



Significant price variation report

Victorian gas wholesale market

Longford facility outage 1 October 2016

21 December 2016

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Executive summary

On Saturday 1 October 2016, there was an unplanned total shutdown of the Esso operated Longford gas production facility in Victoria. The shutdown was caused by the failure of on-site electricity generators. The last time Longford experienced a complete electrical shutdown was in April 2004.¹

The majority of Victoria's gas demand is supplied from Longford. Longford also supplies gas into New South Wales and Tasmania. Given the reliance on Longford as a supply source, the task of maintaining system security and supply following an outage cannot be understated.

The Australian Energy Market Operator (**AEMO**) maintained system security and supply despite high gas demand from South Australia's electricity generators (following the recent black system event) and the risk of a contingency gas event in Sydney.

The Longford outage resulted in:

- Ancillary payments of approximately \$3.1 million
- The 10 am gas price reaching \$33.75/GJ
- A contingency gas event in Sydney (this was successfully managed without the need for contingency gas)

The high ancillary payments on the day triggered one of our significant price variation reporting thresholds.² This report has been prepared in accordance with this obligation.

This report provides a timeline of events on the day, details of the financial outcomes, and interaction between other energy markets.

Follow up actions

While preparing this report, we identified a number of follow up actions:

- We intend to report to the AEMO Gas Wholesale Consultative Forum on:
 - the merits of a standing default allocation of gas at Longford (pending market resolution) for the split of gas between NSW and Victoria in an emergency and
 - the merits (and need) to decrease the timing differences of publication of information/data on the Market Information Bulletin Board (MIBB) and the same information via email/ sms
- We will explore further whether intra-day facility updates on the Bulletin Board (for material changes) may have increased information available during this event. Noting the recommended rule change (to require intra-day data) from the AEMC's 2016 Gas Market Review the AER will clarify in advance with industry

¹ Esso noted the 2004 electrical shutdown had a different root cause to the 1 October 2016 event

² The obligation is set out in the National Gas Rules. Rule 355(1)(b) relates to SPVs in the Victorian market. These thresholds are noted in Appendix A.

what information (including duration and magnitude) is to be expected and in what time frame.

- We note AEMO may examine whether there is scope for improving the allocation of uplift payments, depending on industry feedback. We will monitor this work and participate where appropriate.
- We will report any instances of non-compliance on the gas day in our next Quarterly Compliance Reports.

1 Background

This section explains Victoria's gas market arrangements and the roles and responsibilities of participants.

1.1 The Victorian gas market

Victoria is a major gas supply and demand centre and plays an important part in Australia's east coast gas market.³

There are three gas basins off the coast of Victoria, the largest of which is the Gippsland basin. The Gippsland basin supplied 27 per cent of Australia's east coast gas market needs in 2014–15.

A joint venture between Esso and BHP Billiton (**the Longford gas plant**) accounts for 96 per cent of the Gippsland basin's production.⁴ Longford has a total production capacity of 1,040 TJ/d.⁵

Victoria's gas demand, relative to neighbouring states, is particularly large. For example, on 13 July 2016, total demand across Victoria, and the trading markets in Sydney and Adelaide, exceeded 1.6 PJ.⁶ Victoria's contribution was around 1.2 PJ.

Almost all of the gas consumed in Victoria is transported through the declared transmission system (**DTS**).⁷

Gas can flow between the DTS and New South Wales via the "VicHub" to the Eastern Gas Pipeline (**EGP**)⁸ or via the NSW – Victoria interconnect to the Moomba Sydney Pipeline (**MSP**). Gas can also flow between the DTS and South Australia using the SEA Gas Pipeline (**SEA Gas**) and from the Longford facility to Tasmania via the Tasmanian gas pipeline (**TGP**).⁹

These connection points are illustrated in Figure 1. The figure also shows the wider network of transmission pipelines which support the transportation of gas across Australia's east coast.

The Victorian declared wholesale gas market (**DWGM**) facilitates the scheduling of injections and withdrawals to transport gas across the DTS. The DWGM also allows market participants to buy and sell gas daily at a market price.¹⁰

³ The east coast gas market contains around 39 per cent of Australia's gas reserves, mainly located in Queensland and Victoria - AER's *State of the Energy Market 2015*, page 90

⁴ AER's *State of the Energy Market 2015*, page 90

⁵ AEMO's *Update Victorian Gas Planning Report February 2016*, page 2

⁶ AER's *Significant price variation report East Coast Gas Market July & August 2016*, page 11

⁷ <https://www.apa.com.au/our-services/gas-transmission/east-coast-grid/victorian-transmission-system/>

