

New Zealand Generation Balance – August 2018

Executive Summary

The New Zealand Generation Balance (NZGB) assessment for the next 6 months indicates an improvement in the generation balance for the month of August. The North and South Island generation outages continue to increase over the January-February period, resulting in a deterioration of margins and an anticipated shortfall of approximately 71 MW on 13/02/2019 and 14/02/2019. Under the sensitivity scenario conditions of a major, slow starting North Island generating unit not being offered, further shortfalls could be encountered on several days (Please refer to table1 for specific dates).

The report assessment uses the data available as of 29/07/18 and includes February 2019 in the study window. Compared to the July report, the generation margins have improved slightly, by an average of 150 MW throughout August. This increase in the generation balance is caused by changes in North Island generation outages. However, the generation balance margins have decreased by an average of 100 MW throughout September to November, also impacted by generation outages mainly in the North Island.

The assessment includes the significant outages of:

- HVDC pole and bipole planned for 22/11/18-28/11/18
- Generation outage of Huntly unit 5 scheduled for 26/10/18 – 11/12/18

To mitigate the risk of a shortfall, on dates where a tight generation balance margin is forecasted, market participants should:

1. avoid scheduling additional outages which may remove or constrain generation; and
2. adjust demand and generation offers to minimise the risk of shortfall.

Figure 1, shows generation balance margins from the *long-term* studies. To minimise the risk of a shortfall, it is recommended this information be used for scheduling outages which remove or constrain generation.

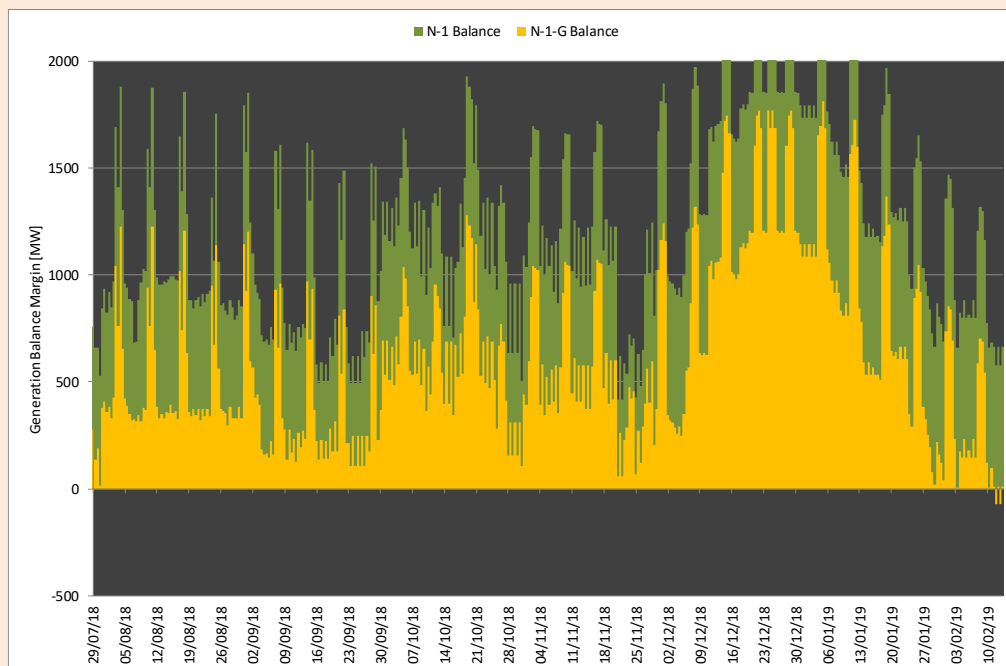


Figure 1: Generation balance study results for the period studied



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Generation balance for Winter 2018

The Winter generation balance study indicates a general improvement in the generation balance margins (N-1 and N-1-G) for August and a decrease for September, with no anticipated shortfalls (N-1-G). Additional sensitivity studies (undertaken to assess the impact of a major slow-starting generating unit not being offered) shows a number of generation balance shortfalls (N-1-G < -50 MW) during several days in August, with several larger shortfalls (up to -254 MW) during September. The results of the base and sensitivity studies for Winter 2018 are shown in Figure 2 and Figure 3 respectively.

