Extending the national gas regulatory framework to hydrogen blends & renewable gases

October 2021

AEMO consultation paper on the Procedures

Important notice

PURPOSE

Energy Ministers have directed AEMO under 91c of the National Gas Law, to conduct a review of the National Gas Rules, National Gas Procedures and any other subordinate instruments that AEMO is responsible for administering. AEMO's review is part of a broader review being undertaken by jurisdictions and the Australian Energy Market Commission into the measures needed to extend the national gas regulatory framework to hydrogen blends & renewable gases.

This consultation paper provides AEMO's initial view on potential changes that may be required to the Procedures for the Short Term Trading Markets (STTM), Declared Wholesale Gas Market (DWGM) and Retail Markets Procedures (RMP) in Victoria, NSW and ACT, Queensland and South Australia to facilitate hydrogen blends and renewable gases.

DISCLAIMER

This document or the information in it may be subsequently updated or amended. This document does not constitute legal or business advice and should not be relied on as a substitute for obtaining detailed advice about the National Gas Law, the National Gas Rules, or any other applicable laws, procedures or policies. AEMO has made every effort to ensure the quality of the information in this document but cannot guarantee its accuracy or completeness.

Accordingly, to the maximum extent permitted by law, AEMO and its officers, employees and consultants involved in the preparation of this document:

- make no representation or warranty, express or implied, as to the currency, accuracy, reliability or completeness of the information in this document; and
- are not liable (whether by reason of negligence or otherwise) for any statements or representations in this document, or any omissions from it, or for any use or reliance on the information in it.

Contents

Tables

1. Introduction

1.1 Background

In August 2021, Energy Ministers agreed that the national gas regulatory framework be reviewed and extended to accommodate hydrogen, biomethane and other renewable gases. As part of the agreement, Energy Ministers decided to prioritise extending the regulatory frame to low-level hydrogen blends and other renewable gases that can be used in existing natural gas appliances. These low-level blends and renewable gases are referred to in this report as natural gas equivalents or NG equivalents (NGEs).

Following the August 2021 agreement, Energy Ministers formally requested that AEMO[1] conduct a review of the National Gas Rules (NGR), National Gas Procedures (Procedures) and other subordinate instruments to identify the changes would be required to ensure that the facilitated markets and regulated retail gas markets can continue to operate as intended if NGEs are brought within scope of the national framework. AEMO has also been requested to implement any changes to its Procedures (and systems) required to facilitate NGEs following any changes made to the NGL and NGR.

In parallel to AEMO's review:

- jurisdictional Officials are reviewing the National Gas Law (NGL), National Energy Retail Law (NERL) and the Regulations made under the NGL and NERL; and
- the AEMC is reviewing the NGR and the National Energy Retail Rules (NERR).

These reviews are focused on the changes that need to be made to the national gas regulatory framework to accommodate NGEs and, in the case of the Officials' review, other gas products that are not suitable for consumption in existing natural gas appliances. The Officials and AEMC have published consultation papers concerning their respective areas of review and AEMO's report should be read in conjunction with both papers.

This report provides AEMO's initial view on the scope of potential changes required to the Short Term Trading Market Procedures (STTM), Declared Wholesale Gas Market (DWGM) Procedures and the Retail Market Procedures (RMP) in Victoria, NSW and ACT, Queensland and South Australia.

AEMO is seeking feedback from industry and market participants on whether the areas of change (or no change) identified in the Procedures for each of the markets is appropriate, noting the scope of this review. AEMO is also seeking feedback on whether the existing Procedure requirements on natural gas and natural gas facilities are fit for purpose for NGEs.

1.2 AEMO's review and terms of reference

The terms of reference provided to AEMO by Energy Ministers requests that AEMO identify any changes to the STTM, DWGM and regulated retail market Procedures to:

- Ensure that settlement and metering within these markets operates as intended.
- Address any other material gaps in these markets that may be identified through consultation with market participants, other market bodies and government officials.

AEMO has also been requested to work with the AEMC in identifying any required changes to the NGR.

AEMO will be responsible for implementing any necessary changes to the Procedures (including subordinate instruments) and systems following changes to the NGL and NGR through its standard consultation processes.

[1] This request was made under section 91C of the National Gas Law.

1.3 Purpose of this consultation paper

This consultation paper provides an initial assessment of whether the Procedures for each of the markets in scope of the review can accommodate NGEs and to identify potential changes to each of the Procedures that may be required to ensure they continue to function as intended and to bring them into line with the approach being considered in the NGL and NGR for NG equivalents. Broader changes to the gas market design that might be required to facilitate NGEs or other gas products are not being considered as part of this consultation paper.

Industry feedback on this consultation paper will inform the development of any changes to AEMO's Procedures required to accommodate NGEs. AEMO intends to provide draft potential Procedure changes in the next phase of this review.

1.4 Terminology used in this consultation paper

For ease of reference, the Officials, AEMC and AEMO consultation papers use the following terminology:

- The term 'natural gas equivalent' (NG equivalent or NGE) is used to describe low-level hydrogen-natural gas blends and other renewable gases that are suitable for consumption in existing natural gas appliances.
- The term 'constituent gas' is used to refer to any gases that are blended with natural gas (e.g. hydrogen) to create a NGE or other gas product but are themselves not suitable for consumption.
- The term 'other gas products' (OG products or OGs) is used to describe higher-level blends or gases that are not suitable for consumption as natural gas (because they would require appliance changes for example).

In accordance with AEMO's terms of reference, AEMO's review is primarily concerned with NGEs. Further detail on the definition and the scope of change for NGEs, constituent gases and OG products can be found in the Officials' consultation paper.

1.5 Next steps

As set out in AEMO's terms of reference, this review has a several key milestones. Following consultation on this paper:

- AEMO will develop a set of draft recommendations for Procedure changes that will be made available for consultation in late March 2022.
- Final recommendations (considering any industry feedback) on Procedure changes being made by September 2022.
- Implement any changes to the Procedures once the NGL and NGR have been amended.

Once changes to the NGL and NGR have been made, AEMO will undertake formal consultation via its standard consultation process to change each of the relevant Procedures in accordance with AEMO's final recommendations.

1.6 Structure of the paper and stakeholder feedback

This paper is split into five sections and three attachments:

- Section 1 (this section): provides background to the review of the national gas regulatory framework and to this paper.
- Section 2: discusses the scope of AEMO's review and the approach and assumptions AEMO has made in undertaking this review.
- Sections 3, 4 and 5: provide an overview of and context for the potential procedure changes for the DWGM, STTM and regulated retail markets respectively.

- Attachments 1, 2, and 3: the attachments which provide AEMO's preliminary assessment as to the specific potential areas of change (or no change) for the DWGM, STTM and Retail Market Procedures that AEMO believes may be needed to facilitate NGEs. The attachments are intended to be read in conjunction with the relevant section of the paper.

AEMO notes that not all sections of this report will be applicable to all readers given the different participant types that operate across AEMO's markets.

To aid stakeholders in providing feedback, a response template has been prepared. AEMO does not expect participants to respond to all consultation questions posed in the paper and welcomes responses that comment only on the questions that are relevant to your organisation.

Feedback to this paper

Written feedback to this paper should be sent via email to GWCF_Correspondence@aemo.com.au via the provided response template and the subject should include: *Hydrogen blends and renewable gases Procedures review*. The closing date for submissions to this consultation paper is 5:00 PM AEDT Thursday 2 December 2021.

2. AEMO's review

This section provides an overview of the scope and the approach AEMO has taken in reviewing its Procedures for this consultation paper. When reviewing the Procedures, AEMO has attempted to apply an assessment framework and adopt assumptions that are consistent with the matters outlined in AEMO's terms of reference and the scope of changes to the national gas regulatory framework outlined in the Officials' consultation paper.

2.1 Review scope

AEMO has been directed to review the Procedures applying to the DWGM, STTM and regulated retail markets (i.e. gas retail markets in Victoria, NSW and ACT, Queensland and South Australia). In doing so, AEMO has been asked to primarily focus on ensuring that settlement and metering in each of the markets continues to function as intended for natural gas and NGEs. While AEMO has focussed on Procedures that relate to settlement and metering, other Procedures in each of the markets have also been reviewed for completeness.

In keeping with AEMO's terms of reference[2], AEMO is not reviewing the following:

- Capacity Transfer and Auction Procedures,
- Gas Supply Hub Exchange Agreement,
- Gas Bulletin Board Procedures,
- GSOO Procedures (not currently in effect), or
- Retail Market Procedures in Western Australia.

The first two of these instruments are not being reviewed at this stage because Energy Ministers have directed that the review be conducted in an expedited manner, and in the early stages of market development, NGEs are not expected to be transported on existing transmission pipelines, meaning that the

[2] AEMO's terms of reference is published on the consultation page for this paper.

regulatory arrangements governing them can be addressed at a later stage without materially impeding market development.

The third and fourth of these instruments are not being reviewed at this stage because the changes will depend on the AEMC's consideration of what, if any, changes will need to be made to the Gas Bulletin Board and GSOO to accommodate NGEs. Depending on the outcome of that process, AEMO may undertake a further review of those Procedures if deemed necessary.

Finally, the retail market in Western Australia operates under a different legislative framework and so is not being considered as part of the current review.

Scope of AEMO's review

Question 1: Are there any other relevant matters that should be considered in AEMO's review of the Procedures that fall within the scope of the terms of reference?

2.2 The approach for natural gas equivalents being considered in the regulatory framework

Key to AEMO's review is the approach to accommodate NGEs that is being considered by Officials. As outlined in the Officials' consultation paper, there is some ambiguity surrounding whether the current national gas regulatory framework extends to NGEs, since the NGL currently only covers a single "product" – natural gas. It does not explicitly contemplate NGEs or other gas products. Changes to the regulatory framework are therefore required to extend its application to NGEs, their constituent gases and their related facilities and activities.

To aid in reading this paper, a brief summary is provided of the approach being considered for the NGL and NERL by Officials. AEMO encourages stakeholders to review the Officials' consultation paper to gain a more comprehensive understanding of what is being proposed and to provide any feedback on the approach[3].

