November 2026 Energy Security Outlook

Thursday, 26 November 2026

Summary

Overall position: The November Energy Security Outlook continues to indicate a healthy energy security position through to the first half of 2027, with no simulated storage trajectories crossing the New Zealand or South Island risk curves before then.

Fuel Capability Case: Risk curves increase over parts of summer 2027 due to increased generator outages, HVDC outage and commissioning delays and decreases through much of autumn and winter compared with last month's update due to increased gas availability, but the overall risk of hydro storage depletion remains low.

Contracted Fuel Case: Risk curves increase over summer 2027, reflecting lower contracted gas availability as well as HVDC outage, commissioning delays and increased generator outages, but decreases through much of winter as the gap from the Fuel Capability Case narrows. Increased SST crossing during this period highlight elevated risk of crossing the contracted risk curves. This indicates where additional contracting could reduce modelled energy security risk.

Pūkaki Easement Scenario: A separate scenario is assessed treating Lake Pūkaki contingent storage as available during normal operation from 2027, i.e. its use is not dependent on an Alert or Emergency risk status being declared. This treatment does not reduce the underlying risk but lowers the thresholds at which risk is escalated. As a result, Pūkaki hydro storage could be expected to drop lower in 2027.

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.

The national controlled hydro storage position is currently 127% of the historic mean with South Island storage at 130% (at 24 November), providing a strong current hydro storage position. Earth Sciences NZ (formerly NIWA) has confirmed that very strong El Niño conditions remain firmly established. The November-January Climate Outlook is for "normal 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 very strong El Niño conditions to strengthen further and likely reach its peak during this outlook period. These conditions could improve inflows into major western SI catchments.

Compared with last month's update, risk increases over parts of summer 2027 and decreases through much of autumn and winter. The New Zealand Watch curve increases in January and February from increased generator outages, additional HVDC outage and commissioning delays, while both the New Zealand and South Island Watch curves are lower from April to July due to additional gas availability.

No Simulated Storage Trajectories (SSTs) cross the New Zealand or South Island risk curves in 2026. In 2027:
- one trajectory crosses the New Zealand Watch and Alert curves; and
- three trajectories cross the South Island Watch curve, including one that also crosses the South Island Alert curve.

Together, these results continue to indicate a low risk of hydro storage depletion under the Fuel Capability Case, where the market supplements thermal fuel up to its maximum capability to manage extended periods of low hydro inflows.

Contracted Fuel Case

The Contracted Fuel Case assumes that only thermal fuel supplies currently secured through contractual arrangements are available for generation. Contracted fuel remains sufficient to fuel all the power system's thermal generation capability in 2026. As a result, the Contracted Fuel and Fuel Capability risk curves are the same for 2026.

Compared with last month's update, the Watch curves are higher over summer 2027 and lower through much of winter. The difference between the Contracted Fuel and Fuel Capability Watch curves is up to 156 GWh for New Zealand in Jan 2027, before narrowing through much of winter.

No Simulated Storage Trajectories (SSTs) cross the New Zealand or South Island risk curves in 2026. In 2027:
- 14 trajectories cross the New Zealand Watch curve, including four that also cross the New Zealand Alert curve; and
- 25 trajectories cross the South Island Watch curve, including five that also cross the South Island Alert curve.

Together, these results indicate an increased risk of hydro storage crossing the risk curves without additional contracting.

By limiting available thermal energy to fuel currently secured under contract, the Contracted Fuel Case highlights the difference between contracted fuel positions and the physical capability to source and use additional fuel. This indicates where additional contracting could reduce modelled energy security risk.

Pūkaki Easement Scenario

On 3 July, Meridian received consent for its fast-track application to access 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 518 m RL (down to 513 m RL). However, the consent has conditions which must be met before it can be exercised and Meridian is working to meet these conditions. As such, the effect of the consent is assessed as an additional scenario in this ESO update where Lake Pūkaki contingent storage is modelled as available during normal operation from 01 January 2027 to 31 December 2028, i.e. its use is not dependent on an Alert or Emergency risk status being declared.

This adjustment does not reduce the underlying risk but lowers the risk curve floors which in turn reduce the risk curve at which the electricity risk status is escalated to Watch, Alert and Emergency.

No Simulated Storage Trajectories (SSTs) cross the New Zealand or South Island risk curves in 2026. In 2027:
- under the Fuel Capability Case, one trajectory crosses the New Zealand and South Island Watch curves; and
- under the Contracted Fuel Case, five New Zealand and nine South Island Watch crossings occur, including one and two Alert crossings, respectively.

This scenario indicates that, all else being equal, less storage is reserved for use after escalation of the electricity risk status through the risk triggers with SSTs indicating lower hydro storage on average can be expected relative to the base scenarios.

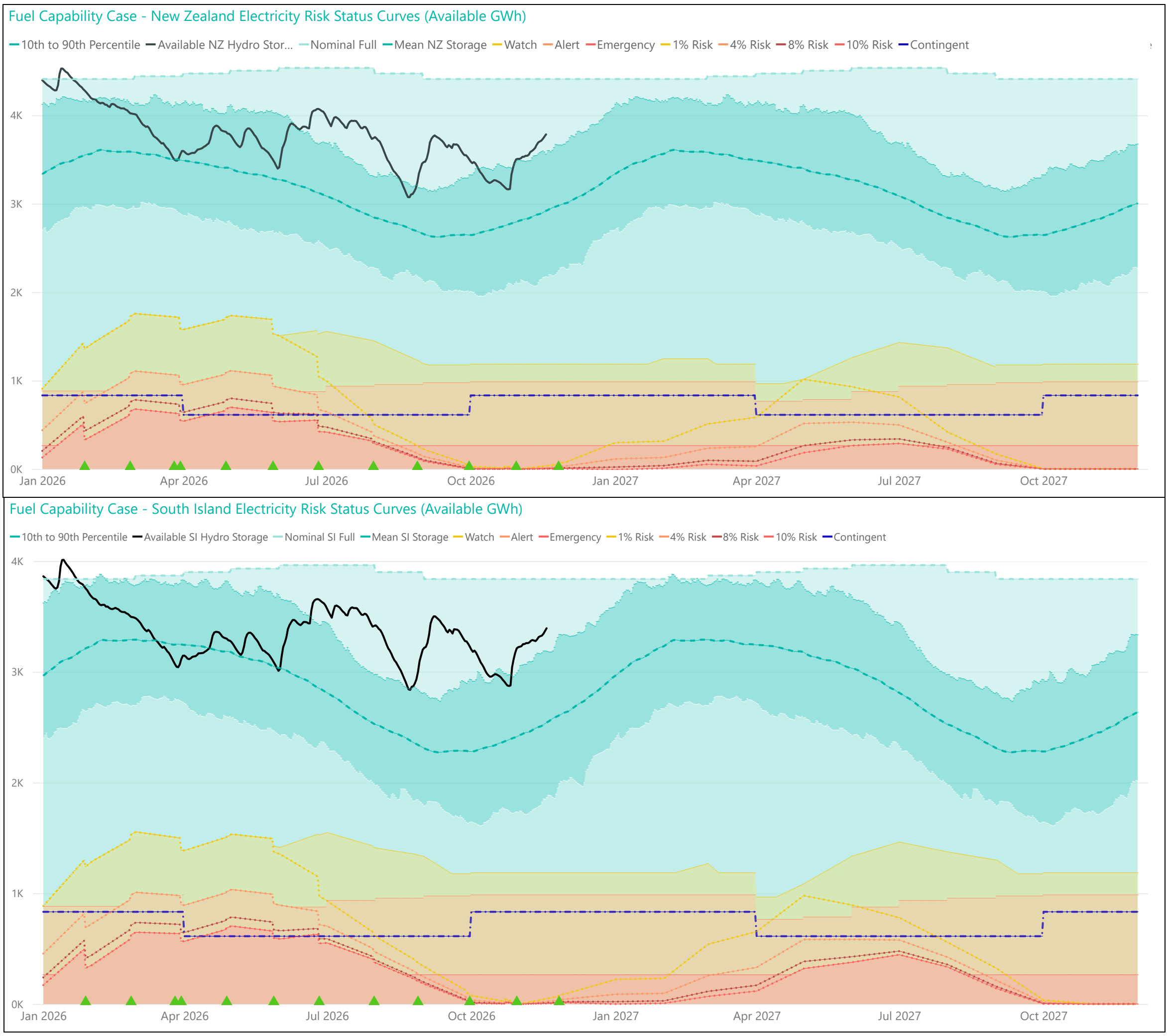
Fuel Capability Case - Electricity Risk Curves (ERCs) - Updates and Assumptions

Thursday, 26 November 2026

Input data prepared as at 16 November indicates (~5%) decrease in current Ahuroa Gas Storage (AGS) levels, while the coal stockpile remains similar to last month's update and close to its maximum level.

Thermal-generation capability is reduced in late 2026 and early 2027 by a scheduled extended Rankine outage commencing in November 2026.

Compared with last month's update, the model includes increased generator outages, delayed commissioning of some new generation, and an additional Pole 3 HVDC outage in January 2027.



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.

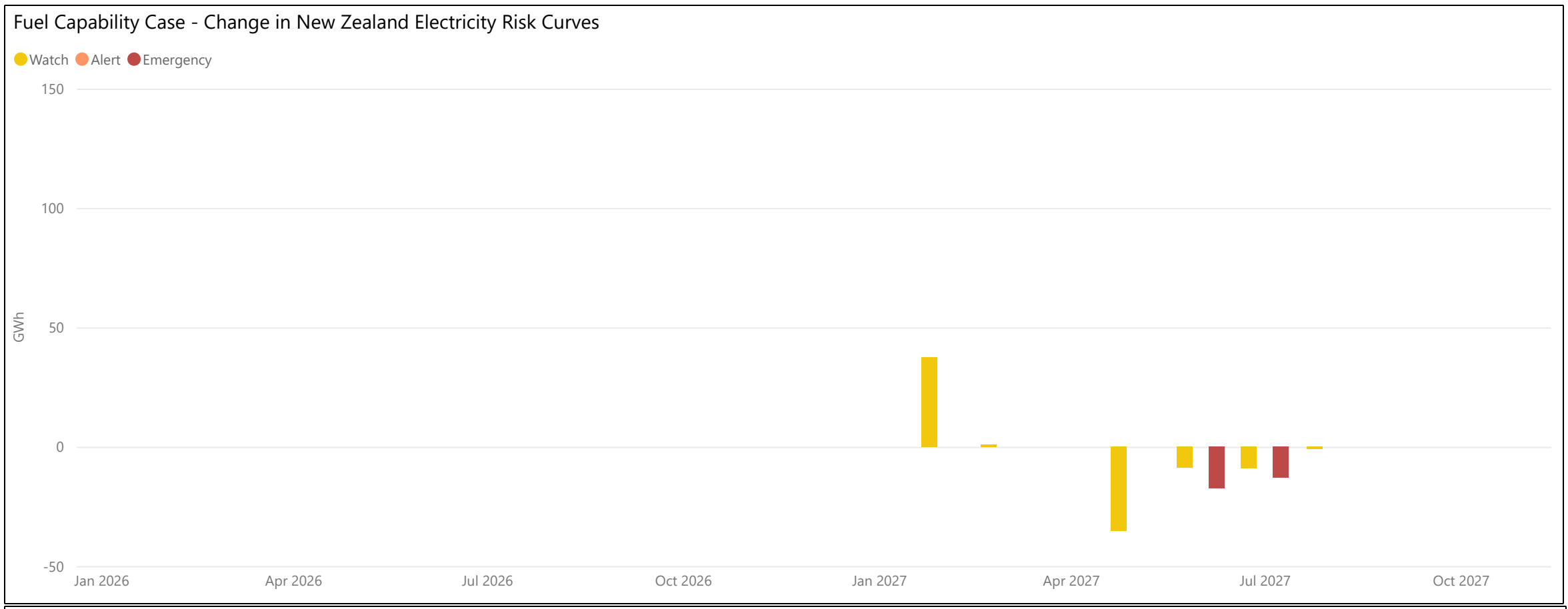
Fuel Capability Case - Changes in the Electricity Risk Curves From Previous Update

