MONTHLY SYSTEM OPERATOR AND SYSTEM PERFORMANCE REPORT

FOR THE ELECTRICITY AUTHORITY

Transpower New Zealand Limited

October 2018

Keeping the energy flowing




TRANSPOWER

Table of Contents

Report Purpose

This report is Transpower's review of its performance as system operator for October 2018, in accordance with clause 3.14 of the Electricity Industry Participation Code 2010 (the Code).

A detailed system performance report (Code obligated) is provided for the information of the Electricity Authority (Authority).

Commentary

This section highlights successful management of significant events and operational issues by the system operator. It provides additional commentary (not Code or SOSPA required) relating to aspects of system operator performance or system performance. The remainder of the report provides supporting detail (which is Code or SOSPA required) in two sections:

- System operator performance, and
- System performance.

Security of supply – During October, North Island inflows were 69% of average and South Island inflows were 68% of average. National hydro storage decreased from 67% to 62% of average for the time of year over the month.

An issue with a valve at Pohokura gas field, as well as the lower than average hydro storage, has meant that supply has been tight. This has been reflected in the market as high prices throughout October. We have engaged with industry participants to aid our analysis of this situation and based on this limited information have concluded that there is no immediate risk to security of supply. The hydro risk status remains at 'Normal', and we are continuing to monitor the situation.

We spoke to the Security and Reliability Council (SRC) on 24 October about the coordination of critical gas contingencies. We highlighted the need for visibility of gas industry production information, not only during a critical contingency but ahead of the situation to enable better planning and coordination, and improved security of supply forecasting.

Operation Managers industry forum - This forum was an initiative of our Operations Managers to provide an opportunity to communicate to Generation Operation Managers in the industry (as well as representatives from the Electricity Authority) some of the key focus areas that came out 2nd March SI AUFLS event in a positive and proactive manner.

Black start test - Working with Genesis Energy, the Systems Operation team planned and successfully practiced a black start of the Tokaanu Power Station on Saturday 6 October.

Real Time Pricing (RTP) – The industry engagement group met in early November to discuss the details of a proposed design for pricing reserve scarcity. The purpose of creating this group is to enable the System Operator and the Authority facilitate a detailed discussion on various aspects of the RTP programme of work and receive feedback.

Dispatch Service Enhancement - Detailed design is on track to be completed by the end of November 2018. The integration pack for ICCP and webservices is being developed for socialising with industry workshop attendees at the end of November.

People news - Jodine Lee has been appointed to the permanent position of Project and Stakeholder Manager in the SO Market and Business division.

System operator performance

1 Compliance

We reported three breaches in October. Two breaches of the Code and one of the Security of Supply Forecasting and Information Policy (SOSFIP).

These breaches related to:

- A manual error in real-time with incorrectly entered constraint parameters
- A Non-Response Long Schedule failing to solve and publish. This is similar to some events in May 2018. A solution has now been identified and put in place.
- An interpretation of how to treat the modelling of contingent hydro storage under the (SOSFIP) resulted in hydro risk curves being inaccurate.

Appendix A shows instances where the system operator has applied discretion under 13.70 of the Code.

2 Market design and system enhancement project updates

Progress against high value, in-flight market design and service enhancement projects is included below along with details of any variances from the current Capex Plan.

Efficient Procurement of Extended Reserves

TAS 79 work is on hold pending information from the Authority Board decision on next steps for Efficient Procurement of Extended Reserve Programme.

Real Time Pricing (RTP)

Work on the TAS deliverables is progressing as scheduled. Focus is on the items that contribute to Authority consultation papers. These are scheduled to be considered by the Authority Board in December 2018.

In addition, the first RTP Industry Engagement Group met on Monday 5 November. The purpose was to enable the System Operator and the Authority facilitate a detailed discussion on various aspects of the RTP programme of work and receive feedback. The workshop provided positive engagement with a targeted group of industry representatives and has established a good level of understanding on the “pricing CE IR deficits” component of the design (including Code). It has enabled us to finalise all aspects of the design for presentation to the Authority December Board.

Dispatch Service Enhancement

Detailed design is on track to be completed by the end of November 2018. The integration pack for ICCP and webservices is being developed for socialising with industry workshop attendees at the end of November. Transition process planning is complete and benefit realisation planning will commence in November.

