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FOR NOTING	
SUBJECT:	STTM DEVIATION PRICING AND SETTLEMENT SURPLUS AND SHORTFALL DESIGN SUMMARY
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DATE:	FRIDAY, 20 JUNE 2014

1.   PURPOSE

1.1. Issues statement

A disparity exists in the Short Term Trading Market (STTM) between market costs incurred due to participants' deviations[1] and prices applied to pay or charge for those deviations. This creates a large monthly settlement imbalance (the net market balance) which has to be settled through shortfall charges, or, less frequently, surplus payments.

This misalignment between Market Operator Service (MOS) costs and deviation prices leaves a significant proportion of MOS costs to be recovered through the settlement surplus or shortfall. This makes the risk associated with deviating difficult to manage, as most of the deviation cost is not known until after the end-of-month reconciliation.

1.2. Desired outcome

The STTM deviations and the settlement surplus and shortfall rule change requires the STTM Procedures to be changed. The procedure change relates to the deviation pricing mechanism and the settlement surplus and shortfall allocation mechanism. This paper explains the major changes proposed. This paper is intended to accompany the Proposed Procedure Change (PPC) –14-002 STTM Deviations and the Settlement Surplus and Shortfall.

These changes will come into effect on 1 November 2014.

2.   BACKGROUND

AEMO conducted a review into operation of the STTM. This review showed that deviation prices only accounted for about 30% of the total deviation cost. AEMO proposed to rectify this by introducing the average cost of MOS into the deviation price.

Stakeholders endorsed this proposal and, at AEMO's request, the Australian Energy Market Commission (AEMC) made changes to the National Gas Rules (NGR) to this effect.

AEMO's final report on the Review of STTM Operations and Demand Hubs can be found here:

http://www.aemo.com.au/Gas/Market-Operations/Short-Term-Trading-Market/Review-of-Short-Term-Trading-Market#final_reports

The final rules can be found here:

http://aemc.gov.au/Rule-Changes/STTM-settlement-surplus-and-shortfall

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[1] As defined in the National Gas Rules

3. DESIGN OVERVIEW

The principle of the design change is to assign the cost of MOS on a gas day to the trading participants who caused that MOS by deviating from their market schedule.

This is proposed to be done by introducing the average cost of MOS for a gas day in the deviation price calculation. Where MOS cannot be clearly attributed to deviations, its cost will not be included in the calculation of deviation prices.

The graduated deviation parameters, used to modify the ex ante market price in the deviation price calculations, will be removed, as AEMO's analysis done for the STTM Phase 1 review showed they were a minor component of the price given the complexity they added.

Other components of deviation pricing methodology, such as the ex post imbalance price and contingency gas prices remain unchanged.

The settlement shortfall allocation is proposed to be changed to assign costs on the basis of withdrawals, as it will no longer be linked to deviations because of the above changes.

4. CURRENT DEVIATION PRICING DESIGN

Deviations are currently priced using an algorithm specified in the STTM Procedures, using the ex ante market price, ex post imbalance price, high or low contingency gas price and the graduated deviation parameters as the key price inputs to this algorithm. The minimum market price, the maximum market price and the administered price cap may all be used to limit deviation prices. These input prices are all defined in the rules.

The short deviation price is:

> The maximum of: the ex ante price x percentage/quantity factors, the ex post imbalance price, or the high contingency gas price.

This price must be between the minimum market price and the maximum market price (or the administered price cap if applicable)

The long deviation price is:

> The minimum of: the ex ante price x percentage/quantity factors, the ex post imbalance price, or the low contingency gas price.

This price must be between the minimum market price and the maximum market price (or the administered price cap if applicable).

5. CURRENT SETTLEMENT SURPLUS AND SHORTFALL DESIGN

Settlement surpluses payments are distributed to trading participants based on their share of all deviation quantities over the billing period, up to a surplus cap of $0.14 / GJ. After this cap is reached, surpluses are distributed based on the trading participant's share of withdrawals over the billing period.

