Australian Energy Market Commission

AEMC
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RULE

Directions paper

National Gas Amendment (ECGS reliability standard and associated settings) Rule

Proponents

Energy Senior Officials Group
Victorian Minister for Energy and Resources

28 August 2025

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About the AEMC

The AEMC reports to the energy ministers. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the energy ministers.

Acknowledgement of Country

The AEMC acknowledges and shows respect for the traditional custodians of the many different lands across Australia on which we all live and work. We pay respect to all Elders past and present and the continuing connection of Aboriginal and Torres Strait Islander peoples to Country. The AEMC office is located on the land traditionally owned by the Gadigal people of the Eora nation.

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Summary

1 The Australian Energy Market Commission (AEMC or the Commission) has prepared this directions paper to advance consideration of the rule change request submitted by the Chair of the Energy Senior Officials Group and the Hon Lily D'Ambrosio MP, Minister for Climate Action, Minister for Energy & Resources and Minister for the State Electricity Commission (the proponents) in July 2024. The rule change request seeks to enhance the existing reliability and supply adequacy (RSA) framework for the East Coast Gas System (ECGS). It proposes the introduction of an ECGS reliability standard, informed by a value of gas customer reliability (VGCR) to complement the existing risk or threat notice function and to inform reviews of the facilitated gas markets settings.

2 The proponents consider that changes are needed to address the risk that, under current arrangements, market participants, the Australian Energy Market Operator (AEMO) and policymakers may make inefficient decisions about how to respond to reliability and supply adequacy risks or threats over the short- and long-term. The request forms part of a broader package of reforms to implement the 'stage 2' RSA framework through amendments to the National Gas Rules (NGR).

3 The Commission received 17 submissions in response to the consultation paper published in March 2025. Stakeholders generally provided conditional support for introducing measures to ensure reliability and supply adequacy in the ECGS. This included introducing an independent panel to provide robust, transparent and representative governance to the ongoing review of the facilitated gas market price settings. Some submissions suggested that the existing market design effectively manages the concerns raised by the proponents.

4 The stakeholder submissions and subsequent analysis have informed the Commission's thinking on the issues and proposed solutions raised in the rule change request. The purpose of this directions paper is to share that current thinking and test our high-level solutions with industry, governments, market bodies and consumers ahead of a draft rule determination. Written submissions responding to this directions paper must be lodged through the AEMC's website by 25 September 2025. There will be other opportunities to engage with the AEMC throughout this rule change process.

5 The Commission agrees with the proponents that there are opportunities to improve the current RSA framework for the ECGS. We consider that the reliability risks the proponents are concerned about can be mitigated by implementing a range of measures suited to the features of the ECGS and its facilitated markets..

6 We consider that our proposed approach will promote the efficient investment in, and efficient operation and use of, covered gas services in the long-term interests of consumers while minimising additional complexity and costs.

We are proposing solutions to address operational, investment and planning problems

7 We have considered the problems raised in the rule change request through two lenses: the operational problem and the investment and planning problem. Assessing the problems over these two horizons has allowed the Commission to consider fit-for-purpose solutions.

- The operational problem focuses on the risk of inefficient decisions being made in the short term, which we have defined as the time between intraday and twelve months. Those

inefficient decisions could be made by market participants or AEMO, due to the limitations in the tools it currently has at its disposal to address reliability risks in the ECGS.

- The investment and planning problem focuses on the risk of inefficient decisions being made by market participants in the longer term, related to planning and investment, to support gas reliability and supply adequacy across the ECGS. The proponents describe that a balance must be struck between the costs of providing reliability and the costs that gas users and other market participants can incur as a result of supply disruption.

8 While we are proposing improvements to the RSA framework, it is important to recognise that there are a range of factors impacting investment decisions within the ECGS. As part of our assessment of these issues, we understand that policy uncertainty, particularly around the energy transition, is causing under-contracting and investment delays. Other issues that impact investment decisions include long-term demand uncertainty and infrastructure access. It will be critical for these issues to be addressed for the market to be able to deliver the necessary investment in gas supply infrastructure across the ECGS.

We propose improvements to the risk or threat signalling framework

9 The Commission considers that the current risk or threat notice arrangements may not facilitate timely and efficient market-led responses. The current approach does not provide an objective mechanism for AEMO to clearly communicate risks or threats and to respond or elicit market responses in relation to reliability risks and threats. This is aligned with the rule change request.

10 To address this, we propose to introduce a tiered risk or threat signalling framework in the NGR. This framework would be informed by a probabilistic metric of supply not meeting demand within a timeframe ranging from intraday to 12 months. The tiered framework would leverage AEMO's current approach and would be complemented by additional information proposed in the ECGS PASA rule change. We propose that AEMO would define tiers for each of the risk or threat notice levels in consultation with industry.

11 We are not proposing any significant changes to AEMO's responsibilities for managing the short-term operation of the risk or threat signalling framework. Instead, the Commission proposes to include principles in the NGR to give AEMO the flexibility to set and adjust the framework as needed by consulting and capturing its final design in the ECGS procedures. We are seeking stakeholder feedback on the level of prescription to include in the rules regarding the tiered framework.

12 The Commission considers that the dual reliability standard proposed in the rule change request is not the right tool to inform the tiers of the framework, which is focused on short-term responses. The dual reliability standard proposed in the rule change request was to include an annual unserved gas (USG) measure and a peak day deliverability measure. We consider that a dual reliability standard informing a risk or threat signalling framework would likely result in:

- ambiguity, from trying to make operational decisions based on two complex metrics
- poor responsiveness, as the standard cannot be calibrated for short-term responses
- inefficiencies, by distorting the tools meant to address fundamentally different problems.

We are proposing changes to the future reviews of the market price settings in the DWGM and STTM

13 The Commission agrees that, under the current arrangements, there are some risks of inefficient investment and planning decisions in the ECGS. Some stakeholders consider that the role the market settings play in overall investment decisions is small, and the Commission acknowledges that their influence is not as significant compared to the settings in the national electricity market

(NEM). However, there are opportunities to improve how the settings are set to better support efficient investment in the ECGS.

14 The market settings in the Declared Wholesale Gas Market (DWGM) and Short Term Trading Market (STTM) are designed to help manage retailer financial risk, support reliability, influence capacity investment, and guide resource allocation. It is critical that the market settings in these facilitated markets are regularly reviewed to ensure they remain fit-for-purpose for the expected future market conditions and possible increased risk of gas supply shortfalls. To achieve this, the Commission is proposing to introduce a Gas Reliability Committee, constituted by the AEMC under the NGR, to carry out future reviews of the market price settings. The Committee would include a range of stakeholders to enable a collaborative and transparent review of the settings.

15 We are not proposing to expand the role of the NEM Reliability Panel as this would require a law change. An amendment to the law is time-consuming and the outcome is not always certain which could impact implementation. The Commission considers that the same level of rigour and independence from the Reliability Panel when it reviews the NEM market price settings can be achieved via the Gas Committee constituted in the rules.

16 The Commission anticipates the NGR would not prescribe a methodology for these reviews but instead include principles or factors for the Committee to consider when conducting such reviews. This paper explores some of those factors and seeks feedback from stakeholders to inform a draft rule determination and future considerations for the proposed Committee.

17 In the context of reviewing the market price settings, the Commission agrees with the proponents that the trade-off between reliability and supply interruptions may be a valuable input that needs to be considered. The potential for an increased tightening of gas supply and demand in the coming years could lead to increased prices and a higher necessity of signalling the importance of reliability for customers through the market settings. However, to date, the reviews of the market price settings in the DWGM and STTM appear to place a higher importance on the risk of cascading financial failure.

18 The Commission considers that future reviews of the settings should continue to assess a range of factors to ensure the settings reflect the trade-off between reliability and affordability, and the trade-off between the cost of providing gas supply and the cost of supply disruptions. This includes:

- the financial stability of the market (or risk of cascading financial failure)
- operational and investment incentives
- the willingness to pay (WTP) of relevant customers to avoid curtailment.

19 The Commission recognises that considering WTP in the ECGS is not straightforward.

20 Supply to the gas distribution system to customers who are beyond the 'city gate' (typically residential and small commercial customers) cannot be turned off without significant safety risks and costs. Because the costs of curtailing these customers is so high, the associated risks would more appropriately be dealt with by regulatory or insurance tools, rather than through market settings. As a result, their WTP is not a relevant consideration when setting the market parameters. As WTP would only form one factor in the market settings, we consider that developing a view of WTP should be a light-touch approach conducted by the proposed Gas Reliability Committee, and not a standalone piece of work done by the AER.

21 We are interested in stakeholder feedback on how the Committee could review and include an assessment of WTP of the relevant customers. This includes feedback on which customers are relevant and possible approaches to how their WTP can be revealed. We are not proposing that a

methodology for considering WTP be included in the NGR, as it is important that the methodology remains open to adjust to changing market dynamics and conditions. However, we do consider it important to understand the possible options now, to help inform future reviews.

There are opportunities to improve the Gas Statement of Opportunities and the Victorian Gas Planning Report

22 The Commission agrees that there are opportunities to improve the Gas Statement of Opportunities (GSOO) and the Victorian Gas Planning Report (VGPR). We are seeking feedback on three proposed changes that aim to support efficient investment and planning decisions across the ECGS. These improvements are that AEMO should:

- leverage a probabilistic metric in the GSOO/VGPR to highlight medium to long term reliability risks
- include a proposed assessment of credible risks to system resilience
- disaggregate the North/South split currently used, where possible, to allow it to communicate location-specific shortfalls to elicit more targeted investment and planning responses from the market.

23 The rule change request suggested that the AER develop new best practice guidelines on forecasting. We consider that such a guideline may increase regulatory costs and will not address the proponent's key concern about the difficulty of developing demand forecasts. Instead, we propose requiring AEMO to consult on and publish its forecasting approach and methodology within its Reliability Forecast Guidelines.

We do not consider a reliability standard to be the right tool for the ECGS

24 In the NEM, the reliability standard plays a defined role in supporting investment through the market price settings. However, the Commission does not consider it to be proportionate to introduce the proposed NEM-style reliability standard in the ECGS to improve the market settings and ultimately achieve more efficient investment decisions. Rather, the settings can be set by considering WTP and other relevant factors, without the need for the additional step of using a reliability standard. The Commission's proposed changes to the GSOO and VGPR, including using a probabilistic metric to highlight medium to long-term reliability concerns, would likely be a more cost-effective way to provide information to guide investment decisions in the ECGS.

How to make a submission

We encourage you to make a submission

Stakeholders can help shape the solution by participating in the rule change process. Engaging with stakeholders helps us understand the potential impacts of our decisions and contributes to well-informed, high quality rule changes.

How to make a written submission

Due date: Written submissions responding to this directions paper must be lodged with Commission by 25 September 2025.

How to make a submission: Go to the Commission's website, www.aemc.gov.au, find the "lodge a submission" function under the "Contact Us" tab, and select the project reference code GRC0076.[1]

Tips for making submissions on rule change requests are available on our website.[2]

Publication: The Commission publishes submissions on its website. However, we will not publish parts of a submission that we agree are confidential, or that we consider inappropriate (for example offensive or defamatory content, or content that is likely to infringe intellectual property rights).[3]

1 If you are not able to lodge a submission online, please contact us and we will provide instructions for alternative methods to lodge the submission

2 See: https://www.aemc.gov.au/our-work/changing-energy-rules-unique-process/making-rule-change-request/our-work-3

3 Further information about publication of submissions and our privacy policy can be found here: https://www.aemc.gov.au/contact-us/lodge-submission

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1 Introduction

The Australian Energy Market Commission (AEMC or the Commission) has prepared this directions paper to advance consideration of the reliability tools proposed by the Chair of the Energy Senior Officials Group and the Hon Lily D'Ambrosio MP, Minister for Climate Action, Minister for Energy & Resources and Minister for the State Electricity Commission (the proponents). These proposed tools include:

- a reliability standard for the East Coast Gas System (ECGS)
- a review of the price settings for the Short Term Trading Market (STTM) and Declared Wholesale Gas Market (DWGM)
- additional monitoring and communication tools.

In the rule change request, the proponents raised concerns around growing risks that the Australian Energy Market Operator (AEMO), market participants and policymakers may make inefficient reliability decisions, raising costs for both participants and consumers.[4] In the proponents' view, these risks continue despite the existing reliability and supply adequacy (RSA) function (stage 1).

The rule change request forms part of a broader package of reforms to implement the 'stage 2' RSA framework through amendments to the National Gas Rules (NGR).[5] The background to the stage 2 reforms is outlined in our background paper published in March 2025.

The purpose of this directions paper is to share the Commission's current thinking on the issues raised in the rule change request and to test high-level solutions with industry, governments, market bodies and consumers ahead of a draft rule determination.

This paper considers the overarching problem through two lenses: an operational lens and an investment and planning lens ('operational problem' and 'investment and planning problem', respectively). The operational problem addresses limitations in the tools AEMO has at its disposal to communicate ECGS reliability risks or threats to market participants and gas bulletin board (GBB) facilities and to elicit responses to mitigate or manage those risks or threats. The NGL refers to 'risks or threats' when setting out the ECGS reliability and supply adequacy functions. As such, throughout this paper, we use these terms when discussing the proposed risk or threat signalling framework and related RSA functions.

The planning and investment problem focuses on the adequacy of market signals and reporting tools that support longer-term supply adequacy in the ECGS and efficient reliability outcomes in the facilitated gas markets.

This paper is structured as follows:

- Chapter 2 explores the operational problem and considers its materiality.
- Chapter 3 presents and tests a high-level solution to the operational problem in the form of enhancements to the existing risk or threat signalling framework with the objective of managing short-term reliability risks.
- Chapter 4 explores the investment and planning problem and considers its materiality.