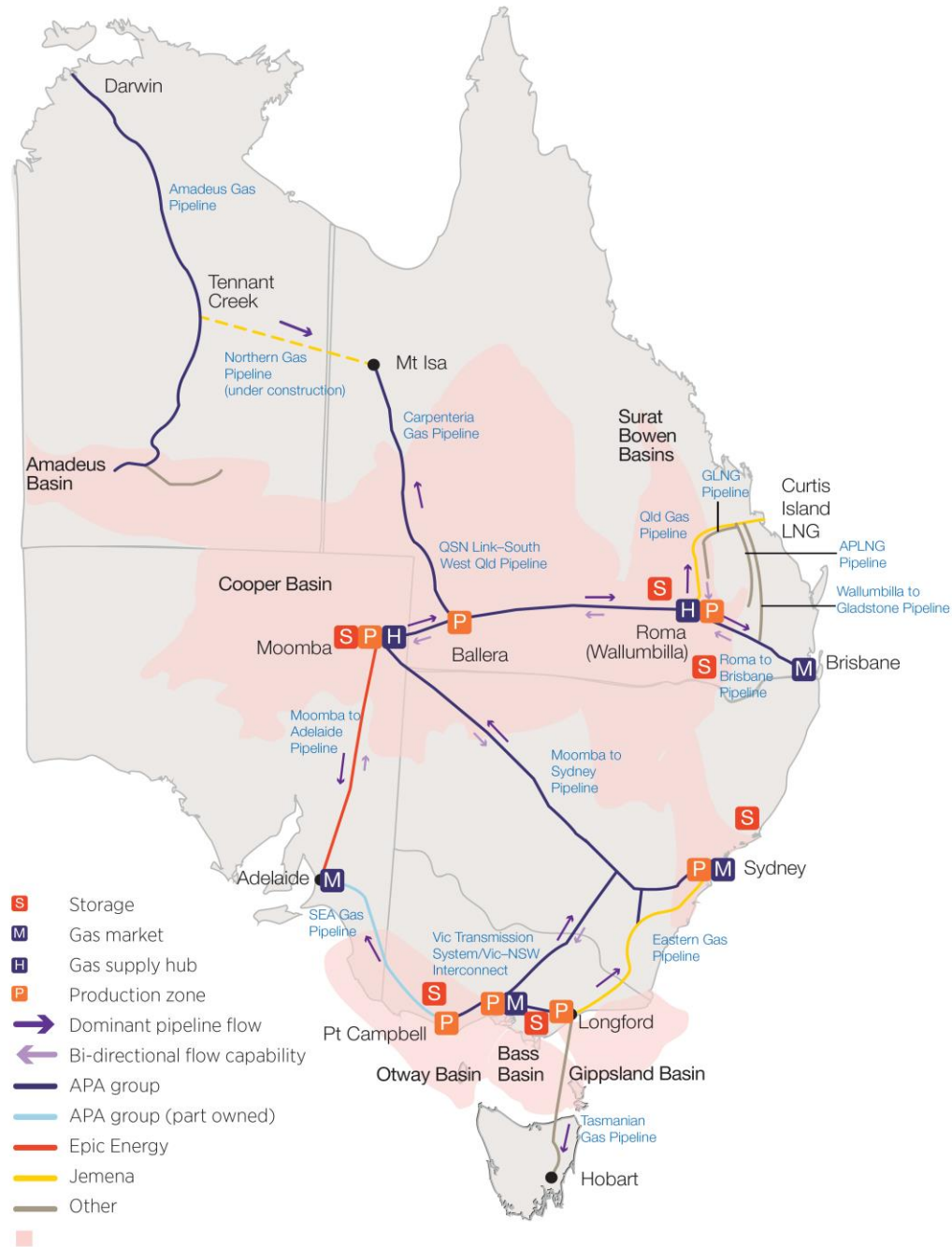
⁸ The VicHub is not shown on the map on the next page, it is located adjacent to Longford and provides interconnections between the Victorian Transmission System, Eastern Gas Pipeline and Tasmanian Gas Pipeline

⁹ At the time of writing this report, a connection from the Tasmanian Gas Pipeline (TGP) and the DTS which could allow gas to flow back into Victoria from the TGP had not yet been commissioned.

¹⁰ Retailer market participants to varying degrees are exposed to the market price: if they have as much gas scheduled for injection as withdrawal, they are largely unexposed; if they have a strong withdrawal position then

The DWGM is operated by the Australian Energy Market Operator (AEMO) under Part 19 of the National Gas Rules (NGR). AEMO takes into account injection and withdrawal bids submitted by participants when determining a gas day's schedule.¹¹

Figure 1 – The east coast gas markets



¹¹ they are more exposed to buy gas at higher market prices such as occurred on 1 October. The operation of the DWGM doesn't follow calendar days; instead a gas day is a 24 hour period beginning at 6 am. Following initial bidding at the beginning of the gas day (6 am), the bids may be revised at 10 am, 2, 6 and 10 pm.

1.2 Roles and responsibilities of participants

There are a number of different entities involved in the daily operation of the DWGM; market participants (such as retailers and producers), network operators, and AEMO. Each has a different set of roles and responsibilities which are described below.

Market participants

Market participants must be registered to buy or sell gas in the DWGM.¹²

The main categories of market participants are retailers, producers, storage providers, and customers connected directly to either the transmission or distribution network.

Each market participant who intends to inject gas into, or withdraw gas from, the DTS, must submit bids to AEMO.¹³

All bids and demand forecasts must be made in good faith and represent the market participants' best estimates.¹⁴

If a market participant knows or believes that it will not, or that it is unlikely to be able to comply in any material respect with the operating schedule it must immediately notify AEMO.¹⁵

Network operators

The DTS is owned and maintained by the APA Group (**APA**); however it is operated by AEMO under a market-based centrally co-ordinated carriage system under part 19 of NGR.¹⁶

There are three distribution networks in Victoria owned by Australian Gas Networks (**AGN**), Multinet, and AusNet Services (**AusNet**).

