

MONTHLY SYSTEM OPERATOR AND SYSTEM PERFORMANCE REPORT

FOR THE ELECTRICITY AUTHORITY

Transpower New Zealand Limited

August 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 August 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.

Authority Board visit to Haywards and SO Control Centre

We hosted four new Authority Board members with a tour of Haywards and NCCN. This was followed by the regular Authority SOC (System Operations Committee) meeting at Transpower House. Discussion included review of dry year policies, the South Australian blackout findings and review of the SO capital plan.

Security of supply

We are working closely with the Authority to plan a review of the Security of Supply Information and Forecasting Policy, and identify priorities to complete by March 2018. Internally, we have captured lessons learnt from the 2017 winter, and are continuing to review our internal processes to ensure we record the knowledge gained. Refer Section 13 Security of supply (p. 6) for current security of supply status.

System operator performance

1 Compliance

Three breaches were reported in August, two were manual errors related to Special Protection Scheme rating changes during outages, the other was an error in notification timeframe sent to a participant.

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 – A capital project to implement the tool changes was approved and is now being developed. Other work under this programme is currently on hold pending Authority Board confirmation of options in early October.

Real Time Pricing – The consultation paper has been released and briefing presentations have been held. The overall time has been pushed out to align with the planned completion of the decision paper following consultation. The decision paper is expected to be approved by the Authority in December 2017. Requirements gathering and design work will recommence in February 2018.

EDF Phase III – This project will refresh dispatch functionality within the market system, reducing barriers to entry and enable future dispatch products to be implemented. The appropriations for the project have been approved by the Authority Board. The Initial Business Case will now be submitted for Transpower approval after which the Initiation phase will commence.

Sensitivity Schedules – This project will provide forecast sensitivity schedules for market benefit. The benefits identification report has been delivered and is under review. The development of the Initial Business Case and the appropriation consultation document are progressing.

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

Pole 3 was taken out of service for three hours on 3 August for urgent maintenance. Pole 2 remained in operation, though with monopole operation the national frequency sharing and market arrangements were unavailable and transfers restricted to 500MW north (slightly less, south). No material operational issues arose during the outage.

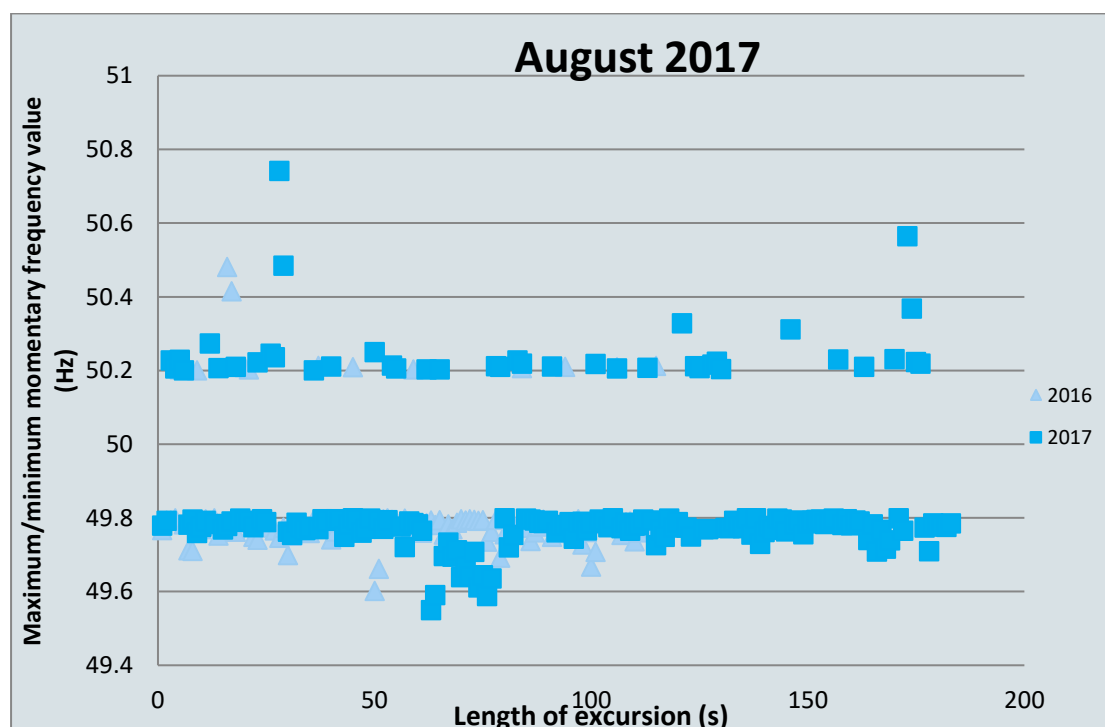
Several short notice outages of Islington (ISL) bus sections were required on 28-29 August due to a number of stuck disconnectors on the 220 kV bus. These outages were well managed by coordinators who were required to plan for unusual disconnector configurations (i.e. buses tied via disconnectors).

