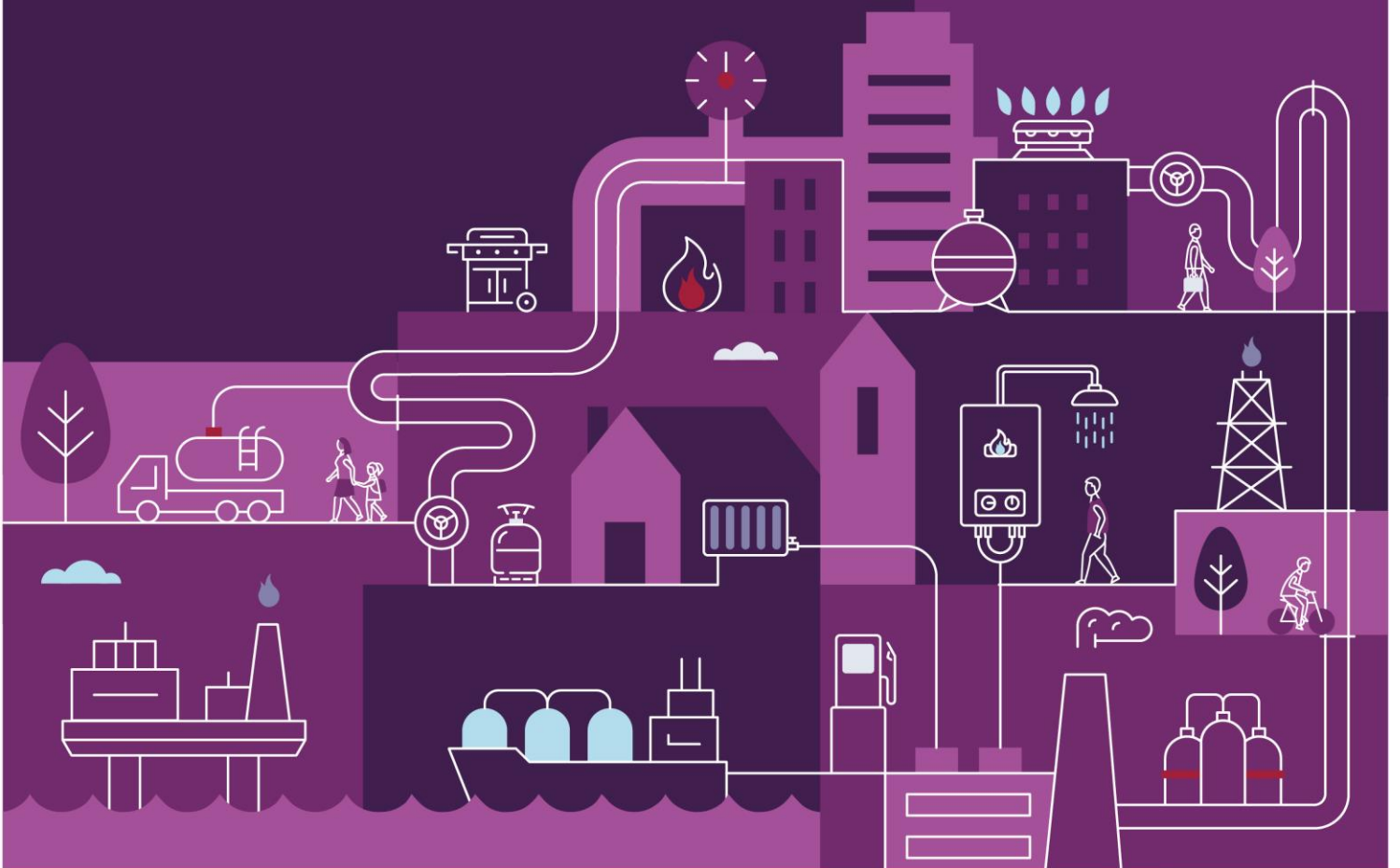


# AEMO Final Report

## September 2022

Hydrogen Blends and Renewable Gases  
Procedures Review





# 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 draft report provides AEMO's 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 in Victoria, NSW and ACT, Queensland and South Australia to facilitate hydrogen blends and renewable gases.

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## Version control

Version	Release date	Changes
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# 1 Overview

## 1.1 Background

In August 2021, Energy Ministers agreed that the national gas regulatory framework be reviewed and extended to accommodate hydrogen blends, biomethane and other renewable gases. As part of the agreement, Energy Ministers decided to prioritise extending the regulatory framework to low-level hydrogen blends and other renewable gases that can be used in existing natural gas appliances.

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

In parallel to AEMO's review, jurisdictional officials (Officials) are reviewing the 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).

This Final Report provides AEMO's view on the scope of potential changes required to the Short Term Trading Market Procedures (STTM), Declared Wholesale Gas Market (DWGM) Procedures and Retail Market Procedures (RMP) in Victoria, NSW and ACT, Queensland and South Australia. It should be read in conjunction with:

- the Officials' final report on extending the national gas regulatory framework and required changes to the NGL, NERL and National Regulations;
- the AEMC's final report on the required changes to the NGR and NERR flowing its review into extending the regulatory frameworks to hydrogen and renewable gases and;
- the AEMC's final determination on the DWGM distribution connected facilities (DDCF) rule change.

## 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 was also asked 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.

While the Terms of Reference only asked AEMO to focus on the required changes to the STTM, DWGM and regulated retail market Procedures, AEMO understands that changes to other Procedures, such as the Gas Bulletin Board (GBB) and Gas Statement of Opportunities (GSOO) Procedures, are likely to be required, given the AEMC's proposal to extend the gas market transparency mechanisms to include hydrogen. This will result in additional reporting on the GBB for facilities, producing, transporting and storing covered gases. In addition, the AEMC are recommending that distribution pipelines be subject to reporting on the GBB. In general, the AEMC are proposing to extend the same reporting obligations that currently apply to natural gas facilities to other covered gases. However, there are some new reporting requirements for gas blends that are being recommended. The proposed changes to the scope of the GSOO and VGPR will require AEMO to review the information it gathers for these reports to ensure that they appropriately capture other covered gases. The proposed changes will also require AEMO to develop new Procedures and these will be developed and consulted on as part for implementing the overall reform package.

### 1.3 National framework terminology and application to gas products

In keeping with the approach that was taken in the Officials' report for the proposed approach in the NGL and NGR, AEMO's report considers the following:

- 'primary gases', which is the term used to refer to natural gas, biomethane, synthetic methane, hydrogen and any other gas specified in the National Gas Regulations to be a primary gas; and
- 'gas blends', which is the term used to refer to a blend of any primary gases (e.g. a natural gas-hydrogen blend, a natural gas-biomethane blend or a biomethane-hydrogen blend).

Consistent with the Officials' final report and the AEMC's final report, AEMO's report uses the term 'covered gas' to refer to any of the primary gases and gas blends that could be within scope of the STTM, DWGM and regulated retail markets (RRM). Where convenient references are also made to 'hydrogen', 'hydrogen blends' and 'other renewable gases', which for the purposes of this report should be considered as a 'covered gas'.

AEMO has coordinated with officials and the AEMC in developing its recommendations and understanding the potential impacts to the Procedures of changes to the NGL and NGR.

### 1.4 Approach and assumptions

In reviewing the STTM, DWGM and retail market related Procedures, AEMO has applied an approach and assumptions that are consistent with the overarching review of the regulatory framework and AEMO's terms of reference. AEMO's final recommendations should be read in the context of the framework and assumptions outlined in the following subsections.

