

# DWGM - INVESTIGATION INTO SCHEDULING OUTCOMES - 9 DECEMBER 2011

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# Contents

1	Summary.....	3
2	Description of Event.....	3
2.1	Background.....	3
2.2	Cause of the Event.....	3
2.3	Market Impacts.....	4
2.4	Estimated Financial Impact .....	4
3	Assessment of the Event .....	4
3.1	Assessment against criteria for Unintended Scheduling Result .....	4
3.2	AEMO Decision.....	<b>Error! Bookmark not defined.</b>
4	Resulting Actions .....	5
	Appendix A – Detailed Analysis .....	6
	Calculation of Market and Financial Impacts .....	6
	Approach .....	6
	Market Outcomes 9 Dec 2011 .....	6

## 1 Summary

A data processing failure within the Transportation and Market Manager (TMM) system resulted in the incorrect tie-breaking of equally priced injection bids in the 2pm schedule on 9 December 2011. AEMO's investigation has found that the event does not qualify as an unintended scheduling result in accordance with National Gas Rule (NGR) 217.

AEMO identified a data processing failure that caused incorrect Authorised MDQ to be input into the calculation of injection-tie breaking rights during the period between 8 November 2011 and 27 April 2012. During this period, the tie-breaking of injection bids occurred in the 2pm schedule on 9 December 2011 only. The incorrect injection tie breaking rights did not impact the schedule price or total schedule quantities but did impact the proportion of injection bid quantities scheduled for each Market Participant and their imbalance payments across the 2pm, 6pm and 10pm schedules on 9 December 2011.

The maximum financial impact for an individual Market Participant as a result of the incorrect injection tie breaking rights was less than \$100 which falls below the threshold (\$20,000) for the event to qualify as an unintended scheduling result in accordance with NGR 217(4). There was no impact on the settlement of ancillary and uplift payments.

AEMO corrected the data processing failure immediately upon identification and has introduced a new data validation within the TMM system to avoid a recurrence of the event.

## 2 Description of Event

### 2.1 Background

In accordance with rule 214(d), where two or more injection bids have the same price, then those injection bids that are associated with AMDQ credit certificates or Authorised MDQ should be scheduled ahead of other injection bids. AEMO determines each Market Participant's injection tie breaking right at each system injection point in accordance with the Injection Tie-Breaking Right Functional Design.

A data processing failure within the TMM system excluded the tariff V block of authorised MDQ from the calculation of the injection tie breaking rights. The incorrect injection tie breaking rights were used in schedules run during the period 8 November 2011 and 27 April 2012. AEMO's investigation found that there was one occurrence of incorrect tie breaking which occurred in the 2 pm 9 December 2011 schedule which also had an effect on the subsequent 6pm and 10pm schedules on 9 Dec 2011.

The determination of Market Participants' Longford uplift hedge quantity is performed in the Metering Management and Settlement (MMS) system and was not affected by the data processing failure.

### 2.2 Cause of the Event

An annual allocation of authorised MDQ for tariff V withdrawal points is made by AEMO to Market Participants for use in injection tie-breaking rights in market schedules and supporting uplift hedges<sup>1</sup> for ancillary payments. The allocation of authorised MDQ for tariff V withdrawal points is determined by AEMO by distributing the total amount of authorised MDQ for all tariff V withdrawal points to each Market Participant based on that Market Participant's share of the total amount of gas withdrawn from tariff V withdrawal points during the peak demand days for those tariff V withdrawal points in the previous winter.

The market systems require the annual allocation of authorised MDQ for tariff V withdrawal points to be entered into the market systems as an integer (no decimal places). The update by AEMO on 8 November 2011 was not entered as an integer and as such the input data could not be

<sup>1</sup> Section 3.2 of the Wholesale Market Uplift Payment Procedures (Victoria) v2.1.

processed by the TMM system when calculating Market Participants' injection tie-breaking rights. During the period between 8 November 2011 and 27 April 2012 the tariff V block of authorised MDQ was not included in the determination of Market Participants' injection tie breaking rights due to a data processing failure. As a result, the injection tie breaking rights were too low for 10 of 14 Market Participants during this period. The incorrect injection tie-breaking rights were used as an input in gas market schedules between 8 November 2011 until 27 April 2012 when the issue was identified and subsequently rectified.

