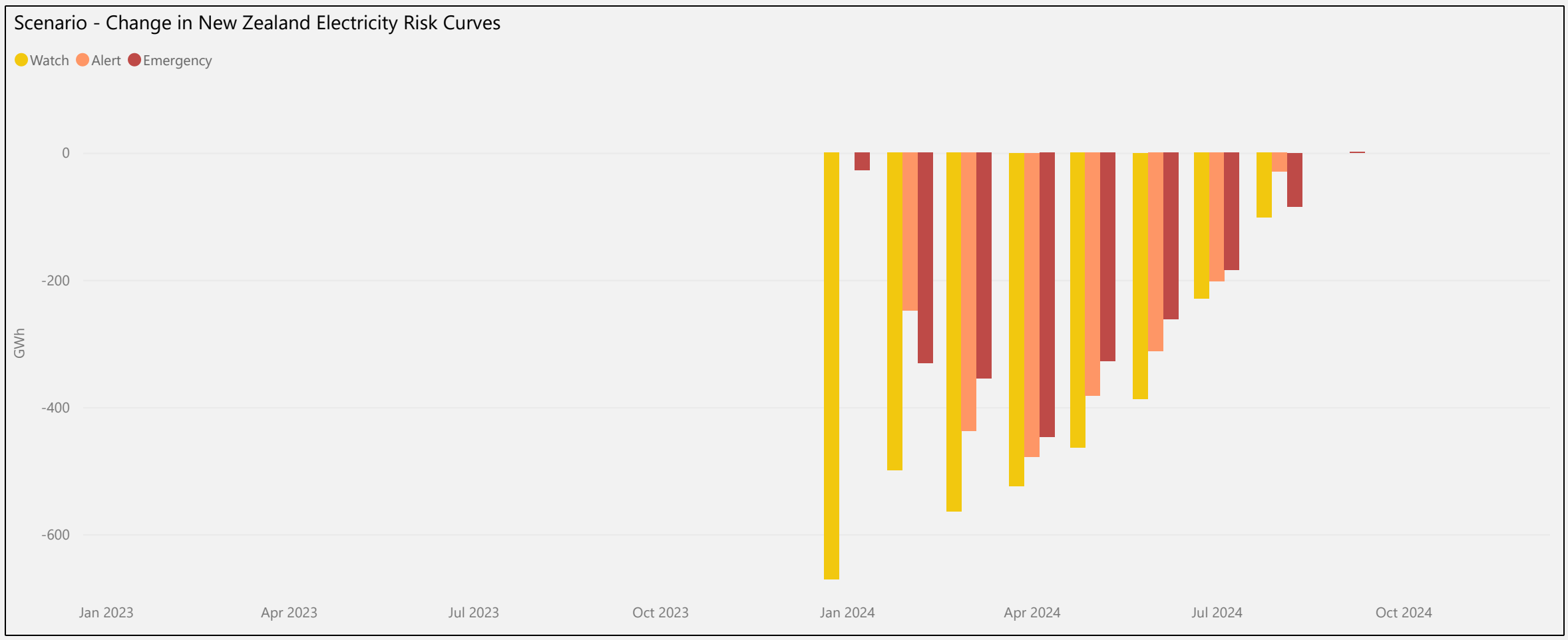


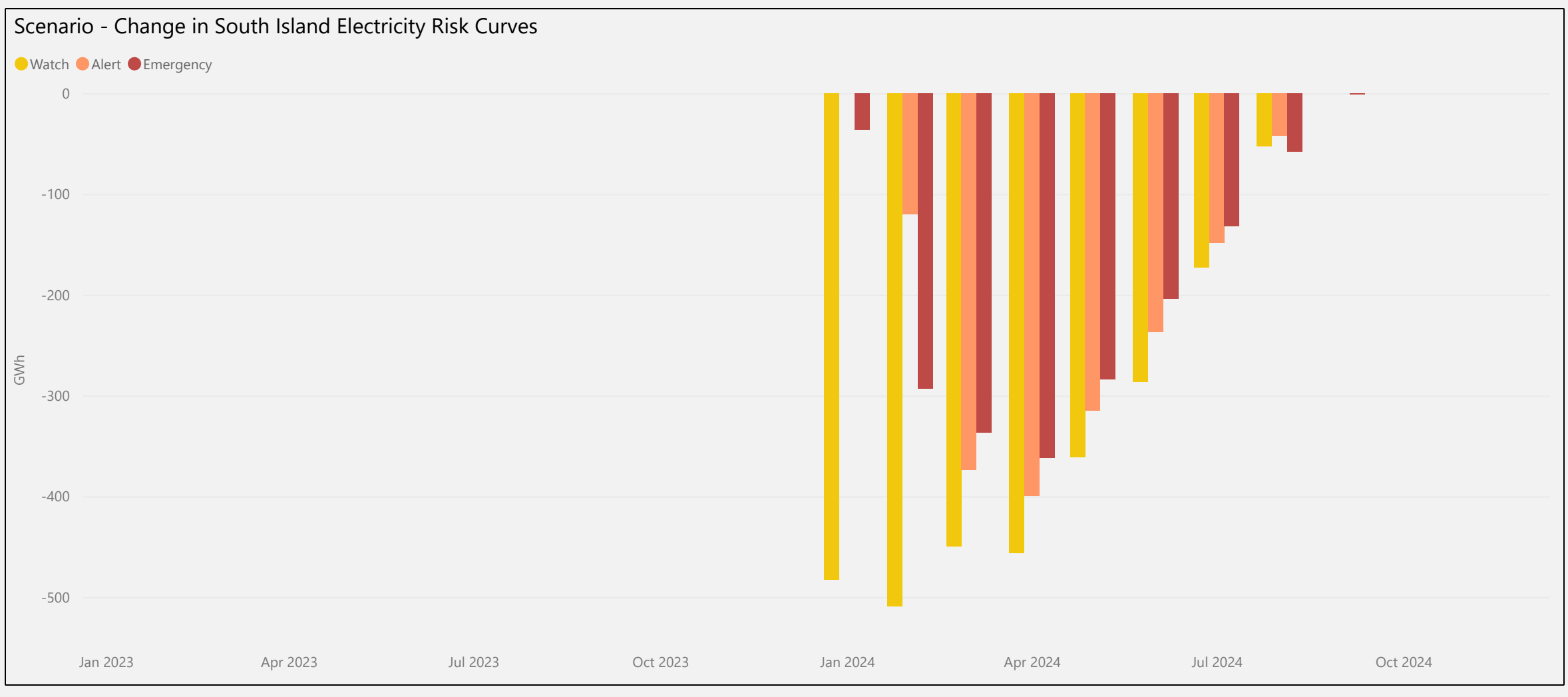


Scenario - Changes in the Electricity Risk Curves from the Base Case

The changes to the scenario Watch/Alert/Emergency curves compared to the base case are shown below.

The decrease in these curves is solely the result of the increase in assumed gas available for generation under the gas reallocation scenario. Thermal deratings are significantly reduced under this scenario, bringing the curves down by up to 670 GWh over summer, and ~500 GWh in autumn and winter.