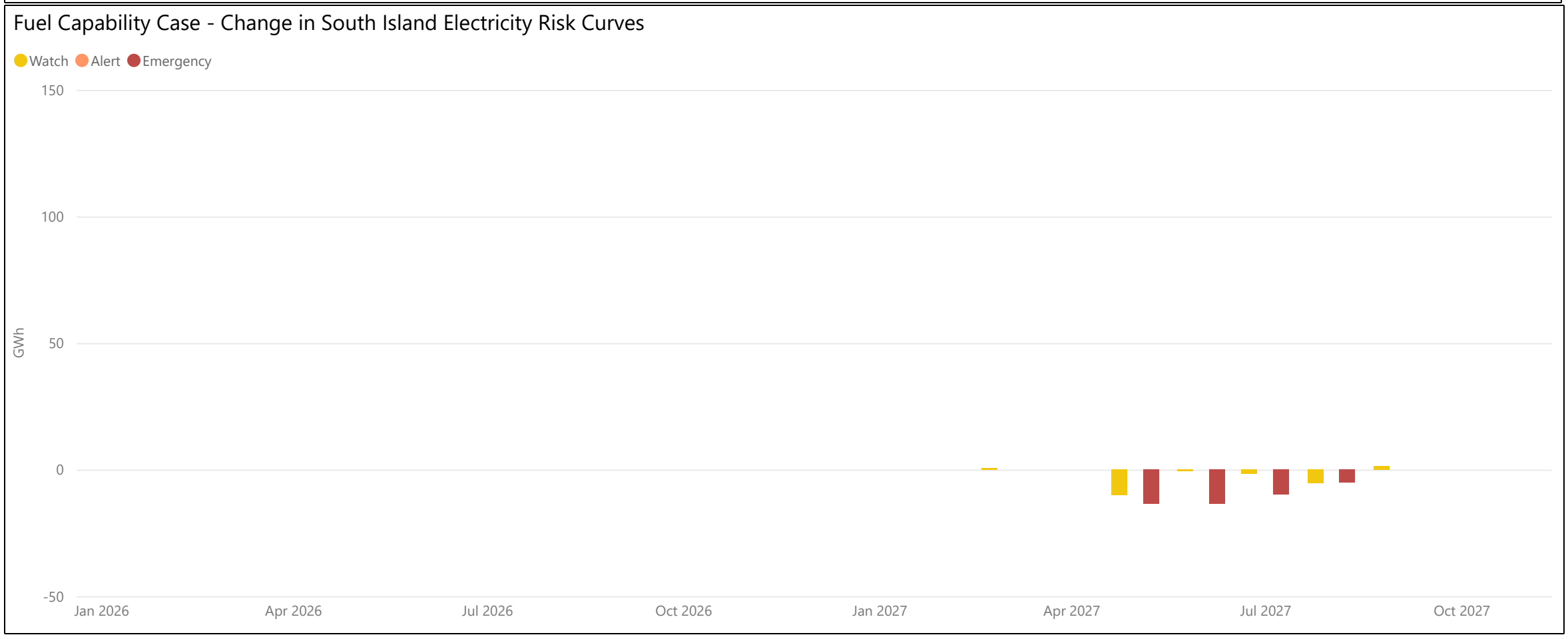
Thursday, 26 November 2026

The changes to the Watch, Alert and Emergency curves compared to last month's update are shown below.

The New Zealand Watch curve has increased by up to 37 GWh in February 2027 reflecting increased generator outages, delays to the commissioning of new generation and additional HVDC outage included in this update. It has decreased by up to 35 GWh in May 2027, reflecting increased gas availability for electricity generation in a dry year.

The South Island Emergency curve has decreased by up to 14 GWh in May and June 2027 due to higher gas availability for electricity generation.





Fuel Capability Case - Thermal Deratings

Thursday, 26 November 2026

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

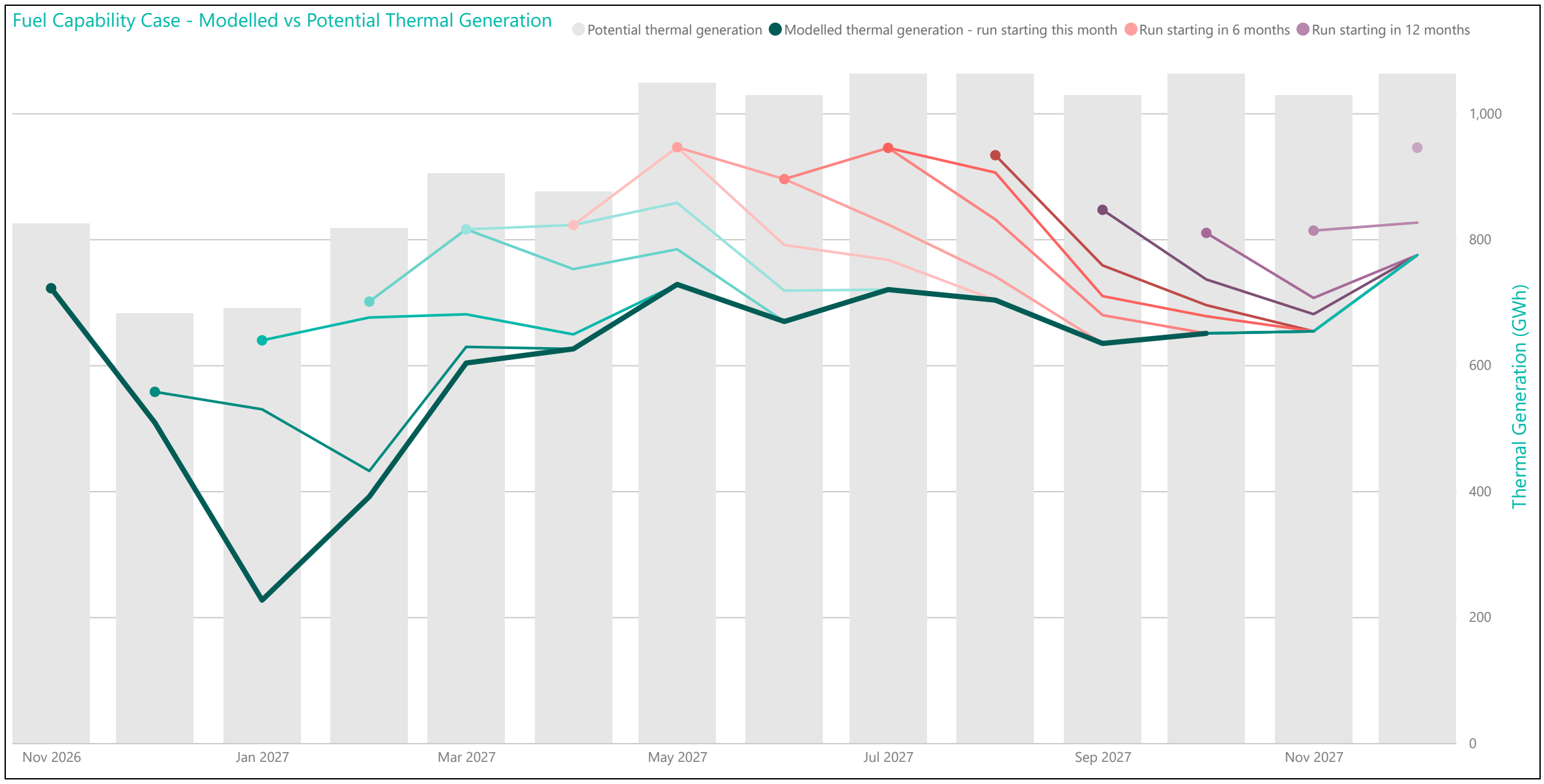
- Modelled thermal generation is slightly higher than in the previous update due to increased gas availability for electricity generation during a dry year.
- Gas stored at AGS decreased to 4.2 PJ at the beginning of November. This could fuel a large combined-cycle gas plant at full output for ~2 months, ignoring gas drawdown constraints, or a peaker for ~7 months.
- The current coal stockpile can fuel three Rankines at full output for ~4 months, or one Rankine for ~13 months without further imports.

In the chart below, potential thermal generation represents the total capacity of available thermal units. Modelled thermal generation shows what those units could generate using the gas and coal available for electricity generation.

A separate model run begins each month, with its starting point shown by a dot. Each row on the table represents a separate run. Each run begins with the coal and gas available at that time, with modelled generation generally declining initially as stored fuel is used.

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	2026-11	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
2026-11	722	509	227	391	603	626	728	669	720	703	634	650		
2026-12		557	530	432	629	626	728	669	720	703	634	650	654	
2027-01			639	676	681	649	728	669	720	703	634	650	654	775
2027-02				701	816	752	784	669	720	703	634	650	654	775
2027-03					816	822	858	718	720	703	634	650	654	775
2027-04						822	946	791	767	703	634	650	654	775
2027-05							946	895	823	741	634	650	654	775
2027-06								895	945	831	679	650	654	775
2027-07									945	906	709	678	654	775
2027-08										933	758	695	654	775
2027-09											846	736	681	775
2027-10												810	707	775
2027-11													813	826
2027-12														945

Fuel Capability Case - Simulated Storage Trajectories (SSTs)