## 2.3 Market Impacts

The data processing failure did not affect the market price or the total scheduled quantity for the affected schedules. However, the use of incorrect tie breaking right quantities resulted in a relatively small over or under scheduling of injection bids as detailed in *Appendix A – Detailed Analysis*.

The data processing failure did not affect the determination of Market Participants' Longford uplift hedge quantity and as such there was no impact on ancillary payments. Further, there was no impact on the Linepack account as a result of the event.

There was no impact on the operation of the Declared Transmission System (DTS) as a result of the event.

## 2.4 Estimated Financial Impact

The use of incorrect tie breaking right quantities resulted in a relatively small over or under payment of imbalance payments as detailed in *Appendix A – Detailed Analysis*. The maximum overpayment and the maximum underpayment was less than \$100. Across all Market Participants there was no aggregate financial impact.

There was no impact on the settlement of ancillary<sup>2</sup> and uplift payments because the correct authorised MDQ quantities were used in the Metering Management and Settlement System (MMS).

A Market Participant's injection deviation quantity is the difference between their scheduled and actual injection quantities. For the purpose of estimating the financial impact of the data processing failure, it is assumed that the corrected scheduling results would have no impact on Market Participants' injection deviation quantities and payments.

## 3 Assessment of the Event

### 3.1 Assessment against criteria for Unintended Scheduling Result

If AEMO investigates a scheduling outcome in response to a request from a Market Participant (in accordance with NGR 218(2)) or based on its own initiative then it must assess the scheduling outcome against NGR 217 to determine if there has been an unintended scheduling result. AEMO's assessment of the scheduling outcomes for gas day 9 December 2011 is set out in Table 1.

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<sup>2</sup> There were no ancillary payments during the period between 8 November 2011 and 27 April 2012.

Table 1: Assessment of the event against NGR 217

Assessment criteria - NGR 217	Assessment
<p>217 (1) If scheduling instructions issued as part of an operating schedule produce one or more of the following results:</p> <p><i>(a) equally beneficial bids are not scheduled to the same extent;</i></p> <p>...</p> <p>then that result will be an <b>unintended scheduling result</b> unless otherwise specified in subrules (2), (3) or (4).</p>	<p>Injection bids with the same bid price were not scheduled to the same extent in the 2pm operating schedule on 9 December 2011.</p>
<p>217 (4) (exception subrule)</p> <p>A result specified in subrule (1) will not be an unintended scheduling result unless its estimated financial effect on Market Participants exceeds either:</p> <p>(a) for an individual Market Participant, \$20,000, adjusted to reflect the change in the Consumer Price Index in accordance with subrule (5); or</p> <p>(b) for all individual Market Participants, an aggregate of \$50,000, adjusted to reflect the change in the Consumer Price Index in accordance with subrule (5).</p>	<p>a) the maximum financial impact for an individual Market Participant was less than \$100 in each of the 2pm, 6pm and 10pm schedules on 9 December 2011, and</p> <p>b) the aggregate impact on Market Participants was \$0 in each of the 2pm, 6pm and 10pm schedules on 9 December 2011.</p>

### 3.2 Outcomes

AEMO has determined that the scheduling outcomes on gas day 9 December 2011 was not an unintended scheduling result in accordance with rule 217(4).

## 4 Resulting Actions

AEMO identified the data processing failure on 27 April 2012 during the course of the industry testing program conducted as part of Gas Market System Release 30 (April 2012). Upon identification of the failure, AEMO re-entered the annual allocation of authorised MDQ for tariff V withdrawal points in the correct data format.

AEMO has implemented a new data validation within the TMM system to alert AEMO Gas System Operations if there is a failure to process the input data.

## Appendix A – Detailed Analysis

### Calculation of Market and Financial Impacts

#### Approach

AEMO analysed the scheduling results during the period between 8 November 2011 and 27 April 2012 and identified that the 2pm schedule on 9 December 2011 was the only schedule requiring the tie-breaking of equally priced injection bids and hence was the only gas day affected by the data processing failure.