To extend the national gas regulatory framework, Officials are considering:

1. Extending the provisions in the NGL and NERL that currently apply to natural gas and its related facilities and activities to NG equivalents and related facilities and activities. *The policy intention is that all elements of the national gas regulatory framework would apply to NG equivalents and their related facilities and activities in the same way that they do to natural gas.*
2. Extending the NGL to constituent gases and related facilities and activities.
3. Extending the market bodies' functions and powers:
    a. in the NGL and NERL to NG equivalents and related facilities and activities; and
    b. in the NGL to constituent gases and related facilities and activities.
4. Future proofing the NGL and NERL by:
    a. recognising OG products, their constituent gases and related facilities and activities and enabling market bodies to exercise their functions and powers with respect to these products once a jurisdiction authorises its supply; and
    b. allowing the Rules and Procedures to be amended over time to accommodate OG products when the prospect of their supply becomes more likely and when jurisdictions authorise their supply and decide to bring supply of the OG product within the scope of the national gas regulatory framework.

[3] Refer to Officials' *Consultation Paper: Extending the national gas regulatory framework to hydrogen blends & renewable gases Changes to the NGL, NERL and Regulations*, Chapter 4 and Chapter 5.

While the specific drafting approach is still being determined, the policy intention is that the existing provisions in the national gas regulatory framework (i.e. the NGL, NGR, NGP, NERL and NERR) that currently just apply to natural gas, will be extended to apply to both natural gas and NGEs. The actual NGL, NGR and procedure changes required will be developed in the next part of this review.

Implications for the Procedures and AEMO's review

If the proposed approach in the NGL is adopted, the scope of AEMO's Procedures and the facilitated markets would change in the following way:

- The scope of the retail markets in Victoria, NSW and ACT, Queensland and South Australia would be expanded to cover natural gas and/or NG equivalents.
- The DWGM would be a market for natural gas and/or NG equivalents. In addition, if the proposed DWGM rule change for distribution-connected facilities comes into effect and the registration categories are expanded to include NG equivalents then distribution-connected natural gas and NG-equivalent facilities would be included in the wholesale market.
- The STTM would become a market for natural gas and/or NG equivalents. If the registration categories in the NGR are either amended or expanded to cover NG equivalents, then these facilities (and STTM trading participants operating at these facilities) would be included in the STTM.

In undertaking its review AEMO has assumed that the changes in the NGL will flow through to the NGR and that the existing provisions in the NGR will in large part apply to both natural gas and NGEs unless bespoke requirements are required (e.g. to accommodate different facilities or differences in physical characteristics).

2.3 Approach and assumptions made in AEMO's review

Considering AEMO's terms of reference and the broader review being undertaken by officials and the AEMC, in reviewing the Procedures AEMO has used an approach and assumptions that are consistent with the overarching review of the regulatory framework. AEMO's assessment of its Procedures and its findings should be read in the context of the framework outlined in this section and the assumptions that have been made.

Definition of natural gas, natural gas equivalents and the approach in the NGL

As outlined in section 2.2, AEMO has adopted the interpretation proposed in the Officials' consultation paper for its preliminary review of the Procedures. Importantly, AEMO's review has focussed on NGEs and has not contemplated OG products or constituent gases (unless relevant to NGEs). AEMO has assumed that where the term "gas" or "natural gas" appears in the Procedures it will be taken to mean natural gas, NGE or both once the national regulatory framework has been extended. If a different approach is taken in the NGL (or NGR), then it is possible additional amendments to the Procedures may be required. AEMO will undertake a further review of its Procedures once changes to the NGL and NGR have been made to ensure they are consistent.

Policy intent with respect to treatment of NGEs in the regulatory framework

In its review, AEMO has taken the approach that, for the time being NGEs, participants that supply, consume, or trade NGEs, as well as facilities involved in producing NGEs, are to be accommodated by existing market rules and Procedures wherever possible and on the same terms as natural gas. This interpretation is consistent with the approach being considered in the Officials' consultation paper where the existing natural gas regulatory framework is effectively being extended to encompass NGEs. In making this assumption AEMO has attempted to assess whether existing requirements in the Procedures are fit for purpose for NGEs as well as natural gas. AEMO has not considered broader more fundamental changes to the market design that may be required to accommodate NGEs or OG products.

Jurisdictional regulations and legislation

Some of AEMO's Procedures refer to regulatory requirements that are defined in jurisdictional instruments and, where this occurs, the relevant instrument is typically specified in the Procedures. In preparing this consultation paper, AEMO has not reviewed jurisdiction-level regulations or legislation to ensure they are fit for purpose for NGEs. AEMO has assumed that the responsible jurisdiction will review (and, if they deem it necessary, amend) its regulations or legislation as part of the broader review into accommodating NGEs.

Regulatory responsibility for determining the gas product

The regulatory responsibility for determining whether a facility producing an NGE (or OG products) can be injected into the gas network will sit with the relevant jurisdiction under their regulations. In reviewing its Procedures, AEMO has assumed that all future NGE facilities are compliant with the relevant jurisdictional instruments and therefore that any NGE that is entering a facilitated market (or regulated gas system) is suitable for consumption as natural gas.

Registration categories and NGR definitions

Registration categories and their definitions are typically not specified in the Procedures for the facilitated markets and are outlined in Part 15A of the NGR (unlike the Gas Supply Hub for example where registration categories are specified in the Procedures). AEMO assumes that this approach will continue for NGEs. For the purpose of this consultation paper, AEMO has assumed that the existing NGR registration categories in Part 15A will be reviewed and updated (if necessary) to accommodate NGEs, consistent with the approach being proposed in the NGL. Any NGR changes to registration categories may lead to further procedure changes that are difficult to identify at this stage.

NGE facilities will participate and inject at the distribution level

For this review, consistent with the approach being taken in the Officials' consultation paper, a core assumption is that NGE facilities will be injecting gas directly into distribution networks. Transmission-connected NGE facilities and their associated impacts have not been considered in this report[4]. As such, the Procedures are being reviewed in this context to determine whether they are fit for purpose for distribution-level supply of NGEs.

[4] As per action 3.15 of the National Hydrogen Strategy: "Agree to not support the blending of hydrogen in existing gas transmission networks until such time as further evidence emerges that hydrogen embrittlement issues can be safely addressed. Options for setting and allowing for ongoing updates of safe limits for hydrogen blending in transmission networks will form part of the review in 2020."

3. Declared Wholesale Gas Market (DWGM) Procedures

3.1 Overview of the DWGM

The DWGM operates in Victoria over the declared transmission system (DTS) under Part 19 of the NGR. The DWGM facilitates the wholesale trading of gas between market participants. AEMO is the market operator of the DWGM and the system operator for the DTS. Key features of the DWGM include:

- Market carriage transportation framework.
- Market is scheduled on-the-day with intraday reschedules.
- Mandatory participation – participants must bid all gas into the DWGM that flows through the DTS.
- AEMO centrally schedules the market, settles participants, and operates the transmission system under the Rules and Procedures.

3.2 Relevance of the DWGM distribution-connected facilities (DDCF) rule change

On 8 September 2021, the Victorian Minister for Energy, Environment and Climate Change submitted a rule change request for the DWGM. The rule change request proposes to change the scope of the DWGM to include distribution-connected injection facilities. At present, the DWGM only includes transmission-connected facilities for scheduling and settlement. This rule change was submitted in context of emergent distribution-connected injection facilities (including hydrogen blending and biogas facilities). This rule change is being progressed in parallel to this review but will follow the rule change process.

The scope of the rule change request is far-reaching and includes potential changes to:

- Market operations
- Settlement
- System operations
- Connections
- Metering
- Gas quality and,
- Powers of direction

Given the broad scope of the DDCF rule change request there will be considerable overlap between the outcomes in that rule change and the changes that will be required in the Procedures to facilitate NGEs. In addition, the rule change request contemplates different options for how distribution-connected facilities may be treated in the market and these options could have significantly different impacts on the DWGM Procedures.

AEMO anticipates that the majority of the changes to the Procedures will be as a consequence of expanding the scope of the wholesale market to include distribution-connected supply with a smaller number of changes specifically required to facilitate NGEs.

Implications for AEMO's review of the DWGM Procedures

Considering that the scope of the rule change request and that the rule change process is at an early stage, AEMO is not able to provide a full assessment of the potential changes to the DWGM Procedures that may

be required to accommodate NGEs. Instead, this chapter provides AEMO's preliminary view on the potential high-level areas of the Procedures that will likely need to change if NGE facilities are included in the DWGM in some form.

AEMO will work with the AEMC through the rule change process to understand the options that are being considered in the NGR and the likely impacts for the DWGM Procedures and systems. AEMO expects that once a final determination is made, it will have to undertake a round of procedure consultation to implement any changes made to the NGR.

Given the uncertainties and the stage of the rule change process, AEMO is not expecting participants to provide feedback on the scope of potential changes to the DWGM Procedures at this stage except for where specific questions have been posed in this consultation paper. AEMO encourages participants to review the DDCF rule change proposal and provide to that process any feedback on the scope of potential changes.

3.3 Scope of the DWGM Procedures

The DWGM Procedures, unlike the STTM or retail market Procedures, are spread across multiple different instruments as required under Part 19. To aid in analysing and reviewing potential changes to the DWGM Procedures, this section groups the various Procedures into the following categories:

- Market and settlement procedures
- Operational procedures
- Connection and maintenance procedures
- Metering procedures
- Distribution UAFG procedures

Section 3.9 provides a summary of potential changes per procedure that may be a consequence of either the DDCF rule change, or the review. *Attachment A* provides a more detailed overview of potential procedure changes by instrument and, where possible, includes clause references. It also provides a high-level overview of potential changes to subordinate instruments.

3.4 Overview of potential changes to market and settlement procedures

Market and settlement procedures relate to the operation of the wholesale market and the settlement of market outcomes for participants. They include:

- Wholesale Gas Market Accreditation Procedures (Victoria)
- Wholesale Gas Market Ancillary Payment Procedures (Victoria)
- Wholesale Gas Market Uplift Payment Procedures
- Wholesale Gas Market Administered Pricing Procedures (Victoria)
- Capacity Certificates Auction and Transfer Procedures
- Wholesale Gas Market Compensation Procedures (Victoria)
- Wholesale Gas Market Electronic Communication Procedures (Victoria)
- Wholesale Market Rule Consultation Procedures (Victoria)

Procedures relating to ancillary payments, uplift payments, accreditation and electronic communications

AEMO expects that if NGE facilities are included in the market, then they will operate in the market on the same basis as existing facilities that inject natural gas at the transmission level and that bidding and settlement will also function in the same way. The DWGM is settled on an energy basis (i.e. dollars multiplied

by gigajoules) and should therefore be able to function irrespective of whether gas injected is natural gas or an NG equivalent. As such, AEMO is not anticipating that there will be significant changes to any of these Procedures to accommodate NGEs. If bespoke requirements for NGEs are identified in the Procedures, then these will likely necessitate changes to the NGR as the Rules do not provide for different treatment based on supply source.