#### Gases covered by the review

Consistent with the refined approach set out in the Officials' consultation paper and the AEMC's draft recommendations, this review is focusing on 'covered gases'. A core assumption of the review is that any gas being injected into a retail or wholesale market is "on-spec" and therefore is suitable for transport and consumption.

## Policy intent and the national framework

AEMO assumes that, for the time being, participants that supply, consume, or trade covered gases, as well as facilities involved in producing primary gases or creating a gas blend, are to be accommodated by existing market rules and Procedures wherever possible and on the same terms as natural gas. This 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 all covered gases. In making this assumption AEMO has attempted to assess whether existing requirements in the Procedures are fit for purpose for hydrogen, renewable gases as well as natural gas. AEMO has not considered broader changes to the market design that may be required to accommodate covered gases.

## 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. AEMO has not reviewed jurisdiction-level regulations or legislation to ensure they are fit for purpose for covered gases. AEMO has assumed that each responsible jurisdiction will review, and amend as necessary, its regulations or legislation.

## Regulatory responsibility for determining the gas product

AEMO assumes that all future facilities are compliant with the relevant jurisdictional instruments. The regulatory responsibility for determining whether a facility can inject a primary gas or gas blend into the gas network will sit with the relevant jurisdiction under its regulations.

## Registration categories and NGR definitions

AEMO assumes that registration categories and their definitions relevant to covered gases will be established in the NGL and Part 15A of the NGR, consistent with the usual approach to Procedures for the facilitated markets. Further, AEMO assumes that the existing NGR registration categories in Part 15A will be reviewed, and updated as necessary, to accommodate covered gases, 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. AEMO has liaised closely with the AEMC on potential changes the AEMC is considering to the NGR to understand the impact for AEMO's Procedures and systems.

## Facilities will participate and inject at the distribution level

Consistent with the approach being taken in the Officials' consultation paper, a core assumption is that facilities producing renewable gases or hydrogen blends will be injecting directly into distribution networks. Transmission-connected facilities and their associated impacts have not been considered in this report<sup>2</sup>. As such, the Procedures are being reviewed in this context to determine whether they are fit for purpose for distribution-level supply.

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<sup>2</sup> 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."

## 1.5 AEMO consultation paper

On October 18, 2021, AEMO published a consultation paper setting out AEMO's preliminary view on changes that may be required to the Procedures to cover renewable gases and hydrogen blends in DWGM, STTM and Regulated Retail Market Procedures. Considering the scope and timing of AEMO's review, only limited changes were identified. A comprehensive summary of stakeholder feedback to AEMO's consultation paper and AEMO's responses can be found on the AEMO website<sup>3</sup>.

## 1.6 AEMO draft report

On 31 March 2022, AEMO published a draft report: *AEMO Draft Report – Hydrogen Blends and Renewables Gases Procedures Review*. The draft report set out AEMO's draft recommendations on changes to the STTM, DWGM and Regulated Retail Market Procedures. In general, the draft report recommended only minor changes to the procedures to ensure that their scope is sufficient to include injections from covered gas producing facilities in a distribution network.

AEMO requested feedback to its draft recommendations and received a total of 6 submissions (including 2 submissions from private individuals). In preparing this final report, AEMO has addressed the feedback it has received and where appropriate has accommodated this feedback in its final recommendations. AEMO notes that it did receive a number of comments that related either to the broader policy and regulatory framework or, other streams of the review. As these matters are outside of AEMO's remit under its terms of reference, AEMO is unable to consider this feedback.

## 1.7 Summary of AEMO's key findings in this review

In general, AEMO's review has found that majority of market procedures are readily able to facilitate the participation of covered gases with only minimal changes required. AEMO's key findings are as follows:

- **Minimal changes required to settlement procedures.** The retail and wholesale markets are settled on an energy basis, with settlement amounts calculated by multiplying gigajoules supplied (or consumed) by price. By requiring covered gas facilities to bid, be allocated and settled in gigajoules, significant changes to the settlement approach, systems and Procedures are not required.
- **Minor changes required to facilitate distribution connections.** The DWGM and retail markets have been designed to only contemplate injections from transmission pipelines. Some amendments will be required to ensure that the scope of key Procedures and market concepts are extended into distribution in order to facilitate the participation of covered gas facilities (and participants operating at these facilities). Material changes to the functioning of these Procedures are not expected i.e. existing arrangements for transmission-connected facilities in general can be extended or replicated for distribution-connected facilities.
- **Moderate changes required due to AEMC's proposed changes in the NGR.** The AEMC have recommended market design changes in the STTM and DWGM to facilitate the participation of covered

<sup>3</sup> [https://www.aemo.com.au/-/media/files/stakeholder\\_consultation/consultations/gas\\_consultations/2021/hydrogen-blends-and-renewable-gases-procedures-review/collated-phase-one-stakeholder-feedback-and-aemo-response.pdf?la=en](https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/gas_consultations/2021/hydrogen-blends-and-renewable-gases-procedures-review/collated-phase-one-stakeholder-feedback-and-aemo-response.pdf?la=en)

gases. These changes will require AEMO to undertake a further round of Procedure changes (and in some instances system changes) to align the markets with the Rules. The most significant changes are expected to be required in the DWGM to expand its scope to cover distribution connected facilities. Readers are encouraged to review the recommendations in the AEMC's final report and DWGM distribution connected facilities rule change final determination. In addition, a number of minor terminology changes will be required due to new terms being introduced into the NGR this will require AEMO to make amendments to most Procedures.

## 1.8 AEMO's final report and next steps

This report provides AEMO's final recommended changes to the DWGM, STTM and RM Procedures. AEMO expects to initiate formal consultation on Procedure changes following Energy Ministers' agreement on required amendments to the NGL and NGR expected to occur in latter part of 2022.

AEMO will commence formal consultation on Procedure changes via its standard process through the Gas Retail Consultative Forum (GRCF) and Gas Wholesale Consultative Forum (GWCF) in line with commencement dates set out in the NGR once the changes to the NGL and NGR have been made. The recommendations made in this report will be used to inform consultation and will aid in the development of initial consultation versions of the amended Procedures. The amended Procedures will need to cover both recommendations made by AEMO in this report and any relevant changes made in the NGR or NGL. Stakeholders will have the opportunity to participate in the consultation process and provide feedback on any proposed Procedure changes.



## 2 Declared Wholesale Gas Market

### 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.

### 2.1 Impact of the DWGM Distribution Connected Facility (DDCF) Rule Change on AEMO's review

On 8 September 2021, the Victorian Minister for Energy, Environment and Climate Change submitted the DWGM Distribution Connected Facility (DDCF) rule change request. The rule change request proposed to expand the scope of the DWGM to include distribution-connected injection facilities. The AEMC is progressing the DDCF rule change in parallel to its more general review into extending the NGR and NERR to hydrogen and renewable gases ('Review'). The AEMC are expected to publish a final determination around the same time as the publication of this final report.

AEMO's review of the DWGM Procedures has been limited as part of this review process as most of the consequential changes to the DWGM Procedures will result from the Rule change rather than AEMO's review. Nevertheless, AEMO has worked closely with the AEMC to assist in informing its final determination and through this process has liaised with the AEMC to understand the potential impact of changes to AEMO Procedures. From an initial review of the rule change, AEMO expects the impacts to include:

- New procedures to be developed as a consequence of new Rules:
  - Distribution operations coordination Procedures.
  - Gas quality monitoring Procedures.
  - Metering installation coordination Procedures.
- Material changes to existing operational and metering Procedures to accommodate new Rule requirements and expand existing functions to accommodate distribution connected facilities in scheduling.
- Minor changes to most market and settlement Procedures and other Procedures and guidelines to reflect changes to terminologies and concepts in the Rules given that distribution connected facilities are expected to participate in the market on the same basis as other facilities.