4 Our consultation paper clarifies that 'inefficient' in this context refers to: a) insufficient expenditure, when consumers would be willing to pay more for greater reliability, b) too much expenditure, when consumers would prefer to pay less and have lower reliability, c) expenditure on the wrong things, meaning that more money than necessary is spent to deliver particular reliability outcomes. AEMC, Consultation paper - National Gas Amendment (ECGS reliability standard and associated settings) Rule, p 4.

5 ECGS Reliability standard and associated settings. Rule change request.

- Chapter 5 outlines and tests a high-level solution to the investment and planning problem. This includes considerations around new approaches for the review of the market price settings in STTM and DWGM, along with improvements to information provided by AEMO through the Gas Statement of Opportunities (GSOO) and Victorian Gas Planning Report (VGPR), with the objective of strengthening market and information signals for long-term supply adequacy planning and investment.

Both chapters 3 and 5 include proposed corresponding arrangements for the implementation of these solutions.

We include supporting materials in five appendices:

- Appendix A lists the RSA functions administered by AEMO under the current rules.
- Appendix B provides further detail on the market price settings in the DWGM and STTM.
- Appendix C sets out the differences between how the problems are framed in the rule change request and how the Commission's has refined the problems as described in this paper.
- Appendix D compares the solutions proposed by the rule change request with those the Commission intends to progress.
- Appendix E lists out-of-scope issues raised by stakeholders in response to the consultation paper published in March 2025.

1.1 We seek stakeholder input on the proposed changes to the ECGS reliability framework

We are seeking your feedback on four proposed solutions which have been developed in response to stakeholder submissions on the consultation paper, and consultation with AEMO and the Australian Energy Regulator (AER).

We received 17 stakeholder submissions to the consultation paper. Stakeholder feedback informed subsequent analysis and the Commission's current thinking on the issues and proposed solutions presented in the rule change request. We have included references to the relevant stakeholder feedback throughout this directions paper. At a high level, stakeholder feedback informed our subsequent analysis and current thinking by:

- highlighting a need to refine the problems to be addressed
- supporting the need for a more objective risk or threat signalling mechanism
- supporting that an independent panel can provide a more robust, transparent and representative governance for future reviews of the STTM and DWGM price settings
- suggesting that the existing STTM and DWGM price settings have been mostly effective in managing some of the concerns raised by the rule change request
- recommending careful consideration of the proposed reliability standard and estimation of a value of gas customer reliability (VGCR).

The Commission proposes addressing the operational problem through a more sophisticated, tiered risk or threat signalling framework for AEMO to issue risk or threat notices to ECGS participants. This would enhance the current 'flat' (i.e., non-tiered) system, enabling AEMO and market participants to respond with measures proportionate to the nature of the risk or threat. We are seeking feedback on our proposal to use a probabilistic metric - such as the likelihood of shortfalls, or demand exceedance - to inform the tier levels of the framework. The Commission considers that these measures would better align with the purpose of the risk or threat notices to the ECGS, which are operational in nature and not intended for system planning.

To address the investment and planning problem, the Commission is considering:

1. establishing a Gas Reliability Committee to lead the review of the market price settings for the STTM and DWGM
2. a range of inputs for the Gas Reliability Committee to consider for the review of the market price settings
3. enhancing the GSOO and VGPR reports with additional information to support more targeted and efficient gas supply and infrastructure planning and investment.

We are seeking your feedback on these proposed tools that would strengthen the efficiency of the reliability signals provided by the STTM and DWGM market settings. In particular, we seek feedback on a range of factors to consider in the review of the market price settings, including the consideration of the 'willingness to pay' of relevant gas customers and market participants to avoid curtailment. The Commission considers that the measures can promote efficient investment in, and efficient operation and use of, covered gas services for the long-term interests of consumers while avoiding the additional complexity and cost associated with implementing an ECGS reliability standard and VGCR.

The feedback from stakeholders will help the Commission develop the proposed options, assess implementation costs and risks, and consider potential transitional arrangements before a draft rule determination is made in early 2026.

The Commission welcomes stakeholder views on any aspect of this paper and encourages the inclusion of evidence or case studies to support submissions.

1.2 Our interpretation of the concepts underpinning reliability and supply adequacy

In 2023, Energy Officials developed and implemented a framework to expand AEMO's powers and functions under what is now referred to as the stage 1 RSA reforms. The RSA function complements existing market-specific rules.[6] The stage 1 RSA reforms enhanced AEMO's powers and introduced tools to monitor, signal, and manage supply shortfalls within the ECGS.

The term 'RSA' is unique to the ECGS framework**.** While the NGL and NGR outline the RSA functions (see appendix A), they do not define the terms 'reliability' or 'supply adequacy'. In the rule change request, reliability in the ECGS is defined as matching demand and supply, considering the temporal and locational dimensions of gas supply and demand.[7]

To set the scene for this direction paper, the Commission considers it important to outline what we mean by 'reliability' and 'supply adequacy' so there is a shared understanding of these concepts in the discussion that follows. For the purpose of this directions paper, we consider that 'reliability' is about having gas supply adequacy and supply infrastructure operability so that consumers are supplied with the gas they require. This includes:

Supply (and capacity) adequacy – ensuring sufficient gas is available across the entire gas supply chain, including production, transmission, storage, and distribution infrastructure, to meet demand, where:

- Gas supply is the actual volume of gas (molecules) available for use, available from production facilities, LNG import terminals, storage facilities and even pipelines.

6 AEMO, About the East Coast Gas System (ECGS), assessed 24 July 2025.

7 Rule change request: ECGS reliability and associated settings, pp 32-33.

- Supply infrastructure capacity refers to the infrastructure's ability to deliver gas from a supply to a demand point. Capacity is a flow/throughput (measured in joules/unit of time) and exists in pipelines (transmission and distribution).

Supply infrastructure operability - means the supply infrastructure is able to operate in its normal operating state. This does not extend to infrastructure security, which we consider to be the protection of physical assets from damage, disruption, or compromise.

We acknowledge the reporting obligations under the NGR for facility owners or operators in the event of an RSA threat. Specifically, a bulletin board (BB) reporting entity for a BB facility must, as soon as reasonably practicable, notify AEMO of an event or circumstances relating to the BB facility of which the BB reporting entity becomes aware that affects, will affect or may affect the reliability of gas supply, including equipment failure. [8]

Even in the presence of an RSA threat, supply infrastructure security remains the responsibility of the infrastructure owner or operator. The RSA framework recognises this by requiring compliance with an ECGS direction to the extent compliance is consistent with a law of a participating jurisdiction.[9]

The security of supply infrastructure is governed by technical standards and regulations. Notably:

- Technical standards addressing a wide range of issues related to infrastructure security.[10] For example, the AS 2885 sets the safety requirements for designing, constructing, inspecting, testing, operating, and maintaining high-pressure pipelines.[11]
- Jurisdictional regulation may also set standards aimed at achieving the safe and reliable operation of the infrastructure in the jurisdiction.[12]

In developing the approach in this directions paper, the Commission has also taken into account that the NGL confers specific RSA functions to AEMO, but that AEMO does not have general responsibility for ensuring supply infrastructure security across the ECGS, noting that AEMO's role in Victoria is broader. From an operational perspective, the key RSA functions involve AEMO:

- monitoring, identifying and communicating actual or potential RSA risks or threats, and
- giving directions or exercising the trading function – but only if AEMO is of the opinion that the direction, or use of the trading function, is necessary to prevent, reduce or mitigate an actual or potential RSA threat it has identified.[13]

Within Victoria, at least in relation to the declared transmission system (DTS), AEMO's functions with respect to reliability are somewhat broader. AEMO's declared system functions extend to coordinating the interaction of facility operators for ensuring a safe, secure, reliable and efficient DTS.[14] AEMO also has related market operation and planning functions and the power to give directions to maintain and improve the reliability of the supply of covered gas in the DTS or declared distribution system.[15]

8 NGR rule 689 (4).

9 NGL s 91AF(6).

10 The NGL part 1.2 defines pipeline reliability standard to means a standard imposed by or under an Act of a participating jurisdiction, or any instrument made or issued under or for the purposes of that Act, relating to the reliable haulage of covered gas in that jurisdiction

11 The Council of Australian Governments in its communiqué of 25 February 1994 agreed to adopted AS 2885 as the national standard for pipeline construction to achieve uniform national pipeline construction standards, according to the Australian Pipelines and Gas Association.

12 Jurisdictional regulation is explicitly recognised in the NGL through the requirement that a scheme pipeline service provider should be provided with a reasonable opportunity to recover at least the efficient costs the service provider incurs in, inter alia, complying with a regulatory obligation or requirement. NGL s 24(2). A regulatory obligation or requirement' covers a pipeline safety duty, a pipeline reliability standard and a pipeline service standard. The ECGS directions framework has been designed to accommodate conflicting jurisdictional requirements (NLG s 91AD(4) and the obligation to comply with a direction is subject to the law of participating jurisdiction; (NGL s 91AF(6)).

13 NGL s 91AD(2) and NGL s 91AF(2).

14 NGL s 91BA(1)(e).

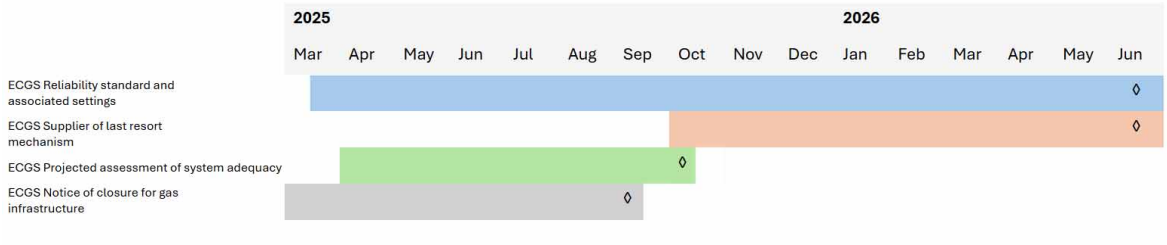
Question 1: Do you have any feedback on our interpretation of the reliability and supply adequacy concepts above?

1.3 The Commission has considered the links with the other three rule change requests for ECGS RSA

This rule change request is part of a suite of ECGS rule change requests currently before the Commission, including the ECGS Supplier of Last Resort (SoLR) mechanism, and improved information disclosure requirements via the ECGS Notice of Closure and the ECGS Projected Assessment of System Adequacy (PASA).[16]

See Figure 1.1 for a current timeline of these rule change requests, noting that milestones indicated in the timeline may vary over the course of the rule change process.

Figure 1.1: Indicative timelines of ECGS rule change projects as of August 2025



Source: AEMC

Note: These timelines are indicative and may vary over the course of the rule change project. The rhomboid at the end of each timeline represents the statutory completion date for standard rule change projects (noting that the ECGS reliability standard rule change issued extension notices for both draft and final determinations).

The Commission is mindful of the proposed linkages between these rule change requests and will ensure that the final design of the ECGS RSA framework considers those linkages.

1.4 The Commission must act in the long-term interest of consumers

In carrying out it's functions, the Commission must have regard to the National Gas Objective.[17]

For this rule change, the relevant energy objective is the National Gas Objective (NGO):

The NGO is:[18]

> to promote efficient investment in, and efficient operation and use of, covered gas services for the long term interests of consumers of covered gas with respect to—
>
> (a) price, quality, safety, reliability and security of supply of covered gas; and
>
> (b) the achievement of targets set by a participating jurisdiction—
>
> (i) for reducing Australia's greenhouse gas emissions; or

15 NGL s 91BC(1)].

16 For more details on these rule changes, please check the project webpages for ECGS supplier of last resort mechanism, ECGS notice of closure for gas infrastructure, ECGS projected assessment of system adequacy. As of August 2025, consultation with ECGS supplier of last resort has not commenced.

17 Section 291(1) of the NGL.

18 Section 23 of the NGL.

(ii) that are likely to contribute to reducing Australia's greenhouse gas emissions.

The targets statement, available on the AEMC website, lists the emissions reduction targets to be considered, as a minimum, in having regard to the NGO.[19]

1.5 We considered four assessment criteria for this rule change

The Commission must consider how to improve the reliability framework through amendments to the NGR against the legal framework.

We identified the following criteria to assess whether the proposed rule change, no change to the rules (business-as-usual), or other viable, rule-based options are likely to better contribute to achieving the NGO:

- safety, security and reliability
- principles of market efficiency
- implementation considerations
- principles of good regulatory practice.

These assessment criteria reflect the key potential impacts (costs and benefits) of the rule change request, for impacts within the scope of the NGO. Our reasons for choosing these criteria are set out in section 4.2 of the consultation paper.

Only the Australia Pacific LNG (APLNG) provided feedback to the assessment criteria, noting agreement with the above selection and adding '[the] AEMC should also consider: relevancy—is there a genuine problem that needs to be addressed?, urgency—do the proposed measures need to be put in place now?, coherency—will the proposed measures contribute to a more cohesive reliability and supply adequacy framework?'[20]

The Commission considers these questions to be appropriately captured by principles of good regulatory practice and implementation considerations criteria.

19 Section 72A(5) of the NGL.

20 APLNG submission to the consultation paper, p 10.

2 We have considered the problems in the operational timeframe

As outlined in the rule change request, there is a growing risk that AEMO, market participants and policymakers make inefficient reliability decisions, raising costs for both participants and consumers.[21]

The proponents identified several issues in the current framework that drive these risks. For example, the ECGS lacks a robust basis for assessing trade-offs between the cost of reliable supply and the cost of supply disruptions, and AEMO has limited guidance on when and how to exercise its RSA function.[22] In the proponents' view, these issues could be addressed by introducing a number of tools to support gas reliability in the ECGS.[23]

The Commission agrees with the proponents that, as the ECGS becomes more exposed to tightening supply and demand conditions, the current RSA framework may not support efficient outcomes. This may result in disproportionate responses to reliability risks or threats.