AEMO

AEMO is responsible for operating Australia's largest gas and electricity markets and power systems. Relevant to this report, AEMO operates the DWGM, the short term trading market (**STTM**) hubs in Adelaide, Sydney, and Brisbane, and the National Electricity Market (**NEM**).

In respect of the DWGM, AEMO operates the DTS to ensure sufficient gas is available to match participants' withdrawal requirements from the DTS.¹⁷ Additionally, AEMO operates the market in Victoria and publishes a pricing schedule which establishes a market price for gas. Relevant to the DWGM, AEMO also publishes information about facilities' operation on the Victorian Market Information Bulletin Board (**MIBB**).

¹² AEMO's gas market registration document *Participant Categories in the Gas Markets*, page 2

¹³ Rule 207 (1) and (2) of the NGR

¹⁴ Rule 213 (2) (a), (b), (c)

¹⁵ Rule 213 (4)

¹⁶ <https://www.apa.com.au/our-services/gas-transmission/east-coast-grid/victorian-transmission-system/>

¹⁷ Rule 206

1.3 Bulletin Board

AEMO in its role as Bulletin Board Operator also publishes information about DWGM facilities via the “East Coast Gas Bulletin Board” (**Bulletin Board**). The information provided on the Bulletin Board is publicly available whereas certain parts of the MIBB are accessed via subscription. The MIBB provides a wider suite of Victorian market information than the Bulletin Board including information as to the impact of constraints on the DWGM and threats to system security in Victoria (as occurred on 1 October).

Part 18 of the NGR sets out rules and obligations for the Bulletin Board¹⁸ centred on provision of information on gas production and pipeline flows and capacity. Many of the participants in the DWGM are also obliged to report on the Bulletin Board. This includes the Esso operated Longford Production Facility which must provide information on its total production outlook for delivery to all states (not just the DWGM).

A number of rule changes expanding reporting requirements and the frequency of reporting have either recently commenced or are very likely to commence soon. Relevantly to this report, the AEMC’s Gas Market Review 2016¹⁹ recommended (recommendation F) there should be improvements in the frequency with which information is reported and alerted on the Bulletin Board to include material intra-day changes to a facility’s capacity or nominations. That is, currently reporting of material intra-day capacity changes such as affected the Longford Production Facility on 1 October is optional.

¹⁸ Part 18 of the NGR, Natural Gas Services Bulletin Board

¹⁹ www.aemc.gov.au; AEMC 2016, East Coast Wholesale Gas Market and Pipeline Frameworks Review, Stage 2 final report: information provision, 23 May 2016

2 Overview of the Longford outage

This section provides an overview of the events surrounding the Longford outage. A key source of information for this section was AEMO's Intervention Report and information provided by Esso as to the timing of its actions on the day.²⁰

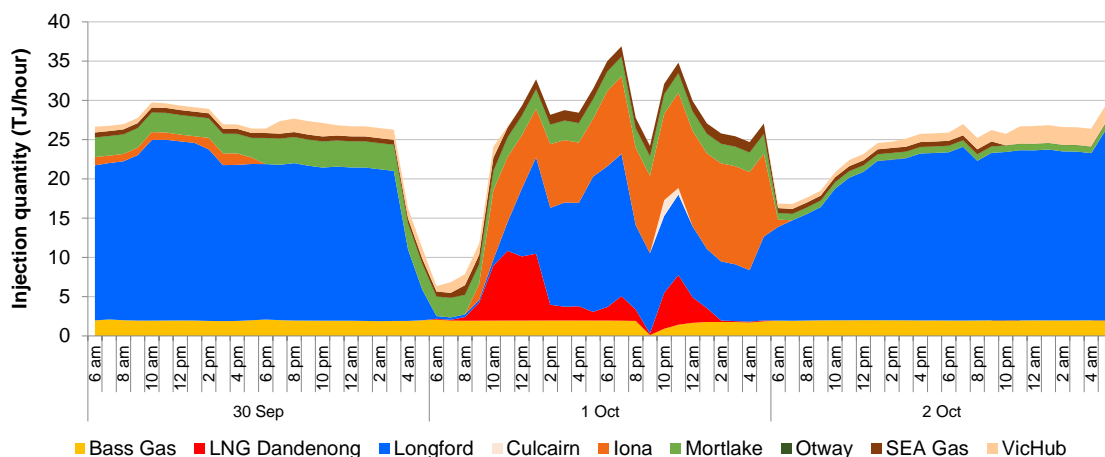
2.1 Timeline of events

In the early morning of Saturday 1 October 2016, there was an unplanned total shutdown of the Longford gas production facility. The shutdown was caused by a failure of on-site electricity generation. The last time Longford experienced a complete electrical shutdown was in April 2004.²¹

Longford is powered by a number of small generators and a connection to Ausnet Services' electricity distribution network.²² On the day, two generators failed in quick succession. The connection to the grid was unable to supply the shortfall and disconnected as a safety mechanism, shutting down all electrical supply to the Longford facility.

Longford supplies a significant amount of gas to the Victorian DTS. Figure 2 below illustrates the reduction of Longford injections into the DTS, and the increase from other sources to help meet the supply shortfall. It also shows Longford's gradual ramp up to normal levels of supply from around 10 am.

