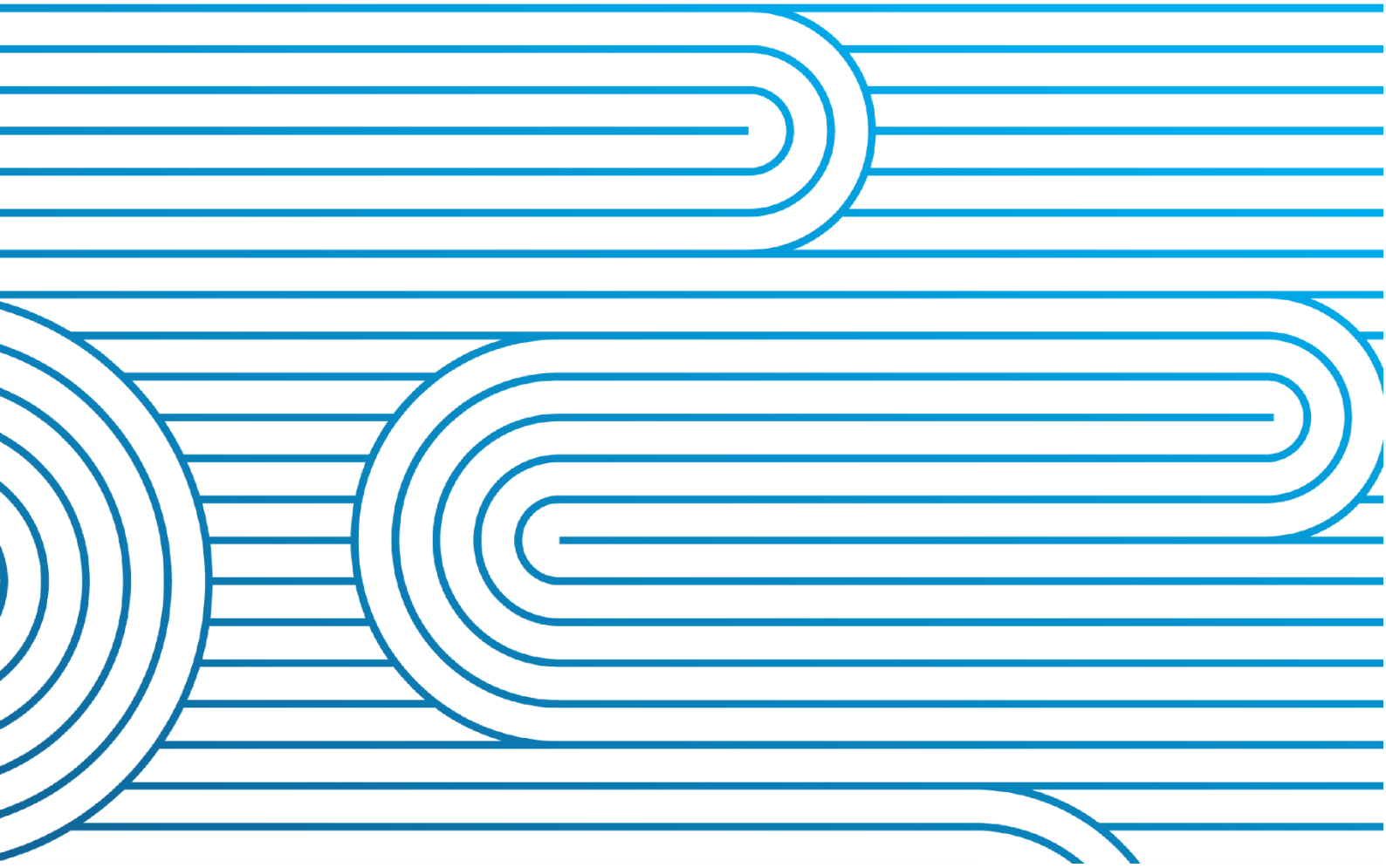
TRANSPOWER

Quarterly system performance information

January to March



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*

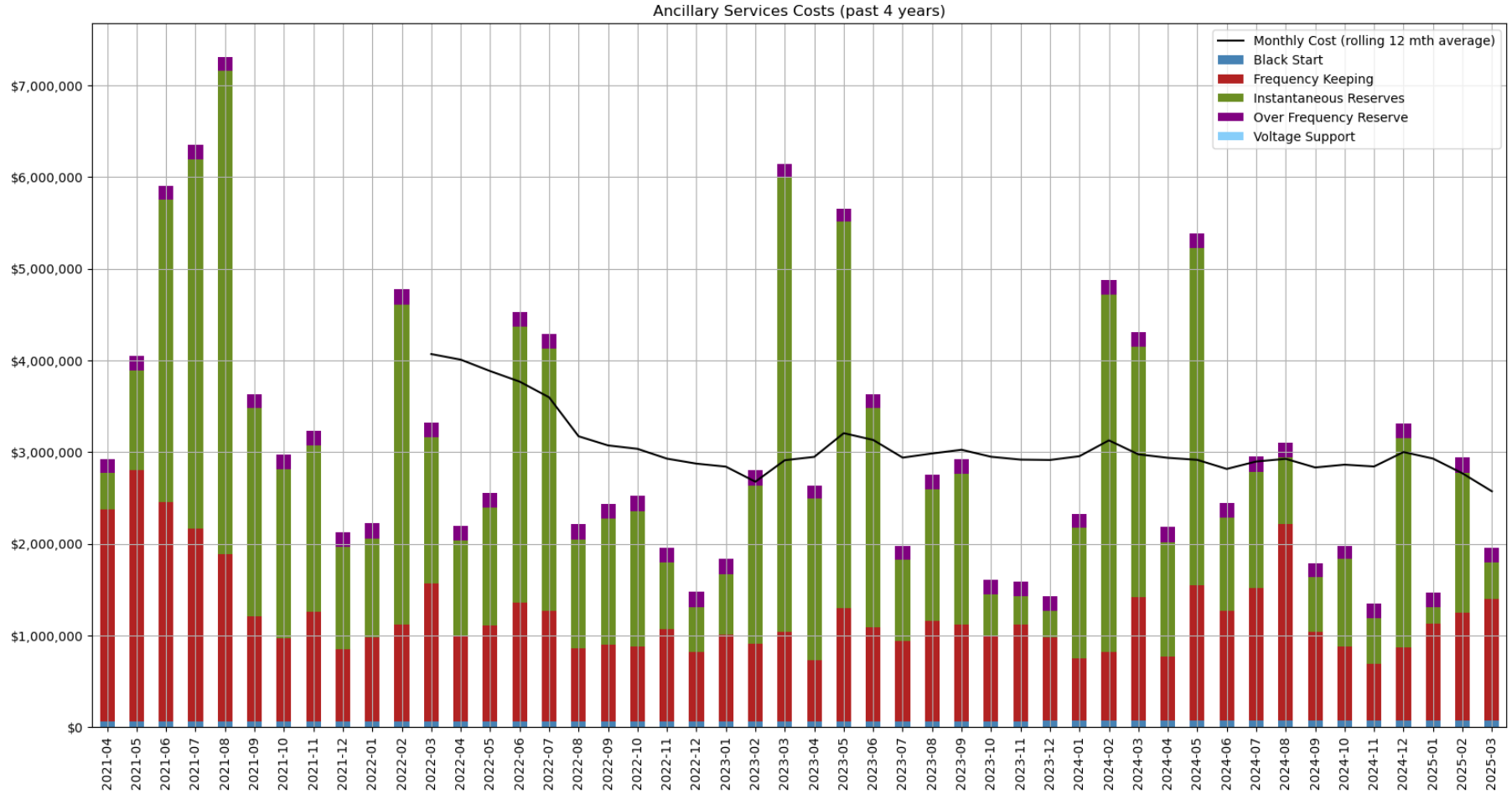
*(b) the operation of this Code and Part 2 and Subpart 1 of Part 4 of the **Act**; and*

