July 2026 Energy Security Outlook

Friday, 31 July 2026

The Electricity Risk Curves are evaluated through two lenses: the Fuel Capability Case (Base Case), which uses the original methodology based on total physical capability to source thermal fuels and utilise it for generation, and the Contracted Fuel Case, which strictly limits thermal energy to firm commercial contracts secured by generators. This approach highlights the gap between physical capability and actual commercial certainty, signalling to industry where additional fuel contracts can yet be secured to reduce security of supply energy risks.

On 3 July Meridian received consent for their fast-track application to access what has been considered contingent storage in lake Pūkaki without an Alert or Emergency status being declared. This consent will expire on 31 December 2028. Once this consent is effective, it will impact the ESO by lowering the Alert and Emergency risk curve floors and by lowering the SSTs on average to reflect the lower expected operating levels for lake Pūkaki with unrestricted access below 518m RL (down to 513m RL). However, the consent has conditions which must be met before it can be exercised and it will take Meridian some time to meet these conditions. As such, the effect of the consent is not modelled in this ESO update.

Fuel Capability Case (Base Case)

The Fuel Capability Case (Base Case) assumes the market supplements the existing coal stockpile at its maximum import capability to maintain increased thermal generation during any extended periods of low hydro inflows.

Overall, there have been reductions to the risk curves for 2027 due to a combination of:

- Small increases in current gas and coal storage levels.
- An increase in expected starting gas storage levels in 2027, following the temporary shutdown of Huntly Unit 5 to make gas available to other users.

No Simulated Storage Trajectories (SSTs) cross any curve in 2026 or 2027. This indicates a low risk of hydro storage depletion under expected market response.

The national controlled hydro storage position is currently 132% of the historic mean with South Island storage at 136% (at 29 July), providing a strong energy storage position for the current winter. Earth Sciences NZ (formerly NIWA) has confirmed that El Niño conditions have been reached. The July-September Climate Outlook is for "normal or below" or "below" rainfall for most of the country except for the western South Island, where rainfall is most likely to be above normal. Earth Sciences NZ predicts about an 80% chance for El Niño to reach or exceed strong intensity, and expects the El Niño influence to become more apparent later in the season. These conditions could improve inflows into major SI catchments in the western South Island.

Industry's ongoing focus on hydro storage management and ensuring sufficient backup thermal fuels and capacity through winter continues to mitigate the potential for sustained high prices.

Contracted Fuel Case

The Contracted Fuel Case assumes that only thermal fuel supplies currently secured through contractual arrangements are available for generation. Current thermal fuel contracts are sufficient to fuel most of the power system's thermal generation capability in 2026, reflecting a strong near-term contracted fuel position. As a result, the Contracted Fuel ERCs for 2026 are similar to the Fuel Capability ERCs.

Should extended dry conditions emerge in 2026, additional thermal fuel contracts can help reduce the risk curves and raise the SSTs. The risk curves can reduce by up to 220 GWh or 39 Rankine days.

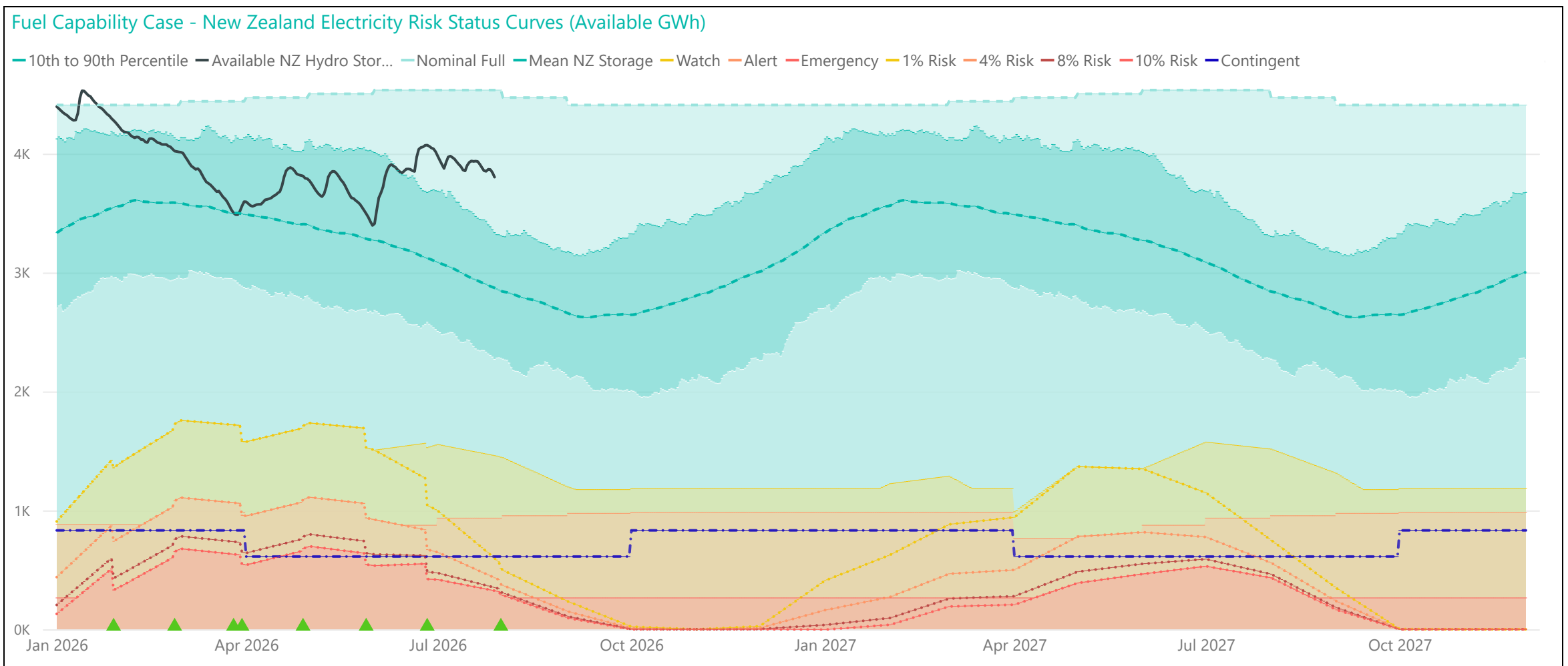
The gap between the Contracted Fuel Case and Fuel Capability Case risk curves becomes more pronounced in 2027 (diverging by up to ~1000 GWh or 180 Rankine days). This results in some SSTs crossing the Watch curve (5 for the New Zealand Watch curve and 2 for the South Island), reflecting the market's tendency to contract fuel closer to need.

