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# Declared Wholesale Gas Market – Intervention Report

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**June 2020**

## Notice of threat to system security

A report into the notice of threat to system security issued on 1 Jun 2020

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# IMPORTANT NOTICE

## **Purpose**

AEMO has prepared this report pursuant to rule 351 of the National Gas Rules, using information available as at 4 June 2020, unless otherwise specified.

## **Disclaimer**

AEMO has made every effort to ensure the quality of the information in this report but cannot guarantee its accuracy or completeness. Any views expressed in this report are those of AEMO unless otherwise stated, and may be based on information given to AEMO by other persons.

Accordingly, to the maximum extent permitted by law, AEMO and its officers, employees and consultants involved in the preparation of this report:

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# 1. Introduction

AEMO issued a notice of a threat to system security in the Victorian Declared Wholesale Gas Market for gas day 1 Jun 2020. This event was due to higher than forecast system demand leading to a projected breach of the minimum operating pressure at Dandenong City Gate.

If pressures within the Declared Transmission System are forecast to fall below minimum operating limits, AEMO will indicate to the market that there is a threat to system security and may schedule out-of-merit-order injections, to maintain system security.

For the 6.00 pm schedule on 1 June 2020, AEMO's actions to alleviate the threat were to:

- Schedule 34 TJ of out-of-merit-order Dandenong LNG injections (this was reduced to 29 TJ at the 10.00 pm schedule)
- Apply a constraint at the Iona Close Proximity Point, restricting the withdrawal quantity to 0 GJ/h.

The impact on the market was approximately \$150,000 of additional ancillary payments, and corresponding uplift payments.

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:

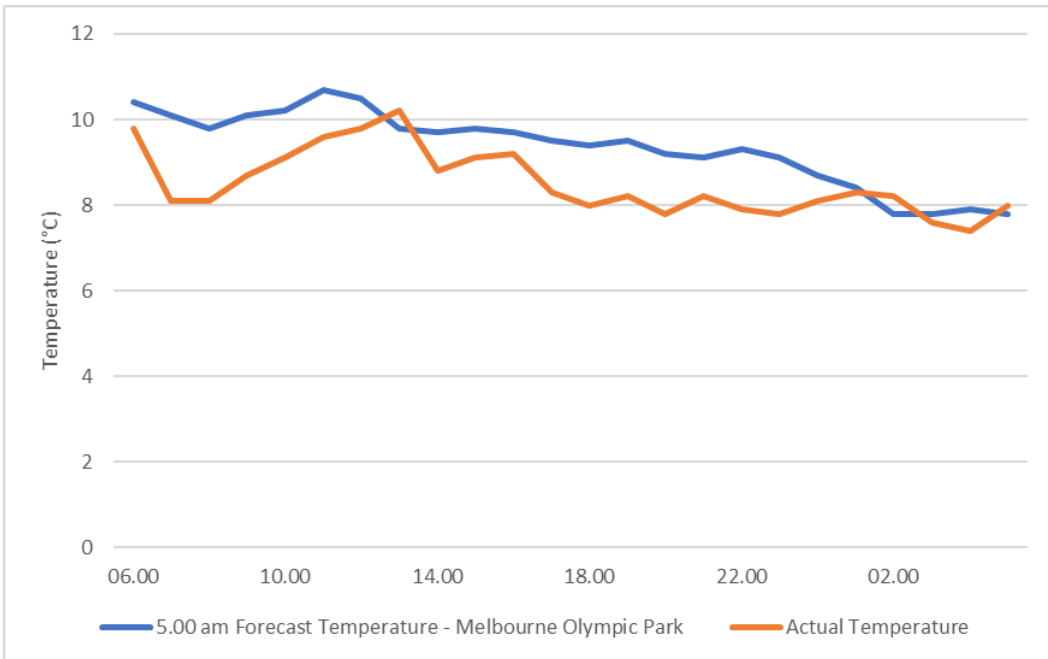
- the adequacy of the provisions of the NGR relevant to the event or events;
- the appropriateness of actions taken by AEMO in relation to the event or events; and
- the costs incurred by AEMO and Registered participants as a consequence of responding to the event or events.

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 1 June 2020, with a forecast maximum of 11°C in Melbourne. However, temperatures were lower than forecast for much of the morning and by 14.00 hrs a cold front with heavy rain passed through Melbourne causing a temperature drop of ~1.6°C, refer to **Figure 1**.