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

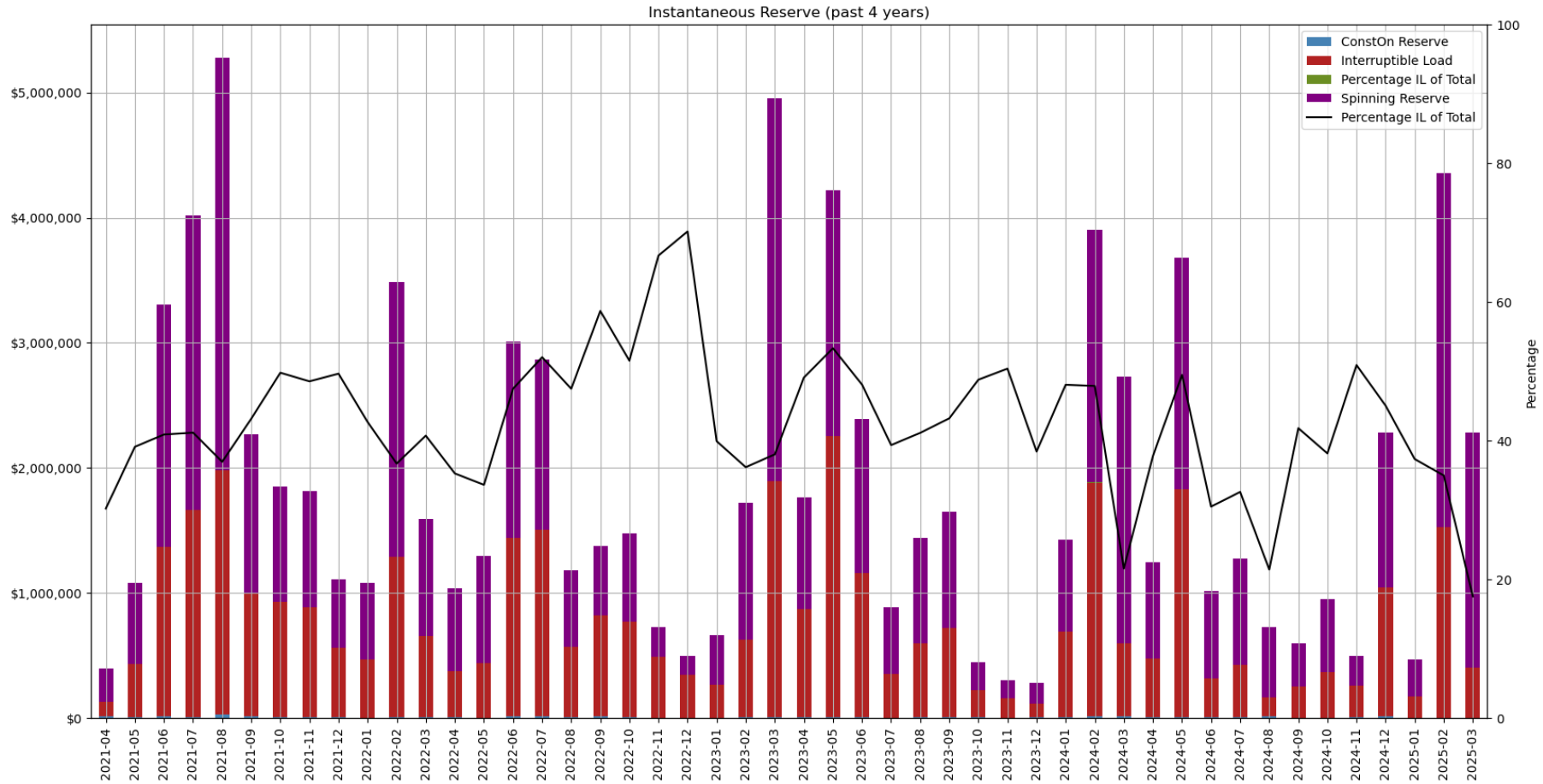
*(d) the provisions of the **market operation service provider agreement**.*

