
Declared Wholesale Gas Market – Intervention Report

July 2019

Notice of threat to system security

A report into the notice of threat to system security issued on 19 June 2019

Important notice

Purpose

AEMO has prepared this report pursuant to rule 351 of the National Gas Rules, using information available as at 27 June 2019, unless otherwise specified.

Disclaimer

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1. Introduction

AEMO issued a notice of a threat to system security in the Victorian Declared Wholesale Gas Market (DWGM) for gas day 19 June 2019.

Rule 351 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. Rule 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.

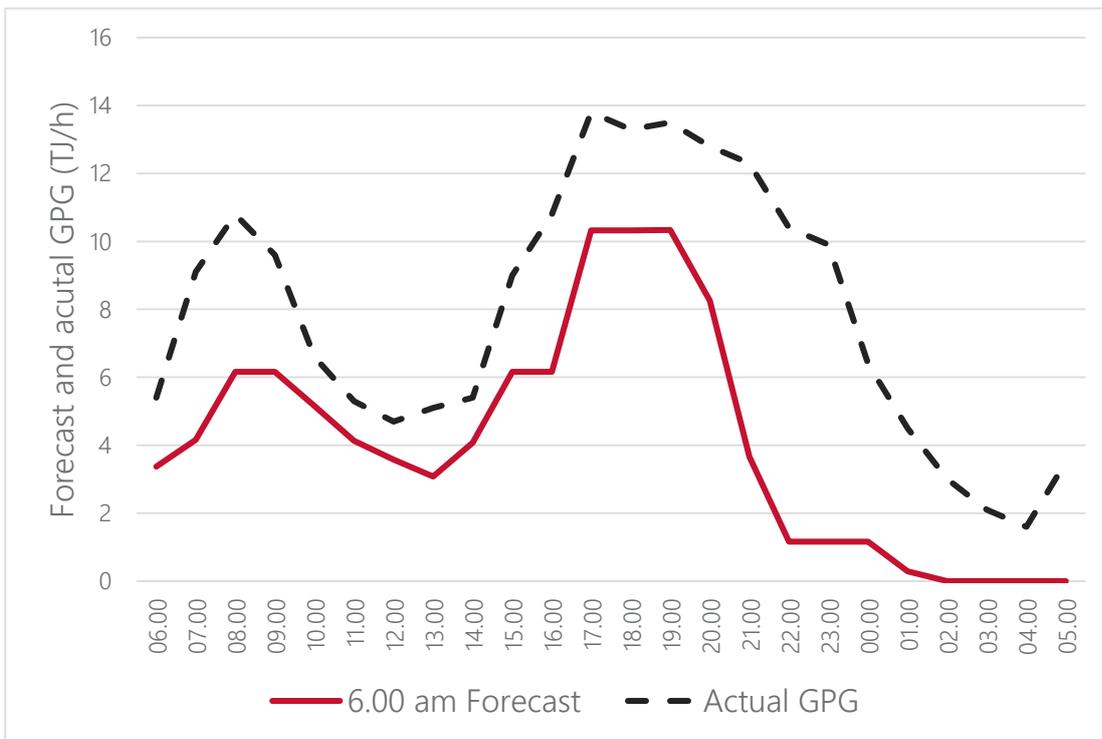
This report is published in accordance with rule 351(2) of the NGR. All times used in this report are AEST.

2. Event Summary

Cold temperatures had been forecast for Victoria on 19 June 2019, with a forecast minimum of 6.2°C and maximum of 11°C. At the 6am schedule the forecast system demand, for the Victorian Declared Transmission System (DTS) was 1,061 TJ with 99 TJ of Gas-fired Power Generation resulting in a total forecast of 1,160 TJ.

