16 July 2012

Mr John Pierce
Chairman
Australian Energy Market Commission
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FROM THE OFFICE OF THE
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Dear John, Mr Pierce

Rule Change Request – Deviation pricing and the settlement surplus and shortfall

We request the Australian Energy Market Commission (AEMC) make an amendment to the National Gas Rules (NGR) with regard to the deviation pricing mechanism in the Short Term Trading Market (STTM).

AEMO conducted a review of the operation of the STTM between August 2011 and March 2012, as prescribed in rule 489 of the NGR. Among other things, this required AEMO to review the graduated deviation parameters and the allocation of settlement surpluses and shortfalls. The key recommendation arising from the review of these aspects of the STTM was to modify the current deviation pricing mechanism to better assign the costs of MOS to the parties that cause it on a gas day.

A description and drafting of the proposed Rule, a statement of the issues concerning the existing NGR, and how the proposed Rule contributes to the achievement of the National Gas Objective is provided at Attachment A.

If made, AEMO would seek to incorporate this rule change in the September 2013 release of the market systems. To meet this objective would require an AEMC draft determination on the rule change by mid-January 2013.

AEMO would be pleased if you could have these matters considered by the AEMC. For further details, please do not hesitate to contact Terry Grimwade, Group Manager—Market Development, on (03) 9609 8520.

Yours sincerely

Matt Zema
Managing Director and Chief Executive Officer

Attachments:

A: Rule Change Proposal

Attachment A: Rule Change Proposal

This Rule Change Proposal is structured as follows:

1 Summary

At present in the Short Term Trading Market (STTM) there is a disparity between the costs incurred in the market due to participants' deviations and the prices applied to pay or charge for those deviations. This creates a large monthly settlement imbalance in the market (the net market balance) which is required to be funded through shortfall charges, or, less frequently, surplus payments.

AEMO is proposing that the rules be modified to facilitate changes to the deviation pricing mechanism in the STTM Procedures that will better align deviation prices with the costs caused by those deviations.

2 Background

2.1 STTM

The STTM is a day-ahead market for natural gas at defined hubs. The STTM currently operates in Adelaide, Brisbane and Sydney.

STTM shippers make offers to supply gas to the hub, while STTM users and STTM shippers make bids to withdraw gas at or from the hub. Bids and offers are submitted on the day before the relevant gas day (i.e. ex-ante), at which time AEMO determines the market price and the quantity of gas traded by STTM shippers and STTM users for that gas day. This schedule is published approximately 18 hours ahead of the gas day so that shippers can use this information as an input to their shipping nominations to the relevant facility operators, a process which occurs outside the STTM. Shippers are able to renominate expected changes to their forecasts to facility operators during the gas day. The STTM has a market schedule variation (MSV) mechanism which allows these renominations to be recognised in the market.

Actual gas flows (or allocations) in the STTM are provided by the facility operators after the end of the gas day. Allocations indicate individual companies' actual gas flows and the quantity of MOS (market operator service) gas used to balance pipeline deviations. This information is used to set the ex post imbalance price, which is determined and published by AEMO after the relevant gas day for each hub. The ex post imbalance price is intended to represent the price that would have been set if forecasts were accurate (i.e. if the ex ante market cleared the quantity of gas that actually flowed).

2.2 Deviations, MOS, and the settlement surplus or settlement shortfall

The STTM balances the difference between scheduled quantities, as adjusted by any MSVs, and actual gas flows by offsetting participants' deviations with MOS gas (i.e. the net total of MOS on a day will be equal and opposite to the net quantity of deviations on a day). Increase MOS typically supplies overall short deviations, while decrease MOS typically supplies overall long deviations. Deviations and MOS are priced and settled in different ways. This leads to either a surplus or a

shortfall of funds in the market, which is settled on a monthly basis. These mechanisms are described below.

Deviations

Deviations from participants' schedules (the difference between their allocations and scheduled quantities, as adjusted by any MSVs) are charged or paid according to a deviation pricing mechanism set out in section 10.8 of the STTM Procedures.

A short deviation, where a participant is required to purchase additional gas after the gas day, is charged at the maximum of the rate adjusted ex ante market price, the ex post imbalance price and the high contingency gas price (if contingency gas has been called). A long deviation, where a participant is required to sell back gas they did not require, or additional gas they delivered, after the gas day, is paid at the minimum of the rate adjusted ex ante market price, the ex post imbalance price and the low contingency gas price (if contingency gas has been called). A sliding cost scale is applied to the ex ante market price using the graduated deviation parameters as set out in rule 462.

Deviations are priced such that the additional gas consumed or not delivered is more expensive to buy from the market than at the ex ante price, in the case of a short deviation, or is paid at less than the ex ante price when sold back to the market, in the case of a long deviation. The graduated deviation parameters have the intent of applying an increasing cost the larger the deviation.

MOS

MOS gas is defined as a pipeline deviation, and is used to balance net deviations in the market. There are two components to the cost of MOS on a day, a MOS service payment, paid for providing MOS, and a MOS commodity payment or charge, to value the additional gas that was delivered, or stored on the pipeline. MOS providers are paid a MOS service payment on a pay-as-bid basis when they provide both increase or decrease MOS to the market. They are also paid a MOS commodity payment for providing increase MOS, or charged a MOS commodity charge for decrease MOS. Both the commodity payment and charge are valued at the ex ante market price set 2 days after the gas day for which the MOS was allocated.