Contents

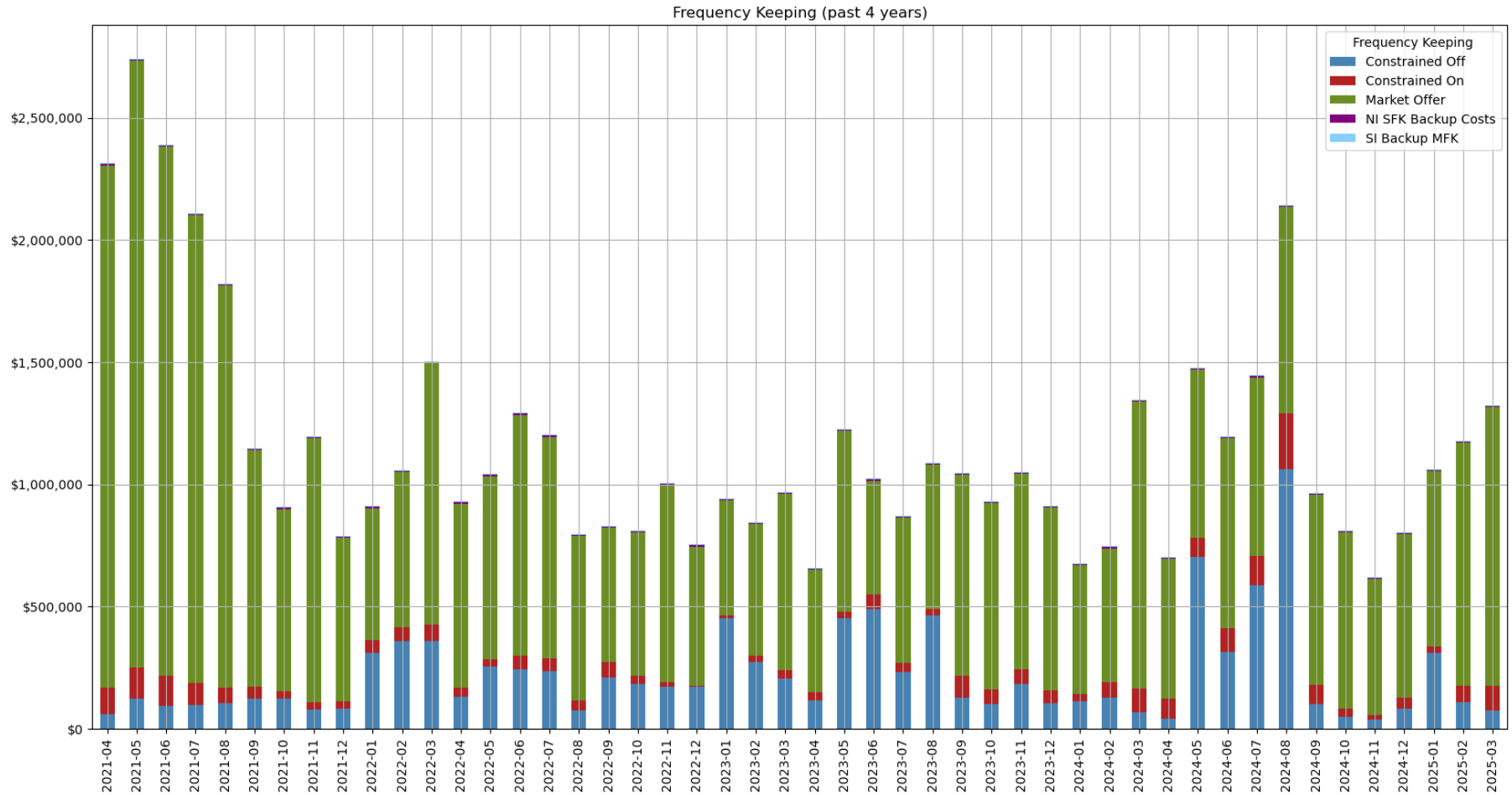
1. Ancillary services costs



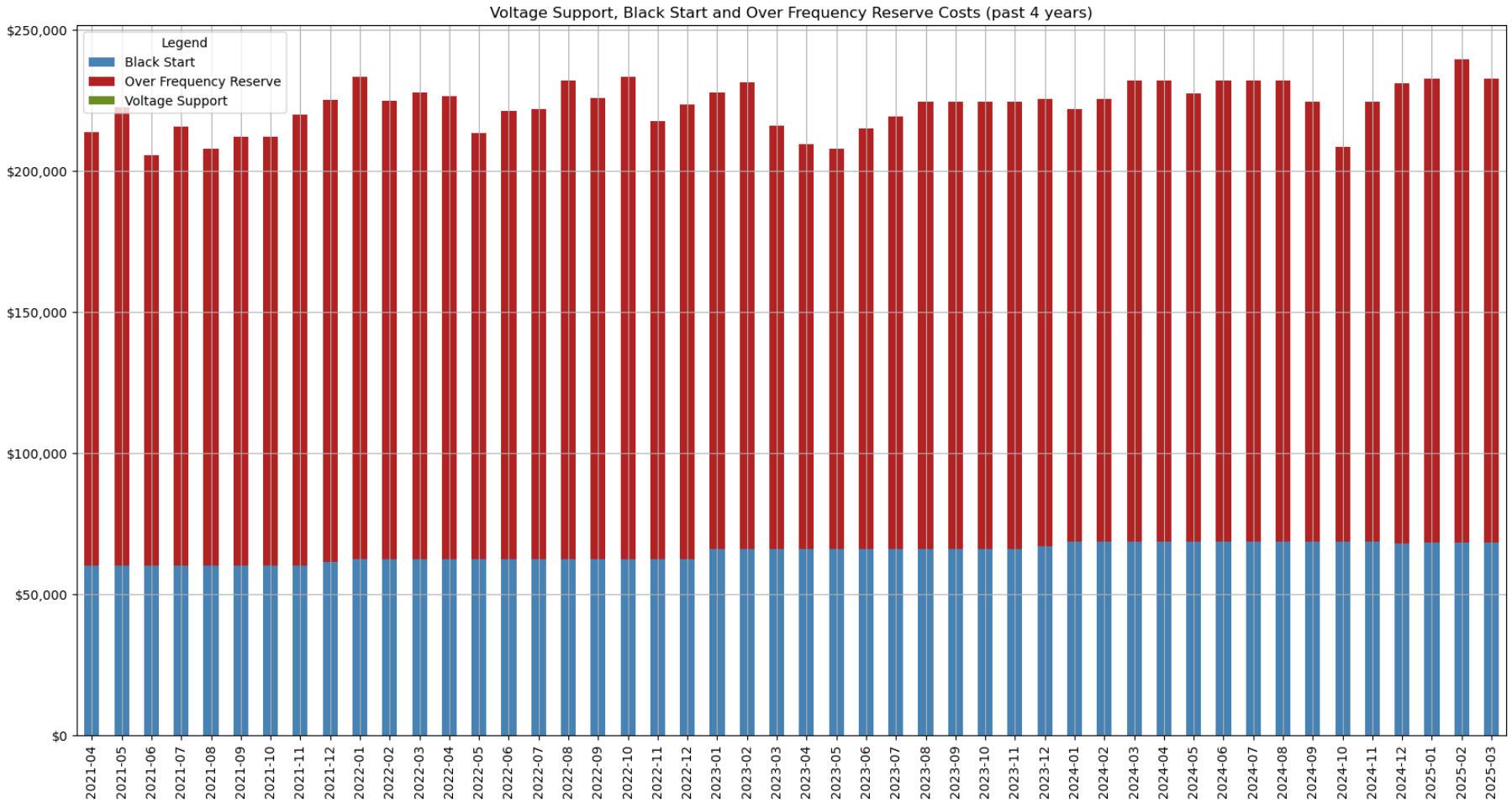
Ancillary service costs were higher this quarter than the previous quarter. The main factor contributing to this is the increase in the instantaneous reserve costs which are shown in the graph below.



Instantaneous reserve costs were higher in the second half of this quarter refecting both because of record low inflows to South Island catchments requiring increased HVDC transfer cover requirements in March. higher demand in February and March despite warmer temperatures. An outage at Tauhara and HVDC Pole 2 and Pole 3 outages in February also lead to periods of high reserves prices and inter-island price separation. Additional secondary risks because of commissioning plant also affected prices as various generators and energy resources entered and left their commissioning phases.



Frequency keeping costs increased this quarter driven mainly by increased frequency keeping costs in the North Island.

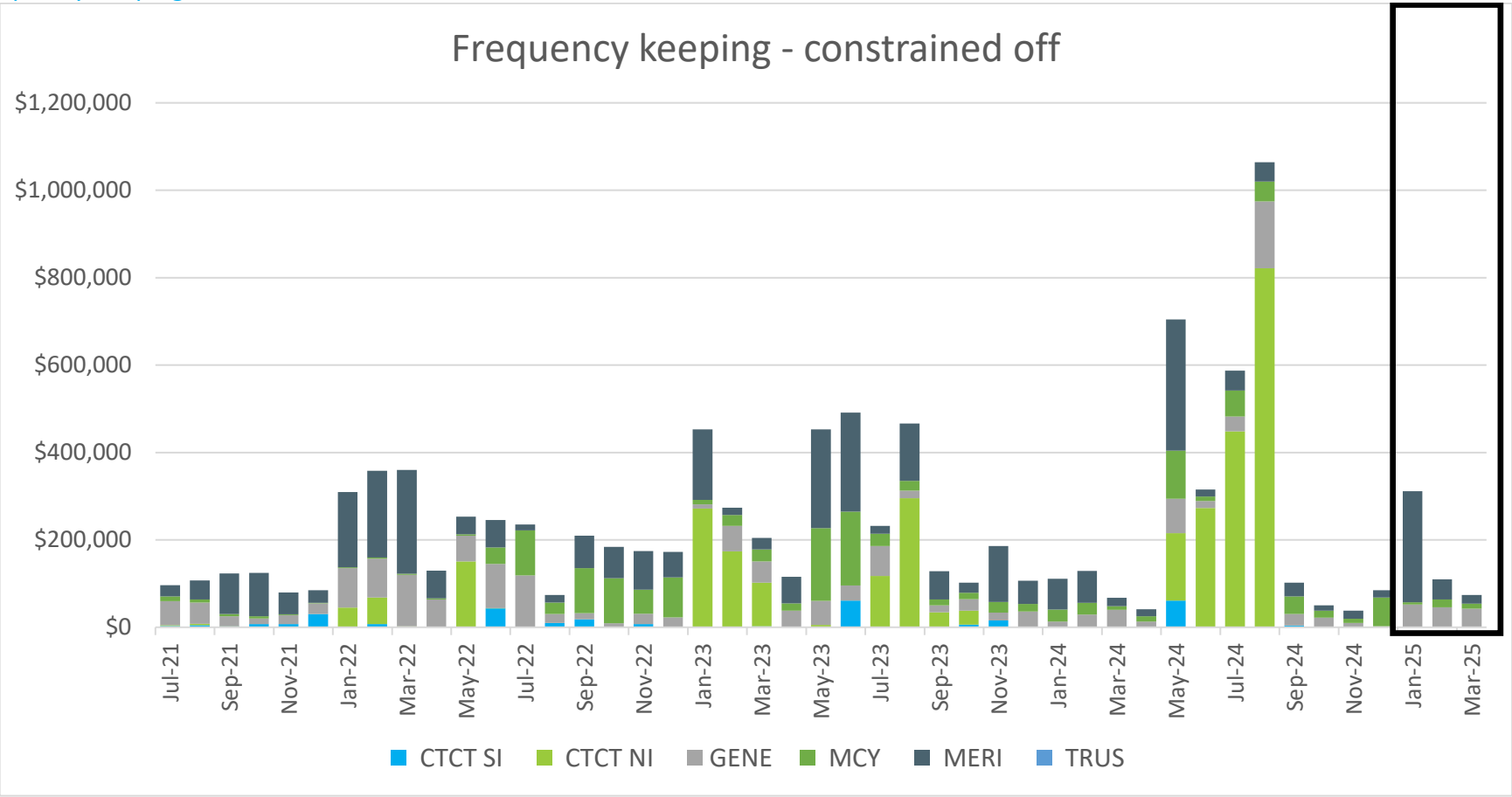


Over frequency reserve costs were higher this quarter reflecting increased availability of generator units which provide these services. Black start costs remained the same.