At the same time, the Commission recognises that the issues raised are multifaceted. To enable targeted policy solutions, we have refined the issues into two distinct problems:

1. **The operational problem.** This is related to the potential for inefficient management of reliability risks within a time frame from intraday to 12 months. It includes supply adequacy and supply infrastructure operability considerations, consistent with AEMO's RSA function under Part 27 of the NGR.
2. **The investment and planning problem.** This is related to the risk of inefficient investment and planning in gas supply, services and infrastructure to meet demand. This includes assessing the role of tools such as market price settings, the Gas statement of opportunities (GSOO) and tools to support the efficient reliability outcomes.

Our analysis of the operational problem is set out below. We have assessed the issues outlined in the rule change request, drawing on stakeholder feedback and engaging with market bodies. We assess the investment and planning problem in chapter 4.

2.1 The current risk or threat notice framework may lead to inefficient reactions from market participants

The current risk or threat notice framework does not provide a clear and objective indication of the nature and severity of reliability risks or threats. Under the current arrangement of the 'flat' (i.e., non-tiered) risk or threat notices, AEMO is required to communicate the nature and magnitude, duration and location of the identified risk or threat in the related notice. However, without an objective framework designed to elicit informed and efficient responses, there may be unintended perceptions in the market of how severe a potential risk or threat may be and the changing nature of those risks or threats. This may lead to disproportionate reactions from market participants. Having an objective risk or threat signalling mechanism would improve the transparency of how and when AEMO is likely to act, or when market participants need to respond and how.

21 Our consultation paper clarifies that 'inefficient' in this context refers to: a) insufficient expenditure, when consumers would be willing to pay more for greater reliability, b) too much expenditure, when consumers would prefer to pay less and have lower reliability, c) expenditure on the wrong things, meaning that more money than necessary is spent to deliver particular reliability outcomes. AEMC, Consultation paper - National Gas Amendment (ECGS reliability standard and associated settings) Rule, p 4.

22 Rule change request, p 7, p 14, p 22.

23 Rule change request, pp 8-10.

In response to our consultation paper, stakeholders provided widespread support for a more objective risk or threat signalling framework to better inform market-led responses.

- Jemena considers that the proposed risk or threat signalling mechanism should allow AEMO to better communicate reliability and supply adequacy risks or threats to the market. They note that effective risk or threat signalling should distinguish between reliability risks across different time horizons to allow for appropriate and timely market engagement and responses.[24]
- APLNG and the AEC recommend that the NGR prescribe the criteria to guide the ECGS procedures. APLNG further notes that having a well-defined criterion may not require a reliability standard.[25]
- AEMO considers it appropriate for the risk or threat signalling criteria to be set out in AEMO's ECGS procedures, also informed by the framework established in the NGR. AEMO also supports the development of multiple levels of alerting.[26]
- Origin notes that the current rules and AEMO's procedures do not sufficiently define what constitutes a system reliability risk or threat; therefore, current signalling mechanisms fail to provide participants with a clear and objective understanding of the potential severity of risks or threats.[27]
- AGL supports enhancements to AEMO's existing risk or threat notices. AGL considers that clearly informing the market about potential supply adequacy risks will increase the likelihood of market-led solutions, reducing the need for direct intervention by AEMO under the RSA framework.[28]

2.2 The 2024 risk or threat notices highlight the need for an objective framework

In 2024, AEMO used stage 1 RSA tools to manage reliability risks in two instances:

1. An incident at the Queensland Gas Pipeline (QGP), which restricted supply into Gladstone.
2. Reduced gas production capacity and high gas-powered generation demand, driving a shortfall risk in the southern region of the ECGS.

2.2.1 The QGP incident highlights the need to have flexible risk or threat notices

On 5 March 2024, AEMO issued a risk or threat notice in response to the QGP failure event. This notice remained active until 10 December 2024.

This risk or threat notice resulted from a pipeline rupture incident to the QGP occurring between the Rolleston compressor station and Oombabeer, disrupting the normal supply of gas to Gladstone, Bundaberg and Maryborough. The QGP is a transmission pipeline located in central Queensland owned/operated by Jemena. Jemena informed AEMO of a pipeline rupture on the QGP, via a red linepack/capacity adequacy indicator on the Gas Bulletin Board (GBB).[29] AEMO proceeded to issue 31 directions to facilitate supply and curtail supply to end users of gas from 5 to 17 March 2024, and an additional three directions to maintain supply to end users between gas

24 Jemena submission to consultation paper, p 2.
25 Submission to consultation paper; APLNG submission, p 6 and AEC submission p 4.
26 AEMO submission to consultation paper, p 2.
27 Origin submission to consultation paper, p 3.
28 AGL Submission to consultation paper, p 6.
29 A red indicator means one of the following conditions is met: (i) involuntary curtailment of 'firm' capacity is likely or is happening, or (ii) linepack has, or is forecast to, drop below minimum operating levels.

day 8 March and 10 December 2024. On 17 March, Jemena repaired the QGP and stated that the pipeline could operate at a reduced pressure (i.e., reduced capacity). On 7 May 2024, AEMO published a preliminary post-intervention report to detail the directions AEMO had taken. Jemena advised AEMO that QGP would be restored to its full firm contracted capacity from 10 December 2024. AEMO subsequently revoked all directions related to the QGP failure event and published a revocation of the ECGS risk or threat notice.

The 'flat' nature of the risk or threat notice limited AEMO's ability to communicate the changing magnitude or nature of the risk or threat (i.e., the risk was reducing, but the risk or threat notice could not communicate this). This event highlighted two key gaps in the current risk or threat notice framework:

- The absence of objective criteria for AEMO to be able to categorise the initial risk or threat.
- Lack of ability for AEMO to downgrade the categorisation (level) as a result of market participants' responses.

2.2.2 The risk or threat notices are unable to distinguish between changing risk or threat levels

On 19 June 2024, AEMO issued a system-wide risk or threat notice due to reduced gas production capacity, declining Iona storage and high gas-powered electricity generation demand.[30] This notice was intended to remain in place until 30 September 2024. AEMO warned of potential peak-day shortfalls under certain demand-supply scenarios. In this instance, AEMO did not exercise directions or trading functions as the market responses were enough to mitigate the risk or threat. AEMO proceeded to revoke the risk or threat notice on 23 August 2024 as demand-supply trends improved. However, the 'flat' notice meant that there was less opportunity for AEMO to communicate the changing nature of the risk or threat.

The Commission agrees that the 'flat' nature of the current risk or threat notices may fail to effectively communicate the likelihood and magnitude or severity of the risk or threat (i.e., there is a risk of overstating or understating the risk or threat level). This can then lead to participants making inefficient decisions about how to respond to such risks or threats.

2.3 There is no clear and objective trigger for AEMO's response to reliability risks or threats

The NGL, Part 6, Division 1A - AEMO's east coast gas system reliability and supply adequacy functions include the ability for AEMO to:

- give directions to relevant entities to prevent, reduce or mitigate an actual or potential threat identified by AEMO to maintaining and improving the reliability and/or supply adequacy of covered gas in the ECGS
- trade in covered gas or to purchase pipeline services or services provided by a compression service provider, blend processing service provider or a storage provider to prevent, reduce or mitigate an actual or potential threat to the extent AEMO considered necessary to maintain and improve reliability and supply adequacy of covered gas in the ECGS.

AEMO conducts internal assessments to monitor trends in the supply and demand of covered gas in the ECGS. These assessments inform when risk or threat notices may be issued, and when exercising of the directions or trading function in relation to threats may be required. There is limited guidance in the NGR or ECGS Procedures to indicate what AEMO needs to consider when

30 AEMO. 2024. ECGS Risk or Threat Notice.

deciding whether to exercise directions or trading functions to prevent, reduce or mitigate an actual or potential threat.

Origin noted in its submission that it is unclear when AEMO will issue directions, as there is no objective system shortfall threshold to first exceed. The lack of a clear threshold also means the magnitude, extent and duration of these interventions are uncertain. This can result in difficulty for participants to trade confidently in the market. For example, a participant may have less incentive to take a storage position if AEMO is likely to direct gas at that facility.[31]

AEMO's RSA functions include issuing directions and utilising the trading function under Part 27 of the NGR. A direction could mean actions such as increasing gas production, curtailing gas consumption, supplying gas from storage, and changing pipeline flows to redirect gas to critical demand areas or ensure system stability. The trading function could be used to cover an impending supply gap via the following ways: purchase or sell (i.e., trade) covered gas, procure gas services, market trading, and procure services from industry. These functions are detailed with relevant examples in the ECGS - RSA Background paper.[32]

31 Origin submission to consultation paper, p 1.

32 ECGS Reliability standard and associated settings. p 21. 2025. Background Paper.

3 We are proposing solutions to address the operational problem

To address the operational problems identified inchapter 2, we propose an objective, fit-for-purpose, tiered framework that supports AEMO's identification, communication and management of reliability risks or threats. This will include using a probabilistic metric to determine the risk or threat levels.

Whilst the rule change request suggested using the proposed reliability standard to inform tiers for risk or threat notices, we do not consider this necessary.

Proposed features of the framework:

- The framework would have at least three tiers, and we are seeking feedback on the naming and structure of these tiers.
- AEMO would have the flexibility to define the specific criteria for each risk or threat notice level in the ECGS procedures following consultation with industry.

We are seeking your feedback on the proposed approach.

3.1 We propose a risk or threat signalling framework that uses tiers and a probabilistic metric

During the RSA stage 1 reforms in 2023, the risk or threat signalling framework was introduced to the ECGS within Part 27 of the NGR. Under the current arrangements, AEMO is required to include the relevant risk or threat notice criteria in its ECGS procedures. This approach provides AEMO with limited guidance on how it should assess and monitor the risks or threats.

As outlined in chapter 2, the Commission considers, in line with the rule change request, that the current risk or threat notice framework is not clear and objective. This can lead to disproportionate responses from market participants in the operational timeframe. During consultation, we received widespread agreement among stakeholders on this issue.

To address this, we propose to introduce a tiered risk or threat signalling framework informed by a probabilistic metric. This approach, which is aligned with the rule change request, aims to support efficient operational decision-making, enabling AEMO to:

- clearly communicate emerging reliability risks or threats to the market
- coordinate and seek responses from market participants to manage such risks or threats
- escalate or de-escalate the risks or threats as a result of those responses
- inform the proportionate response that might be required by AEMO to manage the reliability risks or threats.

3.1.1 We are proposing a probabilistic approach to understanding risks or threats to reliability

Based on AEMO's input and stakeholder feedback, we consider the probabilistic tiers as appropriate for the ECGS due to two gas system-specific features:

- A temporal separation between supply decisions and demand fulfilment. Pipeline transit times, combined with system linepack, mean that changes in supply are often realised at the demand points hours or even days later, depending on distance and network configuration.
- Location-specific shortfalls: reliability risks or threats are often localised (e.g., Victoria) rather than system-wide.

The outlook of the risk or threat notice framework would cover a twelve-month horizon, noting that the GSOO covers a longer time horizon to identify potential reliability risks or threats in the future.

A probabilistic approach also aligns with providing AEMO the ability to assess and communicate risks or threats (i.e., a risk-based framework) where the probabilistic metric represents the likelihood of the risk or threat. In addition to likelihood, AEMO would be able to consider other factors that also inform the level of risk or threat. Additional factors could include the magnitude of shortfall, location, duration and safety considerations, etc. These aspects can create a more comprehensive framework, as compared to a reliability standard metric which would not fully cover all possibilities of demand exceeding supply in the ECGS. By being a risk-based framework, the responses from market participants and AEMO can also be better sized against the magnitude of the risk or threat, as opposed to a binary breach/non-breached standard, which could create disproportionate responses. The framework also allows for responses to be progressively deployed and adjusted as the level of the risk or threat is escalated or de-escalated by AEMO.

Noting that all forecasts are subject to inaccuracies and information limitations, AEMO would forecast the probability of demand exceeding supply based on the information already available to them and additional information proposed in the draft ECGS Projected Assessment of System Adequacy rule change. The probability of demand exceedance could result from:

- reduced gas supply
- higher gas demand
- decreased deliverability
- planned or unplanned gas infrastructure outages.

The proposed approach leverages existing AEMO forecasting and modelling capabilities. These probabilities could be updated as frequently as daily, using data from the gas bulletin board, gas nominations, weather forecasts, etc. Data from the short-term (ST) and medium-term (MT) Projected assessment of system adequacy (PASA) can also support this analysis.

Examples of existing probabilistic metrics that are used in the NEM and other energy systems include:

- Loss of load probability (LoLP): This indicates how often a system is not able to satisfy the load demand or the mean load percentage not met by the system. It is defined as the ratio of total energy deficit to the total load demand during a specific time period.[33]
- Probability of exceedance (PoE): PoE is the likelihood that a maximum or minimum demand forecast will be met or exceeded. A 10% PoE maximum demand forecast, for example, is expected to be exceeded, on average, one year in 10, while a 90% PoE maximum demand forecast is expected to be exceeded nine years in 10.[34]

Question 2: Do you consider the proposed probabilistic approach can support a clearer and more objective risk or threat signalling framework?

Why/Why not?

Do you have any feedback on how this metric can effectively capture the probability of demand exceeding supply?

33 ScienceDirect. 2016. Loss of Load Probability.

34 AEMO. 2019. Electricity Demand Forecasting Methodology Information Paper.

3.1.2 We are proposing a tiered framework

The tiered framework would provide different risk or threat bands that are intended to communicate and elicit responses proportional to the risk or threat. The proposed solution would provide at least three levels of risk or threat notices, thus allowing AEMO to clearly communicate the level of reliability risk or threat and escalate or de-escalate the respective levels of those risks or threats as required.

