Australian Energy Market Commission

RULE CHANGE

CONSULTATION PAPER

National Gas Amendment (STTM deviations and the settlement surplus and shortfall) Rule 2012

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About the AEMC

The Council of Australian Governments (COAG), through its then Ministerial Council on Energy (MCE), established the Australian Energy Market Commission (AEMC) in July 2005. In June 2011, COAG established the Standing Council on Energy and Resources (SCER) to replace the MCE. The AEMC has two principal functions. We make and amend the national electricity, gas and energy retail rules, and we conduct independent reviews of the energy markets for the SCER.

Contents

1 Introduction

On 16 July 2012, the Australian Energy Market Operator (AEMO) submitted a rule change request to the Australian Energy Market Commission (AEMC or Commission) in relation to deviation pricing and the monthly settlement surplus and shortfall in the short term trading market (STTM) for natural gas.

The rule change request proposes a number of amendments to the National Gas Rules (NGR). These rule changes are proposed in the context of broader changes to the deviation pricing mechanisms that AEMO seeks to introduce through the STTM Procedures (Procedures). The NGR changes and associated proposed Procedures changes are intended to better align charges for deviations with the costs caused by deviations. In doing so, the changes are expected to significantly reduce the current large monthly settlement surpluses that often arise due to deviation pricing not recovering the full costs caused by deviations. The rule change request also proposes a related change involving deletion of the settlement surplus cap.

The majority of the requirements for determining deviation prices are currently laid out in the Procedures. As a result, if the requested rule changes are made, AEMO intends to undertake a subsequent Procedures change process to determine the appropriate changes to the Procedures.

This consultation paper only addresses the proposed NGR amendments. As part of assessing the rule change request, the AEMC will not be assessing the details of AEMO's envisaged Procedures changes. Any Procedures changes that may be proposed by AEMO if this rule change is made will be consulted on by AEMO through its Procedures change process.

This consultation paper has been prepared by the staff of the AEMC to facilitate public consultation on the rule change proposal and does not necessarily represent the views of the AEMC or any individual Commissioner of the AEMC.

This paper:

- sets out a summary of, and a background to, the rule change request;
- identifies a number of questions and issues to facilitate consultation on this rule change request; and
- outlines the process for making submissions.

2 Background

This chapter provides background information on relevant features of the STTM and describes the current deviation pricing mechanism and how it operates in the context of the monthly settlement process.[1]

2.1 The short term trading market

The STTM is a market for the trading of natural gas at the wholesale level, currently operating at defined hubs in Adelaide, Brisbane and Sydney. It provides trading participants with the opportunity to buy and sell gas in the open market, as an alternative for, or in addition to, existing long-term industry contracts. The STTM is operated and administered by AEMO.

Gas is sold by producers to shippers under contracts, which occurs outside of the STTM. Shippers hold contracts with pipeline operators for the transportation of gas. Shippers sell the gas to users (such as retailers), who hold contracts with distribution network operators for the distribution of gas to their customers' premises. The STTM is the daily market where shippers and users meet to buy and sell gas.

In the STTM, relevant activities take place before ("ex-ante"), on ("intra") and after ("ex-post") each individual "gas day", which is the day for which gas is scheduled to be transported to a hub. As a "day-ahead" market, gas in the STTM is traded a day before the actual gas day. The day before any gas day, pipeline operators submit pipeline capacity information to AEMO, who publishes this data. STTM users and shippers can then place bids to buy quantities of gas at the hub and STTM shippers can place offers to sell quantities of gas to the hub.

On the basis of this information, AEMO matches offers and bids, determines the ex-ante market price and draws up the initial market schedules for the flow of gas to and from the hub on the gas day. All the gas that is supplied and withdrawn according to the market schedule is settled at the ex-ante market price.

The market schedule is published by AEMO approximately 18 hours ahead of the gas day so that shippers can use this information to nominate the quantity of gas they require from each pipeline operator (a process which occurs outside of the STTM). Pipeline operators then prepare pipeline allocation schedules, detailing the quantities of gas to be delivered to each shipper on each pipeline on the gas day.

On the gas day, shippers supply gas to the hub, and users withdraw gas from the hub.

1 Information in this section was derived from AEMO, *Industry Guide to the STTM*, December 2011.

2.2 Deviations, market operator service and deviation pricing

Typically, volumes of gas that shippers and users actually supply to and withdraw from the hub on any gas day differ from the volumes nominated in advance and recorded in the ex-ante market schedules. This occurs for example as a result of demand being higher than forecast.

The STTM is designed to encourage trading participants to communicate these differences to the market in a transparent manner. This assists AEMO in balancing the gas supply, minimising market costs for balancing and maintaining the integrity of the operating system.

Shippers and users can submit market schedule variations (MSVs) to AEMO for additional (or less) gas bought or sold than scheduled. By submitting an MSV, a trading participant's market schedule is modified so that it better aligns with its actual allocation on a gas day.

If, after having submitted any MSVs, there is still a difference between a trading participant's modified market schedule quantity and actual allocated quantity, this difference is referred to as a "deviation".

In order to incentivise participants to forecast as accurately as possible and meet their schedules, and to recognise the costs caused by deviations, deviations generally incur a financial penalty as explained in section 2.2.1 below.

In the context of settlement of the market in respect of a particular gas day, it is therefore necessary to identify deviations and charge individual shippers and users for their deviations.

To facilitate the settlement process, pipeline operators for each STTM facility provide AEMO with final pipeline allocation data after each gas day, detailing the amount of gas actually allocated to each shipper on their respective pipelines. Final allocations to individual users are generated by AEMO (as retail market operator) after the gas day, using metered data provided by distribution network operators.