Section 2.3 summarises the high-level impacts to the DWGM Procedures resulting from the DDCF rule change and the hydrogen blends and renewable gas review. AEMO expects to commence a consultation process on the Procedures resulting from the rule change following the AEMC's final determination and in line with the

commencement date for the new rule. Consultation will be conducted through the Gas Wholesale Consultative Forum (GWCF).

## 2.2 Feedback to the draft report

Note that not all feedback received by AEMO is included (for example where no comment is made) and some responses have been summarised. Please refer to the AEMO website for full published submissions to the draft report.

**Table 1: DWGM stakeholder feedback draft report**

Question#	Question	Company	Company response	AEMO response
1	Do you agree with AEMO's recommended changes for the DWGM Market and Settlement Procedures? If not, what changes do you believe are required? Please state the Procedure and clause where possible.	AGIG	Agree with AEMO's recommendations.	Noted.
		Ausnet	<p>Of all the DWGM Market and Settlement Procedures proposed changes, AusNet is only impacted by the proposed changes to the Wholesale Market Distribution UAFG Procedures (Victoria). We agree with AEMO's assessment of identified impacts to these procedures.</p> <p>The proposed Wholesale Market Distribution UAFG Procedures (Victoria) will require implementation effort to incorporate distribution connected facilities and settlement the UAFG, but the complexity of the change and level of implementation will depend on the methodology adopted. If changes are limited to minimum compliance changes to incorporate blending from distribution connected facilities, we could make the system and processes changes within months at a low cost. While changes to the broader market settlement approach in introduce global settlements would take years and cost millions.</p>	AEMO notes this feedback from Ausnet. AEMO's recommendation is to only make minimal changes required to incorporate distribution-level injections into the existing UAFG process. This matter will be consulted on further as part of implementation.
		Private individual (John Godfrey)	The definition of hydrogen blends and other gases stating the carbon intensity of a) their production method and b) their carbon emissions when burnt. Consumers want transparent information about products they buy - this must include gas blends.	Noted however AEMO is not responsible for defining covered gases in the regulatory framework.
		Private individual (Jim Crosthwaite)	AEMO should not be making changes, or dedicating resources to these changes in the context of the energy transition.	<p>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.</p> <p>Any changes made to the Procedures will follow a standard consultation and assessment process as required under the NGR.</p>

Question#	Question	Company	Company response	AEMO response
2	Do you agree with AEMO's recommended changes for the DWGM Operational Procedures? If not, what changes do you believe are required? Please state the Procedure and clause where possible.	AGIG	Agree with AEMO's recommendations.	Noted.
		Ausnet	We agree with AEMO's assessment of expected changes to DWGM Operational Procedures, including the establishment of new Distribution Operations Coordination Procedures and Gas Quality Monitoring Procedures. We look forward to engaging extensively in consultations that will be required to develop the Distribution Operations Coordination Procedures, as this procedure will be used as our primary operational control of the quality of blended renewable gas.	Noted.
		Red/Lumo	<p>With the introduction of gas blends produced by Distribution Connected Facilities and therefore differing quality of gas in Distribution Systems, Red Energy and Lumo Energy (Red and Lumo) suggest it is necessary to apply the new Gas Quality Monitoring Procedures to all distribution systems to ensure the safety of customers, not just the Declared Distribution Systems.</p> <p>Gas quality standard and monitoring guidelines need to consider Distribution within Victoria outside of the DWGM. The proposed changes only address gas quality monitoring responsibilities within the DDS and should be expanded to consider the safety of customers both now and in the event that a distribution connected facility is providing blended gas in a pipeline outside of the DDS.</p>	<p>AEMO notes this concern and refers Red/Lumo to AEMO's submission to the draft determination for AEMO's view on this matter.</p> <p>AEMO is unable to expand the scope or application of these procedures without broader changes to the regulatory framework (specifically in the NGR).</p>
3	Do you agree with AEMO's recommended changes for the DWGM Metering Procedures? If not, what changes do you believe are required? Please state the Procedure and clause where possible.	AGIG	We agree with AEMO's recommendations. We look forward to participating in AEMO's review of its Energy Calculation Procedures to ensure that changes required to cater for covered gases are achievable from a systems perspective.	Noted – AEMO will be engaging on this matter with industry as part of implementation.
		Ausnet	We agree with AEMO's assessment of expected changes to DWGM Metering Procedures. In particular, the Energy Calculation Procedures will need updating and we look forward to engaging on the required changes. Additionally, the Metering Installation Coordination Procedures need to incorporate unique aspects of Question # Section # in paper Question Please Provide Response Here metering at city gate facilities and other distribution network facilities.	Noted.
		Red/Lumo	<p>Re: Metering Uncertainty Limits and Calibration Requirement Procedures</p> <p>In our submission to the draft rule change on DWGM Distribution Connected Facilities, we noted that it was unclear how reducing metering calibration requirements promote safety, reliability and security of supply? The original obligation was for AEMO to review the calibration requirements annually, and that responsible persons needed to maintain records of its compliance. In the draft determination, it was noted that the Procedure has not been updated since its establishment. However, we consider that this is an opportune</p>	<p>AEMO notes this concern and wishes to make the following comments:</p> <ul style="list-style-type: none"> <li>The current rules do not relate to how often the asset owners needs to calibrate their metering nor how often AEMO reviews their calibration data.</li> <li>Rather, the rules determine how often AEMO reviews the calibration requirements to determine if asset owners should be undertaking calibration on a more frequent basis.</li> </ul>

Question#	Question	Company	Company response	AEMO response
			<p>time for the Commission to insert a sunset clause into the rules. As hydrogen facilities come on board, it should be incumbent on AEMO to review the calibration requirements, at least annually. And once the parameters are established, move to a three (not five) year review framework. This will ensure that the long term interests of consumers is achieved under the National Gas Objective, in particular as these meters must be safe, and accurate given the expanded nature of the rule now covers settlement metering points.</p> <p>Red and Lumo suggested it is necessary to apply the Metering Procedures to all distribution systems to ensure the accuracy of metering and settlements as well as the safety of customers, not just within the Declared Distribution Systems.</p>	<ul style="list-style-type: none"> <li>The current requirement in the rules is for AEMO to undertake this review annually. The rule change seeks to make this required on as-needed basis.</li> <li>As such, the proposed change is not intended to reduce metering calibration requirements but rather the frequency with which AEMO is mandated to review the calibration requirements for asset owners.</li> </ul>
4	Are there any other matters that you think AEMO should consider for the DWGM Procedures?	Private individual (John Godfrey)	<p>This comment has been summarised – refer to published submission.</p> <p>Need to consider the whole approach to blend other gases into the natural gas distribution system, including climate, engineering and economic impacts.</p>	AEMO notes these comments however these matters sit outside the terms of reference for our review.
		Ausnet	<p>We acknowledge the separate changes to implement zonal heating values in Victoria for customers on basic meters. We agree, in principle, with these changes and we note the timeframe of 6 to 9 months to the implement the change will be required.</p>	Noted – this matter will be consulted on further through the GRCF.
		Red/Lumo	<p>The current Procedures are directed to the DWGM, they fail to take into account those distribution pipelines which fall outside of the DTS and DDS which may still form part of the Victorian wholesale gas market. If a distribution connected facility is to be considered an injection point of the wholesale gas market then the requirements of the DWGM Operational and Metering Procedures should also be extended to include distribution injection points outside of the declared transmission and declared distribution systems.</p>	AEMO notes the concern, but it is not within AEMO’s remit to expand the application of Part 19 or the DWGM.