Wind Offer Arrangements
The project was approved by the Authority Board on 7 November 2018 and is on track to go live on 1 September 2019.

3 Performance metrics

System operator performance against the performance metrics for the financial year as required by SOSPA 12.3 (a) will be provided in the next quarterly report.

4 Actions taken

A full list of actions taken regarding the system operator business plan, statutory objective work plan, participant survey responses and any remedial plan, as required by SOSPA 12.3 (b) will be provided in the next quarterly report.

5 Cost-of-services reporting

The feasibility study into implementing annual cost-of-services reporting to the Authority is required in financial year 2 (SOSPA 12.6). This was completed in September 2017 and a proposed approach submitted to the Authority. Based on feedback, we are now working on developing a draft version of the reporting to present to the Authority.

6 Technical advisory hours and services.

Technical advisory hours and a summary of technical advisory services to which those hours related (SOSPA 12.3 (d) refers) will be provided in the next quarterly report.

7 Separation of Transpower roles

Since the creation of the Operations division and implementation of Transpower-wide training on role impartiality and conflict of interest, we have had a number of issues raised to the register. These issues are being handled in accordance with Transpower's policy for managing conflicts of interest.

There have been no new issues raised in October.

A summary of the open items raised on the conflict of interest register is set out below:

- System operator staff involvement with grid owner project
- Outage planning policy (to be consulted on in November)
- Ensuring consistent information provided for outage information
- Management of actions from role impartiality review
- Confidentiality of participant information

System performance

8 Operational and system events

On 14 October, the Systems Operator Operation Managers hosted an industry forum for Generation Operation Managers from Meridian, Contact Energy, Mercury, Genesis, Trustpower and Nova as well as representatives from the Electricity Authority. The forum was an initiative of our Operations Managers to provide an opportunity to communicate some of the key focus areas that came out 2nd March SI AUFLS event in a positive and proactive manner. The forum was well received, and we plan to make similar forums a regular event – annually or more frequently if there is sufficient appropriate content for there to be interest.

On 17 September, both Cromwell – Frankton 1 and 2 circuits tripped in succession causing loss of supply to Queenstown during a snow storm. Cognisant of the terrain, conditions, and the high likelihood of the unseasonal snow being the causal event, Transpower as grid owner coordinated a response enabling the assets to be returned to service within eight minutes minimising the impact.

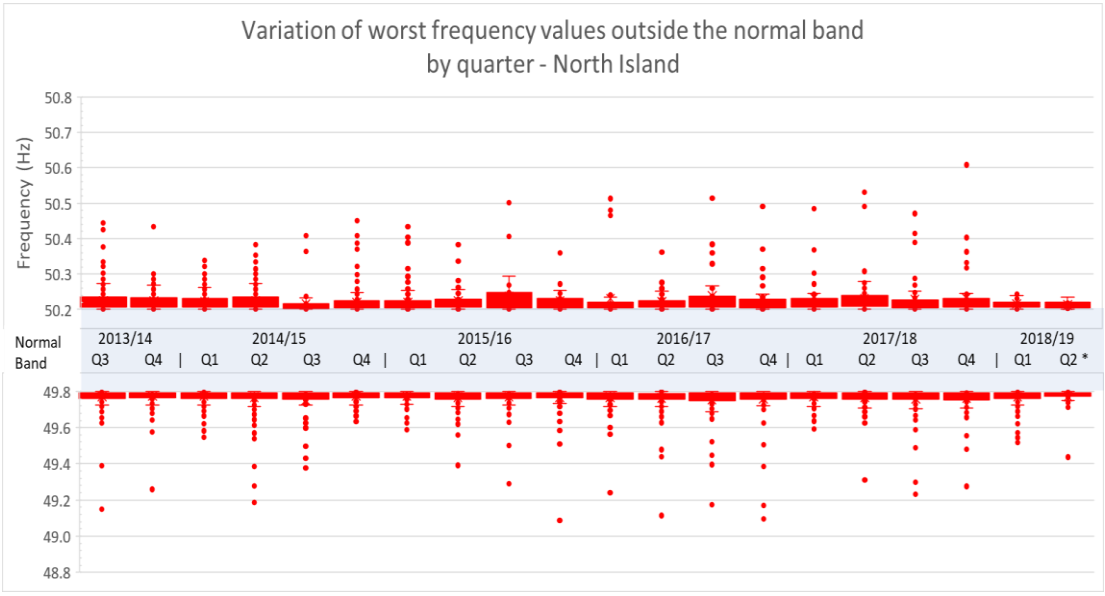
Working with Genesis Energy, the Systems Operation team planned and successfully practiced a black start of the Tokaanu Power Station on Saturday 6 October. A co-ordinator and power systems engineers travelled to the site to be on location over the event to liaise with the control centre throughout the test and evaluate black start performance. Further details will be included in next month's report.