Settlement Surplus or Shortfall

At the end of each billing period (the calendar month), the market accrues a settlement surplus or, more typically, a settlement shortfall, caused primarily by the difference between MOS costs to the market and income from deviation charges and payments. This cost or payment is distributed to participants based on aggregate deviation and withdrawal quantities over the full monthly billing period. A shortfall of market funds is recovered by charging a settlement shortfall charge to trading participants based upon their share of all deviations over the month. Any surplus of market funds is returned to trading participants using a settlement surplus payment, based upon their share of all deviations over the month up to the surplus cap ($0.14/GJ). After the surplus cap is reached, excess funds are returned based on participants' share of market withdrawals over the month. The

surplus cap is designed to maintain the incentive to forecast accurately by not returning funds to deviating parties.

Basis for current design

Deviations

The deviation pricing mechanism in the STTM was designed to provide a balance between providing incentives on participants to forecast accurately and participant risk exposure due to those incentives. The graduated deviation parameters were set so as not to apply overly large costs to a normal, base range of error, but to apply more substantial costs to large deviations, to incentivise accurate forecasting. The design was intended to disadvantage all deviations when compared to the ex ante market schedule, regardless of whether they reduced or increased the overall balancing requirement, as there was concern about how accurately participants would forecast in the new market.

MOS

The key objective with the MOS design was ensuring certainty of the provision of MOS. The cost structure was designed such that it reached a balance between providing enough incentive for participants to offer the service versus the cost imposed on the market for the service. The design of the MOS pricing mechanism separates payments for providing the MOS service (i.e. reserving capacity to supply MOS) from payments or charges for the gas that is supplied or stored. This ensures that MOS providers recover their expected costs for holding capacity for the provision of MOS.

Settlement surplus or shortfall

The current monthly distribution of any surplus or shortfall is a compromise position between maintaining deviation incentives and managing risk associated with deviation incentives, whilst applying some degree of cost to cause.

Shortfall charges were designed to be prorated on a participant's share of deviations over the month on the basis that a shortfall would indicate that deviation prices over the billing period were insufficient to cover the cost of MOS. All deviations (whether causing MOS or reducing the requirement for it), incur shortfall charges equally. Assigning shortfall charges on a deviation basis ensures that the participants that potentially used MOS (by deviating) over a month are the ones who fund it. This was seen as a longer term proxy for assigning the cost of MOS to causers (deviators).

Surplus payments based on deviations are capped at 0.14 $/GJ, and distributed on the basis of withdrawals thereafter, on the basis that returning the entire surplus to deviators would reduce the incentives to not deviate.

A review of the operation of the STTM was prescribed in rule 489 to review these design decisions.

2.3 STTM Review

Under the National Gas Rules (NGR), the Australian Energy Market Operator (AEMO) is required to conduct a number of market reviews for the STTM. In particular, Part 20, Division 11, rule 489 of the NGR required AEMO, by 31 March 2012, to review:

- whether the graduated deviation parameters, the graduated variation parameters and the MOS cost cap are set at appropriate levels; and
- whether Division 6 (Market Operator Service) is operating effectively and efficiently; and
- options for the allocation of settlement surpluses and shortfalls on a daily basis; and
- to identify improvements in the operation of the STTM and the time period for implementation of those identified improvements.

Having regard to this, in August 2011, AEMO commenced a review of the STTM design to consider these issues and released its final report on 30 March 2012. A copy of AEMO's final report can be found on the AEMO website at: (http://www.aemo.com.au/en/Gas/Wholesale-Gas-Markets/Short-Term-Trading-Market/Review-of-Short-Term-Trading-Market)

2.4 Review Findings

AEMO's key recommendations from the review relating to the allocation of settlement surpluses and shortfalls, and the deviation parameters were:

- AEMO does not recommend allocating surpluses and shortfalls on a daily basis, but rather strengthening the cost to cause principles for funding MOS in the STTM. AEMO recommends introducing the average cost of MOS into the existing deviation pricing mechanism to better assign MOS costs to the parties contributing to MOS on a gas day.
- Under the cost to cause model proposed above, AEMO recommends removing the deviation parameters to ensure that the deviation pricing mechanism better assign MOS costs to the parties contributing to MOS on a gas day, rather than attempting to achieve this outcome through the adjustment of these parameters.

AEMO's other recommendations arising from the review completed in March 2012, with regard to MOS and market schedule variations (MSVs), are dealt with in separate rule change proposals.

3 Statement of Issues

3.1 Current NGR requirements

Deviation charges are defined in the NGR as an amount payable to AEMO by a trading participant in respect of a short deviation. A short deviation is where a trading participant withdraws more than they are scheduled in the market, or an STTM shipper delivers less gas than scheduled to the market.

Deviation payments are defined in the NGR as an amount payable by AEMO to a trading participant in respect of a long deviation. A long deviation is where a trading participant withdraws less gas than they are scheduled in the market, or an STTM shipper delivers more gas than scheduled to the market.