2.2.1 Deviation charges and payments

Deviation quantities

An individual trading participant's deviation quantity is the difference between its modified market schedule quantity and its allocated quantity in respect of gas supplied

to or withdrawn from the hub on a particular gas day. A deviation quantity can be "long" or "short".[2]

- For a shipper who supplies gas to the hub, a "long deviation" means it delivered more gas to the hub than scheduled. A "short deviation" means the actual quantity of gas it delivered was less than its market schedule.

- For a user or shipper who withdraws gas from the hub, a "long deviation" means that it consumed less gas at the hub than scheduled. A "short deviation" means the actual quantity of gas it consumed was more than its scheduled quantity.

- "Short deviations" (or "negative" deviations) lead to additional gas being required at the hub, while "long deviations" (or "positive" deviations) lead to excess gas having to be sold back to the market.

Overview of deviation charges and deviation payments

If a trading participant has a "short deviation", it must pay a "deviation charge" to AEMO. This deviation charge is effectively a payment by the participant for purchasing additional gas to cover its deviation quantity.

If a trading participant has a "long deviation", it will be paid a "deviation payment" by AEMO. This deviation payment is effectively a payment to the participant for selling its excess gas back to the market.

As part of the settlement process, AEMO must determine, for each gas day, the deviation charges payable by, or deviation payments payable to, each trading participant at a hub in accordance with the Procedures.[3]

The details of how deviation charges and payments are calculated is set out in the Procedures.[4]

Graduated deviation parameters

The only NGR requirement that directly governs how deviation charges and payments are determined is that, when calculating deviation charges and deviation payments, AEMO must apply graduated deviation parameters that are set out in tables in rule 462 of the NGR.

The graduated deviation parameters are set out in the following tables:

2 NGR, rule 364.

3 NGR, rule 461(2)(g).

4 See Procedures, section 10.8.

Figure 2.1 Graduated deviation parameters

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%

In accordance with these deviation parameters, AEMO currently uses two methods to calculate deviation pricing:

- the "percentage method", where the extent of deviations is calculated as a percentage of the modified market schedule quantity (as shown in the first table above); and
- the "quantity method", where the extent of deviations is measured in absolute quantity in Gigajoules (GJ) (as shown in the second table above).

The deviation parameters are used to determine an "adjusted ex-ante market price" that is used in the calculation of deviation charges or payments. For example, a short deviation of 10 per cent or more will mean the ex-ante market price will be adjusted by a rate of 110 per cent (ie increased by 10 per cent) if the percentage method applies. AEMO will calculate deviation prices based on both the percentage method and the quantity method and use the method that is most advantageous to the trading participant.

Calculation of deviation charges and deviation payments

For a short deviation, the deviation charge payable by a trading participant is calculated under the Procedures using the highest of:

- the adjusted ex-ante market price;

- the ex-post imbalance price;[5] and
- the high contingency gas price (if applicable).[6]

Deviation charges are capped by the market price cap (MPC), which is the maximum price for natural gas traded at a hub for a gas day. The MPC is currently set at $400/GJ.

For a long deviation, the deviation payment payable by AEMO to a trading participant is calculated under the Procedures using the lowest of:

- the adjusted ex-ante market price;
- the ex-post imbalance price; and
- the low contingency gas price.[7]

Deviation payments cannot be lower than the minimum market price (MMP), which is the minimum price for natural gas traded at a hub for a gas day. The MMP is currently set at $0/GJ.

This structure means that participants with deviations effectively face a penalty for deviations as a result of paying, or being paid, a price that is generally less favourable than the ex-ante market price that would have applied if they had not deviated.

2.2.2 Pipeline deviations and market operator service

Differences between actual gas quantities and ex-ante schedules as a result of deviations also need to be accounted for between an STTM pipeline operator and shippers. Individual shippers may make "intra-day" renominations with the relevant pipeline operator for additional or less gas. These renominations, if accepted by the pipeline operator, will result in adjustments to pipeline allocation schedules.

Ideally, the aggregate quantity of gas nominated (including intra-day renominations) by shippers to the pipeline operator for delivery to a hub on a gas day would match the actual quantity of gas delivered to the hub by that pipeline on that day. If this is not the case, the result is a "pipeline deviation". Pipeline deviations are determined on the basis of actual flow data that pipeline operators measure for each pipeline after each

5 The ex-post imbalance price is calculated the day after each gas day and is intended to represent the price that would have been set if participants had forecast accurately. In other words, it is the market price which is adjusted for changes in supply and demand that occurred since publication of the ex-ante market schedules.

6 Contingency gas is a mechanism for balancing supply and withdrawals at a hub when other mechanisms (including market operator service) are unable to do so. A "high" contingency gas price is paid to contingency gas providers whose gas increases supply and/or reduces withdrawals. This price is set at the offer price of the most expensive contingency gas provider who is called.

7 A "low" contingency gas price is paid by contingency gas providers whose gas decreases supply or increases consumption. This price is set at the price bid of the least expensive contingency gas provider called.

gas day. A positive pipeline deviation means more gas was delivered to the hub than nominated, while a negative deviation means less gas was delivered than nominated.

If there is a pipeline deviation, the gas that is necessary to balance that deviation is provided (or withdrawn) by the market operator service (MOS). MOS is defined as "the market operator service by which capacity (in GJ) is provided to balance pipeline deviations by increasing or decreasing the quantity of natural gas supplied to or withdrawn from a hub using an STTM pipeline."[8]

Under the current provisions of the NGR,[9] MOS can be supplied by shippers who hold a contract with an STTM facility operator that entitles the shipper to either withdraw ("loan") gas from the facility (in order to increase the quantity of gas in the pipeline), or store ("park") gas on the facility (in order to decrease the quantity of gas in the pipeline). These shippers are referred to as "eligible contract holders".[10]

MOS is managed by AEMO. At quarterly intervals during the year, AEMO invites eligible contract holders to submit price-quantity offers for the provision of MOS (the "MOS service price") for the next "MOS period". AEMO lists the various offers from lowest to highest prices and generates a "MOS stack" accordingly.[11] The MOS offer prices are capped by the MOS cost cap, which is the maximum MOS price for a MOS increase offer or a MOS decrease offer that AEMO may include in a MOS stack (being $50/GJ).