The proposed framework would combine enhanced clarity with flexibility to provide AEMO with a risk assessment and communication tool that can better inform the market about reliability risks or threats. For example, with each risk or threat notice, AEMO could provide information on the underlying drivers of the risk or threat and its related probabilistic metric (likelihood). See an illustrative example of the information an 'early warning' notice could include:

*A rolling 14-day forecast shows a 7 % probability of demand exceeding supply (7>5% —> early warning) with Iona Underground Gas Storage (UGS) inventory falling below 11,500 TJ before 2 July 2026**

The tier levels would allow for a flexible progression of risk or threat notices. Notices may also be initially issued at any level, depending on the level of risk or threat as informed by the probabilistic metric. Some situations may warrant AEMO issuing an emergency notice immediately; an example of this may be the sudden rupture of a major pipeline, causing immediate supply disruptions to the surrounding regions. Furthermore, the framework can also be used in a de-escalation fashion to signal easing risks or threats (e.g., shifting from 'alert' to 'early warning').

In our illustrative example of the framework below (see Table 3.1) we have adopted the tier names proposed in the rule change request and set the tier thresholds based on increasing probabilities of supply not meeting demand. Given that 'loss of load' is a term used for electricity systems instead of gas system, we used the term 'probability of shortfall' to represent an illustrative probabilistic metric that could be applied to the ECGS. In this illustrative example, a level 1 risk or threat notice could communicate a low-level reliability risk to market participants. This type of risk or threat notice could signal that close monitoring is advised. On the other hand, a level 3 risk or threat notice would signal a higher reliability risk or threat that may require immediate action from market participants or AEMO.

Table 3.1: Illustrative example of risk or threat signalling framework using a probabilistic metric

Level	Probability of shortfalls
1 - Early Warning	5 - 15% probability of supply not meeting demand (if no action is carried out)
2 - Alert	15 - 50% probability of supply not meeting demand (if no action is carried out)
3 - Emergency	50 - 100% probability of supply not meeting demand (if no action is carried out)

Note: This is provided as an example only to highlight how the framework may look. We are not proposing that probability shortfalls will be included in the NGR, and it would be up to AEMO to consult on and implement the framework.

Question 3: Do you consider the proposed tiered approach can support a clearer and more objective risk or threat signalling framework?

Do you have any comments on the naming of the tiers or the illustrative examples, noting that AEMO would consult on the final framework?

3.1.3 We considered the methods outlined in the rule change request

In proposing the probabilistic tiered risk or threat signalling framework, we explored the two models outlined in the rule change request:

1. A gas equivalent of the Lack of Reserve (LOR) framework in the NEM, which includes three escalating tiers of LOR notices - LOR 1, LOR 2 and LOR 3.
2. The European gas framework, which uses tiered threat levels - early warning, alert and emergency.

The LOR framework is deterministic, with a focus on measuring resource levels against reserves, whilst the EU approach is probabilistic and instead relies on periodic risk assessments. We consider that the ECGS shares similar locational and temporal constraints with the EU gas network, which restricts gas movement, thus differing from what we observe in the NEM. Therefore, we propose that a probabilistic risk-based approach is better suited to the ECGS.

The LOR framework features

The LOR framework is deterministic, flagging when reserves fall below a secure threshold. As noted by the proponent, there are three escalating tiers of LOR notices that are used to signal different threat levels in operational timeframes:

- LOR 1: Signals actual or forecast reduction in pre-determined electricity reserves (i.e. below two largest supply resources in state) but no expected impact on power system security or reliability.
- LOR 2: Signals actual or forecast tightening of electricity reserves (i.e. below the single largest supply resource in a state) but no expected impact to the power system.
- LOR 3: Signals electricity reserves are, or are forecast to be, less than or equal to demand and that load shedding may be required.[35]

It is important to note that in the NEM, the LOR notices are not linked to the NEM reliability standard. AEMO discusses the reason for this divergence in the Reliability Standard Implementation Guidelines:[36]

> "In the ST PASA timeframe, it is not realistic to consider USE over a financial year in a seven-day ST PASA timeframe. As ST PASA has access to short-term weather and participant offer information, it therefore has less input uncertainty than is the case for longer term forecasts such as MT PASA and ESOO. Given the proximity to operational timeframes, intervention decisions aim to minimise expected USE, with intervention being considered to address a forecast LOR2 or LOR3."

35 DCCEEW. 2024. p 21. ECGS Reliability standard and associated settings. Rule change request.

36 AEMO. 2025. Reliability Standard and Implementation Guidelines.

This framework measures reserve levels directly against the largest supply resources, which we have determined is not well suited to the ECGS given locational and temporal constraints on gas transport to demand centres.[37]

The LOR framework demonstrates that a tiered risk or threat signalling framework effectively communicates escalating levels of reliability risks across operational timeframes without being tied to a reliability standard. However, due to the key differences between gas and electricity, a deterministic metric to form the criteria for each risk level may not be the best approach for the ECGS.

The European Union (EU) approach

The proponents' preferred approach is to follow the EU threat-signalling framework. This is broadly aligned to our proposed risk or threat signalling framework using a probabilistic metric to inform tiered risk or threat levels, but without the introduction of an unserved gas (USG) or peak day deliverability reliability standard. The EU approach also utilises a tiered approach to communicate escalating risk levels.

The EU approach is probabilistic, using a minimum gas infrastructure standard and gas supply standard to form inputs into risk assessments. These standards differ from the proposed dual reliability standard (i.e., USG and peak day deliverability).

The minimum gas infrastructure standard is based on an N-1 standard, which states that if there is a disruption on the single largest gas infrastructure in an area, the remaining infrastructure in that area must be able to satisfy the total gas demand during an exceptionally high-demand day, that could probabilistically occur every 1-in-20 years. The infrastructure standard can also be fulfilled if the relevant authority can demonstrate that a disruption of the gas supply under these circumstances could be adequately managed through market-based demand-side measures.[38]

The gas supply standard requires supply to protected gas customers to be met during:

- extreme temperatures during a 7-day peak period that could occur 1-in-20 years
- any period of 30 days of exceptionally high gas demand that could occur 1-in-20 years
- for a period of 30 days in the case of disruption of the single largest gas infrastructure under average winter conditions.[39]

The risk assessments occur every four years and are conducted at the EU level for each member country. The infrastructure and supply standards are used to model a series of disruption scenarios, which then form part of the risk assessments. The outcome of these risk assessments then informs the development of preventative action plans and emergency plans, with emergency plans setting out what intervention will occur if a crisis is declared. These plans are also updated every four years.[40]

37 DCCEEW. 2024. p 27. ECGS Reliability Standard and Associated Settings. 5 July.

38 EU Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply and repealing Regulation (EU) No 994/2010, Article 5.

39 EU Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply and repealing Regulation (EU) No 994/2010, Article 6.

40 EU Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply and repealing Regulation (EU) No 994/2010, Article 7 - 11.

3.2 We consider that a flexible approach to implementation is needed

Our view is that the NGR, specifically in relation to the risk or threat signalling framework, can be changed to better guide AEMO's use of risk or threat notices whilst still allowing for the flexibility required in the ECGS procedures or guidelines.

At a high level, the Commission considers the implementation of the framework under the NGR could be as follows:

- outline the need for tiered levels (e.g., number of tiers and corresponding names)
- require AEMO to define the specific criteria for each of the risk or threat levels in the ECGS procedures
- require AEMO to publish the probabilistic metric values and other relevant information associated with each risk or threat notice.
- maintain AEMO's discretion to convene a Gas supply adequacy and reliability (GSAR) conference in accordance with the current rules.

In addition, the ECGS procedures or guidelines could:

- specify the criteria AEMO must consider when deciding whether to issue directions to market participants to prevent, reduce or mitigate an identified threat.
- outline when AEMO considers it necessary to convene a GSAR conference.

At this point, we have not considered if and how the directions or trading functions could be linked to the tiered levels in relation to threats. We are seeking your feedback on whether the NGR should prescribe how AEMO would link those functions to the tiers in the risk or threat signalling framework.

Question 4: Do you consider the proposed implementation framework provides the right balance between NGR and ECGS procedures?

Should the NGR set the number of tiers AEMO will be required to implement?

Should the NGR provide a link between the tiers and the directions or trading functions?

3.3 We propose decoupling the reliability standard from the risk or threat signalling framework

Given that our proposal provides escalating levels of risk or threat notices for AEMO to publish, depending on the likelihood, nature and severity of the identified risk or threat, we do not consider there is a benefit in linking it to a reliability standard.

We do not consider that the proposed dual reliability standard (USG and peak day deliverability) is well suited to guiding short-term operational decision-making. A dual reliability standard informing a risk or threat signalling framework would likely result in:

- ambiguity, from trying to make operational decisions based on two complex metrics
- poor responsiveness, as the standard is not calibrated for short-term issues
- inefficiencies, by distorting the role of tools meant to address fundamentally different problems.

Question 5: Do you have any additional feedback on the proposed risk or threat signalling framework, which does not include a reliability standard?

4 We have considered the problems in the investment and planning timeframes

This chapter sets out the Commission's consideration of the investment and planning problem, which is related to the risk of inefficient investment and planning decisions in gas supply and infrastructure capacity to meet demand.

We have assessed the role of reliability tools such as the price settings for the STTM and DWGM, information provided by the GSOO and VGPR and other tools to support efficient reliability outcomes in the ECGS. The Commission agrees that there are opportunities to support investment and planning decisions in the ECGS, which are further discussed in chapter 5.

4.1 There are risks of inefficient investment and planning decisions to address reliability risks or threats

The 2025 GSOO forecasts peak day gas shortfalls from 2028, with longer-term supply gaps emerging from 2029 in southern Australia. Gas production in southern states is declining faster than demand, which highlights the need for new investment in supply to meet forecast demand.[41]

The rule change request highlights that there is a concern that inefficient investment decisions could be made in the ECGS in response to these forecast shortfalls. The proponents consider that, despite the existing RSA framework, AEMO and market participants may make inefficient trade-offs between the cost of maintaining reliable gas supply and the cost of supply interruptions.[42]

The rule change request also describes that it can be prohibitively expensive and inefficient to maintain 100% reliability and supply adequacy at all times, particularly if it requires costly infrastructure to be built that is only expected to be used on rare occasions. A balance must therefore be struck between the costs of providing reliability and the costs that gas users, market participants, and potentially the government can incur as a result of supply disruptions.

The Commission agrees with the proponents that there are opportunities to support investment and planning decisions in the ECGS. The rest of this section illustrates the role that the STTM and DWGM price settings play for short and long-term reliability and sets out the Commission's considerations on the materiality of the problem.

4.1.1 The market price settings are designed to serve a number of functions

The market settings in the DWGM and STTM are designed to help manage market participant financial risk, support reliability, influence capacity investment, and guide resource allocation:

- The Administered Price Cap (APC) and Cumulative Price Threshold (CPT) limit unmanageable financial risks to market participants. These settings help participants, including retailers, to manage risk during prolonged or extreme market stress by limiting exposure to excessive price volatility.
- The Market Price Cap (MPC) sets the maximum price that gas can be traded for in the DWGM and STTM under normal operating conditions. It allows prices to reflect scarcity and send efficient investment and demand-response signals, while preventing them from reaching inefficiently high levels before the APC is triggered.

41 AEMO, Gas Statement of Opportunities. March 2025. p3.

42 EGCS reliability standard and associated settings rule change request, p 40. See Rule change request here.

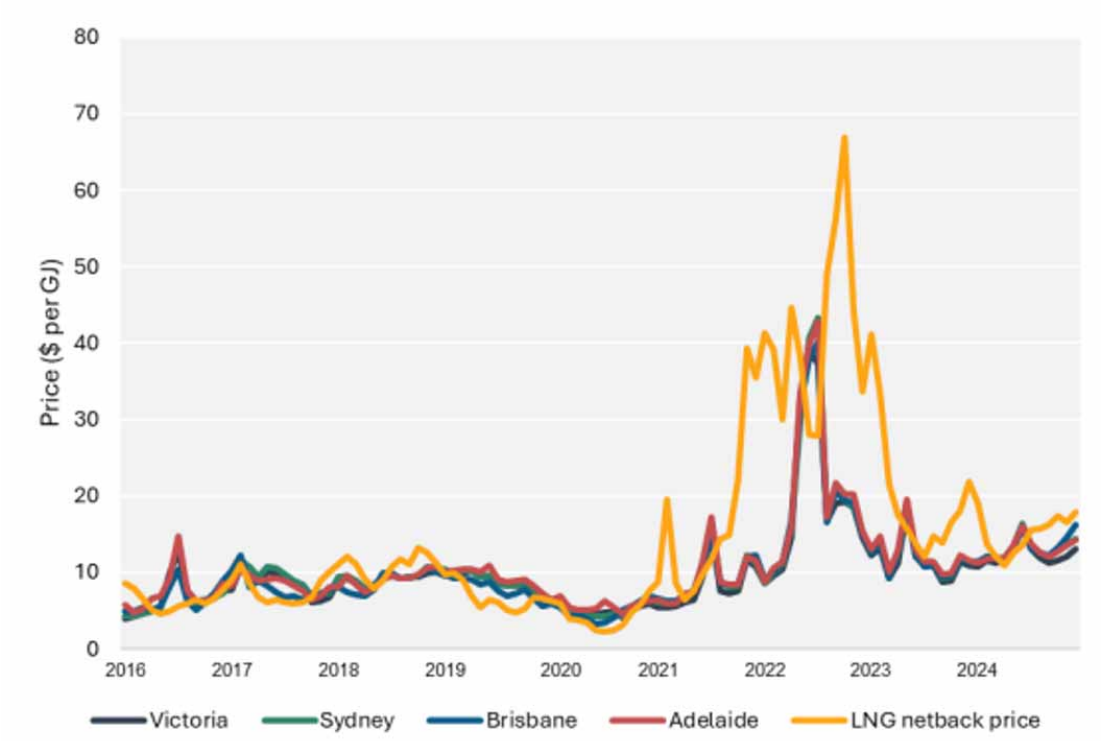
Prices change in facilitated markets in response to shifts in supply and demand for gas. In the short term, supply may not be able to increase quickly due to capacity constraints or the time required for investment. In these cases, if there is an increase in demand, prices will rise. The MPC limits how high prices can go in the DWGM and STTM. See appendix B for more information on the price settings in the DWGM and STTM.