No material weather-related events occurred during August.

9 Frequency fluctuations

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.



Maintain frequency and limit rate occurrences during momentary fluctuations

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

Frequency Band	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-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	2			1	1	1	1	1	1	1		2	11
50.50 > Freq >= 50.20	32	39	45	32	34	20	17	24	34	50	17	39	383
50.20 > Freq > 49.80													
49.80 >= Freq > 49.50	153	101	101	59	67	49	79	84	92	87	88	142	1102
49.50 >= Freq > 48.75	2	2	3	1	2		1			6			17
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.

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	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17
Demand Allocation Notice	-	-	-	-	-	-	-	-	-	-	-	-
Grid Emergency Notice	1	2	-	-	-	4	1	1	1	-	-	1
Warning Notice	1	-	-	-	-	-	-	-	-	-	-	-
Customer Advice Notice	5	12	26	7	11	7	24	10	16	23	2	6

12 Grid emergencies

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

Date	Time	Summary Details	Island
08-Aug-17	19:30	A Grid Emergency was declared to allow the Arapuni 110 kV split to be closed following the tripping of 220 kV Atiamuri-Whakamaru Circuit 1.	N

13 Security of supply

The security of supply situation has continued to improve, with above average inflows on both islands over the past four weeks. The week of 25 August saw overall hydro storage increase to 85% of average for the time of year (a significant improvement on 62% from the month before). The hydro risk status remains at 'Normal'.

Over the last few weeks the contribution of hydro to the generation mix has risen to the level seen this time last year, with thermal generation falling. This marks an end to the dry-winter generation behaviour.

14 Ancillary services

Preparations for the tender process for Ancillary Services are underway.

Two market participants in the North Island are looking to offer reserves. Assessment of the test results and how these would be modelled are on-going.

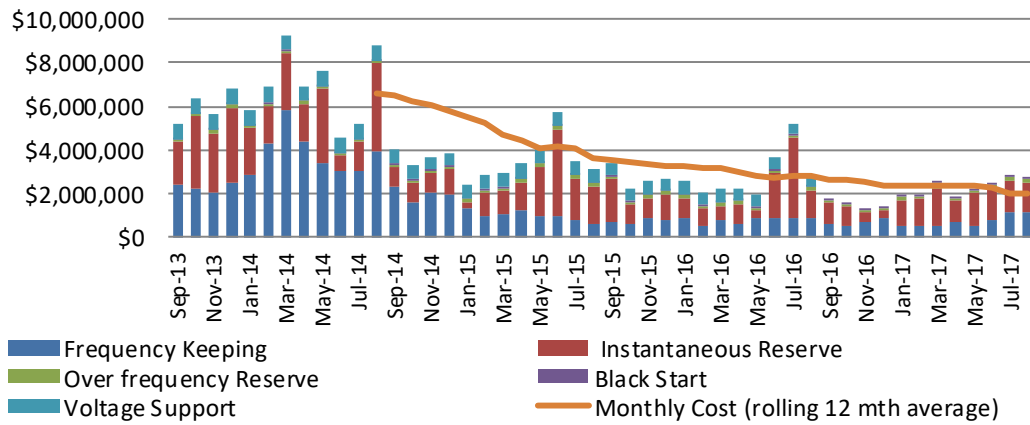
Refer Appendix B for Ancillary Services Graphs.