Rule 462 sets out graduated deviation parameters to be used in determining deviation charges and deviation payments for a Trading Participant in accordance with the STTM Procedures. These are currently set as:

Deviation percentage range	Factor
> +10%	90%
> +5% and ≤ +10%	95%
≥ -5% and ≤ +5%	100%
≥ -10% and < -5%	105%
< -10%	110%

Deviation quantity range	Factor
> +1,200 GJ	90%
> +600 GJ and ≤ +1,200 GJ	95%
≥ -600 GJ and ≤ +600 GJ	100%
≥ -1,200 GJ and < - 600 GJ	105%
< -1,200 GJ	110%

The NGR defines the MMP, or minimum market price, and the MPC, or market price cap, as price caps for natural gas traded at a hub for a gas day. The MMP is $0/GJ, and the MPC is $400/GJ.

The settlement surplus payment and the settlement shortfall charge is the mechanism within the STTM that ensures that the total market income balances the total market outgoing on a monthly basis, as described in section 2.2 of this rule change proposal.

The NGR defines and sets the value of the settlement surplus cap. The cap of $0.14 / GJ is based upon the current design of a monthly surplus or shortfall of funds in the market. While referenced in the NGR, the current monthly settlement surplus and shortfall mechanism is described in the STTM Procedures (section 10.10).

3.2 Issues with current NGR requirements

Poor alignment between the cost of MOS and the price paid or charged for the deviations causing this MOS

The issue with the current NGR and STTM design is that the MOS costs incurred due to deviations on a day do not align with the payments and charges levied on those deviations. This means that parties who cause MOS on a day are not required to fund it, increasing the financial risk in the market to other participants, who may not have even participated on that day. Analysis conducted as part of AEMO's review of the STTM showed that, on average, deviation payments and charges only recovered 20 – 30 % of MOS costs.

Risk in the market due to the magnitude of the net market balance (settlement surplus or shortfall)

This misalignment between 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 the majority of the cost of that deviation is not completely known until after the end of the month. In late 2010, STTM participants raised the issue of the level of risk exposure that existed in the distribution of the settlement surplus or shortfall. Following two high price events[1] at the Sydney hub, concerns were noted relating to how deviations, that were incurred long after the high price day in question, could lead to very large changes in a participant's prudential exposure. There were a number of margin call events observed in relation to deviations on days where gas prices and MOS costs were low, due to exposure to a large shortfall caused by high prices or high MOS costs earlier in the month. This risk was seen as difficult to manage, particularly for parties who operate intermittently, enter the market mid-month, and those who did not deviate on the high price day in question. This risk, created by the settlement of the surplus or shortfall, is a potential barrier to market entry for new entrants to the market.

This issue prompted AEMO to begin looking into whether daily settlement of the surplus or shortfall might be more appropriate. This investigation was rolled into the review of STTM operations in 2011 for broader consideration.

3.3 Options considered to address issue

In its review, AEMO considered three potential solutions for assigning more of the costs incurred by MOS to the parties who caused MOS on a gas day. The proposed solutions were:

- Modifying the existing graduated deviation parameter tables so that deviations recover a higher proportion of MOS costs;
- Distributing the settlement surplus or shortfall on a daily basis; and
- Modifying deviation prices so that they align with MOS costs.

[1] High prices were incurred at the Sydney hub on 8 October and 1 November 2010 due to incorrect data submissions for the MSP.

These options were considered in AEMO's STTM Design and Demand Hubs – Draft Report, and in a workshop held with stakeholders in early 2012. A summary of this review consultation and feedback is provided in Appendix B.

Modifying the existing graduated deviation parameters

Modifying the existing graduated deviation parameters was found to require factors of 0%, 500% and 1000% to significantly reduce the size of the monthly shortfall. Such large parameters generally overrode the ex post imbalance price, except in the first step of the parameter tables. This means that both parties whose deviations caused MOS, and those whose deviations reduced the MOS requirement, would each be required to fund it through the impact of the above factors on deviation prices.

The long (positive) deviation price under such a regime is currently capped by the minimum market price at a lower limit of $0 /GJ, whereas the above factors would often otherwise lead to negative prices for long deviations. This places the majority of the burden of funding MOS onto short (negative) deviations, whether they caused the MOS on a day or not. This creates a bias in the market, with an incentive to over forecast.

AEMO did not recommend pursuing this option.

Distribute settlement surpluses and shortfalls on a daily basis

Distributing the settlement surplus or shortfall on a daily basis was also considered. Two design options were considered: a 'two-sided' design, where any surplus or shortfall is charged or paid on the basis of all deviations, i.e. the direction of the deviation is not considered (this is the current arrangement); and a 'one-sided' design, where a shortfall would be charged to the direction of deviation causing that shortfall.

The advantages AEMO identified with this approach were:

- Participants who do not deviate or trade on a gas day are not exposed to the deviation costs for that day.
- Participants who are overcharged due to an ex post imbalance price that is higher than the cost of MOS on a day will have that surplus returned to them on that day. In a two-sided design (the current design), where surpluses are returned equally to both long and short deviations, this surplus return will be incomplete for those participants as some goes to deviating parties not exposed to that high price. With the current surplus cap of $0.14 / GJ, most of the surplus is returned to withdrawing parties based upon market share.
- Participants have greater day-to-day certainty of their financial position rather than a potentially large and variable settlement surplus or shortfall that is billed at the end of the month.