The prices, bound by the market price settings, can influence investment in:

- Production: Sustained periods of high prices, or expected high prices, can incentivise investment in new gas production or the expansion of existing fields, as they improve the commercial viability of trading gas in these markets.
- Demand response: High prices, or expected high prices, can encourage large users to invest in equipment, systems and processes that allow them to reduce consumption during peak price periods, freeing up supply for other users and improving the supply-demand balance.
- Storage: Market settings influence how demand and supply respond to shocks via price signals, guiding investment in storage. High and volatile prices can create arbitrage opportunities across time, making investment in storage infrastructure more attractive. Storage helps smooth out price shocks and supports system reliability. When market settings limit how high prices can go, this can dampen price volatility and, hence, investment.
- Transmission: Volatility and regional price differences can signal the need to relieve congestion or improve flow paths across the gas network. This informs long-term investment in pipelines to move gas efficiently to where it's most valued. When the market settings limit how high prices can go, this can weaken price signals for where and when gas is most valued.

Box 1: The role of the market price settings to date in the STTM and DWGM

The MPC is currently set at $400/GJ for the STTM and $800/GJ for the DWGM and has not been reached in either markets for 15 years. This indicates that the existing levels of investment in supply and supply infrastructure have been sufficient to meet demand without binding the settings.



The only recent example of the market settings binding was during winter 2022, when the CPT was breached, triggering the APC. This event was exceptional, driven by high international gas prices, unplanned generator outages, and cold-weather demand spikes.

Source: AER. (2025). Downstream spot markets focus report. AER analysis of DWGM and STTM data and ACCC LNG netback data. See here.

The impact of the price settings on investment decisions is unclear

The rule change request suggested that if the STTM and DWGM market settings do not reflect a reliability standard or the value customers place on reliability, they may fail to incentivise sufficient investment in supply, infrastructure, and demand response over the medium to long-term.[43]

While the market settings and spot prices can influence investment by signalling capacity constraints or arbitrage opportunities, it is unclear how material this impact is in practice. In the Commission's view, investment decisions in the ECGS are also shaped by:

- long-term demand certainty (e.g. pace of electrification, industrial gas use)
- policy and regulatory stability (uncertainty deters investment)
- infrastructure access (pipelines, storage, processing).

For gas supply, the market settings may shape expectations of peak revenues but are secondary to structural and policy factors. For example, in its interim update on east coast gas markets in June 2025, the ACCC noted that "[p]roducers have said that they paused investment in and

43 Rule change request: East coast gas system reliability standard and associated settings, p 17.

production of gas because they considered there was too much regulatory uncertainty over 2022-23 for them to be confident to commit capital and undertake production expenditures.[44] It further noted that governments could support efficient and timely gas supply by addressing, among other things, regulatory barriers to investment and confirming the role of gas during the energy transition.[45]

Investment in new supply is also primarily underwritten by long-term international export contracts (often 30-year agreements linked to international prices), though spot price expectations may influence whether additional supply (above their contractual export volumes) is offered to the domestic market or kept in the ground for later use.

Unlike the market settings in the NEM, which have the objective of driving long-term investment, the gas markets do not have this as a primary driver. Stakeholder feedback to the consultation paper reinforces this view on the impact of the market settings on investment decisions. In its submission, AGL noted that the STTM and DWGM were designed primarily for efficient short-run price discovery, operational balancing, and system stability and not as a primary driver of long-term investment. It added "[w]hile these frameworks incorporate scarcity pricing – and can therefore support investment indirectly – this was not their primary design objective".[46]

Unlike the NEM, where market settings have an objective of driving long-term investment, in the gas markets, settings are not primary drivers of investment.[47]

4.1.2 There are opportunities to ensure the market settings remain fit-for-purpose

The Commission considers that although there have been few events where the market settings have been triggered, it is important that these settings are calibrated to support efficient investment signals, even if they play a small role in overall investment decisions.

We also acknowledge the importance of monitoring the level of the MPC, CPT and APC given the events in June 2022 and the likelihood of tightening supply and demand conditions in the future. For instance, the relatively low level of the CPT may warrant review to ensure the framework remains fit-for-purpose in a changing market environment.

Any future review should ensure that the settings consider the trade-offs between reliability and affordability, and the cost of supply vs the cost of disruption. This will help deliver the outcomes being sought by the proponents in the rule change request. See chapter 5 for more information.

4.1.3 There is a perceived conflict of interest in AEMO reviewing the market settings

Under NGR Rule 492, AEMO must review market settings in the STTM within six months of the NEM Reliability Panel's review of the NEM reliability standard and market settings. In contrast, market setting reviews for the DWGM have historically been conducted at AEMO's discretion.

Stakeholders have raised concerns about AEMO's dual role as both market operator and reviewer, citing potential conflicts of interest.[48] They also argue that reviews of DWGM market settings should be made mandatory to ensure greater transparency and accountability. To address these concerns, the rule change request proposes that the AEMC be responsible for reviewing the price settings.

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44 ACCC, Gas Inquiry 2017-2030 - Interim update on east coast gas markets, June 2025, p 11.
45 Ibid, p 11.
46 AGL submission to consultation paper, pp 4-5.
47 See appendix B.
48 ECGS reliability standard and associated settings, Rule Change Request, pp 19, 26 and 51.

4.2 There are opportunities for the GSOO and VGPR to provide targeted information

The GSOO and VGPR are long-term monitoring and communication tools intended to facilitate more informed and efficient market/industry investment and planning decisions. The Commission supports the need for more targeted information to be included in the GSOO and VGPR amid tightening supply and demand conditions, policy uncertainty and increasing interdependence between the ECGS and the NEM.

The GSOO and VGPR provide investment signals by outlining the adequacy of gas supply and supporting infrastructure to meet forecast demand across various scenarios and identifying where new supply or infrastructure may be required. There are increasingly high levels of uncertainty in the forecasting of gas supply and demand in the GSOO and VGPR. Due to the:

- rapidly evolving nature of the ECGS and the NEM
- increasing difficulty of establishing a realistic system demand trajectory.

Gas and electricity markets are increasingly interdependent. This highlights the need for greater information transparency to improve efficiency and planning in both markets. Currently, the GSOO includes a peak day deliverability metric with reliability forecast disaggregation limited to the north-south split.

The rule change request noted that AEMO's forecasts point to ever-increasing system resilience risks.[49] However, AEMO is not required to include the impacts of credible infrastructure failures when undertaking its supply adequacy assessments. During consultation, stakeholders noted that including an assessment of system resilience risks in both the GSOO and VGPR — without adding a burden to industry—could support more informed and efficient planning and investment decisions.[50]

49 The Rule change request, p 2, states that the term system resilience is used to refer to the ability of the system to limit the extent, severity and duration of any reliability or supply adequacy event.

50 APLNG submission to consultation paper, p 7.

5 We are proposing solutions to address the investment and planning problem

The Commission considers that it is critical that the market settings in the DWGM and STTM continue to be regularly reviewed to ensure they remain fit-for-purpose for the expected future market conditions and the increasing risk of tighter supply and demand conditions in the ECGS. Any review of the settings should consider a range of factors, which may include the willingness to pay (WTP) for reliability for certain gas customers. Considering WTP of certain gas customers may allow the market settings to better balance the trade-off between the cost of a reliable supply of gas and the cost of supply interruptions while also recognising the unique features of the gas markets.

We also consider that a more streamlined market settings review can be achieved through an approach where all relevant inputs to the market settings are considered as part of the same reviewing exercise. This is different in comparison to the approach proposed in the rule change request, where a VGCR value would be calculated and reviewed by the AER to then inform a reliability standard, which would then inform the review of the market settings. We also do not consider that a reliability standard for the ECGS is needed to inform the future market price settings reviews.

We are proposing four improvements to increase longer-term transparency and information provisions, which includes that AEMO:

- use a probabilistic metric for shortfall forecast in the GSOO/VGPR
- disaggregate the reliability forecast beyond the current north/south split
- include an assessment of credible risks to system resilience in GSOO/VGPR
- develop and consult on gas forecasting guidelines (rather than the AER).

5.1 The market price settings should continue to be reviewed to ensure they are fit-for-purpose in the future

AEMO's last review of the market price settings for the DWGM and STTM occurred in 2022.[51] This involved testing different scenarios where an event is triggered that produces market stress, and finding parameters that maximise market efficiency without representative participants facing unacceptable risks.[52]

Given the role the market price settings play in helping to manage the financial risks of market participants, support reliability, influence capacity investment, and guide resource allocation, it is critical that they continue to be reviewed on a regular basis to ensure they are fit-for-purpose for the expected future market conditions. See appendix B for further information on the role of the price settings. We also consider that there is an opportunity for the NGR to be updated to require a review of the settings of both the DWGM and STTM concurrently. Future reviews may also wish to consider whether it is necessary to align the settings in both markets.

51 AEMO engaged Market Reform Pty Ltd to assist them in carrying out the review.

52 Using a hypothetical example of each size and type of participant they simulated different gas market parameters across the scenarios to determine which parameters maintain an acceptable level of risk (no more than 500 days lost profit) across participants. See link here.

5.1.1 Willingness to pay could be considered in future reviews

In any review of the market price settings, there are a range of factors that will need to be taken into account. The Commission considers that by incorporating WTP into the process, consideration could be given to how the market settings could better support the trade-off between reliability and affordability in the ECGS.

Understanding WTP may be a valuable input into future reviews of the settings

In both electricity and gas markets, consumers cannot always signal the value they place on reliability. A price cap that considers consumers' WTP for reliability can be implemented to avoid consumers consuming at prices that exceed their WTP, with the cap making the efficient trade-off between the cost of supply and the value consumers place on reliability. If a price cap is set too high, some consumers may consume even when the supply cost exceeds the value they place on that consumption. This leads to an inefficient outcome. Conversely, if the price cap is set too low, prices may be unable to send strong signals of scarcity and induce efficient responses from market participants to manage tight demand and supply conditions, or the need for investment.

Historically, the market settings (particularly the MPC) have been sufficiently high such that the market almost always clears without the need for involuntary curtailment. However, in the presence of growing risks of tight supply and demand conditions, this might not continue to be the case and the market settings will need to support the efficient trade-off between reliability and affordability. Incorporating the WTP of consumers who cannot reveal the value they place on reliability and may face curtailment can help ensure the market settings consider all relevant factors and support an efficient trade-off between reliability and affordability. To date, reviews of the STTM and DWGM market price settings appear to have placed a stronger emphasis on other factors, such as managing the risk of cascading financial failure. Future reviews of the settings should consider all relevant factors and their importance in setting the market parameters.

As such, the Commission considers future reviews of the market settings (discussed in section 5.1) should consider a range of factors, including:

- the impact of the settings on consumer gas bills
- the financial stability of the market (or risk of cascading financial failure)
- operational and investment incentives
- the WTP of consumers who cannot reveal the value they place on reliability and are at risk of curtailment.

The WTP of customers that cannot be reasonably load shed should not be considered

As discussed in the consultation paper, supply to the gas distribution system (customers who are beyond the 'city gate', typically residential and small commercial) cannot be turned off without significant safety risks and costs.[53] Because the costs of curtailing supply to these customers are so high, the associated risks would more appropriately be dealt with by regulatory or insurance tools, rather than through market settings. As a result, the Commission is of the view that their WTP is not a relevant consideration when setting the market parameters.

In light of these factors, we do not consider that a NEM-like VCR approach surveying residential and small commercial gas customers would provide a meaningful input into the gas market settings.

53 AEMC, Consultation paper. pp 30-32.

We would like stakeholder input on how the WTP of relevant customers could be discovered

Certain customers are already able to signal their WTP through the markets - those that participate via ex-ante bids, at least to the extent their WTP is below the existing MPC. However, there are also buyers in the short term markets who bid as 'price takers' (but could reasonably be curtailed), along with many customers who purchase gas through bilateral contracts.

We are interested in stakeholder views on how the committee examining the market settings (see section 5.3 on proposed governance) could discover the WTP of the relevant customers. This could include:

- a survey of targeted, relevant customer segments
- using information in bilateral contracts, such as compensation terms for non-delivery of gas, to infer the value different customers place on reliability
- using the WTP of GPG revealed through the NEM prices and settings as a proxy for the WTP of consumers who cannot reveal their value of reliability and can safely be load shed.[54]

As WTP would only form one factor in the market settings, we consider this should be a light-touch approach conducted by the relevant committee and not a standalone piece of work undertaken by the AER (see section 5.3 for more detail).

We are interested in your feedback on these options, including other approaches you may consider relevant. We are also interested in stakeholder input on whether WTP should both customers who purchase gas through the STTM or DWGM and customers whose gas does not transit through these markets, and the types of customers who might be captured in this group.

It is important to note that the Commission is not proposing that a methodology for considering WTP should be included in the NGR. It is important that the methodology remains open so it can adjust to changing market dynamics and conditions. However, we do consider it important to understand the possible options now, to help inform future reviews.