To calculate the market and financial impact of the data processing failure, AEMO compared the original operating schedules with a revised set of operating schedules for gas day 9 December 2011. To calculate the revised schedules, AEMO reallocated the authorised MDQ for tariff V withdrawal points and recalculated the injection tie breaking rights. AEMO then determined revised operating schedules in the Market and Clearing Engine (MCE) using the corrected injection tie breaking rights in conjunction with the original set of scheduling input data.

A Market Participant's injection deviation quantity is the difference between their scheduled and actual injection quantities. For the purpose of estimating the financial impact of the data processing failure, it is assumed that the corrected scheduling results would have no impact on Market Participants' injection deviation quantities and payments. That is, a Market Participant would have deviated from their operating schedule by the same quantity regardless of whether that schedule quantity was higher or lower than it should have been.

#### Market Outcomes 9 Dec 2011

Tie breaking of injection bids using incorrect injection tie breaking rights occurred in the 2 pm 9 December 2011 schedule which also had an effect on the subsequent 6pm and 10 pm schedules on gas day 9 Dec 2011. As shown in Table 2, the maximum over or under scheduling of a Market Participant was less than 1,000 GJ per schedule.

*Table 2: Impact on imbalance quantities for gas day 9 December 2011*

Schedule	2pm	6pm	10pm
	Change to imbalance quantity (GJ)		
Maximum under scheduling for a Market Participant.	< -1,000	< -1,000	< -200
Maximum over scheduling for a Market Participant.	< 1,000	< 1,000	< 200
Total mismatch in schedule outcomes across all Market Participants.	0	0	0

Relatively low market prices on gas day 9 December 2011 resulted in a small net financial impact for Market Participants. As shown in **Error! Reference source not found.**, the maximum under or over payment for an individual Market Participant on gas day 9 December 2011 was less than \$100.

*Table 3: Market Participant financial impact for gas day 9 December 2011*

Schedule	2pm	6pm	10pm
Market Price (\$/GJ)	\$0.00	\$0.10	\$0.00
Maximum imbalance underpayment	\$0	< -\$100	\$0
Maximum imbalance overpayment	\$0	< \$100	\$0
Total difference across all Market Participants	\$0	0	\$0

## Key Terms

Term	Meaning
AEMO	Australian Energy Market Operator
AMDQ	A generic term used to refer to both authorised MDQ and AMDQ credit certificates
AMDQ credit certificates	The capacity of the DTS has increased since 1998 as a result of gas system developments and augmentations. This additional capacity is allocated as AMDQ credit certificates.
Ancillary payments	Ancillary payments (AP) are compensation payments to Market Participants who inject gas that was bid above the market price.
Authorised MDQ	Authorised MDQ is a transportation right, which provides a hedge against congestion uplift, for MPs withdrawing gas from the DTS that has been injected at Longford.
DTS	Declared Transmission System
Injection Tie Breaking Rights	A Market Participant's aggregate AMDQ credit certificates and authorised MDQ which is input into the schedules for the purpose of the tie-breaking of injection bids. Market Participants' bids with injection tie breaking rights are given scheduling priority when two or more injection bids have the same price.
Market Participant	Retailers, Market customers and Traders
MCE	Market Clearing Engine
MMS	Metering Management and Settlement System
NGR	National Gas Rules
SIP	A system injection point is a transmission system connection point designed to permit gas to flow through a single pipe into the transmission system, which may also be, in the case of a transfer point, a system withdrawal point.
Tariff D	Large customers
Tariff V	Residential and small-to-medium commercial and industrial customers
Tie-breaking	When two or more bids have the same price AEMO must schedule those bids according to principles as set out in NGR rule 214.
TMM	Transportation and Market Manager system
Uplift hedge	An uplift hedge is the amount of AMDQ that a Market Participant nominates to use as a hedge against congestion uplift.
Uplift payments	An uplift payment is normally charged to the Market Participant whose actions caused the associated ancillary payment.