Settlement shortfall charges are assigned based upon a trading participant's share of all deviation quantities over the billing period.

The settlement shortfall mechanism was designed this way as it is predominantly made up of costs caused by trading participants' deviation quantities. It was intended to be a mechanism for recovering MOS costs over a month. The surplus cap was put in place so that surplus payments would not negate incentives to follow the market schedule.

6. PROPOSED DEVIATION PRICING DESIGN UNDER THE NEW RULES

The average cost of MOS, i.e. MOS price is proposed to be introduced into the deviation pricing structure, alongside the ex ante price, the ex post imbalance price and the high and low contingency gas prices.

In settlements, MOS commodity payments and charges are accounted for two days after the day on which the MOS is allocated. This deviation pricing methodology recovers these costs through deviations on the day the MOS is incurred so that the quantities of gas match. This will result in a two day offset in the settlement surplus and shortfall. Over the course of a billing period this will balance out, excepting the first and last two days of each month.

6.1. MOS Price

On any particular gas day at a hub, there will either be an increase MOS price or a decrease MOS price, not both.

The increase MOS price or decrease MOS price is determined by:

> Dividing the total cost (service cost and commodity cost on D+2) of the predominant type of MOS by the quantity of that MOS (in GJ).

When there is MOS in opposing directions, the predominant type of MOS is whichever type of MOS is the greater in volume.

A worked example is shown in appendix 1.

The MOS price is proposed to be based upon allocation data for a gas day provided by 11am (or 12.30pm) the next day (as is used for the ex post imbalance price calculations), and the ex ante price for the gas day + 2. If the ex post imbalance price is delayed, the calculation of the MOS price will also be delayed to account for changes to allocation data.

6.2. Deviation Price

The proposed short deviation price is:

> The maximum of the ex ante market price, the ex post price, the increase MOS price (if any) and the high contingency gas price (if any), limited by [the market price cap + the MOS cost cap], or the administered price cap.

The proposed long deviation price is:

> The minimum of the ex ante market price, the ex post price, the decrease MOS price (if any) and the low contingency gas price (if any), limited by [the minimum market price - the MOS cost cap].

The deviation prices are fixed (i.e. cannot be updated) once the ex post imbalance price is set. AEMO will publish the deviation price via a Market Information System (MIS) report on a daily basis.

Special Case – Contingency gas

If there is contingency gas scheduled on a gas day, the MOS price may be disregarded. This is so that trading participants who act to minimise their exposure to the contingency gas price are not penalised for doing so.

Special Case – Administered price cap applies

When the administered price cap applies, the long deviation price will be limited by the minimum market price (MMP) instead of (the MMP – the MOS cost cap); and the short deviation price will be limited by the market price cap (MPC) instead of the (MPC + the MOS cost cap).

7. SETTLEMENT SURPLUS AND SHORTFALL DESIGN UNDER THE NEW RULES

There is no change to the distribution of surplus payments, however the surplus cap will now be defined in the STTM Procedures instead of in the NGR.

The distribution of shortfalls is proposed to be assigned based on trading participants' share of withdrawals over the billing period. This is because shortfalls will be generated when there is counteracting MOS (increase MOS on one pipeline supplying a hub at the same time as decrease MOS on another pipeline supplying a hub) or contingency gas scheduled in excess of final requirements. Neither of these scenarios has identifiable 'causers' in the market, therefore the costs should be socialised. The AEMC has amended rule 462(2A) to allow this design change to be made.

8. NEXT STEPS

AEMO will commence the procedure change consultation. The proposed timeline for this consultation is shown in table 1 below:

AEMO to start and publish the Proposed Procedure Change (PPC)	04-July-2014
AEMO to publish the Impact Implementation Report (IIR)	01-August-2014
Submissions close	29-August-2014
AEMO to publish Final Decision	26-September-2014
Implementation Date	01-November-2014

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Appendix – Worked Examples

Example 1:

This example illustrates what happens when there is MOS in two different directions on two pipelines supplying a hub.