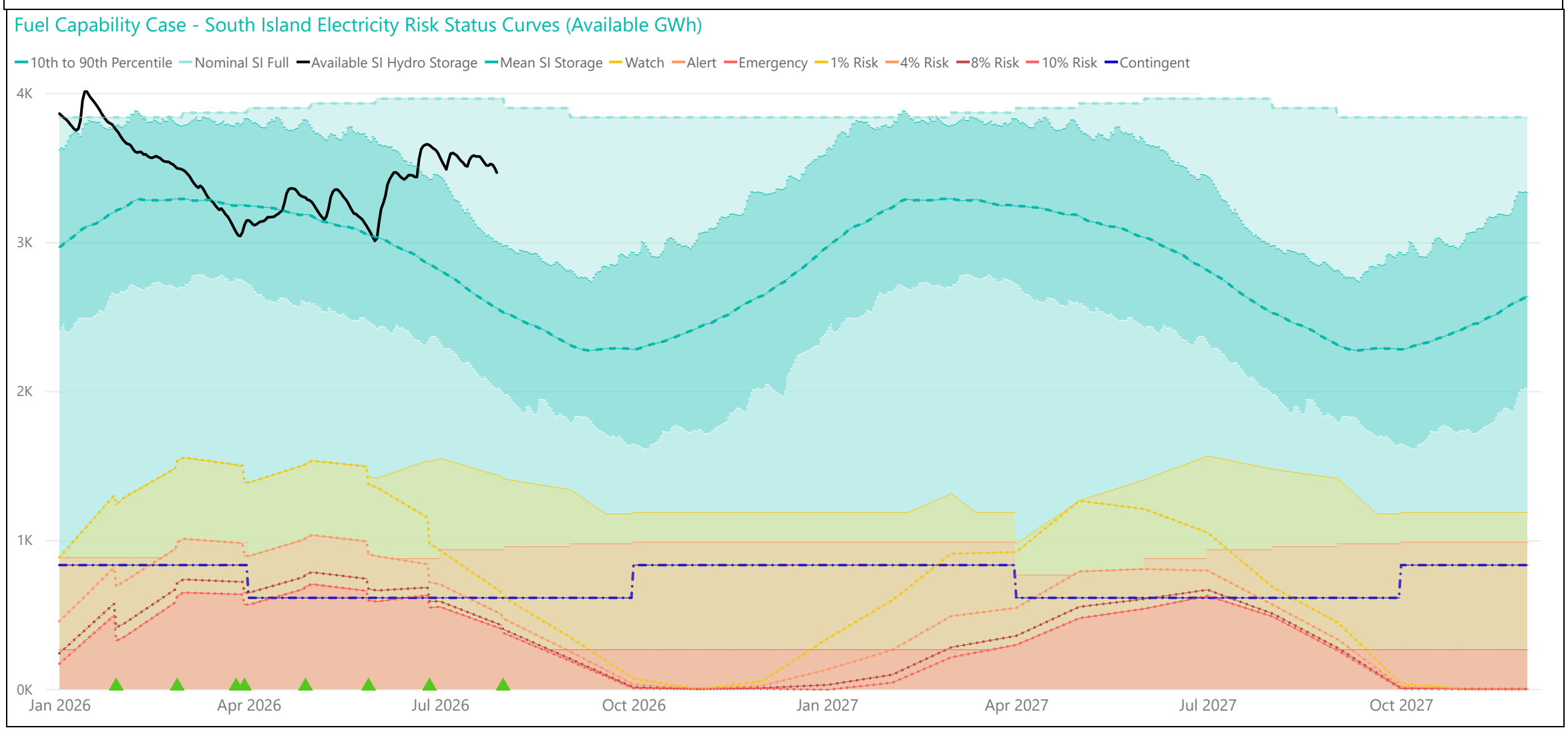
By restricting available energy strictly to currently secured contracts, this Contracted Fuel Case intentionally highlights the physical capacity that remains uncontracted, and the ability for additional contracting to reduce risks. This reinforces that contracted positions require continuous updating to provide ongoing security of supply cover.

Fuel Capability Case - Electricity Risk Curves (ERCs) - Updates and Assumptions

Friday, 31 July 2026

- Input data prepared as of 24 July indicates small (<5%) increases in current Ahuroa Gas Storage (AGS) levels and the current coal stockpile, both of which are now at or near their maximum level.
- The generation capability of the thermal fleet is reduced in late 2026 and early 2027. This is driven by scheduled Huntly outages affecting Unit 5 and Unit 6, alongside an extended Unit 4 (Rankine) outage commencing in November 2026.
- The model incorporates updates to planned generator outages and upcoming new generation commissioning dates and retains permanent removal of TCC.
- Datagrid data centre demand is not included in the demand forecast used for this update.





Energy Security Outlook Explanation:
Energy Security Outlook 101

Watch Curve - The one percent risk curve.
Alert Curve - The maximum of the four percent risk curve and the floor.
Emergency Curve - The maximum of the 10 percent risk curve and the floor.
Official Conservation Campaign Start - See cl. 9.23 of the code.
Official Conservation Campaign Stop - See cl. 9.23A of the code.
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 any contingent hydro storage linked to electricity risk curves representing higher levels of risk of future shortage, and the buffer as specified in the SOSFIP.

Fuel Capability Case - Changes in the Electricity Risk Curves From Previous Update

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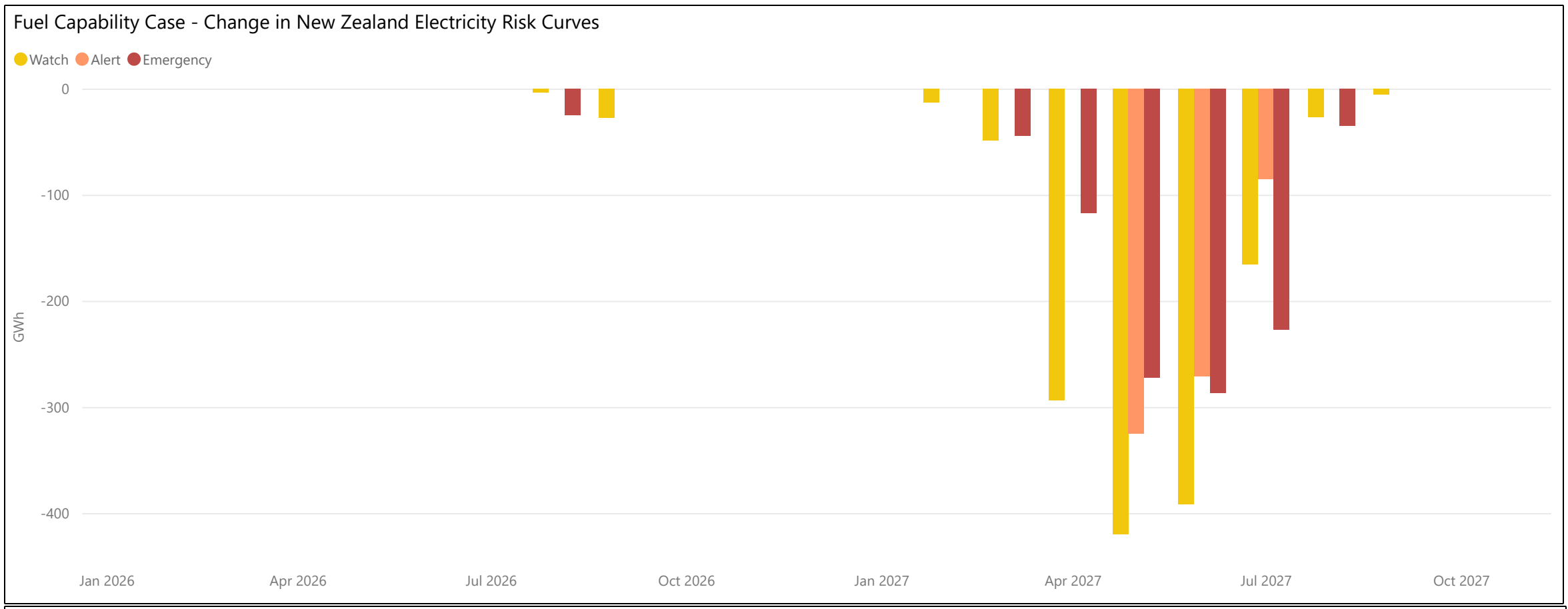
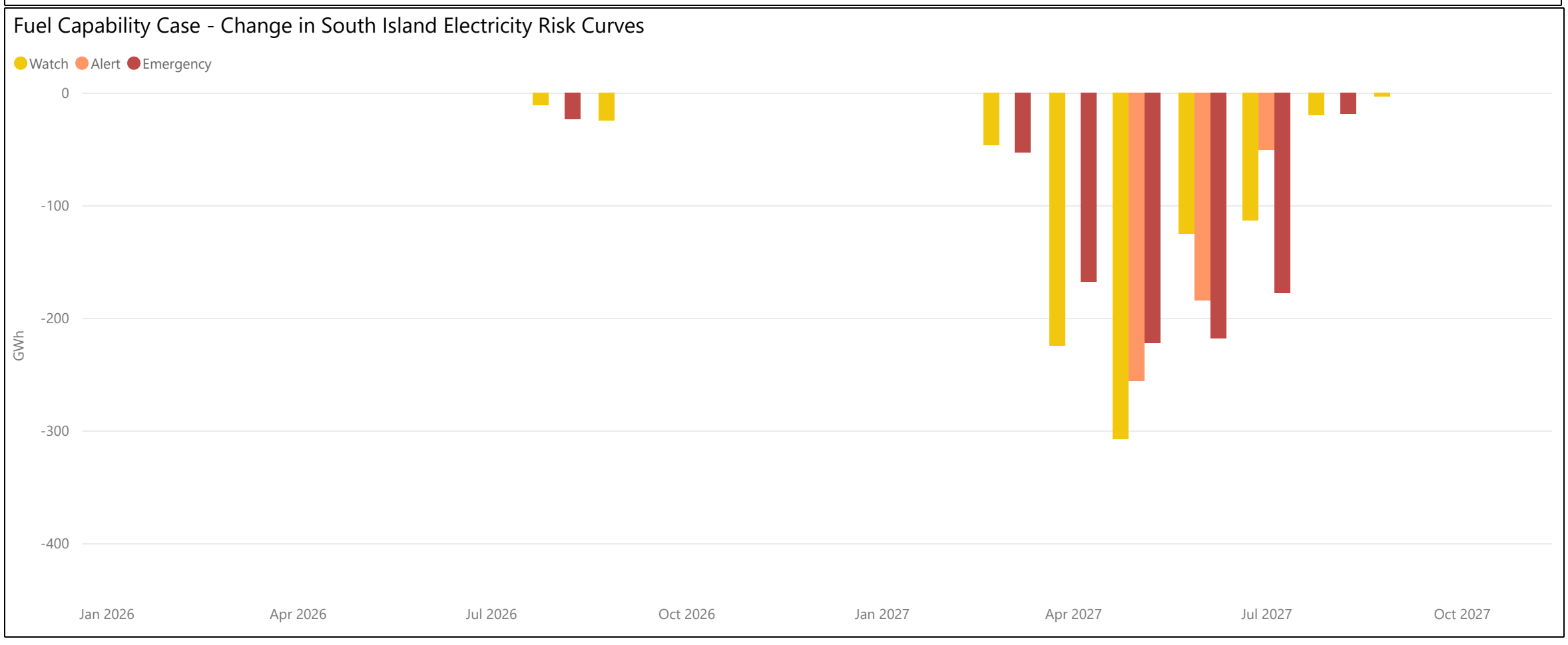
The changes to the Watch/Alert/Emergency curves compared to the last update are shown below.

