STTM EVENT – ADMINISTERED EX-POST PRICE – ADELAIDE AND SYDNEY HUBS – 1, 2 & 3 JUNE 2014

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FINAL

Contents

Glossary

Terms or Abbreviations	Explanation
AEMO	Australian Energy Market Operator
AEST	Australian Eastern Standard Time
GJ	Giga joules
IMT	Information Management and Technology
MIS	Market Information System
MOS	Market Operator Service
MSD	MOS step allocation data (daily file). Note MSD files are only submitted for pipelines.
NGR	National Gas Rules
PAD	Facility Allocation data (daily file). Note PAD files are submitted for all facilities.
NGR	National Gas Rules
RTO	Real Time Operations
STTM	Short Term Trading Market
SWEX	STTM WebExchanger
SWEXIE	SWEX Interface Engine

1 Summary

On 2 June 2014, AEMO's market systems incorrectly rejected valid pipeline allocation data files on the basis of MOS allocations that were not associated with any contract right holder at the Sydney hub. At the Adelaide hub, pipeline allocation data files that had been accepted were incorrectly invalidated by a later process. As a result, provisional ex post prices for Adelaide and Sydney were calculated (and published) using default allocations.

AEMO investigated the cause of the provisional ex post prices and concluded that it was due to a market systems issue. Subsequently, AEMO determined that an administered ex post pricing state applied for gas day 1 June 2014 under rule 429 of the National Gas Rules (NGR). On following days, AEMO also determined that an administered ex post pricing state applied for gas days 2 and 3 June 2014.

AEMO deployed its IT solution related to the rejection of daily allocation data files at around 07.30 AEST on 5 June 2014 which allowed the ex post price to be determined as normal for gas day 4 June and subsequent days. However, there was still a related validation issue with processing of monthly allocation data files which was resolved with the deployment of a second IT solution on 12 June.

For both Adelaide and Sydney, the market impact of the events from the use of an administered ex post price was negligible because there were non-material impacts from changes to deviation payments/charges and in calculating the cumulative price for the next gas day. There were no impacts in prudential monitoring.

AEMO has engaged Pricewaterhouse Coopers to conduct an end-to-end investigation of these related events. It is expected that its report will identify the root cause(s) and make recommendations on mitigating actions, which will be also provided to participants.

This report has been prepared under Rule 497 of the NGR (for a reviewable[1] event) and Section 7.6 of the STTM Procedures to assess the actions taken by STTM facility operators and AEMO in relation to the event and the effect of the event on the operation of the STTM.

All references to time in the report refer to Australian Eastern Standard Time.

2 Background

2.1 The MOS timing and eligibility project

Market system changes to MOS processes were deployed into production on 6 May 2014 with the effective dates for functionality to apply from 1st June 2014.

The MOS timing and eligibility project allows trading right holders to offer MOS in the STTM, reduces the MOS period to 1 month, with the first monthly MOS period being June 2014, and allows submissions of MOS offers via participant interfaces.

2.2 Allocation data and ex post imbalance price

By 11:00 AEST on each gas day at Adelaide and Sydney, the allocation agent for the relevant STTM facility is required to submit the STTM facility allocation for the previous gas day. For any STTM pipeline, the daily STTM facility allocation notice[2] consists of two files, a facility allocation file and a market operator service (MOS) step allocation file (also known as the PAD and MSD files respectively).

The STTM facility allocations provide AEMO with the delivered quantity of gas for the relevant gas day. The STTM facility allocations are used as an input into the calculation of the ex post imbalance price for the gas day in question. The ex post imbalance price is one of the prices used to determine a trading participant's deviation payment or charge.

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1 For the purposes of this report, the reviewable event is the administered ex post pricing state.
2 Refer to Appendix A for more detail on the allocation notice and related validations.

If the STTM facility allocations are not submitted by 11:00 AEST, then AEMO systems trigger a warning and an extended period is automatically made available for the allocation agent to deliver the STTM facility allocations for the relevant facility by 15:00 AEST.

If the STTM facility allocations are not submitted by the 15:00 AEST extended window, AEMO will use default allocations for the relevant facility to calculate the ex post imbalance price.

3   Description of Events

On 2 June 2014, AEMO's market systems incorrectly rejected valid pipeline allocation data files on the basis of MOS allocations that were not associated with any contract right holder at the Sydney hub. At the Adelaide hub, pipeline allocation data files that had been accepted were incorrectly invalidated by later system processing. As a result, provisional ex post prices for Adelaide and Sydney were calculated (and published) using default allocations.

AEMO investigated the cause of the provisional ex post prices and concluded that it was due to a market systems issue. Subsequently, AEMO determined that an administered ex post pricing state applied for gas day 1 June 2014 under rule 429 of the National Gas Rules (NGR).