Adelaide Hub:

Ex ante price:	$3.63 /GJ
Ex post imbalance price:	$3.97 /GJ

MAP facility:

Increase MOS service payments (total):	$23,755
Increase MOS commodity payment D+2:	$24,215

Total MOS Cost (service + commodity D+2):	$47,970
Increase MOS quantity required:	6,283 GJ
<u>Increase MOS price</u> is set at $7.63 /GJ	

SEAGAS facility:

Decrease MOS service payment:	$74,339
Decrease MOS commodity charge D+2:	$17,659

Total MOS Cost (service – commodity D+2):	$56,680
Decrease MOS quantity required:	-4,582 GJ

MOS price is not determined as decrease MOS quantity < increase MOS quantity at hub level

Total Long Deviation Quantity:	2,242 GJ	– paid at ex ante price
Total Short Deviation Quantity:	-3,943 GJ	– charged at increase MOS price

Deviation payments:	$8,139
Deviation charges:	$30,085

Net market balance:

<u>Market income:</u>

Deviation charges	$30,085
Decrease MOS commodity charges*	$17,659

<u>Market Outgoings:</u>

Deviation payments	$8,139
Decrease MOS service payments	$74,339
Increase MOS service payments	$23,755
Increase MOS commodity payments*	$24,215

*Note that the MOS commodity payments and charges are priced and accounted for on D+2.

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Settlement shortfall: **-$82,704**

Settlement shortfall is assigned based on trading participants' share of withdrawal quantities over a billing period at the hub:

	share of withdrawals	Shortfall Allocation
Trading Participant A	20%	-$16,540.80
Trading Participant B	30%	-$24,811.20
Trading Participant C	50%	-$41,352.00

Example 2:

This example illustrates what happens when the MOS direction on two pipelines supplying a hub are the same.

Adelaide Hub:

Ex ante price:	$3.71 /GJ
Ex post imbalance price:	$3.84 /GJ

MAP facility:

Increase MOS service payment:	$12,035
Increase MOS commodity payment D+2:	$21,177

Total MOS Cost (service + commodity D+2:	$33,212
Increase MOS quantity required:	5,515 GJ

SEAGAS facility:

Increase MOS service payment:	$35
Increase MOS commodity payment D+2:	$142

Total MOS Cost (service + commodity D+2):	$177
Increase MOS quantity required:	37 GJ

Both facilities require increase MOS quantities and the <u>increase MOS price</u> is set at $6.01 /GJ

[($33,212 + $177) / (5,515 GJ + 37 GJ)]

Total Long Deviation Quantity:	1,496 GJ	– paid at ex ante price
Total Short Deviation Quantity:	-7,048 GJ	– charged at increase MOS price

Deviation payments:	$5,550
Deviation charges:	$42,288

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Net market balance:

Market income:

Deviation charges	$42,288

Market Outgoings:

Deviation payments	$5,550
Increase MOS service payments	$12,070
Increase MOS commodity payments*	$21,319

*Note that the MOS commodity payments and charges are priced and accounted for on D+2.

Settlement surplus: **$3,349**

Surplus allocation based on billing period deviations, up to a surplus cap of $0.14 /GJ.

Total deviation quantities at the hub: 8,544 GJ

	deviation quantities	Surplus Allocation (capped at $0.14 /GJ)
Trading Participant A	544	$76.16
Trading Participant B	3,000	$420.00
Trading Participant C	5,000	$700.00

After that, any residual surplus allocation is based on withdrawals.

Residual surplus	$2,152.84

	share of withdrawal	Residual Surplus Allocation
Trading Participant A	20%	$430.57
Trading Participant B	30%	$645.85
Trading Participant C	50%	$1,076.42