Figure 2 – Gas injections into the Victorian transmission network



At 4.26 am, injections from Longford into the DTS ceased. Limited injections resumed at around 4.52 am.

At 5.30 am, AEMO modelled gas flows throughout the DTS. The model indicated there was no threat to system security or any potential pressure issues.

²⁰ AEMO's report is available here: <https://www.aemo.com.au/Gas/Declared-Wholesale-Gas-Market-DWGM/Market-notices>

²¹ This shutdown had a different root cause to the 1 October 2016 event

²² These generators are non-scheduled and are registered with AEMO under the National Electricity Rules.

At 5.36 am, injections from Longford ceased again.

Over the next ten minutes or so, AEMO brought together available market data and spoke with Longford.

At 5.47 am, AEMO notified Longford²³ that it will implement a constraint on Longford's total injections for the day of 514 TJ and constrain down its hourly injections to 0 TJ/h for the first three hours of the gas day (i.e. from 6 am to 9 am). Shortly after, AEMO notified the market of the Longford injection constraint using a system wide notice.

Over the next hour, AEMO spoke with some of the distribution network operators about minimum gas pressure requirements at particular parts of the network. This enabled AEMO to better understand the risks of any loss of supply, and how to best manage the network to maintain system security.

Shortly after 6:30 am, Longford initiated consultation with its customers on how much (scarce) gas would be available and how it would be allocated between Victoria and other destinations (NSW/Tasmania).

At 7 am, Longford advised AEMO it would provide more accurate information about the outage at 8.30 am. Longford noted it was unlikely to be injecting at full capacity in three hours (i.e. at 10 am).

Using this information, at 7.15 am AEMO re-modelled the DTS. The model indicated there was potential for pressure issues at the Sale custody transfer meter at 2 pm.

At 8.27 am, AEMO re-modelled the DTS. At this stage AEMO had not yet received any updated constraint information from Longford. The model indicated the Sale custody transfer meter would breach contractual pressures between 10 and 10.30 am. AEMO commenced preparations for an ad-hoc schedule.²⁴

At 8.32 am, Longford advised AEMO that its total capacity for the day would be 540 TJ and injections would start to ramp up from 11 am.²⁵ This quantity was to supply both the DTS and the EGP (which supplies Sydney). Longford noted it would provide the proportion of gas for each region once it had confirmed instructions from its shippers.

At 8.37 am, Longford provided AEMO with an estimate that 40 per cent of available capacity would be allocated to Victoria.²⁶ Longford noted its estimate took into account information obtained from several of its customers.²⁷

At 8.40 am, AEMO declared a threat to system security. At 9.03 am, AEMO intervened in the market by publishing an ad hoc schedule for one hour period from 9 am to 10 am.

²³ AEMO refers to Longford in its report, information about Longford production facility comes from the operator, Esso

²⁴ In Victoria, the first schedule for a gas day is the four hour period from 6 am to 10 am. The ad hoc schedule was required to revise the final hour of this schedule (i.e. from 9 am to 10 am).

²⁵ This quantity is around 5 per cent higher than previously forecast. At around 6 am, Longford advised AEMO its forecast of total capacity for the day was around 515 TJ.

²⁶ This results in a revised maximum daily capacity of 220 TJ based on a 12 hour ramp up from 11 am.

²⁷ Esso finished receiving allocation instructions from remaining customers about two hours later.

This ad hoc schedule acted to revise the final hour of the previously published 6 am schedule. It incorporated the following:

- A maximum daily constraint on Longford injections of 180,000 GJ
- A constraint preventing net injections on Vichub for the day
- A minimum hourly injection rate on Dandenong LNG of 5,500 GJ/hour

The change in daily quantities scheduled across impacted injection points in the DTS is set out in the Intervention Report, and is reproduced in Table 1.

Table 1 – The change in injections at the ad hoc schedule

Injection Point	6 am schedule quantity (GJ)	Ad hoc schedule quantity (GJ)	Difference (GJ)
Longford	514,000	180,000	-334,000
Dandenong LNG	1,751	115,719	113,968
Culcairn	13,027	86,235	73,208
Iona storage	30,898	178,271	147,373
VicHub	33,000	7,029	-25,971
SEA Gas	28,001	37,001	9,000

The ad hoc schedule instructed participants to inject gas mostly from the Dandenong LNG and Iona storage facilities. The out of merit injections from storage facilities commenced as early as 6 am but were escalated at 9 am around the time AEMO had announced a threat to system security. The ad-hoc schedule nominations of gas injections from storage facilities replaced the original 6 am scheduled injections from the Longford plant that were expected to begin at 9 am. The ad-hoc schedule was used to calculate financial settlements for the entire 6–10 am trading schedule.

At 9.54 am, AEMO approved the 10 am schedule which incorporated information from Esso as to the customer allocation 'split' between principally NSW and Victoria. The 10 am schedule incorporated:

- Longford's maximum daily injections increased from 180,000 GJ to 220,000 GJ
- Dandenong LNG's minimum hourly injection rate increased from 5,500 GJ to 8,000 GJ from 10 am to 2 pm (unconstrained for the rest of the day).

The change in daily quantities scheduled across impacted injection points in the DTS resulting from the 10 am schedule is set out in the Intervention Report, and is reproduced below in Table 2 below.