Separate stacks are published for "increase MOS" (where additional gas needs to be delivered to the hub) and "decrease MOS" (where excess gas needs to be withdrawn from the hub).

In addition to the MOS service price, AEMO pays or charges the MOS provider the "MOS commodity charge" for the MOS gas supplied or withdrawn on the gas day. The MOS commodity charge is set equal to the ex-ante market price that applies two days after the relevant gas day.

MOS can also be caused by factors unrelated to participants' deviations. This mainly occurs where there are two pipelines connected to one hub and there is increase MOS on one pipeline and off-setting decrease MOS on the other pipeline. AEMO describes this situation as "counteracting MOS" in the rule change proposal and it is also sometimes referred to as "excessive MOS".

8 NGR, rule 364.

9 In a separate rule change request, AEMO has proposed to amend the NGR in order to broaden the eligibility to provide MOS to any shipper which holds an underlying agreement that allows this to occur. This request has recently been initiated by the AEMC. Information can be found on the AEMC website: www.aemc.gov.au.

10 NGR, rules 364 and 399.

11 STTM Procedures, sections 5.5.1 and 5.5.2.

2.2.3 The relationship between MOS and deviations

If changes in demand and supply of gas on a particular gas day are communicated to the market by participants in a transparent way, MSVs will account for the increased or decreased gas traded between shippers and users. Intra-day shipper renominations with pipeline operators will reflect these same changes at the pipeline allocation level.

Changes in quantities that were not accounted for by MSVs will result in deviation quantities, which attract deviation penalties. These same deviation quantities will have to be offset by the provision of MOS gas if they were not renominated by shippers to pipeline operators.

In a general way, the relationship between deviations and MOS can therefore be summarised as follows:

- Increase MOS will be provided where the net deviations on a pipeline are short (negative). AEMO must pay the MOS provider for the provision of increase MOS. AEMO charges trading participants deviation charges for short deviations. The income AEMO collects from deviation charges should offset at least some of the costs incurred by AEMO for the provision of increase MOS.

- Decrease MOS will be provided where the net deviations on a pipeline are long (positive). AEMO will be paid the MOS commodity charge by the MOS provider for decrease MOS. AEMO pays trading participants deviation payments for long deviations. The income AEMO collects from MOS commodity charges should ideally offset at least some of the costs incurred by AEMO for deviation payments.[12]

However, as explained below, the total amount charged by AEMO for deviations generally does not match the total amount paid by AEMO for MOS. The difference between these payments and charges is recovered though the monthly settlement process.

2.3 Monthly settlement process

AEMO performs calculations in order to settle the market for each individual gas day and invoices trading participants on a monthly basis.

Settlement of any particular gas day will be made up of payments to trading participants by AEMO and charges paid by trading participants to AEMO. These payments and charges result primarily from deviations and MOS provision as explained above, but also for example from charges for MSVs and provision of contingency gas (if needed).

12 However, AEMO must also pay the MOS provider the MOS service charge. In practice, it is not uncommon for the MOS service charge to exceed the MOS commodity charge, meaning AEMO makes a net payment to the MOS provider.

Overall, these payments and charges typically do not match, leading to either a settlement surplus (too much funds are collected) or a settlement shortfall (not enough funds are collected). Over a monthly billing period, AEMO accumulates the daily settlement surpluses and shortfalls at a hub and distributes the net settlement surplus or shortfall to trading participants at the end of the month in order to ensure that over each month, the total market income balances the total market expenses.

In case of a settlement shortfall, the additional funds that are needed to balance the market are collected from the participants who have deviated, on the basis of their share of all deviations over that month. As any additional shortfall funds that may be required will primarily be needed to pay for MOS expenses that month, this approach seeks to ensure that shortfall charges are borne by those participants who caused a need for MOS in the first place by deviating.

If there is a settlement surplus, the excess funds will be distributed to trading participants in two stages:

- First, surplus money is distributed to participants who have deviated, based on their share of all deviations over a month. However, the NGR contains a "settlement surplus cap", which means that this surplus payment amount is capped at $0.14 per GJ.[13] This cap is designed to prevent participants recovering a large proportion of their deviation charges through the settlement process, which could reduce their incentives not to deviate.

- The funds that remain after the settlement surplus cap is reached are distributed to all trading participants, based on their proportional share of the month's withdrawals at the hub.

13 NGR, rule 364.

3 Details of the rule change request

3.1 Summary of the proposed rule changes

The rule change request proposes the following a number of amendments to the NGR. In summary, AEMO proposes to:

- amend the definition of a "deviation payment" in rule 364 to reflect that decrease MOS can either result in income to the market or cause a cost to the market. Accordingly, AEMO proposes that the definition should provide that a deviation payment can not only be a payment by AEMO to a trading participant, but also a payment by a trading participant to AEMO;
- amend the definition of a "deviation charge" to make it consistent with the above proposed change to the definition of "deviation payment";
- amend the definition of the "minimum market price" (MMP) to clarify that deviation charges and deviation payments are not subject to the MMP and can therefore be negative;
- amend the definition of the "market price cap" (MPC) for consistency with the proposed change to the MMP;
- remove the definition of the "settlement surplus cap" from the NGR, so that there is no longer any cap on settlement surplus payments;
- amend rule 405 to clarify that the MMP and MPC only apply to price steps used in ex-ante and ex-post scheduling, to ensure that they are not applied to deviation prices directly;
- amend rule 461 for consistency with the proposed changes to the definitions of "deviation charges" and "deviation payments";
- remove rule 462, which sets out the graduated deviation parameters; and
- remove rule 489, which requires AEMO to undertake the review of the STTM operation, as that review has been completed.