## 2.3 Key conclusions from AEMO’s review and final recommendations

This section provides AEMO’s final recommendations for DWGM Procedures. AEMO has identified a small number of additional changes from its draft report however the overall scope of change remains largely unchanged.

### 2.3.1 Terminology and minor interpretation changes across all Procedures

As a consequence of definitional and interpretation changes in the NGL and NGR, there are several new terms that will have implications for the DWGM Procedures. Specifically, AEMO considers that the Procedures will need to be amended to accommodate the following changes:

- DDS injection point – means a receipt point on a declared distribution system. The AEMC proposes to introduce this term to accommodate injections into a DDS.
- Market injection point – a market injection point means a system injection point or a DDS injection point or both. This new term will capture the two different types of “injection points” in the DWGM. As AEMO’s Wholesale Market Procedures use the term system injection point to refer to receipt points on the DTS, a number of minor changes will need to be made to reflect the new definition. Some Procedures will need to differentiate between a system injection point and a DDS injection point.
- Market withdrawal point – this is a term that has been incorporated into the final determination by the AEMC. It is the withdrawal equivalent of a market injection point.
- Definition of gas and natural gas – Officials are recommending that the NGL recognise covered gases which comprise primary gases and gas blends. AEMO expects that the term ‘gas’ that is used in the Procedures will now be interpreted as meaning a covered gas in accordance with the changes being made in the NGL and NGR. However, a number of DWGM Procedures use the term gas and natural gas interchangeably. AEMO will review whether the use of ‘natural gas’ in its Procedures is appropriate. In reality, AEMO expects that most of the references to ‘natural gas’ in the Procedures will be amended to ‘gas’, which will be taken to mean ‘covered gas’.
- Blend processing service provider – Officials are considering amending the DWGM registration categories in the NGL and the AEMC are considering amending the NGR to include blend processing service providers. Where DWGM facility operators are separately defined in the DWGM Procedures, changes will need to be made to accommodate blend processing service providers.
- Net bidding facility – this is a new concept that has been incorporated into the final determination by the AEMC. References to these facilities may need to be incorporate into some of the operational and metering Procedures, per the requirements in the NGR.

### 2.3.2 Recommendations for the 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)
- Wholesale Gas Market Ownership Rules

In its review of these Procedures, AEMO has only identified very minor changes primarily related to new NGR definitions and expansion of scope to include distribution connected facilities. AEMO received no material feedback to its draft recommendations for changes to market Procedures and so its recommendations remain largely the same for the final report.

The policy intention for new facilities that are producing hydrogen, a blend or a renewable gas is that they participate in the market on the same basis as natural gas producing facilities. That is, there is an expectation that the facilities (and the participants operating at these facilities) will bid, be allocated, metered, and settled on an energy basis. As the market Procedures operate on an energy basis no bespoke requirements have been identified to facilitate the participation of hydrogen blend or renewable gas facilities.

AEMO has identified that several Procedures are explicitly limited in application to the DTS and need to be expanded in scope to include facilities that may connect to a declared distribution system (DDS). These changes are not expected to significantly lead to functional changes to the operation of these procedures but rather ensure that market arrangements are consistent across assets in-line with the AEMC’s final determination. Identified amendments include expanding:

- The title of gas Procedures to ensure that title can be transferred with in a DDS for injections from a distribution connected facilities.
- The eligibility requirements in the Compensation Procedures so that participants injecting directly into a DDS are eligible for compensation on the same basis as Participants.
- Ensuring that the scope of the Capacity Certificates Auction and Transfer Procedures to include distribution connected facilities.

The remaining market Procedures are only expected to need terminology updates and other non-material changes to bring them into line with the AEMC’s final determination, functional changes are not anticipated.

**Table 2: DWGM Market Procedures recommended changes**

Procedure	Procedure description	Draft report recommended changes	Final report recommended changes
<b>Wholesale Gas Market Accreditation Procedures (Victoria)</b>	This Procedure outlines the requirements for participants to be accredited for controllable quantities at system withdrawal and injection points.	Primarily definitional changes are expected to align the terminology used in the Procedures with the new NGR <i>market injection point</i> term. This change will clarify that the accreditation Procedures apply to all market injection points, including distribution points.  No specific changes to accreditation application process or constraints have been identified.	No further changes identified.
<b>Wholesale Gas Market Ancillary Payment Procedures (Victoria)</b>	This Procedure defines how ancillary payments are calculated and allocated in the DWGM.	No change.	No further changes identified.
<b>Wholesale Gas Market Uplift Payment Procedures (Victoria)</b>	This Procedure defines how Uplift payments are calculated and allocated in the DWGM.	No change.	No further changes identified.
<b>Wholesale Gas Market Administered Pricing Procedures (Victoria)</b>	These Procedures specify the administered price cap for the DWGM and describe AEMO’s processes for declaring and ending administered price	No change.	No further changes identified.



Procedure	Procedure description	Draft report recommended changes	Final report recommended changes
	periods in the Market in accordance with the Rules.		
<b>Wholesale Gas Market Compensation Procedures (Victoria)</b>	The purpose of these Procedures is to describe the principles and methodology upon which compensation amounts are to be determined by the dispute resolution panel under Rule 238.	Changes to clauses 4a and 4b for the award of compensation to clarify that compensation may be for injections into the DTS or a DDS.	No further changes identified. AEMO notes that the final determination has also clarified that the rules for compensation will apply to all facilities.
<b>Capacity Certificate Auction and Transfer Procedures</b>	These Procedures define how the capacity certificates auction operates and the system capability and modelling requirements used to determine auction quantities.	No changes are expected to the operation of the capacity certificates auction.  Changes will be required to the modelling requirements to ensure that distribution connected facilities are included in the modelling processes and assumptions.	AEMO notes that the final determination has confirmed that <i>both</i> controllable injections and withdrawals in a DDS will be eligible for capacity certificates. AEMO will need to consider the impact to both CC-exit and CC-entry zones as well as the modelling methodology. This is not expected to be an immediate issue and will depend on when and where distribution connected facilities are developed.
<b>Wholesale Gas Market Electronic Communication Procedures (Victoria)</b>	These Procedures govern the operation of the DWGM electronic communication system, as per NGR 319(4), under which:  (a) information must be provided by Registered Participants to AEMO;  (b) information must be provided by AEMO to Registered Participants; and  (c) information published on the Market Information Bulletin Board may be accessed by Market Participants.	No change.	No further changes identified.
<b>Wholesale Market Rule Consultation Procedures (Victoria)</b>	The Wholesale Market Rule Consultation Procedures (Victoria) developed under the rule 357(2) provides information on how AEMO consults on proposals for changes to Part 19 of the NGR submitted by a person other than AEMO under rule 356.	No change.	No further changes identified.