The New Zealand ERCs have reduced by up to 420 GWh (Watch curve, May 2027) and the South Island ERCs have reduced by up to 310 GWh (Watch curve, May 2027).

These reductions are primarily due to an increase in the estimated starting AGS gas storage level in early to mid 2027. This increase is mostly due to the temporary shutdown of Huntly Unit 5 from 1 July to 31 December 2026. This reduces the gas needed for electricity generation and as a result increases the potential for gas to be stored resulting in a higher expected level of gas stored in AGS for 2027. Higher than expected starting hydro storage also contributes to this lower expected gas needed for electricity generation.

Changes are also influenced by shifts in commissioning project timing. Over the past month a few projects have been pushed out slightly.





Fuel Capability Case - Thermal Deratings

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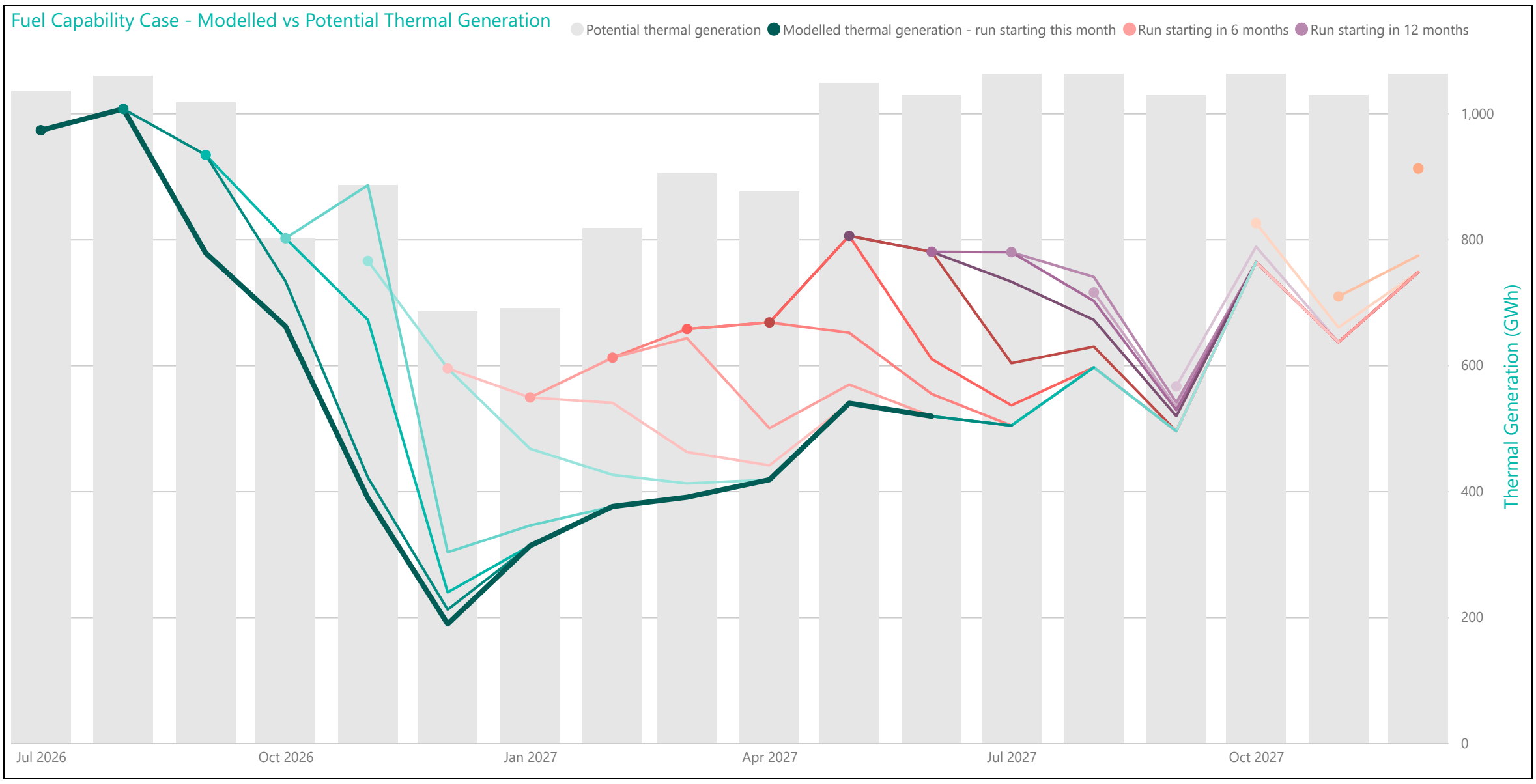
The thermal deratings and key considerations for the July 2026 ERCs update are below:

- Thermal generation capability is higher than in last month's update due to higher estimated starting AGS gas storage, particularly in 2027.
- Gas storage levels at AGS have increased to 7 PJ as of the beginning of July and could fuel a large combined cycle gas plant at full output for ~3 months (ignoring draw down rates) or a peaker for ~11 months.
- The current coal stockpile can fuel three Rankines at full output for ~4 months, or one Rankine for ~13 months without further imports.