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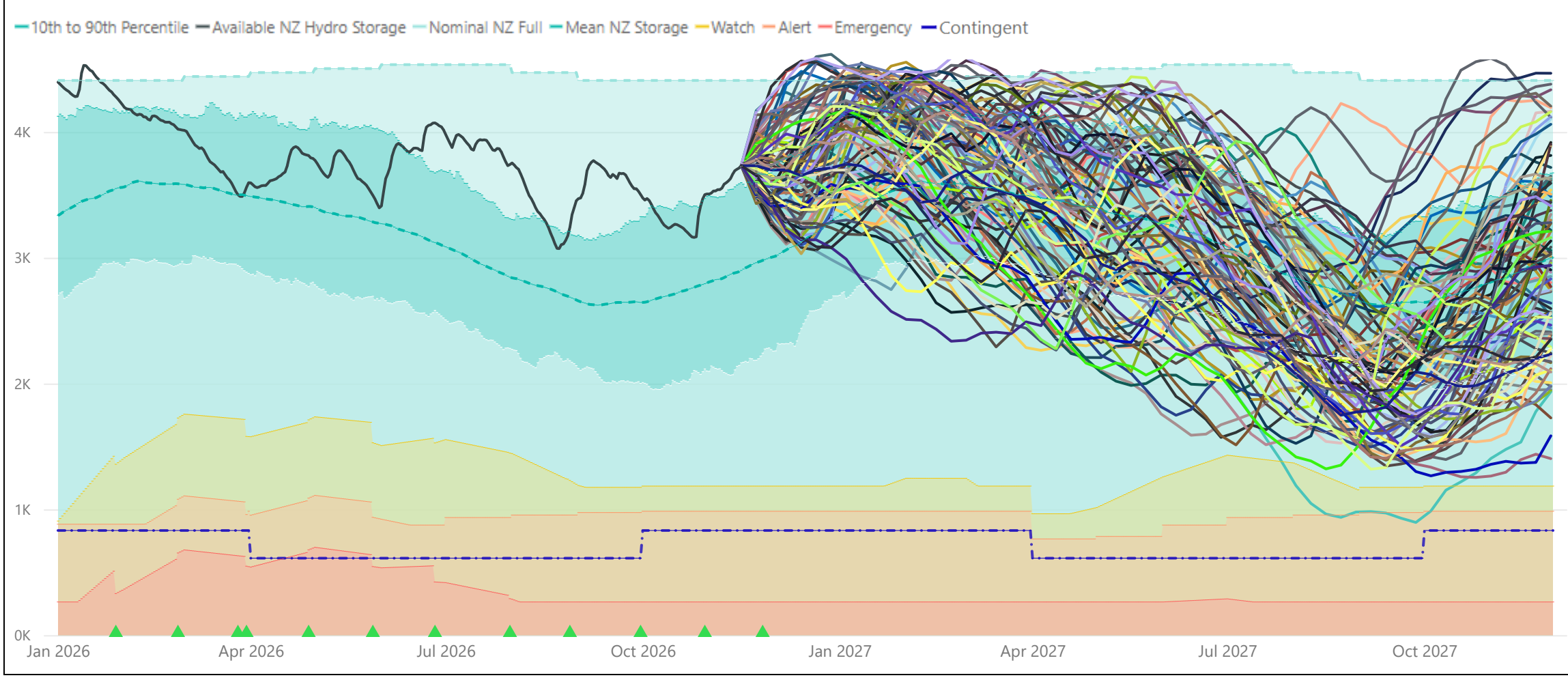
The November SST update is shown below. The hydro storage starting date is 16 November.

No SSTs cross any of the NZ or SI risk curves in 2026.

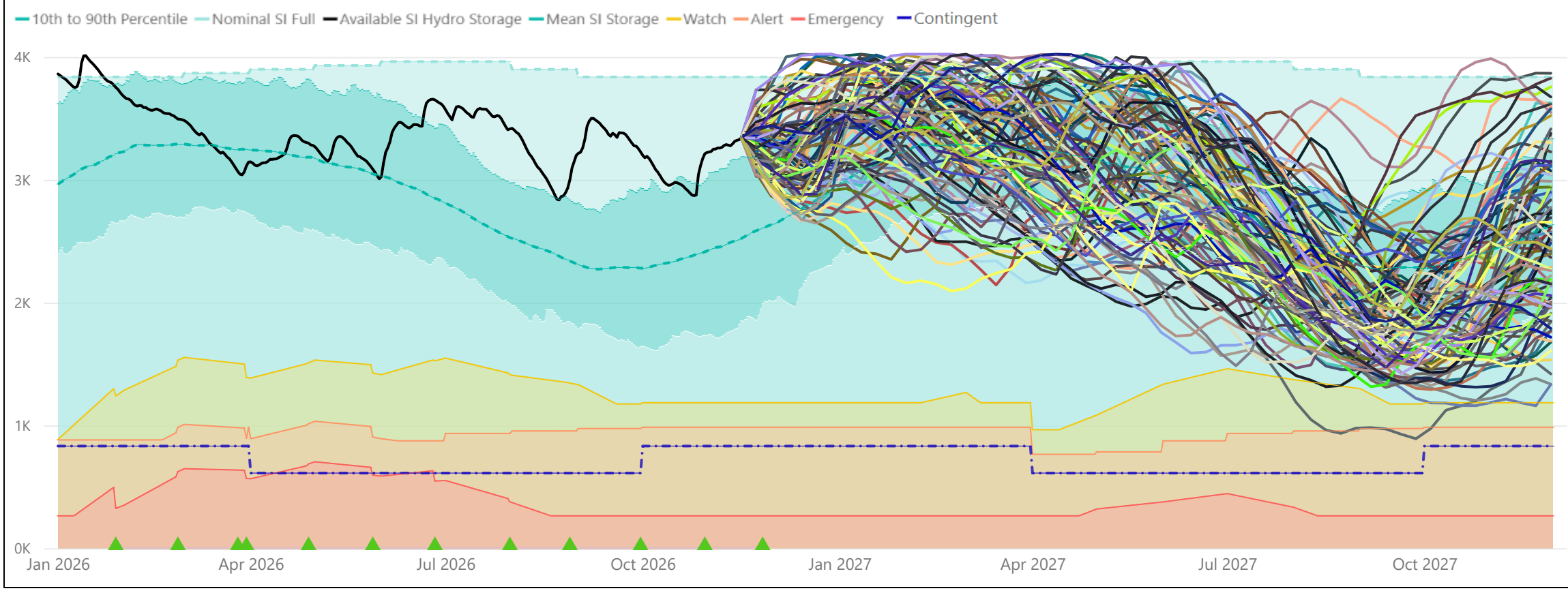
In 2027:

- one SST crosses the New Zealand Watch and Alert curves; and
- three SSTs cross the South Island Watch curve, including one that also crosses the South Island Alert curve.

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 Fuel Case - Electricity Risk Curves

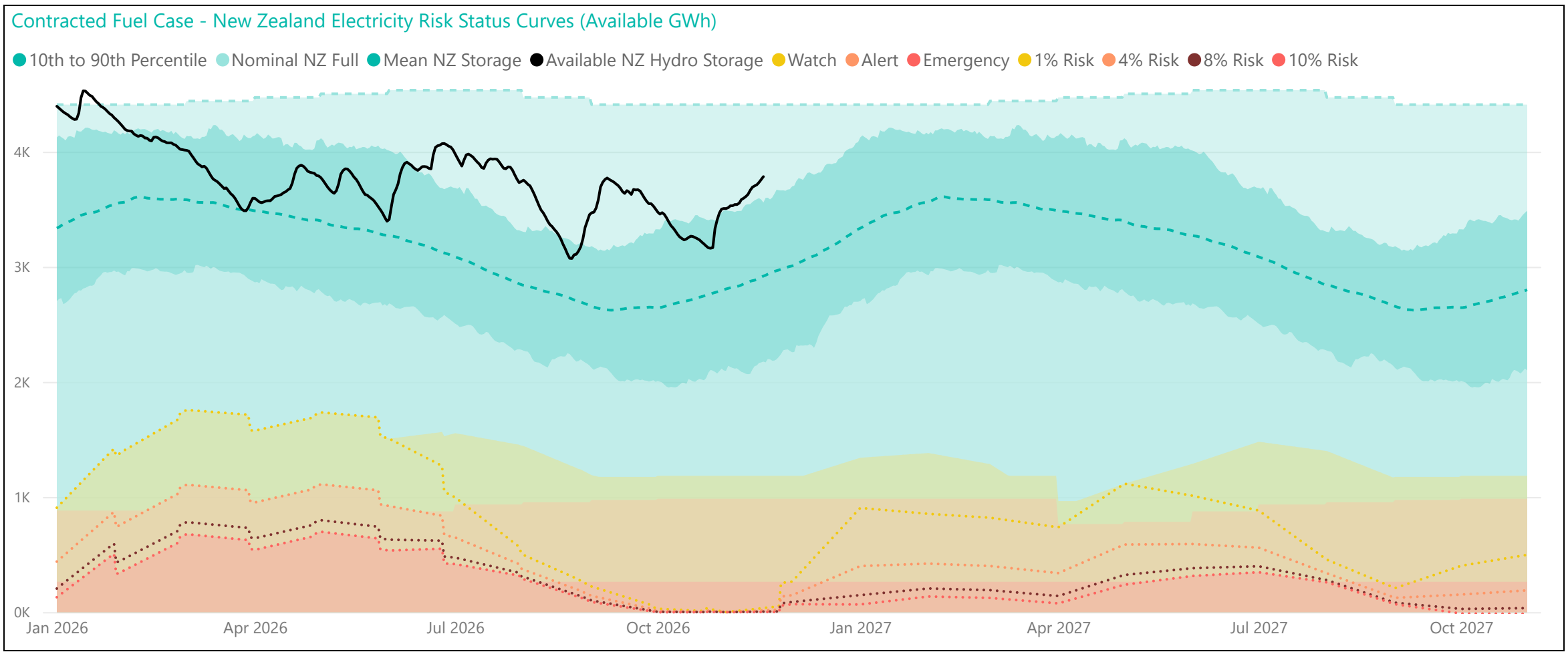
This case illustrates the shift in the Energy Risk Curves when constrained strictly to firm thermal fuel contracts, as implemented in accordance with the amended Security of Supply Forecasting and Information Policy (SOSFIP) which came into effect on 1 May.

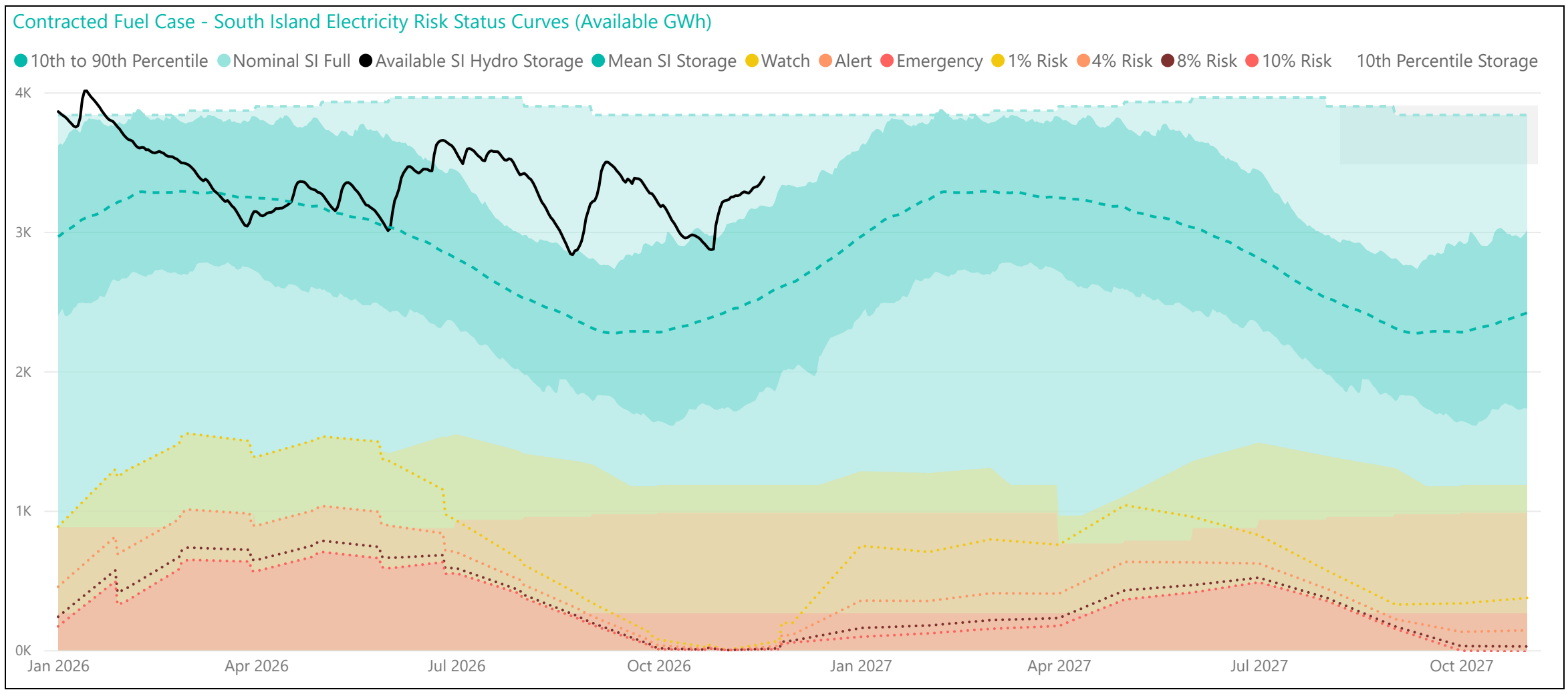
Contracted fuel remains sufficient to support the power system's full thermal-generation capability through the remainder of 2026. As a result, the Contracted Fuel and Fuel Capability risk curves are the same over this period.