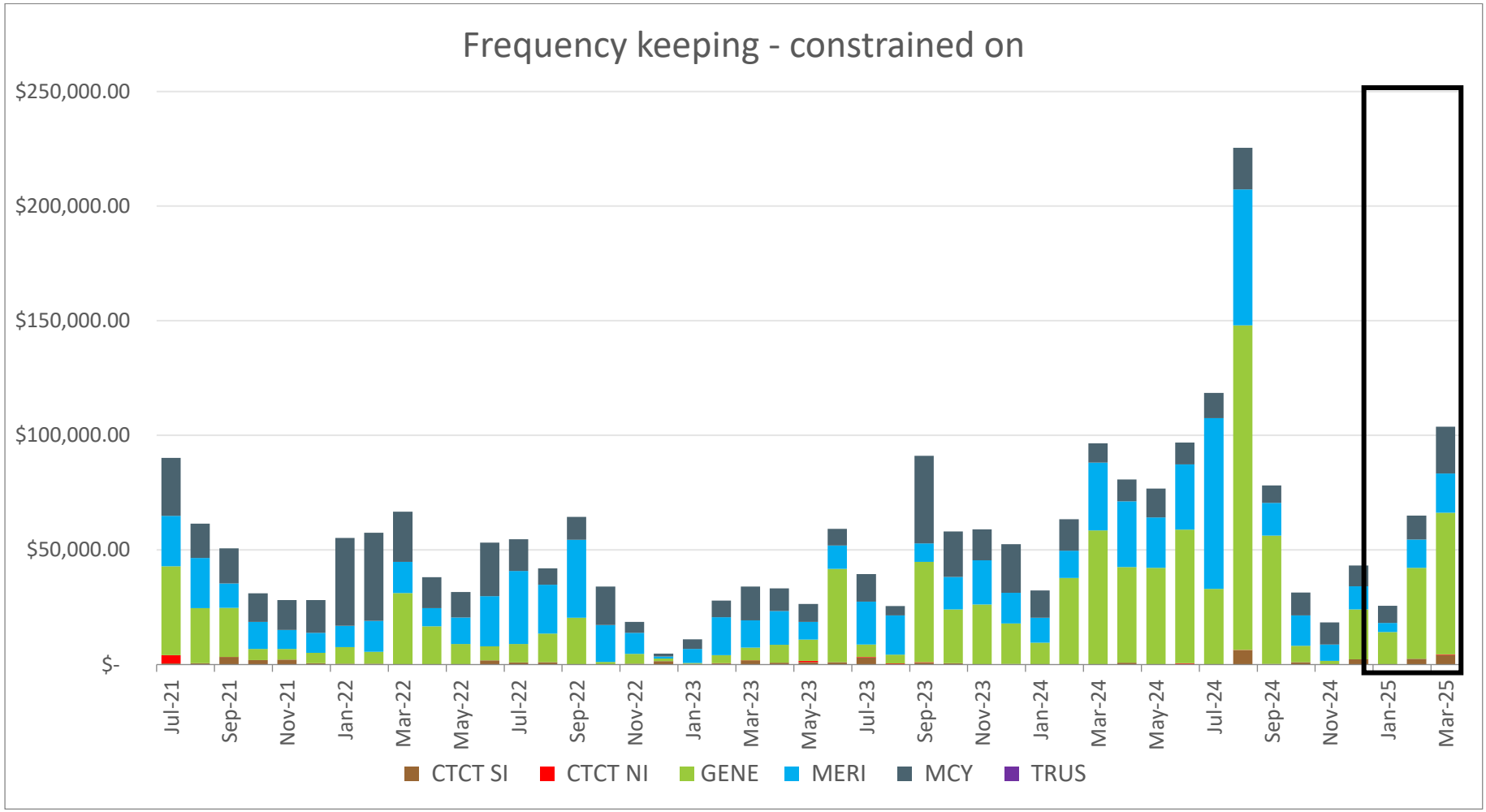
1.1 Constrained on/off costs

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

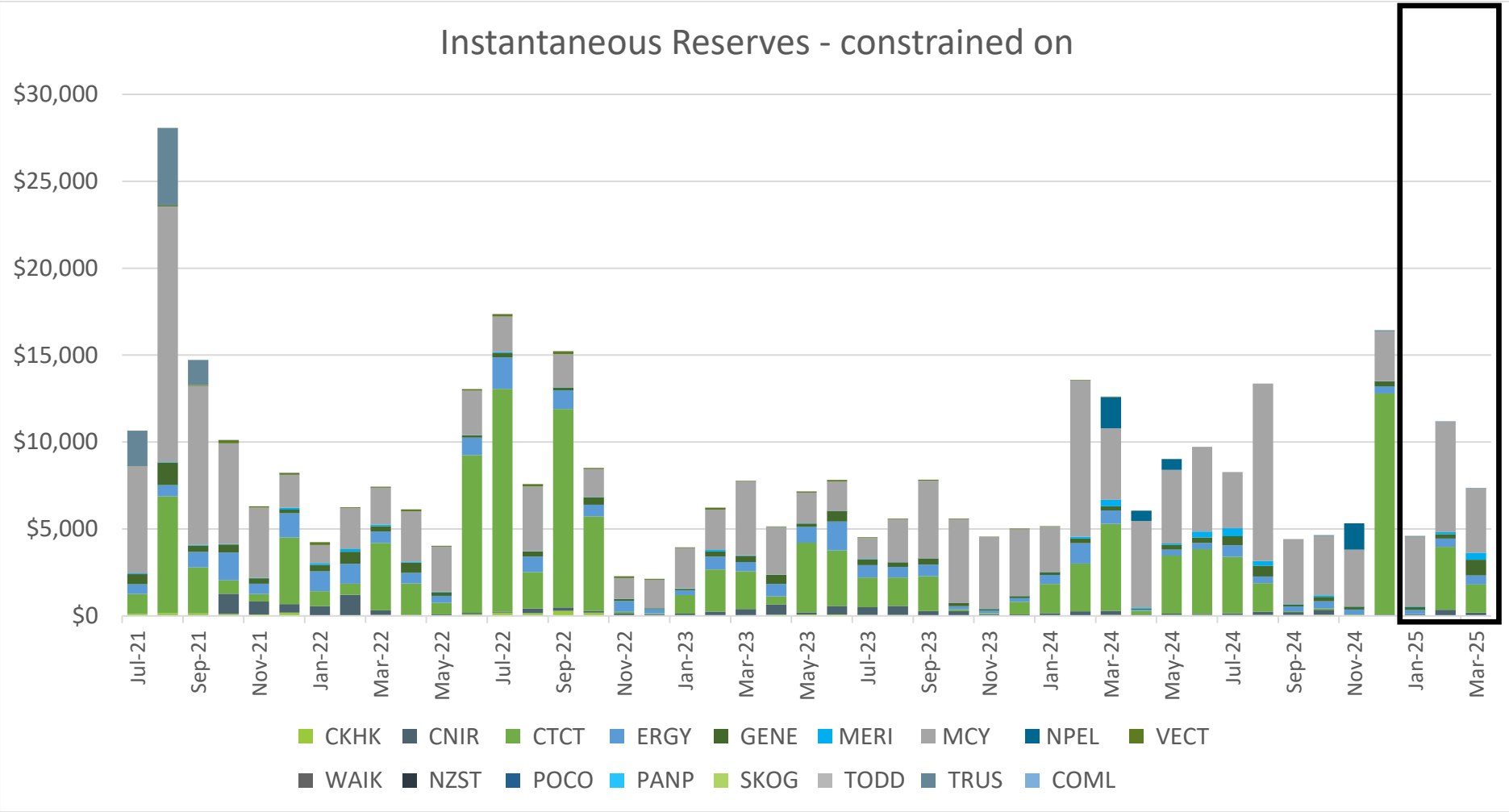


Constrained off costs have increased this quarter. The increase in costs can be attributed to the higher market prices compared to the previous quarter as hydro storage catchments in the South Island received record low inflows. The higher market prices resulted in increased generation running in the North Island particularly.



Constrained on costs increased this quarter reflecting high market prices for generation in later in the quarter driven by record low hydro storage in South Island catchments. However overall, these costs are still relatively low compared to other ancillary service costs.

Instantaneous Reserves



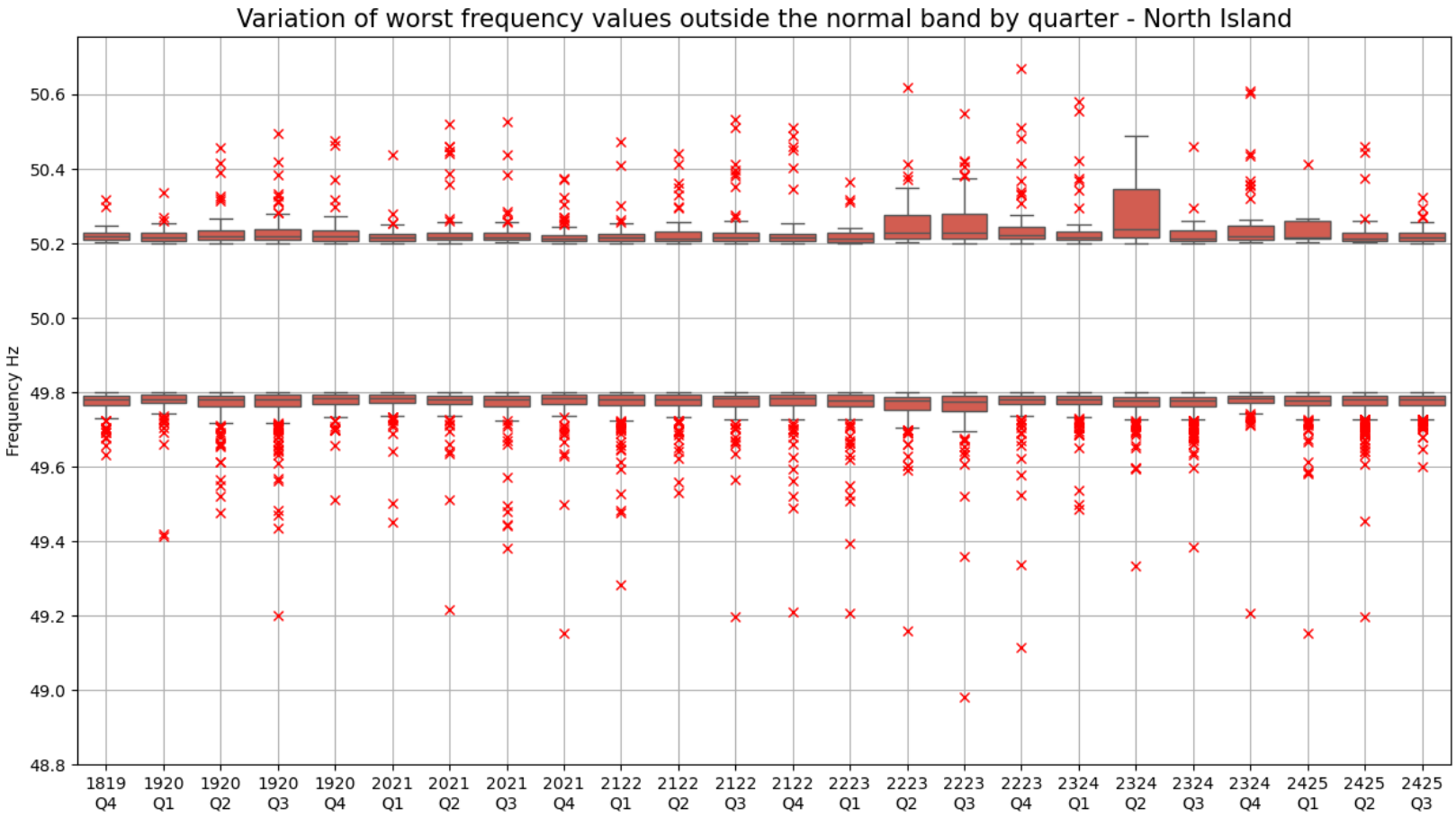
Costs this quarter are comparable to last quarter. These costs are relatively low compared to other ancillary service costs.

