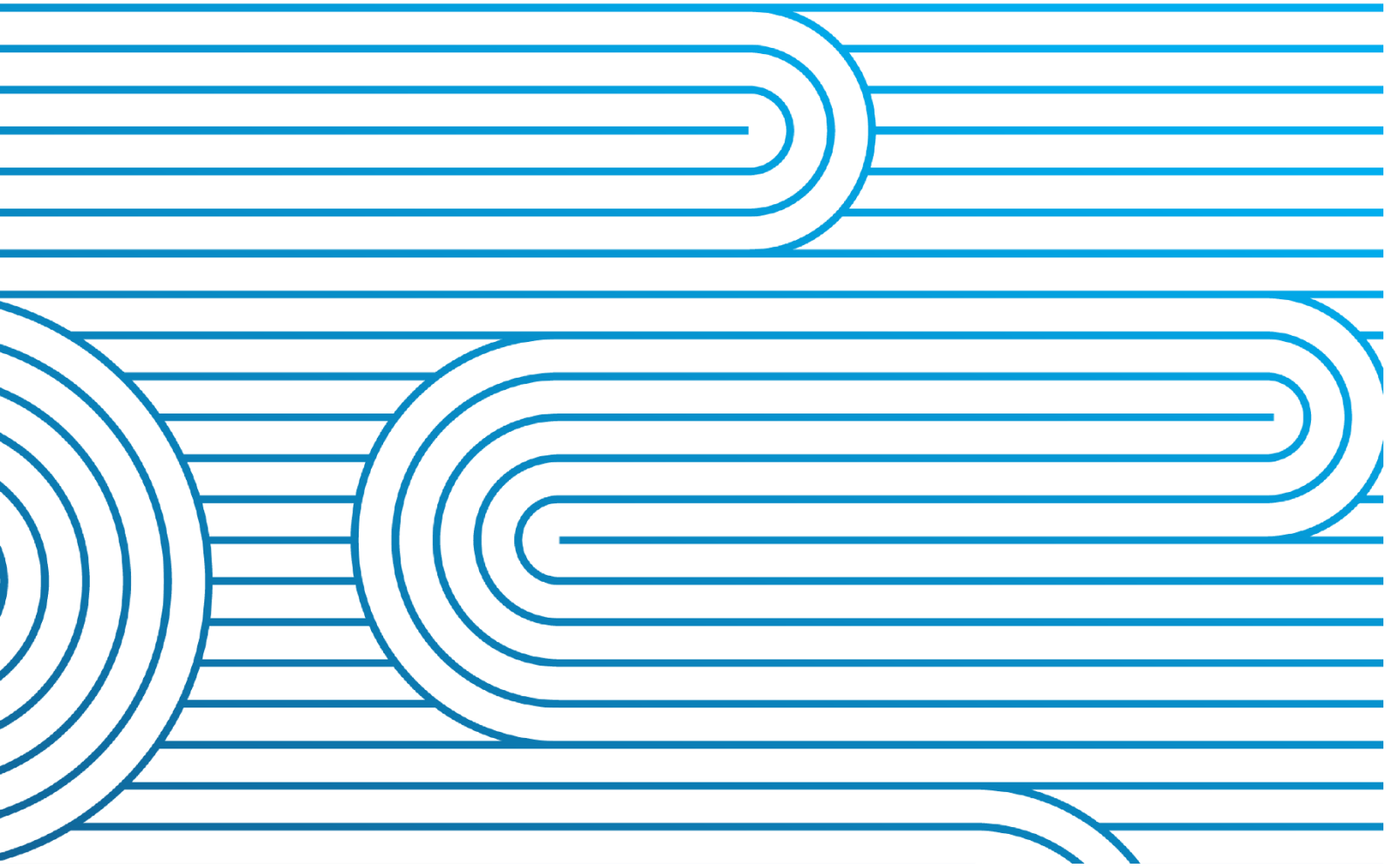
TRANSPOWER

Quarterly system performance information

October to December



Report Purpose

This report is Transpower's review of its performance as system operator in accordance with clauses 3.13 of the Electricity Industry Participation Code 2010 (the Code) and 12.3 of the System Operator Service Provider Agreement (SOSPA):

3.13 Self-review must be carried out by market operation service providers

*(1) Each **market operation service provider** must conduct, on a monthly basis, a self-review of its performance.*

*(2) The review must concentrate on the **market operation service provider's** compliance with—*

*(a) its obligations under this Code and Part 2 and Subpart 1 of Part 4 of the **Act**; and*

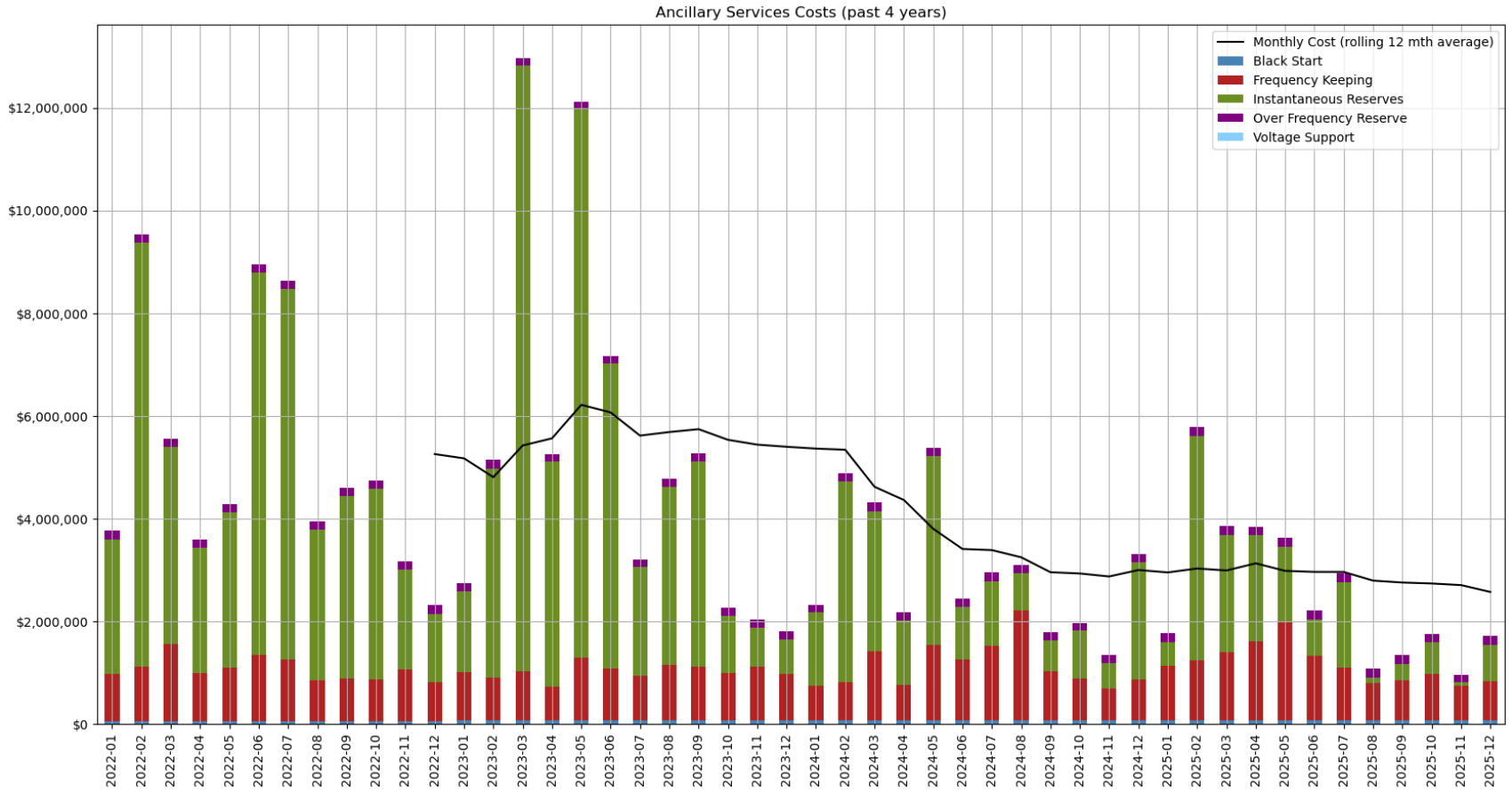
*(b) the operation of this Code and Part 2 and Subpart 1 of Part 4 of the **Act**; and*

*(c) any performance standards agreed between the **market operation service provider** and the **Authority**; and*