On the chart below, potential thermal generation is the total capacity of available units. Modelled thermal generation (shown by the lines) is what those units could generate using the gas and coal available for electricity generation. There is a separate model run starting each month, with the start of each run shown by a dot. In the table, each row corresponds to a separate run. Each run starts with a stockpile of stored coal and gas, and modelled generation tends to decline initially as this stockpile is consumed. Whirinaki is a diesel generator and is not included in the charts below, however it is still included in the model where it is limited to 60 GWh generation over a 6 month period.

Fuel Capability Case - Modelled vs Potential Thermal Generation



Fuel Capability Case - Modelled Thermal Generation (GWh) by Run Month

Run Month	2026-07	2026-08	2026-09	2026-10	2026-11	2026-12	2027-01	2027-02	2027-03	2027-04	2027-05	2027-06	2027-07	2027-08	2027-09	2027-10	2027-11	2027-12	2028-02	2028-03	2028-04	2028-05	2028-06
2026-07	973	1007	778	661	389	189	313	375	390	418	539	519											
2026-08		1007	934	733	421	212	313	375	390	418	539	519	504										
2026-09			934	801	672	239	313	375	390	418	539	519	504	596									
2026-10				801	886	303	345	375	390	418	539	519	504	596	495								
2026-11					765	595	467	426	412	418	539	519	504	596	495	763							
2026-12						595	549	540	462	441	539	519	504	596	495	763	636						
2027-01							549	612	643	500	569	519	504	596	495	763	636	748					
2027-02								612	657	668	651	554	504	596	495	763	636	748					
2027-03									657	668	805	609	536	596	495	763	636	748	506				
2027-04										668	805	780	603	629	495	763	636	748	506	543			
2027-05											805	780	732	672	519	763	636	748	506	543	646		
2027-06												780	779	702	528	763	636	748	506	543	648	615	
2027-07													779	740	541	763	636	748	506	543	648	647	429
2027-08														715	533	763	636	748	506	543	648	647	469
2027-09															566	788	636	748	506	543	648	647	521
2027-10																825	660	748	506	543	648	647	557
2027-11																	709	774	506	543	648	647	557
2027-12																		912	526	543	648	647	557
2028-02																			722	773	790	701	557
2028-03																				773	881	880	640
2028-04																					881	893	810
2028-05																						893	810
2028-06																							810

Fuel Capability Case - Simulated Storage Trajectories (SSTs)

Friday, 31 July 2026

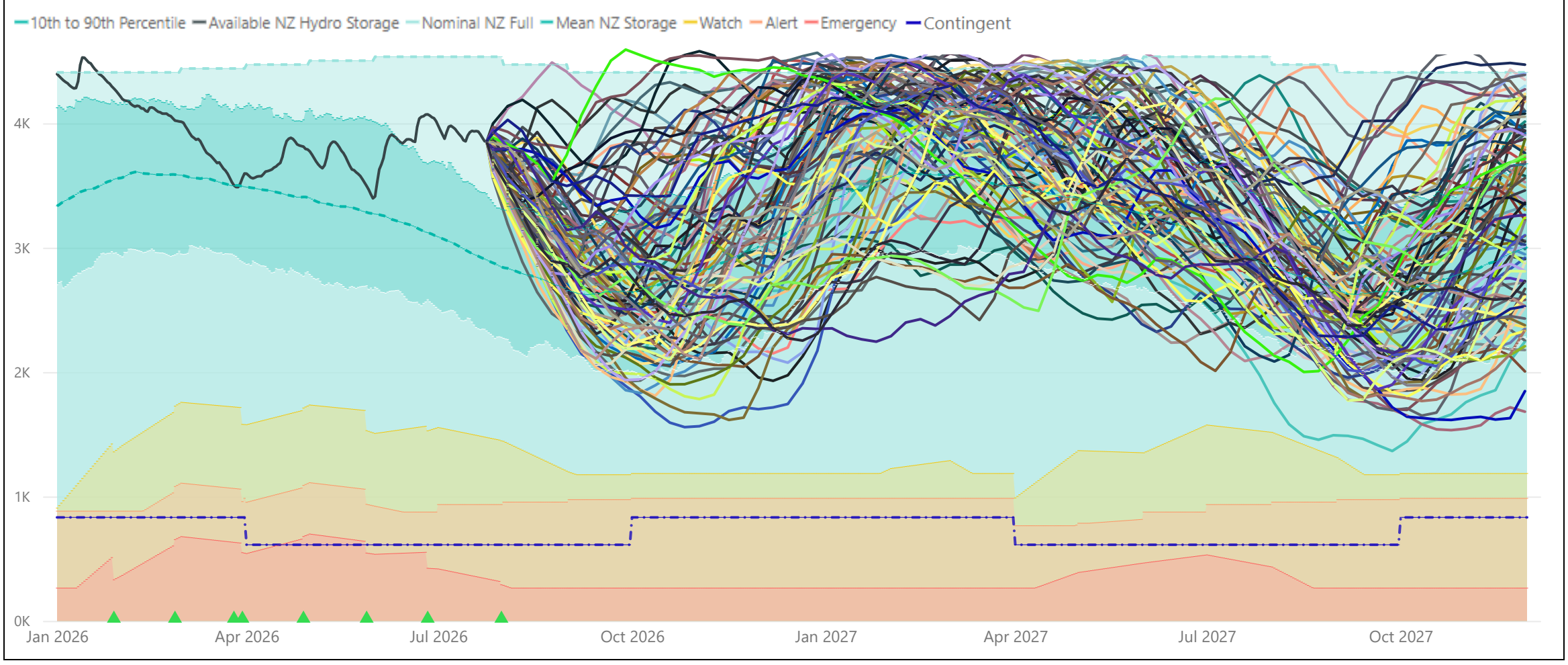
The July SST update is shown below. The hydro storage starting date is 24 July.

0 SST cross NZ watch curve in 2026 or 2027.

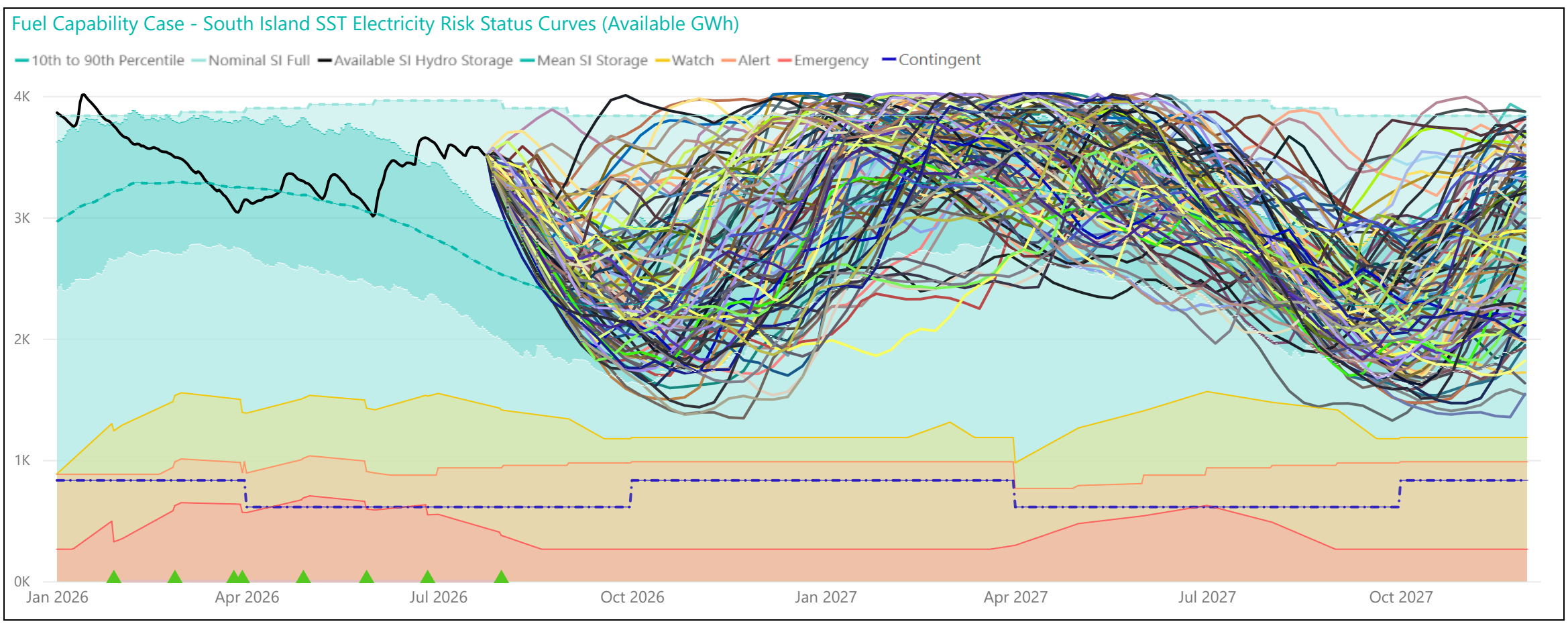
0 SST cross SI watch curve in 2026 or 2027.