9 Frequency fluctuations

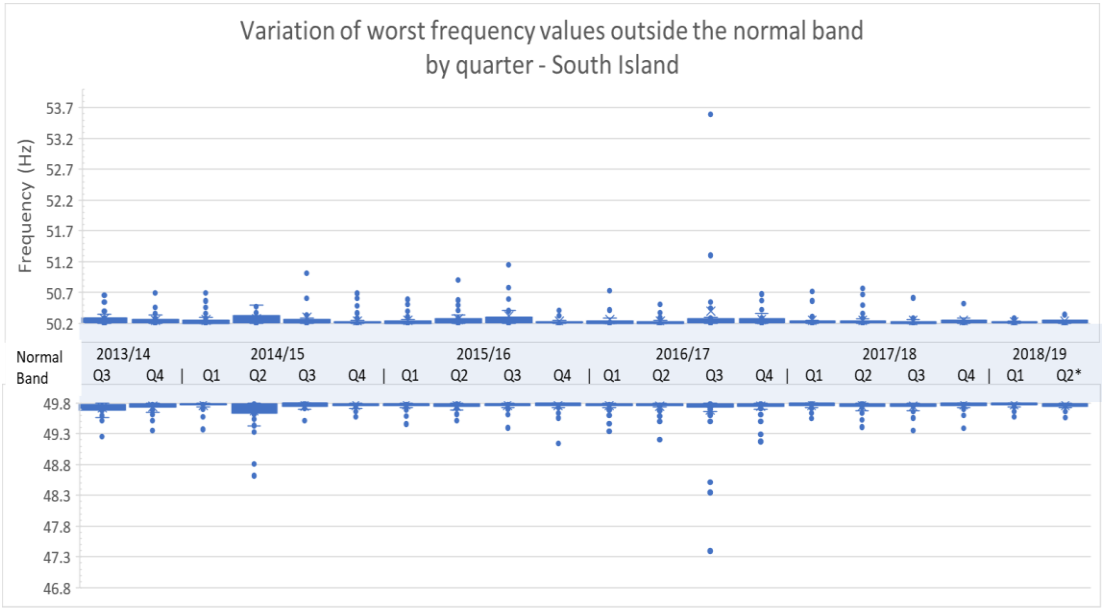
9.1 Maintain frequency in normal band (Frequency value)

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

North Island



South Island



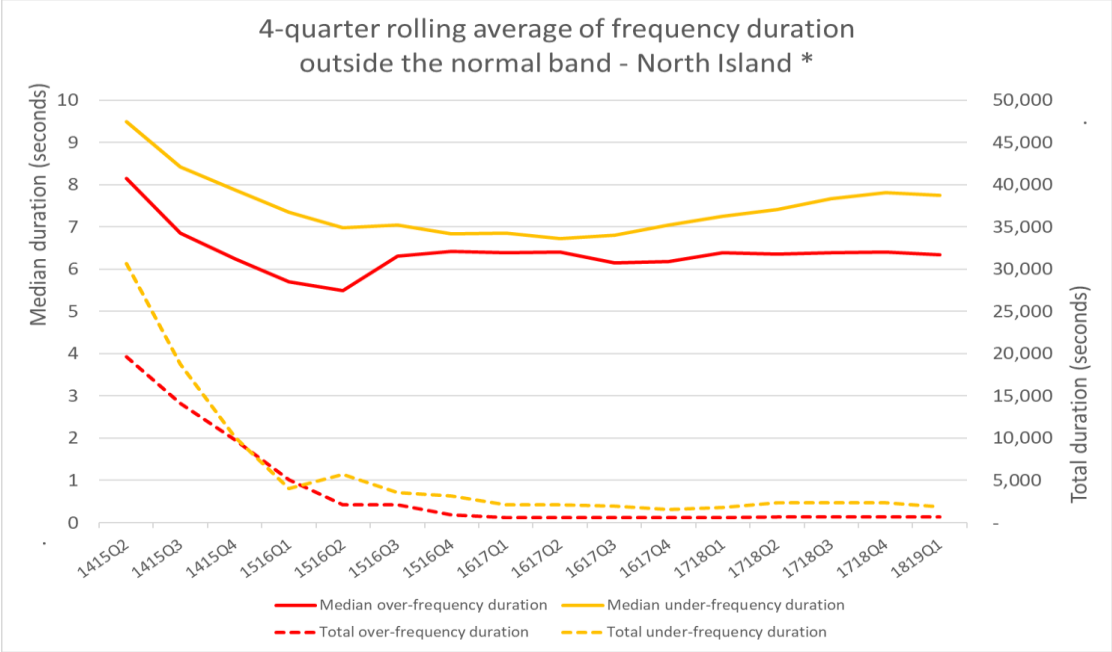
* 2018/19 Q2 only contains data for October