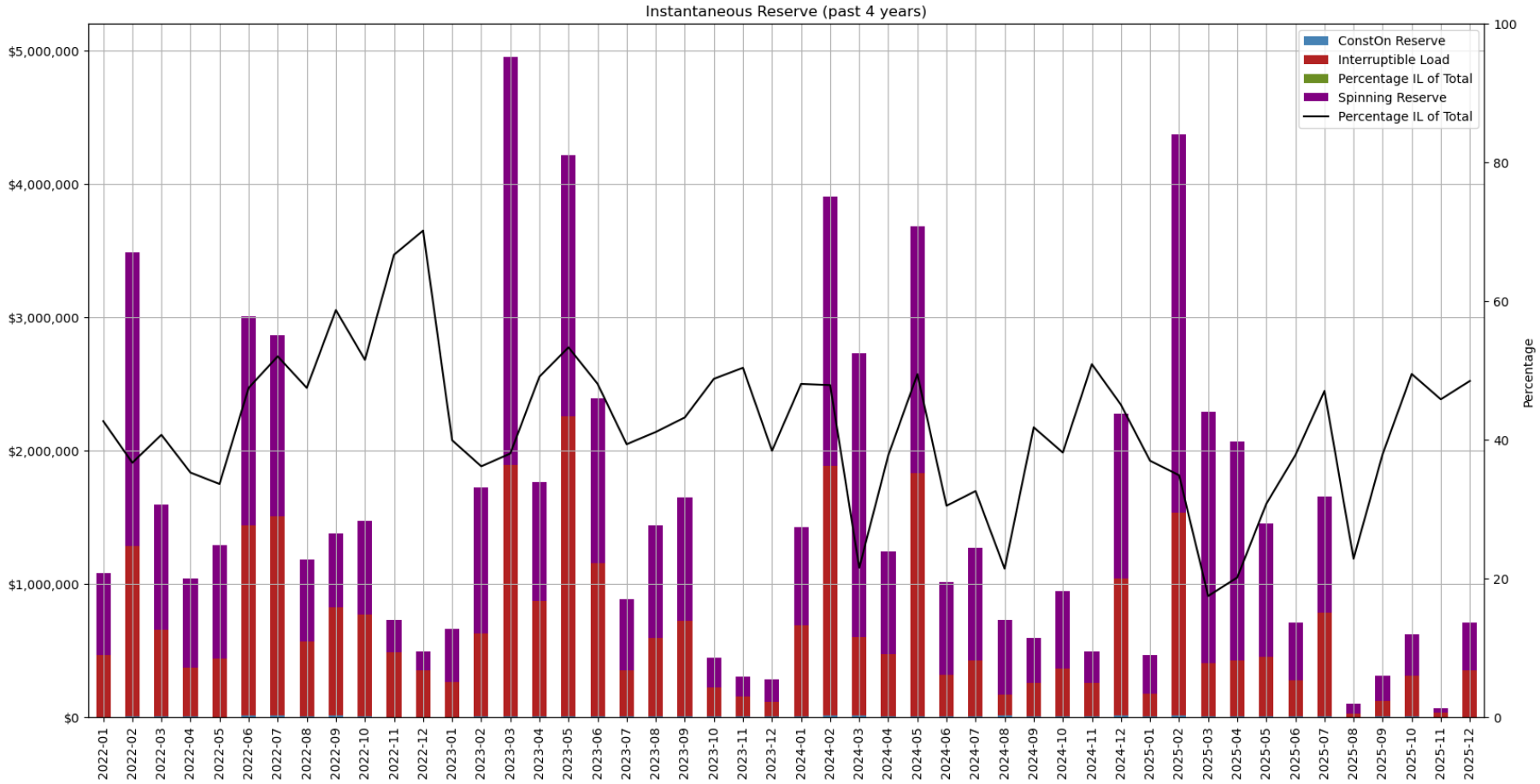
*(d) the provisions of the **market operation service provider agreement**.*