As such, no changes are expected to the Accreditation Procedures, Ancillary Payment Procedures, Uplift Payment Procedures, Gas Market Electronic Communication Procedures.

Procedures relating to compensation and administered pricing

The Compensation Procedures and Administered Pricing Procedures may need minor definitional changes to ensure that these Procedures also extend to distribution injection facilities (and participants participating at those facilities) if they are included in the wholesale market as part of the DDCF rule change. Aside from definitional changes, the approaches and framework outlined in the Compensation Procedures and Administered Pricing Procedures is not expected to change.

Procedures relating to capacity certificates

The Capacity Certificates Auction and Transfer Procedures are expected to come into force on 1 January 2023 and replace the existing AMDQ Procedures – an outcome of the AEMC's 2019 "Improvement to AMDQ regime" rule change. The Procedures that cover the operation of the capacity certificates auction are not expected to require changes. However, if the DDCF rule change expands the provision of capacity certificates to distribution-connected facilities, then changes are likely to be required to the procedures that concern the definition and coverage of capacity certificates zone and the modelling approach for capacity certificates. In the current version of the Procedures the approach to developing zones and modelling capacity certificates is set at the transmission-system level.

Title of gas

The Wholesale Gas Market Ownership Rules (a Procedure) will likely need to be updated to reflect changes in the made in the NGR as part of the DDCF rule change. Changes to the ownership rules concerning title of gas will be required if distribution injections are included in the wholesale gas market as part of the DDCF rule change. The current procedures and rules concerning title to gas do not take distribution injections into account. Under the current approach, title to gas is transferred to a market participant at the withdrawal custody transfer meter (i.e. when withdrawn from the Declared Transmission System) and so would not cater for distribution-connected injections. The AEMC is consulting on this matter as part of the DDCF rule change.

3.5 Overview of potential changes to operational procedures

Operational procedures are those Procedures that relate to the operation of the DTS and in this consultation paper include:

- Gas Scheduling Procedures
- Gas Market System Security Procedures
- Gas quality guidelines
- Gas quality standard and monitoring guidelines

Gas scheduling Procedures

The Gas Scheduling Procedures currently only apply at the DTS level (as required in the NGR), and in general do not extend into declared distribution systems or to any distribution-connected supply sources. Potential changes to these Procedures will therefore depend on whether these distribution-connected facilities are "scheduled" by the market (which would require an update to the scheduling rules in the NGR), how constraints are managed at these facilities and the party that is responsible for monitoring and managing gas quality and compliance. If the distribution-connected facilities are scheduled by the market and AEMO is

responsible for applying constraints to these facilities in the market and/or operational schedules, then updates to the Gas Scheduling Procedures are likely to be required to cover how constraints are determined and applied.

Procedures relating to gas quality and monitoring

The gas quality guidelines and gas quality standard and monitoring guidelines largely apply to the DTS. If the NGR accords AEMO with the responsibility of managing gas quality for distribution-connected facilities, then these Procedures will need to be updated so that their scope is expanded.

In addition, the current gas quality standard and monitoring guidelines use parameters that are based on the characteristics of natural gas. AEMO expects that not all parameters will be appropriate for a NGEs and so a review of the framework is likely to be required to ensure it is fit for purpose.

System security procedures

AEMO does not expect the processes in the Gas Market System Security Procedures to be changed given its current system security role is not anticipated to change as an outcome of the DDCF rule change or this review. Minor definitional changes may be required to reflect any changes made in the NGR.

3.6 Overview of potential changes to connection procedures and maintenance planning procedures

Connection Procedures

At present, the Rules provide an assessment and approval framework for connections to the DTS, and so the Procedures (and Rules) do not extend to the declared distribution systems. AEMO notes that the DDCF rule change seeks to clarify the connection arrangements for declared distribution systems and establish whether there should be a Rules-based framework. It is not yet clear what AEMO's role would be in any future framework; however, the rule change proponent expressed that AEMO may only have a limited role related to market operation. Under such an approach, only limited (or perhaps no) changes would be required to this Procedure. On the other hand, if AEMO's existing role in the Rules for transmission connections was extended into distribution then the scope of this procedure would need to be revised (or a new DDS-specific procedure developed) to create a distribution-level connections framework.

Maintenance Planning Procedures

The Wholesale Gas Market Maintenance Planning Procedures only apply to DWGM facility operators where AEMO is responsible for the coordination of planned maintenance to minimise threats to system security. If the DDCF rule change results in distribution-connected injection facilities becoming DWGM facilities, then these Procedures will apply to NGE facilities. However, at this stage AEMO is not anticipating any changes or bespoke requirements in these Procedures to accommodate distribution-connected supply or NGEs as they will be treated in the same way as natural gas facilities.

3.7 Metering Procedures

The Wholesale Market Metering Procedures (Victoria) incorporate:

- Metering Uncertainty Limits and Calibration Requirement Procedures
- Energy Calculation Procedures
- Metering Communication Procedures
- Metering Register Procedures
- Data Validation Procedures

Metering Uncertainty Limits and Calibration Requirements

The current Procedures that relate to uncertainty limits only apply to transfer points on the DTS and so may need to be changed to include distribution-connected supply. If the Rules and Procedures are expanded to cover distribution-connected supply, then the uncertainty limits may need to be reviewed. The limits will need to be considered in the context of hydrogen blends (due to its different physical characteristics when compared with natural gas) and whether the state-wide approach to calculating heating values continues.

Energy Calculation Procedures

These Procedures relate to the calculation of natural gas energy at distribution delivery points under NGR 303(6). Given the different properties of hydrogen, AEMO is expecting that it will need to review and revise the energy calculation equations to cater for NGEs. This will include reviewing the equations, inputs and assumptions and potentially the approach used to determine pressure correction factors and compressibility factors to ensure that these technical factors are consistent with the characteristics of NGEs (specifically, hydrogen blends).

Metering Communication Procedures

These Procedures are established under NGR 308(1) and set out the requirements for AEMO to collect metering data for any metering installation where data is required for settlement purposes. As such, changes to this procedure will depend on how distribution-connected facilities are treated in the market and whether (and how) they are included in market settlement. If changes are required to this procedure, they are primarily expected to be definitional and scope changes. AEMO anticipates that the data requirements and data exchange processes that currently apply to DTS metering installations would be extended to distribution-connected facilities without requiring many bespoke differences.

Installation Database Procedures and Meter Register Procedures (Data Validation Procedures)

No changes to these Procedures are expected as a consequence of NGEs or the DDCF rule change.

3.8 Distribution Unaccounted for Gas (UAFG) Procedures

The Wholesale Market Distribution UAFG Procedures (Victoria) are made under NGR 317. These Procedures cover the UAFG calculation and allocation process between distributors and retailers. The UAFG benchmark rates are set out in the Gas Distribution System Code administered by the Essential Services Commission.

At a high level the current distribution UAFG process in the Procedures can be described as follows:

1. AEMO determines and provides custody transfer meter (CTM) injections (i.e. withdrawals from the DTS) and net system load values to the distributors and retailers for reconciliation.
2. Distributors send consumption data to each retailer.
3. Market participants and distributors must review and agree on the consumption data.
4. Once the parties have agreed, AEMO issues a statement for any reconciliation amounts.

A key assumption used in these Procedures is that CTM injections (from the DTS) are the only supply source for the distribution networks. This assumption is reflected in the process, inputs and equations outlined in this Procedure. AEMO expects that this procedure will need to be changed (regardless of the outcome of the DDCF rule change) to cater for distribution-connected supply.

Given AEMO will be re-opening this procedure as part of this process, it is an opportune time to review whether participants would like to see any changes to the current approach in these Procedures.

DWGM Distribution UAFG Procedures

Question 2: Do you think the approach to determining and allocating distribution UAFG should be changed in the Procedures? If so, what changes to the processes do you think should be made?

3.9 Summary of potential DWGM Procedure changes

To aid stakeholders in understanding the potential scope of change for DWGM Procedures across the review and rule change processes a summary is provided in this section.

Table 1 DWGM potential Procedure change due to the DDCF rule change or the review

Procedure Category	Procedures	Potential changes due to DDCF rule change	Potential changes due to Review
Market Procedures	Wholesale Gas Market Accreditation Procedures	No change expected.	No change expected.
	Wholesale Gas Market Ancillary Payment Procedures	No change expected.	No change expected.
	Wholesale Gas Market Uplift Payment Procedure	No change expected.	No change expected.
	Wholesale Gas Market Administered Pricing Procedures	Definitional changes may be required to expand scope to distribution-connected facilities.	No change expected.
	Capacity Certificates Auction and Transfer Procedures	Definitional and methodology changes may be required to expand scope to distribution-connected facilities.	No change expected.
	Wholesale Gas Market Compensation Procedures	Definitional changes may be required to expand scope to distribution-connected facilities.	No change expected.
	Wholesale Gas Market Electronic Communication Procedures	No change expected.	No change expected.
	Wholesale Market Rule Consultation Procedures	No change expected.	No change expected.
	Wholesale Gas Market Ownership Rules	Scope and approach changes may be required if the wholesale market is expanded to included distribution connections.	No change expected.
Operational Procedures	Gas Scheduling Procedures	Scope and approach changes may be required if the wholesale market is expanded to included distribution connections.	No change expected.
	Gas Market System Security Procedures	No change expected.	No change expected.
	Gas quality guidelines and Gas Quality Standard and Monitoring Guidelines	Scope and approach changes may be required if the AEMO DTS obligations are expanded in the NGR to include distribution connections.	No change expected.
Connections and Maintenance Procedures	Wholesale Market connection approval Procedures	Scope and approach changes may be required if the AEMO DTS obligations are expanded in the NGR to include distribution connections.	No change expected.
	Wholesale Gas Market Maintenance Planning Procedures	No change expected (scope should automatically expand to cover distribution facilities if they are included in the market).	No change expected.
Metering Procedures	Wholesale Market Metering Procedures	Potential changes to metering communication procedures to capture distribution-connected	Potential changes to Energy Calculation Procedures and

Procedure Category	Procedures	Potential changes due to DDCF rule change	Potential changes due to Review
		facilities if they are included in the market for settlement.	metering uncertainty limits and calibration requirements
Distribution UAFG Procedures	Wholesale Market Distribution UAFG Procedures	Likely need to change irrespective of rule change outcome but approach in rule change could affect the scope of change.	Will need to change to capture distribution-connected supply (regardless of how it is captured by the wholesale market).

DWGM General

Question 3: Considering this section, the scope of the DDCF rule change and, Attachment A, are there any other matters you think AEMO should consider to facilitate NGEs in the DWGM? If so, please identify the relevant Procedure and explain why a change is required to accommodate NGEs.

