

DWGM EVENT – INTERVENTION – 26 MAY 2017

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Contents

1	Introduction	4
2	Background	4
3	Appropriateness of actions taken by AEMO	6
3.1	Out-of-merit-order injections	6
3.2	Lost opportunity to withdraw gas at Iona CPP	6
4	Costs of intervention	7
4.1	Total Ancillary Payments and Uplift Payments	7
5	Adequacy of Part 19 of the NGR	7
5.1	Maintenance approval	7
5.2	Market notices	7
6	Conclusion	8

IMPORTANT NOTICE

Purpose

AEMO has prepared this report pursuant to rule 351 of the National Gas Rules using information available as at 30 May 2017, unless otherwise specified.

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1 Introduction

The Australian Energy Market Operator (AEMO) declared a threat to system security in the Victorian Declared Wholesale Gas Market (DWGM) for gas day 26 May 2017 during a planned outage of the Brooklyn Compressor Station.

Clause 351(1)(b) of the National Gas Rules (NGR) requires that AEMO investigate and prepare a report following an event which is or may be a threat to system security. Clause 351 also requires that AEMO assess and advise on:

- the adequacy of the provisions of the NGR relevant to the event or events;
- the appropriateness of actions taken by AEMO in relation to the event or events; and
- the costs incurred by AEMO and Registered participants as a consequence of responding to the event or events.

This report addresses each of these requirements and is published in accordance with clause 351(2) of the NGR.

2 Background

In April 2017, APA GasNet advised that it would undertake total outages of the Brooklyn Compressor Station (BCS) on two days for approximately eight hours between 8am and 4pm on each day before the end of May. These outages are for the purpose of conducting annual maintenance, which is required to ensure the BCS is in a reliable state before winter every year.

The BCS is primarily used to:

- support gas exports into Iona underground gas storage at Port Campbell (Iona UGS);
- assist in balancing system linepack for efficient operations;
- support system demand in the Brooklyn to Lara Pipeline (BLP), South West Pipeline (SWP) and the Western Transmission System (WTS);
- support gas powered generation at Laverton; and
- maintain pressures above operating limits in the Brooklyn-Corio Pipeline and the Brooklyn-Ballan Pipeline on high demand days.

When the BCS is unavailable, net injections at the Iona close proximity points (Iona CPP) are required to meet demand that is supplied from the BLP, SWP and WTS. The minimum injections required on any given gas day is variable depending on system demand, this relationship is shown in Figure 1.