The disadvantages identified by AEMO with this approach were:

- Contingency gas (CG) scenarios showed circumstances where, when more CG is scheduled than is required on a day, the short (negative) deviation charge plus the shortfall charge received by parties can exceed the market price cap (MPC), although the shortfall charge could be capped to limit this risk.

- The existing surplus and shortfall methodology, moved to a daily mechanism (two-sided mechanism), makes no distinction between parties who cause MOS on a day and those who do not and treats both equally.
- If there is MOS not caused by any parties' deviations[2], all deviating parties on a day will bear that cost. If the surplus and shortfall distribution is one-sided (assigns a 'causing' deviation sign), then those parties will bear all the risk of un-caused MOS; and
- Certain surplus scenarios resulted in a situation where parties could increase their deviations after the day using MSV transactions, and yet increase their total income on the day. This is seen as a perverse market outcome.

To deal with the issues noted, a complex design requiring caps on both surpluses and shortfalls would be required. These caps may be able to be set at fixed values, but alternatively may have to be based upon values calculated daily. A daily surplus or shortfall mechanism was also found to make the current deviation prices irrelevant, as they are effectively overridden by the surplus payment or shortfall charge.

AEMO did not recommend pursuing this option.

AEMO recommends modifying deviation prices so that they align with MOS costs. This is discussed further in section 4.1.

4 Proposed Solution and Rule

4.1 Description of the Proposed Rule

AEMO proposes to address the issues identified in section 3 as follows:

Proposal

It is proposed to better align the cost to the market of a deviation (MOS costs), with the charge or payment associated with that deviation, by introducing the average cost of MOS (per GJ) incurred on a day into the current deviation pricing structure (as outlined in the STTM Procedures, section 10.8). On any particular day, there would be either an increase MOS cost, or a decrease MOS cost, not both, corresponding to the overall net balancing requirement at the hub. This is because on a day, the hub technically only requires either increase MOS or decrease MOS to balance deviations, however there can be circumstances where both increase MOS and decrease MOS are allocated, unrelated to the balancing requirement at the hub and hence not caused by any participant's deviations. AEMO also proposes to remove the graduated deviation parameters, because they are no longer needed under this proposal and have been found to mostly apply to parties who reduce the requirement for MOS in the market, discouraging parties from bringing extra gas to the market if it expected to be short (and vice versa).

[2] Such as 'counteracting MOS', as observed at the Adelaide hub. Counteracting MOS is the name given to the phenomenon where one pipeline supplying a hub provides increase MOS on a day, while the other pipeline provides decrease MOS on the same day. This counteracting MOS is not caused by any parties' deviations and is classed as 'uncaused' MOS.

This proposal will mean that the price charged for a short deviation will be the maximum of the ex ante market price, the ex post imbalance price, the average increase MOS cost, if generated, and the high contingency gas price, if called.

The price of a long deviation will be the minimum of the ex ante market price, the ex post imbalance price, the average decrease MOS cost, if generated, and the low contingency gas price, if called.

This mechanism will assign the cost of MOS on a day to the parties that caused that MOS.

Required NGR changes

There are a number of changes required to the NGR in order to be able to implement this proposal.

Definitions of deviation payments and charges, the MMP and the MPC

The first issue with implementing this proposal is that the total cost of decrease MOS is made up of both MOS service payments (which incur a cost to the market) and MOS commodity charges (which result in income to the market). This means the total cost of decrease MOS can therefore be either a net income for the market, in which the parties causing this decrease MOS would be paid for their long deviation, or a net outgoing for the market, meaning the parties causing this decrease MOS effectively see a negative deviation price and are required to pay the market for their long deviation. To be able to assign the full cost of decrease MOS to parties with long deviations, the price for a long deviation needs to be allowed to be negative, i.e. the minimum market price cap should not constrain the deviation price. Allowing this negative deviation price means that the resultant deviation payment requires those parties to pay the market rather than be paid for that deviation.

This requires changes to clarify the definition of MMP, the minimum market price, and MPC, the maximum market price, to ensure that they are not applied directly to the deviation price. This is considered appropriate because a deviation payment or charge is a compensatory amount that reflects the cost or gain to the market of the trading participant's deviation from its schedule, and should not be regarded as a price for gas traded in the market. AEMO notes that the average cost of MOS is already constrained by both the market price cap, as applied to the ex ante market price used to value the commodity charge or payment, and the MOS price cap, used to value the MOS service payment. These price caps constrain the average cost of MOS to be between -$50 / GJ (minimum market price minus the MOS cost cap) and $450 / GJ (maximum market price plus the MOS cost cap). These are considered to be appropriate prices to apply to deviations as they reflect the legitimate cost incurred by the market to serve those deviations.

As such, the proposed rule changes to resolve this issue are:

1. Clarify the definition of MMP, the minimum market price, and MPC, the maximum market price, to ensure that they are not applied directly to the deviation price.
2. Amend the definition of deviation payment to allow a payment by or to a trading participant. This will allow the full cost of decrease MOS, which can either be a net payment or a net charge to the MOS provider, to be recovered directly through deviation pricing. It is

proposed to amend the definition of deviation charge in the same manner for drafting consistency.