Question 6: Do you consider that it would be beneficial for the WTP of certain customers to have more weight in future reviews of the STTM and DWGM market settings?

Do you have any suggestions on how to best estimate the WTP of the relevant customers?

5.2 We do not consider a reliability standard is the right tool for the ECGS

As noted earlier, the rule change request outlined that the price settings could be set with regard to the proposed reliability standard. This is in line with the approach in NEM. However, in the electricity market, the reliability standard plays a defined role in supporting investment through the market price settings.

The Commission does not consider it to be proportionate to introduce the proposed NEM-style reliability standard to improve the market settings and ultimately achieve more efficient investment decisions. As we are proposing that the settings be assessed having regard to WTP and other relevant factors, this removes the need for the additional step of using a reliability standard. Considering WTP, instead of a NEM-like value of gas customer reliability approach, may allow the market settings to better support the trade-off between the cost of reliable supply of gas and the cost of supply interruptions by also recognising the unique features of the gas markets.

54 GPG are often the marginal bidder in gas markets when prices in electricity markets are high. They would have a high WTP for gas in order to earn revenue from supplying electricity.

As noted above, determining WTP in gas may look different to how the VCR is determined in the NEM, reflecting differences in the underlying infrastructure. While electricity is delivered through poles and wires and can be interrupted and restored relatively easily, allowing residential and small commercial electricity customers to be load shed when needed, gas is delivered through pressurised pipelines where interrupting supply incurs significantly higher costs and safety risks. Because the costs of curtailing supply to these gas customers are so high, the associated risks may be more appropriately dealt with by regulatory or insurance tools, rather than through market settings. As a result, the process for determining the WTP of relevant customers will likely look different to how VCR is determined in electricity as an input to the NEM reliability standard.

We also consider that the cost of developing and maintaining a NEM-style, reliability standard is non-trivial. A simpler approach to estimating WTP to inform the review of the STTM and DWGM market settings, may be more proportionate, given the importance of other factors when reviewing the market settings.

The Commission considers that attempting to apply a NEM-style reliability standard to the ECGS would risk misapplying a mechanism that is not fit for purpose in the presence of the ECGS' unique characteristics. It would introduce additional complexity without delivering an effective tool for the ECGS. Given this, we do not consider it proportionate to introduce the proposed reliability standard for the ECGS.

Instead, we are proposing other more impactful measures to support investment in the ECGS that may be more cost-effective:

- Factoring WTP into future reviews of price settings without requiring the AER to determine the VGCR, as outlined above.
- Improving the governance of the price settings review in a simpler way than what is proposed by the rule change request (see section 5.3).
- Improving the planning and investment signals in the GSOO and VGPR (see section 5.4).

5.3 Improving the governance arrangement for reviews of the market settings

The Commission is proposing to introduce a Gas Reliability Committee (GRC) under the NGR to carry out the future reviews of the market price settings. This is broadly aligned with the proposal in the rule change request, but has the additional benefit of including a formal role for a broad of stakeholder views to be included in the decision-making process.

5.3.1 We considered three options for the governance arrangements

During the consultation on this rule change, stakeholders broadly supported assigning the responsibility for periodic review of market settings to the AEMC or the AEMC's NEM Reliability Panel. Stakeholders considered that the AEMC or the NEM Reliability Panel would be better suited to the role given their independence and energy system-wide perspective, including the experience in reviewing electricity market settings.[55]

We agree with the rule change request and stakeholders that the AEMC should be involved in the review of the STTM and DWGM market settings given our experience in reviewing electricity market settings and our independence from the operational role. We considered three options on

55 Submissions to consultation paper: CS Energy, p 2,Origin, pp 2-3.

how the AEMC could exercise this new function (Table 5.1). Of the three options, we consider option 3, an AEMC-constituted GRC would be best placed to review the settings.

Table 5.1: We considered the pros and cons of the three governance options

Options	Pros	Cons
Option 1: The AEMC would review the market settings using its established self-initiated review process. (As proposed by the rule change request)	• Mirrors the current arrangement carried out by AEMO but eliminates any perceived conflict of interest.	• May be perceived as less independent (compared to the other options). • Any changes that involve amendments to the NGR would proceed through a rule change process.
Option 2: Establish a Reliability Panel, under the NGL, with its functions and powers explicitly set out in the law. This option was supported by most stakeholders.	• Provides a formal, legislated and known structure. • Any changes could be considered to enable the Reliability Panel to submit a rule change under the fast-tracked rule change process. • Ensures both the STTM and DWGM settings are reviewed concurrently	• Requires a law change, which could be onerous and timeline/outcome is uncertain.
Option 3: The AEMC could convene a Gas Review Committee (GRC)(Commission's preferred option)*	• This approach offers broader perspectives (as compared to Option 1) and could strengthen stakeholder confidence in the process.	• Any changes that involve amendments to the NGR would proceed through the standard rule change process • Committee members may be exposed to personal liability for decisions.

Note: * S 74(3)(c) of the NGL allows the Rules to confer functions or powers on, or leave any matter or thing to be decided or determined by any working group, panel or committee established by the AEMC

A GRC constituted by the AEMC is the Commission's preferred approach because it addresses the perceived conflict of interest with AEMO reviewing the settings. It maximises transparency by directly involving representative stakeholders in deciding on the level of the settings. This is opposed to the approach proposed in the rule change request, where consultation would be carried out through the usual AEMC processes, but stakeholders would not be involved in the decision-making. See section 5.3.2 for more detail on the structure of the proposed GRC. This inclusive approach is likely to foster stronger stakeholder buy-in and shared ownership of outcomes. This view was supported by stakeholders during the consultation process.[56]

We have considered ways to address the possible limitations of this option, including that:

56 Submissions to the consultation paper, Shell Energy, p 3 and AGL, p 3.

- The NGR would be structured to allow the GRC to determine the values of the market settings through a formal report.
- The rules governing market settings would then reference either the values specified in the NGR or those outlined in the most recent report, if different.
- An immunity provision will be introduced into the rules to provide immunity protections for committee members.

We also noted an alternative governance model proposed during consultation submissions: a law change to expand and consolidate the scope of the NEM Reliability Panel to oversee both gas and electricity market parameters.[57] [58] Based on preliminary assessment, this suggested option was discounted for two reasons:

- The necessary law change could be onerous and the timeline and outcome are uncertain
- The NEM and ECGS are governed by different laws, frameworks and objectives, making the consolidation of their market settings governance structure infeasible.

Question 7: Do you consider introducing a GRC to review the market price settings in the DWGM and STTM can strengthen the review process?

5.3.2 Key features of the proposed AEMC constituted Gas Reliability Committee

Structure and composition of the GRC

- The proposed GRC would be constituted under the NGR and the NGR would set out its various functions.
- The composition of the GRC members would be set out in the NGR, which would include the number and types of members required to represent the range of participants in the ECGS, including AEMO, AER, small and large consumers, pipeline owners, gas producers, facility operators and gas retailers.
- An appropriate immunity clause similar to the provision in s122 of the NEL would be introduced to the NGR to protect committee members from personal liability. This protection would be empowered by the rule making power in NGL s74(3)(n).

Proposed functions of the GRC

- The GRC would determine the guidelines for the review of the market settings across the DWGM and STTM, including the timing and frequency of such a review.
- The GRC could consider participants' willingness to pay as an input alongside other relevant factors.
- The GRC would determine market setting values via a formal report.
- The relevant provisions in Parts 19 and 20 of the NGR (which govern the DWGM and the STTMs respectively) would define the market settings by reference to the decisions and formal report made by the GRC following a review.

57 CS Energy submission p 2
58 Origin submission to ECGS reliability and associated settings consultation paper, pp 2-3.

5.3.3 We consider the GRC should be responsible for estimating the WTP and not the AER

We consider that introducing a step where the AER estimates WTP and provides this to the GRC for reviewing the market settings would be inefficient. Instead, we propose that the GRC determines all inputs needed in the review of the market settings.

In the NEM, the VCR has a range of applications, beyond just the reliability standard and market price settings. The AER is responsible for setting the VCR to ensure the development of a nationally consistent methodology and to avoid duplication and reduce costs.[59] By contrast, in the ECGS, the proposed approach of considering WTP would only be used by the GRC for the purpose of reviewing the market price settings. See Table 5.2 for more detail on the role of the VCR in the NEM and our proposed application of WTP in the ECGS.

From this, we do not consider that there is a need for a nationally consistent approach that supports multiple uses by multiple entities. Therefore, we are proposing a simplified approach where WTP is considered by the GRC, rather than a standalone project led by the AER. This would keep the process for reviewing the market price setting streamlined and more efficient.

Table 5.2: The current use of VCR in the NEM compared to the proposed use of WTP in the ECGS

Use case	Reliability panel / Proposed GRC	AER and network service providers	Jurisdictional network regulators
VCR In the NEM	• informs review of the wholesale market reliability standard and settings • informs review of the system restart standard • informs reliability and emergency reserve trader procurement	• inform the assessment of requests to declare certain risks as protected events • is the key measure for linking outcome performance with service target performance incentive schemes.	• informs the settings of transmission and distribution reliability standards and targets, for example in IPART's 2016 Electricity Transmission Reliability Standards
WTP in the ECGS	• informs the review of market settings in the STTM and DWGM	Not applicable	Not applicable

Source: AEMC and AER, Values of customer reliability, Final report on VCR values, December 2024

5.4 We propose improvements to the GSOO and VGPR

The Commission proposes three changes to the GSOO and VGPR , which aim to support efficient investment and planning decisions in the ECGS.

59 Establishing values of customer reliability rule change, AEMC, p i.

5.4.1 We propose the use of a probabilistic metric to highlight medium to longer-term reliability risks

Currently, the GSOO and VGPR report peak days demand and seasonal gas supply shortfalls. The forecast uses a probability of exceedance (PoE) measure, with a focus on two demand levels being exceeded only once in 20 years or two years.

The reporting of supply shortfalls remains deterministic, without any associated probability measures.[60]

However, stakeholders have recommended a shift toward probabilistic reporting, citing the high variability and uncertainty in input assumptions — such as weather patterns, economic conditions, cost pressures, availability and pricing of alternative energy sources, and unexpected power outages.[61]

As part of their feedback, Shell Energy highlighted the following:

- In addition to reporting "the expected size, timing, duration, and location of a forecast breach of the reliability standard," it is equally important to report the probability of exceedance or the percentage of scenarios in which a forecast shortfall occurs within a given time period.
- Including the likelihood of shortfall events would significantly improve transparency and enable more informed decision-making by market participants, consumers, and policymakers.[62]

We agree with stakeholders that a move to a probabilistic metric would better highlight medium to longer-term reliability risks to support investment and planning decisions. A probabilistic approach aligns with providing AEMO the ability to assess and communicate risks where the probabilistic metric represents the likelihood of the risk. In addition to likelihood, AEMO will be able to consider other factors that also inform the level of risk. Additional factors could include the magnitude of shortfall, location, duration and safety considerations, etc. The investment and planning responses from market participants can also be better sized against the magnitude of the risks.

5.4.2 We propose a disaggregated reliability forecast beyond the current north/south split

The current north/south split used in gas forecasting is largely shaped by transmission pipeline constraints. However, the value of maintaining this segmentation may not allow AEMO to communicate forecast location-specific shortfalls. From this, an appropriate planning and investment response could be diminished.

We understand that disaggregating forecasts to a very granular level may risk breaching confidentiality (e.g. where only one key producer serves a particular state such as Longford in Victoria). To address this, the Commission proposes that:

- AEMO should consider reporting based on relevant geographic areas, such as physical network constraints or market dynamics, as appropriate.
- The geographic areas would not be prescribed in the rules, providing AEMO the flexibility to define areas in the most appropriate way to be able to communicate effectively the location of a forecast reliability risk. This would be subject to managing risks related to confidentiality.

This view was also expressed by the APLNG during consultation.[63]

60 AEMO, GSOO March 2025, p 18

61 Submissions to consultation paper: APA submission, p 9 and APLNG, p 8.

62 Shell Energy submission to consultation paper, p 4.

63 APLNG submission consultation paper, pp 3 -4.

> "...considers that a southern and northern jurisdiction split would more appropriately take into account the physical limitations of the ECGS. This differentiation could provide more granular information on the supply-demand balance in the different jurisdictions and facilitate effective and efficient market-led responses in constrained areas and/or better targeted measures to be enacted by government."

5.4.3 We propose including an assessment of credible risks to system resilience in the GSOO/VGPR

We propose including a requirement in the NGR for AEMO to consider system resilience in preparing the GSOO and VGPR. The methods and scope for this assessment would be detailed in AEMO's guidelines, providing flexibility in how risks are evaluated and communicated.

This approach would offer:

- a practical framework for identifying and understanding potential resilience risks and their implications
- a targeted focus on credible risks—likely scenarios such as the loss of specific subsets of plant
- caution against over-specification or "gold-plating", ensuring assessments are cost-efficient and fit-for-purpose.

Additionally, AEMO should leverage existing and emerging data sources (e.g. ISP and PASA processes), helping to minimise any additional information burden on stakeholders.

Stakeholder feedback supported a cautious approach to avoid 'gold-plating' this assessment:[64]

> "[I]f the system resilience risk assessment is introduced, AEMO should use existing data sources and publicly available information. APLNG does not support introducing new information disclosure requirements"

Question 8: Do you agree with our proposed improvements to the GSOO and VGPR?

Do you have any feedback on the proposed three measures aimed at improving the transparency of information in the GSOO and VGPR to better support efficient planning and investment decisions?