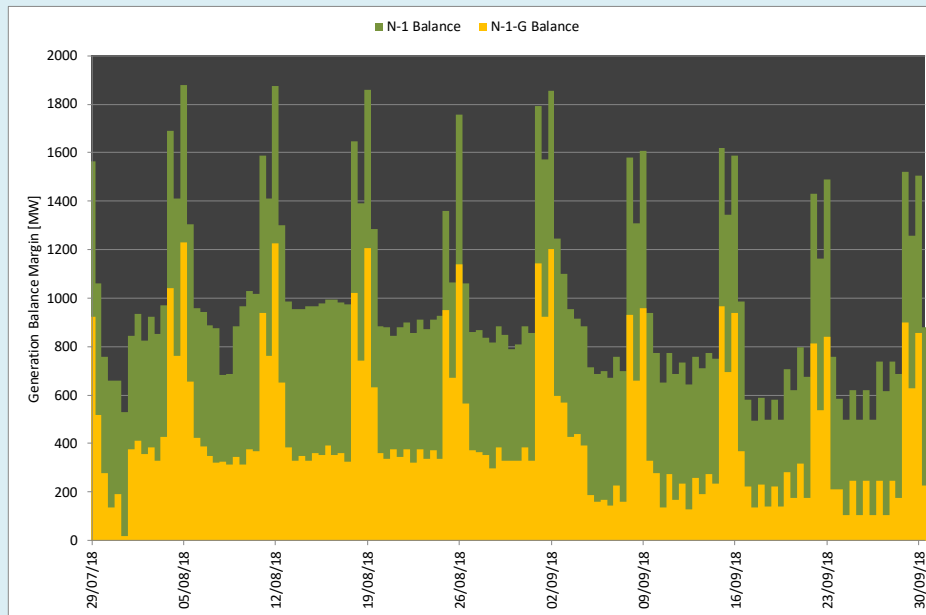


Figure 2: Generation balance base study results (winter months only)

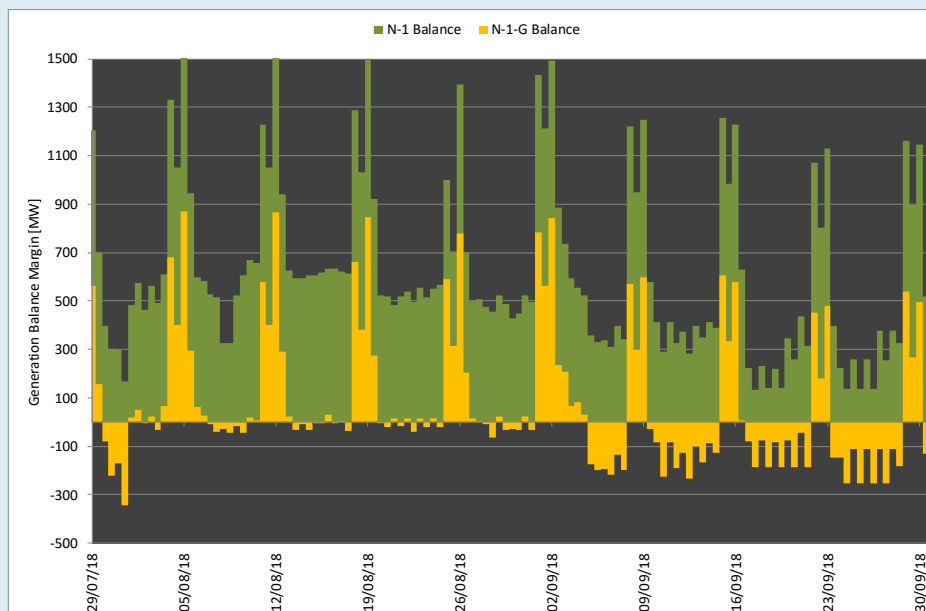


Figure 3: Generation balance sensitivity study results (winter months only)



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Low generation balance margins for the period studied

Low generation balance margins are anticipated on several days over the studied period, with some shortfalls (N-1-G) forecasted towards the end of our study period. Additionally, under sensitivity scenario conditions of a major, slow starting North Island generating unit not being offered, further generation balance shortfalls could be encountered on several dates.

A summary of the study results for these dates, as well as a summary of outages causing the low generation balance margins, are detailed in Table 1.

Table 1: Result of the long-term generation balance studies.