The SST for the 1931 inflow year comes close to the South Island watch curve in August 2027 but does not cross it.

Fuel Capability Case - New Zealand SST Electricity Risk Status Curves (Available GWh)



Fuel Capability Case - South Island SST Electricity Risk Status Curves (Available GWh)



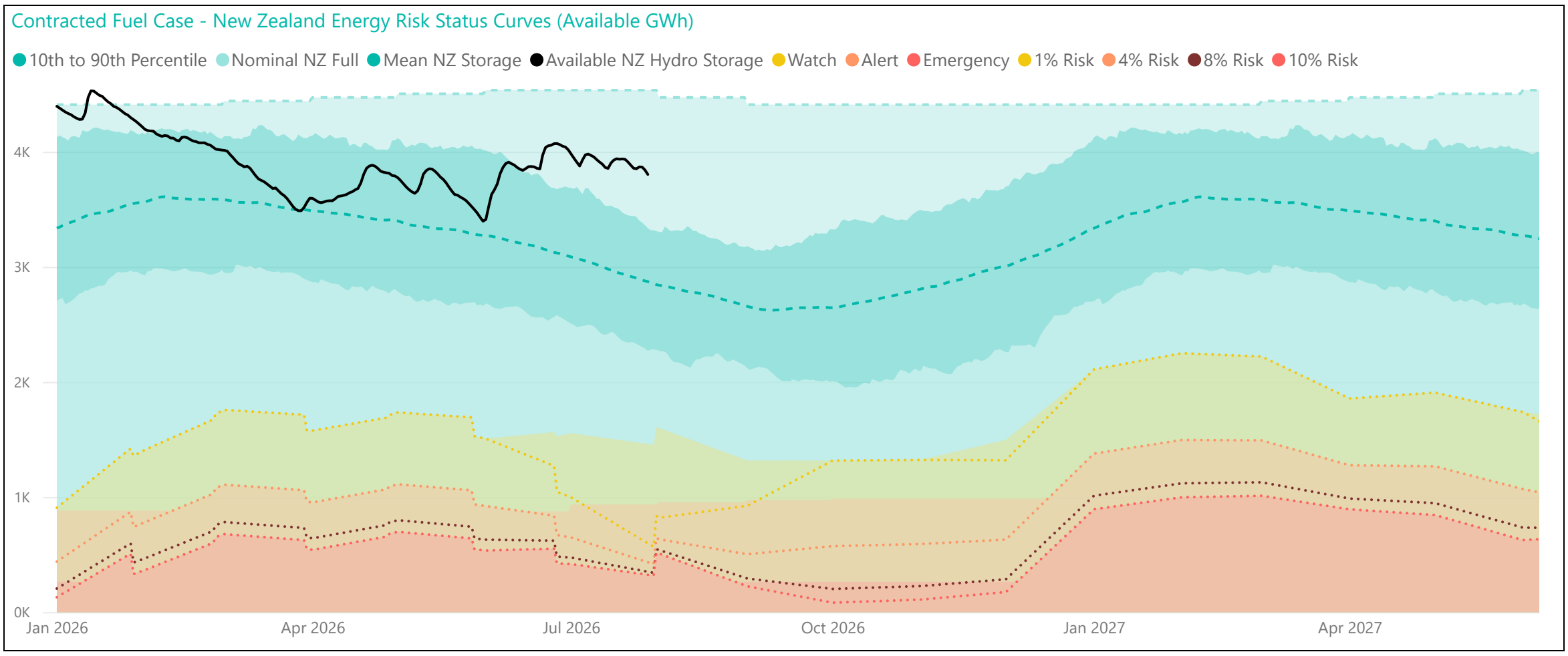
Contracted Fuels Case - Electricity Risk Curves

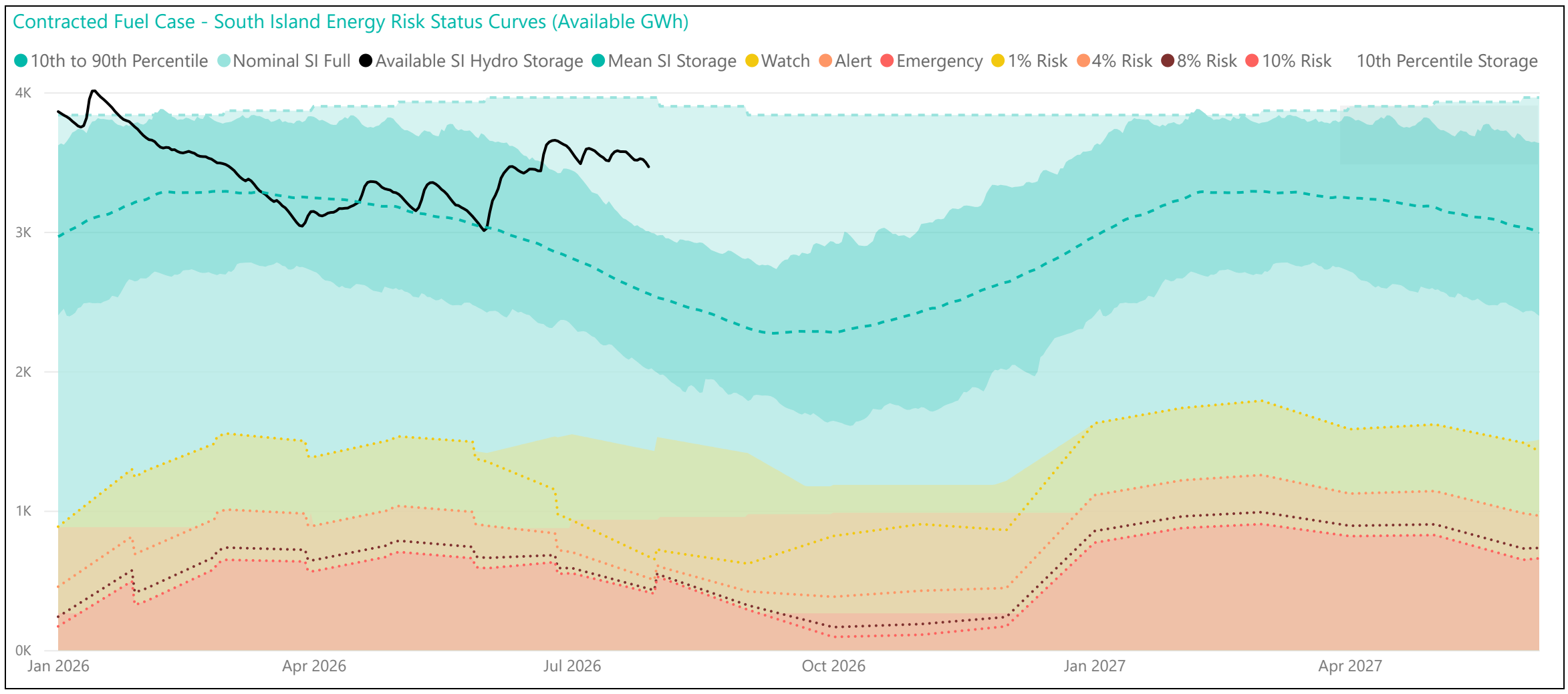
This case illustrates the shift in the Energy Risk Curves when constrained strictly to firm thermal fuel contracts, as implemented in accordance with the recently amended Security of Supply Forecasting and Information Policy (SOSFIP) which came into effect on 1 May.