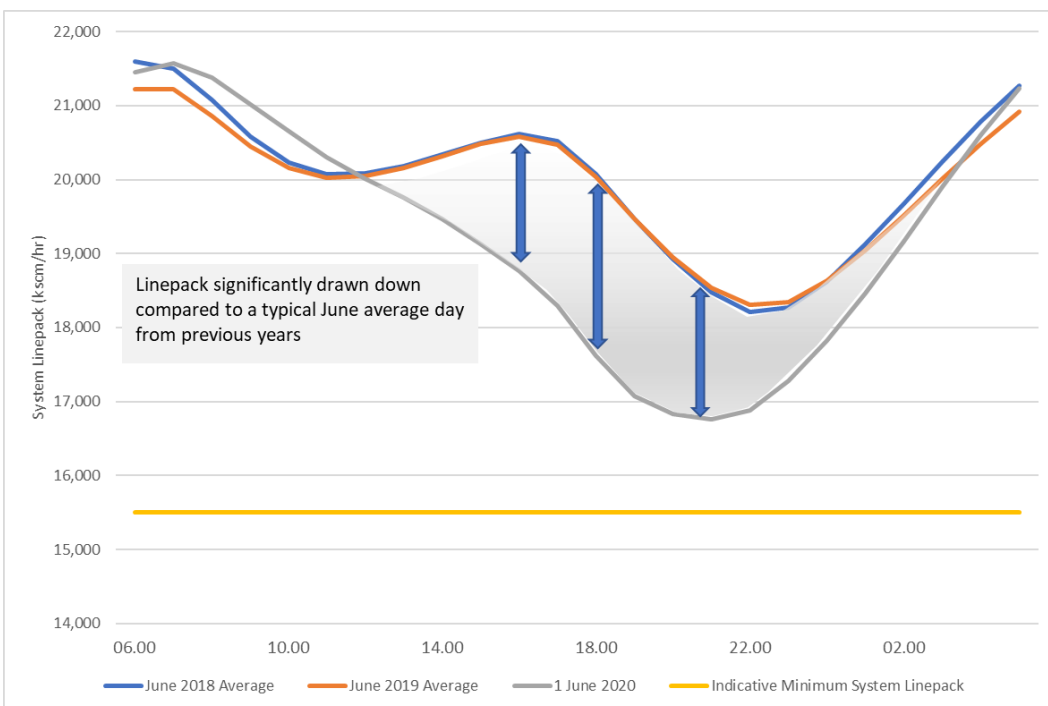
**Figure 1 Forecast temperatures compared with actual temperature**



Market Participants had forecast, in aggregate, a daily system demand of 936 TJ at the 6.00 am schedule, increasing to 970 TJ by the 10.00 pm schedule. AEMO’s 6.00 am forecast for the day was 959 TJ, increasing to 1,007 TJ by the 10.00 pm schedule. Actual demand on 1 June 2020 was approximately 1,020 TJ.

AEMO has observed a sustained higher demand throughout the day as a result of the COVID-19 restrictions which has changed the system demand profile. Prior to COVID-19 restrictions, the demand profile on a typical cold day would consist of a high morning and high evening demand without the consistently high demand in the middle of the day. This higher demand throughout the day contributed to a more rapid decrease in system linepack as can be seen in **Figure 2**.

