MONTHLY SYSTEM OPERATOR AND SYSTEM PERFORMANCE REPORT

FOR THE ELECTRICITY AUTHORITY

Transpower New Zealand Limited

October 2017

Keeping the energy flowing




TRANSPOWER

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Report Purpose

This report is Transpower's review of its performance as system operator for October 2017, 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.

Two pricing error claims occurred in October of which one was not upheld. This brings the total to four pricing errors for the year to date. Each error is managed through an event review process mitigating the issue from re-occurring.

Under the current RTP proposal the pricing error process is currently expected to remain, not dissimilar to that of overseas models. This would allow participants the opportunity to challenge prices should they appear incorrect. In a complex nodal pricing market this would appear prudent particularly during the early stages of go live with participants coming to terms with the new pricing model.

System operator performance

1 Compliance

No breaches were reported in October.

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 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

The majority of the project is on hold pending the recommendation on options from the Authority Board. In the meantime, Transpower continues to support the Authority with input and options assessment. A recommendation from Transpower on a future approach for the project has been developed and delivered to the Authority. This will feed into the Authority's decision making process and Board approval in December.

Transpower continues to work on the capital component of this work to make changes to the Reserve Management Tool (RMT) and developing a tool to support extended reserves block data collection. The approved capital project underway deviates from the current Capex Plan with an increased approved capital cost (approved $525k against Capex Plan of $195k). Although the approved completion date currently aligns with the Capex Plan, this is now at risk given the delays in confirming direction and options.

Real Time Pricing

Support to the Authority for the consultation period for real time pricing continues. Transpower focus is currently on the issues raised during submissions to understand design implications. The Authority is planning for an early December Board meeting to provide an update and confirm a decision to proceed. Planning commenced for the next phase which will refine the requirements, confirm the solution and develop the capital business case. Time and cost of this work aligns with the current Capex Plan.

EDF Phase III

This project will replace the aging inter-party dispatch interfaces. New interfaces will be able to be supported and enable new dispatch products in the future. The project has commenced work on the Proof of Concept design, and the solution requirements workshops. Communications planning has also started, with initial messaging being published to industry early November. Time and cost of this work aligns with the current Capex Plan.

Sensitivity Schedules

The Sensitivity Schedules initiative was developed following industry feedback where there was a desire to obtain price sensitivity information based on variability of the forward looking forecast schedules. Analysis has been completed demonstrating a positive net benefit. This initiative was originally intended to be a 'service enhancement' however, there have been synergies identified with the Load Forecast Improvement project now being established by the Authority. This 'service enhancement' project has now been put on hold, with the scope being migrated across to the Load Forecast Improvement 'market design' project. Although time and cost of this work align with the current Capex Plan, this project will now be aligned with the Load Forecast Improvement project and therefore will be removed from the Capex Plan. No future reporting will be provided for this project.

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 refers). An update will be provided in the next quarterly report.

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

As system operator, Transpower has not been materially affected by any other role or capacity Transpower has under the Code or under any agreement.