5.4.4 We propose improvements to the transparency and engagement on forecasting

The rule change request suggested that the AER develop new best practice guidelines on forecasting. In the Commission's view, introducing this guideline will increase regulatory costs and will not address the proponent's key concern about the difficulty of developing demand forecasts. This view was supported by stakeholders in response to the consultation paper.[65]

Instead, we propose requiring that AEMO consult on and publish its forecasting approach and methodology within its Reliability Forecast Guidelines. These guidelines would also incorporate methods for assessing system resilience. Furthermore, AEMO should regularly update its forecasting processes to enhance transparency and strengthen stakeholder confidence.

64 APLNG submission consultation paper, p 8.
65 APLNG submission to consultation paper, p 7.

Question 9: Do you agree that we do not need to require the AER to establish best practice forecasting guidelines?

Do you support the proposed position that AEMO should develop and consult on its own forecasting guidelines, rather than having AER establish best practice guidelines for AEMO to follow?

Should AEMO be required to review its forecasting approach periodically (and if so, at what frequency) or have full discretion?

A AEMO ECGS reliability and supply adequacy functions

The NGL defines AEMO's ECGS reliability and supply adequacy functions to include, among other things, the following:[66]

1. To monitor trends in the supply of, and demand for, covered gas in the ECGS and factors affecting, or that may potentially affect, the reliability or adequacy of the supply of gas within that system.
2. To identify and communicate actual or potential risks or threats to the reliability or adequacy of the supply of covered gas within the ECGS.
3. To report to and advise the MCE, including a member of the MCE, on matters relating to the reliability or adequacy of the supply of covered gas within the ECGS.
4. To publish information relating to the reliability or adequacy of the supply of covered gas within the ECGS.
5. To give directions to relevant entities to the extent AEMO considers necessary to maintain and improve the reliability or adequacy of the supply of covered gas within the ECGS. [67]
6. To trade in covered gas or to purchase pipeline services or services provided by a compression service provider, blend processing service provider or a storage provider to the extent AEMO considers necessary to maintain and improve the reliability or adequacy of the supply of covered gas within the ECGS. [68]
7. Other functions conferred on AEMO by the Rules for the purposes of section 91AD.
8. To make, amend or revoke Procedures (East Coast Gas System Procedures) relating to a function specified in paragraphs 91AD(1)(a) to 91AD(1)(g).[69]

The National Gas Rules may specify:[70]

- the matters that AEMO may or must consider in determining there is or is not an actual or potential threat to the reliability or adequacy of the supply of covered gas within the ECGS;
- the kinds of directions that AEMO may or may not give;
- the matters that AEMO may or must consider in determining whether to exercise its directions or trading function.

66 The list of the functions was drawn from NGL subsections 91AD(1)(a) to and including 91AD(1)(h).

67 Under NGL section 91AF(2), a direction must not be given unless AEMO is of the opinion that the giving of the direction is necessary to prevent, reduce or mitigate an actual or potential threat identified by AEMO. Under NGL section 91AF(6), a person to whom an east coast gas system direction applies must comply with the direction to the extent to which compliance is consistent with a law of a participating jurisdiction applying to the person.

68 Under NGL section 91AD(2) AEMO must not exercise its trading function unless AEMO is of the opinion that the trade or purchase is necessary to prevent, reduce or mitigate an actual or potential threat identified by AEMO in the exercise of the function specified in subsection 91AD(1)(b). Part 27 of the NGR includes other provisions governing the use of AEMO's ECGS functions including obligations to consult before giving a direction (rule 700) and restrictions on the types of direction AEMO may give (rule 701).

69 AEMO makes ECGS Procedures under section 91AG of the Law and is also required to issue guidelines under section 91AD(3).

70 Provided under section 91AD(5) of the NGL.

B Summary of the market settings in the STTM and DWGM facilitated markets

The price caps (MPC and APC) and trigger mechanisms (CPT) are the key market settings used in the DWGM and STTM. The table summarises the current STTM and DWGM settings.

B.1 The price settings in the DWGM and STTM

Table B.1: Current STTM and DWGM reliability settings

Market Parameter	STTM	DWGM
MPC	$400/GJ	$800/GJ
APC	$40/GJ	$40/GJ
CPT	$440 (110% of MPC)	$1400
CPT horizon/ Administered Pricing period	7 days	35 consecutive scheduling intervals
Trigger for Administered Market State	**APC State (rule 428)** • AEMO fails to publish ex-ante market schedule by required time on D-1 and uses a provisional schedule • CPT is triggered • A minor retailer of last resort (RoLR) event as determined under the STTM Procedures • Technical or operational conditions in a pipeline or distribution system materially affect ability to supply or withdraw gas at the hub or to supply end users from STTM distribution system (to be determined in accordance with STTM Procedures). **Market administered scheduling state (rule 430)** • Major RoLR event • Government direction	**Administered price period (rule 224 + Administered Pricing Procedures)** • AEMO fails to publish market price or a pricing schedule by required time • CPT is triggered • Market suspension • Minor RoLR and major RoLR events • Material curtailment

Source: DCCEW (2024). East Coast Gas System Reliability Standard and Associated Settings Rule Change Request. See here. For more details on the current market settings see the Background paper and the Market Reform 2022 Gas market parameter review.

B.2 The MPC will continue to have a role in providing scarcity and investment signals

The MPC should be set high enough to enable market price signals to guide short-run supply-demand and allow markets to clear. When demand and supply conditions are tight, prices will rise and send a scarcity signal to the market, which can respond by reducing demand (demand response), redirecting supply from one use to another, or incentivising additional high-cost supply. As noted in section 4.1.1, the MPC can also encourage investment over longer time frames by allowing high prices to signal the need for additional supply or capacity (e.g. storage and pipeline), alongside other factors that drive investment decisions. If the MPC is set too low, it may not allow prices to rise to levels that signal scarcity and the need for investment. The MPC also limits financial exposure to extreme prices for participants by setting the maximum price that gas can be traded before the APC is triggered.

B.2.1 The MPC has an important role in setting prices

For gas that is bought and sold through the STTM and DWGM, expectations about facilitated market price movements and ultimately what buyers will pay are bound by the market settings.

For gas that is bought and sold through contracts, the prices in these contracts are indirectly influenced by the market settings. This means:

- The prices agreed in contracts reflect the opportunity cost of purchasing gas through facilitated markets as an alternative to contracting. The expected facilitated market price is bound by the MPC.
- The prices agreed in contracts reflect the opportunity cost of re-selling contracted gas through the STTM and DWGM. The expected revenue from re-selling contracted gas and electricity in facilitated markets is bound by the MPC.

There are some key differences between gas and electricity. In electricity, all electricity flows through the NEM, even contracted electricity, and the role of contracts is predominantly to hedge against the facilitated market price (i.e., the NEM spot price). This creates a strong and direct link between facilitated market prices, market settings, and contract prices. In gas, not all gas flows through the STTM and DWGM. These markets are limited by geographical boundaries and do not cover the entire gas network. This means the link between the facilitated market prices, market settings and contract prices is less direct than in electricity.

Because of the geographical boundaries, there are two main ways the STTM and DWGM are used for buyers and sellers of contracted gas. One is for balancing purposes, to buy or sell excess or shortfall volumes around contractual positions. The other is to physically transport gas through regions where trading through those markets is mandatory. In both cases, the facilitated market price and market settings are relevant, and contracted prices should in some way aim to hedge against the facilitated market price, similar to how contracts operate in the NEM.

However, because not all gas flows through STTM and DWGM, contract prices in gas may not closely only reflect those market prices and market settings.[71]

The impact of market settings on prices in the gas sector means there are risks that this sector could be exposed to cascading financial failure if the MPC is set too high. Equally, if the MPC is

71 In fact, there is a great degree of opacity in the formation of gas contract prices, with gas buyers also noting that contract prices often reflect imbalances in bargaining power between buyers and sellers and information asymmetry. ACCC (2024), Gas inquiry December Interim Report, December, p. 49-51.

set too low, facilitated market prices will be unable to send strong signals of scarcity and induce efficient responses from market participants.

B.2.2 The MPC sends a signal for investment

The MPC also has a role in incentivising investment in gas. For gas bought and sold through the STTM and DWGM, expectations about price movements in those markets and ultimately the return that sellers can expect to receive are bound by the MPC. In electricity, peaking generators typically recover most of their costs through the short periods of high prices enabled by the NEM market settings (MPC). If the MPC is not sufficiently high, they may limit incentives for efficient investment or responses in times of scarcity.

Most gas and electricity investments are underwritten by contracts, which limit the investors' exposure to STTM and DWGM market prices. But the prices of those contracts are a function of the expected return on investment:

- For electricity, where all generation must flow through the NEM, the expected return on investment is closely linked to the spot market price.
- For gas, because not all gas flows through those markets, there are many more sources of investment than what can be earned through the STTM and DWGM, including international markets that impact investment incentives.

Given that the MPC shapes participants' exposure to financial risk, it may influence hedging strategies and contract terms. While indirect, there is an important link between market settings (MPC) and investment incentives. This link may be less direct in gas than in electricity.

B.3 The CPT and APC will continue to have a role in managing retailer financial risk without negatively affecting investment signals

The CPT and APC are designed primarily as risk management tools. They are intended to protect market participants from extreme and prolonged price volatility that could otherwise lead to financial distress and undermine market stability. As the lower price cap that occurs when the APC is triggered can prevent cost recovery for high-cost supply, there is a compensation framework for times when the APC is triggered. A review of the market settings should continue to balance these objectives across the market parameters.

C Details on problem refining

Table C.1: Comparing problem statements in the rule change request (RCR) with their refined version in this paper

RCR Problem	Refined Problem	Commission considerations
Overarching problem: "While the east coast gas system has operated relatively well without a reliability standard to date, the tightening demand-supply balance, together with the energy transition and increasing interrelationship with the NEM, is expected to result in the east coast gas system becoming more exposed to reliability and supply adequacy threats. There is therefore a much greater risk that inefficient decisions will be made by market participants, AEMO and policy makers about how to respond to reliability or supply adequacy threats over the short, medium and longer term, the costs of which would ultimately be borne by gas consumers". Rule change request, p 14.	Overarching problem: As the ECGS becomes more exposed to reliability risks or threats, the current RSA framework may not support efficient outcomes, effective system planning or proportionate responses to reliability risks or threats.	In alignment with the proponents' concern, the Commission recognises the opportunities to improve the current regulatory framework for ECGS RSA. Our directions paper divided this problem into two parts: an operational problem focused on short-term reliability management risks or threats and an investment and planning problem focused on these issues on a longer time horizon (> one year).
"... it can be prohibitively expensive and inefficient to maintain 100% reliability and supply adequacy at all times, particularly if it requires costly infrastructure to be built that is only expected to be used on rare occasions. A balance must therefore be struck between the costs of providing reliability and the costs that gas users and other market participants can incur as a result of supply disruptions."	The Commission considers there are opportunities to assess whether the market price settings in the STTM and DWGM reflect the trade-off between reliability and supply interruptions through a comprehensive and consistent approach. In doing so, it is important to note that many gas customers, such as residential and commercial customers, cannot be curtailed (ie not supplied with gas) without disproportionate costs and	Alignment in principle. However, the Commission considers there are important differences between the NEM and the STTM/DWGM that need to be taken into account, such as the inability to curtail (ie cut supply to) residential and commercial gas customers.

RCR Problem	Refined Problem	Commission considerations
Rule change request, p 15.	safety risks. The Commission also considers that there are additional policy uncertainty risks around the future of gas, which could be contributing to inefficient investment and planning in gas infrastructure. These additional risks are outside the remit of the NGR and will continue to be part of risk factors for market participants, irrespective of the outcome of this rule change process.	
"In other energy markets, this balance is reflected in a reliability standard that reflects the value that customers place on reliability. There has, however, been no reliability standard in the east coast gas system to date." Rule change request, p 15.	NA - see next column to the right.	The Commission considers that in most markets for goods and services, the market price mechanism allows supply to efficiently match demand without an explicit regulatory framework to manage reliability. We have adopted a 'first-principle' and solution-neutral approach when assessing the broader issues (i.e. market failures) that may drive inefficient outcomes in the facilitated gas markets.
"That is, in the absence of a reliability standard there is a risk that market participants and/or AEMO could spend more - or less - on trying to address any reliability or supply adequacy threat that arises than the value gas users place on reliable supply." Rule change request, p 15.	The Commission recognises opportunities to improve planning and investment signals to facilitate efficient reliability outcomes in the ECGS (investment and planning problem).	Partial alignment with the proponent's concern. The Commission considers that market participants manage risks of inefficient capacity allocation within their business-as-usual contracting & risk management frameworks. As such, these risks are intrinsic to the business of market participants and not driven by the lack of a reliability standard (in other words, a standard would not mitigate these risks). When it comes to ensuring AEMO's

RCR Problem	Refined Problem	Commission considerations
		expenditure on storage reserves is proportionate to the value of reliability, we will keep considering how the risk or threat signalling framework proposed as part of this directions paper can support AEMO's responses, including directions.
"...there is a risk that if the STTM and DWGM reliability settings do not reflect the reliability standard and the value customers place on reliability, they will fail to incentivise sufficient investment in supply, infrastructure and demand response over the medium to longer term." "...There is also a question as to whether the cumulative price thresholds are providing appropriate investment signals." Rule change request, pp 17-18.	The Commission considers there are opportunities to assess whether the STTM and DGWM's market price settings consider the trade-off between reliability and supply interruption, noting the aforementioned considerations about the costs and risks associated with curtailing residential and commercial gas customers.	The proponents' problem statement has been refined with added considerations on the cost trade-offs. The Commission considers that although the market settings play a small role in overall investment decisions, according to some stakeholders, it is important that these settings are calibrated to continue to support efficient investment signals into the future of the ECGS.
"Another problem that has been identified with the current arrangements is that while the rules require AEMO to carry out periodic reviews of the STTM price related settings and set out the matters AEMO is to consider when doing so, there is no equivalent requirement in the NGR for the DWGM settings." Rule change request, p 19.	The Commission considers opportunities for better regulatory practice that would ensure consistency in the review of both the STTM and the DWGM.	Our problem statement is aligned with the proponents'.
"From a governance perspective, questions have also been raised in the past about whether AEMO is the most appropriate market body to review the	Stakeholder feedback supported the concern about potential conflicts of interest arising from AEMO's dual role as market operator and reviewer	Our problem statement is aligned with the proponents'.