**Figure 2 System linepack comparison**

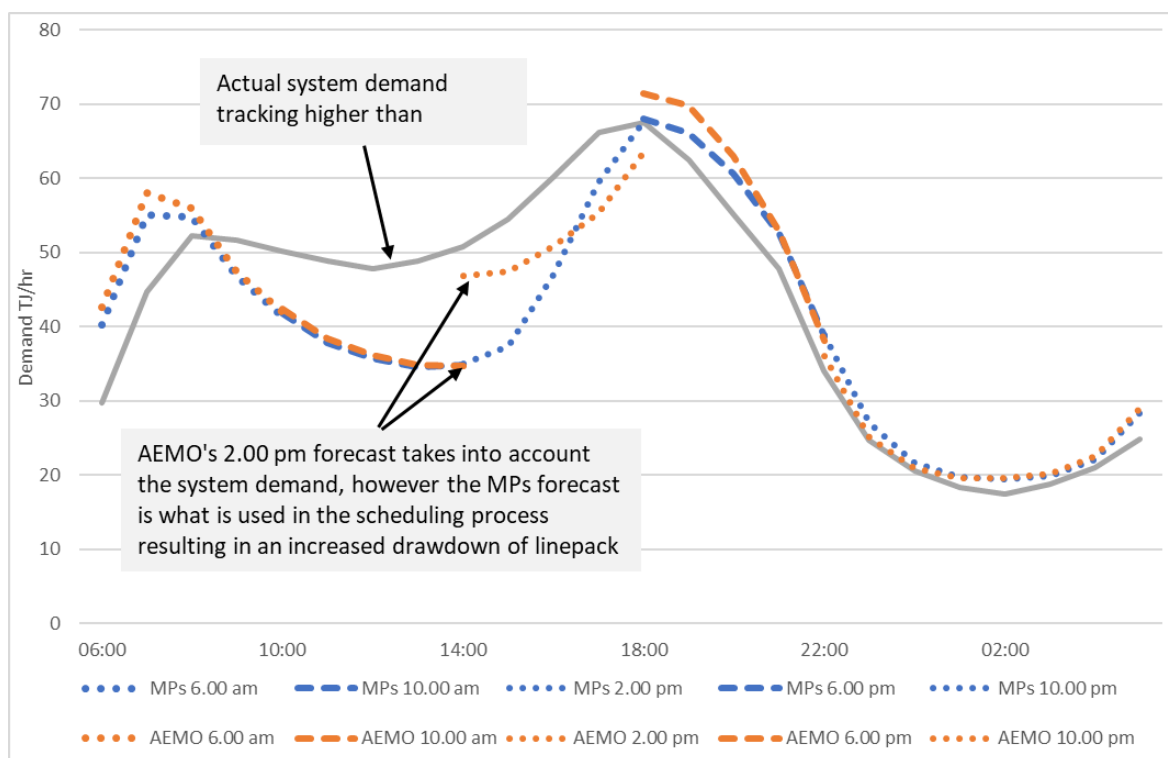


The cold weather across the day, combined with the COVID-19 adjusted demand profile, resulted in demand tracking higher than forecasts from 08.00 hrs through to 18.00 hrs, refer **Figure 3** for a comparison of the hourly forecasts and actual demand, as updated at each scheduling interval.

This chart highlights:

- The difficulties in correctly forecasting the demand profile on a very cold day, as a result of the COVID-19 restrictions. The forecasts are more aligned to a typical cold day, which is what would have been observed in previous years.
- That AEMO, with the benefit of real-time data was able to adjust the 2.00 pm forecast to be much closer to actuals than Market Participants (MPs) were able to.

**Figure 3 Comparison of forecast system demand and actual system demand by schedule**



For the 2.00 pm scheduling interval, there was no indication that there would be any system security issues. However, as a result of the demand continuing to track above forecast, system modelling conducted at around 15.00 hrs indicated that system pressure could be breached at Dandenong City Gate (DCG) Inlet, and there was the potential for pressure issues in the south west of the Declared Transmission System (DTS).

Brooklyn Compressor Station (BCS) had a partial unplanned outage, commencing just after 14.00 hrs, impacting on the ability to support South West Pipeline (SWP) demand. BCS is used to maintain gas pressure on the SWP from the north, and when on outage this can lead to a localised issue that can be resolved by injecting additional gas from the Iona Close Proximity Point (CPP).

At the commencement of gas day 1 June 2020 SWP had limited linepack due to the previous days net withdrawals, and gas had been withdrawn from the Iona CPP throughout the day leading up to the 6.00 pm schedule.

AEMO notified the market of a threat to system security at 17.39 hrs. To avoid the potential breach of system pressures at DCG inlet, AEMO intervened and took the following actions at the 6.00 pm scheduling interval:

- scheduled 34 TJ of LNG
- constrained Iona CPP withdrawals to 0 GJ/hr to maximise SWP injections.

A chronology of events is included in appendix A1.

# 3. Assessment of event

This event was triggered due to colder than forecast temperatures in Melbourne, combined with impacts from a COVID-19 adjusted demand profile, which caused higher than anticipated system demand throughout the day. The decision to issue a threat to system security was made for the following reasons:

- There was the potential for a pressure breach at DCG Inlet
- The uncertain weather patterns that had impacted temperature forecasts, and resulted in increased demand leading into the evening
- There was limited availability of additional supply, especially from the SWP.

## 3.1 Adequacy of Part 19 of the NGR

In respect of 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
- NGR 208 and 215 Demand forecasts

### 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 17.39 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 LNG facility had been notified earlier in the day that there was a possibility of LNG being scheduled and received the final notification at 17.39 hrs to inject gas, in response to the threat to system security.