Procedure	Procedure description	Draft report recommended changes	Final report recommended changes
<b>Wholesale Market Distribution UAFG Procedures (Victoria)</b>	These Procedures govern the distribution unaccounted for gas (“DUAFG”) process. This consists of business rules and data formats which will enable the exchange of required information between Distributors and Market Participant	<p>Changes are expected to the injection calculations to accommodate distribution level injections:</p> <ul style="list-style-type: none"> <li>• Changes to how CTM injections are calculated; and</li> <li>• Changes to injection data.</li> </ul> <p>No changes to the methodology for the UAFG process.</p> <p>The current Procedures define injections as being from the DTS to a DDS. The existing calculations and Procedures therefore assume that there is a one-to-one relationship between DTS CTM injections and distribution withdrawals. This will no longer be the case once distribution connected facilities are injecting gas into a DDS. AEMO will therefore need to modify the Procedures to ensure that calculations for UAFG account for all supply.</p>	No further changes identified.
<b>Wholesale Gas Market Ownership Rules</b>	These Procedures outline the rules for transferring title through the market from injectors to withdrawers of gas.	Changes to expand the title transfer approach to include injections into a declared distribution system from a production or blending processing facility.	The current rules transfer title at the point of withdrawal from the DTS at a system withdrawal point. The approach needs to be modified to cater for injections at a DDS.

### 2.3.3 Recommendations for Operational Procedures

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

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

In addition, the AEMC’s final determination requires that AEMO develop the following new Procedures:

- Distribution operations coordination procedures
- Net bidding facility procedures
- Gas quality monitoring procedures

AEMO will develop and consult on these Procedures following the final determination and part of implementing the distribution connected facilities rule change and so they have not been considered in detail as part of preparing this final report.

As identified in AEMO’s draft report and the AEMC’s final determination, AEMO expects that the operational procedures will need to be updated to incorporate distribution-connected facilities for scheduling, constraints etc. and to incorporate the different physical characteristics and other gases from natural gas.

The only significant change that has been identified from the draft report is the need to incorporate hydrogen blend processing facilities as net bidding facilities in the DWGM. Please see the AEMC’s final determination for more information.



Table 3: DWGM Operational Procedures recommended changes

Procedure	Procedure description	Draft Report Recommended Changes	Final report recommended changes
<b>Gas Scheduling Procedures</b>	These Procedures govern the operation of the DWGM.	<p>AEMO expects that the Gas Scheduling Procedures will need to be updated to consider how constraints that apply to distribution connected facilities are managed in the market, including:</p> <ul style="list-style-type: none"> <li>• blending constraints</li> <li>• facility constraints</li> <li>• network constraints</li> </ul> <p>Where applicable, existing constraint types will be expanded to include distribution connected facilities.</p> <p>Updates to scheduling procedures to it make it clear that distribution constraints will be incorporated in scheduling.</p>	An additional change not articulated in the draft report relates to the change to definition of demand under Rule 208. As described under Rule 208, demand has been amended to include gas withdrawn from the DDS but excluding amounts that are already covered from DTS withdrawals or specified system withdrawal points. AEMO may also request a demand forecast, if it requires it, from one or more specified DDS withdrawal points. This amendment aims to capture the impact of any distribution injections on the demand forecast.
<b>Gas Market System Security Procedures</b>	<p>These Procedures represent general principles applicable to the operation of the DTS in a way that averts or minimises threats to system security.</p> <p>Note that these do not cover every possible situation. Where a contingency is of such severity that it cannot be managed using the principles and strategies detailed in these Procedures, AEMO may be required to implement other elements from the Emergency Protocol.</p>	Changes are primarily expected to the scope of these Procedures to accommodate distribution connected facilities into the DDS. The fundamental system security provisions and the way that AEMO operates the DTS and manages threats to system security are expected to be similar.	No further changes identified.
<b>Gas Quality Guidelines</b>	<p>These guidelines establish AEMO’s response to short-term excursions from the standard gas quality specifications, in order to balance the risks of the supply of off-specification gas with the risks associated with curtailment of injection, subsequent system disruption and re-lights in gas consumer premises.</p> <p>While not an instrument under the NGR, these provide a transparent and consistent approach for accepting or rejecting off-specification gas events by AEMO and are generally adhered to by participants.</p>	Guidelines to be superseded by proposed new Gas Quality Monitoring Procedures.	The final determination requires AEMO to make gas quality monitoring Procedures. These new Procedures will cover the matters currently included in the gas quality guidelines as well as new requirements (including requirements that relate to declared distribution systems). AEMO will incorporate the gas quality guidelines into the new procedure.
<b>Gas quality standard and monitoring guidelines</b>	These Guidelines provide additional guidance and transparency to participants about key gas quality matters. This document provides an overview of the standard of gas quality required at all system injection points connected to the DTS and covers gas quality standards;	Guidelines to be superseded by proposed new Gas Quality Monitoring Procedures.	The final determination requires AEMO to make gas quality monitoring Procedures. These new Procedures will cover the matters currently included in the gas quality standard and monitoring guidelines. AEMO will incorporate the gas quality guidelines into the new Procedure.

Procedure	Procedure description	Draft Report Recommended Changes	Final report recommended changes
	requirements for approving all gas quality monitoring systems; and requirements for a Gas Quality Monitoring Plan.		
<b>Distribution Operations Coordination Procedures</b>	This new AEMO Procedure is proposed to facilitate operations between AEMO and distributors with distribution connected facilities.	This Procedure will be required to provide for: <ul style="list-style-type: none"> <li>• submission, assessment, acceptance and review of methodologies for determining supply point constraints applicable at DDS injection points</li> <li>• arrangements for provision of information between AEMO and Distributors</li> </ul>	No further changes identified from the AEMC's final determination.
<b>Gas Quality Monitoring Procedures</b>	This new AEMO Procedure is proposed to provide for a range of matters relating to gas quality monitoring, including monitoring standards, the use of gas quality monitoring systems, and any matters AEMO considers necessary.	This Procedure will be primarily based on the AEMO Gas Quality Standard and Monitoring Guidelines, with additions per the new Rule. New components include: <ul style="list-style-type: none"> <li>• equipment to be included in gas quality monitoring systems and equipment standards;</li> <li>• process for making an election responsible for establishing and maintaining approved gas quality monitoring arrangements</li> <li>• arrangements for applying for temporary or permanent modifications approved gas quality monitoring arrangements</li> <li>• testing of gas quality monitoring systems and the costs of tests</li> <li>• other matters AEMO reasonably considers necessary or desirable.</li> </ul>	No further changes identified from the AEMC's final determination.
<b>Net bidding facility procedures</b>	As per the AEMC's final determination, these new procedures are required to facilitate the participation of net bidding facilities anticipate to include hydrogen blend processing facilities.	N/A – was not included in the draft report or draft determination.	AEMO will need to develop new Procedures to: <ul style="list-style-type: none"> <li>• Outline the criteria to be classified as a net bidding facility.</li> <li>• Outline the classification process.</li> <li>• Specify the metering configuration requirements for net bidding facilities.</li> </ul> <p>AEMO will consult with industry on the development of these new Procedures as part of implementing the distribution connected facilities rule change.</p>

### 2.3.4 Recommendations for 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.

The Metering Procedures require updates to reflect the DDCF rule change to ensure that new distribution connected facilities are captured for metering and settlement purposes. In addition, the Procedures need to ensure that the different physical requirements for primary gases are met for metering and measurement purposes.

In addition, under the DDCF rule change, the AEMC proposes that AEMO develop the following new Procedures:

- Metering installation coordination Procedures.

At the request of the Victorian Energy Minister, AEMO is currently reviewing its Procedures to implement zonal heating values in Victoria for customers on basic meters<sup>4</sup>. AEMO expects that this process will require changes to the Energy Calculation Procedures. AEMO is separately consulting on this matter through the Gas Retail Consultative Forum.