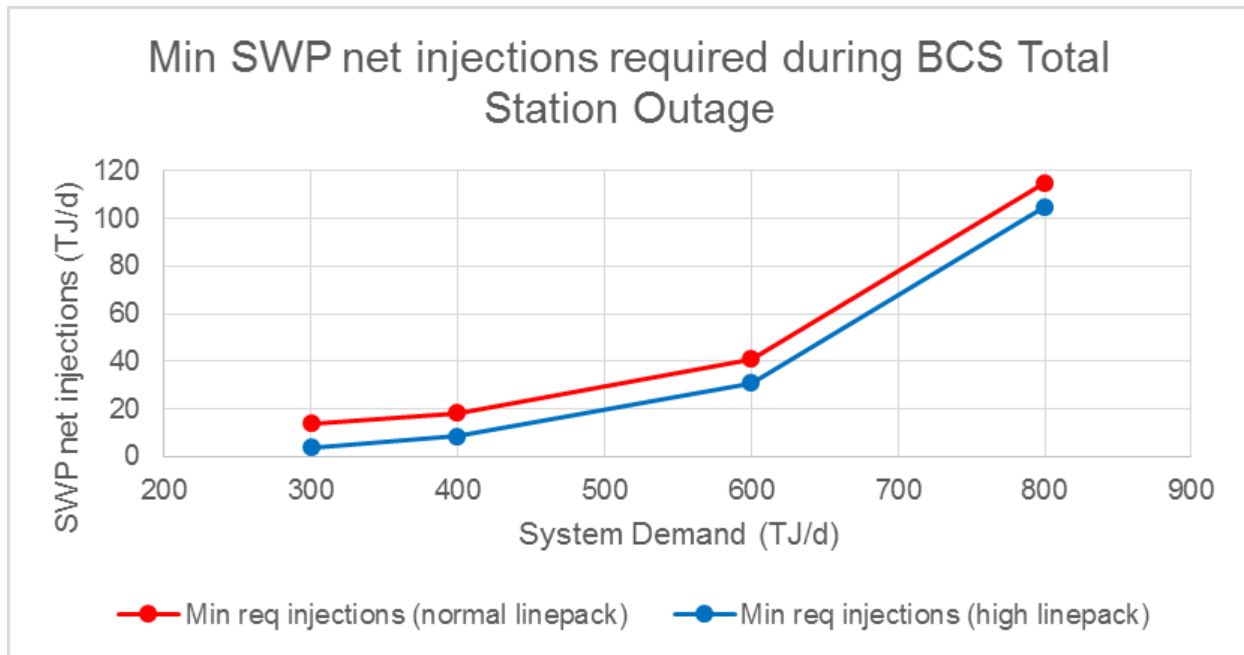


Figure 1: Minimum Port Campbell net injections required to meet system demand on the SWP

On 5 May 2017, AEMO issued a market notice advising participants of:

- two total outages of the BCS to allow annual maintenance to be conducted, one of these outages scheduled for 17 May between 8am and 4pm, and the second outage scheduled for 24 May between 8am and 4pm;
- the net injection requirements at the Iona CPP for supplying demand on the BLP, SWP and WTS, including a scheduling process whereby AEMO would:
 - allow bids for controllable withdrawal quantities to be scheduled on the condition that there are sufficient physical injections at the Iona CPP to support the withdrawals and system demand on the BLP, SWP and WTS; and
 - restrict bids for controllable withdrawal quantities to be scheduled prior to calling on out-of-merit-order injections (above market price bids) to avert the threat to system security, if insufficient net injections are likely to be scheduled; and
- the potential for AEMO to declare a threat to system security and subsequently schedule out-of-merit-order injections if pressures within the system were forecast to fall below minimum operating limits.

On 16 May 2017, AEMO held an industry conference to inform participants of the:

- scope of BCS work and operational impact on the DTS;
- DWGM scheduling process to be applied during this outage; and
- market notices that AEMO would issue, and the intent of these notices.

During the 17th May outage, there were sufficient injections scheduled at Iona CPP to meet the demand that is supplied from the BLP, SWP and WTS, as such there was no threat to system security.

The second outage was rescheduled from 24 May to 26 May with a revised outage time of between 8am and 6pm. Market Participants were notified by AEMO on 23 May of the outage reschedule.

At 10:45PM on 25 May, AEMO issued a notice seeking a market response to a threat to system security for gas day 26 May.

A threat to system security was declared at 5:20AM on 26 May as there were insufficient injections scheduled at Iona CPP to meet the forecast demand in the region, and AEMO's operational response was required which resulted in some out-of-merit-order injections.

3 Appropriateness of actions taken by AEMO

AEMO's objectives during this event were to:

- Operate in accordance with the NGR and the Wholesale Market Procedures,
- Limit the risk of involuntary curtailment to customers,
- Alleviate the threat to system security and return the DTS to normal operating conditions.

3.1 Out-of-merit-order injections

In response to the threat to system security on 26 May, AEMO scheduled the minimum required net injection at the Iona CPP, which included some out-of-merit-order injections (above market price bids) at Iona CPP. This was consistent with the approach outlined in the market notices issued to participants.

The table below lists AEMO's demand forecasts, the minimum required net injections and out-of-merit-order injections at the Iona CPP in the operating schedules for 26 May.

26-May-2017	6AM Schedule	10AM Schedule	2PM Schedule	6PM Schedule	10PM Schedule
AEMO's demand forecast (TJ/d)	705.5	683.9	682.9	N/A	N/A
Minimum required net injection at Iona CPP (TJ/d)	80.0	70.0	70.0	N/A	N/A
Out-of-merit-order injection at Iona CPP (TJ/d)	41.3	22.9	10.7	N/A	N/A

The changes in the out-of-merit-order injection quantities between scheduling horizons were mainly due to intra-day re-bidding, which resulted in changes to the market price and therefore controllable injection quantities in the pricing schedules.

No out-of-merit-order injections were needed for the 6PM and 10PM schedules, as the maintenance had concluded and BCS was restored to normal operations at 4.46 PM.

3.2 Lost opportunity to withdraw gas at Iona CPP

To schedule the required net injections at Iona CPP on 26 May, AEMO reduced the scheduled controllable withdrawal quantities at the Iona CPP to 0 GJ/hr at the 6AM, 10AM and 2PM schedules. This was consistent with the approach outlined in the market notices issued to participants.

The table below lists the de-scheduled controllable withdrawal quantities (in GJ) at the Iona CPP in the operating schedules for the gas day 26 May 2017.