Surplus cap

This proposal will significantly reduce the size and the nature of the settlement shortfall and better allocate these costs to cause, however, there may be more frequent settlement surpluses. This is because the proposed use of the average MOS cost in the deviation pricing will ensure at least full recovery of MOS[3], and where the total deviation quantity (in GJ) is greater than the total MOS quantity at a hub will result in a surplus. This arises as individual participants' deviations can be either long or short on a day and will usually be greater in total quantity than the overall net deviation at the hub. Therefore, AEMO proposes to remove the surplus cap. Capping the return of a surplus to $0.14 / GJ would mean that an over-recovery of MOS costs from parties that have deviated from their schedule would be transferred to parties with the greatest market share, which is inequitable. Removing the surplus cap will result in the market surplus being returned primarily to those parties that funded that surplus. Modelling of past market data suggests that this will not result in decreased incentives to forecast accurately, as MOS costs are typically a much higher cost than is currently provided by the ex post imbalance price and the graduated deviation parameters. Even after returning any surplus based upon only deviation quantities, the proposed deviation prices still provided strong incentive to not deviate. The surplus cap would serve more to transfer wealth to larger participants than it would to discourage deviations under this proposal. AEMO's proposal is:

3. Remove the surplus cap of $0.14/GJ from the NGR.

Graduated deviation parameters

As already mentioned, AEMO recommends removing the graduated deviation parameters so that there is no price offset applied to the ex ante market price when it is used to cost deviations that 'helped' the market, i.e. reduced the overall MOS requirement. The current deviation parameters discourage parties from bringing extra gas to the market on a day when the market is likely to be short, and instead encourage reliance on MOS for balancing the market. The introduction of the average MOS price into the deviation price also means that the graduated parameters are no longer required. AEMO's proposal is:

4. Remove the graduated deviation parameters from the NGR.

Other considerations for noting

During AEMO's consultation on this issue, concerns were raised with how this proposal interacts with the occurrence and cost of counteracting MOS, where there is both increase MOS and decrease MOS at a hub on a gas day. AEMO notes that this level of detail will form part of the STTM Procedures, but has included the following discussion for completeness.

Under this proposal, there will be either a MOS cost for increase MOS or for decrease MOS, not both, based on the MOS required to supply the overall balancing requirement at the hub. Any occurrence of counteracting MOS will have the cost of MOS on the second pipeline excluded from

[3] Except where there is counteracting MOS, as discussed in the subsection 'Other considerations for noting'

the average cost of MOS and, as such, will form part of the market surplus or shortfall settlement. This is because counteracting MOS is not typically caused by any party's deviations, and as such should not form part of the MOS cost that is required to be recovered from deviations on a day. Further, the additional MOS provided on the first pipeline above the net balancing requirement will only be recovered as far as there are equivalent deviation quantities to match. The costs not recovered will also form part of the market surplus or shortfall settlement.

This proposal does not solve the issue of counteracting MOS, but does, largely, separate its cost from deviation pricing and assign it to the settlement surplus or shortfall. AEMO notes that the methodology that has been proposed for determining an average MOS cost on a day, as described in its final report for the STTM operational review, will result in a higher average cost of MOS on a counteracting MOS day than would have been the case if there were no counteracting MOS, which is still of concern to some stakeholders. However, this methodology for determining the average cost of MOS on a day can still be the subject of further consultation as part of the consultation process for the associated changes to the STTM Procedures, as part of this proposal.

Summary

In summary, AEMO proposes changes to the NGR as follows:

- Amend the definition of a deviation payment to allow a payment by or to a Trading Participant, to reflect the fact that decrease MOS can either result in income to the market or cause an overall cost to the market. Parties causing decrease MOS should be required to fund this entire cost. Accordingly, the deviation payment is no longer only a payment to a trading participant – it can also be a payment by a trading participant.
- Amend the definition of a deviation charge to be consistent with the above change to the definition of deviation payment.
- Amend the definition of MMP (the minimum market price) to remove any implication that it may constrain deviation prices.
- Amend the definition of MPC (market price cap) to maintain consistency with the proposed MMP definition.
- Remove the definition of the settlement surplus cap from the NGR. AEMO considers that new deviation settlement mechanism proposal will considerably change the magnitude and the function of settlement surpluses and shortfalls and as such the surplus cap is not required.
- Amend rule 405 to clarify that the MMP and MPC apply to price steps used in ex ante and ex post scheduling to ensure they are not inadvertently applied to deviation prices directly.
- Amend rule 461 to reflect the change in definitions of deviation charges and payments.
- Remove rule 462, the graduated deviation parameters.
- Remove rule 489 - Review of STTM operation, as it has been completed, and refers to graduated deviation parameters.

4.2 Draft of the proposed rule

AEMO's draft rule is included in Appendix A.