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.

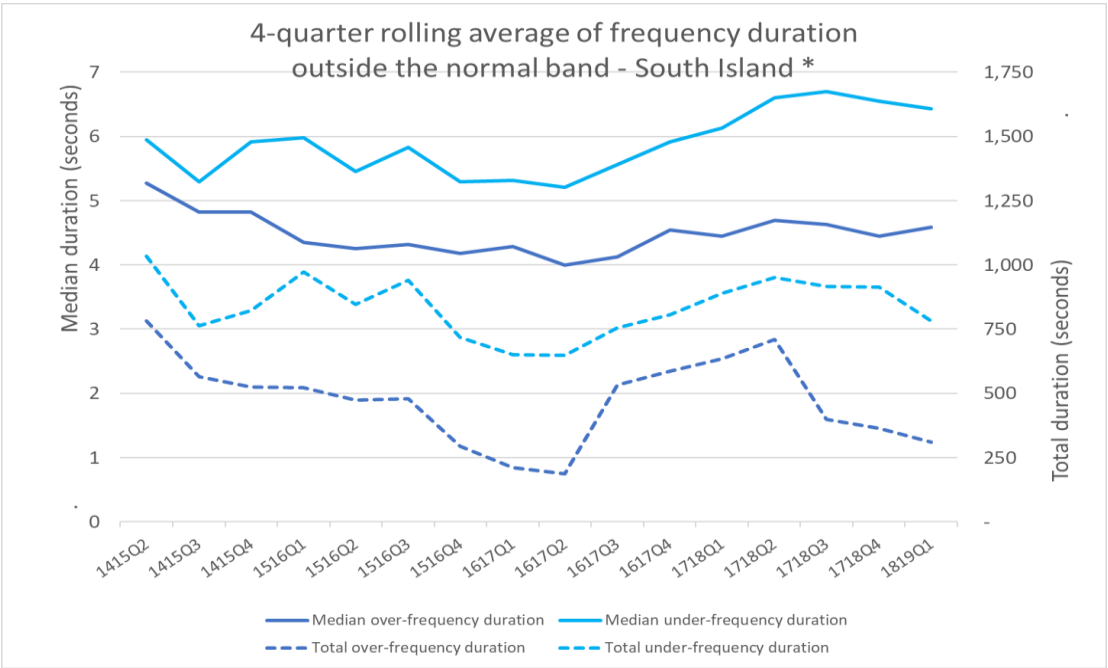
9.2 Recover quickly from a fluctuation (Time)