RCR Problem	Refined Problem	Commission considerations
facilitated market reliability settings, or whether it may constitute a potential conflict of interest for AEMO as operator of these markets." Rule change request, p 19.	of market price settings.	
"One of the problems that has been identified with these tools [GSOO and VGPR] is that if a reliability standard is implemented and AEMO is not required to expressly consider the standard when developing its GSOO or VGPR forecasts, then they could fail to provide appropriate planning and investment signals" Rule change request, p 20.	The Commission recognises the opportunities for the GSOO and VGPR to provide greater transparency to market participants and other relevant gas stakeholders. These include opportunities to provide additional information on forecast supply gaps to better inform planning and investment decisions in the ECGS.	Partial alignment with the proponents' concern. The Commission does not consider opportunities to improve the GSOO and VGPR are uniquely tied to the introduction of a reliability standard and has, therefore, considered the broader scope of the problem raised in the rule change request.
"The other problems that have been identified with the GSOO and VGPR are that: •they do not include an assessment of credible risks to system resilience (i.e. the ability of the east coast gas system to limit the extent, severity and duration of a reliability or supply adequacy event) •the scenarios, assumptions and inputs used in the GSOO and VGPR can differ from those used in the ESOO, notwithstanding the increasing interrelationship between the NEM and the east coast gas system." Rule change request, p 20.	The Commission considers the opportunities for the GSOO and VGPR reports to include information on system resilience, i.e. the ability of the ECGS to respond to unexpected shocks that affect reliability.	The Commission supports the first problem statement (opportunities to include an assessment of credible risks to system resilience). With respect to the second problem statement, the Commission considers detailed changes of modelled variables and scenarios in the GSOO and VGPR to be outside the scope of this rule change and for AEMO to consider as part of their forecasting guidelines.
"Concerns have also been raised about the differences between the way in which AEMO and the ACCC currently assess reliability and supply	NA - see next column to the right.	The Commission does not consider differences in forecast assumptions across reports a matter for NGR to regulate. There are benefits

RCR Problem	Refined Problem	Commission considerations
adequacy and the potential for this to cause confusion and potentially weaken the planning and investment signals that are intended to be provided by the GSOO and VGPR." Rule change request, p 20.		for developers, investors and market participants to independently choose the forecast assumptions and scenarios they believe in.
"One concern that has been raised with the current risk or threat notice arrangements is that they may not facilitate a timely and efficient market-led response, because they do not provide a clear and objective indication of the nature and severity of identified threats." Rule change request, p 21.	The Commission considers that the current risk or threat notice framework would benefit from better clarity and objectivity in assessing and communicating forecast reliability risks or threats.	Our problem statement is aligned with the proponents'.
"The final concern that has been raised with the current RSA framework is that it does not provide sufficient guidance to AEMO on how and when to exercise its east coast gas system RSA functions." Rule change request, p 21.	As above.	As part of this rule change process, the Commission is considering ways to improve how risks or threats to the ECGS are assessed and communicated through risk or threat notices. Broader issues relating to AEMO's execution of the RSA functions - particularly the exercise of the trading function - are expected to be included in the ECGS Supplier of last resort rule change.

D Solutions in this direction paper vs solutions in the rule change request

This appendix provides a detailed comparison between the solutions proposed by the rule change request and the solutions proposed as part of this directions paper. The table below provides a commentary on the alignment (or differences) between the two groups of solutions and references to the relevant chapters and sections.

Table D.1: Comparing solutions proposed in the rule change request and solutions considered by the Commission in this directions paper

RCR Solutions	AEMC Solutions	Alignment
Risk or threat signalling framework • Objective mechanism • Three-tiers (early warning, alert, emergency) • Linked to the reliability standard • Criteria for each risk level set out in AEMO's ECGS procedures. Rule change request, p 9, pp 47-48.	Risk or threat signalling framework • Clear and objective mechanism • Tiered framework • Probabilistic metric to assess risks of supply-demand shortfalls • Criteria for each risk level set out in AEMO's ECGS procedures. • Design of the final framework is informed by industry, with consultation run by AEMO. See chapter 3 for more information.	The two solutions are broadly aligned. The Commission agrees that the threat signalling framework should incorporate tiers to capture evolving reliability risk levels, with tiers informed by an objective metric. We consider that a probabilistic metric is better suited than a reliability standard in informing the criteria for risk or threat notices. This is because these notices seek to instigate warnings and responses to short-term reliability risks by allowing for escalation (or de-escalation) of the risk as opposed to a binary breach/non-breach of a NEM style standard. Governance arrangements are aligned.
GSAR conferences • require AEMO to convene a GSAR conference after an actual/potential breach of the reliability standard. • provide AEMO with the discretion to convene a GSAR conference at any other time. Rule change request, pp 48-49.	GSAR conferences • The NGR would maintain AEMO's discretion to convene a GSAR conference when necessary. • The ECGS procedures or guidelines would outline when AEMO considers it necessary to convene a GSAR conference.	The Commission considers that the Rules would maintain AEMO's discretion/flexibility to convene a conference when they consider it necessary and proportionate to the level of risk. As previously stated, the Commission does not consider the reliability standard suitable to inform short-term (12-month) operational risks.

RCR Solutions	AEMC Solutions	Alignment
Dual reliability standard, which includes: • an annual unserved gas (USG) measure • a peak day deliverability measure. The level of the standard would have regard to the value of gas customer reliability, which is also part of the proposed solution. Rule change request, pp 32-41.	N/A	As discussed above, the Commission considers the proposed reliability standard unsuitable for informing a short-term (12-month) focused tiered risk or threat signalling framework. With lower-complexity alternatives available, the Commission also considers a reliability standard not required for informing the STTM and DWGM price settings in the context of their review. This is further discussed in section 3.3 and section 5.2 of this paper.
Value of gas customer reliability (VGCR) • AER-led survey methodology for estimating the VGCR. • AER-led review of the VGCR at least every four years. Rule change request, pp 37-39.	Alternative metrics to the proposed VGCR, such as customers' willingness to pay (WTP) for gas in the DWGM and STTM can inform market settings without the need to set a reliability standard first. See section 5.1 for more information.	The Commission considers the development of a VGCR by the AER to be a complex step for a system like the ECGS. Rather, we consider that future reviews of the price settings could consider the WTP value of certain groups of gas customers. These would be customers who cannot signal their WTP to avoid curtailment. The WTP, or similar alternative metrics, would likely exclude customers, such as residential and commercial, that cannot be curtailed without significant costs and risks to the system.
Review of the price settings for the STTM and DWGM • Review the market settings against a VGCR informed reliability standard • Align the STTM and DWGM settings Rule change request, pp 40-41.	Review of the price settings for the STTM and DWGM • Level of the settings to be informed by a range of existing factors and potential new ones to account for the different objectives of the settings in the facilitated markets. •	The Commission considers there is an opportunity for a consistent review of the market settings of both the STTM and DWGM. The review should consider the aforementioned trade-offs alongside risks of financial collapse of market participants (which the current review methodology already accounts for).

RCR Solutions	AEMC Solutions	Alignment
	• Simultaneous review of the market settings for both the DWGM and STTM. This does not equate to aligning the value of the price settings. See section 5.1 for more information.	The Commission clarifies that the review could also determine whether the level of the settings for the two markets should be aligned or not. This review will be conducted outside this rule change project. As noted before, the Commission does not consider a reliability standard a necessary input for reviewing the price settings.
Improvements to the GSOO and VGPR • Inclusion of a reliability forecast (to assess potential breaches of a reliability standard) in these reports • AER to develop new best practice guidelines on forecasting • Inclusion of an assessment of risks to system resilience. Rule change request, pp 42-44.	Improvements to GSOO and VGPR • Indicate probabilistic nature of forecast supply-demand shortfalls through a probabilistic metric (eg loss-of-load or exceedance). • Disaggregate the forecast beyond the current North/South split, where appropriate • AEMO to develop and consult on gas forecasting guidelines • Include an assessment of credible risks to system resilience in GSOO and VGPR. See section 5.4 for more information.	The Commission agrees that several improvements to the GSOO and VGPR reports would allow for clearer and more granular planning signals. We do not consider that a reliability standard is needed in this process.
Governance Arrangements • AEMC to set and review the reliability standard and settings • AER to develop the methodology for VGCR and periodically review the VGCR •	Governance Arrangements • AEMC to establish a gas reliability committee under the NGR • The Committee will conduct the market settings review and determine the appropriate inputs for this exercise	In relation to the review of the market settings, the Commission is considering different governance arrangements from those proposed in the rule change request. The Commission considers that the preferred option (gas reliability committee) for review governance should promote inclusion of comprehensive views in the review and streamline

RCR Solutions	AEMC Solutions	Alignment
• AEMO to monitor, identify and communicate actual or potential breaches of the reliability standard.	• AEMO to adjust its procedures for GSOO/VGPR proposed changes See section 5.3 for more information.	the review process.

E Out-of-scope issues raised by stakeholders

This appendix provides a detailed list of any out-of-scope issues that were raised by stakeholders during the consultation stage. The table outlines the stakeholder name, the relevant comments raised by the stakeholder and the associated page numbers. The stakeholder submissions can be found here.

Table E.1: Out-of-scope issues raised by stakeholders

Stake-holder	Comments	AEMC response
Alinta Energy	Alinta emphasises that changing the associated market settings will not resolve the need to secure more gas supply. "Ultimately, the current regulatory restrictions on gas exploration and production will serve to further limit the avenues available to market participants to address demand-supply issues." (p 3)	While we note the concern related to current restrictions, this matter is outside the scope of the ECGS RSA functions and as such, outside the scope of this rule change request.
APA	APA flags that developing new gas supply is critical to meet any reliability standard. "The market will be unable to meet any reliability standards if there isn't gas available to meet demand. Governments should be cognisant that they have a role to play in expediting approval processes, removing barriers and policy uncertainty to ensure that upstream gas expansions and frontier basins can be established and connected to the interconnected gas grid as soon as possible." (p 9)	While we note the concern related to barriers and policy uncertainty, this is outside the scope of the ECGS RSA functions and as such, outside the scope of this rule change request.
APA	APA provides suggestions regarding the Notice of Closure (NOC) rule change. They are broadly supportive of the proposal for the advanced notice of closure of critical gas infrastructure to support more timely and efficient responses by market participants. (pp 14-16)	This issue is outside the scope of this rule change request. On 26 June 2025, the AEMC made a draft determination regarding the notice of closure rule change. More information can be found here.
Australia Pacific LNG	APLNG notes that new gas must be developed and made available where it is needed, close to the centres of demand, to minimise the risk of supply shortages. "Removing regulatory barriers, not introducing more regulation, is key to achieving this." (p 1)	While we note the concern related to regulatory barriers, this is outside the scope of the ECGS RSA functions and as such, outside the scope of this rule change request.

Stake-holder	Comments	AEMC response
Epic Energy	Epic Energy provides some recommendations for the Notice of Closure (NOC) rule change. "Although we are supportive of notice periods for closure of gas infrastructure, we are cautious that this should be at a facility level, and should not apply to subcomponents such as compressors or metering stations." (pp 1-2)	This issue is outside the scope of this rule change request. On 26 June 2025, the AEMC made a draft determination regarding the notice of closure rule change. More information can be found here.
Origin	Origin notes that the potential utility of a gas reliability standard could include: • AEMO's procurer of last resort role for Dandenong LNG • The Australian Domestic Gas Security Mechanism (ADGSM) (pp 1-2)	The Commission is not considering these issues in this rule change request, as the functions reside outside the ECGS RSA functions. On 7 August 2025, the AEMC made a draft decision to extend AEMO's procurer or last resort powers for the Dandenong LNG storage facility by four years. More information can be found here.

Abbreviations and defined terms

No Number Section Body

AEMC	Australian Energy Market Commission
ACCC	Australian Competition & Consumer Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
APC	Administered Price Cap
Commission	See AEMC
CPT	Cumulative Price Threshold
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DWGM	Declared wholesale gas market
ECGS	East Coast Gas System
ESOO	Electricity statement of opportunities
EU Framework	European Union Framework
GFBP	Gas forecasting best practice guidelines
GRC	Gas reliability committee
GSAR	Gas supply adequacy and reliability
GSOO	Gas statement of opportunities
LOR	Lack of Reserve framework
LoLP	Loss of load probability
MPC	Market Price Cap
NEL	National Electricity Law
NEO	National Electricity Objective
NER	National Electricity Rules
NERL	National Energy Retail Law
NERO	National Energy Retail Objective
NERR	National Energy Retail Rules
NGL	National Gas Law
NGO	National Gas Objective
NGR	National Gas Rules
NOC	Notice of closure
NT Act	*National Electricity (Northern Territory) (National Uniform Legislation) Act 2015*
PASA	Projected assessment of system adequacy
PoE	Probability of Exceedance
Proponent	The individual / organisation who submitted the rule change request to the Commission
QGP	Queensland gas pipeline
RSA Framework	Reliability and supply adequacy framework
RoLR	Retailer of last resort
SoLR	Supplier of last resort
STTM	Short term trading market

USG	Unserved gas
VGCR	Value of gas customer reliability
VGPR	Victorian gas planning report
WTP	Willingness to pay