	Base Scenario		Worst Case Sensitivity Scenario		Equipment Outage Impact				
	N-1 Margin	N-1-G Margin	N-1 Margin	N-1-G Margin	Generation		Transmission		HVDC
					NI	SI	NI	SI	
Wed 01/08/18	843	378	483	18	200	400	0	0	0
Thu 02/08/18	823	357	463	-3	250	400	0	0	0
Fri 03/08/18	851	328	491	-32	250	350	0	0	0
Mon 06/08/18	941	387	581	27	200	300	0	0	0
Tue 07/08/18	875	320	515	-40	250	300	0	0	0
Wed 08/08/18	684	314	324	-46	250	500	0	0	0
Thu 09/08/18	884	314	524	-46	250	300	0	0	0
Fri 10/08/18	1016	366	656	6	200	150	0	0	0
Mon 13/08/18	953	329	593	-31	200	250	0	0	0
Tue 14/08/18	954	329	594	-31	250	250	0	0	0
Wed 15/08/18	964	354	604	-6	250	250	0	0	0
Thu 16/08/18	993	354	633	-6	200	250	0	0	0
Fri 17/08/18	975	325	615	-35	250	200	0	0	0
Mon 20/08/18	881	338	521	-22	250	350	0	0	0
Tue 21/08/18	843	345	483	-15	250	400	0	0	0
Wed 22/08/18	856	320	496	-40	250	350	0	0	0
Thu 23/08/18	874	338	514	-22	250	300	0	0	0
Fri 24/08/18	912	338	552	-22	250	300	0	0	0
Mon 27/08/18	858	363	498	3	250	350	0	0	0
Tue 28/08/18	815	297	455	-63	250	350	100	0	0
Wed 29/08/18	847	329	487	-31	200	350	100	0	0
Thu 30/08/18	790	329	430	-31	250	400	0	0	0
Fri 31/08/18	855	329	495	-31	200	350	0	0	0
Tue 04/09/18	885	390	525	30	300	400	0	0	0
Wed 05/09/18	688	160	328	-200	550	350	0	0	0
Thu 06/09/18	672	144	312	-216	600	350	0	0	0
Fri 07/09/18	700	160	340	-200	550	350	0	0	0
Sun 09/09/18	940	330	580	-30	400	300	0	0	0
Mon 10/09/18	651	134	291	-226	500	350	0	0	0
Tue 11/09/18	685	168	325	-192	500	350	0	0	0
Wed 12/09/18	644	127	284	-233	500	350	0	0	0
Thu 13/09/18	709	193	349	-167	500	350	0	0	0
Fri 14/09/18	750	234	390	-126	500	350	0	0	0
Sun 16/09/18	988	368	628	8	450	300	0	0	0
Mon 17/09/18	495	135	135	-185	450	550	0	0	0
Tue 18/09/18	500	140	140	-185	450	550	0	0	0
Wed 19/09/18	500	140	140	-185	500	550	0	0	0
Thu 20/09/18	618	175	258	-185	450	450	0	0	0
Fri 21/09/18	673	175	313	-185	450	400	0	0	0
Sun 23/09/18	758	211	398	-149	550	400	0	0	0