Gas Day	6AM Schedule	10AM Schedule	2PM Schedule	6PM Schedule	10PM Schedule
26-May-2017	9,912	9,076	8,240	N/A	N/A

The changes in controllable withdrawal quantities between scheduling horizons were mainly due to intra-day re-bidding, which resulted in changes to the market price and therefore controllable withdrawal quantities in the pricing schedules.

4 Costs of intervention

4.1 Total Ancillary Payments and Uplift Payments

The market impact resulting from the threats to system security are in the form of additional Ancillary Payments (AP) and corresponding Uplift Payments (UP).

The table below lists these payments by type for 26 May 2017.

Gas Day	Ancillary Payments (\$)	Congestion Uplift Payments (\$)	Surprise Uplift Payments (\$)	Common Uplift Payments (\$)
26-May-2017	\$24,331.31	\$24,141.27	\$190.03	0

The results can be summarised as follows:

- Uplift payments were categorised as approximately 99% congestion uplift, 1% surprise uplift, and 0% common uplift. The categories are applied as follows:
 - Congestion uplift is allocated to Market Participants when their daily profiled demand forecasts and scheduled controllable withdrawal quantities exceed their AMIQ (profiled uplift hedge);
 - Surprise uplift is allocated to Market Participants who were deemed to have worsened the constraint at reschedules. For example, this can occur when participants under-inject or over-withdraw in the preceding schedule (for positive APs);
 - Common uplift is any remaining uplift that cannot be allocated as congestion or surprise uplift, and is applied across Market Participants in proportion to their actual withdrawal quantities over a gas day.

5 Adequacy of Part 19 of the NGR

In respect of this event, AEMO has assessed the application and adequacy of NGR provisions relating to maintenance approval, market notices, and this intervention report.

5.1 Maintenance approval

NGR 326(1) requires that AEMO coordinate maintenance to ensure that system security is not threatened, while NGR 326(4) requires AEMO and service providers to cooperate to minimise any threat to system security that would likely result from proposed maintenance.

In this case, AEMO determined that completing this maintenance, would result in a potential threat to system security which could not be resolved through coordination. In addition, the proposed maintenance approach would minimise the threat compared with other maintenance options, or deferring maintenance (given that the existing station isolation valves failed to meet critical safety requirements).

AEMO finds that these NGR provisions were applied correctly in this case, though NGR 326(1) could be better clarified to acknowledge that coordination may not be sufficient to remove all threats to system security associated with planned maintenance activities.

5.2 Market notices

NGR 341(1) requires that when AEMO identifies a potential threat to system security, it must notify registered participants as soon as practicable – including details of the nature and location of potential threat, and AEMO's estimate about whether intervention will be required.

In this case, AEMO issued a market notice on 5 May 2017 advising registered participants of the planned BCS outages to be conducted on 17 May between 8am and 4pm and 24 May between 8am and 4pm, and seeking market response to the potential for AEMO to declare a threat to system security for the outage if pressures within the system were forecast to fall below minimum operating limits. An industry conference was held on 16 May 2017 to explain the scope of maintenance, proposed AEMO scheduling process, and market notification protocol.

The second outage scheduled on 24 May between 8am and 4pm was rescheduled to 26 May with a revised outage time between 8am and 6pm.

The first outage occurred on 17 May 2017, and the market responded to AEMO's market notice by removing bids for controllable withdrawal quantities and increasing bids for controllable injection quantities below the market price.

For the second outage which occurred on 26 May 2017, AEMO issued a notice on 25 May seeking a market response. On 26 May, AEMO determined that it was necessary to schedule net injections at Iona CPP to balance system demand – by both restricting controllable withdrawal quantities, and forcing on out-of-merit-order injections at the Iona CPP.

AEMO subsequently issued notices when out-of-merit-order injections were scheduled at Iona CPP due to the declared threat to system security, and when the threat had subsided after the BCS maintenance was completed.

AEMO finds that these NGR provisions are adequate, and were applied correctly in this case.

6 Conclusion

AEMO declared a threat to system security in the Victorian DWGM for gas day 26 May 2017 during a planned outage of the BCS, due to insufficient market response injections from Iona CCP to meet the demand at the BLP, SWP and WTS.

On this gas day, AEMO de-scheduled controllable withdrawal quantities and scheduled out-of-merit-order injections at the 6AM, 10AM and 2PM schedules. This resulted in approximately \$24,331 of additional ancillary and uplift payments.

Following this event, AEMO has assessed the application and adequacy of associated NGR provisions, and finds that these provisions were applied correctly.

Please direct any feedback or questions regarding this report to GasMarket.Monitoring@aemo.com.au.