2. Frequency fluctuations

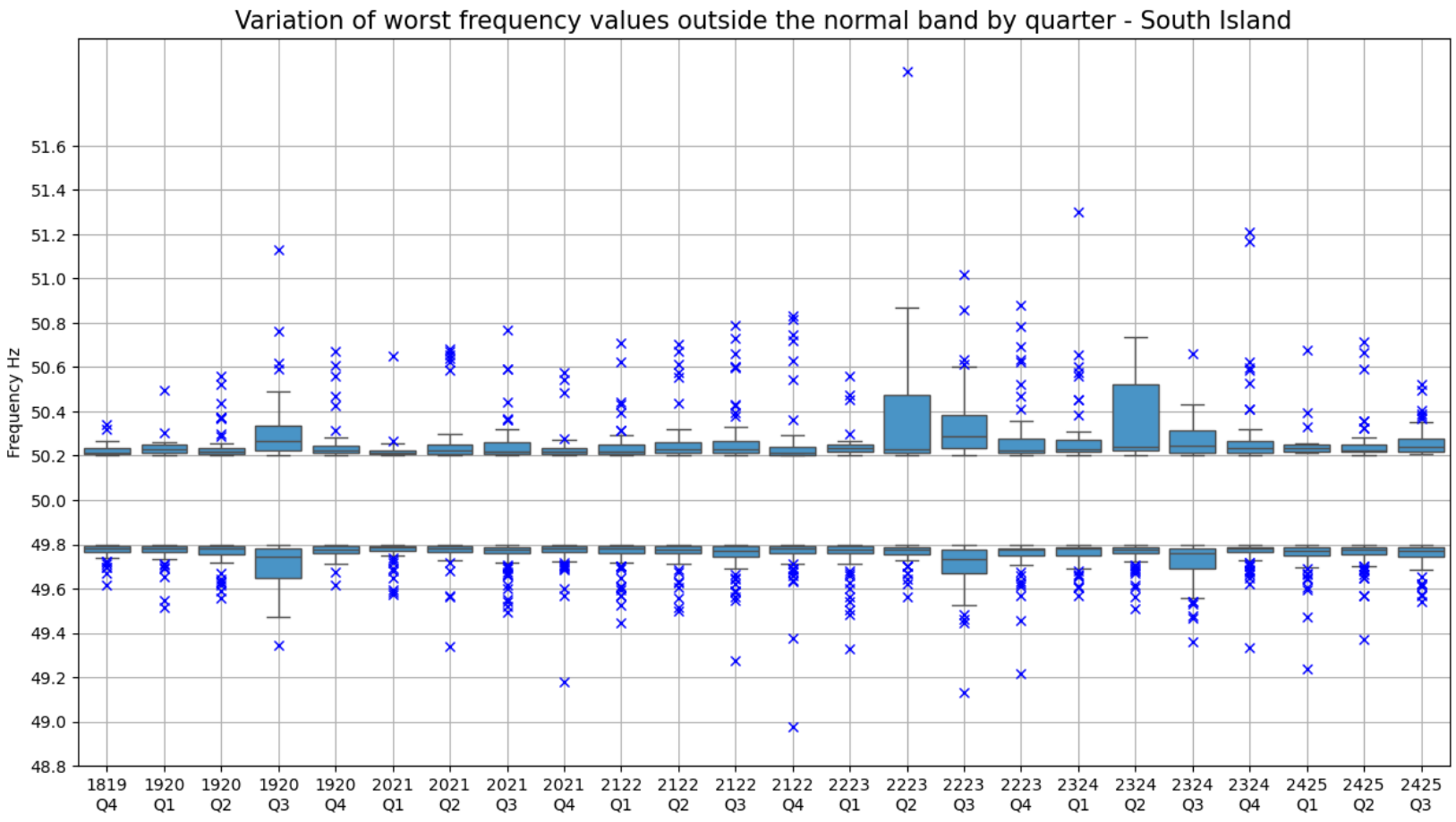
2.1 Maintain frequency in normal band (Frequency value)

The following charts show the distribution of the worst frequency excursion outside the normal band (49.8 to 50.2 Hz) by quarter since Q3 2017/18, 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:

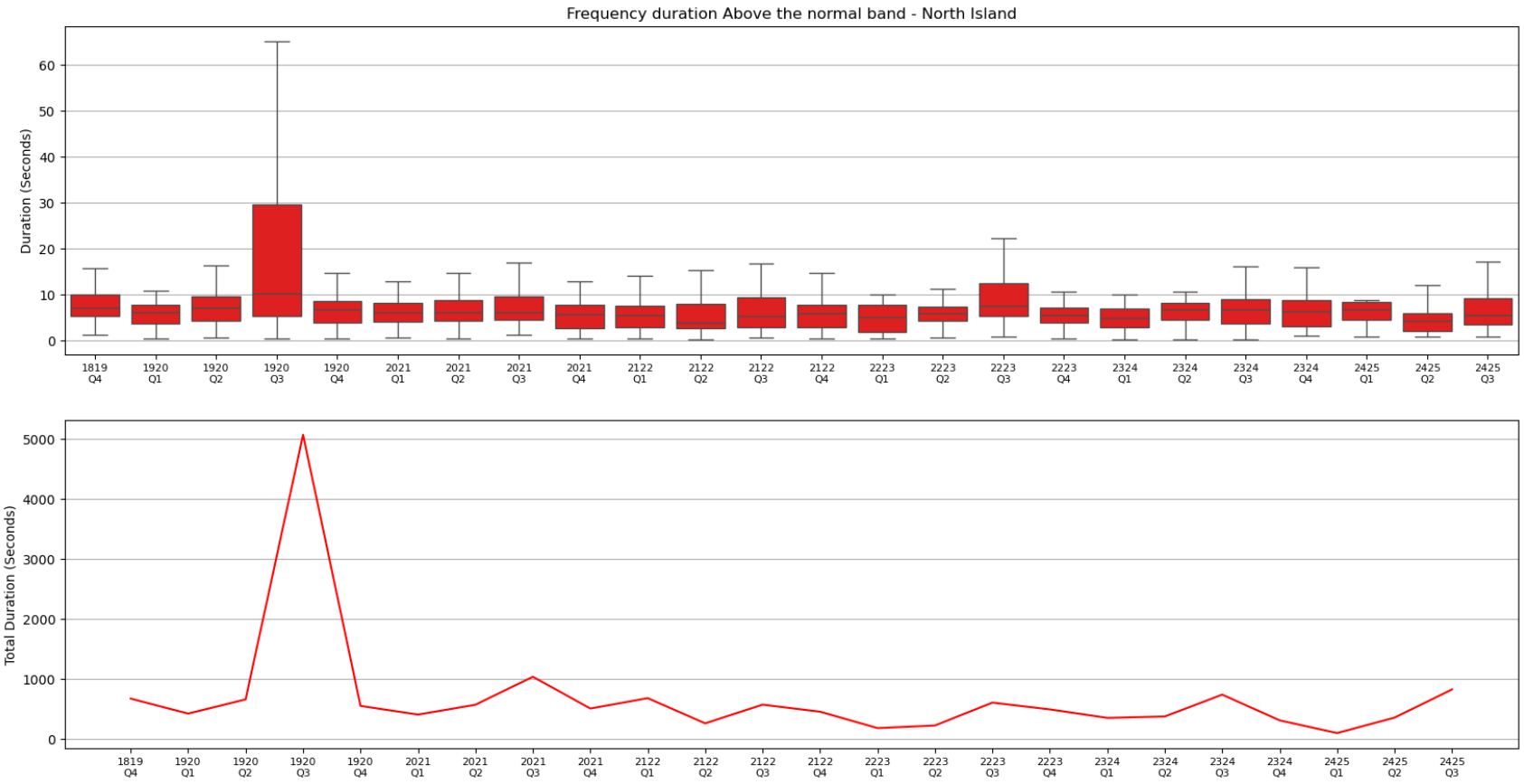
	Above	Below
January		Huntly generation tripping (N/S) – 14/0, Nga Awa Purua tripping (N/S) – 18/01
February	Tiwai Potline 11/02	
March	Tiwai Potline 09/03, 11/03 & 31/03	Huntly generation tripping (N/S) – 14/03