Appendix A: Discretion

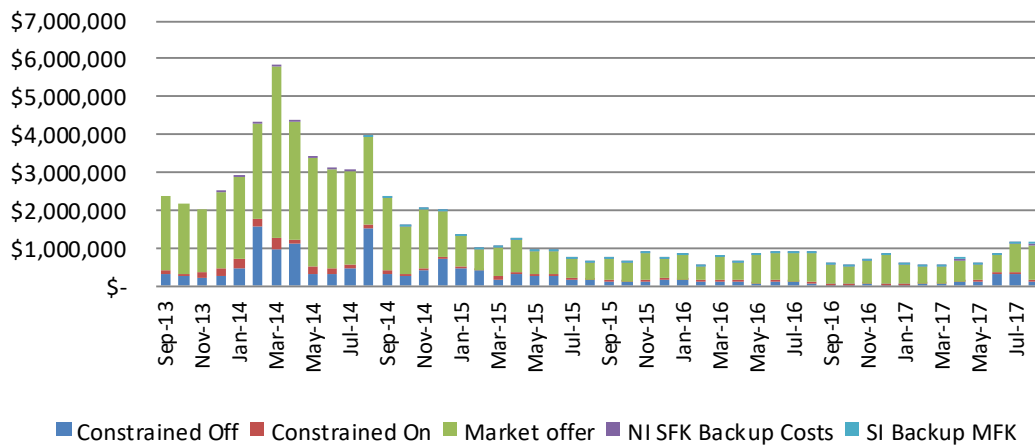
Event Date & Time	Subject	Event Description
8/8/2017 1:30:23 AM	DISCRETION	MAN2201 MAN0 Discretion Clause 13.70, Part 13 EN Max : 189 Start: 08-Aug-2017 01:30 End: 08-Aug-2017 02:00 Notes: Restoration of emergency potline - Line 3. Last Dispatched Mw: 373.77
15/8/2017 6:40:26 PM	DISCRETION	WGN0331 Discretion Clause 13.70, Part 13 FIR Max : 92.8 Start: 15-Aug-2017 18:40 End: 15-Aug-2017 19:00 Notes: Last Dispatched: IntF: 65.74 IntS: 45.08
16/8/2017 3:57:43 AM	DISCRETION	MKE1101 MKE1 Discretion Clause 13.70, Part 13 ENR Max : 0 Start: 16-Aug-2017 03:57 End: 16-Aug-2017 04:30 Notes: Tripped, caused by system event. Last Dispatched Mw: 44.1
23/8/2017 7:36:44 AM	DISCRETION	WHI2201 WHI0 Discretion Clause 13.70, Part 13 EN Min : 10 Start: 23-Aug-2017 07:36 End: 23-Aug-2017 08:00 Notes: Required for system security of supply for the morning peak. Last Dispatched Mw: 13.66
30/8/2017 11:50:28 AM	DISCRETION	MAN2201 MAN0 Discretion Clause 13.70, Part 13 EN Max : 365 Start: 30-Aug-2017 11:50 End: 30-Aug-2017 12:00 Notes: Line 2 185MW extended potline return. Last Dispatched Mw: 550

Appendix B: Ancillary Services Graphs

Ancillary Services Costs (past 4 years)



Frequency Keeping (past 4 years)



Instantaneous Reserve (past 4 years)