Table 2 – The change in injections at the 10 am schedule

Injection Point	6 am schedule quantity (GJ)	Ad hoc schedule quantity (GJ)	Difference (GJ)
Longford	180,000	220,000	40,000
Dandenong LNG	115,719	75,287	-40,432
Culcairn	86,235	56,011	-30,224
Iona storage	178,271	203,271	25,000
VicHub	7,029	5,129	-1,900
SEA Gas	37,001	29,001	-8,000

2.2 Financial outcomes

This section addresses the impact of the Longford outage on gas prices, and ancillary/uplift payments and imbalance/deviation payments.

Victorian gas prices

Table 3 below shows the gas prices across the day and the weighted average imbalance price.

Table 3 – Prices across the gas day

	6 am	10 am	2 pm	6 pm	10 pm	Imbalance price (weighted average)
Price (\$/GJ)	10.88	33.75	12.06	9.99	12.29	13.64

The gas price at the beginning of the day (6 am) was \$10.88/GJ. The price was determined using participants' bids to inject and withdraw gas which had a submission cut-off time of 5 am. At this stage participants were not aware of the issues at Longford.

The 10 am price of \$33.75/GJ was largely driven by the Longford outage. With Longford unable to provide gas, other supply sources needed to supply the shortfall. This resulted in higher priced gas being scheduled.

We have considered whether participants rebid supply into higher prices at this time. Analysis indicates that this was not the case. In fact, for the 10 am schedule, there was more gas available at lower prices compared to the 6 am schedule (however significant quantities were to be supplied from Longford which could not be scheduled). Demand was also lower, which helped mitigate further price rises. Price rises were also

mitigated as participants' forecast demand in aggregate was less than their actual demand on the day.²⁸

From the 2 pm schedule onwards, gas prices returned to 'normal' levels. This was driven by more gas being offered into the market at lower prices (particularly from SEA Gas and Iona) and further reductions in demand.

Imbalance and deviation payments

Imbalance payments are calculated at each schedule throughout the gas day and are designed to account for circumstances when a market participant's scheduled injections and withdrawals are out of balance (i.e. the participant is a net injector or a net withdrawer). Deviation payments are designed to account for when a market participant deviates from AEMO's schedule.²⁹

AEMO's ad hoc schedule would have influenced the imbalances and deviations of market participants.

We note, however, that the ad hoc schedule was governed by the bids submitted by participants. We understand the ad hoc schedule did not instruct participants to do anything beyond what was contemplated in these bids.³⁰

We are satisfied that AEMO prepared and published the ad hoc schedule in accordance with its obligations.

The gas price for the 10 am schedule was \$33.75/GJ. This price is used to calculate deviation payments for the 6 am schedule, and imbalance payments for the 10 am schedule.

In its Intervention Report, AEMO notes that without the ad-hoc schedule, participants scheduled to inject gas from Longford would have been required to pay a large amount of deviation payments calculated at the 10 am price of \$33.75/GJ.

The report also notes these deviation payments would have funded a substantial portion of the outstanding linepack account and some of the total uplift payments (via surprise uplift) for the day.³¹

Ancillary and uplift payments

Ancillary payments are made to market participants when they are given a scheduling instruction by AEMO to inject or withdraw more gas than they were originally scheduled. Ancillary payments are funded by uplift payments. Appendix B explains the different kinds of uplift payments and other related information.

²⁸ AER is following up with participants to investigate reasons for the under-forecasting of gas demand on the day of 1 October 2016.

²⁹ Rule 235 of the NGR explains imbalance and deviation payments in more detail.

³⁰ We note the NGR requires participants to submit bids (and demand forecasts) to AEMO in good faith and for the bids to represent the participants' best estimates (rule 213 (2) (a), (b), (c)). Participants also immediately notify AEMO if they have concerns about their ability to comply with an operating schedule (rule 213 (4)).

³¹ AEMO, *DWGM Event – Intervention – 1 October 2016*, 14 October 2016, p. 7.

The Longford outage did not result in any retail or industrial customer curtailment directed by AEMO. There was, however, some limited instances of market participants asking their customers to curtail load to reduce market exposure on the day as could be expected on any higher price day.

Ancillary payments were generated across the market as gas was scheduled out of merit order including from Dandenong LNG.

Total ancillary payments across the market for the gas day totalled \$3,103,145.43.³² The allocation of this amount between uplift payment types is outlined in Table 4 below.³³

Table 4 – Allocation of ancillary payments

Uplift Type	Provisional Amount	Percentage of total
Congestion Uplift	\$2,796,749.80	90.1%
Surprise Uplift	\$13,832.52	0.4%
Common Uplift	\$292,563.10	9.4%
Total Uplift	\$3,103,145.42	100%

Source: AEMO³⁴

AEMO's Intervention Report notes the majority of uplift payments (i.e. congestion uplift) generated on the day will be attributed to participants who had withdrawals for scheduling intervals that exceeded their authorised maximum interval quantity nominations. The Intervention Report notes this is in accordance with the methodology set out in AEMO's Wholesale Market Uplift Payments Procedures.³⁵

In making the procedures, the NGR requires AEMO to allocate uplift payments so far as practicable to the cause. Some participants have raised concerns this settlement outcome may not adequately allocate 'costs to cause'. Other participants said they found it difficult to determine the impact of ancillary and uplift payments generated.