AEMO's rule change request includes a proposed rule.

3.2 Rationale for the rule change

AEMO considers that the proposed rule changes are necessary in the context of envisaged overall changes to the deviation pricing design and settlement process under the NGR and the Procedures. AEMO seeks to make overall changes to the deviation pricing design because, according to AEMO, under the current design there

is a misalignment between costs to the market resulting from MOS and income to the market from deviation charges and payments.[14]

As part of its statutory review of the STTM,[15] AEMO conducted a review of the graduated deviation parameters and explored alternative options for the settlement shortfalls and surpluses.

According to AEMO, analysis conducted as part of this review showed that, on average, deviation charges and payments only recovered 20-30 per cent of MOS costs. A significant proportion of MOS costs therefore needs to be recovered through the monthly settlement surplus and shortfall process.

As a result, the majority of the cost of the deviation will only be invoiced at the end of a monthly billing period. This approach can result in participants accruing large costs during a month and can consequently result in large changes in a participant's prudential exposure, particularly if there have been events during the billing period where MOS costs have been very high as a result of high deviations.

This makes the risk associated with settlement of the surplus or shortfall difficult for participants to manage, especially, according to AEMO, for participants who operate intermittently, enter the market mid-month, or who did not deviate on "high price" days. AEMO also considers that it creates a barrier to entry for potential new entrants to the market.

In response to these concerns, AEMO proposes modifying the deviation pricing design in order to better align the cost to the market of a deviation (ie the costs of supplying MOS) with the charge or payment associated with that deviation. In other words, AEMO seeks to strengthen the "cost to cause" principle in the deviation pricing design.

After having explored a number of options for better "cost to cause" pricing, AEMO proposes to achieve this by introducing the average cost of MOS (per GJ) incurred on a day into the deviation pricing structure under the Procedures.[16] If implemented, this change would mean that:

- the deviation charge for a short deviation would be the maximum of:
  - the ex-ante market price;
  - the ex-post imbalance price;

14 AEMO rule change request, p. 7.

15 Rule 489 of the NGR requires AEMO to conduct a review on the operation of the STTM, while rule 490 of the NGR requires AEMO to conduct a review that examines the potential for a short term trading market to operate at prospective additional hubs. Both reviews had to be completed by 31 March 2012. AEMO combined the two reviews and undertook a two-stage consultation with stakeholders, releasing a consultation paper on 16 August 2011 and a draft report on 19 December 2011. The *STTM Operation Review and Demand Hubs Review - Final Report* was published 30 March 2012.

16 AEMO rule change request, p. 9.

- the average increase MOS cost; and
- the high contingency price (if called); and

- the deviation payment for a long deviation would be the minimum of:
  - the ex-ante market price;
  - the ex-post imbalance price;
  - the average decrease MOS cost; and
  - the low contingency price (if called).

AEMO expects this change to the deviation pricing design to reduce the magnitude of the settlement surplus or shortfall by approximately 80 per cent. It would also better assign the cost of MOS to participants who caused it on a particular gas day, rather than leaving it to the monthly surplus or shortfall.[17] AEMO considers that the increased clarity and certainty this brings to deviation pricing benefits the market, as it allows participants to better manage the risks associated with deviating. AEMO submits that the stronger deviation price signals are therefore likely to improve efficient operation of the STTM.

The main NGR changes proposed by AEMO, and AEMO's rationale for those changes, are discussed below.

Definitions of the minimum market price, the market price cap, deviation payment and deviation charge

AEMO proposes to amend the definitions of the MMP and the MPC. With the proposed amendments, AEMO seeks to clarify that the MMP and MPC do not directly apply to (and therefore restrict) deviation pricing.[18]

AEMO considers this change is necessary in the context of the envisaged changes to the deviation pricing design.

Long deviations, where less gas was demanded in the market than scheduled in advance, or more gas was supplied than scheduled, trigger the provision of decrease MOS. As explained above, AEMO pays the MOS provider service charge for providing the MOS service and the MOS provider pays AEMO a commodity charge for the gas. This means that the total cost of decrease MOS can be either a net income to the market (if the commodity charge exceeds the service charge) or a net outgoing for the market (if the service charge exceeds the commodity charge). We understand that it is common for decrease MOS to result in a net cost for the market.

AEMO argues that in order to be able to assign the full cost of decrease MOS to participants with long deviations, the price for a long deviation needs to be allowed to

17 Ibid, p. 13.

18 Ibid, p. 10.

be negative. A negative deviation payment would mean that the party that deviated would pay AEMO rather than being paid by AEMO. AEMO considers that this would result in better "cost to cause" pricing.

In order to permit negative deviation payments, AEMO seeks to amend the definition of a "deviation payment". That definition currently reads: "an amount payable by AEMO to a Trading Participant in respect of a long deviation quantity."[19] AEMO proposes that this definition be changed to reflect that a deviation payment may not only result in a payment to a trading participant by AEMO, but may also result in a payment by a deviating trading participant to AEMO.

AEMO also considers that the definition of the MMP should be clarified in order to ensure that the MMP does not apply to deviation pricing and to allow deviation payments to be negative. The MMP is currently defined as the "minimum market price for natural gas traded at a hub for a gas day, being $0/GJ".[20] AEMO considers that the MMP should not apply to deviation charges or deviation payments, as those prices do not directly relate to prices for gas traded in the market.