4.3 How the Proposed Rule addresses the identified issues

AEMO considers that the proposed Rule addresses the issues outlined in section 3 of this rule change request as follows:

Allow better alignment between the cost of MOS and the price paid or charged to the deviations causing this MOS

The proposed rule allows the cost of MOS to be introduced to the deviation pricing mechanism described in section 10.8 of the STTM Procedures. Because the total cost of decrease MOS on a day may either result in a net payment to the market or a net cost to the market, the proposed rule gives the flexibility to either pay or charge parties with long deviations. This will mean that deviation payments and charges will fully recover the cost of MOS incurred on a day, insofar as those deviations caused that MOS.

Reduce the magnitude of the net market balance (settlement surplus or shortfall)

The proposed rule, in allowing the aforementioned changes to the deviation pricing mechanism, is expected to reduce the magnitude of the net market balance (settlement surplus or shortfall) by approximately 80% by assigning the cost of MOS to parties who caused it on a day rather than leaving it to the monthly surplus or shortfall. This reduces the risk associated with settlement surplus payments and more particularly, settlement shortfall charges.

Reduce barriers to market entry

The proposed rule, by assigning the cost of MOS to the parties that caused it, reduces the risk that a party will be exposed to MOS costs they had no involvement in. This is seen as a significant risk in the market at present and is viewed as a barrier to entry by smaller parties.

This proposal addresses these issues better than the alternatives discussed in section 3.3 as it will mean that the parties causing MOS on a day fund it, rather than all deviating parties, as would happen with adjustment to the graduated deviation parameters. It also achieves this goal through the deviation price rather than through the settlement of the surplus or shortfall, which makes the cost of a deviation more transparent. MOS not caused directly by any deviations will remain a common cost to be recovered on a monthly basis through the settlement of the surplus or shortfall.

5 How the Proposed Rule Contributes to the National Gas Objective

Before the AEMC can make a Rule change it must apply the rule making test set out in the National Gas Law (NGL), which requires it to assess whether the proposed Rule will or is likely to contribute to the national gas objective (NGO). Section 23 of the NGL states the NGO is:

> … to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.

AEMO considers that the proposed Rule is likely to contribute to the NGO for the following reasons:

- The proposal provides a closer link between the use of natural gas services and the market cost of those services. This allows participants to make a decision about the value of a service against the market cost of that service rather than have those costs spread across all gas users at the hub. When faced with the true cost of a deviation, trading participants would be expected to avoid that deviation unless the value exceeds the cost of that deviation. If trading participants avoid more expensive deviations then there would be a decrease in the costs that are currently spread across all gas users at a hub across a month.
- The proposal provides greater clarity and certainty of the price of deviations in the STTM, which encourages secondary trading.
- The size of the monthly surplus and shortfall risk in market is shown to be reduced significantly with this proposal. This reduces risk to trading participants as they are not required to pay for MOS costs that were caused by other parties, and enables them to better manage their risk in the market, promoting more efficient operation of the STTM and reducing barriers to entry.

Overall, this rule change is expected to reduce deviation pricing uncertainty in the STTM, providing stronger pricing signals and incentives in the market. This promotes the efficient use of natural gas services.

6 Expected Benefits and Costs of the Proposed Rule

AEMO's recommended amendments to the deviation pricing mechanism will change the distribution of funds between parties, increasing costs that are known soon after a gas day and reducing those that are not fixed until the end of a billing period. The burden of funding MOS will be shifted from parties who generally deviate during a month to those whose deviations actually contribute to MOS on a day.

Parties impacted by this proposal

Parties impacted by this rule change proposal are primarily trading participants, both existing and new entrants to the market. Existing trading participants will be assigned more of the actual cost of a deviation on the day incurred, rather than at the end of the month through a shortfall charge. This makes the incentive to forecast accurately clearer and more direct. Trading participants who participate sporadically, or new entrants who enter the market mid-way through a month, will benefit by not being exposed to such a large proportion of MOS costs that they had no involvement in. This reduces potential prudential shocks to these parties who can currently have high exposure to high prices on a day, or high MOS costs on a day, whether or not they participated on that day. The current arrangement can put parties who had no involvement with a gas day at risk of margin

calls or suspension. Under this proposal, only costs that cannot be assigned to specific deviations will cause a shortfall, reducing this risk in the market. This potentially encourages entry to the market for those who have been unwilling to participate thus far.

Participants who forecast accurately, and renominate expected changes in load to pipeline operators, will benefit from this proposal as they will not be required to fund MOS caused by another party's poor forecasting. Conversely, parties who do not forecast accurately and cause MOS by doing so, will not benefit from this change as they will attract a greater proportion of the MOS costs through their deviation charges.

Modelling of past market data suggests that the majority of trading participants would generally benefit from this change, particularly those smaller parties that have to date not been in a position to effectively manage the large shortfall risk in the STTM. A stronger price signal on the cost of a deviation may incentivise more accurate forecasting, which would benefit distributors and pipeline operators in their operational planning. However, the risk associated with the existing shortfall mechanism already incentivises participants to minimise their deviation where possible, so the level of improvement is uncertain. This change is not expected to lead to any deterioration in forecasting accuracy.