It appears participants did not understand the calculation of the congestion uplift charge which represented 90 per cent of ancillary charges for the day. Without completely understanding the allocation methodology of uplift payments, participants questioned the equity of congestion uplift payments which they consider unfairly penalises those participants without AMDQ credits.

³² At the time of the ad hoc schedule, ancillary payments totalled \$3,934,329.95. The ancillary payment clawback mechanism resulted in the total payments reducing due to lower priced gas being available for the 10 am schedule. This is explained in more detail in AEMO's Intervention Report on page 5.

³³ The procedures are available here: <http://www.aemo.com.au/Gas/Declared-Wholesale-Gas-Market-DWGM/Policies-and-procedures>

³⁴ AEMO, *DWGM Event – Intervention – 1 October 2016*, 14 October 2016, p. 6.

³⁵ Available here: <http://www.aemo.com.au/Gas/Declared-Wholesale-Gas-Market-DWGM/Policies-and-procedures>

We note, however, these concerns relates to the methodology set out in the procedures. It is not suggesting AEMO incorrectly applied the methodology.

AEMO has noted it will explore this issue further and has invited participants to provide their comments and suggestions in the New Year.

2.3 Interactions between energy markets

The movement of limited gas supply across markets in different states has become increasingly important to satisfy the sharp increase in gas demand on the east coast. As the ACCC gas inquiry noted, the traditional flow of gas supply from the Cooper basin in South Australia is changing:

“...gas from the Cooper Basin was historically an important source of supply for the South Australian market via the Moomba to Adelaide Pipeline System (MAPs), and for the New South Wales market via the Moomba to Sydney Pipeline (MSP). Redirection of gas from the Cooper Basin to Queensland has reduced diversity of supply available in the southern states, adversely affecting the competitive dynamics in those states...”³⁶

The current market environment leaves the market forces of gas supply and demand finely balanced on the east coast. When a large shock to a major gas supply occurs at one point on the east coast, this can have effects on pricing and gas supply across multiple markets. The inter-linkages between the gas markets in Victoria, South Australia and New South Wales on the 1 October 2016 are summarised below.

Victoria

NSW – Vic Interconnect

On 1 October, injections of gas from NSW into Victoria were limited due to a constraint (unplanned outage) on the injection point at Culcairn which lasted from 6AM–10PM.

Vic – Hub

AEMO also applied a directional flow point constraint (DFPC) on VicHub into the DTS at the time of its ad hoc schedule (which ran from 9 am to 10 am). The DFPC constrained flows to 0 TJ, and remained in place for the rest of the day. The AER understands AEMO applied the constraint because it was uncertain based on information it acquired at the time as to how much (if any) gas could flow through VicHub. Related to the application of this constraint, on 13 December AEMO notified that in accordance with rule 218(1)(a) of the NGR, AEMO has, on request from a Market Participant, commenced an investigation into whether an *unintended scheduling result* occurred.

New South Wales

A Contingency Gas Trigger event occurred for the Sydney STTM on 1 October related to the Longford plant shut down. The Longford gas plant shut down raised concerns of a potential supply shortfall in the Sydney hub (Longford supplies Sydney via the Eastern Gas Pipeline). AEMO has noted that without knowing what would be injected

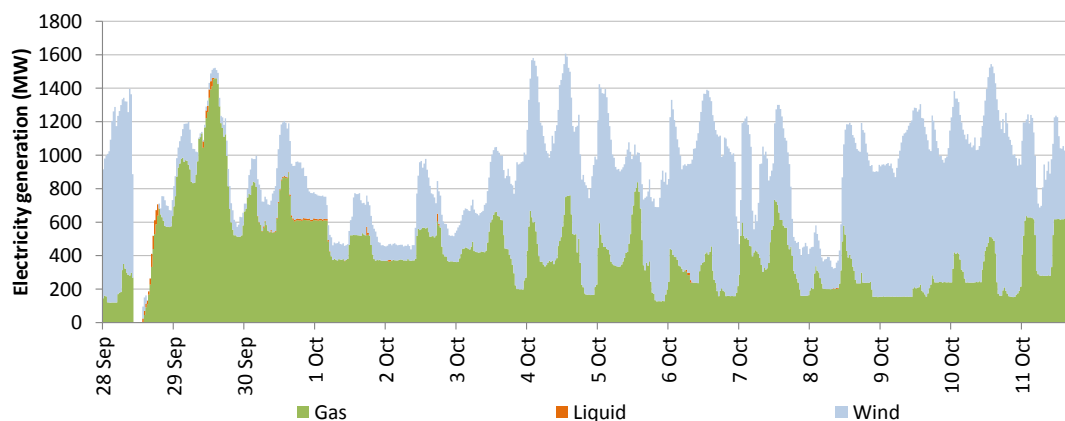
³⁶ ACCC, Inquiry into the east coast gas market, April 2016, p. 29.

into the EGP, Jemena was uncertain what it could deliver to the Sydney hub.³⁷ The contingency trigger event was resolved following industry conferences in part through participants' renominations on to the Moomba Sydney Pipeline and balancing gas (MOS). As a result of participants' renominations and Longford's increased production volumes later in the day, contingency gas was not required. This trigger event highlights the importance of Longford as a supplier not just to the Victorian wholesale market but also the Sydney STTM.