For reasons of consistency, AEMO also proposes similar amendments to the definitions of the MPC and "deviation charge".

Deletion of the settlement surplus cap

AEMO proposes to delete the reference to the settlement surplus cap of $0.14/GJ from the NGR.[21]

Under AEMO's envisaged changes to the deviation pricing provisions of the Procedures, AEMO expects that settlement surpluses will occur more often than is the case under the current design. This is because at the hub level, on any particular day, there would be either a net overall short deviation (resulting in increase MOS cost) or a net overall long deviation (resulting in decrease MOS cost), but not both. Individual trading participants' deviations may however be either short or long, and will both attract deviation penalties. As a result, if AEMO implements its currently envisaged Procedures changes, the amount that AEMO expects to recover from deviation charges and payments over a month is likely to often exceed the costs of the MOS that was caused by those deviations.

Having a surplus cap in place would mean that over-recovered MOS costs would be returned in part to parties with the greatest share of a month's withdrawals rather than to those parties that funded the surplus. Removing the surplus cap would allow over-recovered MOS costs to be returned solely to those parties that paid deviation prices and funded that surplus.

AEMO submits that removing the surplus cap will not diminish the incentive to participants to forecast accurately or stay within their scheduled loads. This is because

19 NGR, rule 364.

20 NGR, rule 364.

21 AEMO rule change request, p. 11.

deviating parties will continue to pay a penalty through deviation charges or payments if they deviate. AEMO states that modelling of past market data according to its proposed new deviation pricing design, in which there is no surplus cap, suggests that the new deviation prices under AEMO's proposed Procedures changes would still provide a strong incentive not to deviate.

Deletion of the graduated deviation parameters

AEMO proposes to delete rule 462, which sets out the graduated deviation parameters. That rule requires AEMO to use the graduated deviation parameters when determining deviation charges and deviation payments in accordance with the Procedures.

AEMO argues that the graduated deviation parameters discourage participants from bringing additional 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. This is because the graduated deviation parameters result in all participants that deviated by more than a specified percentage or GJ quantity being penalised for deviating.[22] However, AEMO considers that in some circumstances it actually assists the market for a party to deviate because it reduces the amount of MOS required, and that party should not be penalised for doing so. For example, if there is an overall short deviation at a hub, any party that deviates long will reduce the amount of MOS required to balance the hub and will reduce costs to the market.

AEMO also considers that under its proposed Procedures changes to introduce the average cost of MOS into the deviation pricing design, there is no longer a need for the graduated deviation parameters. We understand that this is because the average MOS cost will generally be higher than the adjusted ex-ante price, meaning that the adjusted ex-ante price would rarely determine deviation prices under the proposed changes to the Procedures.

22 This "penalty" arises because the graduated deviation parameters are used by AEMO to calculate the adjusted ex-ante price, which is one of the prices used by AEMO when calculating deviation charges and deviation payments under the Procedures. The result is that a participant who deviates will pay or receive a less favourable price for the gas than if it had forecasted accurately and paid the ex-ante market price.

4 Assessment framework

The Commission's assessment of this rule change request must consider whether the proposed rule promotes the national gas objective (NGO) as set out under section 23 of the National Gas Law (NGL):

> "The objective of this law is to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interest of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas."

In assessing the rule change request against the NGO, the Commission will take the following key issues into consideration:

- the effect of the proposed rule on efficient operation and use of gas services in the STTM;
- the effect of the proposed rule on administrative efficiency and operation of the STTM; and
- whether the proposed rule is consistent with the principles of good regulatory practice.

A specific consideration will be the impact of the proposed rule changes on participants' incentives to forecast accurately.

Good regulatory practice

In relation to the final bullet point above, the AEMC will consider the intended relationship between the NGR and the Procedures when the STTM was created:[23]

> "Under the conceptual framework for the STTM legislation... the NGR will contain the detail of the market operation and the STTM Procedures will include the more detailed process requirements involved in NGR obligations and address lower level technical and administrative matters."

The AEMC will have regard to whether, and to what extent, the NGR should specify the criteria, methodologies and process to be applied by AEMO, compared to the level of discretion that AEMO should have over those matters in properly performing its functions. This requires finding a balance between an appropriate level of prescription in the NGR that would promote certainty and stability of regulatory outcomes as well as transparency of approach, with a level that provides AEMO with adequate flexibility and ability to accommodate particular circumstances in operational decision making.

Within this framework, it may be appropriate for the NGR to set some parameters that limit the extent to which detailed matters can be further specified in the Procedures.

23 *Explanatory Material on the Draft Short Term Trading Market Rules*, 2009, p.2.

Relationship between NGR and Procedures change processes

As discussed in chapter 3, AEMO's overarching objective is to implement a number of overall changes to the deviation pricing design. AEMO seeks to implement these changes to the deviation pricing design primarily by making changes to the relevant sections in the Procedures. However, AEMO's proposed Procedures changes are incompatible with several current provisions of the NGR. Accordingly, AEMO requires the requested rule changes to be made before it can make the desired Procedures changes.

The Procedures change process is managed by AEMO separately from the AEMC rule change process. AEMO must comply with the consultation procedures and other requirements set out in Part 15B of the NGR when amending the Procedures.

This consultation paper does not address AEMO's envisaged changes to Procedures. The details of any Procedures changes will not be considered as part of the AEMC's rule change process.

This rule change process will consider AEMO's proposed amendments to the NGR on their own merits, independent of AEMO's proposed changes to the Procedures.