**Table 4: DWGM Metering Procedures recommended changes**

Procedure	Procedure description	Draft report recommendations	Final recommendations
<b>Metering Uncertainty Limits and Calibration Requirement Procedures</b>	The Procedures in this chapter are made under rule 297 of the NGR. They apply to all metering installations where gas is injected into or withdrawn from the DTS and apply to responsible persons in the DWGM.	<p>Change scope to include:</p> <ul style="list-style-type: none"> <li>• metering installations for distribution connected facilities</li> <li>• connection points between DDS of different Distributors.</li> </ul> <p>Review uncertainty limits and calibration requirements to ensure they are compatible with hydrogen blends, hydrogen and renewable gases.</p> <p>Update the frequency with which calibration must be carried out by a responsible person.</p> <p>AEMO will consider the need for further guidance in the Procedures relating to instances where AEMO becomes aware that the accuracy of metering installation used for settlements does not comply.</p>	<p>Some additional detail has been identified in the final determination including:</p> <ul style="list-style-type: none"> <li>• Frequency of calibration requirements review has changed to intervals not exceeding 5 years and not more than once a year (Rule 299(3))</li> <li>• Section 2.2 (Scope): Application of calibration requirements has broadened. Rule 299 (Calibration of metering installations) now applies to settlement metering points. The procedure currently states that it applies to all metering installations where gas is injected into or withdrawn from the DTS.</li> <li>• There are new requirements around compliance, including addressing defects/malfunction which may or may not need to be reflected (Rule 293).</li> </ul>
<b>Energy Calculation Procedures</b>	The Procedures in this chapter are made under rule 303(6) of the NGR and relate to the calculation of natural gas energy at distribution delivery points. These procedures do not cover metering installations directly connected to the AEMO-operated gas transmission system, as the "Gas Metering – CTM Data Requirements" document, covers these meters.	Updates to technical parameters including Pressure Correction Factors. The energy calculation formula will be amended so that the Procedures are appropriate for all covered gases.	No further changes identified. Full technical assessment will be undertaken as part of implementing the distribution connected facilities rule change.

<sup>4</sup> Renewable Gas Blending in Victoria - Gas Heating Values: <https://aemo.com.au/initiatives/trials-and-initiatives/renewable-gas-blending-in-victoria>

Procedure	Procedure description	Draft report recommendations	Final recommendations
<b>Metering communication Procedures</b>	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.	Scope and definitional changes to capture distribution connected facilities.	No further changes identified.
<b>Metering register Procedures</b>	The Rules specify that AEMO must maintain a register of all metering installations that provide data used for settlement purposes. The purpose of these Procedures is to set out the metering information that is to be contained in the metering register for the DWGM in accordance with Part 19 of the Rules.	Terminology changes are required to reflect NGR definitional changes including market injection point.	No further changes identified.
<b>Data validation Procedures</b>	The procedures in this chapter are made under rule 314(2) of the NGR. They cover the automated validation and substitution parameters to be applied to CTMs, DMs and Gas Chromatographs for which AEMO is the MDA	No change.	No further changes identified.
<b>Metering Installation Coordination Procedures</b>	This new AEMO Procedure is proposed to provide for providing for the obligations of the responsible person with respect to the prescribed matters relating to metering installations for system points and transfer points between declared distribution system points.	This Procedure will be required to provide for: <ul style="list-style-type: none"> <li>temporary changes to metering installations</li> <li>addressing the consequences of temporary metering data failures</li> <li>monitoring of metering installations</li> <li>audit requirements, and the cost of audits</li> <li>investigation and reporting</li> </ul>	No further changes identified.

### 2.3.5 Connection and maintenance procedures recommendations

The Connection Procedures refer to the Wholesale Gas Market Connection Approval Procedures (Victoria) and maintenance procedures refer to the Maintenance Planning Procedures (Victoria). The final determination has largely left the connection process to the pipeline interconnection framework rather than a new connections framework administered by AEMO in the NGR. As such, no specific changes are expected to be required as a consequence of the distribution connected facilities rule change.

The final determination has only made minimal changes to the maintenance framework for distribution connected facilities. Rule 326A will require AEMO to provide for the provision of information reasonably required about maintenance for distribution connected facilities however the full maintenance coordination and planning framework does not apply to these facilities. AEMO will consult with industry on potential information requirements pertaining to maintenance for distribution connected facilities as part of implementing the final determination.

## 3 Short Term Trading Markets

### 3.1 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.

All AEMO procedures relating to the STTM are covered by a single document, the STTM Procedures.

### 3.2 Key conclusions from AEMO's review

This section outlines AEMO key findings in its review of the STTM Procedures.

AEMO's review into the STTM Procedures identified very few changes required to facilitate the participation of hydrogen and other renewable gas facilities. The STTM Procedures do not require significant change for the following reasons:

- The majority of the STTM Procedures deal with the operation of the market and settlement and do not cover technical metering requirements or other technical parameters. The day-to-day functioning of the STTM is not expected to change with the introduction of hydrogen or renewable gas producing facilities.
- STTM settlement is done on an energy basis (GJs multiplied by dollars). New hydrogen and renewable gas facilities will be required to participate in the market on the same basis as other facilities with data and bids provided in GJs for example. As such no settlement changes are expected to be required.
- The STTMs already facilitate the participation of distributed connected facilities as so unlike the DWGM changes are not specifically required to facilitate distribution-level participation.

As such the majority of changes will be as a consequence of changes the AEMC are making in their review of the NGR. AEMO and the AEMC have been collaborating closely to understand the potential impact of respective recommendations

Key STTM amendments proposed by the AEMC are as follows:

- **Extend the STTM shipper registration** – The AEMC is recommending the STTM shipper registration category is extended to clarify that includes injections from blend processing facilities. This change is not expected to have a material impact on the Procedures.
- **Injection Facility category** – The AEMC proposes to replace the ‘STTM production facility’ and ‘STTM storage facility’ definitions with a new single category – ‘STTM injection facility’. The STTM Procedures primarily use the term STTM facility, which applies to all facilities in the STTM. However, there are some references to specific facility types that will need to be updated to reflect this new definition.
- **Capacity information provided under rule 414** - The AEMC proposes that a materiality threshold be applied to STTM facility hub capacity provided by STTM facility operators. The STTM Procedures may need to be modified to clarify what information is used in the event that the facility operator has not submitted new information (i.e., the last submission).
- **Facility aggregation** – The AEMC is consulting on a recommendation to enable STTM facilities that are operated by a single party to be aggregated for submission of offers and STTM information. AEMO would therefore be required to approve applications from STTM facility operators and publish information on aggregated facilities. AEMO would need to develop new Procedures to cover this process.
- **Streamlining the Custody Transfer Point amendment process** – Both the AEMC and AEMO have consulted on simplifying the Process for updating CTPs and such a change will require changes to both the NGR and Procedures. The approach the AEMC is considering would require AEMO to maintain a register of CTPs for STTM hubs. The STTM Procedures would outline the CTP register and would need to set out the arrangements required for AEMO to make changes to the register.
- **Allow net bidding and settlement** – Similar to the change made to the final determination for the distribution connected facility rule change in the DWGM, the AEMC are recommended that certain facilities (and participants at those facilities) be enabled to participate in the market on a net basis where appropriate. This will have impacts for the STTM Procedures as these Procedures will need to be developed to approve the classification of a net metered facility and to outline how settlement and allocation information is to be determined for these facilities.

### 3.3 Stakeholder feedback to the draft report

Note not all feedback is included (for example where no comment is made) and some responses have been summarised. Please refer to the AEMO website for full published submissions to the draft report.