Contents

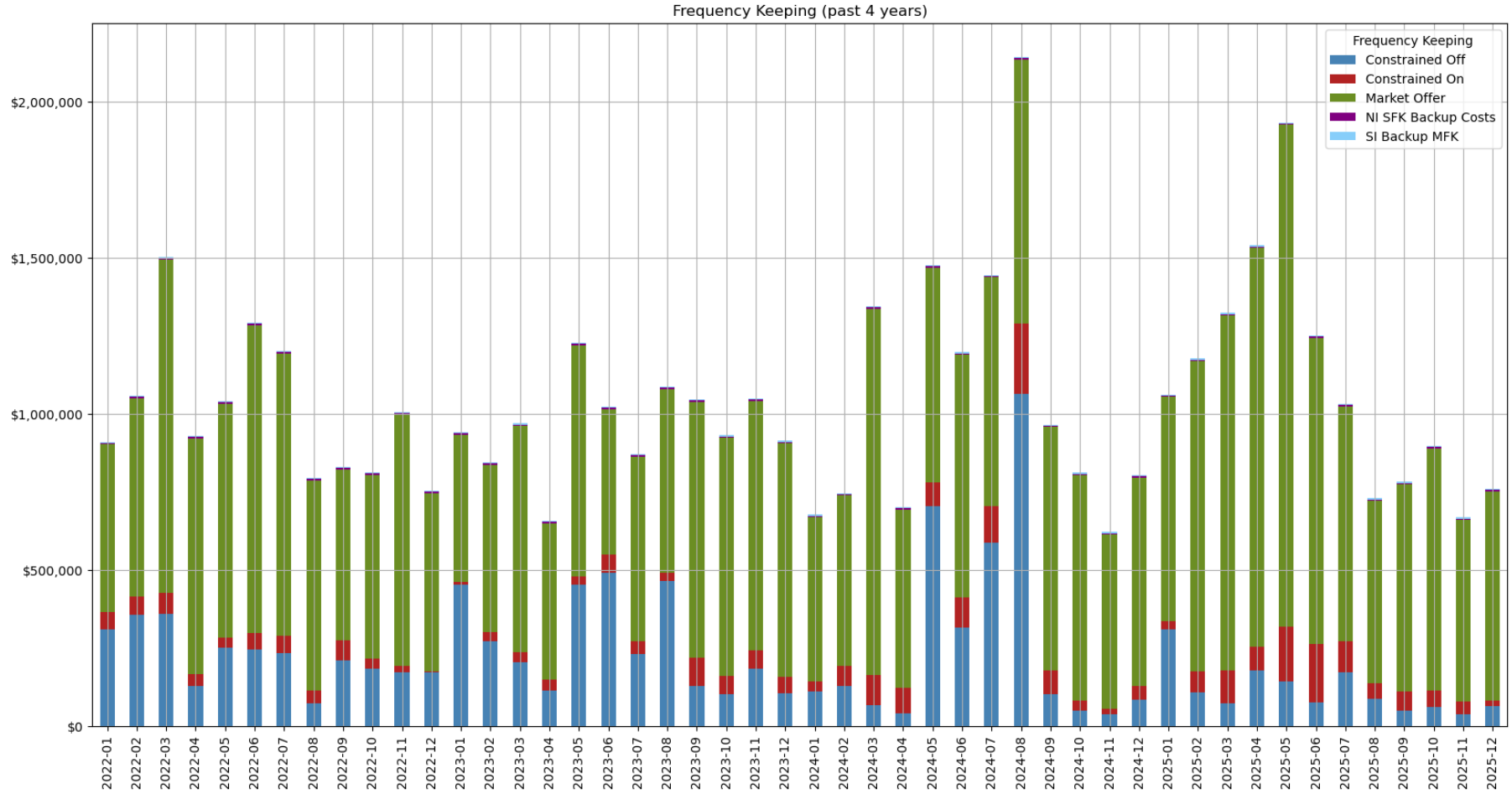
1. Ancillary services costs



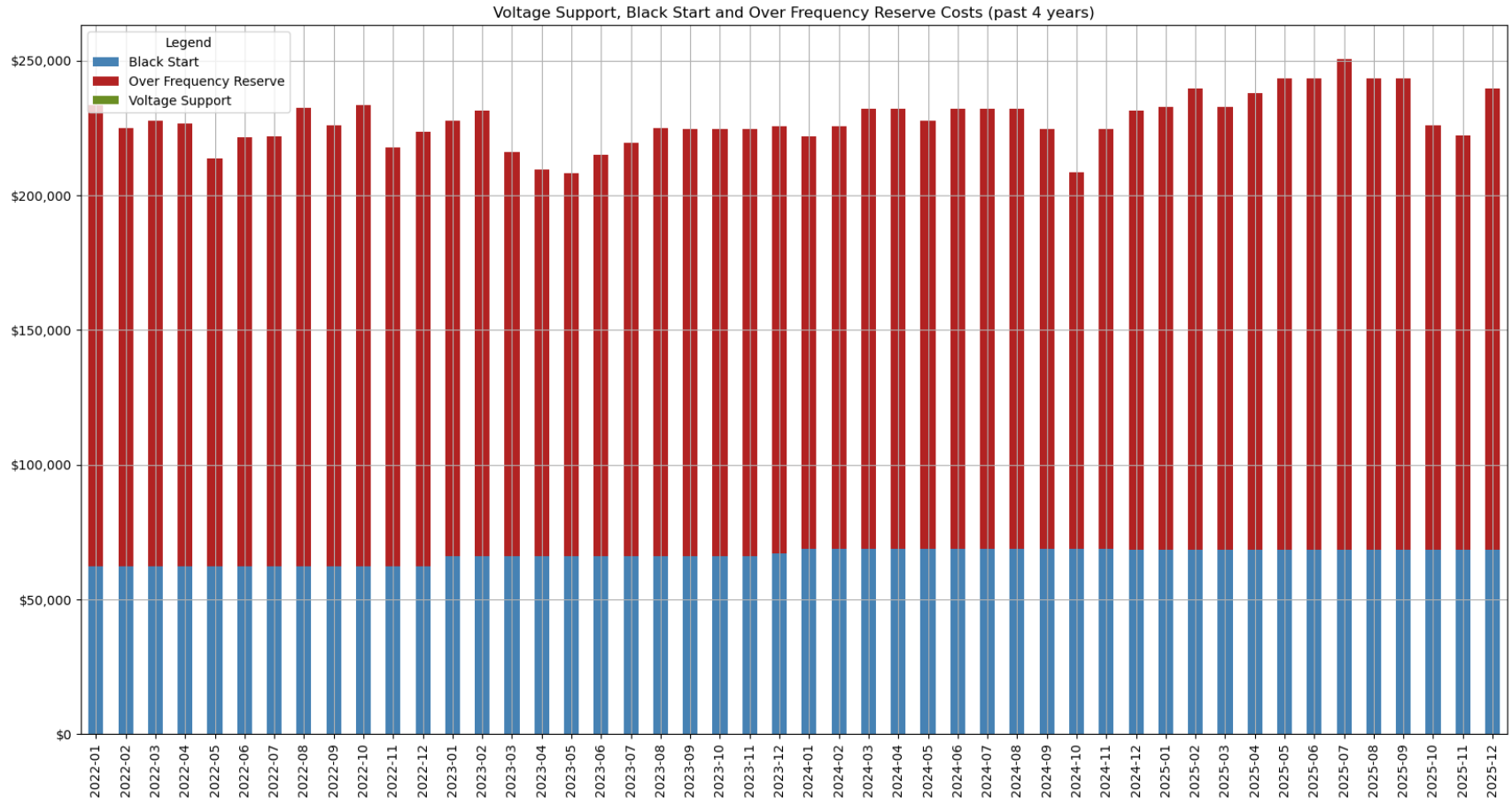
Ancillary service costs were lower this quarter than the previous quarter. The decrease was driven by a decrease in the instantaneous reserve cost, shown in the following plot.



Instantaneous reserve costs were lower this quarter than last quarter particularly in November. Costs decreased this quarter as higher priced thermal generation was backed off as temperatures rose and demand decreased. High levels of storage in the South Island hydro catchments also resulted in fewer high priced North Island reserves being required to cover the risk in the South Island. However, generator and HVDC outages and changeable spring/shoulder conditions led to price volatility as higher priced thermal and peaking generation was needed intermittently.



There was a decrease in frequency keeping costs this quarter in both islands. The decrease was driven by reductions to constrained on and constrained off frequency keeping costs.

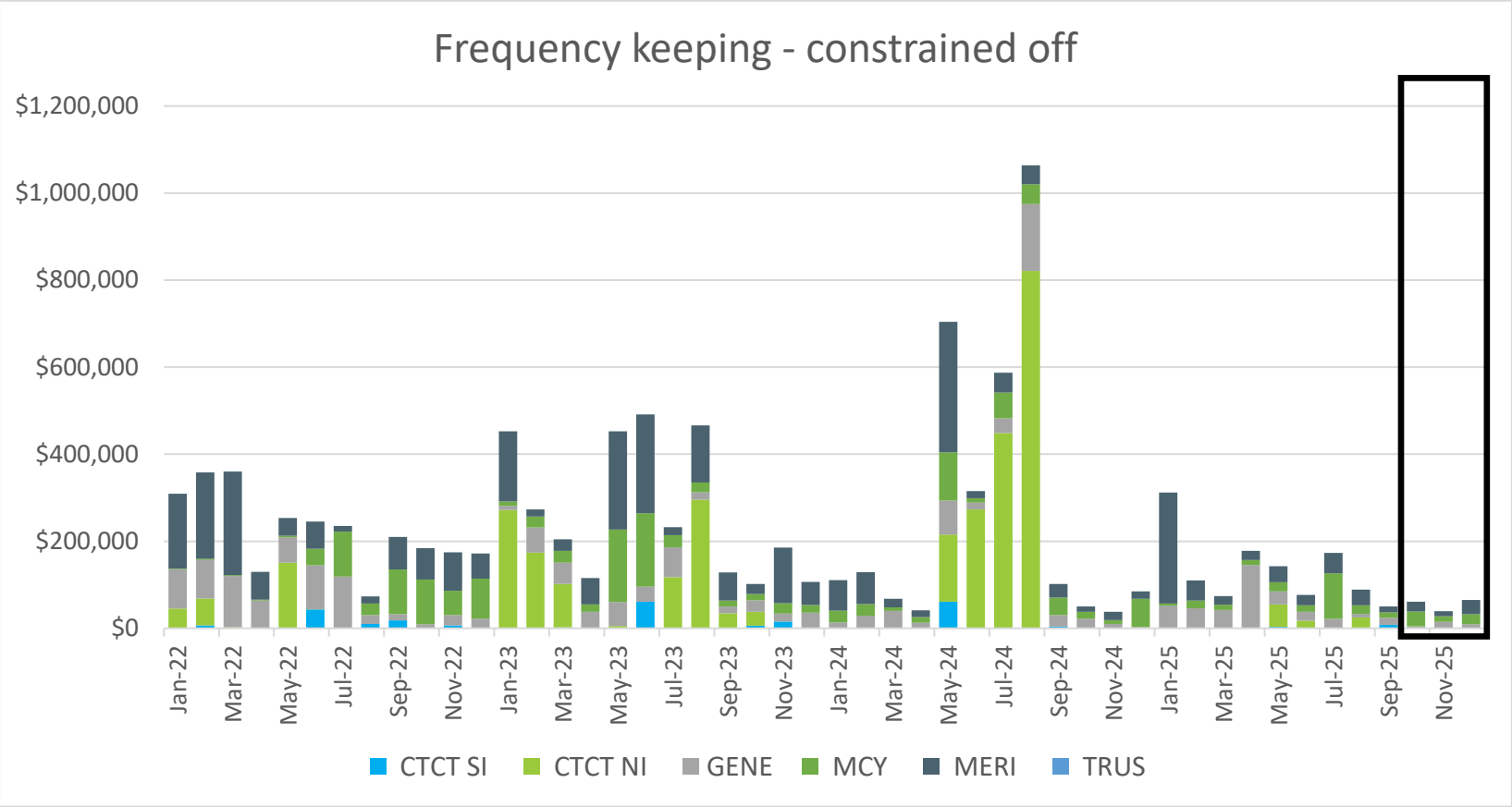


Over frequency reserve costs were lower this quarter reflecting decreased availability of generator units which provide these services. Black start costs remained the same.