AEMO's proposed Procedures changes provide relevant context to help understand some of the potential implications of the requested NGR changes. However, the content of any changes to the Procedures is currently uncertain and will not be determined until AEMO completes the Procedures change process. There is currently no certainty that the Procedures changes will be made in the form currently envisaged by AEMO. Indeed, there is no certainty that any Procedures changes will be made.

Accordingly, the requested NGR changes can only be made if the AEMC considers those specific NGR changes promote the NGO.

We understand that AEMO intends to commence the Procedures change process following the publication of the AEMC's draft rule determination.

5 Issues for consultation

Taking into consideration the assessment framework, we have identified a number of issues for consultation. These issues outlined below are provided for guidance. Stakeholders are encouraged to comment on these issues as well as any other aspect of the rule change request or this paper, including the proposed assessment framework.

5.1 Deletion of the settlement surplus cap

AEMO proposes to remove the settlement surplus cap from the NGR. Currently, the only reference to the settlement surplus cap is the definition in rule 364.

The settlement surplus cap arguably increases the incentives on participants not to deviate. It caps the amount of settlement surplus funds that are returned to the participants that have caused deviations (and therefore paid deviation charges) in a particular billing period. Given that deviation charges are designed to act as a penalty that incentivises participants not to deviate, refunding a large proportion of those charges to participants that deviated may reduce the effect of that incentive - ie the effective penalty for deviating will be lower.

A potential benefit of removing the settlement surplus cap is that it will be consistent with a stronger "cost to cause" principle for deviation pricing and monthly settlements. Under a cost to cause approach, deviation charges and payments would be designed so that they aim to recover sufficient revenue to cover the costs of MOS that are caused by deviations. Under such an approach, it would arguably be inefficient for deviation charges and payments to recover more revenue than is required to cover those costs, and if excess revenue is recovered it arguably should be refunded to the deviating parties so that they only pay for the costs that they cause. A settlement surplus cap therefore appears inconsistent with a cost to cause approach to deviation pricing.

We note that if this rule change is made, there would be nothing to prevent AEMO from still including a settlement surplus cap in the Procedures. This rule change would simply move that matter from the scope of the NGR to a matter for AEMO's discretion under the Procedures change process. AEMO would also then have flexibility as to the level at which any settlement surplus cap was set.

However, AEMO states that it does not intend to include a settlement surplus cap in the amended Procedures. AEMO considers that the settlement surplus cap is no longer needed in the overall changes to the deviation pricing design it intends to implement. AEMO also considers that it is inequitable for surpluses to be transferred to parties with the greatest market share, as can occur under the settlement surplus cap, rather than refunding it to parties that funded the surplus through deviation charges or payments.

AEMO also notes that surpluses are likely to be more common if it implements its proposed Procedures changes, as explained in chapter 3.

Question 1 Deleting the settlement surplus cap

a) Should the reference to the settlement surplus cap be removed from the NGR? Please provide supporting arguments.

b) Would removal of the settlement surplus cap have a material negative impact on participants' incentives to forecast accurately and not deviate?

c) Would removal of the settlement surplus cap promote a more efficient approach to deviation pricing and settlement? In particular:

- **Is a settlement surplus cap inconsistent with a "cost to cause" approach to deviation pricing and settlement?**
- **If so, would a more "cost to cause" approach to deviation pricing and settlement promote efficiency?**

d) Given the uncertain outcome of any subsequent Procedures change process in relation to deviation pricing and settlement, should the NGR set some additional principles or parameters for the settlement process that ensure an appropriate incentive to forecast accurately and not deviate is maintained? If so, what would be appropriate principles?

5.2 Deletion of the graduated deviation parameters

AEMO proposes to remove the reference to the graduated deviation parameters from the NGR.

As explained in chapter 3, the graduated deviation parameters adjust the ex-ante market price as a basis for the calculation of deviation charges or payments. Rule 462 requires AEMO to use the graduated deviation parameters in determining deviation charges and payments under the Procedures.

Under the graduated deviation parameters, larger deviations are intended to attract larger adjustments of the ex-ante market price. However, the adjustments even for large deviations are relatively small and are limited to a maximum adjustment of 10 per cent.

In practice, we understand that the graduated deviation parameters do not currently affect the actual deviation charges or payments that apply to the majority of deviations. As explained in section 2.2.1, the adjusted ex-ante price determined by application of the graduated deviation parameters is only one of three parameters that are used by AEMO under the Procedures to calculate deviation charges and payments. As a result, the graduated deviation parameters only have a practical effect where deviation charges or payments are determined by the adjusted ex-ante market price rather than the ex-post imbalance price or the contingency gas price. We understand from discussions with AEMO that in practice the majority of deviation charges and payments are currently set based on the ex-post imbalance price.

In the rule change request, AEMO states that:[24]

> "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."

Deletion of the graduated deviation parameters would remove this feature from the design of the deviation pricing regime in the NGR. However, if, as noted above, the graduated deviation parameters do not determine deviation prices in the majority of cases, this principle may currently only have limited application in practice.

As explained in section 3.2, AEMO considers that the graduated deviation parameters should be deleted because they discourage participants from deviating in circumstances where it actually benefits the market for them to deviate by reducing the amount of MOS required to balance deviations in the other direction. In particular, AEMO considers that the graduated deviation parameters discourage participants from bringing additional 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.

AEMO also considers that the graduated deviation parameters would no longer be needed under its envisaged overall changes to the deviation pricing design. Under AEMO's proposed Procedures changes, the average cost of MOS would be included as a parameter for determining deviating charges and payments under the Procedures and would likely apply in most circumstances rather than the ex-ante or adjusted ex-ante price.