South Australia

As a consequence of the black system event in South Australia on 28 September, the electricity market in that region was suspended through until 11 October. AEMO restricted the output of a number of wind generators, due to performance concerns.³⁸ As a result, gas supplies in Adelaide on 1 October were being allocated to fuel higher output from gas powered electricity generators. Consequently, there was limited gas supply available to be diverted from the SEA Gas pipeline into Victoria via the DTS. The output of gas generation over the course of the electricity market suspension in South Australia is depicted in Figure 3 below highlighting that 1 October was a high demand gas day (the green portion) despite being a weekend.

Figure 3 – SA electricity generation by fuel type



³⁷ AEMO, STTM event: Contingency gas trigger – Gas day 1 October 2016, 11 November 2016, p. 9.

³⁸ AEMO, Black system South Australia third preliminary report, 28 September 2016, December 2016, pp. 5–7.

3 Findings and follow up actions

We have made a number of findings and follow up actions which are set out below.

AEMO's decision to declare a threat to system security and issue an ad hoc schedule

We consider AEMO acted appropriately in declaring a threat to system security. AEMO acted under difficult time constraints to address the reduction in pressures of the Victorian transmission system and avoid customer curtailment with the best information available.

We consider AEMO acted appropriately in issuing an ad hoc schedule. We acknowledge the ad hoc schedule was necessary to reduce the likelihood of a loss of customer supply and that AEMO considered there was insufficient time to wait for either a market response or to schedule out of merit order gas at the 10 am schedule.

These decisions appear to be consistent with AEMO's obligations under rules 342 and 343 of the NGR.

Provision of information to AEMO

In preparing the ad hoc schedule, AEMO was reliant on information from a number of facility operators.

In particular, Esso was required to provide to AEMO its shippers instructions on how Longford's gas was to be allocated between Melbourne and Sydney (and Tasmania).

To do this, Esso needed to assess and investigate the causes of the shutdown in order to develop an accurate forecast for AEMO and its customers.

Following this assessment, Esso consulted with its customers in order to provide gas allocation information to AEMO. This commenced around 6.35 am.

At around 8.37 am, Esso provided an indicative range to AEMO for the development of the ad hoc schedule. This estimate took into account information obtained from several of Esso's customers. About two hours later, Esso finished receiving allocation instructions from any remaining customers.

It is unclear whether market outcomes would have changed materially had Esso provided AEMO 'confirmed' allocations earlier. However we note management of emergencies often requires decisions to be made with limited time and that any delays should be minimised as much as possible.

AEMO has since raised the possibility of having a default standing arrangement for the allocation of gas to be used in emergency situations. While this could result in quicker system wide management, it may impact the ability for market based responses. This potential trade off should be explored when considering any changes.

The AER will table the issue of the merits of a default allocation arrangement at the next AEMO Gas Wholesale Consultative Forum for broader industry comment.

AEMO's access to information to help manage the DTS

In its Intervention Report, AEMO notes it needs to be informed in a timely manner of any new information that impacts a facility's ability to inject or withdraw gas into the DTS. AEMO notes it had limited additional information to assess the period that Longford was likely to be unavailable and the likely ramp rate to assess the impact on gas supply to customers at Sale.

The report suggests broadening rule 219 to allow for this additional information to be requested and provided, and notes the issue will be addressed at the Gas Wholesale Consultative Forum.

Esso has noted that due to the complex and dynamic nature of a facility restart, significant uncertainty in any ramp profile exists and resources are dedicated to safe and effective restart to achieve the best market outcomes.

We consider it is essential for AEMO to have access to good information in order for it to fully assess a threat to system security and determine an appropriate course of action.

For this reason, we are willing to explore AEMO's suggestion of broadening rule 219. However we note it may be an appropriate first step to consider of other existing obligations that may help achieve the same aim, such as rule 341(2) of the NGR and section 91BC of the NGL.

AEMO's publication of information

We have spoken with a number of participants regarding the events of 1 October. Most agree that communication on the day was executed well by AEMO.

AEMO publishes key information for the Victorian Gas Market on the Market Information Bulletin Board (**MIBB**) and did so on the day promptly in response to information provided by many participants including Esso.

Many participants used information from the MIBB.

In accordance with AEMO's procedures, it uses the MIBB to post constraint information and other information such as declarations of threats to system security and ad hoc schedules.

Some participants raised issues which highlight that there is a delay between market notices appearing on the MIBB and notifications being sent via email and SMS text messages. AEMO has noted this has been raised previously and there would be market costs in ensuring the immediate notification by email and SMS.

The AER will raise the issue of communication of market wide notices through the various channels for broader industry comment.

AEMO-led industry conferences

AEMO and participants have noted that a number of industry conferences were held throughout 1 October to deal with electricity supply issues for South Australia,

management of the Victorian gas market and also a contingency gas assessment conference under Part 20 of the NGR for the Sydney STTM on 1 October.

We consider that AEMO acted appropriately to convene a contingency gas assessment conference for the Sydney STTM.

Use of the Bulletin Board

Bulletin Board (Part 18 of the NGR)

Gas Producers and Pipeline Operators have obligations to publish information on the East Coast Gas Bulletin Board which are **in addition** to requirements to provide information to AEMO for the purpose of operating the Gas Markets under Part 19 and 20 of the NGR.