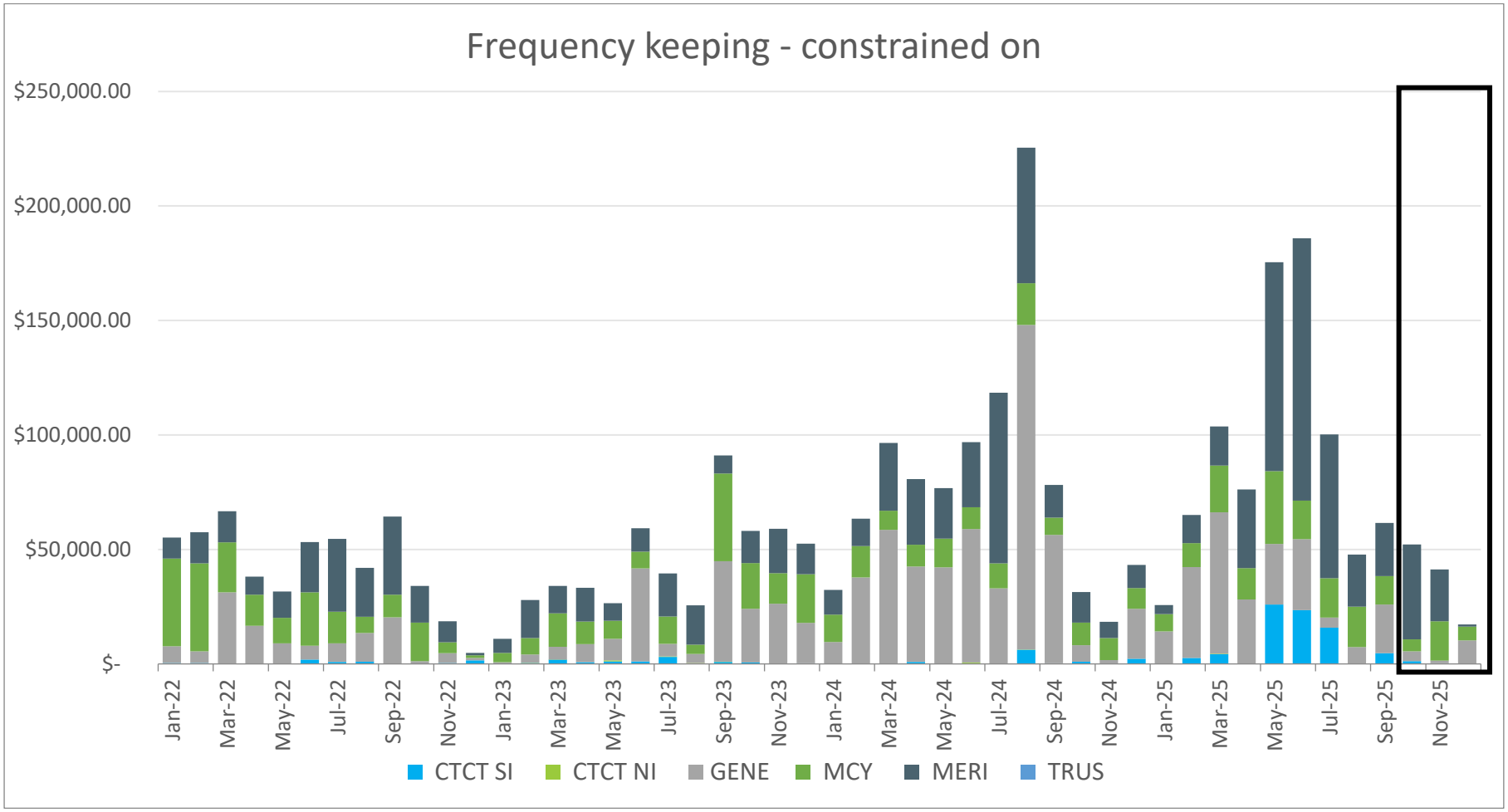
1.1 Constrained on/off costs

Note: Where there is a high payment, as opposed to in increasing/decreasing trend, it will often relate to payments over a small number of trading periods.

Frequency Keeping

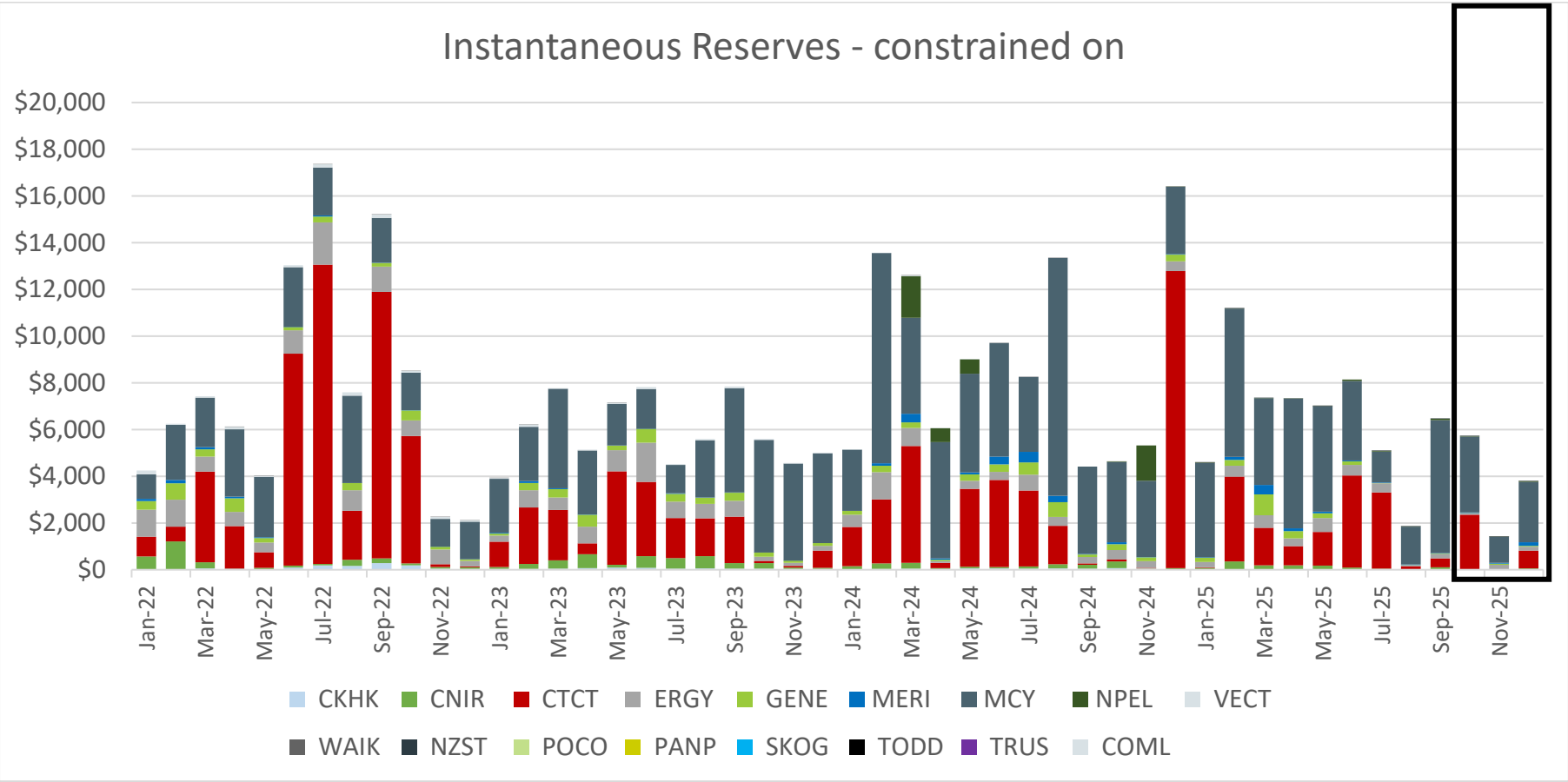


Constrained off costs have fallen this quarter. The decrease in costs can mainly be attributed to the lower market prices for generation compared to the previous quarters.



Constrained on costs decreased this quarter reflecting lower market prices for generation. The decrease in costs can be attributed to the lower market prices compared to the previous quarters with high levels of storage in hydro catchments in the South Island. Some of the reduction can also be attributed to the Manapouri units not being available as frequency keepers. However overall, these costs are still relatively low compared to other ancillary service costs.