In 2026 the risk curves for the Contracted Fuel Case are lower in the near term (till end 2026) compared to 2027. This reflects the increased thermal fuel stockpiles and contracts to enable a stronger thermal response to lower inflows in 2026. The risk curves are higher in 2027 because current firm contracts do not yet reflect the amount of thermal fuel than can or will be contracted. The gap between the Contracted Fuel risk curves in 2027 and the Fuel Capability risk curves reflects the pool of physically available thermal energy in 2027 and beyond that has not yet been commercially secured.

There has been a small increase to the risk curves in late 2026 and early 2027 since the last update, and a decrease in May and June 2027. Factors contributing to this are discussed on the next page.

Under a well-functioning market with sufficient incentives, we would expect additional thermal fuel to be contracted as future market conditions (including dry year risk mitigation) become more visible. This would be reflected as a reduction in the risk curves under the Contracted Fuels Case.





Contracted Fuel Case - Changes in the Electricity Risk Curves from Previous Update

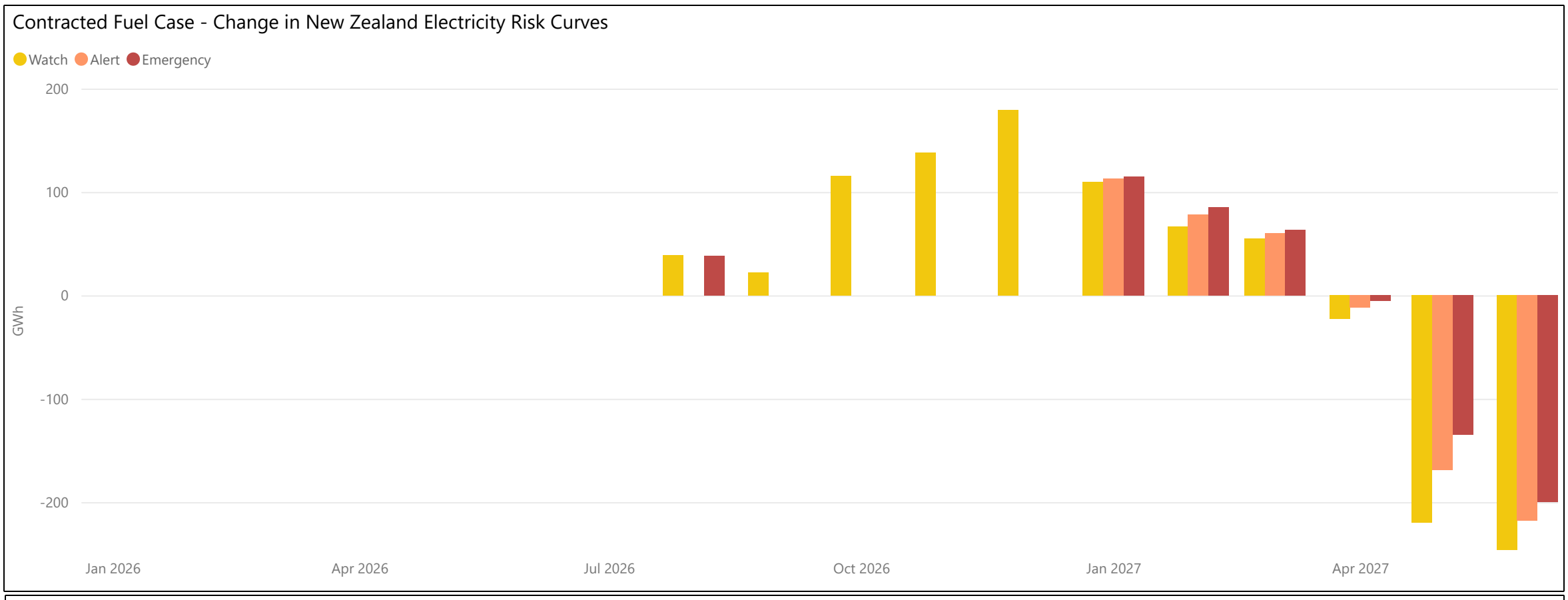
The changes to the Watch/Alert/Emergency curves compared to the last update are shown below.

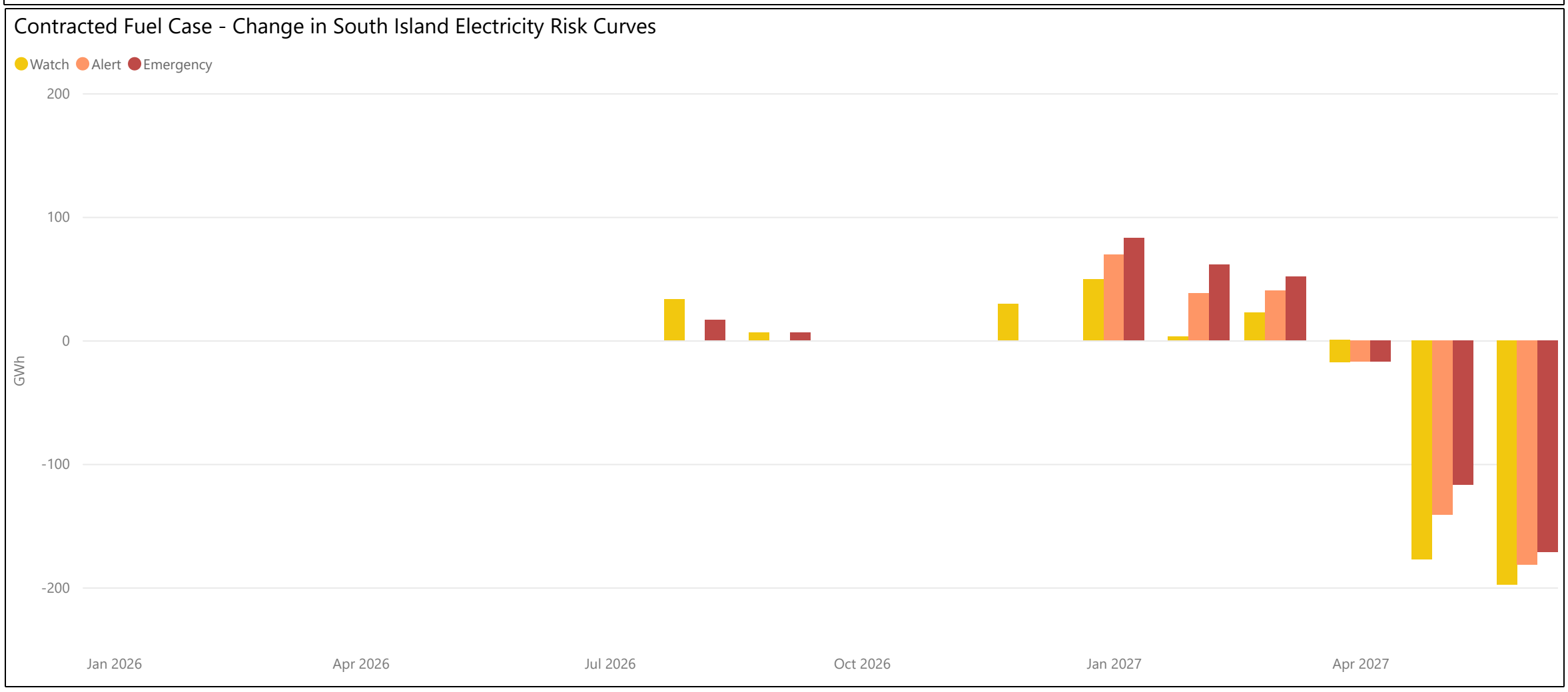
There are small increases in the risk curves in late 2026 and early 2027 (up to 180 GWh for the New Zealand Watch curve in December 2026). This is influenced by:

- A lower estimated starting coal stockpile with the Huntly unit 5 shut expected to result in more coal generation.
- Delays to commissioning projects.
- Newly modelled outages.