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	Base Scenario		Worst Case Sensitivity Scenario		Equipment Outage Impact				
	N-1 Margin	N-1-G Margin	N-1 Margin	N-1-G Margin	Generation		Transmission		HVDC
					NI	SI	NI	SI	
Mon 24/09/18	497	106	137	-254	550	500	0	0	0
Tue 25/09/18	497	106	137	-254	500	500	0	0	0
Wed 26/09/18	497	106	137	-254	500	500	0	0	0
Thu 27/09/18	615	106	255	-254	500	350	0	0	0
Fri 28/09/18	685	177	325	-183	500	350	0	0	0
Sun 30/09/18	878	228	518	-132	500	150	0	0	0
Mon 01/10/18	1020	370	660	10	750	200	0	0	0
Thu 11/10/18	904	364	544	4	750	400	0	0	50
Fri 26/10/18	932	282	572	-78	1000	450	0	0	50
Mon 29/10/18	634	154	384	-206	950	550	0	0	50
Tue 30/10/18	634	154	384	-206	950	550	0	0	50
Wed 31/10/18	634	154	384	-206	950	550	0	0	50
Thu 01/11/18	502	109	252	-251	1250	550	0	0	50
Fri 02/11/18	1036	395	685	35	1000	300	0	0	50
Mon 05/11/18	1044	394	684	34	1000	250	0	0	50
Tue 06/11/18	997	347	637	-13	1050	250	0	0	50
Wed 07/11/18	1041	391	681	31	1000	450	0	0	50
Thu 08/11/18	922	409	672	49	950	450	0	0	50
Fri 09/11/18	866	353	616	-7	1000	450	0	0	100
Tue 13/11/18	985	409	699	49	950	350	0	0	50
Wed 14/11/18	945	409	695	49	950	400	0	0	100
Thu 15/11/18	950	374	664	14	1000	350	0	0	50
Fri 16/11/18	955	371	661	11	1000	350	0	0	50
Tue 20/11/18	1045	399	689	39	1000	250	50	0	100
Thu 22/11/18	419	59	59	-191	950	250	0	0	500
Fri 23/11/18	419	59	59	-191	950	250	0	0	500
Mon 26/11/18	428	68	68	-182	950	300	0	0	700
Tue 27/11/18	482	122	122	-128	900	300	0	0	700
Wed 28/11/18	1002	396	686	36	1000	300	0	0	50
Thu 29/11/18	1009	404	694	44	950	300	0	0	50
Fri 30/11/18	810	204	494	-156	1150	300	0	0	50
Mon 03/12/18	972	322	612	-38	1050	200	100	0	100
Tue 04/12/18	936	286	576	-74	1050	200	150	0	100
Wed 05/12/18	905	255	545	-105	1100	200	150	0	100
Thu 06/12/18	897	247	537	-113	1250	200	0	0	100
Wed 30/01/19	666	19	656	9	1350	200	0	0	50
Fri 01/02/19	688	38	678	28	1200	200	0	0	50
Mon 04/02/19	657	7	647	-3	1250	350	0	0	50
Mon 11/02/19	657	7	647	-3	1250	450	0	0	50
Tue 12/02/19	662	12	652	2	1250	550	0	0	50
Wed 13/02/19	579	-71	569	-81	1400	450	0	0	50
Thu 14/02/19	579	-71	569	-81	1400	450	0	0	50

To mitigate the risk of a shortfall, on dates where tight generation balance margins are forecasted, market participants should:

1. avoid scheduling additional outages which may remove or constrain generation; and
2. adjust demand and generation offers to minimise any risk of shortfall



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Changes since the July 2018 report

The major changes between this and the previous month's report are:

1. A general increase in the generation balance margins (N-1 and N-1-G) for August and decrease for September. This is mainly caused by changes in the North Island generation outages.
2. The report now includes February in the study window, where the generation margin is expected to further deteriorate as the North Island generation outage continue to increase into February.
3. Generation Balance shortfalls (N-1-G) are anticipated on 13/02/2019 and 14/02/2019.

Notable outages

Notable outages of generation and transmission equipment that impact the generation balance for the period studied are shown in Figure 4.

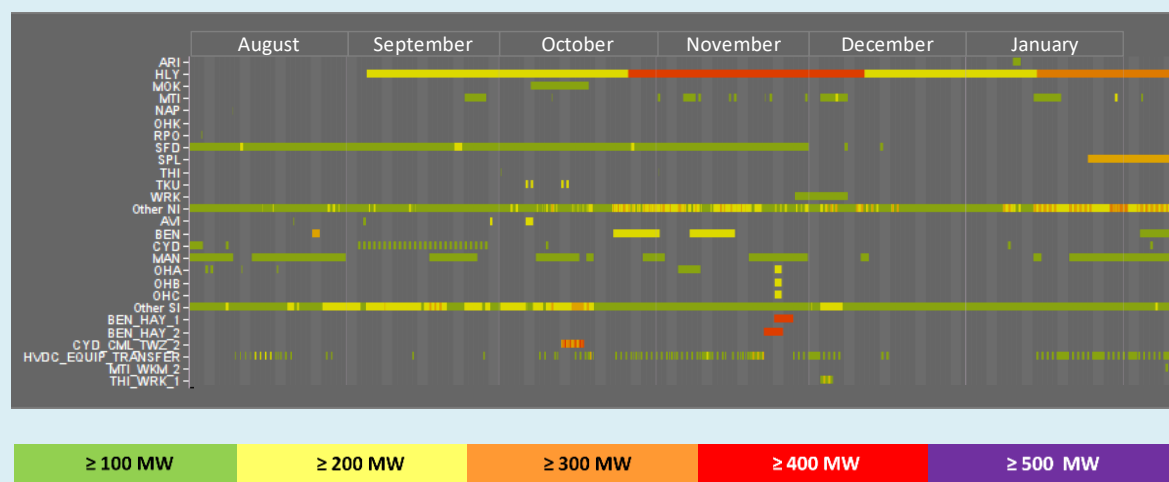


Figure 4: Significant generation and transmission equipment outages.



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