Benefits of the proposal

The key benefit of AEMO's recommended amendments is the reduction in the size of the monthly surplus or shortfall. Analysis done for AEMO's final report on the review of STTM operation showed a reduction in the size of the monthly surplus or shortfall of 85% for the Sydney hub, which is a significant reduction in the size of the unknown risk in the market. This achieves more direct alignment of MOS costs to those who contributed to MOS requirements, rather than using the settlement surplus or shortfall to recover MOS costs.

Under this proposal the cost of MOS in the market is more transparent, potentially encouraging increased competition in the provision of MOS. This also provides a more direct price signal of costs on a day, encouraging market schedule variation trading and potentially secondary markets.

The proposal was modelled for 6 months at the Sydney hub and compared to settlement results from the current arrangements. This modelling showed that the proposed amended approach would address a potential misallocation of MOS costs of, on average, $120,000 per month. This equates to $1.4 million per year of misaligned costs in the market at one hub. While there is not necessarily expected to be an overall reduction in costs in the market, there is potential to significantly reduce wealth transfer between parties.

Cost of the proposal

The approximate cost for AEMO to implement the IT changes for this proposal is $115,000.

Participants will incur some expense updating their reconciliation systems. The proposed option of incorporating the cost of MOS into the existing deviation settlement algorithms minimises the change to reconciliation calculations compared to other options explored.

Appendix A: Draft Rule

This Appendix outlines the proposed changes to the NGR covered by the Rule change proposal.

It is noted that strikethroughs in red represent deletions to the NGR as a result of the Rule change and insertions are represented by text in blue underline. This draft is based on version 12 of the NGR.

Part 20, Division 1

364 Definitions

deviation charge means an amount payable to or ~~AEMO~~ by a Trading Participant in respect of a short deviation quantity.

deviation payment means an amount payable to or by ~~AEMO to~~ a Trading Participant in respect of a long deviation quantity.

~~**graduated deviation parameters** means the parameters used to determine the amount of a deviation charge or deviation payment, specified in rule 462.~~

MMP means the minimum market price ~~for natural gas traded at a hub for a gas day~~, being $0/GJ.

MPC means the market price cap, ~~which is the maximum price for natural gas traded at a hub for a gas day,~~ being $400/GJ.

~~**settlement surplus cap** means an amount for a billing period that AEMO is to use in calculating settlement surplus payments in accordance with the STTM Procedures, being $0.14/GJ.~~

Part 20, Division 6

405 General requirements

(1) In determining a provisional schedule, ex ante market schedule or ex post imbalance price, AEMO must schedule ex ante offers, ex ante bids and price taker bids for a hub for a gas day so as to maximise the value of ex ante bids and price taker bids (and for this purpose, price taker bids must be valued by the SPA) less the value of ex ante offers, subject to:

(a) the capacity limits of registered trading rights; and

(b) the priority and flow direction of the registered facility services associated with registered trading rights; and

(c) the capacity information for STTM facilities; and

(d) the requirement that the flow of natural gas from the hub on an STTM pipeline must be no greater than the flow of natural gas to the hub on that STTM pipeline.

(2) The SPA must value price taker bids so that ex ante offers are scheduled to meet the quantity of all price taker bids before the quantity of any ex ante bid.

(3) The SPA must prioritise the scheduling of ex ante offers, ex ante bids and price taker bids so as to produce only one solution when multiple possible scheduling or pricing solutions exist.

(4) The ~~A~~ price for a price step ~~natural gas~~ in any schedule must not be less than the MMP or greater than the MPC.

(5) AEMO must determine where no feasible scheduling solution is possible within the constraints imposed under this Division and the STTM Procedures.

Part 20, Division 10

461 Amounts for gas days

(1) AEMO must determine, for each gas day, in accordance with the STTM Procedures, the modified market schedule for each hub.

(2) AEMO must determine, for each gas day, in accordance with the STTM Procedures, the sum across all hubs of:

(a) the ex ante market charge payable by, or ex ante market payment payable to, a Trading Participant at a hub; and

(b) the variation charges payable by a Trading Participant in respect of market schedule variations at a hub; and

(c) the pipeline flow direction constraint charge payable by, or pipeline flow direction constraint payment payable to, an STTM Shipper at a hub; and

(d) the amount payable to an STTM Shipper (whether in its capacity as a MOS provider or otherwise) for the provision of MOS or overrun MOS at a hub; and

(e) the amount payable by or to an STTM Shipper for the restoration of MOS gas provided at a hub on the second gas day before that gas day; and

(f) the capacity charges payable by, or capacity payments payable to, an STTM Shipper at a hub; and

(g) the amount payable by or to a Trading Participant at a hub in respect of deviation charges ~~payable by,~~ or deviation payments ~~payable to, a Trading Participant at a hub~~; and

(h) the amount payable by or to a Trading Participant in respect of contingency gas at a hub.