4. Short Term Trading Market (STTM) Procedures

4.1 Overview of the STTM

The STTM is a wholesale market for the trading of natural gas operated by AEMO under part 20 of the NGR. The STTM currently comprises three hubs located at Adelaide, Sydney and Brisbane. While each hub is scheduled, priced and settled separately, all hubs operate under the same set of rules and procedures. The key features of the STTM include:

- a mechanism for participants to trade gas at a transparent price ahead of the gas day,
- a market based balancing mechanism (known as market operator service) for settling deviations, and
- a framework for balancing supply and demand if there is a physical shortfall or surplus when normal market mechanisms are unable to do so (known as contingency gas).

Participation in the STTM is mandatory for any facilities (STTM Facilities), shippers, or users (Trading Participants) who inject or withdraw gas at an STTM hub. The STTMs overlay the existing contract carriage framework that operates at STTM facilities and trading participants must have the appropriate contractual arrangements in place with STTM facility operators. AEMO's role in the STTM is to act as market operator. The scheduling and operation of an STTM facility is the responsibility of the relevant STTM facility operator in accordance with the Rules, Procedures, jurisdictional regulations and the facility operator's own commercial arrangements.

4.2 Scope of the STTM Procedures

AEMO is required to develop STTM Procedures under Part 20 of the NGR. The STTM Procedures cover technical and procedural matters as required under the Rules. In general, the STTM Procedures specify how the market operates and how participants are settled. The design of the market itself is largely covered by the NGR. The Procedures also set out the processes and obligations for STTM facility operators in providing information that is required under the Rules to facilitate the efficient operation of the market.

The table below provides a summary of the key topics covered by the STTM Procedures. This summary is not intended to be exhaustive and is intended to aid participants in understanding the changes (or no changes) identified by AEMO in section 4.3. It is recommended that stakeholders review the STTM Procedures which can be found on the AEMO website.

Table 2 STTM Procedures overview

Procedure heading	Procedure Reference	Matters covered	Summary
Preliminary	1	• Definitions • Interpretation • Formulae, calculations and values	Defines the key terms used in the STTM Procedures, the approach used to identify a gas day and the mathematical notations used in equations.
Hubs	2	• Sydney, Adelaide and Brisbane STTM hubs	Defines the *custody transfer points that* comprise each STTM hub.

Procedure heading	Procedure Reference	Matters covered	Summary
STTM Facilities and distribution system information	3	• Benchmark information • Other information • Determining STTM facility capacity • STTM facility operator data	Defines the requirements for STTM facility operators to provide benchmark information for contingency gas, default and maximum STTM facility capacities for use in the STTM schedules in the event that an STTM facility operator has not provided that information under NGR 376.
Registration of services and trading	4	• Facility services and distribution services • Additional trading rights	This provision allows AEMO to require additional information (over what is required in the Rules) for a facility services, distribution service or trading rights. Currently the STTM Procedures do not require any additional information for facility services and distribution rights. There is a requirement for additional trading right information to cover whether an additional trading right includes the right to make a MOS increase or MOS decrease offer.
Market operator service	5	• MOS estimates • Request for MOS increase offers and MOS decrease offers • MOS increase offers and MOS decrease offers • MOS stacks	These Procedures cover the process AEMO, trading participants, and STTM pipeline operators follow in determining MOS estimates and MOS increase and MOS decrease stacks for each MOS period.
Scheduling and Pricing Algorithm	6	• The scheduling and pricing algorithm • Mathematical formulation document • Incremental price step quantities • SPA inputs • Ex Post imbalance price and provisional ex post imbalance price • Functionality of the SPA • SPA outputs	The Procedures cover the mathematical approach AEMO uses to schedule and clear the market in accordance with the requirements under the Rules.
General Market operations	7	• Scheduling for the ex ante market • Allocations • Market schedule variations • MOS allocation service cost • Ranked deviations quantities information • Reporting on validation and substitution of data	These Procedures concern the day-to-day operation of the STTM including requirements for how participants must, information requirements for STTM facility operators, the publication of information by AEMO and processes related to determining the ex post price and managing market schedule variations.
Administered market states	8	• Cumulative price threshold • Technical or operational conditions • Major and Minor Retailer of Last Resort Events • Market Schedule Quantities in Market Administered Scheduling	These Procedures outline the processes and requirements for the various 'abnormal' market states that are contemplated in the NGR.

Procedure heading	Procedure Reference	Matters covered	Summary
		State and Market Administered Settlement State	
Contingency gas	9	• CG offers and bids • CG Gas benchmark information • CG trigger events • Calling and scheduling CG • Evidence of delivery of CG	These Procedures cover how CG bids and offers are made by trading participants, the information requirements for STTM facility operators and the process and requirements for CG events and scheduling CG under the NGR.
Settlement	10	• Settlement processes	These Procedures outline all of the various settlement equations that are used in the STTM and the approach AEMO takes as required under the NGR.
Prudential requirements	11	• Monitoring and margin calls	These Procedures outline how AEMO estimates and monitors exposure for each trading participant under the NGR. It also outlines the requirements for how participants must respond to margin calls.
Transitional	12	• MOS periods, market administered scheduling state, cumulative price threshold and deviation quantities.	These Procedures set out the approach that was taken for market start for each STTM hub and the approach that will be taken for any additional STTM hubs for transitional matters.

4.3 Overview of potential changes identified in the STTM Procedures

This section provides AEMO's preliminary assessment of changes that may be needed in the STTM Procedures to accommodate NGEs. A summary of proposed potential changes (and information on why certain Procedures do not need to change) can be found in Attachment B. Readers are encouraged to review the attachment alongside this section.

It is important to note that the scope of the STTM Procedures primarily relates to the functioning of the market (and not the physical gas system) and largely does not concern 'operational' matters. In addition (and unlike the DWGM) the STTM framework already accommodates distribution-level injections in the form of an "STTM Production facility" or "STTM Storage facility".

STTM hub definitions

For each STTM hub, the Procedures specify the custody transfer points (CTP) that comprise that hub. If a new CTP is commissioned (or an old CTP is decommissioned), AEMO must amend the STTM Procedures to reflect that change. Such a change requires AEMO to follow the approved consultation process to amend Procedures set out in Part 15B of the NGR which requires multiple rounds of consultation, meaning that a change would take at least three months to implement. The current approach would mean that whenever a new NGE facility connects to an STTM hub, AEMO would have to run a standard consultation process to update its Procedures.

AEMO is interested in industry's views on whether the hub definition and change framework is fit for purpose for NGE facilities. While the procedure change process is relatively straightforward, given NGE facilities are expected to be (relatively) small and there could be numerous facilities connecting to an STTM hub over a short period of time it could be onerous to require multiple consultations to update the STTM Procedures. It is possible that a more streamlined approach could be developed for example where the CTPs that comprise a hub sit in a subordinate instrument to the STTM Procedures and this instrument would be updated (rather

than the entire STTM Procedures) to reflect any changes to connections through a more direct consultation process. A change in approach will also need a change to the NGR.

STTM hub definition change framework

Question 4: Do you think a more streamlined consultation process should be considered for amendments to STTM hub definitions? If yes, what steps do you think should be involved in such a consultation process?

STTM facility and distribution information

NGE facilities are expected to participate in the market on the same basis as their natural gas counterparts and it is assumed that they can provide the same set of capacity information (as defined in the Rules). The STTM facility and distribution information Procedures relate to the processes AEMO must use to determine an STTM facility's capacity if the facility operator has not provided a default gas day capacity or a maximum gas day capacity under the Rules. Changes to the processes in these Procedures are not expected to be required for NGEs.

STTM market operations

These Procedures outline the processes for the scheduling of the ex-ante market, allocations, determining the ex-post price and market schedule variations. In general, the operation of the STTM is not expected to require changes to facilitate the participation of NGE facilities and no changes have been identified to the general market operations chapter. AEMO has also not identified any bespoke requirements for bids from NGE facilities on the assumption that trading participants operating at these facilities will participate in the market on the same basis as trading participants using natural gas facilities.

STTM market operations

Question 5: Do you agree with AEMO's assessment that the STTM market operations do not need to change to facilitate NGEs? If not, what changes do you believe may be required?

Administered market states

The administered market state Procedures outline the processes that are required to trigger the administered market states that are set out in the Rules.

One potential change to the administered market states Procedures has been identified. Section 8.2.3 of the Procedures relates to the process concerning significant constraints at an STTM hub which in turn triggers an administered market state. The provisions in 8.2.3 apply where a Trading Participant has taken an ex ante market schedule position but then becomes unable to flow that gas due to a technical issue in the supply chain. The current threshold for a Trading Participant to trigger this provision is that constraint will exceed 5TJ and 50% of the quantity scheduled for supply to the hub by that Trading Participant in the most recent schedule issued for the gas day.

If a trading participant's only position in the market is at a NGE facility then there is a potential that if this facility trips or if there is a blending constraint that requires the facility to reduce its production, the trading participant will trigger an operational constraint. If this occurs, the trading participant will have to provide AEMO with a notice and evidence of the operational constraint under the current Procedures. If AEMO then determines that an operational constraint is in effect, then an administered market state may apply. AEMO is seeking feedback on whether the aforementioned 5TJ/50% threshold is appropriate considering the likely size and technical parameters for NGE facilities.

No additional changes have been identified to STTM Procedures relating to the administered market states.

STTM administered market states

Question 6: Do you consider that threshold for significant constraints for a trading participant to trigger the significant constraints process is appropriate? If not, what would an appropriate threshold be?

Other areas of the STTM Procedures

No further potential changes have been identified for the STTM Procedures at this stage.

With respect to settlement, the STTM is settled on an energy basis (i.e. dollars multiplied by gigajoules). It is expected that (as required in the Rules) bids and allocations at NGE facilities will also be done on a GJ basis. As such, no changes to the settlement approach or equations are seen as necessary to facilitate NGEs. No bespoke requirements for MOS (which is only able to be offered on STTM pipelines) or the CG Procedures have been identified.

A summary of the potential changes considered in this report is provided in *Attachment B*.

Other areas of the STTM Procedures

Question 7: Considering this section and *Attachment B*, are there any other areas of the Procedures that you consider need to be changed to facilitate participation of NGEs in the STTM? If so, please identify the procedure and explain why changes are required to accommodate NGEs.

4.4 STTM registration and participation considerations

In reviewing the STTM Procedures, AEMO has identified aspects of the registration and participation framework that may need to be considered as part of the broader review into the regulatory framework.