**Table 5: STTM stakeholder feedback to the draft report**

Question#	Question	Company	Company response	AEMO response
5	Do you agree with AEMO's recommended changes for the STTM Procedures? If not, what changes do you believe are required? Please	AGIG	We agree with AEMO's recommendations.	Noted.



Question#	Question	Company	Company response	AEMO response
	state the Procedure and clause where possible.	Jemena	Jemena is supportive of changes to the STTM procedures that help facilitate the development of renewable gas markets, however, without full details of how the recommended changes will be incorporated into the STTM procedures this support is qualified. It is important that regulatory and procedural obligations do not create barriers to new entrants.	Noted – AEMO will consult on amendments through the GRCF and GWCF.
6	Are there any other matters that you think AEMO should consider for the STTM Procedures?	Red/Lumo	<p>Red and Lumo recognise APA’s observation that, “Consideration may need to be given to scheduling and curtailment mechanisms and how these specifically relate to scheduling of injections to create blended products and maintain blends within the tolerance range.” and propose that Metering Procedures similar to those in the DWGM are required in the STTM and non-STTM network sections. Where a blending facility is adding, or removing, gases from the gas supplied in a network operator’s (distributor’s) pipeline there is additional risk of gas not meeting specification.</p> <p>The current STTM Procedures lack metering procedures, including those guiding the monitoring of the quality of gas or guiding curtailment in the event of gas not meeting the agreed specifications of the STTM hub or network section.</p>	AEMO notes this concern. However, the STTM regulatory framework differs from the DWGM framework. As such AEMO, does not have the same role with respect to metering or gas quality in an STTM as it does in the DWGM. Such a change would require broader changes to the STTM’s design and ultimately a substantial rule change for Part 20 of the NGR.

### 3.4 Final recommended changes to the STTM Procedures

This section provides AEMO’s final recommended changes to the STTM changes. No additional changes have been identified from AEMO’s draft report, one additional change is required due to proposed changes to the NGR.

**Table 6: STTM Procedures recommended changes**

Ref#	Procedure Clause	Procedure overview	Draft report recommendations	Final report recommendations
1	2-Hubs	This Procedure defines the STTM hubs at Sydney, Adelaide and Brisbane. The Procedure provides each hub’s list of constituent CTPs. When a new CTP is added to an STTM hub, this Procedure clause is modified to include the update and to reflect the characteristics of the new CTP.	<ul style="list-style-type: none"> <li>Remove the connection point definitions for each STTM hub.</li> <li>Retain high-level description of each STTM hub e.g. geographic coverage and physical assets in accordance with any requirements from 371 (2).</li> </ul>	No further changes identified.
	New	Procedure to outline the STTM CTP register.	<ul style="list-style-type: none"> <li>Define the contents of a new subordinate instrument that will specify the CTPs that comprise an STTM hub</li> <li>Define the change process for the new subordinate instrument.</li> </ul>	No further changes identified.
2	3 – STTM Facilities and Distribution System Information	These Procedures govern the determination of default facility capacities and the publication of facility information by AEMO.	<ul style="list-style-type: none"> <li>Create a requirement for AEMO to use the last submitted facility hub capacity by the facility operator. <i>Note this requirement already exists but may need to be reviewed and linked more closely to the new Rule.</i></li> <li>Review current Procedures for maximum and default capacities to</li> </ul>	No further changes identified; however changes will need to be considered against rules once available.

Ref#	Procedure Clause	Procedure overview	Draft report recommendations	Final report recommendations
			ensure they are consistent with the new rule.	
3	New – Aggregation of STTM facilities	A new Procedure may be required to define the requirements for aggregating STTM facilities as the AEMC is considering would require AEMO to maintain a register of CTPs for STTM hubs.	<ul style="list-style-type: none"> <li>• Outline application process and the information AEMO requires.</li> <li>• Set timeline for AEMO to respond to an application.</li> <li>• Create process for AEMO to seek further information from an applicant including timeframes.</li> <li>• Specify notification process.</li> <li>• Define how AEMO will publish the relationship between individuals facilities and the aggregated STTM facility.</li> </ul>	No further changes identified.
4	New – net bidding	A new procedure to facilitate the participation of eligible facilities (and trading participants at those facilities) in net bidding for the STTM.	N/A	Set out requirements and process for classification as an STTM net bidding facility. Specific NGR drafting will need to be considered, changes will be consulted on via the GWCF.



# 4 Regulated Retail Markets

## 4.1 Overview of the retail markets

The regulated retail markets (RRM) 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; and
- operating the central IT systems that facilitate retail market services.

## 4.2 Key conclusions from AEMO's review

This section outlines AEMO key findings in its review of the Retail Market Procedure (RMP)s. AEMO has only identified limited changes to the RMPs that will be required to facilitate the participation of hydrogen and renewable gas facilities.

### Retail competition procedures

A significant portion of the RMPs related to processes that are required to facilitate retail market competition and customer churn including:

- Metering processes<sup>5</sup> for retail billing
- MIRN discovery processes
- Customer transfer processes
- Retailer of last resort arrangements

These mechanisms are not expected to require changes with the potential introduction of hydrogen, hydrogen blends or other renewable gases.

### Settlement, balancing, allocations and reconciliation procedures

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<sup>6</sup>. The Procedures covered here include:

- NSW and ACT: Chapter 8
- Queensland: Chapter 6
- South Australia: Chapter 8

In general, these procedures are expected to continue to be fit-for-purpose with the introduction of hydrogen, hydrogen blends and other renewable gases. The current approach to managing data flows required for these processes is not expected to require significant changes and is anticipated to function in the same way. The

<sup>5</sup> With the exception of interval metering processes for Victoria. These metering processes are described in Part 19 of the NGR.

<sup>6</sup> In relation to Victoria, Part 19 of the NGR describes what information is provided to AEMO and how it is used.

primary changes identified by AEMO relate to ensuring that the procedure requirements and formulas capture all gas flows either withdrawn or injected as some procedures imply that injections can only come from transmission pipelines. Amended versions of relevant formulas and Procedures clauses will be developed and consulted on as part of implementation through the Gas Retail Consultative Forum (GRCF).

### Terminology

The AEMC has made minor changes to some of the registration category definitions in the NGR to clarify that participants at blend processing facilities are required to register and participate in the retail markets where appropriate. The changes include:

- **Expanding the definition of self-contracting user** – In the NSW/ACT, South Australia, and Queensland Retail Markets, the AEMC is recommending that the definition of self-contracting user be expanded to include blend processing facilities. AEMO does not expect this to change to require significant changes to the Procedures, but existing obligations may apply to new parties.
- **Expanding the definition of market participant other** – In Victoria, the AEMC is proposing to expand the definition of market participant other to include blend processing facilities so that participants operating at these facilities may be registered. AEMO does not expect this to change to require significant changes to the Procedures, but existing obligations may apply to new parties.

In addition to the changes, in the NGR, AEMO has identified a small number of legacy definitions in the RMP that will need to be amended to bring the RMPs in line with the changes being made to the overall regulatory framework.

## 4.3 Stakeholder feedback to the draft report.

Note not all feedback is included (for example where no comment is made) and some responses have been summarised. Please refer to the AEMO website for full published submissions to the draft report.