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 issue of a potential pressure breach at DCG Inlet could be resolved by scheduling out-of-merit-order (injection bids above the market price) gas from Dandenong LNG<sup>1</sup>. This is gas that has already been bid into the market.

In this assessment of the NGR provisions (specifically NGR 213, 214 and 215) 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

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<sup>1</sup> The bids at Dandenong LNG are scheduled in merit order, however, they are not in merit order when considering the market-wide bids.

market of a threat to system security. However, this would need to consider existing constraints and system security.

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

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)

AEMO is undertaking this review and plans to present the findings at a Gas Wholesale Consultative Forum later in 2020.

### 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
- 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.

### 3.1.3 Demand Forecasts

NGR 208 requires Market Participants to submit demand forecasts for the amount of gas that they expect to withdraw in each hour of the gas day, updated for each scheduling interval. For the purposes of producing operating schedules, as per NGR 215, AEMO must use these demand forecasts with the exception that AEMO can make a demand forecast override. A demand forecast override is an adjustment made by AEMO, in accordance with the gas scheduling procedures, for the purpose of ensuring system security in the preparation of operating schedules.

AEMO finds that the NGR provisions are adequate, however, AEMO considers that further review should be undertaken with regards to the demand override methodology.

## 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-fired 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.

In this event, AEMO took all reasonable steps to assess the forecasts and notify the market accordingly. The change in weather and colder than expected temperatures on 1 June 2020 resulted in higher than expected demand.

AEMO's modelling indicated a potential breach of pressures could occur after the 6.00 pm scheduling interval as a result of the higher demands that had occurred throughout the day. As such, AEMO notified the market of a threat to system security at 17.39 hrs, scheduled 34 TJ of LNG in the 6.00 pm scheduling interval and constrained Iona CPP withdrawals to 0 GJ/hr.

The total demand on 1 June 2020 was approximately 1,020 TJ.

## 4. Costs of intervention

In response to the notice of a threat to system security issued for gas day 01 June 2020, AEMO scheduled 34 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 the out-of-merit-order gas was in the form of additional ancillary payments, and corresponding uplift payments, of approximately \$150,000.

32 TJ of gas that had been bid to be withdrawn at the Iona CPP was also not able to be scheduled due to the constraint placed on the withdrawals.

## 5. Conclusion

AEMO issued a notice of threat to system security in the Victorian Declared Wholesale Gas Market for gas day 1 June 2020. AEMO scheduled 34 TJ of out-of-merit-order LNG injections at the 6.00 pm schedule and constrained withdrawals at Iona CPP as a result of higher than forecast demand.

This resulted in \$151,896 of additional ancillary and uplift payments.

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](mailto:GasMarket.Monitoring@aemo.com.au).

# A1. Chronology

Date/Time (AEST)	Event/ Action	Details
1 June 2020 14.05 hrs	APA request BCS outage	APA request BCS unit 12 to be shut down for inspection, as there may be an issue with the bellows.
1 June 2020 15.07 hrs	AEMO forecast	AEMO forecasting indicates potential for pressure breach at DCG Inlet at 21.00 hrs. APA notified of potential for Dandenong LNG to be injected.
1 June 2020 16.25 hrs	AEMO forecast	AEMO forecasting indicates potential for pressure breach at DCG Inlet. AEMO determine 34 TJ of LNG is required to be injected. AEMO advise APA that LNG will be required to be injected.
1 June 2020 17.39 hrs	AEMO market notice	AEMO issues market notice of the threat to system security
1 June 2020 17.42 hrs	6.00 pm schedule approved	6.00 pm operating schedule and pricing schedule are approved
1 June 2020 17.48 hrs	AEMO market notice	AEMO sends market notices advising of Iona CPP and Dandenong LNG constraints
1 June 2020 21.43 hrs	AEMO market notice	AEMO sends market notice advising constraint at Iona CPP withdrawal meters, of 0 GJ/h, remains in place from 22.00 hrs due to unplanned outage at BCS
1 June 2020 21.55 hrs	AEMO market notice	AEMO sends market notice indicating the threat to system security for gas day 1 June 2020 has ended
1 June 2020 22.00 hrs	AEMO market notice	AEMO sends market notice indicating the constraint at Dandenong LNG injection meter had been revised to 29 TJ/d