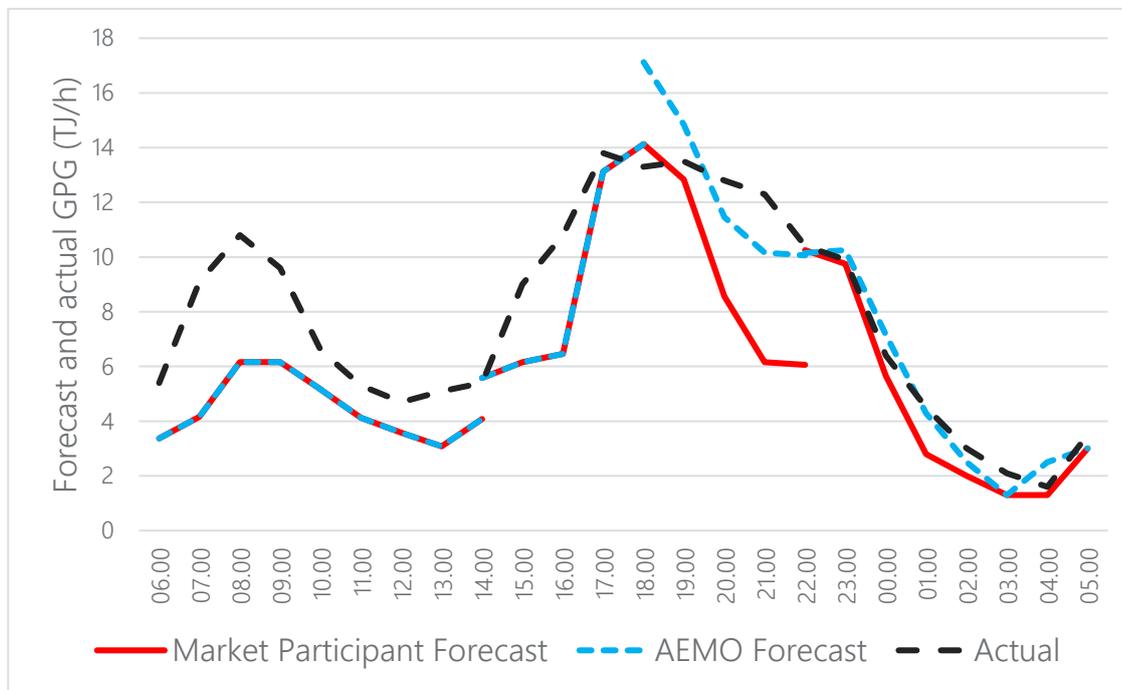
At around 08.30 hrs unit 3 of the Loy Yang A (LYA3) coal power station came offline¹, which at the time accounted for approximately 8% of the generation in Victoria. Wind generation in Victoria was also forecast to be low reaching only 11 MW in the evening. This combination of low wind and the loss of a large coal generating unit resulted in higher GPG compared to what had been forecast at the 6.00 am schedule, with actual GPG demand of 189 TJ for the gas day as shown in Figure 1.

Figure 1 Forecast GPG at 6.00 am and actual GPG demand for 19 June 2019



¹ The rebid reason for the unit coming offline was "0830~P~010 Unexpected/Plant limits~106 Aux/Plant failure"

Changes in GPG profiles, throughout the day, resulted in inaccurate forecasting of GPG usage. For example, Laverton North Power Station updated their National Electricity Market (NEM) dispatch offers at 15.00 hrs. This change in profile extended a potential 3.5-hour run (17.00 hrs to 20.30 hrs) into a 9-hour run (15.00 hrs to mid night). Jeeralang Power Station also updated their offers several times extending their dispatch over the evening peak. The timing of these changes to GPG dispatch resulted in uncertainty as to the total usage in the GPG forecasts for each of the scheduling intervals, as shown in Figure 2.



Leading into the 6.00 pm schedule, AEMO modelling indicated the pressure at Dandenong City Gate (DCG) Inlet would fall to 3,500 kPa, relative to the limit of 3,300 kPa². Given the cold weather, and uncertainty with GPG forecasts AEMO notified the market of a threat to system security at 17.57 hrs. To avoid the potential risk of breaching system pressures, AEMO intervened and scheduled 12 TJ of LNG in the 6.00 pm to 10.00 pm scheduling interval.

At 21.41 hrs, the DTS demand had reduced and pressure had stabilised. AEMO sent out a System Wide Notice to the market that the threat to system security for the gas day had ended.

The total demand on 19 June 2019 ended up as 1,225 TJ, comprising 1,036 TJ of system demand and 189 TJ of GPG.

A chronology of events is included in Appendix A1.

3. Assessment of event

This event was caused by higher than forecast system demand due to low temperatures coinciding with higher than forecast GPG due to the unplanned outage of a coal power station unit. The decision to issue a notice of a threat to system security was made for the following reasons:

- Uncertainty of GPG demand driven by low wind generation and LYA3 being offline; and
- The potential for DCG Inlet to breach 3,300 kPa.

² Modelling provides an indication of future pressures in the DTS, and the degree of forecast error that the system can tolerate. In this case a difference of 200 kPa at DCG equates to a buffer of around 10-15 TJ.

3.1 Adequacy of Part 19 of the NGR

In response to this event, AEMO has assessed the application and adequacy of the NGR, with a primary focus on the following provisions:

- NGR 341 Notice of threat to system security
- NGR 351 Intervention Reports

3.1.1 Notice of threat to system security

NGR 341 requires that if AEMO believes there is a potential threat to system security, it must notify Registered participants, without delay, the details of that threat to system security.

At 17.57 hrs AEMO notified the market of the threat to system security.

If AEMO reasonably considers that a threat to system security is unlikely to subside without intervention (NGR 343), AEMO must intervene in the market by taking any measures it believes are reasonable and necessary to overcome the threat to system security. The Dandenong City Gate Inlet requires an hour notice before becoming available for injection. Once available, the injection can increase quickly if required.

AEMO notes that NGR 343 specifies some of the options available to AEMO when intervening in the market are:

- Curtailment in accordance with the emergency curtailment list
- Increasing withdrawals
- Requiring gas to be injected which is available but not bid into the market
- Injecting off-specification gas
- Requiring Registered participants to do any reasonable act or thing that AEMO believes necessary in the circumstances.