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



South Island

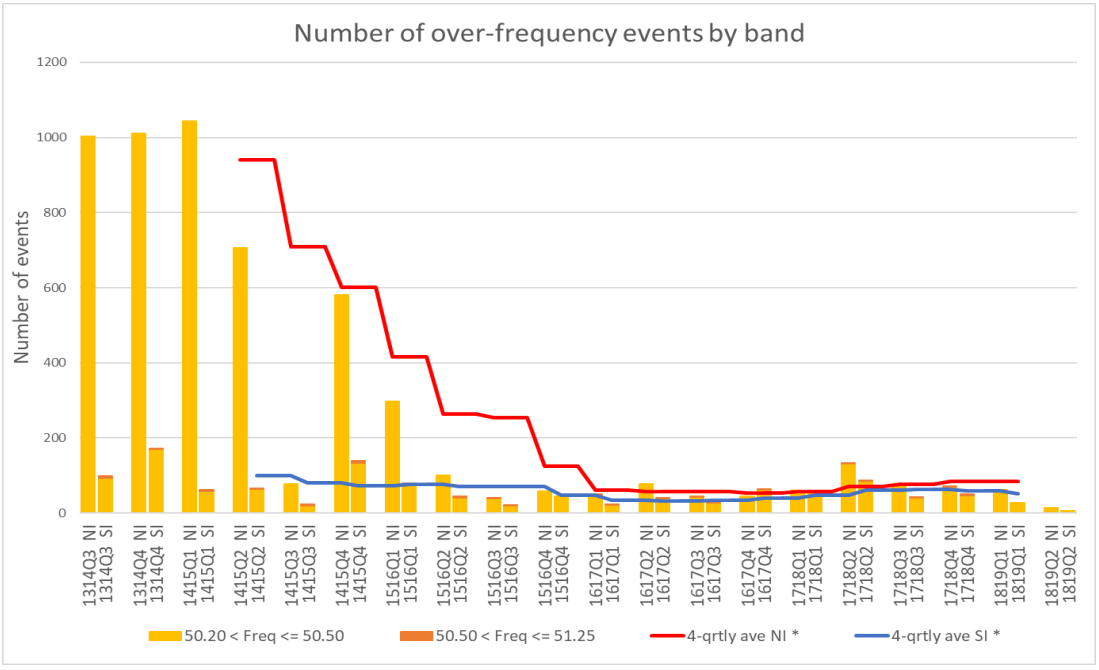


* These graphs have not been updated since 2018/19 Q1; they will only be updated at the end of each quarter

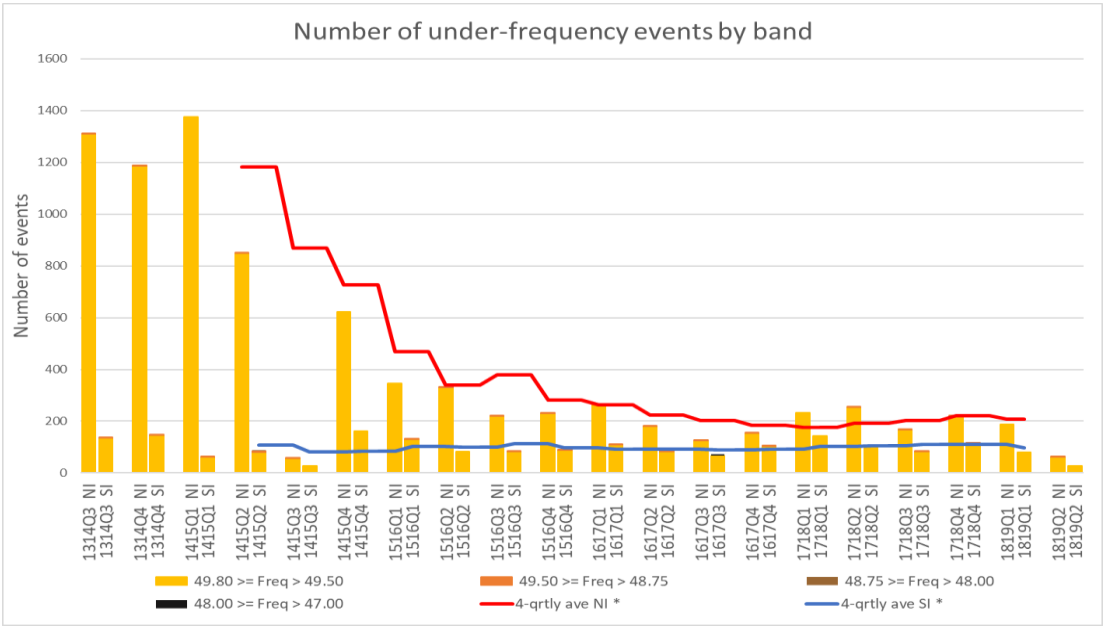
9.3 Manage frequency and limit rate of occurrences during momentary fluctuations (Number)

The following charts show the number of momentary fluctuations outside the frequency normal band, grouped by frequency band, for each quarter since 2014. The information is shown by island, including a 4-quarter rolling average to show the prevailing trend.

Over-frequency events



Under-frequency events



* 4-qtrly averages for NI and SI will only be updated at the end of each quarter

9.4 Manage time error and eliminate time error once per day

There were no time error violations in the reporting period.