A number of participants noted that the primary (information reporting) requirement in an emergency is for a facility operator to provide AEMO with information to manage the event across the system. This happened in accordance with part 19 of the NGR through information being provided to AEMO and being disseminated to the market. The same participants have raised concerns that requirements to provide updated information through the Bulletin Board may cause delays and confusion in the management of an event.

Other participants have commented that the provision of further information as soon as practicably available from Esso on the Bulletin Board would have been valuable to them to assess the market conditions. This information would, for example, communicate the duration and magnitude of any facility outage. The provision of this additional information is consistent with Bulletin Board changes recommended by the AEMC, and currently under development.

We consider it is likely participants would have valued early notification about Longford's capacity on the day.

However, this is not to suggest that Esso did not provide critical information to AEMO in accordance with its obligations under the NGR.

We consider that a timely posting of facility's operational status on the public bulletin board would improve transparency overall and would be consistent with reducing any perceptions or actual issues with information asymmetry.

The AER will discuss further with AEMC and AEMO the implementation of this rule change with regard to how bulletin board information is provided simultaneously with information to market operators.

The allocation of uplift payments

As noted above, some participants raised concerns that the settlement outcome on the day may not adequately allocate 'costs to cause'. Other participants said they found it difficult to determine the impact of ancillary and uplift payments generated.

AEMO has committed to exploring this issue further and has invited participants to provide their comments and suggestions. We will monitor this work and participate where appropriate.

Follow up actions

In preparing this report, a number of issues were identified that warrant further action. In summary:

- We intend to explore with the AEMO Gas Wholesale Consultative Forum:
 - the merits of a standing default allocation of gas at Longford (pending market resolution) for the split of gas between NSW and Victoria in an emergency and
 - the merits (and need) to decrease the timing differences of publication of information/data on the MIBB and the same information via email/sms
- We will also explore whether intra-day facility updates on the Bulletin Board (for material changes) may have increased information available during this event. Noting the recommended rule change (to require intra-day data) from the AEMC's 2016 Gas Market Review the AER will clarify in advance with industry what information (including duration and magnitude) is to be expected and in what time frame.
- We note AEMO will examine whether there is scope for improving the allocation of uplift payments, depending on industry feedback. We will monitor this work and participate where appropriate.
- We will report on any instances of non-compliance on the gas day in our next Quarterly Compliance Reports.

Appendix A – AER SPV reporting thresholds

The Significant Price Variation Reporting thresholds are set out below.

The two reporting thresholds set out in the [Victorian SPV guideline](#) are when:

- the trade weighted market price published by AEMO on a gas day is more than three times the average price for the previous 30 days and the trade weighted market price is equal to or greater than \$15/GJ
- the ancillary payment amount published by AEMO on a gas day is an amount payable or receivable which exceeds \$250 000.

Appendix B – Ancillary and uplift payments

Rule 239 of the NGR provides that any market participant who is given a scheduling instruction by AEMO to inject or withdraw more gas than they were scheduled is entitled to receive an ancillary payment.³⁹

Ancillary payments are funded by uplift payments. AEMO has published the [Wholesale Market Uplift Payment Procedures](#) which set out, amongst other things, how ancillary payments are allocated between uplift payments.

Rule 240 (2)(a) of the NGR requires AEMO, when making the procedures, to apply the principle of allocating uplift payments so far as practicable to the cause.

The procedures note uplift payments are ‘therefore allocated to those Registered Participants whose actions generated the relevant ancillary payments’. The procedures also explain the three kinds of uplift payments; congestion, surprise, and common.

Congestion uplift payments will be to a market participant where the total withdrawals of gas by that market participant in a scheduling interval exceed its authorised maximum interval quantity (**AMIQ**) in that scheduling interval.⁴⁰

Surprise uplift payments will be allocated to any market participant which does not inject or withdraw gas in a gas day in accordance with that market participant's operating scheduled injections or operating scheduled withdrawals (as applicable) in the previous schedule or its demand forecasts or operating scheduled controllable withdrawals increase or decrease between the previous and the current schedules.

If the aggregate amount of uplift payments allocated by AEMO as congestion uplift payments and surprise uplift payments in respect of a gas day do not fully fund the total ancillary payments payable in respect of that gas day, the unfunded portion of such ancillary payments is allocated by AEMO as **common uplift payments**.

Common uplift payments arise in the following circumstances:

- a) where AEMO overrides the total demand forecasts from all Market Participants by increasing the demand forecasts for scheduling, but the actual uncontrollable demand is less. As a result, the additional withdrawals cannot be attributed to specific Market Participants' forecasting errors and must therefore be categorised by AEMO as common uplift payments to be shared by all Market Participants;
- b) where the terms and conditions of the service envelope agreement of the relevant declared transmission system service provider limits the amount of uplift payments that would otherwise be payable by that declared transmission system service provider as a result of failing to meet its agreed capacity requirements;

³⁹ This rule is subject to sub rules 4, 5, and 6.

⁴⁰ The procedures also set out when congestion uplift can be allocated to a declared transmission system service provider. See page 6 of the procedures.

- c) or where uplift payments are payable but there is no basis for categorising these uplift payments as surprise or congestion uplift payments.

Appendix C – Consultation

Parties consulted with in preparing this report:

AEMO

AGL

AGN (APA)

Australian Paper

Energy Australia

Engie

ERM

Esso

Jemena

Momentum

Shell (QGC)

Victorian Department