2.1.1 Recover quickly from a fluctuation (Time)

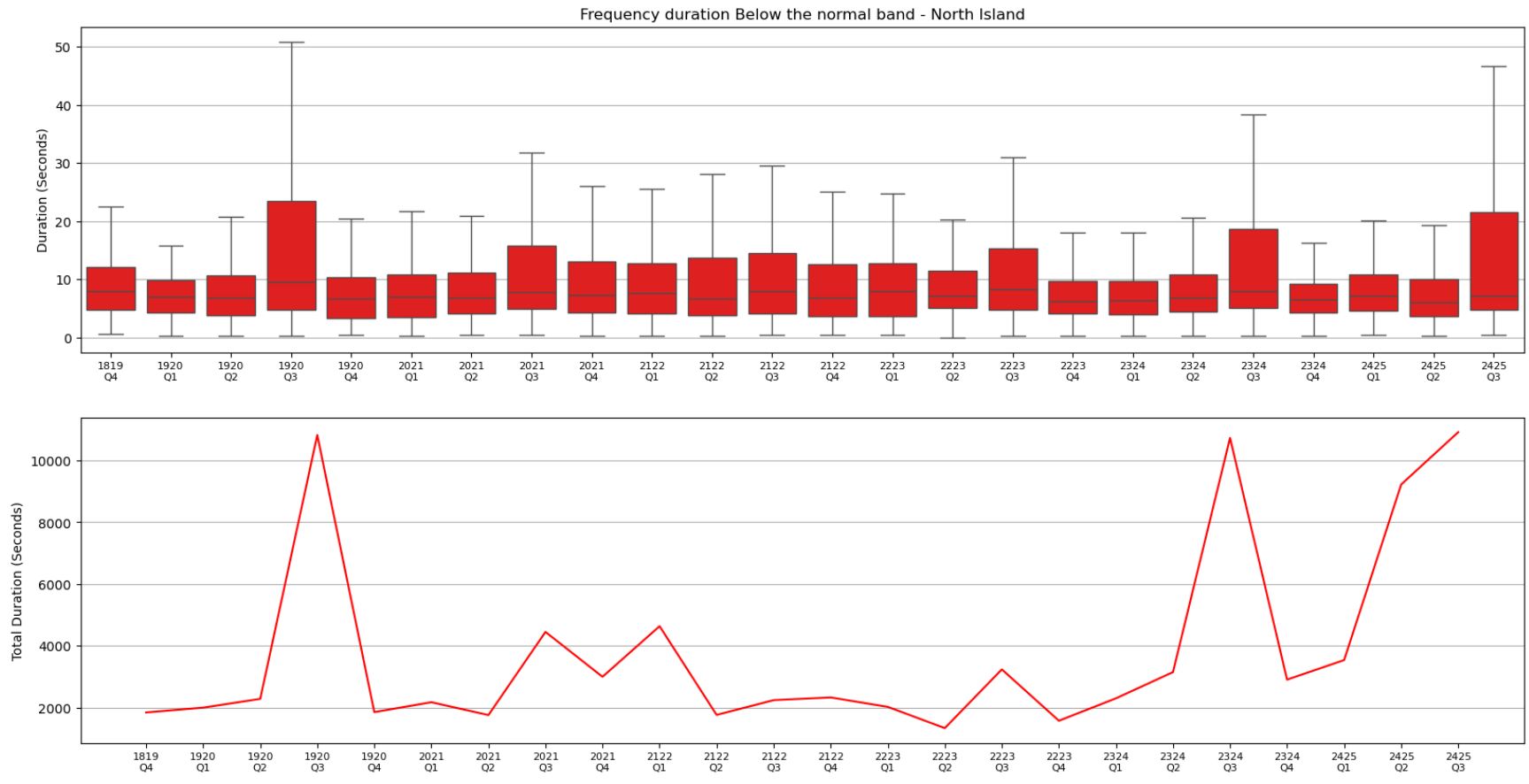
The following charts show the median and total duration of all the momentary fluctuations above and below the normal band for each island. The information is shown as a 4-quarter rolling average to illustrate trends in the data.

North Island

Above the normal band



Below the normal band

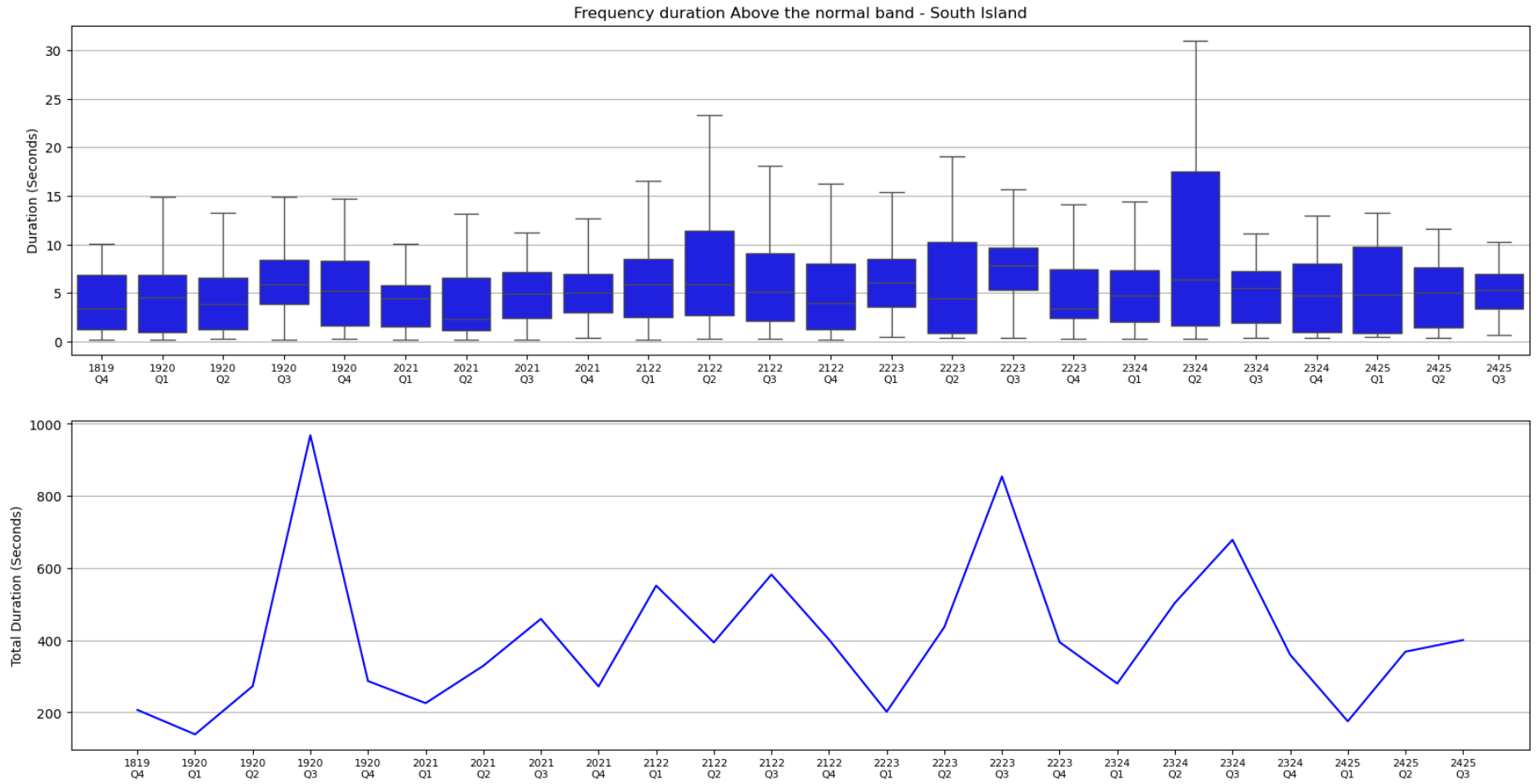


Excursions ± 0.5 Hz of the normal band this quarter:

	Above	Below
January		Huntly generation tripping (N/S) – 14/0, Nga Awa Purua tripping (N/S) – 18/01
February	Tiwai Potline 11/02	
March	Tiwai Potline 09/03, 11/03 & 31/03	Huntly generation tripping (N/S) – 14/03

South Island

Above the normal band



Below the normal band

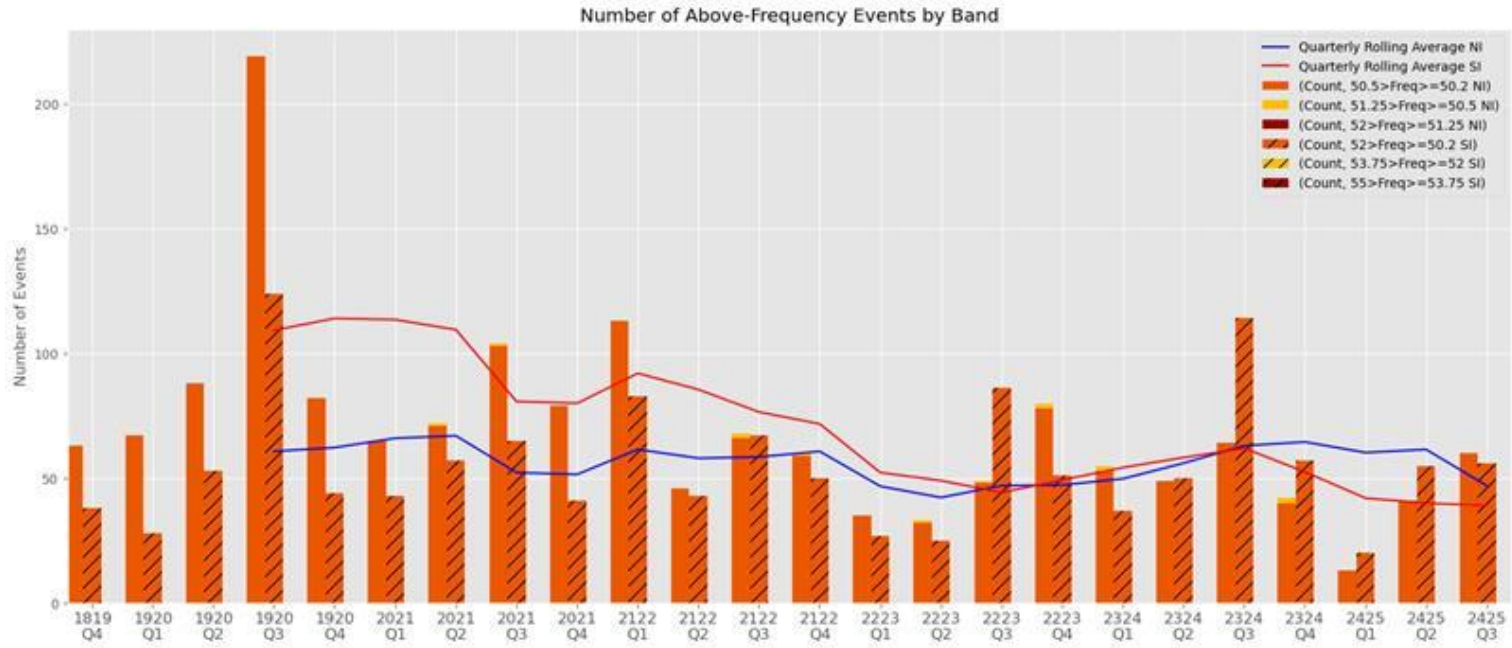
Excursions ± 0.5 Hz of the normal band this quarter:

	Above	Below
January		Huntly generation tripping (N/S) – 14/0, Nga Awa Purua tripping (N/S) – 18/01
February	Tiwai Potline 11/02	
March	Tiwai Potline 09/03, 11/03 & 31/03	Huntly generation tripping (N/S) – 14/03

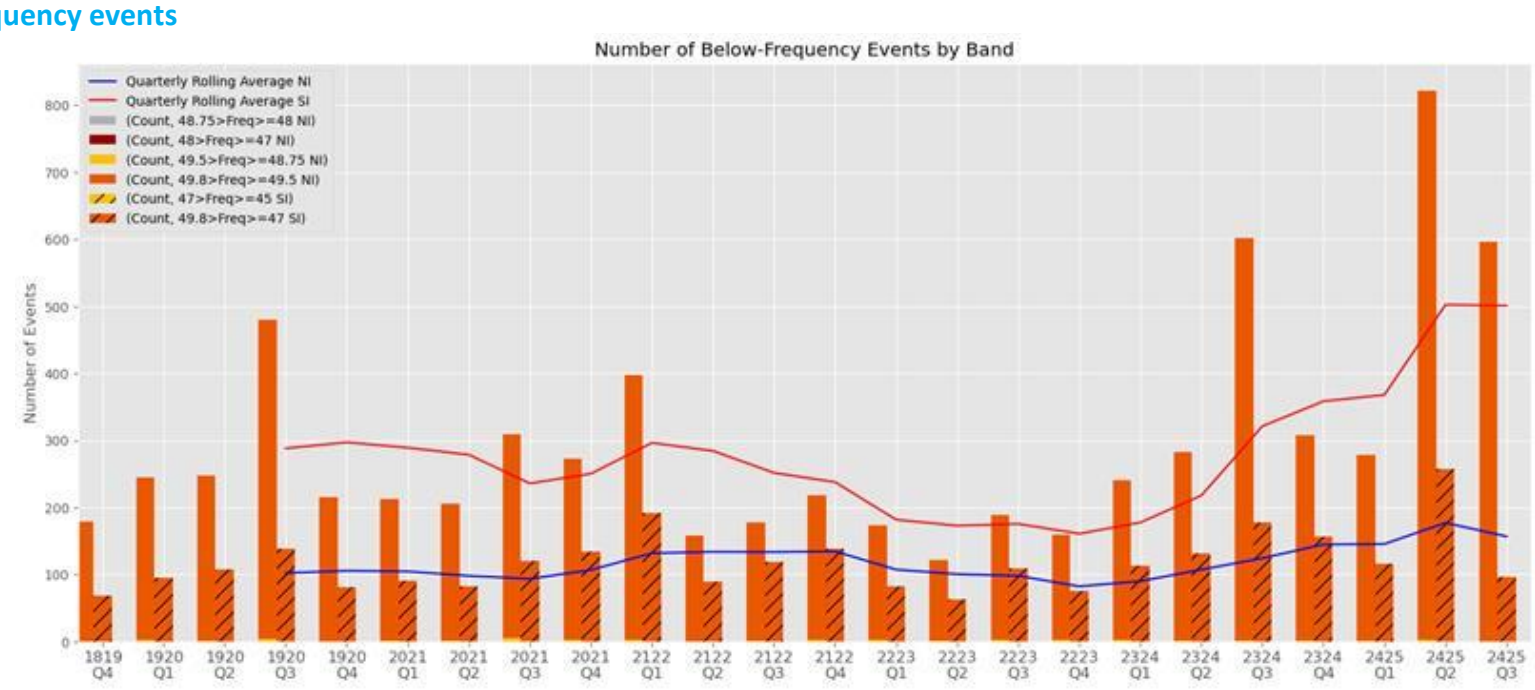
2.2 Manage frequency and limit rate of occurrences during momentary fluctuations (Number)

The following charts show the number of momentary fluctuations outside the frequency normal band, grouped by frequency band, for each quarter since Q3 2017/18. 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
January		Huntly generation tripping (N/S) – 14/0, Nga Awa Purua tripping (N/S) – 18/01
February	Tiwai Potline 11/02	
March	Tiwai Potline 09/03, 11/03, 16/03 & 31/03	Huntly generation tripping (N/S) – 14/03