STTM registration categories

The definitions for STTM Facilities are specified in Part 20 of the National Gas Rules. Once the drafting approach in the NGL has been determined, an assessment will need to be made as to whether an STTM Production Facility (or STTM storage facility), as defined in the NGR is fit for purpose and would cover NGEs and NGE facilities. This is an important consideration because the STTM participant registration categories that are defined in Part 15A (e.g. STTM shipper) are tied back to production or storage facilities that are connected to an STTM hub. It is possible that the facility definitions will need to be amended or new definitions required. This is a matter in which AEMO will seek to collaborate with the AEMC as part of its review into the NGR.

STTM exemptions and aggregation

Part 20 of the NGR does not include an exemption framework for STTM facilities. There is also no ability to "aggregate" facilities for registration and participation purposes. If there are a large number of small NGE facilities (e.g. biomethane facilities), there may be a desire to aggregate these facilities for bidding and/or settlement purposes. Under the current framework individual bids would have to be submitted at each facility and these could be for very small quantities.

AEMO understands that, given the potential size and scale of NGE producing facilities (at least while they are mostly trial projects), there may be a view that they should be exempted from registration and/or participation in the STTM. However, over time in aggregate they could account for a larger volume of supply, so it is important to consider how these facilities should be dealt with. Any implications for settlement would also need to be considered.

AEMO has also not assessed what the ramifications would be for the market, its systems or procedures if exemptions and/or aggregation are permitted. This topic is matter for the NGR review being undertaken by the AEMC and AEMO will provide input into that process.

Part 15A registration exemptions

AEMO has a general registration exemption power in Part 15A. Rule 135AG states that:

(1) AEMO may:

(a) grant an exemption from registration to a person who applies for such an exemption; or

(b) grant, by notice published on its website, a general exemption from registration in favour of a class of persons defined in the notice.

(2) An exemption must be consistent with:

(a) the national gas objective; and

(b) relevant guidelines issued from time to time by AEMO.

This exemption provision has not been used by AEMO to date. As discussed at the Gas Wholesale Consultative Forum (GWCF) on 23 September 2021, AEMO is currently considering the application of this rule and developing a guideline to provide industry with greater clarity on AEMO's approach to assessing exemptions. The guideline will be developed separately from this review through the GWCF.

The provision in Part 15A is not specific to NGEs or NGE facilities nor do the Rules provide any principles for how exemptions are to be assessed or their scope (beyond meeting the intent of the National Gas Objective). In addition, the way in which an STTM facility and STTM facility operator is defined in Part 20 is not linked to registration. If an exemption framework for NGE facilities is to be developed, then this is really a policy matter that should be considered in the context of the broader review and new provisions would need to be included in the NGR.

5. Retail Market Procedures

5.1 Overview of the retail markets

The regulated retail gas markets in NSW/ACT, Queensland, South Australia and Victoria allow licensed retailers to sell natural gas to residential and business customers and are designed to facilitate retail competition. In these markets, AEMO is the retail market operator and is responsible for

- managing customer transfers and associated market data between retailers, and between retailers and distribution businesses.
- managing the daily allocation of gas to retailers to enable settlement.
- operating the central IT systems that facilitate retail market services.

5.2 Content of the Retail Market Procedures

AEMO is required by the NGL to develop and maintain Retail Market Procedures (RMPs) for each of the regulated retail gas markets and each market operates under its own specific set of Procedures. While each of the RMPs is a standalone instrument and are drafted differently, they tend to cover common concepts and processes.

To aid in the discussion of the changes that may be required to the RMP, AEMO has attempted to group the various procedures under common headings (Attachment C). Please note that not all headings apply to each procedure. When AEMO develops the specific draft procedure changes in the next phase of the review, this will be done for each of the individual RMPs respectively. It is important to note AEMO is not seeking to harmonise the RMP, nor is it seeking unnecessary to reword clauses in a way that will make them overly prescriptive relative to the requirements of this review.

The table below provides a summary of the key topics covered by the RMP. This summary is not intended to be exhaustive and is intended to aid participants in understanding the changes (or no changes) identified by AEMO in section 5.3 and Attachment C. It is recommended that participants review each RMP document, each of which can be found on the AEMO website. The specific potential changes and the chapter references per RMP can also be found in Attachment C. Readers are encouraged to review the attachment alongside this section.

Table 3 Retail Market Procedures overview

Procedure heading	Matters covered
General	• Definitions • Interpretation • Parties covered by the Procedures • Technical protocol and full retail competition hub obligations • Audit requirements
Databases	• Allocation of Meter Installation Registration Numbers (MIRN)s to Distributors. • Management of AEMOs and Distributors databases
Metering	• Meter Management • Site access • Meter reading (basic and interval) including scheduling, site access, frequency, timing, transfer reads; historical data

Procedure heading	Matters covered
	• Other reads such as special and customer reads. • Methodologies including validation, estimation and substitution • Calculation and provision of energy data (Distributors, Retailers and AEMO) • Heating value • Profiling • Data changes • Gate point data
MIRN Discovery Process	• MIRN discovery requests and response information, • Assistance in searching.
Customer Transfer Process	• Describes the life cycles of the various stages of the customer transfer process which includes preconditions, initiation, objections registration • Bulk Customer Transfer • Customer transfer in error correction process
Retailer of last resort (ROLR)	• Provision of customer data to AEMO • Sets out the processes for managing a RoRL event.
Allocation, reconciliation/balancing, and settlements	• Sets out the processes for managing the daily allocation of gas usage. • Manifest data errors
Distribution Unaccounted for Gas	• Calculation of unaccounted for gas and determination of payments.

Further to the categories above, it is important to note that in NSW and ACT, SA and Queensland there are specific subsections of the Procedures that only apply to non-STTM retail networks (e.g., any SA gas retail network outside of Adelaide in SA) due to the different requirements and processes in those networks. In addition, in Victoria Part 19 of the NGR and the associated Procedures primarily apply to DTS networks. Non-DTS networks (e.g., Horsham, which is on the non-DTS Carisbrook to Horsham Pipeline) are typically administered under a service agreement between AEMO and the relevant distribution business.

5.3 Potential changes to the RMPs

This section provides AEMO's preliminary assessment of changes that may be needed in the RMPs. In general, AEMO expects most processes in the RMPS to remain unchanged when the framework in the NGR and NGL for natural gas is expanded to include natural gas equivalents.

Definitions

Across the RMP, AEMO has identified several definitional issues that appear to conflict with the approach that is being considered in the NGL either because they do not contemplate a NGE *or* because they implicitly assume that supply into a network sections can only come from a transmission pipeline.

Table 4 provides a summary of definitional issues identified by AEMO across the RMPs.

Table 4 Potential definition changes in the Retail Market Procedures

Retail Market Procedure	Term	Current definition	Potential Change
Victoria	Gas	Undefined	Unlike the other east coast RMP, the definition and interpretation sections of the Victorian RMP do not explicitly define the term 'gas'. AEMO will seek to harmonise the definition with the broader regulatory framework.
	Custody Transfer Meter	means a meter that measures the transfer of gas between the transmission system and a distribution pipeline.	Depending on the approach taken in the DDCF rule change, this term may need to be updated or a new term may need to be introduced to capture the meters for distribution-connected supply (hydrogen/blending facility or other) – a concept that is currently not explicitly considered in the Victorian retail or wholesale markets. AEMO will review this term when the rule change is further progressed.
South Australia	Injecting	The process of delivering gas out of a transmission pipeline, through a gate point and into a sub-network. Note: This process will usually be termed "delivery" by the transmission pipeline operator, and "receipt" by the Network Operator.	This definition may need to be amended to make it clear that injecting includes injecting from a distribution-connected injection facility (not just a transmission pipeline) to cover facilities producing NGEs. The change may be required so that users can meet their obligations under 8.2 that requires injections to match withdrawals within a subnetwork and the allocation provisions in 8.3.
Queensland	Custody Transfer Meter	A meter that measures the transfer of gas between the transmission system and a distribution system or between one distribution system and another distribution system.	This term may need to be broadened (or a new term introduced) to include meters at distribution-connected injection facilities. Currently only meters between distribution networks on transmission pipelines and distribution networks appear to be covered.
NSW and ACT	Network receipt point	A point at which gas enters a Network Operator's network.	This definition would appear to cover all gas entering a network (irrespective of source). However, if necessary AEMO will seek to clarify this definition.
	Heating Value	Part of the definition states: "The HV assigned to a delivery point on any given day will vary in accordance with the mix of hydrocarbons in the gas in that network section."	The term hydrocarbon in this definition is inconsistent with the approach being taken in the NGL with respect to NG and NGEs and so may need to be modified.

The potential proposed definitional changes identified are primarily intended to clarify the scope of the procedures and ensure that they are consistent with the broader regulatory framework. AEMO does not expect these potential changes themselves to lead to fundamental changes to existing obligations or processes for current participants under the RMP. AEMO may also need to make further amendments to definitions and terms if there are changes to defined terms (or new defined terms) in the NGR following the AEMC's review.

Definitions and concepts in the retail market procedures

Question 8: Do you agree with proposed potential changes to the terms in table 3? If not, please provide details on which RMP jurisdiction and details about the reason why you don't agree with the proposed changes?

Question 9: Do you think there could be any unintended consequences from amending these terms? If so, please provide details on which RMP jurisdiction, clause reference # and details about the reason why you believe unintended consequences could occur).

Question 10: Noting the review scope described in sections 2.1 and 5.2, are there any other terms in the RMP AEMO should consider amending to facilitate the participation of NGEs or NGE facilities?

Balancing, allocation and reconciliation

These are the Procedures that determine how user injections and withdrawals into/from a distribution network are defined, calculated, provided to AEMO and used to determine balancing, allocation, settlement and any reconciliation that is required. The Procedures covered here include:

- NSW and ACT: Chapter 8
- Queensland: Chapter 6
- South Australia: Chapter 8
- Victoria: is covered by provisions in the NGR. AEMO will consider what requirements may be necessary as part of its response to the DDCF rule change and the AEMC's review of the NGR.

With respect to NSW and ACT, Queensland, and South Australia, the definitional changes considered in table 3 are most likely to impact these Procedures and primarily apply to non-STTM networks, as STTM networks are covered by STTM facility allocations and STTM definitions. AEMO will review the relevant STTM network Procedures in each jurisdiction but is not expecting that changes will be required.

The Procedures outlined in this section need to be assessed to ensure that settlement remains whole if NGE facilities inject NGE directly into distribution networks in addition to supply that is already coming from transmission pipelines, seeing as the procedures were drafted on the assumption that distribution networks would receive injections only from a single injection point, i.e., the transmission pipeline.