In 2027, the Contracted Fuel risk curves are higher because current firm contracts do not cover all thermal fuel that could be physically sourced and used. The gap between the Contracted Fuel and Fuel Capability risk curves represents physical thermal-fuel capability that is not yet covered by firm contracts.

Compared with last month's update, the Watch curves are generally higher over summer 2027 and lower through much of winter. The main drivers 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

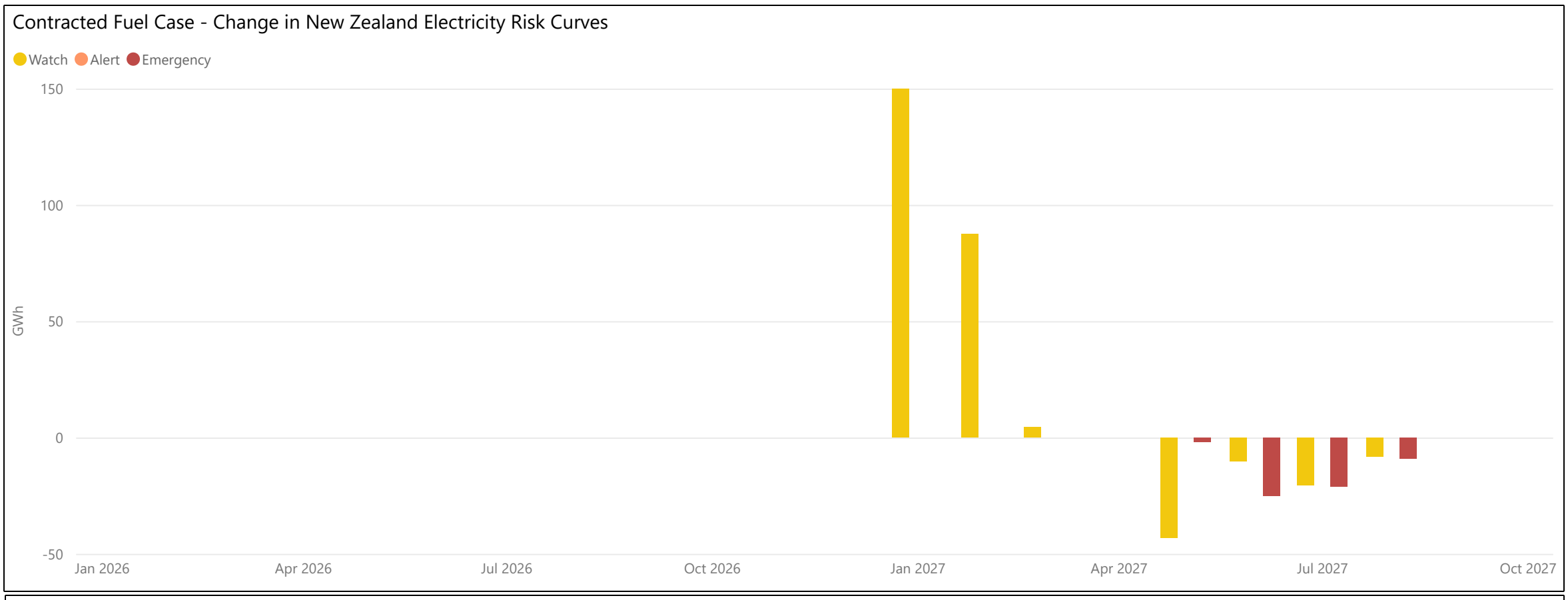
The changes to the Watch, Alert and Emergency curves compared to last month's update are shown below.

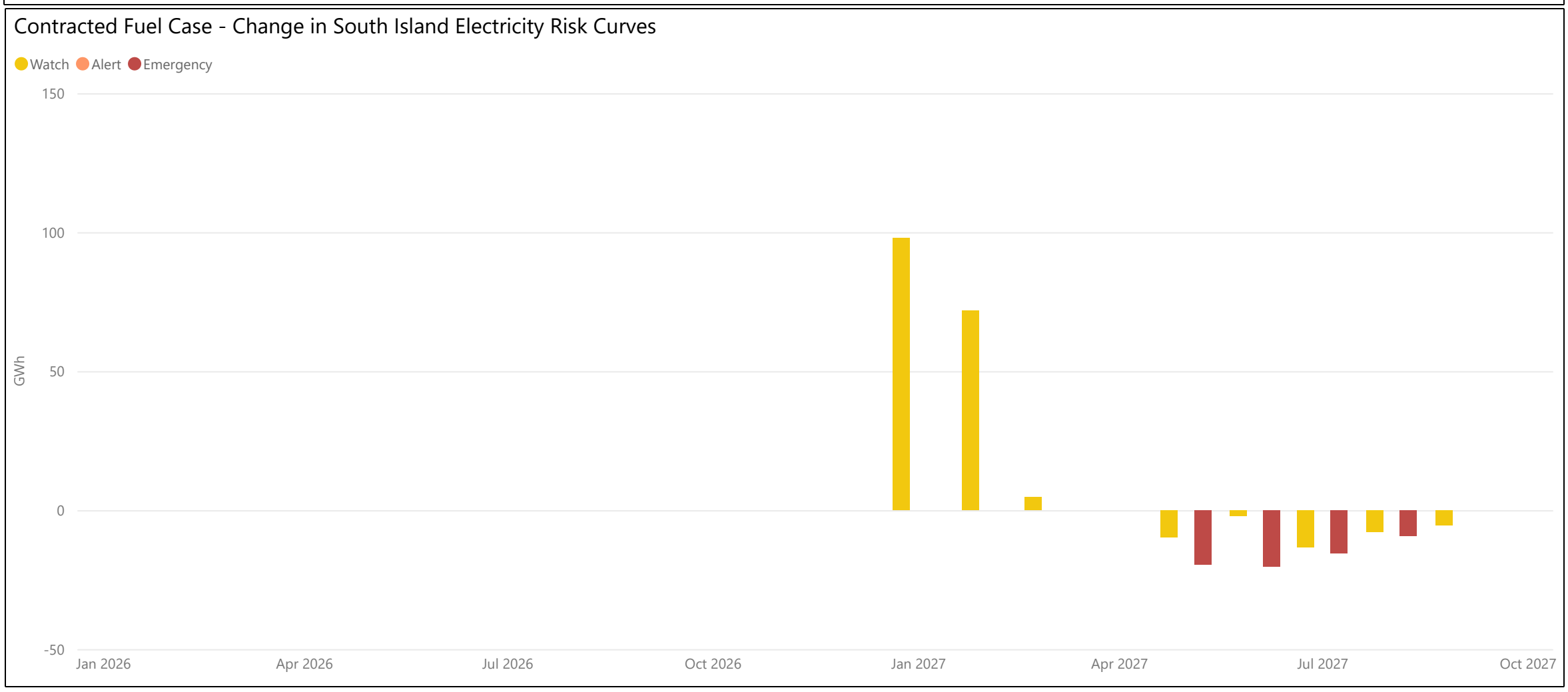
The New Zealand and South Island Watch curves are higher over summer 2027 and generally lower from April to August. The largest increases occur in January 2027, reaching up to 156 GWh for New Zealand and 98 GWh for the South Island.

The higher Watch curves over summer primarily reflect lower contracted gas availability in January and February, which reduces modelled thermal generation. Although the risk curves have increased during this time, the likelihood of reaching these is low as indicated by the Simulated Storage Trajectories.

Higher contracted gas availability from March contributes to lower risk curves from April.

The changes are also influenced by updated generation commissioning dates, including delays to several projects, increased generator outages and an additional HVDC outage in January 2027 compared to last month's update.





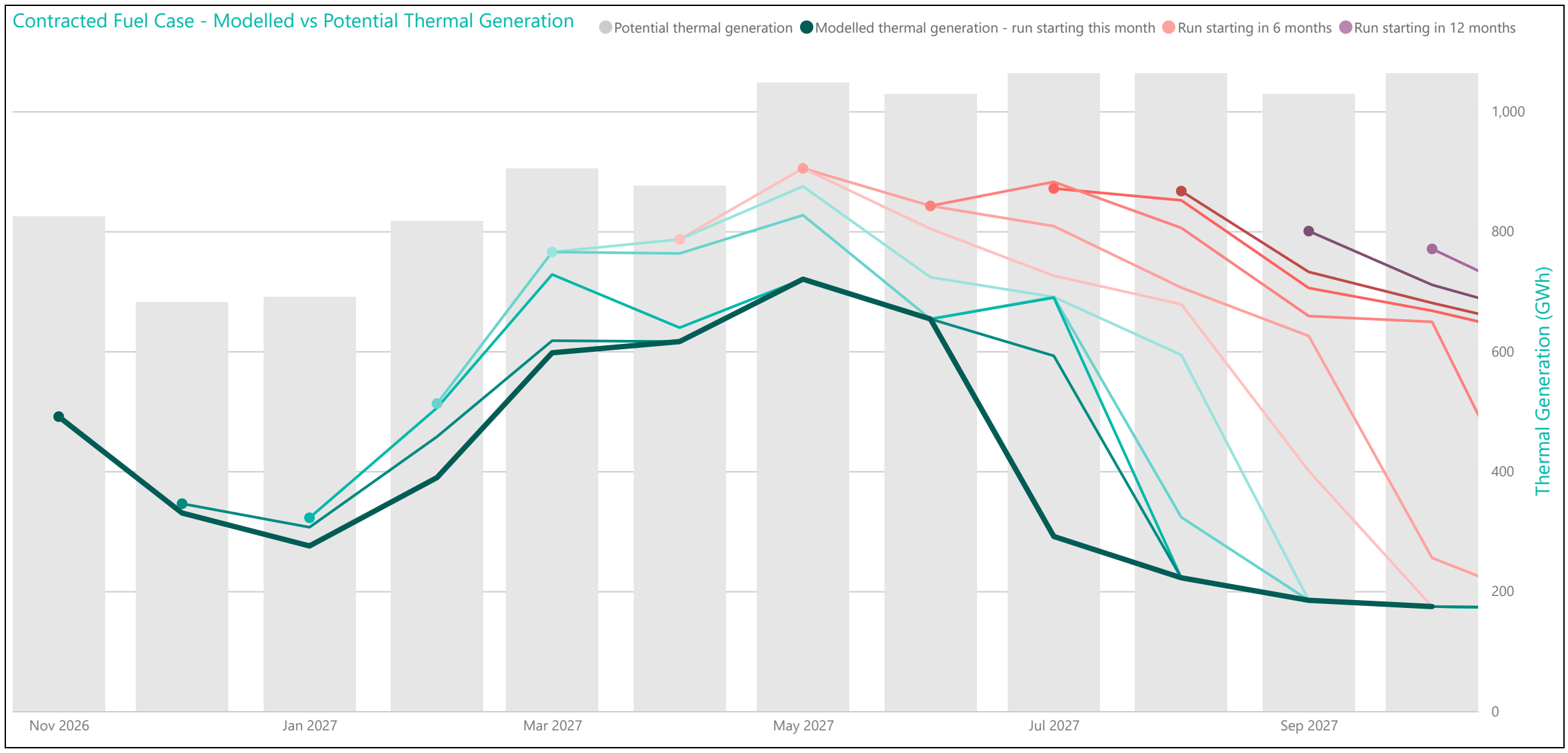
Contracted Fuel Case - Thermal Deratings