10 Voltage management

Grid voltages did not exceed the Code voltage ranges during the reporting period.

11 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	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18
Demand Allocation Notice	-	-	-	-	-	-	-	-	-	-	-	-
Grid Emergency Notice	1	-	3	1	-	1	1	-	-	1	-	-
Warning Notice	-	1	-	-	-	-	-	1	1	-	-	-
Customer Advice Notice	8	1	3	6	4	10	12	4	2	9	9	6

12 Grid emergencies

The following table shows grid emergencies declared by the system operator.

Date	Time	Summary Details	Island
		None this month.	

13 Security of supply

During October, North Island inflows were 69% of average and South Island inflows were 68% of average. National hydro storage decreased from 67% to 62% of average for the time of year over the month.

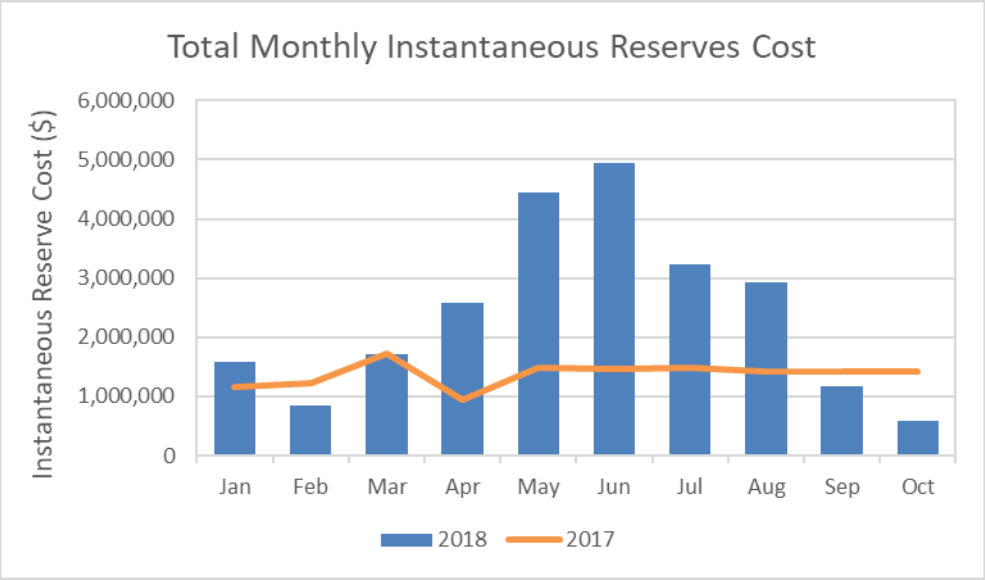
An issue with a valve at Pohokura gas field, as well as the lower than average hydro storage, has meant that supply has been tight. This has been reflected in the market as high prices throughout October. We have engaged with industry participants to aid our analysis of this situation and based on this limited information have concluded that there is no immediate risk to security of supply. The hydro risk status remains at 'Normal', and we are continuing to monitor the situation.

We spoke to the Security and Reliability Council (SRC) on 24 October about the coordination of critical gas contingencies. We highlighted the need for visibility of gas industry production information, not only during a critical contingency but ahead of the situation to enable better planning and coordination, and improved security of supply forecasting.

14 Ancillary services

The instantaneous reserves costs In October are half of what there were in September, and significantly lower than the high costs in May and June. The low costs in October can be attributed to two factors:

- The largest risk on the system that needs to be covered by reserves has reduced with the thermal generators operating on lower outputs
- In a dry sequence the hydro generators typically offer reserve at low prices as they prefer to clear for reserves than energy



The annual ancillary services tender process closed on 19 October. We tendered for Over-Frequency Reserves in both the North and South Islands, and a Black Start provider in the South Island. The new contracts will commence on 1 December 2018.

Refer Appendix B for Ancillary Services Graphs.

Appendix A: Discretion

Event Date and Time	Event Description
02-Oct-2018 18:01:00	KAW0111 TAM0 : Required for system security
09-Oct-2018 11:57:00	MAN2201 MAN0 : Offload extended potline Last Dispatched Mw: 738
11-Oct-2018 11:48:00	MAN2201 MAN0 : Restore Extended Potline

Appendix B: Ancillary Services Graphs