On following days, AEMO also determined that an administered ex post pricing state applied for gas days 2 and 3 June 2014.

There was also a related validation issue with processing of monthly allocation data files which prevented a successful submission in the following cases:

- Any update or revision to the monthly settlement allocation files for the period prior to 1 June.

- If a participant set the MOS enable flag to "no" (for a trading right), then any monthly settlement allocation files submitted after that time would not be accepted – even if they apply to periods prior to the date on which the "no" flag was set.

4   Cause of the Events

The immediate cause for the events relate to how MOS allocations for MOS enabled trading rights were being validated in the two allocation files (ie. the PAD and MSD files) submitted by facility operators.

AEMO has engaged Pricewaterhouse Coopers to conduct an end-to-end investigation of these events in order to determine the root cause(s).

5   Market Impacts

5.1 Administered ex post pricing state for the Adelaide hub

The administered ex post prices (being administered at the ex-ante price) for the Adelaide hub were equal or higher over the three days compared to the ex post prices if the administered ex post pricing state had not applied (refer to the table below).

Date	Ex ante scheduled to hub (GJ)	Ex post allocation (GJ)	Market long (-) or short (+) (GJ)	Administered ex post price ($/GJ)	Ex post price ($/GJ) (ie. not administered)	Price Difference ($/GJ)
1/06/2014	66,815	62,325	-4,490	3.7880	3.7800	0.008
2/06/2014	74,464	74,400	-64	3.7780	3.7780	0
3/06/2014	75,486	75,026	-460	3.8788	3.8788	0

The small difference in price on 1 June ($0.0080/GJ) had a non-material impact on prudential monitoring since there were no margin calls for any STTM participants which occurred from

using the (higher) administered price. On subsequent days there was no price difference. On each day the cumulative price for the next gas day was correctly calculated using the administered price, was below the cumulative price threshold (e.g. $26.7834/GJ compared to $440/GJ) and therefore did not trigger an administered price cap state.

The prices differences translate to changes in deviation payments (payment received by a trading participant for a long deviation) and deviation charges (charge paid by a trading participant for a short deviation) over the three days as follows:

- Deviation payments were overpaid by $24.21 (i.e. parties were overpaid by this amount because of the higher administered price).
- Deviation charges were the same (since the administered price is higher).

The increase in deviation payments affected the net market balance (i.e. net market surplus or net market shortfall). The Adelaide hub had higher net market shortfalls for the June billing period by $24.21, and this had a consequential impact to the distribution of shortfall charges.

With the administered ex post price, the shortfall charge distribution from the larger net market shortfall created changes to shortfall amounts for parties. The net effect was that no participant was either better off by more than $22.25 or worse off by more than $0.00.

5.2 Administered ex post pricing state for the Sydney hub

The administered ex post prices (being administered at the ex-ante price) for the Sydney hub were equal or lower over the three days compared to the ex post prices if the administered ex post pricing state had not applied (refer to the table below).

Date	Ex ante scheduled to hub (GJ)	Ex post allocation (GJ)	Market long (-) or short (+) (GJ)	Administered ex post price ($/GJ)	Ex post price ($/GJ) (ie. not administered)	Price Difference ($/GJ)
1/06/2014	230,828	240,450	9,622	3.8681	4.0488	0.1807
2/06/2014	272,169	282,049	9,880	3.8681	4.0488	0.1807
3/06/2014	292,835	291,846	-989	3.7988	3.7988	0

The small difference in prices ($0.1807/GJ) on 1 and 2 June had a non-material impact on prudential monitoring since there were no margin calls for any STTM participants which occurred from using the (lower) administered price. On each day the cumulative price for the next gas day was correctly calculated using the administered price, was below the cumulative price threshold (eg. $26.2085/GJ compared to $440/GJ) and therefore did not trigger an administered price cap state.

The prices differences translate to changes in deviation payments/charges over the three days as follows:

- Deviation charges were undercharged by $2,856.58 (ie. parties were undercharged by this amount because of the lower administered price).
- Deviation payments are the same (since the administered price is lower).

The deviation undercharges affected the net market balance (i.e. net market surplus or net market shortfall). The Sydney hub has higher net market shortfalls for the June billing period by $2,856.58, and this has a consequential impact to the distribution of shortfall charges.

With the administered ex post price, the shortfall charge distribution from the larger net market shortfall created changes to shortfall amounts for parties. The net effect was that no participant was either better off by more than $0.00 or worse off by more than $3,881.38.

6   Further Assessment of the Event

6.1 Actions taken by participants, facility operators, and AEMO

AEMO's assessment is that STTM facility operators did not contribute to or cause the event, and the event was due to issues within AEMO's market systems.

AEMO support staff responded appropriately to monitoring alarms on the day but were not able to resolve the market systems issue before normal market operation was affected.