The Contracted Fuel Case includes fuel that's available under firm contracts. This includes the current coal stockpile, diesel storage and AGS gas reported as available for electricity generation. It does not assume additional coal or diesel imports unless they are already contracted. Modelled thermal generation is therefore limited by available thermal units, physical fuel delivery constraints and firm contracted fuel volumes.

In the chart below, potential thermal generation represents the total capacity of available units. Modelled thermal generation shows what those units could generate using the gas and coal available for electricity generation.

A separate model run begins each month, with its starting point shown by a dot. Each row in the table represents a separate run. Each run begins with the contracted coal and gas available at that time, with modelled generation generally declining initially as this fuel is used.

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	2026-11	2026-12	2027-01	2027-02	2027-03	2027-04	2027-05	2027-06	2027-07	2027-08	2027-09	2027-10
2026-11	491	330	275	389	597	616	720	654	291	222	185	174
2026-12		346	306	457	617	616	720	654	592	222	185	174
2027-01			322	505	728	639	720	654	689	222	185	174
2027-02				513	765	763	827	654	690	323	185	174
2027-03					765	786	875	723	690	594	185	174
2027-04						786	905	804	726	678	400	174
2027-05							905	842	808	706	625	255
2027-06								842	882	805	659	649
2027-07									871	851	705	667
2027-08										867	732	680
2027-09											800	711
2027-10												770

Contracted Fuel Case - Simulated Storage Trajectories

The November Contracted Fuel SST update is shown below. The hydro storage starting date is 16 November.

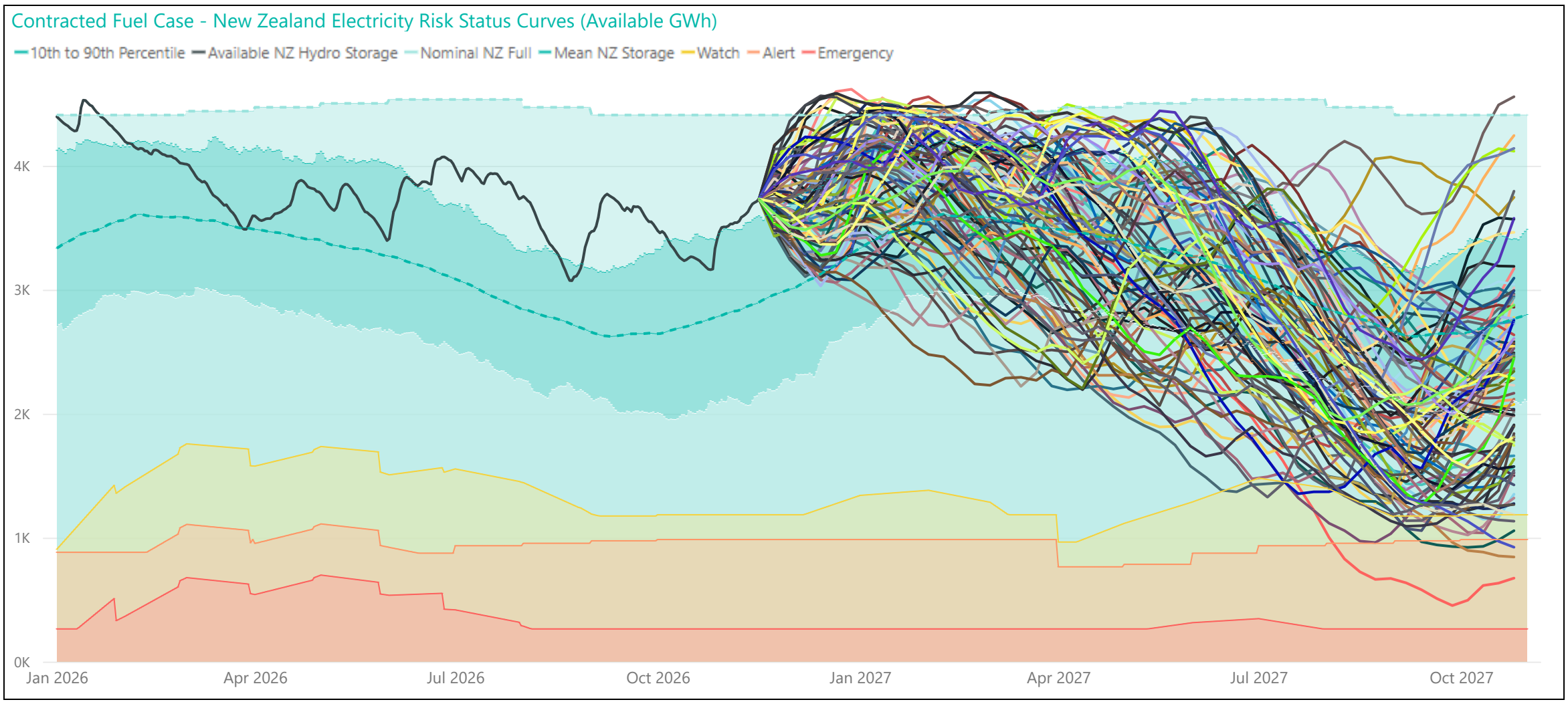
No SSTs cross any of the NZ or SI risk curves in 2026.

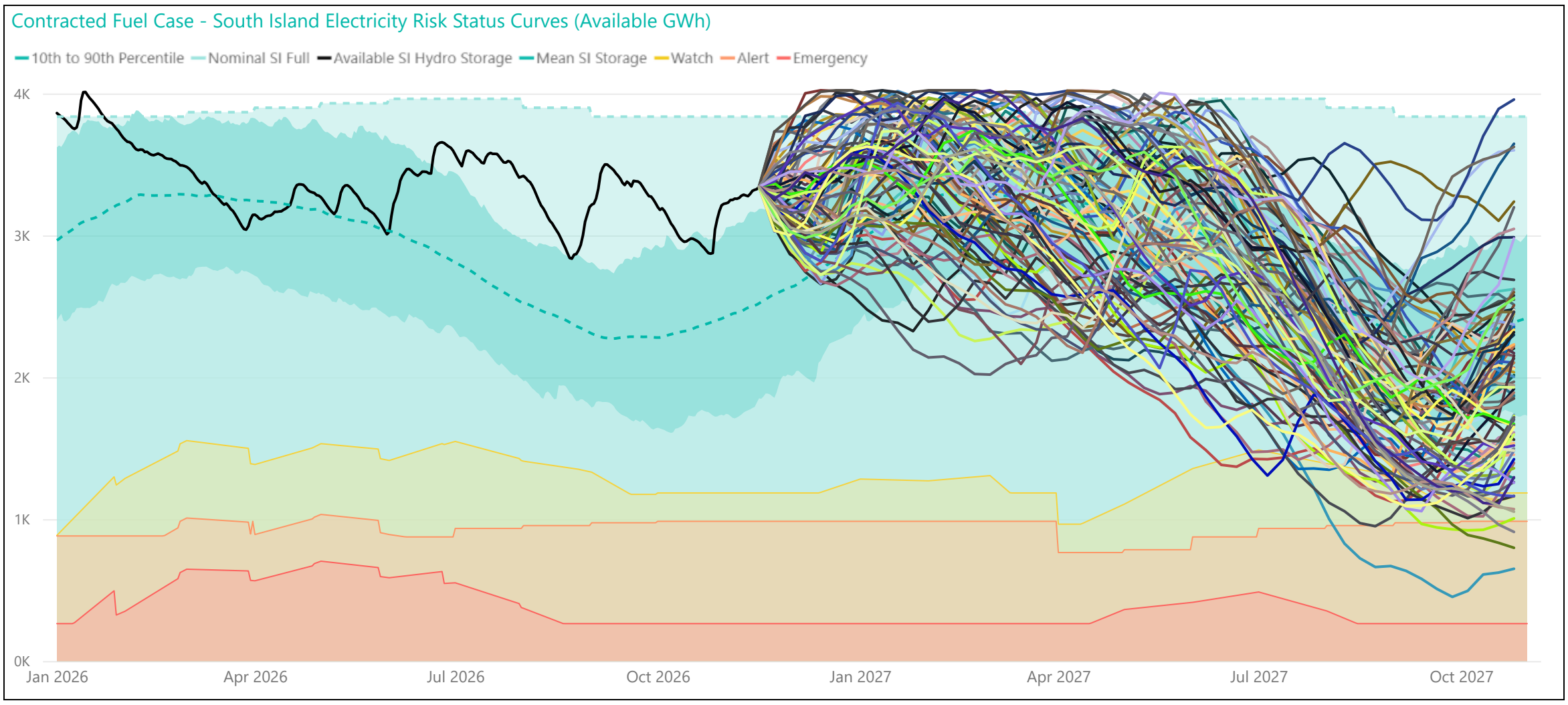
In mid-to-late 2027:

- 14 SSTs cross the New Zealand Watch curve, including four that also cross the New Zealand Alert curve; and
- 25 SSTs cross the South Island Watch curve, including five that also cross the South Island Alert curve.

More SSTs cross the Watch and Alert curves than in last month's Contracted Fuel Case update, reflecting reduced contracted gas availability in January and February 2027, increased generator outages and delayed generation commissioning. These changes increase reliance on hydro generation and contribute to greater storage drawdown, which is not necessarily reversed by higher contracted gas availability later in 2027.

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.