In general, AEMO considers that the existing processes as defined in the RMPs for balancing, allocations, settlement and reconciliation will remain fit for purpose for NGEs, and no bespoke requirements have been identified. AEMO has come to this view because it is expected that, subject to the definitional changes in table 3, injections from NGE facilities will be captured by the existing inputs, processes and equations as defined in the RMPs.

AEMO is also assuming that the existing processes in the Procedures for non-STTM networks will continue to work due to the 'aggregation level' at which data is currently provided:

- NSW and ACT: injections and withdrawals are provided at network receipt point or network section level under chapter 8 of the Procedures.
- South Australia: injections and withdrawals are provided and calculated at a sub-network or gate-point level under chapter 8 of the Procedures.
- Queensland: injections and withdrawals are provided and calculated at a withdrawal-zone/distribution-region level under chapters 6.

Given the level at which data is aggregated (both for inputs and outputs), the information provided by participants under the Procedures and the calculations made by AEMO should be able to accommodate NGEs and NGE facilities supplying into distribution networks. AEMO does note that business processes may need to change for users and distributors in determining the aggregated quantities that they provide to AEMO as they may need to include multiple supply sources to meet their obligations under the Procedures.

Balancing, allocation, and reconciliation

Question 11: Do you agree with AEMO's view that the existing obligations and processes in the procedures for determining balancing, allocations and reconciliation will be fit for purpose for NGEs and NGE facilities? If not, please provide details on which RMP jurisdiction, clause reference # and what changes do you consider may be required?

Question 12: Will users and distributors be able to meet their obligations under the procedures to provide AEMO with information on injections (and withdrawals), if NGE facilities connect to distribution networks? If not please provide details on which RMP jurisdiction, clause reference # and, what issues do you think AEMO needs to consider?

Processes relating to customer transfers and facilitating retail competition

Across all RMPs, AEMO does not anticipate any changes to the Procedures relating to:

- Metering databases,
- MIRN discovery,
- Customer transfer processes, or
- Retailer of last resort processes.

These procedures and their associated processes are not expected to be affected by the introduction of NGEs or NGE facilities.

Metering

The metering procedures cover the processes for meter installations, meter reads and the data flows that are required between AEMO, distributors, retailers and other parties to facilitate the retail market. They also cover the calculations and provision of energy data. AEMO does not expect these processes to change when the regulatory framework is expanded to cover NGEs. While hydrogen blends have the potential to affect the heating value in gas distribution networks (see section 5.4.1), the process for determining and providing energy data as expressed in the Procedures is not expected to change. In this regard, it is worth noting that outside of Victoria, most technical metering requiring (e.g. calibration) are outlined in jurisdictional regulations and that these may need to be reviewed by the jurisdictions to ensure they are fit for purpose for NGEs.

AEMO expects that any distribution-connected supply (hydrogen/blending facility or other) for NGEs must be metered by distributors per jurisdictional regulations and (subject to any changes required to the Procedures), meter data for the facilities will be provided to AEMO by the relevant distributor, similar to information currently provided for transmission pipeline meters that connect to a distribution network.

Metering

Question 13: Do you agree with AEMO's assessment that the RMP with respect to metering are able to accommodate NGEs? If not, please provide details on which RMP jurisdiction, clause reference # and what changes do you think may be required?

Distribution UAFG

The distribution UAFG Procedures in the retail markets set out the processes for allocating and reconciling UAFG amounts between distributors and retailers in the regulated retail gas markets. While the injection of NGEs may affect the amount UAFG in a network, it is not clear that the UAFG methodologies as expressed in the RMP would need to be changed for phase one of this review. The UAFG methodology for Victoria is covered in the Wholesale Market Distribution UAFG Procedures (Victoria); please see section 3.8 for AEMO's view on potential changes to those Procedures.

UAFG methodologies and benchmarks are not specified in the Procedures and are a matter for a distributor's access arrangement and/or jurisdictional instruments. These arrangements may need to be reviewed as part of the broader review into the regulatory framework; however, they do not fall inside AEMO's remit.

Distribution UAFG

Question 14: Do you agree with AEMO's view that the distribution UAFG process in the Retail Market Procedures in NSW and ACT, Queensland and South Australia do not require change to facilitate NGEs? If not, what changes do you believe may be required?

General Retail Market Procedures

Question 15: Considering section 5.3 and Attachment C, do you believe there are any other matters AEMO should consider in reviewing the RMPs? If you believe there are other matters AEMO should consider please provide details on which RMP jurisdiction, clause reference # and why you believe it may need to be reviewed to accommodate NGEs.

5.4 Other retail market considerations

In reviewing its Procedures AEMO has identified several other retail market matters that sit outside of its terms of reference that may need to be reviewed as part of the broader reform process.

5.4.1 Heating value zones and energy calculations

Victoria

In Victoria, the *Gas Distribution System Code* states that AEMO will monitor and declare a daily state-wide flow-weighted average heating value for gas for all non-daily metered gas customers, excluding those in nominated zones. The RMPs in Victoria require AEMO to publish the daily flow weighted heating value on the market information bulletin board. The RMP also requires the relevant distributor to calculate the average heating value for a reading period using the average daily flow weighted heating value reported by AEMO. This means that (unlike in other jurisdictions) non-daily metered customers are settled using a heating value that is determined on a state-wide basis published by AEMO.

Use of a state-wide heating value for settlement naturally means that some customers may pay more per unit of energy and others less due to variance in the actual and local heating values for gas delivered across the state. This variance may increase if NGEs are introduced. However, the increase in variance may not be material and the current approach may be acceptable in the interests of simplicity and minimising cost. If NGEs (specifically hydrogen-natural gas blends) become prevalent, it is anticipated that larger deviations from the state-wide heating value would emerge.

A change to the heating value approach would require changes to the *Gas Distribution System Code* which is administered by the Essential Services Commission and then to the RMPs. If there is a change to the model then these two instruments could be updated in parallel. It is worth noting that a change to the heating value methodology would incur costs for AEMO and industry, and there is a question as to whether the change should be made now given that there is considerable uncertainty about the timing and magnitude of future hydrogen projects. Considering the aforementioned, if there is a change to the heating value model in Victoria it could be initiated as a part of a government initiative.

NSW and ACT, Queensland and South Australia

Outside of Victoria, AEMO is not responsible for calculating or providing the heating value information that is used in energy calculations for settlement and billing. In general, the RMPs require distributors to calculate and provide the heating value information. Distributors are also responsible for determining heating value zones and the allocation (also known as mapping) of postcodes (and supply points) to the heating value zones. In the current market, distributors are well placed to make these determinations as they have the best

information for their own networks including where new connections are being installed and the topology of distribution network. It is worth noting that heating value definitions and requirements are also included in some jurisdictional instruments.

Queensland RMPs provide an example of how the current framework works for heating value zones. In Queensland, distributors are required by the RMP to annually review the mapping of postcodes to heating value zones and provide AEMO with any updates. The RMP also accord distributors with the responsibility to provide AEMO with any updates for new connections in new postcodes. The RMP requires the distributor to maintain the mapping between heating value zones and any custody transfer meters. AEMO publishes the postcode-to-heating value zone mapping and runs the consultation for any changes. The RMPs state how the applicable heating value (average heating value for a reading period) is to be used in the calculation of energy data for settlement.

The Rules (or Procedures) do not provide policy principles or guidelines for how heating value zones are determined in a network. If deemed necessary, this is a matter that could be considered as part of the broader reform process.

5.4.2 Jurisdictional regulations

AEMO has also identified several overlaps between the RMPs and jurisdiction-level regulations and legislation. AEMO has not considered jurisdictional instruments as part of its review and assumes that these instruments will be amended and if necessary updated by jurisdictions. The table below provides a summary of the areas of the Procedures where there are references to jurisdictional regulatory instruments.

Table 5 Jurisdictional regulations and the Procedures

Jurisdiction	Jurisdictional Instrument	Procedure reference	Procedure
NSW and ACT	Assumed to be Gas Supply (Safety and Network Management) regulation	4.1 – basic meter installation	The Network Operators is required to install basic meters "subject to satisfaction of any prerequisites for the installation of the *basic meter* under applicable laws"[5]. AEMO assumes that the jurisdiction has reviewed any applicable laws governing meter installation and (if required) has made a change to accommodate low-level blends.
South Australia	Technical regulator as established under the Gas ACT 1997 (SA)	1.1 – definition h eating value	The definition of Heating value is determined by the Technical Regulator (as established under the Gas Act 1997 (SA).
	Gas metering code (South Australia)	1.1 definition approved methodology (estimation, substitution, validation)	A methodology for the estimation of metering data provided for in the Gas Metering Code, as applicable to the relevant meter type. This is referred to for estimation, substitution and validation.
		3.5.4 Substituted meter reading.	A Network Operator must only undertake a substituted meter reading in the circumstances specified in the Gas Metering Code and accordance with an approved substitution methodology.

[5] Note – AEMO has assumed the reference to "applicable laws" is a reference to the Gas Supply (Safety and Network Management) Regulation 2013.

Jurisdiction	Jurisdictional Instrument	Procedure reference	Procedure
Queensland	Gas Supply Act	2.9.1 – basic meter installation	Distributors are required to install meters in such a manner as to comply with the requirements of the Gas Supply Act
	Petroleum Gas Supply Act	2.9.4 – time expired meters	Distributors are required to replacing meter with meters that comply with the Petroleum Gas Supply Act.
	Meter measurement scheme, which are required under the Queensland Petroleum and Gas (Production and Safety) Act.	5.2.2 obligation to maintain interval meters	Distributors are required to maintain interval meters in accordance with the requirements of their meter measurement scheme.
Victoria	Gas Distribution code	1. definitions, installation database	installation database, in relation to a Distributor, means the database which the Distributor is required to create, maintain and administer under clause 6 of the Distribution Code.
		2.91 – basic meter installation	If a Retailer requests the Distributor to install a new basic meter for a supply point, the Distributor must install that new basic meter as soon as reasonably practicable and in such a manner as to comply with the requirements of the Distribution Code and any applicable law
		2.94 – time expired meters	ensure that the meters to be replaced will be replaced by meters which comply with the requirements of the Distribution Code and any applicable laws; and
		7.12 - Benchmark rates	In performing calculations and determining payments under clause 7.1.1, AEMO must use the applicable unaccounted for gas benchmark rates specified in the Distribution Code or another instrument that replaces the Distribution Code in relation to unaccounted for gas benchmark rates

A1. Summary of potential DWGM Procedure changes

Unlike the retail markets and short term trading market, the DWGM Procedures are split over multiple instruments. The table below provides a summary of preliminary potential changes by DWGM procedural instrument. AEMO notes that a thorough review of the DWGM procedures will be required once the AEMC has progressed the DWGM rule change as many of the specific changes will be dependent on the outcome of that process.