**Table 7: RRM stakeholder feedback draft report**

Question#	Question	Company	Company response	AEMO response
7	Do you agree with AEMO's recommended changes for the Retail Market Procedures? If not, what changes do you believe are required? Please state the Jurisdiction, Procedure and clause where possible.	AGN	AGN agrees with AEMO's recommendations	Noted.
		JGN	NSW/ACT Retail Market Procedures Definition of Heating Values – Jemena supports the removal of the reference to hydrocarbons. However, it is unclear at this time as to how AEMO intends to clarify the term “technical parameters” and what, if any, could be the potential impacts of this change.  Network Receipt Point – Jemena supports AEMO's recommendation that no changes are required.	AEMO notes JGN's support to remove the mention of hydrocarbons from the HV and we also note JGN's supports AEMO position not to make any changes to Network Receipt Point.  In relation to the term “technical parameters” the expected change to clarify the term technical parameters will not proceed. As it stands, the Heating value (HV) definition which currently includes reference to the technical parameters is not impacted with the introduction hydrogen and renewable gases. So too is

Question#	Question	Company	Company response	AEMO response
				<p>the HV term in the other jurisdictions that do not mention an such parameters.</p> <p>However, AEMO has recognised the HV definition is different across all jurisdictions. There is no rationale that they should be different. AEMO will raise this HV definition inconsistency with participants, via the GRCF with a view to develop a singular definition that can be applied to all jurisdictions. Such a change would be facilitated via a formal consultation and may include other harmonisation opportunities as well.</p>
		Ausnet	We agree with AEMO's assessment of expected changes to the Retail Market Procedures	Noted.
		Red/Lumo	Red and Lumo have raised concerns with the AEMC regarding the scope of Part 19 of the NGR and have noted that should hydrogen facilities be located outside the DWGM but inside Victoria, then one manner to resolve the coverage issue is to place obligations on distribution facilities within the Retail Market Procedures. We urge AEMO and the AEMC to strongly consider the consumer protections and other important aspects of the rule changes (e.g. gas quality, safety and settlement) should blended facilities become prevalent in areas outside the scope of the DWGM but inside the scope of the RMP(Vic).	<p>AEMO notes Red and Lumo feedback provided to the AEMC regarding the effectiveness and coverage pertaining to the of the obligations on distribution facilities should they be outside the DWGM but within Victoria.</p> <p>It is AEMO's view that the matters that Red and Lumo have raised exist today and they are not a result of the introduction of distribution connected facilities or covered gases, therefore AEMO believes this coverage issues are not within the scope of AEMO's hydrogen and renewable gases review of the gas procedures.</p>
8	Are there any other matters that you think AEMO should consider for the Retail Market Procedures?	AGN	<p>Retail Market Procedures (All) – proposal to expand the definition of 'Self Contracting User' in SA, Qld &amp; NSW, and of 'Market Participant Other' in Vic to include blend processing facilities. An appropriate materiality threshold for registration of these facilities under these categories will need to be established.</p> <p>Retail Market Procedures (SA) – Gate Point Coding. A separate identifier is required for injection points that are not connected to a transmission pipeline. The details of this can be explored in the formal industry consultation process</p>	<p>In relation to establishing a materiality threshold for registration of these facilities, AEMO has followed up with AGN post this feedback seeking further details about this suggestion as AEMO was unclear about what this entailed. AEMO has not received firm advice from AGN about the specific of the suggested materiality threshold, therefor AEMO will not be suggesting any expected changes to the procedure to do with materiality thresholds.</p> <p>In relation to AGN's comment that a separate identifier is required, AEMO intends to undertake further consultation on this matter as part of implementation. In order to make a decision AEMO needs to understand the benefits of this information to retail market participants as well as the potential systems impact.</p>

## 4.4 Final recommended changes to the Retail Market Procedures

This section outlines AEMO's final recommended changes to the RMPs. Changes to the Victorian RMP as a consequence of the AEMC's rule change have not been explicitly considered as part of this paper and AEMO will consult on any changes following a final determination per its standard process.

Table 8: Retail Market Procedure Recommended Changes

Ref#	Procedure Clause	Procedure overview	Draft Recommendation	Final Recommendation
<b>Victoria Retail Market Procedures</b>				
1	Definitions	Definition of gas	<p>Insert a new definition of gas that is aligned with definitions in the NGR and NGL.</p> <p>Italicise the word gas throughout the Procedures, where it is appropriate to do so.</p>	No further changes identified and will form part of the hydrogen and renewable gases formal consultation.
	Definition	Market participant definitions	N/A	In reviewing the RMPs for the final report, AEMO has identified some ambiguities with the definition of market participant in the Procedures. In implementing the changes for this review, AEMO will consider clarifying this definition to align it with the NGR (Part 19 and Part 15A).
	Definitions	Definition of Custody Transfer Meter	Either amend term or introduce new term to clarify that distribution connected facilities are also metered	Expected change to amend the definition of Custody Transfer Meter, prevails, and will form part of the hydrogen and renewable gases formal consultation. The current definition will be expanded to include distribution connected facilities.
<b>NSW/ACT Retail Market Procedures</b>				
2	Definitions	Heating Value	<p>Remove reference to hydrocarbons.</p> <p>Clarify the term technical parameters.</p>	<p>Expected change to remove references to hydrocarbons in the definition "Heating value" (HV), prevails, and will form part of the hydrogen and renewable gases formal consultation.</p> <p>In relation the use of the words "technical parameters" AEMO will not be putting forward a change in relation to the hydrogen and renewable gases formal consultation. AEMO recognise the definition HV is different across all jurisdictions. There is no rational as to why definition of HV should be different. AEMO will raise this HV definition inconsistency with participants, via our gas forums with a view to develop singular definition that can be applied to all jurisdictions. This would be facilitated via formal consultation and may include other harmonisation opportunities as well</p>
3	Definitions	Network receipt point	No change	This was originally flagged as a potential change in AEMO's initial consultation paper. AEMOs draft report concluded that this term remains fit of for purpose. AEMO's final recommendation is that no change is made.
<b>South Australia Retail Market Procedures</b>				
4	Definitions	Injecting	Term to be amended to include all covered gases.	<p>The draft report noted that the definitions for Injecting and energy inflow was limited to gas from a transmission pipeline and needs to include all covered gases. On further review, AEMO has identified other clauses in the procedures whereby the same limitations equally apply therefore a better drafting approach would be establish a new definition in the procedures for all covered gases (including transmission pipeline operators) and where appropriate amend exiting provision within the procedures should the obligation apply only to a certain category within the covered gases grouping.</p> <p>Expected change to amend the terms injecting and energy flow will not form part of the hydrogen and</p>

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				renewable gases formal consultation, because same limitations equally apply to other provision.
5	Definitions	Energy inflow	Term to be amended to include all covered gases.	See previous comment on injecting.
6	Appendix D 14.12	Gate Point Coding	No change	<p>In its draft report AEMO recommended no change.</p> <p>However, following further consideration of this issue and stakeholder feedback to the draft report, AEMO believes this issue merits further consideration. AEMO needs to understand the potential requirements from retail market participants as well as the potential systems impact and so will undertake further consultation on this matter as part of implementation.</p>
<b>Queensland Retail Market Procedures</b>				
7	Definition	Custody Transfer Meter	Clarified to ensure that covered gases that are injected directly into a distribution network are metered.	<p>The draft report noted covered gases (from distribution connected facilities) that are injected directly into a distribution network are expected to be metered. Like the VIC RMP the current CTM definition appears to limit the CTM as metering injections gas between the transmission system and a distribution system; or between one distribution system and another distribution system (noting that distribution system same the same meaning in the NERL) therefore the definition should be amended, and aligned with the equivalent definition in VIC.</p> <p>Expected change to amend the definition of Custody Transfer Meter, will form part of the hydrogen and renewable gases formal consultation. The current definition will be expanded to include distribution connected facilities.</p>