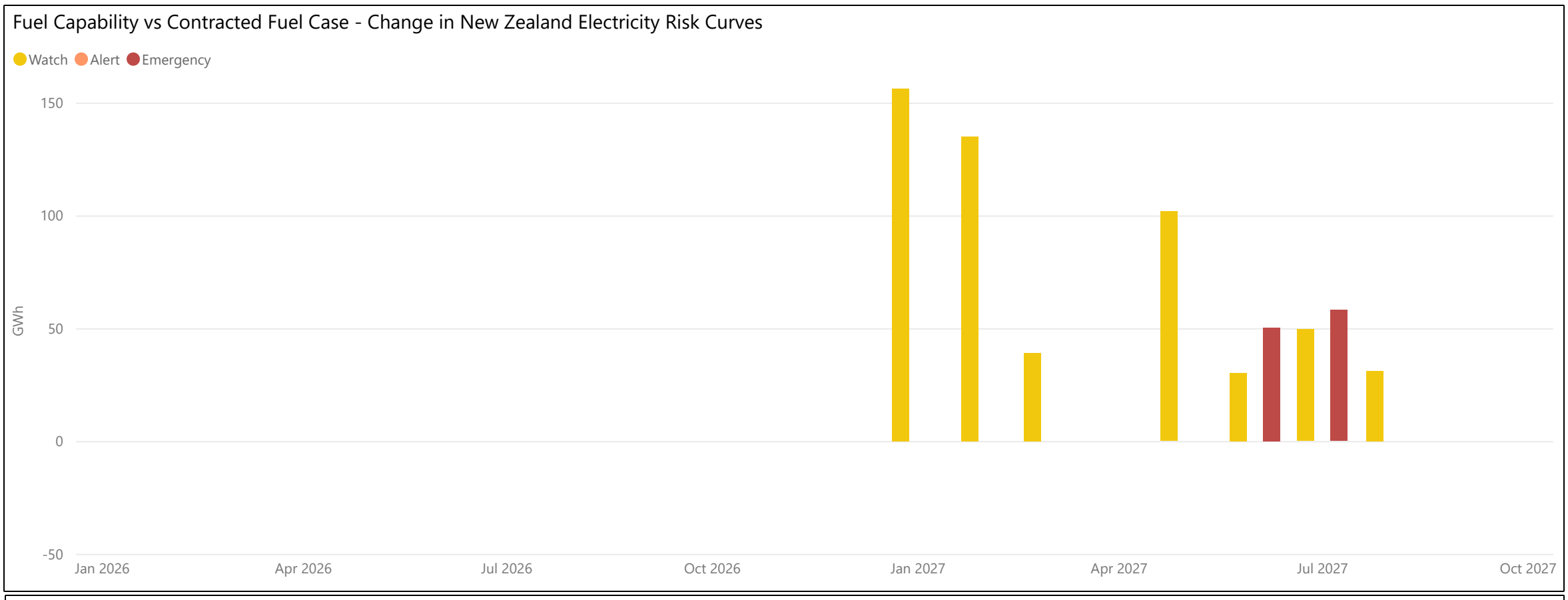
Contracted Fuel Case - Changes in the Electricity Risk Curves from Fuel Capability Case

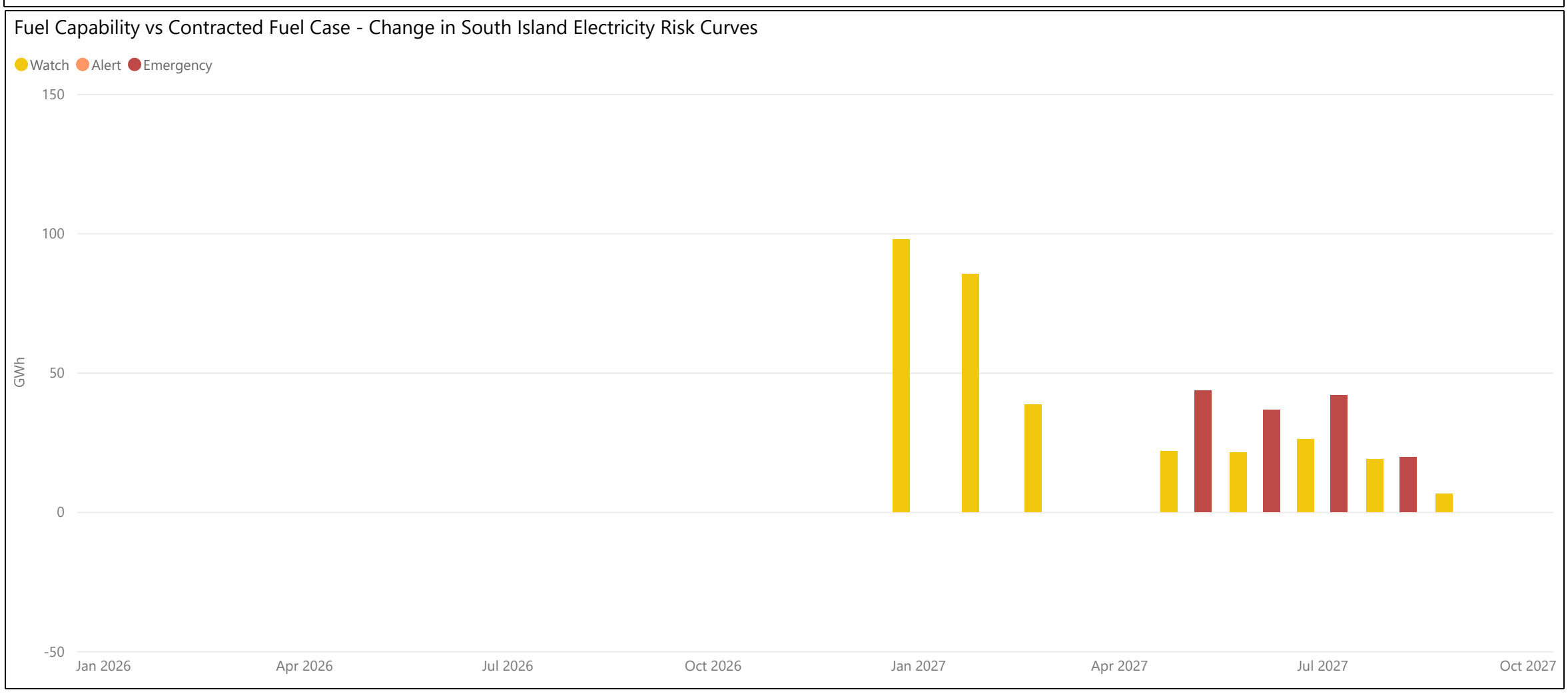
The charts below show the differences in the Watch, Alert and Emergency curves between the Contracted Fuel and Fuel Capability cases.

Current coal and gas storage levels remain healthy. Together with existing fuel contracts, this allows all available thermal generation capability to be delivered in 2026 under the Contracted Fuel Case.

In 2027, the Contracted Fuel risk curves are higher because current firm contracts do not cover all thermal fuel that could be physically sourced and used. The difference between the Contracted Fuel and Fuel Capability Watch curves is up to ~156 GWh, or 27 Rankine days.

This reflects the pool of physically available energy in 2027 that has not yet been commercially secured. The higher gap 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.





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

Thursday, 26 November 2026

This scenario uses the same inputs as the November Fuel Capability Case, except for the modelled implementation of the Lake Pūkaki storage easement.

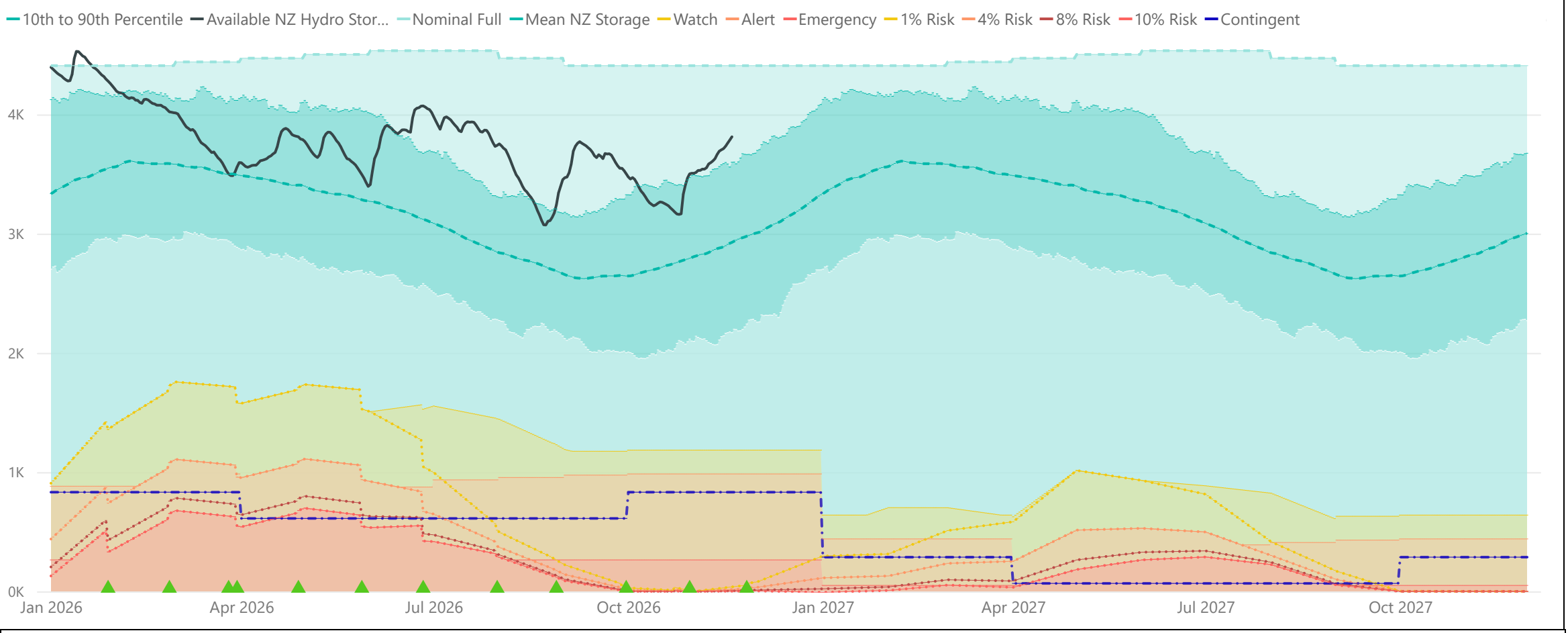
From 1 January 2027, the Lake Pūkaki contingent storage range between 518 m and 513 m RL is modelled as part of its normal operating range rather than contingent storage. This removes the modelled requirement for an Alert or Emergency status to be declared before this storage can be accessed.

Under the Security of Supply Forecasting and Information Policy (SOSFIP), this treatment reduces the contingent storage allowances incorporated into the risk status curve floors. This, by definition, reduces the risk status curves (Watch, Alert and Emergency) reflecting that less contingent storage is available at the applicable risk levels rather than a reduction in the risk.