In this event, the higher than forecast demand from GPG was the cause of a potential pressure breach at DCG Inlet. The decision to inject gas from Dandenong LNG resolved this potential issue by scheduling out-of-merit-order (injection bids above the market price)³. AEMO finds that the NGR provisions are adequate, however, AEMO considers that further review and consultation should be undertaken with regards to:

- The need to issue a threat to system security to constrain on gas that has already been bid into the market

As the LNG is gas that has already been bid into the market, AEMO notes that it may be within the current Rules for AEMO to constrain on gas that has already been bid in without needing to notify the market of a threat to system security (NGR 213, 214 and 215). However, this would need to consider existing constraints and system security.

Subject to further consideration of the NGR provisions, on initial assessment, this would require minor changes to the following AEMO Market Procedures:

- Wholesale Market System Security Procedures (Victoria)
- Wholesale Market Gas Scheduling Procedures (Victoria)

3.1.2 Intervention Report Timing

NGR 351 places an obligation on AEMO to publish an Intervention Report within 10 business days after the event. AEMO has previously raised this as concern given the limited time this placed on AEMO to conduct a thorough investigation, given the requirement to assess:

- the adequacy of the Rules;
- the appropriateness of actions taken by AEMO; and

³ The bids at Dandenong LNG are scheduled in merit order, however, they are not in merit order when considering the market-wide bids.

- the costs incurred by AEMO and Registered participants as a consequence of responding to the event or events.

AEMO has reviewed this and AEMO intends to adopt the following approach to reporting on these events, wherever possible:

- Investigate and publish a report based on immediately available data within 10 business days of the relevant event.
- Where not all information necessary to complete the required assessment is available, that report will be flagged as preliminary, with a final report to be published once the additional information is received and analysed.

For the purposes of this report, AEMO believes it has all necessary information and does not intend to publish a subsequent report.

3.2 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 including Gas Powered Generation;
- Alleviate the threat to system security and return the DTS to normal operating conditions.

NGR 206 requires that AEMO schedule injections into and withdrawals from the DTS in accordance with bids and must:

- Comply with the gas scheduling procedures; and
- Use its reasonable endeavours to operate within the system security procedures.

AEMO took all reasonable steps to model and re-model the forecast demand from GPG and the system at each schedule. The higher than forecast GPG usage as a result of the unplanned outage of LYA3 and cold temperatures resulted in higher than forecast demand and reduced pressure at the DCG Inlet. AEMO has reviewed its actions for this event to issue a notice of a threat to system security and inject 12 TJ of LNG and considers the response to be appropriate.

AEMO did not request a market response as Market Participants would not have been able to respond given the timing of issuing the notice of a threat to system security.

AEMO successfully produced a 6.00 pm schedule and maintained system security through the scheduling of out-of-merit-order gas from Dandenong LNG.

3.3 Costs of intervention

In response to the notice of a threat to system security issued for gas day 19 June 2019, AEMO scheduled 12 TJ of out-of-merit-order Dandenong LNG injections. This was consistent with the approach outlined in the market notices issued to Market Participants.

The market impact resulting from this event was in the form of ancillary payments, and corresponding uplift payments, of \$36,133.

4. Conclusion

AEMO issued a notice of a threat to system security in the Victorian DWGM for gas day 19 June 2019. AEMO scheduled 12 TJ of out-of-merit-order LNG injections at the 6.00 pm schedule.

This resulted in \$36,133 of uplift payments.

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

AEMO has highlighted several provisions within the Rules where further review could be conducted to change the way AEMO operates in these events into the future. AEMO intends to raise these issues with the Gas Wholesale Consultative Form.

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

A1. Chronology

| Date/Time (AEST) | Event/ Action | Details |
|---------------------------|------------------------------|---|
| 19 June 2019 08.30 hrs | Coal generating unit offline | Unit 3 of the Loy Yang A coal power station came offline. |
| 19 June 2019 15.00 hrs | Increased GPG | Laverton North Power Station increased their forecast 3.5-hour run (17.00 hrs to 20.30 hrs) into a 9-hour run (15.00 hrs to mid night). |
| 19 June 2019 16.35 hrs | Increased GPG | Jeeralang Power Station increased their forecast 2-hour run (17.00 hrs to 19.00 hrs) into a 3-hour run (16.30 hrs to 19.30 hrs) |
| 19 June 2019 16.45 hrs | AEMO forecast | AEMO modelling indicated that there was potential for a breach of the DCG Inlet pressure of 3,300 kPa. |
| 19 June 2019 17.57 hrs | Market Notice issued | AEMO issues notice of a threat to system security, indicating 12 TJ of LNG was to be injected in the 6.00 to 10.00 pm scheduling interval. |
| 19 June 2019 21.43 hrs | Market Notice issued | Threat to system security had ended, and constraint removed for the 10.00 pm schedule with no further LNG being scheduled out-of-merit-order. |