462 [Deleted]~~Graduated deviation parameters~~

~~In determining deviation charges and deviation payments for a Trading Participant, AEMO must use the factors for the deviation percentage range and the deviation quantity range in the following tables in accordance with the STTM Procedures:~~

Deviation percentage range	Factor
> +10%	90%
> +5% and ≤ +10%	95%
≥ -5% and ≤ +5%	100%
≥ -10% and < -5%	105%
< -10%	110%

Deviation quantity range	Factor
> +1,200 GJ	90%
> +600 GJ and ≤ +1,200 GJ	95%
≥ -600 GJ and ≤ +600 GJ	100%
≥ -1,200 GJ and < -600 GJ	105%
< -1,200 GJ	110%

Part 20, Division 11

489 [Deleted]Review of STTM operation

(1) [Deleted]

(2) AEMO must conduct a review of the operation of the STTM, to be completed by 31 March 2012, that:

(a) considers whether the graduated deviation parameters, the graduated variation parameters and the MOS cost cap are set at appropriate levels; and

(b) considers whether Division 6 (Market Operator Service) is operating effectively and efficiently; and

(c) identifies options for the allocation of settlement surpluses and shortfalls on a daily basis; and

(d) identifies any improvements in the operation of the STTM and the time period for implementation of those identified improvements.

Appendix B: Consultation

This Appendix outlines the consultation undertaken by AEMO with respect to the proposed rule change.

Nature of the consultation

AEMO conducted its review of the operation of the STTM, as prescribed in rule 489, using the extended consultative procedure described in rule 9A of the NGR.

This process began with the release of AEMO's STTM Reviews Phase 1 – Discussion Paper on 16 August 2011. This paper was published on AEMO's website and was open for public consultation for 28 days, with submissions due on 23 September 2011.

As part of its consideration of issues raised by stakeholders, AEMO conducted a public workshop on STTM design and operational issues on 14 November. Notes from this workshop were published on AEMO's website.

Following consideration of the issues raised in both submissions and at the workshop, AEMO released its draft report publically on 19 December 2011. This paper invited comment by 3 February 2012, allowing 29 business days for consultation.

A further public workshop on STTM design and operational issues was held on 20 February 2012 to further discuss details proposed by AEMO in its draft report and provided in submissions to this report.

AEMO released its final report on 30 March 2012, concluding the consultation.

The notes and information for the consultation papers and workshops have been published on AEMO's website on the STTM Reviews page: http://www.aemo.com.au/en/Gas/Wholesale-Gas-Markets/Short-Term-Trading-Market/Review-of-Short-Term-Trading-Market.

Content of the consultation

AEMO's discussion paper presented analysis showing that whilst the graduated deviation parameters, when viewed on their own, were performing as intended, the deviation prices were insufficient to cover the costs of MOS used to balance those deviations. This resulted in high shortfall charges each month to fund MOS. AEMO sought views from stakeholders on the following questions:

- What are stakeholder's views on the appropriateness of the deviation pricing mechanism?
- Is the provision of the MOS service a social cost which should be funded by all participants or should it be directly funded by parties who used that service on a day? And why?

- Should the settlement surplus or shortfall be used to fund the MOS service, or should it only be used to socialise risk not caused by any particular participants?
- Is there a need to change the settlement surplus and shortfall mechanism to a daily mechanism? Why or why not?
- Should "positive" deviators be treated differently to "negative" deviators for the purposes of the settlement surplus/shortfall mechanism?
- If you move to a daily settlement surplus/shortfall mechanism, is the settlement surplus cap (0.14 $/GJ) needed, why or why not?

Submissions to the discussion paper were largely supportive of moving to a more direct cost to cause model for pricing deviations and funding MOS as monthly settlement dulled the incentive to follow schedules and forecast accurately. There were also comments seeking to ensure that any change did not impact incentives to forecast accurately.

AEMO's draft report presented two options for strengthening the cost to cause principles for funding MOS in the STTM. These options were:

- daily settlement of the market surplus or shortfall; and
- linking the deviation price directly to the cost of MOS.

AEMO's draft recommendation was to pursue changes to the pricing and settlement of deviations in the market so that MOS is funded through the deviations that cause it. AEMO also recommended, as part of this change, modifying the settlement of the market surplus and shortfall so that it is distributed on participants' share of withdrawals over a billing period.

Responses to the draft report were again largely supportive of strengthening cost to cause principles, with a preference for linking deviation pricing directly to the cost of MOS. However, concerns were raised around how costs of counteracting MOS[4] would be assigned, and of the high cost of MOS as a balancing service in general. There was also a suggestion to consider the use of the graduated deviation parameters to achieve this same goal.

AEMO presented more detailed analysis of the two options, as well as the suggestion to modify the graduated deviation parameters, at a workshop on 20 February 2012. Feedback was generally supportive of pursuing more a direct cost to cause settlement design, with a preference for a MOS price that is fixed the day after the relevant gas day; however there remained some reservations in relation to the frequent occurrence of counteracting MOS.

AEMO's final report recommended changing the pricing and settlement of deviations in the market so that MOS is funded through the deviations that cause it. AEMO also recommended retaining the distribution of the settlement surplus or shortfall on a monthly basis and removing the surplus cap.

[4] Counteracting MOS is the term that has been given to describe the occurrence of MOS being allocated in opposition on two pipelines serving a hub. This issue has been occurring at both the Adelaide and Sydney hubs.

Glossary

Term or Abbreviation	Explanation
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
MOS	Market Operator Services
NGL	National Gas Law
NGO	The National Gas Objective as stated in section 23 of the NGL
NGR	National Gas Rules
STTM	Short Term Trading Market
STTM-CF	STTM Consultative Forum