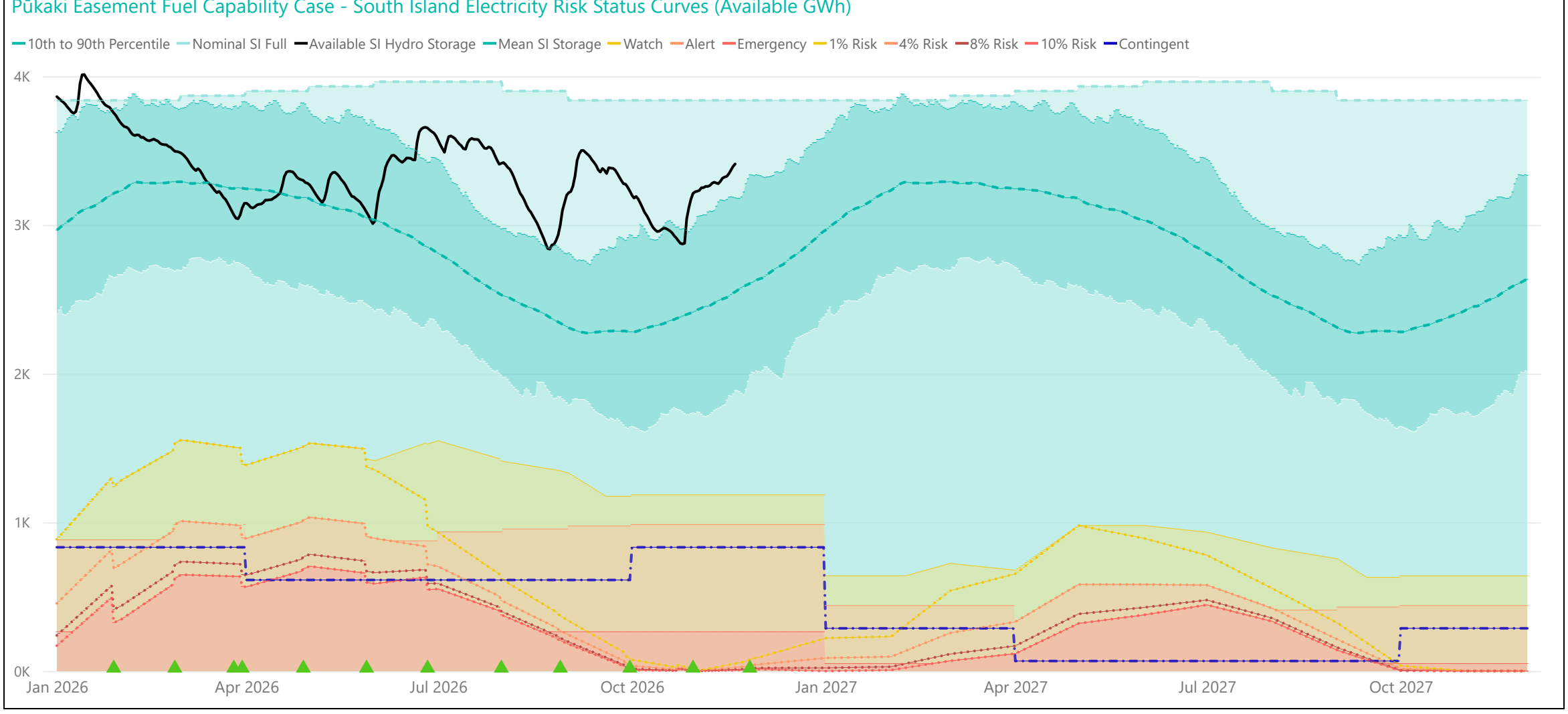
The Watch and Alert thresholds decrease by up to ~545 GWh, while the Emergency threshold decreases by up to ~214 GWh during 2027.

All other assumptions from the November 2026 Fuel Capability Case are retained, including Ahuroa Gas Storage and coal inventories, planned generator and HVDC outages, and updated generation commissioning dates.

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



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



Pūkaki Easement Fuel Capability Case - Simulated Storage Trajectories (SSTs)

Thursday, 26 November 2026

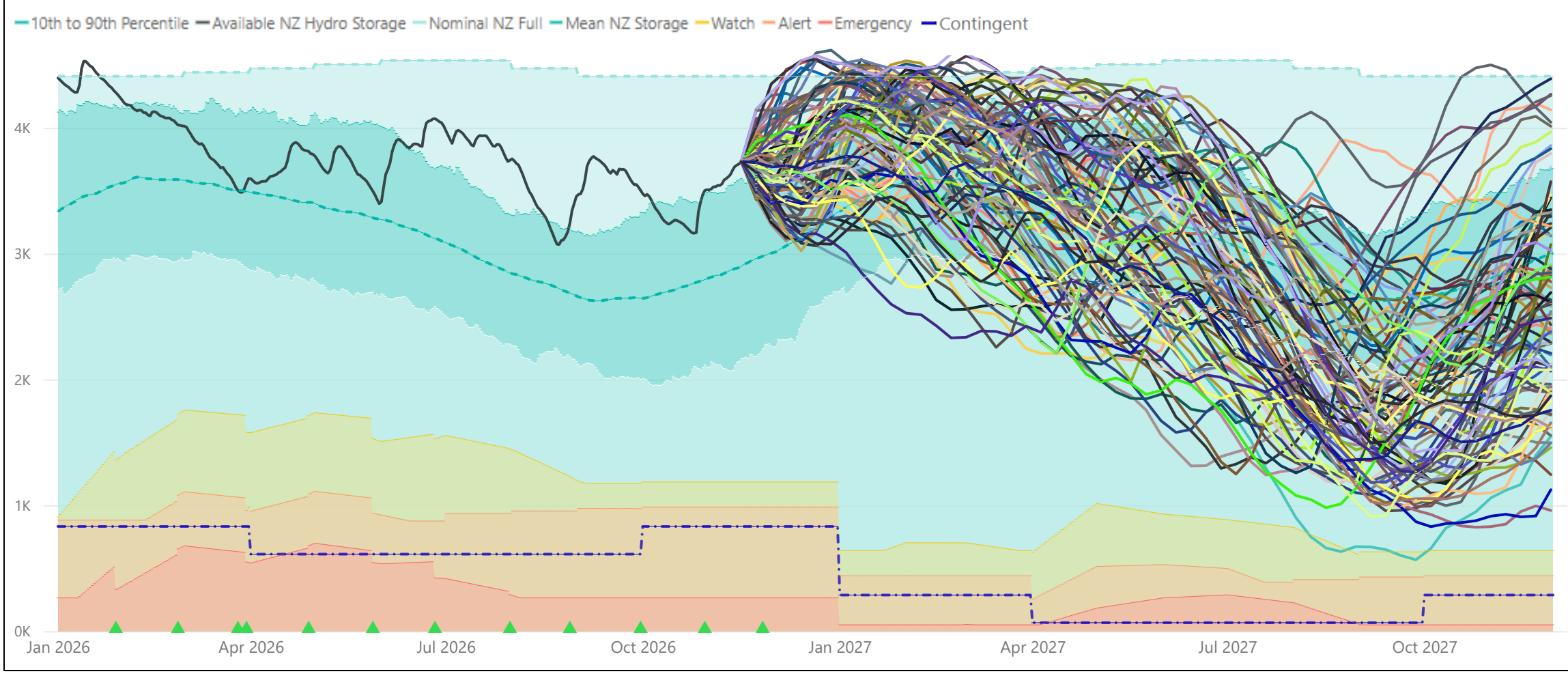
The November Pūkaki Easement SST results are shown below. The hydro storage starting date is 16 November.

No SSTs cross the New Zealand or South Island risk curves in 2026. In 2027:

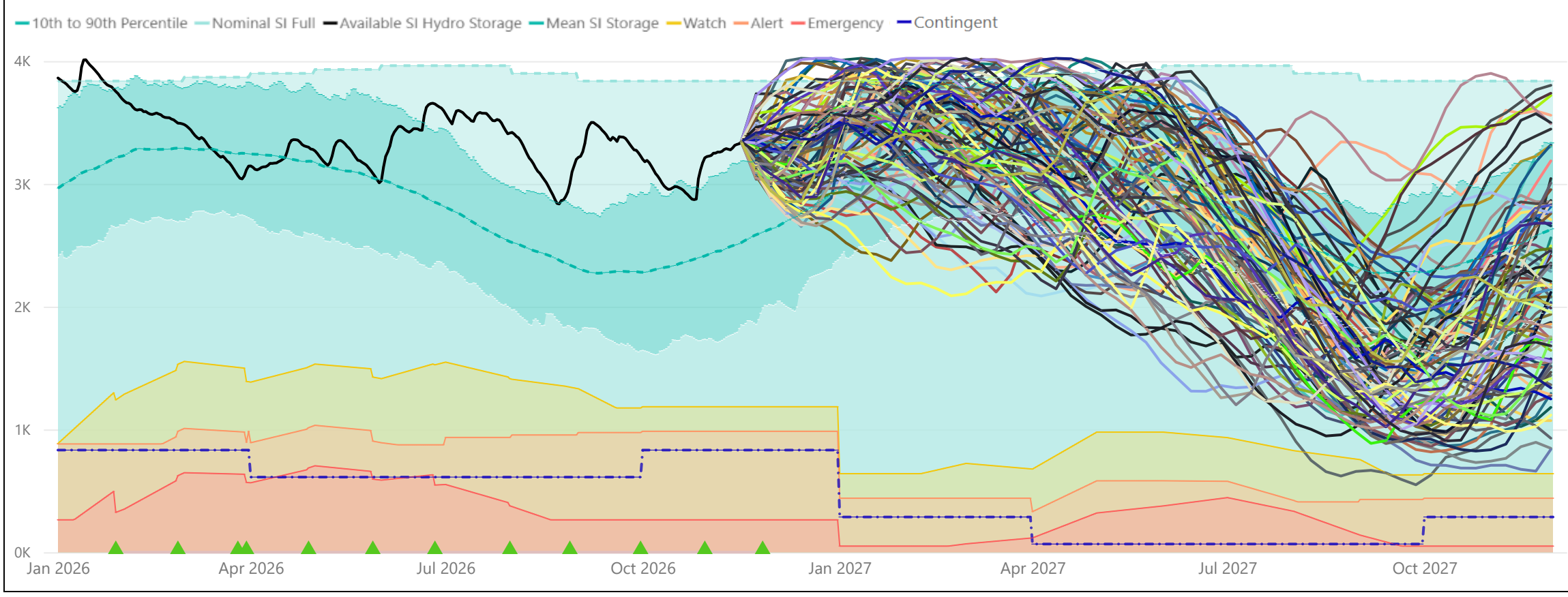
- one SST crosses the New Zealand Watch curve; and
- one SST crosses the South Island Watch curve.

Compared with the November Fuel Capability Case, simulated storage trajectories are lower because access to a wider normal operating range results in increased modelled hydro generation and lower hydro storage levels expected in Lake Pūkaki in 2027, all else being equal.