DWGM Procedure	Procedure Reference	Potential changes
Wholesale Market Accreditation Procedures	All chapters (clauses 2.3, 2.5 and 2.6 which cover controllable injections are relevant for NGEs).	No changes expected – if distribution-connected facilities end up being scheduled facilities following the DDCF rule change and these facilities are treated in the same way as transmission injected facilities then it is assumed the accreditation rules will apply in the same way. AEMO has not foreseen the need for bespoke requirements at this stage.
Wholesale Gas Market Administered Pricing Procedures (Victoria)	1.2 – definitions and interpretation	A definitional change may be required to the term pipeline point to clarify that this includes a point on a distribution system if the DDCF rule change is made to include distribution-connected facilities in the market.
	All other clauses	No changes expected – it is expected that the administered pricing arrangements will work for natural gas equivalents and participants injecting or withdrawing NGEs.
Capacity Certificates Auction and Transfer Procedures	Chapter 7 - System Capability Modelling Requirements	The DDCF rule change proposes an option where distribution-connected facilities are eligible for capacity certificates. If this is adopted, the framework for calculating distribution capacity certificates will need to be updated. Topics to work through will include: modelling approach, information provision and CC zone definition. AEMO intends to engage on this matter as part of its response to the DDCF rule change and will develop this work further following

DWGM Procedure	Procedure Reference	Potential changes
	All other chapters	No changes expected – the remainder of the Procedures talk to the functioning of the capacity certificates auction no bespoke requirements or changes are expected to facilitate participation for NGE supply or distribution-connected facilities.
Wholesale Gas Market Ancillary Payments Procedures	All chapters	No changes expected – the ancillary payments methodology is not specific to the injection source, nor would specific requirements be needed for NGEs. AEMO expects that if distribution-connected facilities are included in the market, then the ancillary payment methodology would apply for participants injecting at these facilities in the same way as they do at other injection points.
Wholesale Gas Market Compensation Procedures (Victoria)	Clauses 4 (a) and 4(b) principles for the award of compensation	These procedures explicitly state that compensation is only payable for injections into the declared transmission system. NGEs are expected to be injected into declared distribution systems. If distribution-connected facilities are scheduled in the market and eligible for compensation following the DDCF rule change, a minor definitional change to these clauses will be required to expand compensation to distribution injections.
	All other chapters	No changes expected – the compensation methodology is not expected to be adjusted or have bespoke requirements for NGEs.
Wholesale Gas Market Connection Approval Procedures (Victoria)	All chapters	At present the connection approval process (as outlined in the NGR) only applies to connections on the declared transmission system. If the DDCF rule change includes distribution connections in the market then changes to this procedure may be required. However, AEMO notes the AEMC are consulting on several different models for the connection approval process. If a model is adopted for distribution that is similar to that in transmission, then AEMO would need to develop a framework for assessing and approving distribution connections including guiding principles and a modelling methodology to assess their impact on the DTS and DDS. Given that the approach that will be taken in the Rules is currently being consulted on by the AEMC, AEMO will seek to engage on this matter as part of the DDCF rule change and will develop procedure changes for consultation following a determination from the AEMC.

DWGM Procedure	Procedure Reference	Potential changes
Wholesale Gas Market Distribution UAFG Procedures	Chapter 2.1, 2.15, 2.16, 2.17 – CTM injections	This procedure outlines the process for distribution unaccounted for gas and governs the business rules and data exchanges between distributors and market participants. The UAFG reconciliation amount formula itself is in the *Victorian Gas Distribution Code*. A core assumption of this Procedure is that all injections are from declared transmission system CTMs and that these are equal to the gas withdrawn in the distribution system. With the introduction of distribution-connected facilities, this assumption will no longer hold true. AEMO will review the inputs and formulas in these sections of the Procedure to understand whether it is still fit for purpose in a scenario where transmission injections no longer equal distribution withdrawals. It is likely that the calculations, definitions and descriptions will need to be updated to accommodate distribution level injections. '
Wholesale Gas Market Electronic Communication Procedures	All chapters	No change expected
Wholesale Gas Market Maintenance Planning Procedures	Chapter 1.2 – definitions and interpretation Chapter 2 - General	The current maintenance Procedures and Rules only apply to DWGM facility operators. If the DDCF rule change classifies distribution-connected facility operators as DWGM facility operators, then minor definitional changes to this procedure will be required to capture them.
	All other chapters	No changes expected. It is expected that the information required from distribution facilities and the process for information provision will be the same as other DWGM facilities.

DWGM Procedure	Procedure Reference	Potential changes
Wholesale Gas Market Metering Procedures (Victoria)	Chapter 2 metering uncertainty limits and calibration requirements	Under NGR 299, the metering calibration requirements only apply at system points and so changes to this procedure will depend on whether distribution-connected facilities are treated as system points. The uncertainty limits for energy calculations currently assume the declared state-wide heating value will be used. They currently only apply to transfer points. If they apply to distribution-connected supply they may need to be reviewed and this will also need to be considered alongside any change to the heating value approach as the current limits may need to be reviewed in the context of hydrogen and the state-wide heating value.
	Chapter 3 - Energy Calculation Procedures	These Procedures relate to the calculation of natural gas energy at distribution delivery points under NGR 303 (6). Changes to these Procedures will be required to facilitate NGEs and are mostly independent of the DDCF rule change. The current energy calculation procedures are based on the characteristics of natural gas. Given the different properties of hydrogen and that NGEs may include hydrogen blends, AEMO is expecting that it will need to review and revise the energy calculation equations. This will include reviewing the approach to pressure correction factors and compressibility factors.
	Chapter 4 - Metering Communication Procedures	This Procedure is required under NGR 308 (1), where AEMO must collect metering data for all metering installations from which metering data is required for settlement purposes. Changes to this chapter will depend on the approach taken in the DDCF rule change. If distribution-connected facilities are settled through the market then the scope of this Procedure will need to be expanded to capture these facilities. No bespoke changes have been identified in this Procedure itself but specific data requirements are likely to be needed in a subordinate instrument, similar to the CTM and DM data requirements that are currently in place.
	Chapter 5 - Installation Database Procedures	No changes expected
	Chapter 6 – Metering register Procedures	No changes expected

DWGM Procedure	Procedure Reference	Potential changes
	Chapter 7 – data validation Procedures	No changes expected – as it currently covers all metering not just CTMs.
Wholesale Gas Market Gas Scheduling Procedures	All chapters	Changes to this procedure will depend on the approach taken in the DDCF rule change. If facilities are scheduled, then the input to scheduling chapter will need to be updated to include these new facilities. Specifically, the constraints may also need to be updated depending on the approach taken in the Rules to managing constraints at distribution-connected facilities. AEMO is unable to provide further advice on this Procedure until the approach in the Rules has been determined.
Wholesale Gas Market System Security Procedures	All chapters	No changes expected
Wholesale gas market uplift payment procedures	All chapters	No changes expected – similar to the Ancillary Payment Procedures, the approach to uplift in this procedure are facility neutral and would apply to both injections and withdrawals of natural gas and natural gas equivalents.
Gas Quality Guidelines	All chapters	Changes to this procedure will depend on the approach taken in the DDCF rule change and what party will ultimately be responsible for compliance with gas quality standards. If it is not AEMO then no changes are expected.
Gas Quality Standard and Monitoring Guidelines	All chapters	This procedure currently only applies to the declared transmission system. Similar to the Gas quality guidelines, it needs to be established in the DDCF rule change who is responsible for monitoring and managing gas quality and compliance for distribution-connected supply. The current gas quality parameters in this procedure are based on the characteristics of natural gas and not all will be appropriate for a natural gas equivalent so it is likely changes will be required if the responsibility falls to AEMO.

DWGM Procedure	Procedure Reference	Potential changes
Wholesale Gas Market Ownership Rules	All chapters	Changes to the ownership rules concerning title of gas will be required if distribution injections are included in the wholesale gas market as part of the DDCF rule change The current Procedures concerning title to gas do not take distribution injections into account. Under the current approach, title to gas is transferred to a market participant at the withdrawal CTM i.e when withdrawn from the Declared Transmission System. Title at the CTM is based on a participant's relative share of demand at that CTM. Note distribution networks do not have title to the gas injected at the CTM (only custody and control of the gas). If distribution-connected injection facilities are included in the market, AEMO will need to set title to gas injected into the distribution network. The title, custody and risk rules in the NGR would also need to be updated to accommodate distribution injections.

DWGM Subordinate Instruments

These instruments include guidelines and methodologies that form part of the Procedures. The subordinate instruments are included here for completeness. However, given draft changes to the Procedures have not yet been made AEMO is only able to provide a high-level overview of potential changes. Specific changes will be developed as part of the Procedure consultation process.

DWGM Subordinate Instrument	High level changes
Ancillary Payments Function Design	No changes expected
Demand override methodology	No changes expected – however, if changes to the definition of demand are made as part of the DCCF rule change further analysis may be required.
Wholesale Gas Market Critical Load Location Pressures	No changes expected
Gas Metering CTM Data Requirements	Likely to require changes consistent with those articulated in the Metering Procedures section.
Gas Metering DM Data Requirements	Likely to require changes consistent with those articulated in the Metering Procedures section.
Injection Tie-breaking right functional design	Will be incorporated into the Gas Scheduling Procedures as part of the DWGM enhancement project. However, no changes are expected to tie-breaking's functional design for NGEs.
AEMO pressure correction factors	Likely to require changes consistent with those articulated in the Metering Procedures section.
Wholesale Gas Market Nomination of Responsible Person	No changes expected
Wholesale Gas Market Rule Consultation Procedures	No changes expected
Gas Curtailment and Gas Rationing and Recovery Guidelines	DTS CTMs that have distribution-connected supply may need to have this additional supply factored into the curtailment approach. AEMO will review the guidelines as part of AEMO's review for the DDCF rule change.

A2. Summary of potential STTM Procedure changes

The table below provides a summary of AEMO's review of the STTM Procedures. For the most part, AEMO expects that the STTM Procedures will remain fit for purpose for facilities that are injecting natural gas or natural gas equivalent under the proposed framework. AEMO has not considered the impact of constituent gas facilities here on the assumption that they will not directly participate in the market. AEMO notes that a general review of registration requirements for facilities in the STTM should be undertaken. These Procedures do not currently address things like thresholds or exemptions – all participants must register, subject to AEMO's discretion for exemptions.