System performance

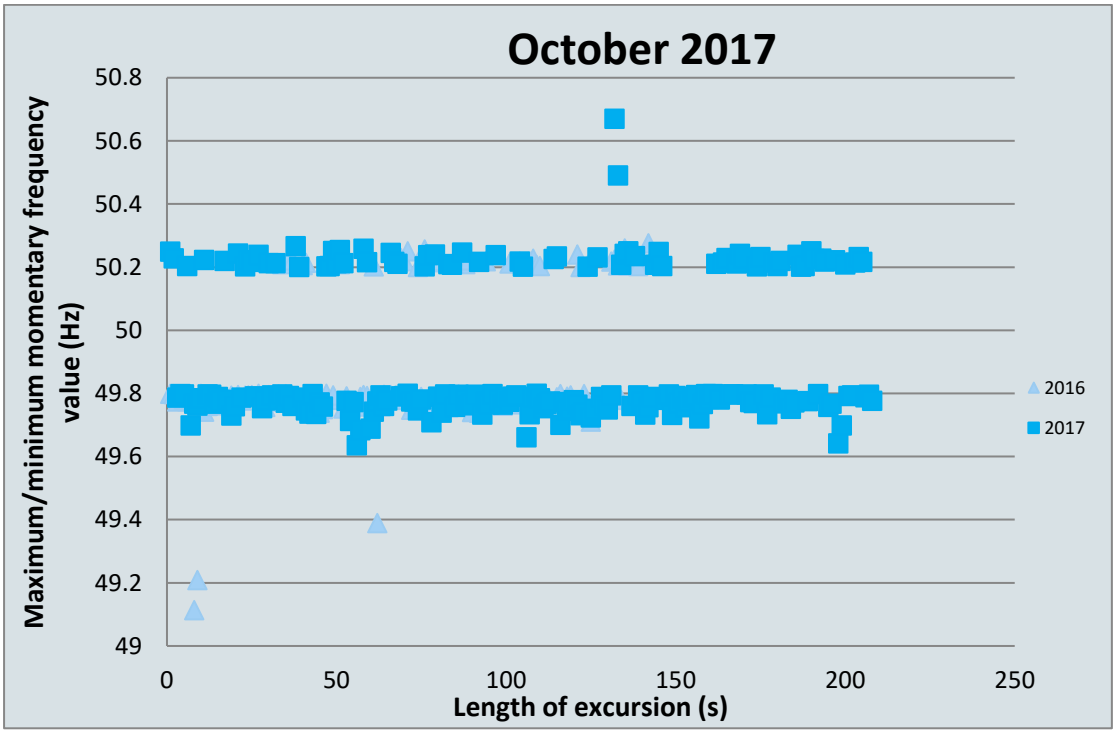
8 Operational and system events

No material weather-related or system events occurred during October.

9 Frequency fluctuations

9.1 Maintain frequency in normal band and recover quickly from a fluctuation

The chart below shows the maximum or minimum frequency reached and length of each frequency excursion outside the normal band (49.8 to 50.2 Hz) during the reporting period.



9.2 Maintain frequency and limit rate occurrences during momentary fluctuations

The tables below show the total number of momentary fluctuations outside the frequency normal band, recorded in each island, for each month over the last 12 months and the 12 month cumulative totals, grouped by frequency band.

North Island

Frequency Band	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Annual rate
55.00 > Freq >= 53.75													
53.75 > Freq >= 52.00													
52.00 > Freq >= 51.25													
51.25 > Freq >= 50.50													
50.50 > Freq >= 50.20	29	24	22	11	10	8	16	22	6	22	31	41	**242**
50.20 > Freq > 49.80													
49.80 >= Freq > 49.50	70	42	45	30	52	55	59	42	52	92	89	91	**719**
49.50 >= Freq > 48.75	1	1	2		1			3					**8**
48.75 >= Freq > 48.00													
48.00 >= Freq > 47.00													
47.00 >= Freq > 45.00													

South Island

Frequency Band	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Annual rate
55.00 > Freq >= 53.75													
53.75 > Freq >= 52.00					1								**1**
52.00 > Freq >= 51.25													
51.25 > Freq >= 50.50		1	1	1	1	1	1	1		2	1	1	**11**
50.50 > Freq >= 50.20	16	8	12	9	7	16	18	28	11	17	28	29	**199**
50.20 > Freq > 49.80													
49.80 >= Freq > 49.50	31	17	22	19	27	29	33	45	36	50	58	46	**384**
49.50 >= Freq > 48.75	1							2					**3**
48.75 >= Freq > 48.00					1								**1**
48.00 >= Freq > 47.00					1								**1**
47.00 >= Freq > 45.00													

Note: The frequency excursions for March include simultaneous over-frequencies and under-frequencies that occurred when the South Island was split into two electrical islands on 2 March.

9.3 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-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17
Demand Allocation Notice	-	-	-	-	-	-	-	-	-	-	-	-
Grid Emergency Notice	-	-	-	4	1	1	1	-	-	1	-	-
Warning Notice	-	-	-	-	-	-	-	-	-	-	2	-
Customer Advice Notice	26	7	11	7	24	10	16	23	2	6	6	1

12 Grid emergencies

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

Date	Time	Summary Details	Island
		None.	

13 Security of supply

After strong inflows in September, October was drier, particularly in the South Island. North Island inflows were 112% of average for the month of October, compared to 61% for the South Island.

National hydro storage decreased from 121% to 102% of average for the time of year over the month. The hydro risk status remains at ‘Normal’.

14 Ancillary services

Submissions for the tender process for Ancillary Services have been assessed and a decision on who the successful participants are is being finalised.

Two market participants in the North Island are looking to offer reserves. Models for them have been built and are currently being tested in the market system.

Refer Appendix B for Ancillary Services Graphs.

Appendix A: Discretion

Event Date & Time	Event Description
9/10/2017 12:11:03 PM	MAN2201 MAN0. Extended potline L3 186MW return.
9/10/2017 12:28:48 PM	MAN2201 MAN0.
12/10/2017 11:53:09 AM	MAN2201 MAN0 Extended Potline 2.
16/10/2017 8:38:56 AM	MAN2201 MAN0. Extended Potline 2. MAN has approval to vary from electronic dispatch to manage the TWI reduction line offload. MEL to return to Economic Dispatch once line reduction has been completed
17/10/2017 2:11:50 PM	MAN2201 MAN0. Return Potline 2 to service.
19/10/2017 7:31:56 AM	WHI2201 WHI0. Dispatched on to cover other ramping plant and kept on for morning peak due to forecast shortfall.
24/10/2017 2:15:17 PM	MAN2201 MAN0. Extended Potline 2 return.
27/10/2017 2:50:54 PM	TKB2201 TKB1. Tripped.

Appendix B: Ancillary Services Graphs