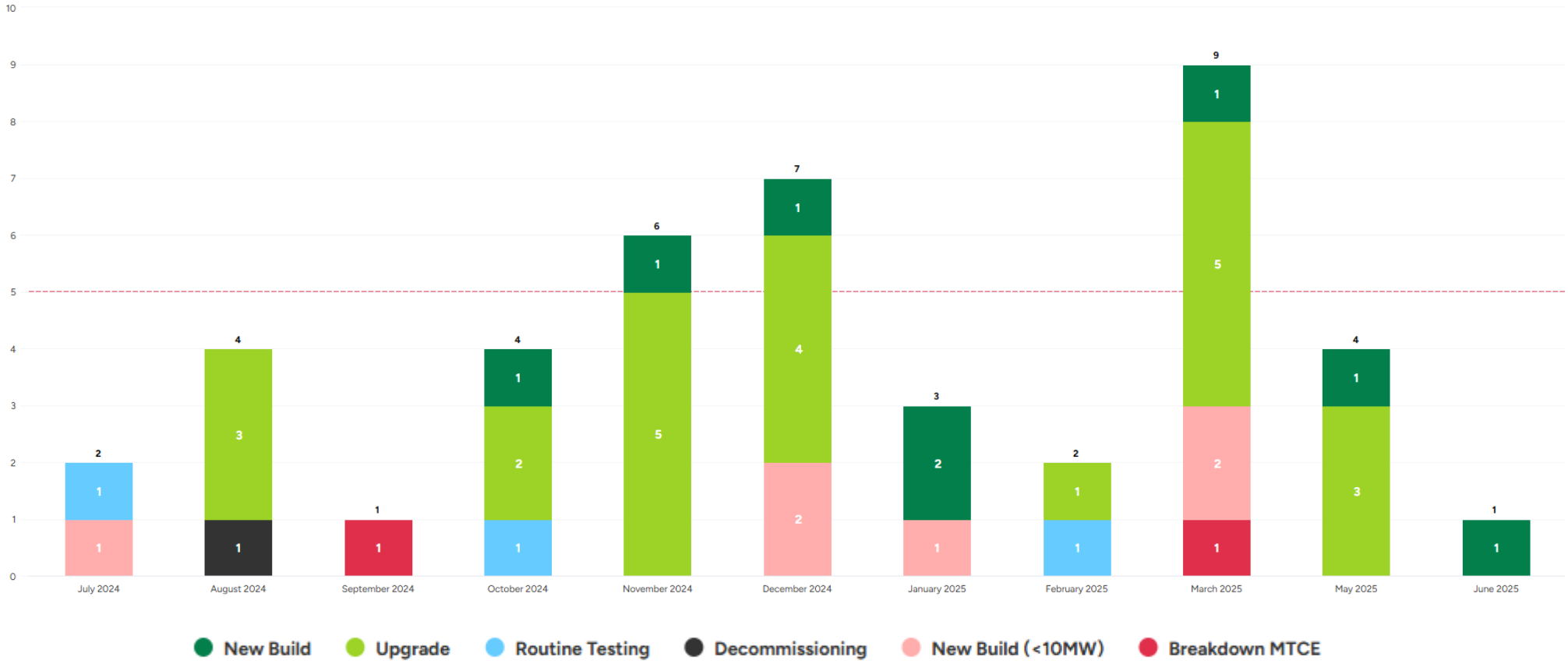
Reporting against Code clause 7.2E:

North Island	52 > x ≥ 51.25	51.25 > x ≥ 50.5	49.5 > x ≥ 48.75	48.75 > x ≥ 48	48 > x ≥ 47
2024					
Jan	0	0	0	0	0
Feb	0	0	0	0	0
Mar	0	0	1	0	0
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

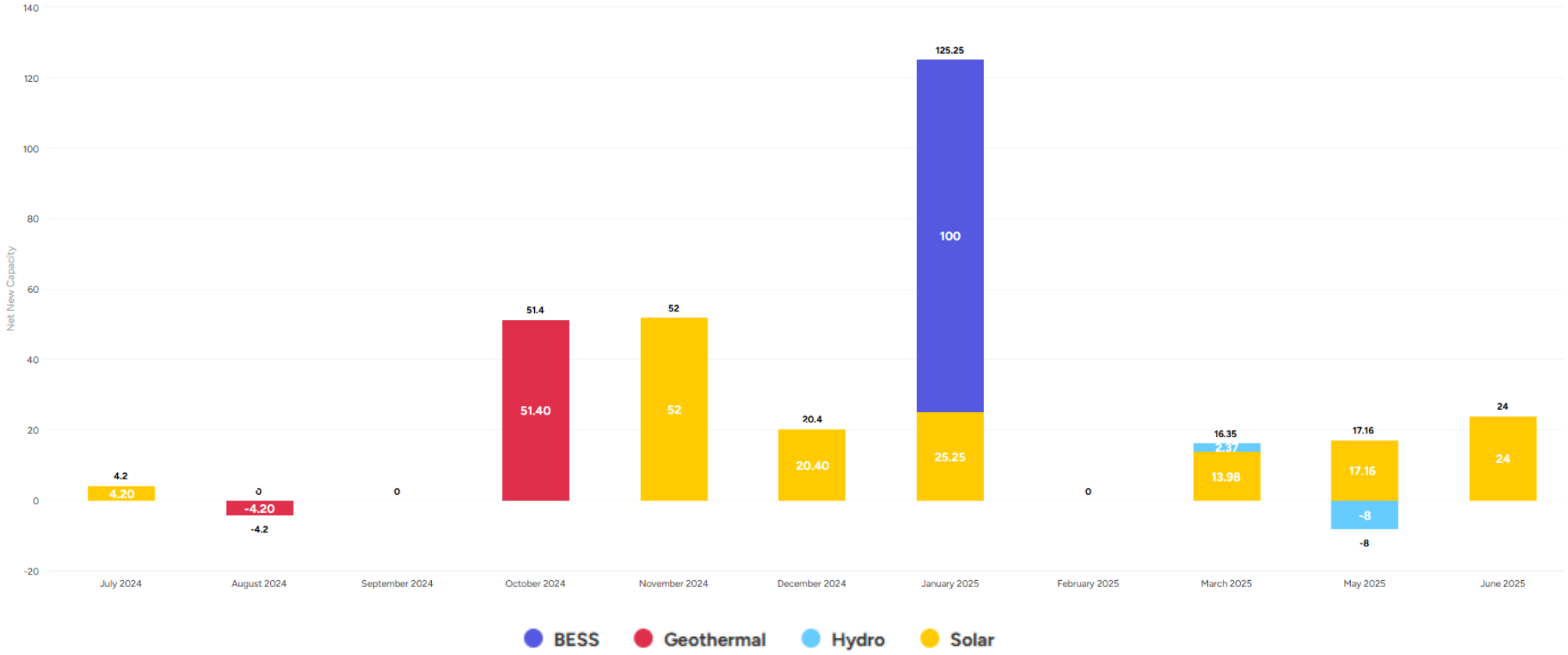
South Island	55 > x ≥ 53.75	53.75 > x ≥ 52	52 > x ≥ 51.25	51.25 > x ≥ 50.5	49.5 > x ≥ 48.75	48.75 > x ≥ 48	48 > x ≥ 47	47 > x ≥ 45
2024								
Jan	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0
Mar	0	0	0	0	1	0	0	0
Apr	0	0	0	2	0	0	0	0
May	0	0	0	0	0	0	0	0
Jun	0	0	0	0	1	0	0	0
Jul	0	0	0	0	1	0	0	0
Aug	0	0	0	0	0	0	0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

3. Commissioning

3.1 FY 24/25 Completed and Confirmed Commissioning



3.2 FY 24/25 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	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sept-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25
Demand Allocation Notice	-	-	-	-	-	-	-	-	-	-	-	-	-
Grid Emergency Notice	-	-	2	1	-	-	-	-	-	1	3	-	-
Warning Notice	-	-	1	-	-	-	-	-	-	-	-	-	-
Customer Advice Notice	9	13	27	11	12	8	17	6	12	12	5	11	18

4.1 Low residual CANs

This quarter we have issued 2 low residual Customer Advice Notices

- 24 February Low Residual Situation: A CAN was issued to advise of a North Island low residual situation forecast for the afternoon of 24 February from 13:30 – 17:30.

5. Grid emergencies

The following table shows grid emergencies declared by the System Operator January to March 2025.

Date	Time	Summary Details	Island
02 January 2025	07:57	A grid emergency was declared to remove assets from service due to the onset of an severe (G4) Geomagnetic Induced Current event. South Island grid reconfiguration occurred.	SI
30 January 2025	09:06	A grid emergency was verbally declared at 09:06 directly with the affected participants due to the urgent nature of a Manawa generation unit at Matahina being in distress, where the only way to remove it safely from service being to clear the whole Matahina bus. After it was confirmed that protection was not impacted, normal supply was restored at 13:18 and the Grid Emergency ended at 13:22 and a Grid Emergency Report GEN was subsequently issued.	NI