There are also counteracting factors reducing the risk, resulting in decreases to the risk curves in May and June 2027 (up to a 250 GWh decrease for the New Zealand Watch curve in June 2027). These factors include:

- Increased contracted gas volumes in 2027 since the previous update.
- Higher estimated starting AGS storage due to the Huntly Unit 5 shut.



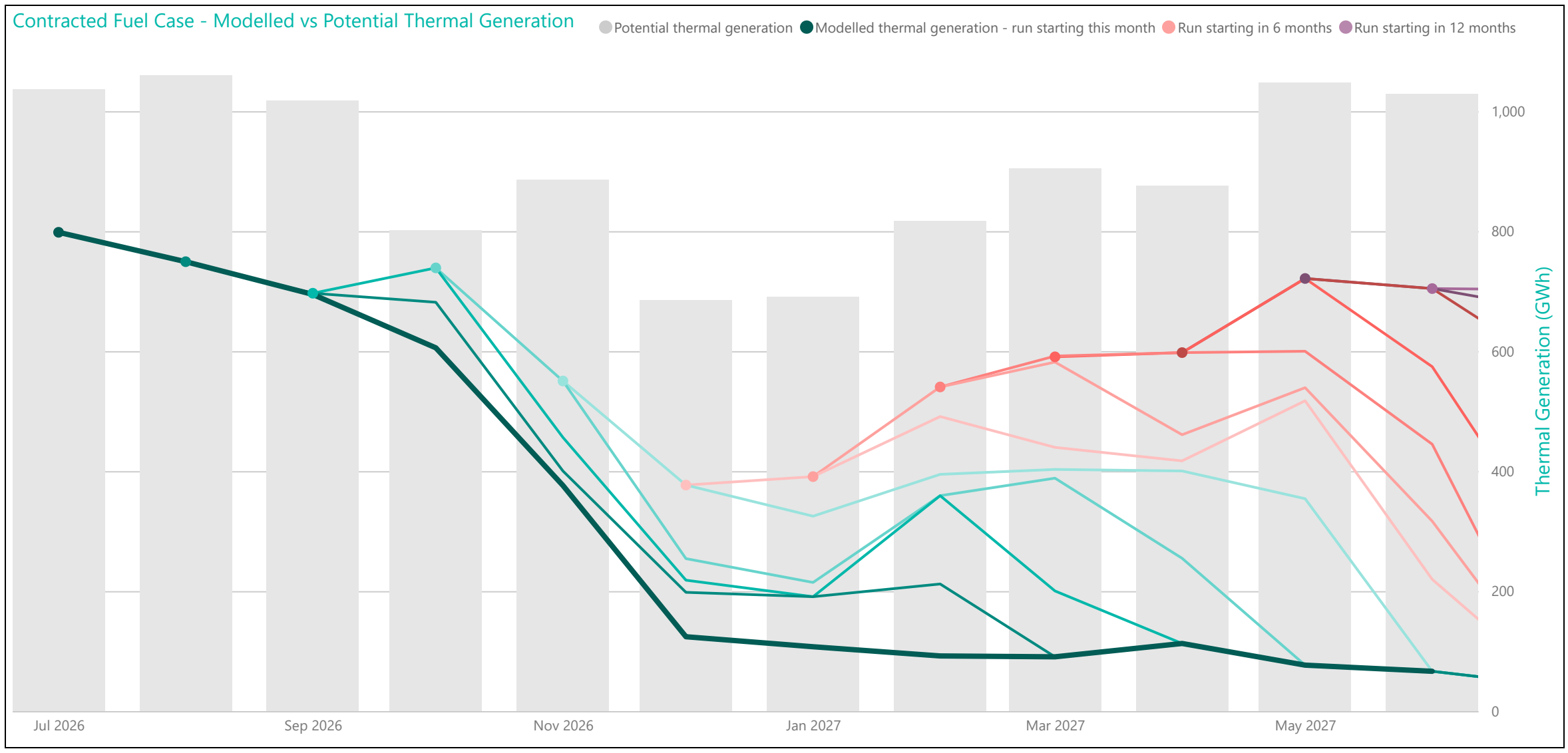


Contracted Fuel Case - Thermal Deratings

Thermal capacity typically reliant on spot market purchases or non-binding industrial flexibility is fully derated in this scenario. Only firmly secured, forward-contracted supply agreements are included in the available energy pool.

The Contracted Fuel Case includes the current coal stockpile and AGS gas reported as available for electricity generation, but does not assume additional future coal imports unless already contracted. Modelled thermal generation is therefore limited by available thermal units, physical fuel delivery limits, and firm contracted fuel volumes.

On the chart below, potential thermal generation is the total capacity of available units. Modelled thermal generation (shown by the lines) is what those units could generate using the gas and coal available for electricity generation. There is a separate model run starting each month, with the start of each run shown by a dot. In the table, each row corresponds to a separate run. Each run starts with a contracted volume of coal and gas, and modelled generation tends to decline initially as this available energy is consumed. Whirinaki is a diesel generator and is not included in the charts below, however it is still included in the model where it is limited to 60 GWh generation over a 6 month period.