AEMO correctly determined that an administered ex post pricing state applied for gas days 1, 2 and 3 June 2014 at the Adelaide and Sydney hubs under NGR 429. The market was notified of the administered state via MIS report INT666 Market Notice (and also via email/SMS).

6.2 The effect of the reviewable event on the operation of the STTM

For the purposes of this report, the reviewable[3] event is the administered ex post pricing state that applied at the Adelaide and Sydney hubs. Market impacts (including financial estimates) are described in Section 5.

The market impact of the events from the use of administered ex post price was negligible because there were non-material impacts from changes to deviation payments/charges and in calculating the cumulative price for the next gas day. There were no impacts in prudential monitoring.

6.3 Whether the provisions of Part 20 of the NGR were adequate to address the reviewable event

In accordance with rule 429 of the NGR, AEMO determined that an administered ex post pricing state applied for gas days 1, 2 and 3 June 2014 as it was unable to produce an ex post price by 12:00pm using valid facility operator allocation data for the Adelaide and Sydney hubs.

Part 20 contemplates the possibility of AEMO not meeting all its obligations (eg. not being able to determine an ex post imbalance price using validated data by the required time) by providing for different administered market states in Subdivision 6 of Part 20.

In this instance, there is nothing to suggest that the provisions of Part 20 of the NGR were not adequate.

7   Resulting Actions

AEMO deployed its IT solution related to the rejection of daily allocation data files at around 07.30 AEST on 5 June 2014 which allowed the ex post price to be determined as normal for gas day 4 June and subsequent days. However, there was still a related validation issue with processing of monthly allocation data files which was resolved with the deployment of a second IT solution on 12 June.

It is expected that Pricewaterhouse Coopers' report will identify the root cause(s) and make recommendations on mitigating actions, which will be also provided to participants.

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3   Rule 497(2)(a) of the NGR includes an administered ex post pricing state as a reviewable event.

APPENDIX A: Facility Allocation data and the ex post imbalance price

By 4.5 hours after the start of each gas day, the allocation agent for the relevant STTM facility is required to submit the STTM facility allocation for the previous gas day. The gas day starts at 6:30am at the Sydney and Adelaide hubs, and 8:00am for the Brisbane hub.

The STTM facility allocations provide AEMO with the final delivered quantity of gas for the relevant gas day. The STTM facility allocations are used as an input into the calculation of the ex post imbalance price for the gas day in question. The ex post imbalance price is one of the prices used to determine a trading participant's deviation payment or charge.

If the STTM facility allocations are not submitted by 4.5 hours after the start of the gas day, an extended period is made available for the allocation agent to deliver the STTM facility allocations for the relevant facility by 8.5 hours after the start of the gas day.

If the STTM facility allocations are not submitted by 8.5 hours after the start of the gas day, AEMO will use default allocations for the relevant facility to generate the ex post imbalance price by 9.5 hours after the start of the gas day.

For any STTM pipeline, the daily STTM facility allocation notice consists of two files, a facility allocation file and a market operator service (MOS) step allocation file (also known[4] as the PAD and MSD files respectively). For each STTM facility allocation notice, the PAD file is required to be submitted before the MSD file and the two files are typically submitted a few minutes apart by the pipeline operators. Validations by the AEMO STTM systems are performed as follows:

- *Individual PAD and MSD validations*—validations are performed individually on the facility allocations (PAD) and MOS step allocation file (MSD) for each pipeline facility at the time the pipeline operator submits each file;

- *The PAD/MSD matching check*—a validation is run to check that the total MOS quantities (excluding overrun MOS) in both the facility allocation file and MOS step allocation file for each pipeline match. This is run at the time the MOS step allocation file is submitted. The MSD submission is rejected if it fails this test.

- *The PAD/MSD cut-off check*—in case the PAD and MSD sequence[5] is not followed, the STTM system also performs a daily check, at the D+1[6] allocation submission cut-off time, that there is a valid matching pair of facility allocations and MOS step allocation files for each STTM pipeline. Accordingly, this is required to be run at 11:00am for the Sydney and Adelaide hubs and 12:30pm for the Brisbane hub. In the absence of a matching pair of valid allocation files, default allocations for the relevant STTM pipeline are applied and used as an input into the calculation of the provisional or ex post imbalance price.

As far as the NGR and STTM Procedures are concerned these two files are treated as one allocation notice and neither can be considered to be validly submitted without the other.

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[4] Refer to STTM participant build pack and STTM participant build pack business validations addendum at http://www.aemo.com.au/Gas/Policies-and-Procedures/Short-Term-Trading-Markets/Rules-Procedures-and-Interface-Protocol
[5] For example, a second PAD file could be submitted which doesn't match the first MSD file.
[6] D+1 refers to the day after the respective gas day D.