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



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



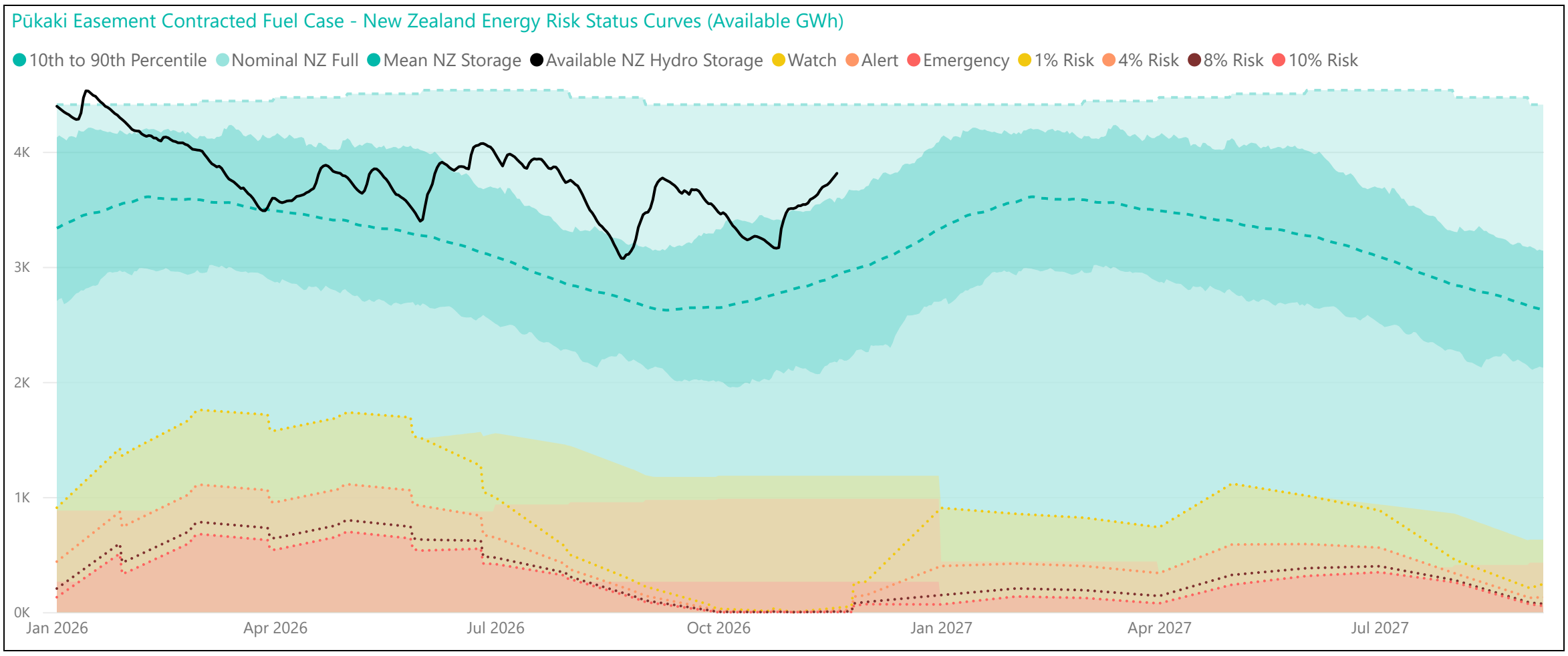
Pūkaki Easement Contracted Fuel Case - Electricity Risk Curves

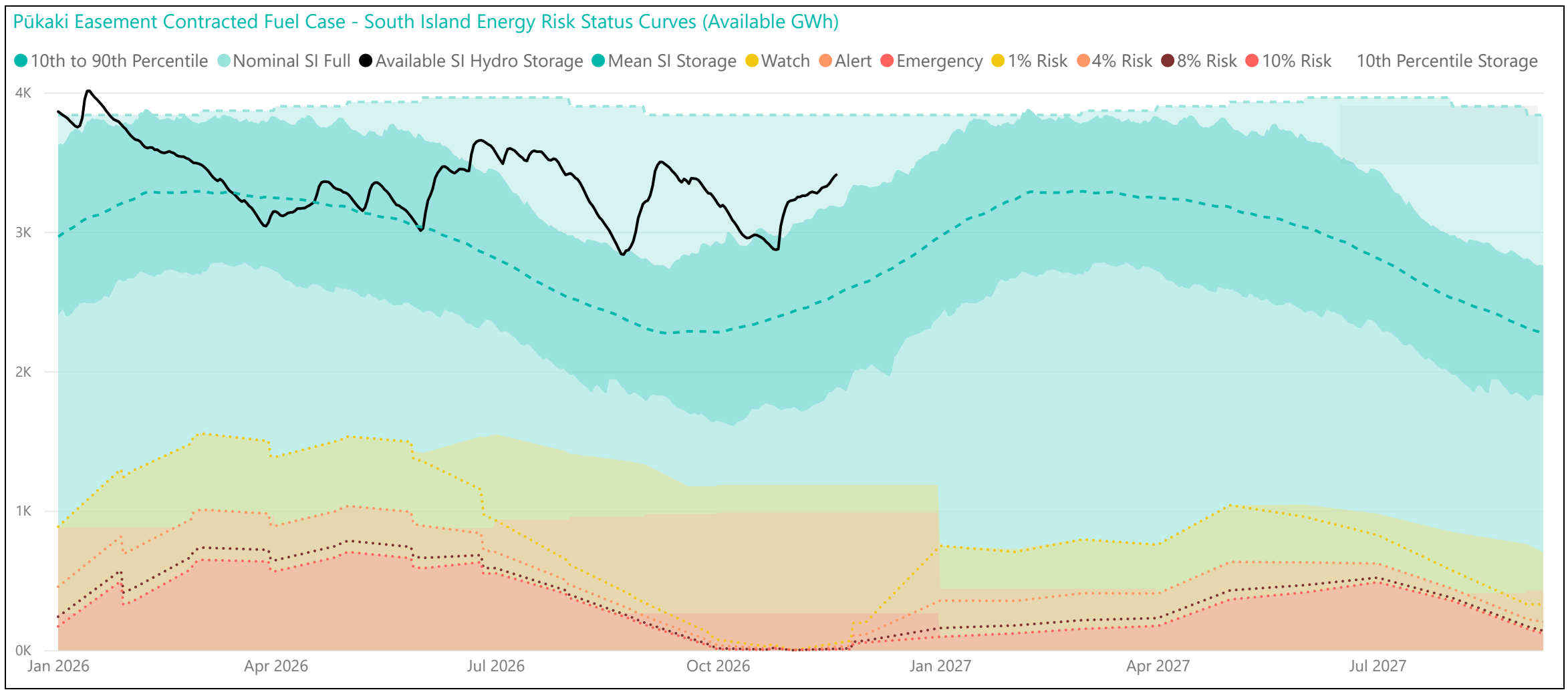
This scenario combines the modelled Lake Pūkaki storage easement with the Contracted Fuel Case, which limits thermal fuel to supplies currently secured through firm contracts. It has been implemented in accordance with the amended Security of Supply Forecasting and Information Policy (SOSFIP), which came into effect on 1 May.

As described in the Contracted Fuel Case section, firm contracts are sufficient to support full thermal-generation capability in 2026 but do not cover all thermal fuel that could be physically sourced and used in 2027.

The Lake Pūkaki easement lowers the Watch, Alert and Emergency thresholds by reducing the contingent storage incorporated into the status-curve floors. As discussed previously, this does not indicate a reduction in risk, rather reflects that less hydro storage is reserved for access after a security status is declared.

Additional thermal-fuel contracting could narrow the gap between the Contracted Fuel and Fuel Capability risk curves and reduce modelled energy security risk under the Contracted Fuel Case.





Pūkaki Easement Contracted Fuel Case - Simulated Storage Trajectories

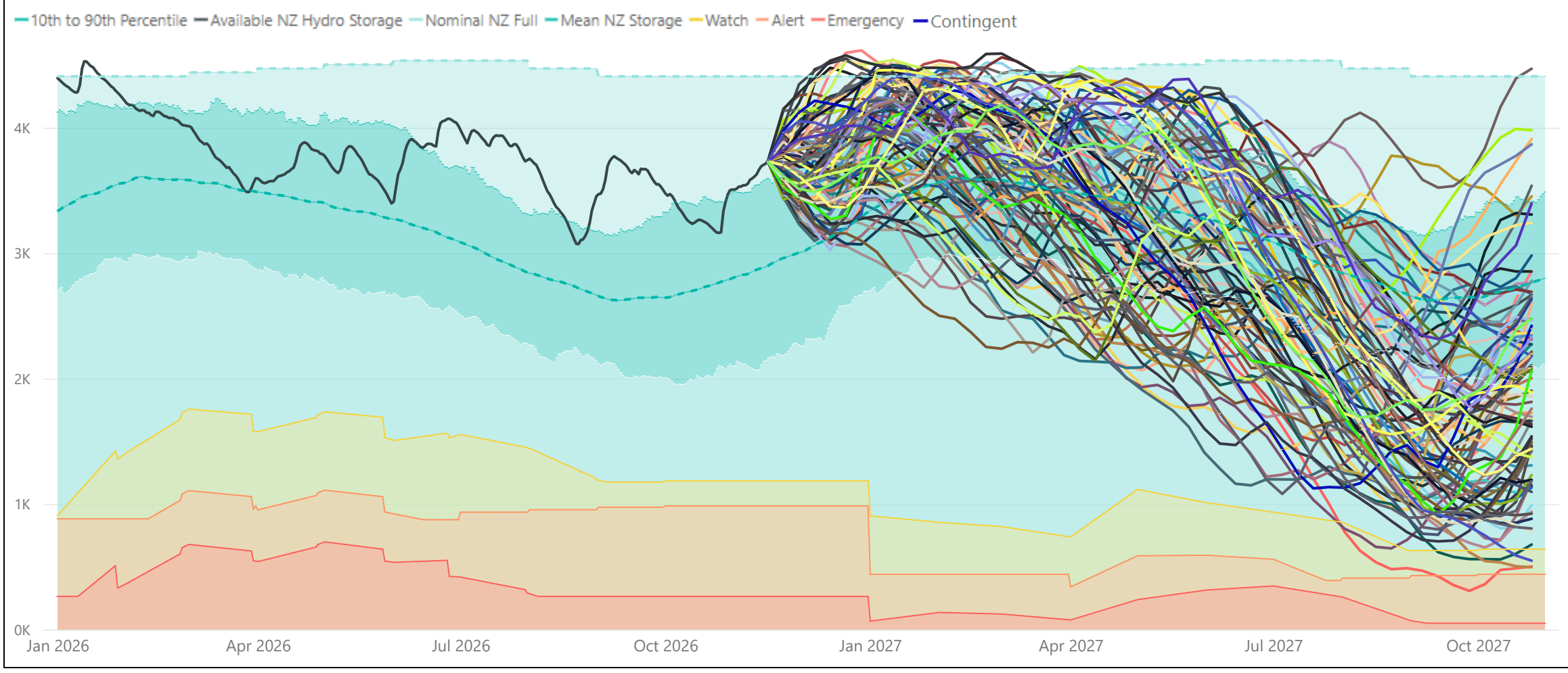
The November Pūkaki Easement Contracted Fuel SST results are shown below. The hydro storage starting date is 16 November.

No SSTs cross the New Zealand or South Island risk curves in 2026. In 2027:

- five SSTs cross the New Zealand Watch curve, including one that also crosses the New Zealand Alert curve; and
- nine SSTs cross the South Island Watch curve, including two that also cross the South Island Alert curve.

The combination of a wider normal operating range for Lake Pūkaki and limits on contracted thermal fuel results in lower simulated storage trajectories. Compared with the November Contracted Fuel case, the trajectories are slightly lower during 2026, reflecting the modelled effect of the wider operating range from 1 January 2027. The difference increases in 2027, leaving less stored hydro energy available under stressed system conditions.

Pūkaki Easement Contracted Fuel Case - New Zealand Electricity Risk Status Curves (Available GWh)



Pūkaki Easement Contracted Fuel Case - South Island Electricity Risk Status Curves (Available GWh)