However, as discussed in chapter 4, there is no certainty that AEMO's currently envisaged Procedures changes will be made. If the graduated deviation parameters were deleted from the NGR, AEMO could still elect to include some form of graduated deviation parameters in an amendment to the Procedures. In the rule change request AEMO explains that it considered amended graduated deviation parameters as an alternative solution, but considered that approach would be unlikely to raise sufficient revenue to fully fund the costs of MOS. To do so, the graduated deviation parameters would need to be increased from 0, 5 per cent and 10 per cent to 0, 500 per cent and 1,000 per cent.[25]

Good regulatory practice

Rule 462, which contains the graduated deviation parameters, is currently the only provision in the NGR that governs how deviation charges and deviation payments are calculated. If that rule was deleted as proposed by AEMO, then the NGR would simply

24 AEMO rule change request, p. 4.

25 AEMO rule change request, p. 8.

provide that deviation payments and deviation charges are to be determined by AEMO for each gas day in accordance with the Procedures.[26]

Deviation pricing is an important aspect of market design. It is the primary mechanism for providing incentives to participants to forecast accurately and comply with their market schedules. As such, it may be inappropriate for the NGR to contain no provisions in relation to deviation pricing and for it to be left entirely to the Procedures.

AEMO has set out its envisaged Procedures change in the rule change proposal. However, as noted above there is no certainty that the Procedures will be amended in the manner currently envisaged by AEMO. The content of any Procedures change will only be determined after the separate Procedures change process. In addition, if the NGR are silent on deviation pricing, the relevant provisions of the Procedures could change again in future without any need for a rule change.

If participants have concerns about the NGR not containing any provisions regarding deviation pricing and leaving that issue entirely to the Procedures, then it may be appropriate for the NGR to contain a set of principles to guide the development of deviation prices and charges.

The Procedures provisions related to the calculation of deviation charges and deviation payments are currently contained in section 10.8 of the Procedures. Those provisions are lengthy and contain detailed formulae. It is unlikely to be appropriate to include that level of detail in the NGR and it is most likely to be appropriate for the technical details of how deviation charges and payments are calculated to be contained in the Procedures.

We invite stakeholder submissions on whether it would be appropriate, if the graduated deviation parameters are deleted, for the NGR to contain principles that AEMO must have regard to when determining deviation charges and payments under the Procedures.

If stakeholders consider that there would be merit in including principles in the NGR, we invite stakeholders to propose suitable principles.

For the purposes of facilitating discussion, potential principles are set out in the box below.

These principles could replace the current rule 462. AEMO would only be required to "have regard to" these principles when determining the content of the Procedures.

26 See rule 461(2)(g).

Box 5.1: Potential principles for consultation

AEMO must have regard to the following principles when determining deviation charges and deviation payments for a Trading Participant in accordance with the STTM Procedures:

- Deviation charges and payments should be set to promote the economically efficient operation of the STTM by incentivising accurate forecasting of gas schedules, to the extent practicable.
- Deviation charges and payments should, to the extent practicable, reflect the costs of providing Market Operator Service and minimise any settlement shortfall charge or settlement surplus payment.
- Any settlement shortfall charge or surplus payments that occur should be allocated to Trading Participants on a cost for cause basis.

Question 2 Deleting the graduated deviation parameters

a) Should the graduated deviation parameters be deleted from the NGR? Please provide supporting arguments.

b) What impact would removal of the graduated deviation parameters be likely to have on participants' incentives to forecast accurately?

c) Do the graduated deviation parameters potentially discourage participants from deviating in circumstances where it would benefit the market for them to deviate by reducing the amount of MOS that is required?

d) Deletion of the graduated deviation parameters in rule 462 would mean that there would be no provisions in the NGR relating to the calculation of deviation charges and payments, and those matters would be left entirely to the Procedures:

- **Would such an outcome be appropriate and consistent with good regulatory practice?**
- **Would it be preferable to replace rule 462 with a set of principles that AEMO must have regard to when determining deviating charges and payments under the Procedures? If so, what matters should those principles cover?**

5.3 Definitions of the minimum market price, the market price cap, deviation payment and deviation charge

AEMO proposes amendments to the definitions of the "minimum market price" (MMP), "market price cap" (MPC), "deviation payment" and "deviation charge".

The modifications to the MMP and the MPC are intended to clarify that they do not apply to deviation pricing. AEMO argues this clarification is appropriate, as the definitions currently refer to gas traded in the market rather than to costs or gains to the market as a result of participants' deviations.

The proposed amendments to the definitions of the MMP and deviation payment are intended to allow deviation payments to be negative. In particular, the proposed modification to the definition of a "deviation payment" seeks to recognise that decrease MOS can either result in an income to the market or cause a cost to the market. Accordingly, AEMO proposes that the definition should reflect that a deviation payment may not only result in a payment to a trading participant by AEMO (as under the current definition), but also a payment by a trading participant to AEMO. It is also proposed rule 461, which currently refers to a "deviation payment" only as an amount payable to a trading participant, be changed accordingly.

The proposed change to the MMP is also necessary to allow negative deviation payments.

AEMO does not propose inserting a separate minimum price for deviation payments. If AEMO's proposed Procedures changes were made, the effective minimum price for deviation payments in practice would be -$50/GJ, based on the maximum possible cost for decrease MOS.[27] However, because there would be no minimum price in the NGR, there would be nothing to stop the Procedures setting a lower price for deviation payments in future.

AEMO also proposes that similar amendments be made to the definitions of the MPC and deviation charge "for consistency" with the changes to the definitions of the MMP and deviation payment.

However, it could be argued that consistency is not necessary or appropriate in relation to the deviation charge definition. AEMO's proposed change would allow deviation charges to be negative - ie for a participant with a short deviation to be paid by AEMO rather than paying AEMO. It is difficult to envisage a scenario where that would be appropriate.