Instantaneous Reserves



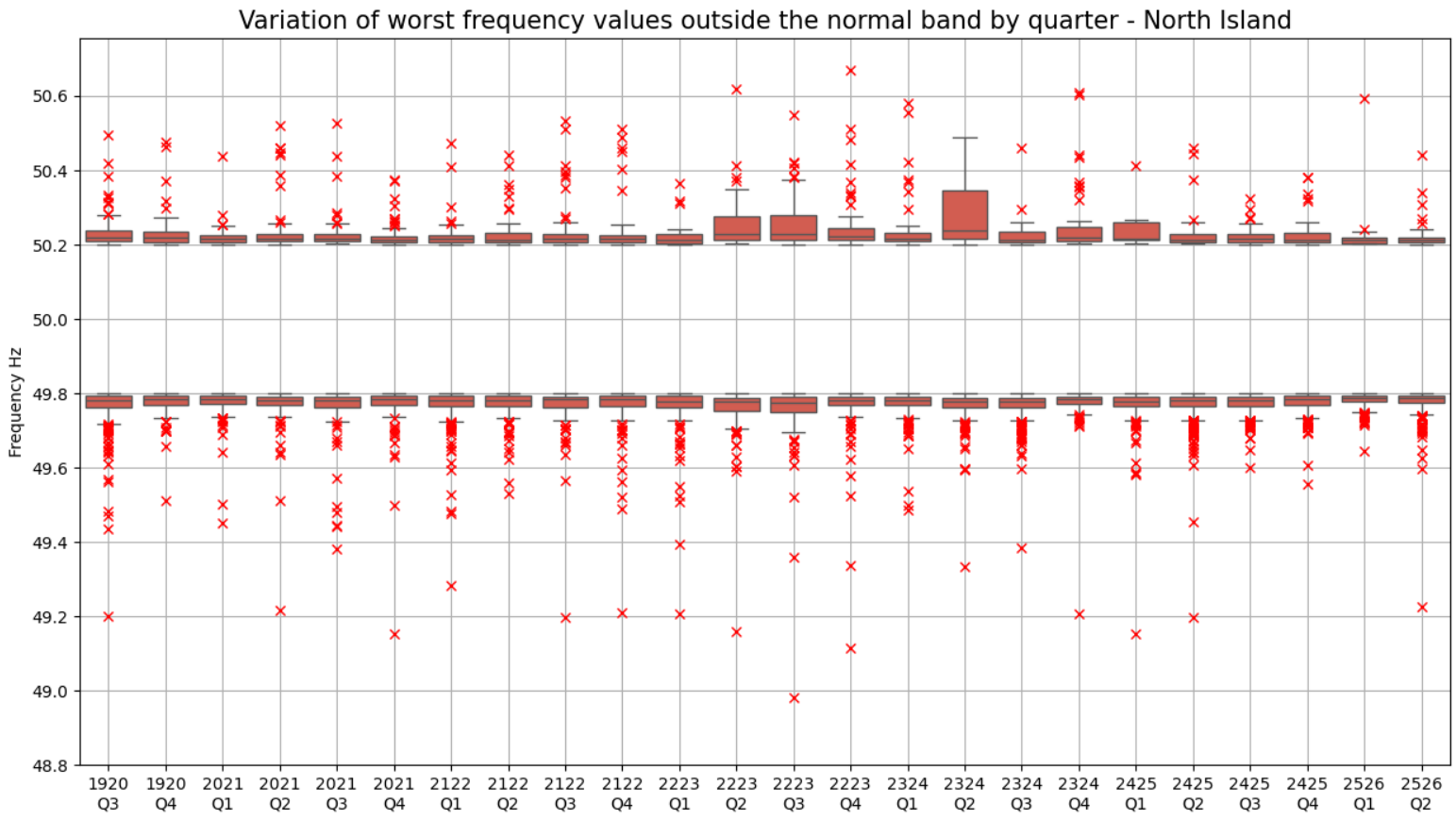
Costs decreased further this quarter compared to last quarter. These costs are relatively low compared to other ancillary service costs.

2. Frequency fluctuations

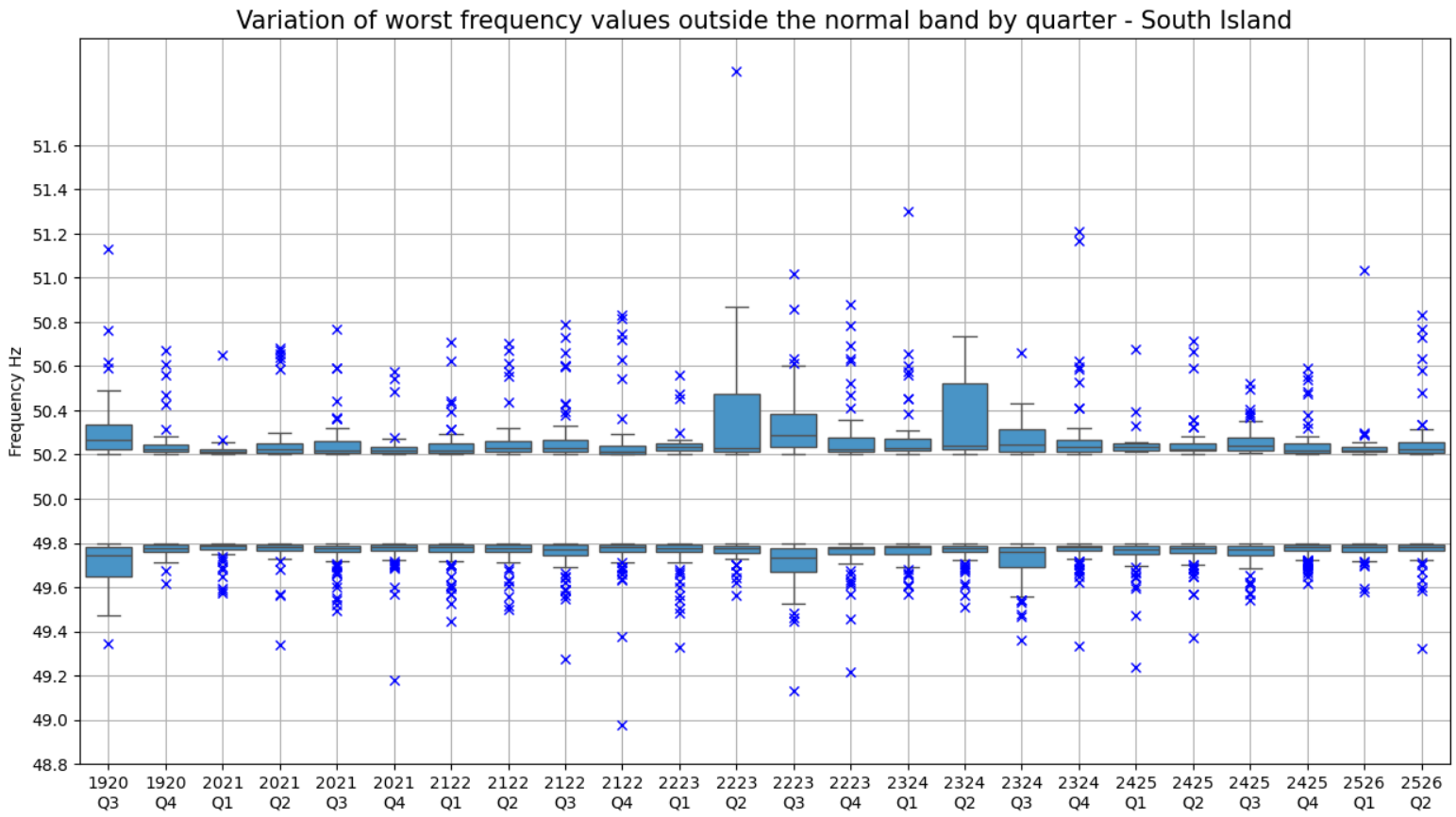
2.1 Maintain frequency in normal band (Frequency value)

The following charts show the distribution of the worst frequency excursion outside the normal band (49.8 to 50.2 Hz) by quarter, including the reporting period.

North Island



South Island



Note: These box and whisker charts show the distribution of data. The “box” represents the distribution of the middle 50% of the data, the “whiskers” indicate variability, and outliers are shown as single data points.

Excursions ± 0.5 Hz of the normal band this quarter:

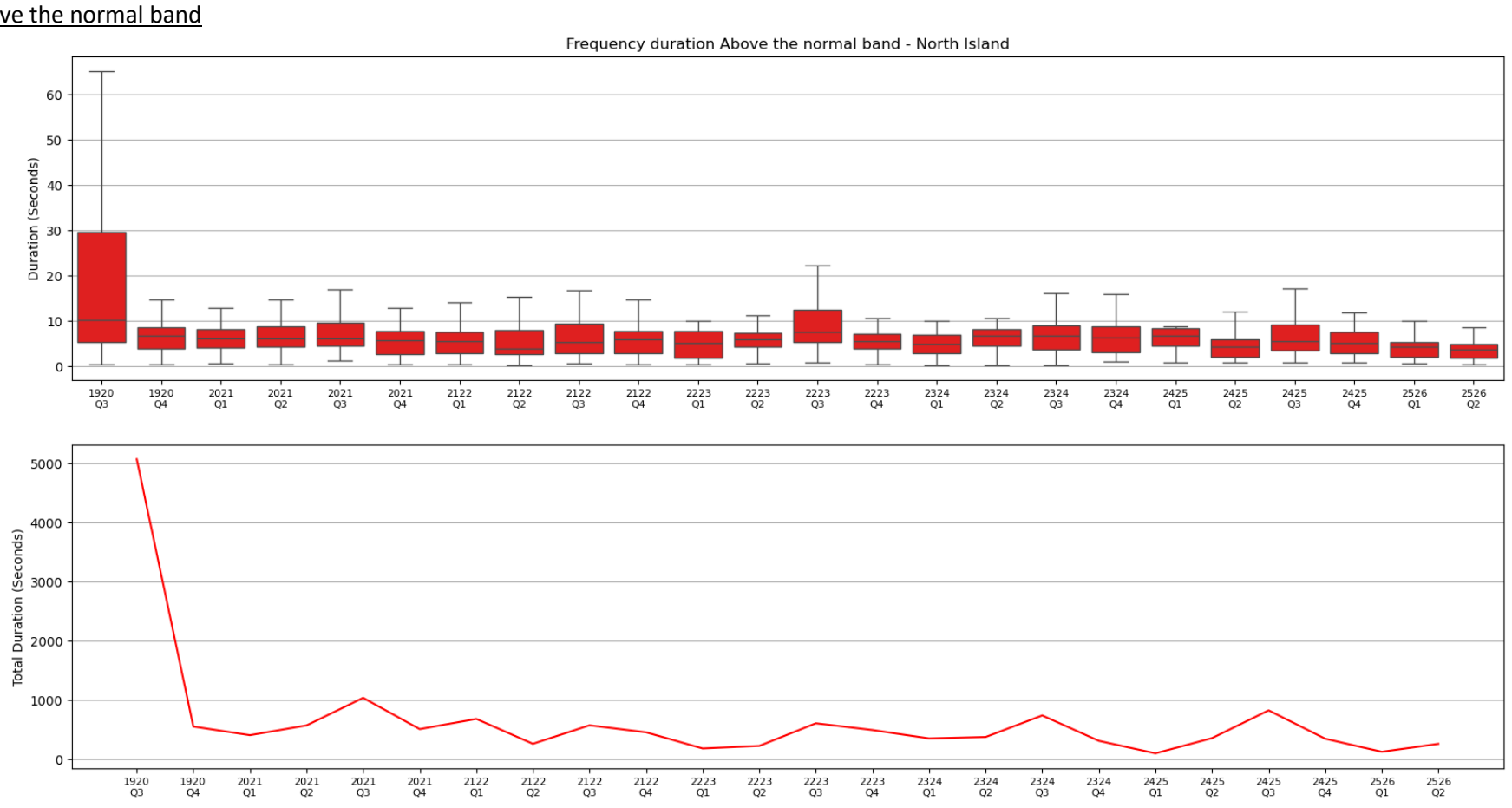
	Above	Below
October	TWI Potline 08/10, 13/10, 23/10 ISL-KIK trip 23/10 HVDC Pole 3 trip 23/10	HVDC Pole 3 trip 23/10 TAB & TAC generation trip 23/10 MAN G5 trip 27/10
November	TWI Potline 13/11, 24/11, 25/11	
December	TWI Potline 04/12, 14/12, 16/12, 17/12, 21/12	TAB & TOPP2 trip 21/12

2.1.1 Recover quickly from a fluctuation (Time)

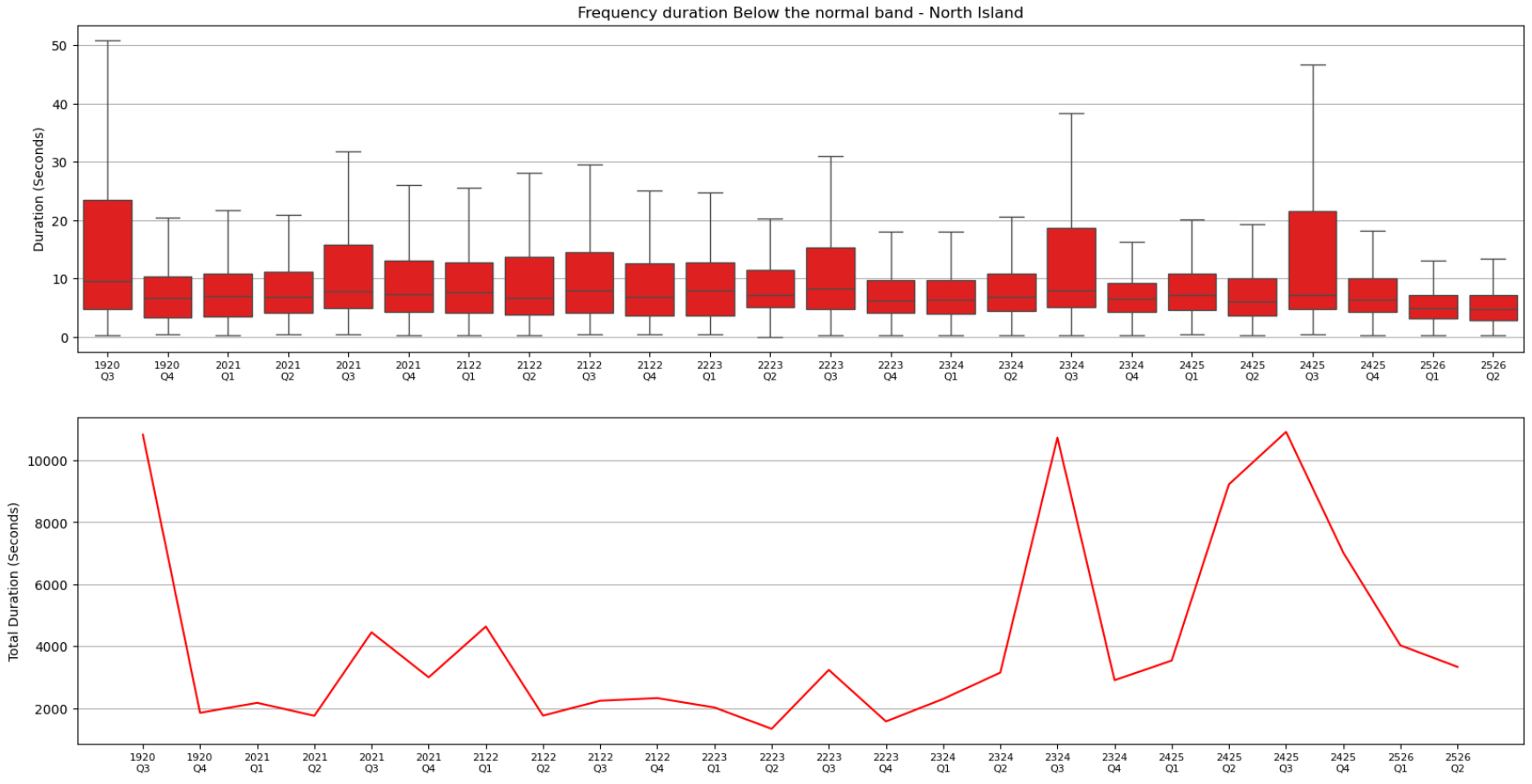
The following charts show the median and total duration of all the momentary fluctuations above and below the normal band for each island. The information is shown as a 4-quarter rolling average to illustrate trends in the data.

North Island

Above the normal band



Below the normal band



Excursions ± 0.5 Hz of the normal band this quarter:

	Above	Below
October	HVDC Pole 3 trip 23/10	HVDC Pole 3 trip 23/10 TAB & TAC generation trip 23/10
November		
December		TAB & TOPP2 trip 21/12

South Island

Above the normal band

Below the normal band

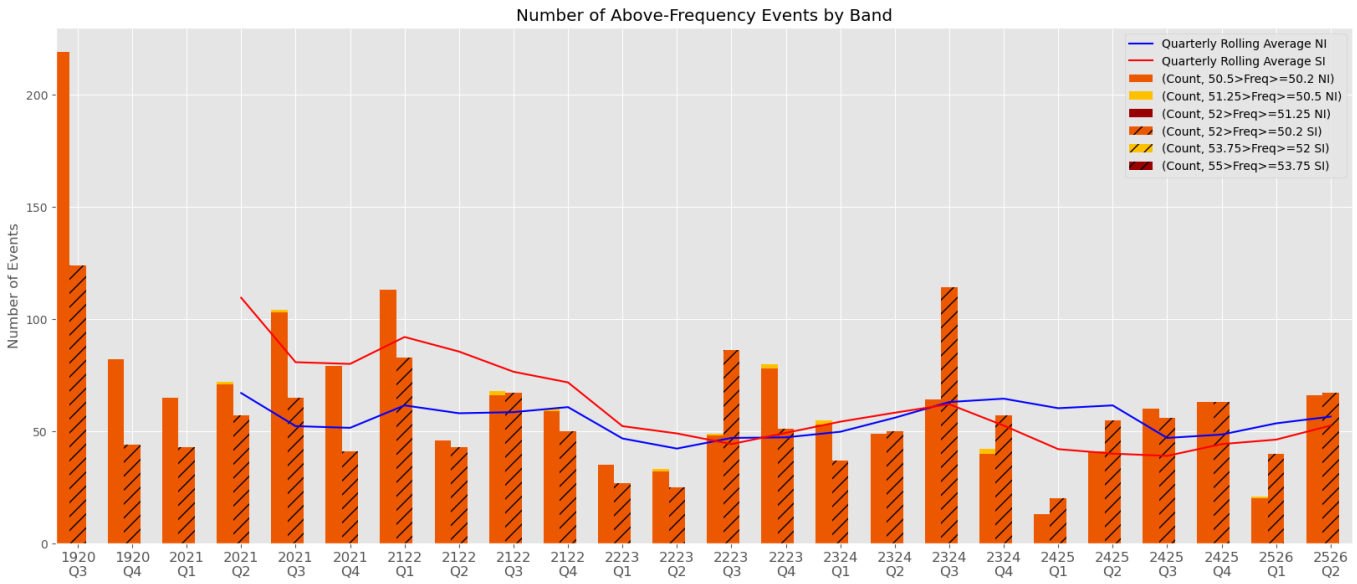
Excursions ± 0.5 Hz of the normal band this quarter:

	Above	Below
October	TWI Potline 08/10, 13/10, 23/10 ISL-KIK trip 23/10 HVDC Pole 3 trip 23/10	HVDC Pole 3 trip 23/10 TAB & TAC generation trip 23/10 MAN G5 trip 27/10
November	TWI Potline 13/11, 24/11, 25/11	
December	TWI Potline 04/12, 14/12, 16/12, 17/12, 21/12	TAB & TOPP2 trip 21/12

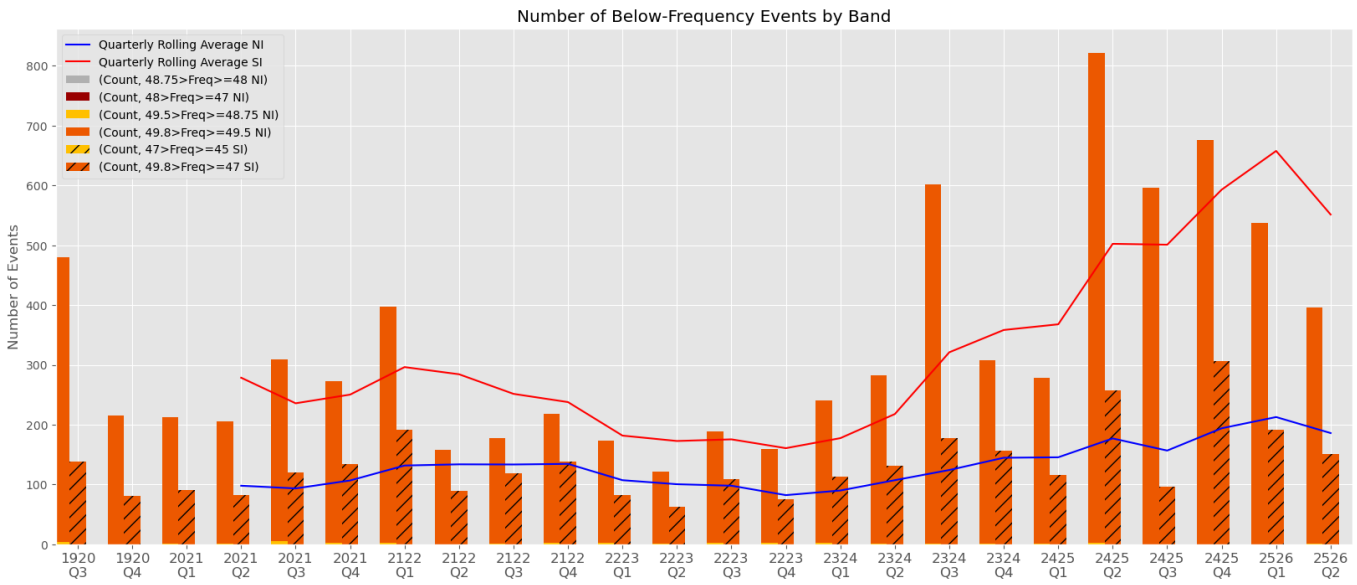
2.2 Manage frequency and limit rate of occurrences during momentary fluctuations (Number)

The following charts show the number of momentary fluctuations outside the frequency normal band, grouped by frequency band, for each quarter. Information is shown by island, including a 4-quarter rolling average to show the prevailing trend.

Over-frequency events



Under-frequency events



Excursions ± 0.5 Hz of the normal band this quarter:

	Above	Below
October	TWI Potline 08/10, 13/10, 23/10 ISL-KIK trip 23/10 HVDC Pole 3 trip 23/10	HVDC Pole 3 trip 23/10 TAB & TAC generation trip 23/10 MAN G5 trip 27/10
November	TWI Potline 13/11, 24/11, 25/11	
December	TWI Potline 04/12, 14/12, 16/12, 17/12, 21/12	TAB & TOPP2 trip 21/12

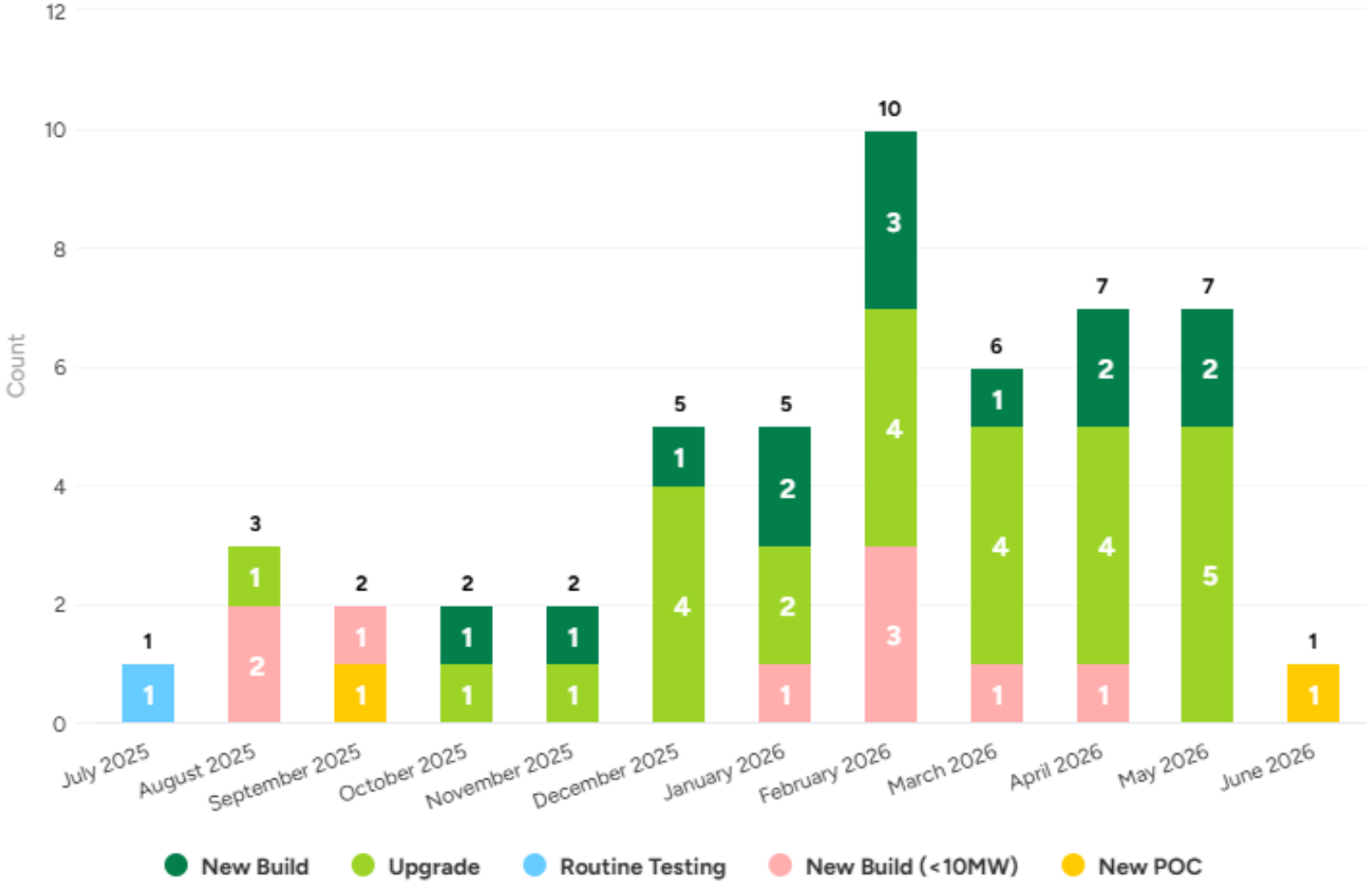
Reporting against Code clause 7.2E:

North Island	52 > x ≥ 51.25	51.25 > x ≥ 50.5	49.5 > x ≥ 48.75	48.75 > x ≥ 48	48 > x ≥ 47
2024					
Apr	0	2	0	0	0
May	0	0	0	0	0
Jun	0	0	1	0	0
Jul	0	0	1	0	0
Aug	0	0	0	0	0
Sep	0	0	1	0	0
Oct	0	0	0	0	0
Nov	0	0	0	0	0
Dec	0	0	2	0	0
2025					
Jan	0	0	2	0	0
Feb	0	0	0	0	0
Mar	0	0	1	0	0
Apr	0	0	1	0	0
May	0	0	0	0	0
Jun	0	0	0	0	0
Jul	0	0	1	0	0
Aug	0	0	0	0	0
Sep	0	1	0	0	0
Oct	0	0	2	0	0
Nov	0	0	0	0	0
Dec	0	0	1	0	0

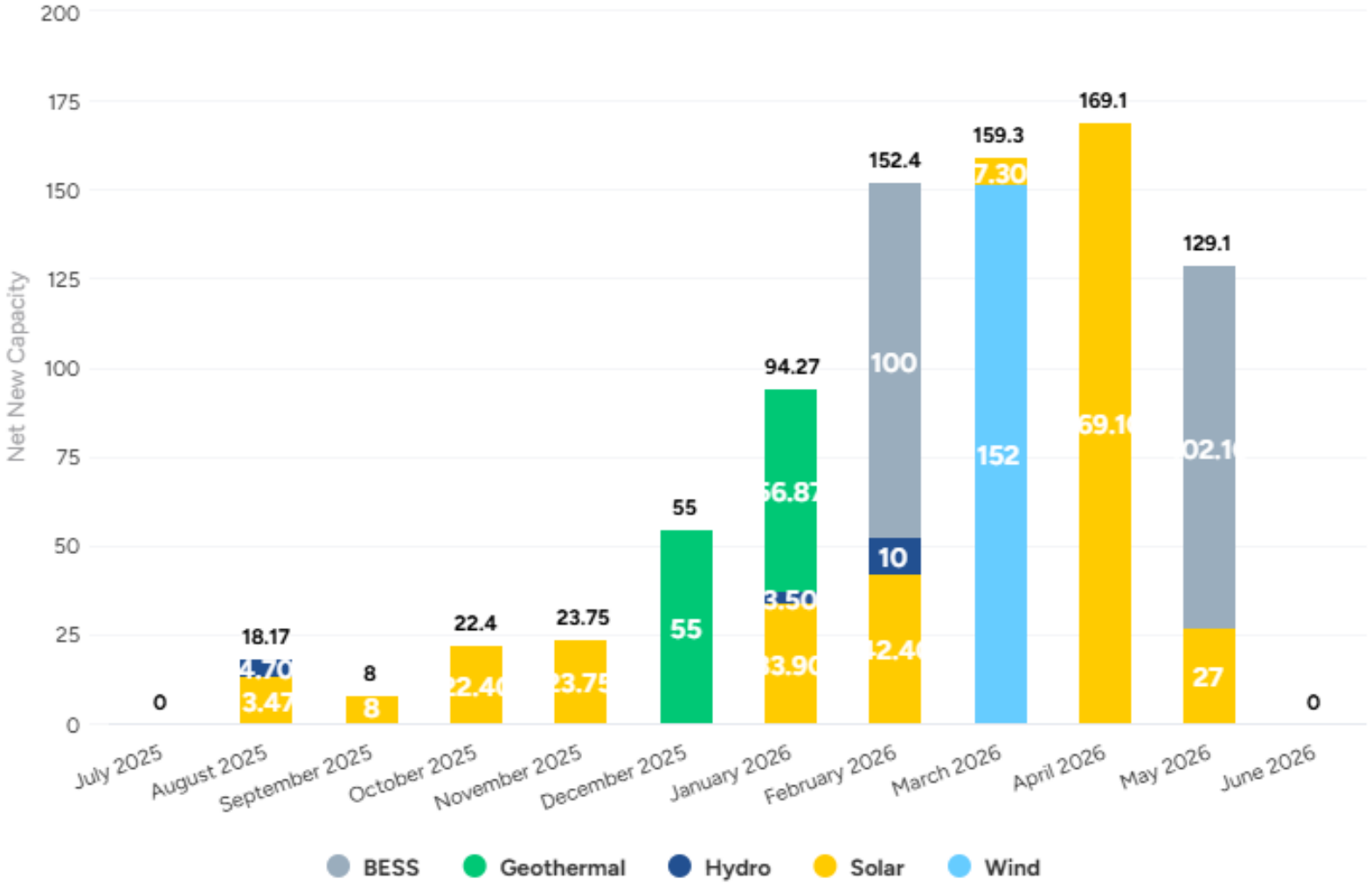
South Island	55 > x ≥ 53.75	53.75 > x ≥ 52	52 > x ≥ 51.25	51.25 > x ≥ 50.5	49.5 > x ≥ 48.75	48.75 > x ≥ 48	48 > x ≥ 47	47 > x ≥ 45
2024								
Apr	0	0	0	2	0	0	0	0
May	0	0	0	0	0	0	0	0
Jun	0	0	0	0	1	0	0	0
Jul	0	0	0	0	1	0	0	0
Aug	0	0	0	0	0	0	0	0
Sep	0	0	0	0	1	0	0	0
Oct	0	0	0	0	0	0	0	0
Nov	0	0	0	0	0	0	0	0
Dec	1	0	0	0	2	0	0	0
2025								
Jan	0	0	0	0	2	0	0	0
Feb	0	0	0	0	0	0	0	0
Mar	0	0	0	0	1	0	0	0
Apr	0	0	0	0	1	0	0	0
May	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0
Jul	0	0	0	0	1	0	0	0
Aug	0	0	0	0	0	0	0	0
Sep	0	0	0	1	0	0	0	0
Oct	0	0	0	0	2	0	0	0
Nov	0	0	0	0	0	0	0	0
Dec	0	0	0	0	1	0	0	0

3. Commissioning

3.1 FY 25/26 Completed and Confirmed Commissioning



3.2 FY 25/26 New Capacity (MW) by Generation Type



4. Security notices

The following table shows the number of Warning Notices, Grid Emergency Notices and Customer Advice Notices issued over the last 12 months.

Notices issued	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25
Demand Allocation Notice	-	-	-	-	-	-	-	-	-	-	-	-
Grid Emergency Notice	3	-	-	1	1	-	-	-	-	5	5	3
Warning Notice	-	-	-	-	-	-	-	1	-	-	1	-
Customer Advice Notice	5	11	18	18	21	10	5	14	10	12	14	10

4.1 Low residual CANs

This quarter we have issued 1 low residual Customer Advice Notice:

- 28 October Potential Short Fall or Low Residual Situation: A CAN was issued to advise of a National energy shortfall or low residual generation for 28 October 07:30 to 09:30.

5. Grid emergencies

The following table shows grid emergencies declared by the System Operator in October to December 2025.

Date	Time	Summary Details	Island
23 October 2025	07:30	A verbal Grid Emergency was declared to place a split in the system by removing the Greymouth-Kumara 1 circuit, to safeguard against voltage collapse in the South Island following a loss of supply to Culverdon of approximately 11 MW.	SI
28 October 2025	02:51	The tripping of the Whirinaki-Wairakei and Harapaki-Tauhara circuits, due to lightning strike, causing a loss of supply to the Hawkes Bay and a loss of connection for Harapaki, Whirinaki and Waikaremoana generation. A Grid Emergency was declared for grid reconfiguration to effect restoration to Hawkes Bay.	NI
12 November 2025	14:45	A Grid Emergency was declared to remove the following assets from service due to the onset of a severe (G4) Geomagnetic Induced Current event: Roxburgh - Three Mile Hill circuit 1, North Makarewa – Gore – Three Mile Hill circuit 1, Benmore – Twizel circuit 1, and Roxburgh T10.	SI
8 December 2025	04:37	A Grid Emergency was declared to reconfigure the Huntly 220 Bus. Huntly T21 was removed from service.	NI
26 December 2025	17:47	A Grid Emergency was declared to reconfigure the Roxburgh 220kV Bus.	SI