Contracted Fuel Case - Modelled Thermal Generation (GWh) by Run Month

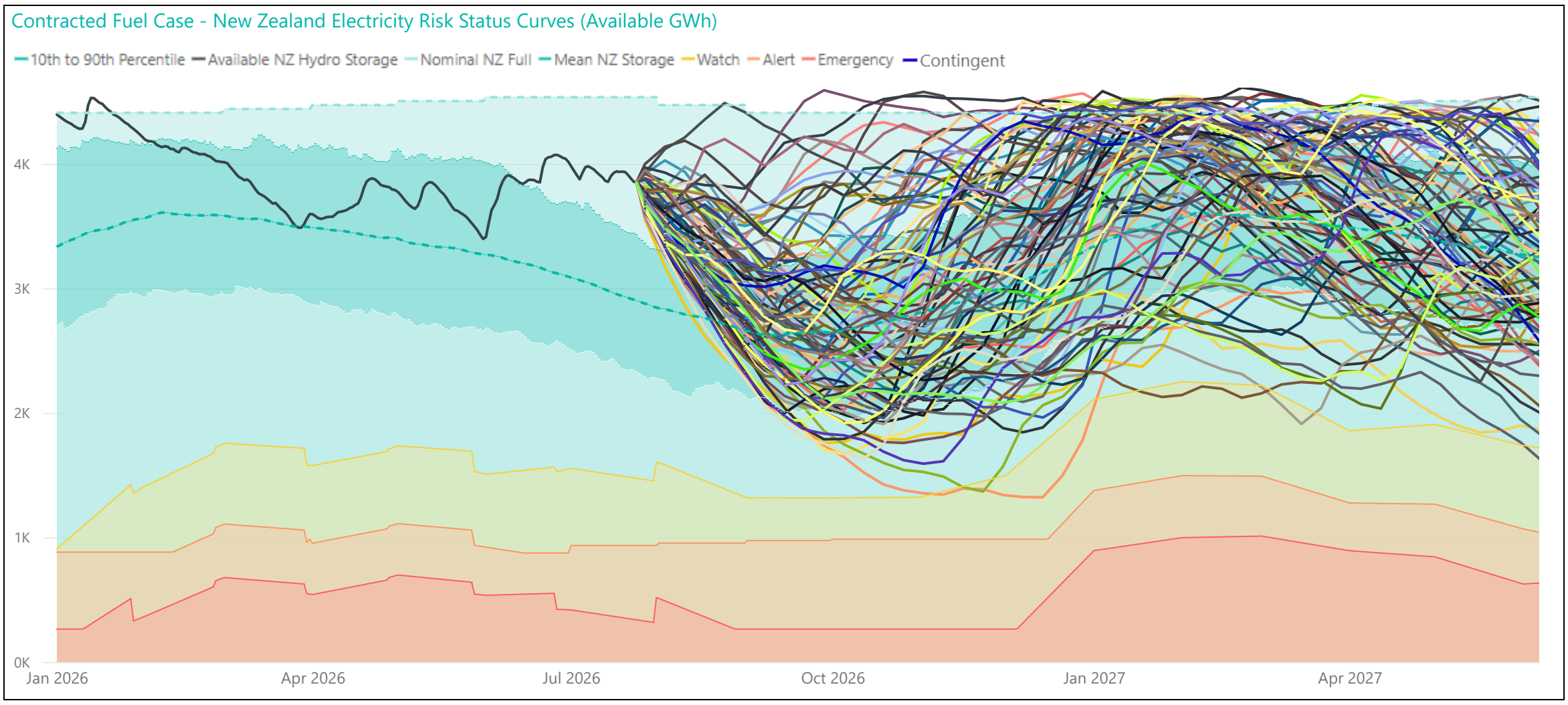
Run Month	2026-07	2026-08	2026-09	2026-10	2026-11	2026-12	2027-01	2027-02	2027-03	2027-04	2027-05	2027-06
2026-07	798	749	695	606	376	124	107	92	90	113	77	66
2026-08		749	697	682	400	198	191	212	90	113	77	66
2026-09			697	739	456	218	191	359	200	113	77	66
2026-10				739	550	254	214	359	388	255	77	66
2026-11					550	377	325	395	403	400	354	66
2026-12						377	391	491	440	417	517	220
2027-01							391	540	582	461	539	317
2027-02								540	592	598	600	445
2027-03									591	598	721	574
2027-04										598	721	704
2027-05											721	704
2027-06												704

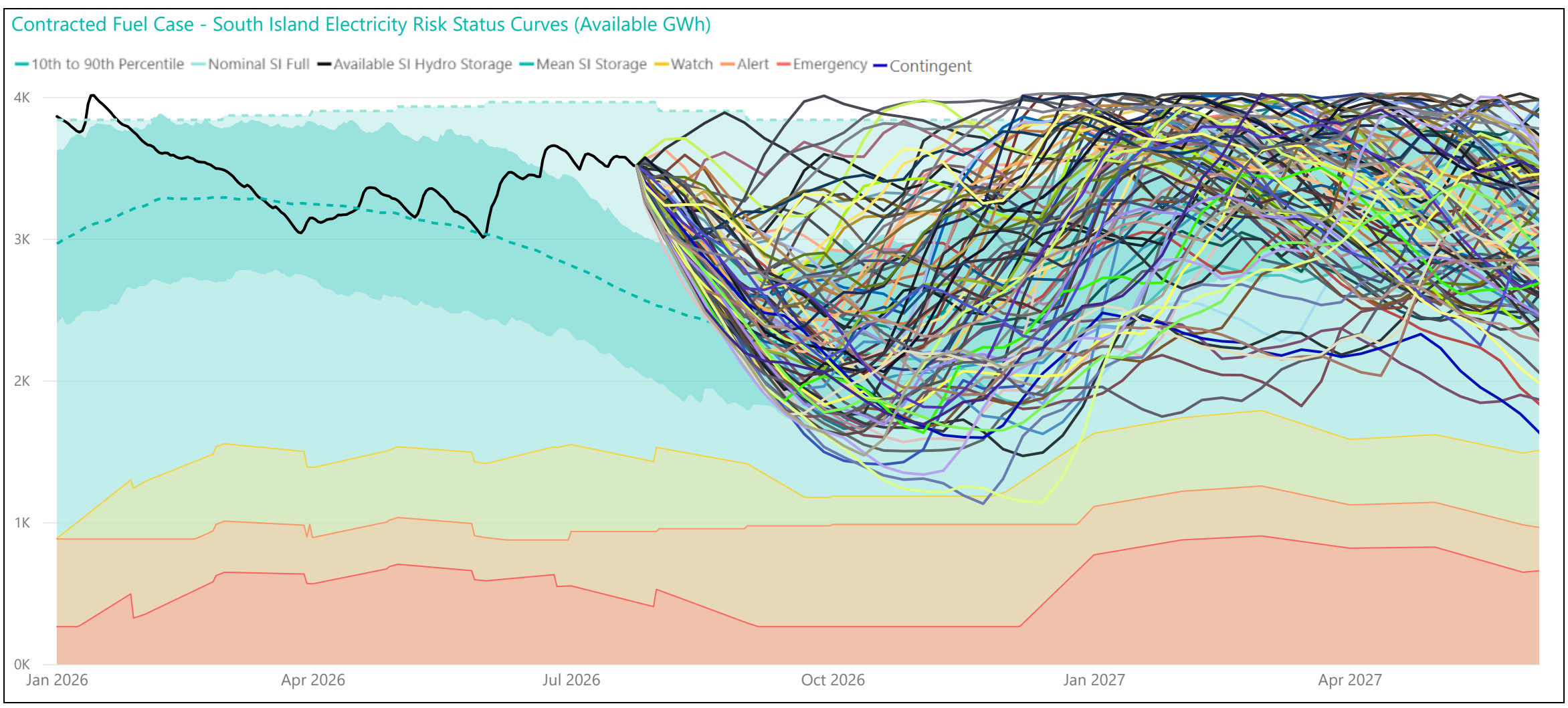
Contracted Fuel Case - Simulated Storage Trajectories

The July Contracted Fuel SST update is shown below. The hydro storage starting date is 24 July.

5 SSTs cross the New Zealand Watch curve between now and June 2027. 2 SSTs cross the South Island Watch curve.

Fewer SSTs cross the risk curves than in the previous Contracted Fuel Case update due to the much stronger starting hydro storage position, which is a result of resent high hydro inflows. More SSTs cross the Watch curve than in the Fuel Capability Case because this case only reflects the actual contracted position at this point in time. Because commercial fuel agreements typically only extend for the near term, this highlights the gap to physical capability and reinforces that contracted positions require continuous updating to provide ongoing security of supply cover.





Contracted Fuel Case - Changes in the Electricity Risk Curves from Fuel Capability Case

The changes to the Watch, Alert, and Emergency curves under the Contracted Fuel Case compared to the Fuel Capability Case are detailed below.

Current levels of thermal storage (gas and coal) remain healthy. This is reflected in the Contracted Fuel Case with most of the system thermal generation capability being deliverable in 2026. Additional thermal fuel contracting in 2026 can increase thermal contribution and reduce the New Zealand risk curves in 2026 by up to 220 GWh or 39 Rankine days and South Island risk curves by up to 150 GWh or 26 Rankine days.

In 2027, there is a larger gap between the risk curves based on the Contracted Fuel Case versus the Fuel Capability Case. This is up to ~1,000 GWh or 180 Rankine days for the New Zealand Watch curve and ~600 GWh or ~110 Rankine days for the South Island Emergency curve. This increase reflects the diminished ability of current fuel stockpiles and lighter firm contracted thermal fuel volumes further into the future to sustain a strong thermal generation response under future low inflow scenarios, relative to the physical thermal generation capability modelled in the Fuel Capability Case.

As discussed above, this also reflects a larger pool of physically available energy in 2027 that has not yet been commercially secured. The increase of the curves into 2027 reflects the market's tendency toward contracting closer to need, where participants finalise firm fuel contracts closer to the period of actual consumption.