STTM Procedures section	Chapter Reference	Summary of review
Preliminary	1	Market facility definition: The current definition is broad enough that it could refer to a natural gas equivalent facility ("NGE facility"). If new registration categories are added they will be automatically captured (if they are *STTM facilities*). Market facility means *an STTM facility or STTM distribution system*
Hubs	2	The existing Hub definitions in the Procedures can be expanded to include new distribution level CTMs for NGE facilities. AEMO anticipates that Procedure changes may be required as new facilities come online. However, every additional CTM will require a procedure change consultation. Also note that the Rules do not contemplate aggregation or exemption of CTMs at this stage.
STTM Facilities and Distribution System Information	3	No changes identified – it is expected that NGE facilities will be able to provide benchmark and capacity information unless a carve out is created in the NGR.
Registration of Services and Trading Rights	4	No changes expected – this section is currently blank (except a small provision for MOS which is not relevant)
Market Operator Service	5	No changes expected – MOS can only be provided on STTM pipelines
Scheduling and Pricing Algorithm	6	No changes expected - to how the market is scheduled or prices determined

STTM Procedures section	Chapter Reference	Summary of review
General Market Operations	7	No changes expected – market timetable and allocation process expected to remain the same for NGEs and their facilities.
Administered Market States	8	Potential change to the trigger for a significant operational constraint.
Contingency Gas	9	No changes expected – CG offer and bid process not expected to change (and NGEs could theoretically voluntarily participate). AEMO does have a question around CG triggers in the NGR.
Settlement	10	No changes identified – settlement is done on energy basis and is not specific to NGE or NG.
Prudential Requirements	11	No changes expected
Transitional	12	No changes expected

A3. Summary of potential Retail Market Procedure changes

The NGL, NGR and Retail Market Procedures (RMP) provide for the regulation of natural gas retail markets in some jurisdictions. The objective of these provisions is to provide for a co-ordinated and centralised approach to administering the regulated retail gas markets, with AEMO as retail market operator.

Major headings[6] within the Retail Market Procedures	Jurisdiction RMP Chapter reference	Proposed changes
General • Defining terms used in the Procedures as well as interpretation (e.g. In VIC, how the daily flow weighted heating value is determined and applied) • Interpretations • Identifying who the Procedures apply to. • Technical protocol and Full Retail Contestability (FRC) Hub obligation. • Explanation of the audit requirements pertaining to compliance by AEMO with its processes and systems.	VIC – Chapter 1	Changes to 1.1.1 Definition of are required. 1.1.1 (Definitions) 1. Does not have a defined term for "gas". Part 19 of NGR has a gas defined as "gas includes natural gas and processable gas". AEMO has assumed that the definition will be modified to say "Has the meaning given to 'natural gas' in the Law" Noting the above assumption, the proposed changes are: • add the following term "gas" with the lists of other words and phrases that call up Part 19 definitions. • Italicise the word "gas" throughout these Procedures (where it is appropriate to do so). 2. Changes to definition of Custody Transfer Meter (CTM) is required. This term may need to be updated or a new term may need to be introduced to capture the meters for distribution-connected supply (hydrogen/blending facility or other). Note the existing CTM definition states a meter that measures the transfer of gas between the transmission system and a distribution pipeline

[6] It is important to note that not all the listed major heading apply to every jurisdiction RMP. Some RMPs may only a subset of the major headings whereas other may have all major headings.

Major headings[6] within the Retail Market Procedures	Jurisdiction RMP Chapter reference	Proposed changes
	QLD – Chapter 1	Changes to 1.1.1 Definition of Custody Transfer Meter (CTM) is required. To maintain the balancing process ("all gas injected" and "all gas consumed") the definition of CTM should be modified to include hydrogen/blending facility, or a new definition introduced that places an obligation on the hydrogen/blending facility to provide gas injecting data so that the balancing mechanises described in chapter 6 remain fit of purpose. Note the existing CTM definition states gas being measuring between the transmission system and a distribution system or between one distribution system and another distribution system.
	NSW/ACT -Chapter 1	"heating value (HV)" definition currently includes: "The HV assigned to a delivery point on any given day will vary in accordance with the mix of hydrocarbons in the gas in that network section" Hydrogen is not a hydrocarbon, which means this definition may need to be revised to clarify that the HV will (e.g.). The change can be either delete the words "hydrocarbons in the" or the final sentence should be removed. Note - In relation the heating value (HV)" definition mentions that HVs are measured based on the measurements of a designated gas chromatograph, or multiple gas chromatographs weighted in accordance with technical parameters. AEMO assumes thar the proponent of these technical parameters has reviewed the relevant section of this document and (if required) make a change to accommodate the hydrogen product. The term "network receipt point" will also be reviewed to assess whether it needs to be changed (or a new term added) to encompass distribution-connected supply sources. Injection and TDQ is aggregated across all network receipt points within a network section.

Major headings[6] within the Retail Market Procedures	Jurisdiction RMP Chapter reference	Proposed changes
	SA – Chapter 1	Changes to 1.1.1 Definition is required. A new definition for hydrogen/blending facility (HBF) should be added. - In relation to the definition of Heating value is determined by the Technical Regulator (as established under the Gas Act 1997 (SA). AEMO assumes the jurisdiction has reviewed the relevant section of this regulatory instrument that formulate the Technical Regulator determination of the term Heating Value and (if required) make a change to accommodate the hydrogen product. - In relation to the definition mentions a methodology provided for in the gas metering code. AEMO assumes the jurisdiction has reviewed the relevant section of this regulatory instrument and (if required) make a change to accommodate the hydrogen product.
Databases • Allocation of Meter Installation Registration Numbers (MIRN)s to Distributors. • Management of AEMOs and Distributors databases.	VIC – Chapter 2 and 3	No change
	QLD – Chapter 2 and 3	No change
	NSW/ACT -Chapter 2	No change
	SA – Chapter 2	No change
Metering • Meter Management • Site access • Meter reading (basic and interval) including scheduling, site access, frequency, timing, transfer reads; historical data • Other reads such as special and customer reads. • Methodologies including validation, estimation and substitution • Calculation and provision of energy data (Retailers and AEMO) • Heating value • Profiling • Data changes • Gate point data	VIC – Chapter 2[7], Attachment 3, 4 and 5.	Basic metering - No change. Note - In relation to installing meters there is an obligation to comply with the requirements of the Gas Distribution System Code. AEMO assumes the jurisdiction has/will review the relevant section of this regulatory instrument and (if required) make a change to accommodate the NGE product. Interval and other metering – See NGR
	QLD – Chapter 2, 5, Attachment 1, 2 and 3	No change. Note - In relation to installing meters there is an obligation to comply with the requirements of the Gas Supply Act. AEMO assumes the jurisdiction has/will review the relevant section of this regulatory instrument and (if required) make a change to accommodate the hydrogen product. - In relation to replacing meters there is an obligation to comply with the requirements of the Petroleum Gas Supply Act. AEMO assumes the jurisdiction has/will review the relevant section of this regulatory instrument and (if required) make a change to accommodate the NGE product. Interval and other metering.

[7] For Victoria, the interval metering provision for declared distribution system are described in the Part 19 of NGR. Click here to view. See rules 290 to 316. For non-declared distribution systems (South Gippsland, Grampians and Bairnsdale) interval metering arrangements between AEMO and the Distributor for these systems are described in "Agreed Services" Agreements between these parties.

Major headings[6] within the Retail Market Procedures	Jurisdiction RMP Chapter reference	Proposed changes
	NSW/ACT -Chapter 3 and 4, Attachment 1 ,2 and 3	No change Note - The Network Operators is required to install basic meters "subject to satisfaction of any prerequisites for the installation of the basic meter under applicable laws"[8]. AEMO assumes that the jurisdiction has reviewed any applicable laws governing meter installation and (if required) has made a change to accommodate low-level blends
	SA – Chapter 3 and 4, Appendix A, B and C	No change Note - Distributors are required to undertake a substituted meter reading in the circumstances specified in the gas metering code. AEMO assumes the jurisdiction has reviewed the relevant section of this regulatory instrument and (if required) make a change to accommodate the hydrogen product
MIRN Discovery Process • MIRN Discovery requests and response information, • Assistance in searching.	VIC – Chapter 3.	No change
	QLD – Chapter 3	No change
	NSW/ACT -Chapter 5	No change
	SA – Chapter 5	No change
Customer transfer process • Describes the life cycles of the various stages of the customer transfer process which includes preconditions, initiation, objections registration • Bulk Customer Transfer • Customer transfer in error correction process	VIC – Chapter 4.	No change
	QLD – Chapter 4	No change
	NSW/ACT -Chapter 6 and 11	No change
	SA – Chapter 6 and 9	No change
Retailer of Last Resort (RoRL) • Provision of customer data to AEMO • Sets out the processes for managing a RoRL.	VIC – Chapter 5 and 6	No change
	QLD – Chapter 9 and 10	No change
	NSW/ACT – Chapter 7	No change
	SA – Chapter 7	No change
Balancing, allocation, reconciliation and settlements	VIC – NGR[9]	See NGR

[8] AEMO has assumed the reference to "applicable laws" is a reference to the Gas Supply (Safety and Network Management) Regulation 2013

[9] Part 19 of the NGR describes the allocation and reconciliation processes for the declared wholesale gas market

Major headings[6] within the Retail Market Procedures	Jurisdiction RMP Chapter reference	Proposed changes
• Sets out the processes for managing the daily allocation of gas usage. • Manifest data error	QLD – Chapter 5, 6 and 7	Likely to be no changes if the changes proposed in chapter 1 are included. Changes will be to ensure that existing processes all gas or NGE that is injected into a retail market are captured.
	NSW/ACT -Chapter 8 and 12	Likely to be no changes if the changes proposed in chapter 1 are included. Changes will be to ensure that existing processes all gas or NGE that is injected into a retail market are captured.
	SA – Chapter 8	Likely to be no changes if the changes proposed in chapter 1 are included. Changes will be to ensure that existing processes all gas or NGE that is injected into a retail market are captured.
Distribution Unaccounted for Gas • Calculation of unaccounted for gas and determination of payments.	VIC – Chapter 7[10]	No change
	QLD – Chapter 11	No change
	NSW/ACT – Chapter 8	No change
	SA – Chapter 8	No change

[10] How AEMO calculates Distribution UAFG is described in Distribution UAFG Procedures made by AEMO under Part 19 of the NGR. Click here to view.