Similar to the change to the MMP, AEMO does not propose inserting a separate maximum price for deviation payments to replace the MPC. If AEMO's proposed Procedures changes were made, the effective maximum price for deviation payments

27 -$50/GJ is the sum of the lowest possible MOS commodity charge payable to AEMO ($0/GJ) and the highest possible MOS service charge payable by AEMO ($50/GJ).

in practice would be $450/GJ, based on maximum possible cost for increase MOS.[28] However, with no maximum price in the NGR, a higher price could be set in future under the Procedures.

All of these proposed changes are related to AEMO's desire for deviation pricing to better reflect the cost to cause principle. Any cap or floor on deviation charges and payments potentially limits the ability of those prices to fully recover the costs imposed by deviations. In particular, negative deviation payments are necessary to recover the full costs of long deviations.

Question 3 Amendments to the definitions of the MMP, MPC, deviation payment and deviation charge

a) Should the definitions of the minimum market price and market price cap be modified in order to clarify that they do not apply to deviation pricing?

b) Do you consider that AEMO's proposed changes to the definitions of the minimum market price and market price cap provide sufficient clarity that they do not apply to deviation charges and payments?

c) Should deviation payments be permitted to be negative?

d) If the definitions of the minimum market price and market price cap are amended so that they do not apply to deviation pricing, should the NGR contain separate minimum and maximum prices for deviation charges and payments? If so, what should those prices be?

e) Is AEMO's proposed amendment to the deviation charge definition appropriate? Should AEMO ever be required to make a payment to a participant with a short deviation?

5.4 Other issues

5.4.1 Commencement

The rule change proposal does not set out a proposed commencement date for the rule changes.

If implemented, the rule changes could significantly affect the monthly settlement process. Accordingly, it is likely to be necessary for the rule changes to commence at the start of a monthly billing period.

Given that the rule changes would, if made, also require changes to the Procedures, it is also likely to be necessary for the rule changes and associated Procedures changes to commence at the same time.

28 $450/GJ is the sum of the highest possible MOS commodity charge payable by AEMO ($400/GJ) and the highest possible MOS service charge payable by AEMO ($50/GJ).

If any IT changes or process changes are also required by AEMO and/or participants, sufficient time should also be allowed after finalisation of the rule change and Procedures change processes before they are implemented.

5.4.2 Costs of the proposed changes

AEMO has estimated the costs of the proposed rule change primarily in terms of costs related to necessary changes to IT systems. These costs are estimated to be $115,000.[29]

We expect that participants will also incur IT and process-related costs.

However, we understand that AEMO's estimated costs relate to implementation of the overall package of proposed NGR and Procedures changes, based on AEMO's currently envisaged Procedures changes. These costs appear to primarily relate to the proposed Procedures changes, not the proposed NGR changes, and the amount of any costs will depend on the final content of any Procedures changes.

AEMO has not identified any other costs related to the proposed NGR changes.

5.4.3 Other relevant reviews

AEMO is currently undertaking its STTM intra-day review of options for additional or alternative STTM market processes that would operate within a gas day. AEMO is also currently undertaking a review of market parameters in the STTM, including the MMP and MPC.

Submissions are invited on whether either of those reviews could have implications for this rule change proposal.

5.4.4 Counteracting MOS

The rule change proposal discusses issues related to "counteracting MOS" (also referred to as "excessive MOS"). AEMO states that the proposed rule change "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".[30]

The specific NGR changes proposed by AEMO do not appear to have any impact on the issue of counteracting MOS. However, issues related to counteracting MOS may be an important consideration in AEMO's separate consultation process in relation to the detailed design of any subsequent Procedures changes.

29 AEMO rule change request, p. 15.

30 AEMO rule change request, pp. 11-12.

Question 4 Other issues

a) Do you have any views on when the rule change should commence, if it is made?

b) What are the expected costs to participants of the proposed rule changes?

c) Do any other reviews that AEMO is currently undertaking have implications for this rule change proposal?

d) Will the proposed rule changes have any impact on counteracting or excessive MOS?

6 Lodging a submission

The Commission has published a notice under section 303 of the NGL for this rule change proposal inviting written submissions. Submissions are to be lodged online or by mail by 20 December 2012 in accordance with the following requirements.

Where practicable, submissions should be prepared in accordance with the Commission's Guidelines for making written submissions on rule change proposals.[31] The Commission publishes all submissions on its website, subject to any claims of confidentiality.

All enquiries on this project should be addressed to Alex Fattal on (02) 8296 7800.

6.1 Lodging a submission electronically

Electronic submissions must be lodged online via the Commission's website, www.aemc.gov.au, using the "lodge a submission" function and selecting the project reference code "GRC0014". The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated.

Upon receipt of the electronic submission, the Commission will issue a confirmation email. If this confirmation email is not received within three business days, it is the submitter's responsibility to ensure the submission has been delivered successfully.

6.2 Lodging a submission by mail

The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated. The submission should be sent by mail to:

Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Or by Fax to (02) 8296 7899.

The envelope must be clearly marked with the project reference code: GRC0014.

Except in circumstances where the submission has been received electronically, upon receipt of the hardcopy submission the Commission will issue a confirmation letter.

If this confirmation letter is not received within three business days, it is the submitter's responsibility to ensure successful delivery of the submission has occurred.

31 This guideline is available on the Commission's website.

Abbreviations

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
Commission	See AEMC
GJ	Gigajoule
MMP	minimum market price
MOS	market operator service
MPC	market price cap
MSV	market schedule variation
NGL	National Gas Law
NGO	national gas objective
NGR	National Gas Rules
Procedures	STTM Procedures
STTM	short term trading market