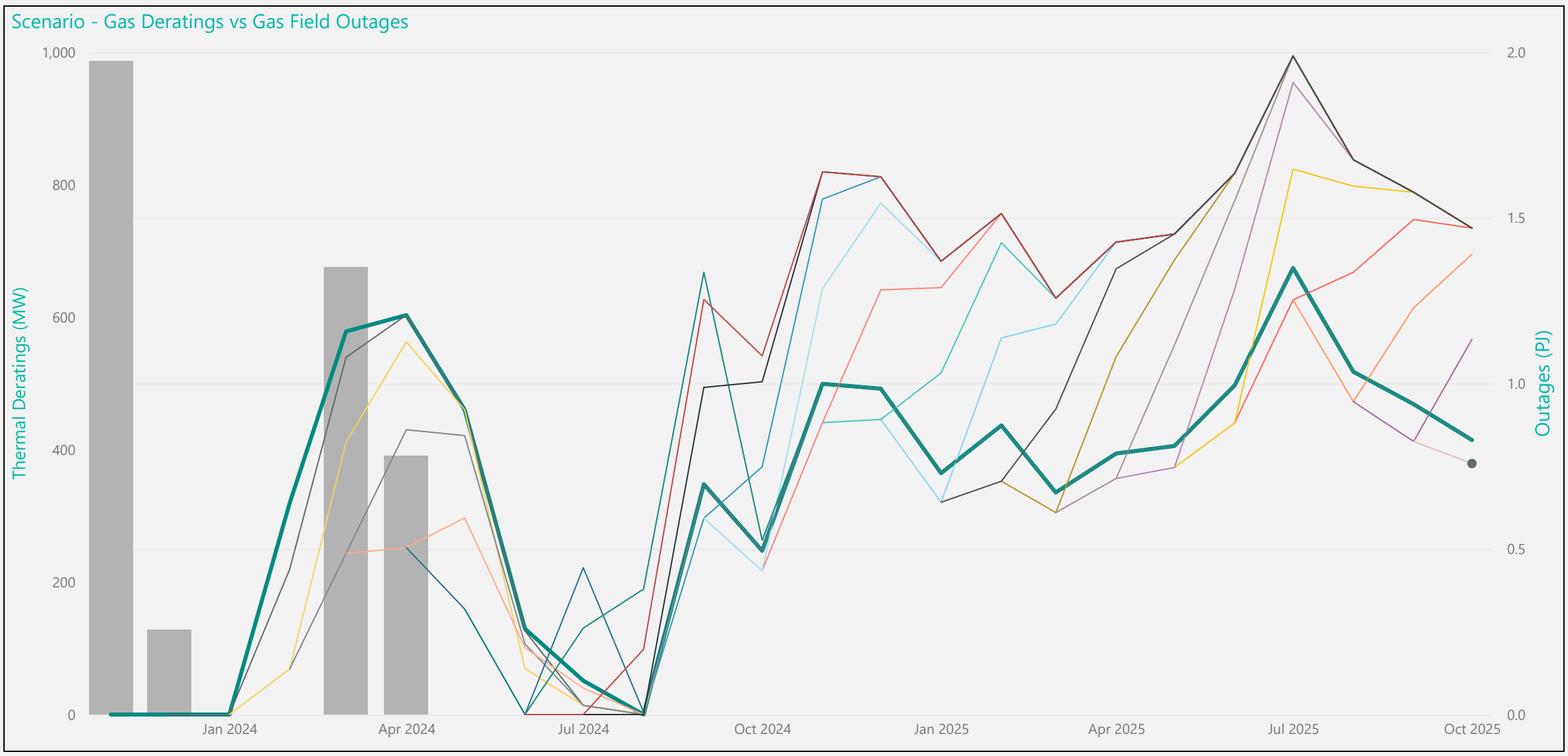




Scenario - Thermal Deratings

The thermal deratings and key considerations for the November 2023 ERC scenario are below:

- Gas demand flex from the petrochemical sector and available to electricity generation is assumed to be an extra ~80 TJ/day over June-August.
- The rest of the key considerations are the same as in the base case
- Deratings are lower here than in the base case across winter due to an increase in assumed available gas for generation



	2023-11	2023-12	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
2023-11	0.00	0.00	0.00	319.10	578.42	602.98	460.18	129.53	51.11	0.00	347.71	247.26												
2023-12		0.00	0.00	219.19	539.35	602.98	460.18	126.17	13.81	0.00	347.71	247.26	499.34											
2024-01			0.00	68.71	411.00	562.62	460.18	69.24	13.81	0.00	347.71	247.26	499.34	491.96										
2024-02				68.71	243.16	429.99	421.11	106.42	13.81	0.00	347.71	247.26	499.34	491.96	364.36									
2024-03					243.16	252.01	296.88	100.89	39.94	0.00	347.71	247.26	499.34	491.96	364.36	436.47								
2024-04						252.01	159.28	0.00	221.57	3.77	347.71	247.26	499.34	491.96	364.36	436.47	335.22							
2024-05							159.28	0.00	130.51	189.41	667.71	263.16	499.34	491.96	364.36	436.47	335.22	394.09						
2024-06								0.00	0.00	98.35	626.52	541.46	819.34	811.96	684.36	756.47	628.58	713.22	725.44					
2024-07									0.00	0.00	493.88	502.40	819.34	811.96	684.36	756.47	628.58	713.22	725.44	817.08				
2024-08										0.00	296.39	374.04	778.15	811.96	684.36	756.47	628.58	713.22	725.44	817.08	994.27			
2024-09											296.39	216.94	642.81	772.10	684.36	756.47	628.58	713.22	725.44	817.08	994.27	837.52		
2024-10												216.94	440.64	641.13	644.50	756.47	628.58	713.22	725.44	817.08	994.27	837.52	788.57	
2024-11													440.64	445.50	515.78	712.34	628.58	713.22	725.44	817.08	994.27	837.52	788.57	734.40
2024-12														445.50	320.46	568.50	589.52	713.22	725.44	817.08	994.27	837.52	788.57	734.40
2025-01															320.46	352.26	461.17	672.86	725.44	817.08	994.27	837.52	788.57	734.40
2025-02																352.26	304.90	540.23	686.18	817.08	994.27	837.52	788.57	734.40
2025-03																	304.90	356.34	557.83	775.89	994.27	837.52	788.57	734.40
2025-04																		356.34	372.94	642.06	954.41	837.52	788.57	734.40
2025-05																			372.94	440.23	823.44	797.65	788.57	734.40
2025-06																				440.23	625.97	667.67	747.38	734.40
2025-07																					625.97	472.35	614.12	694.97
2025-08																						472.35	412.29	566.61
2025-09																							412.29	378.99
2025-10																								378.99

Scenario - Simulated Storage Trajectories

The SSTs for the November 2023 Gas Reallocation scenario are shown below

- Only three of the 89 SSTs would cross the New Zealand watch curve under this scenario. None cross Alert or Emergency.
- Two SSTs cross the South Island Watch curve