

Wholesale Impact and Implementation Report (IIR) – Hydrogen and DCF changes



Impacted jurisdiction(s)	Victoria only		
Proponent	Luke Stevens	Company	AEMO
Affected Gas Market(s)	Declared Wholesale Gas Market (DWGM)	Consultation process (Ordinary or Expedited)	Ordinary
Industry Consultative forum(s) used	Gas Wholesale Consultative Forum (GWCF)	Date Industry Consultative forum(s) consultation concluded	15 September 2023
Short Description of change(s)	Implementation of the AEMC's Hydrogen review and DWGM Distribution Connected Facility rule changes. In addition, implementing the Minister's request to move from a statewide heating value zone to a zonal heating value for customers.		
Procedure(s) or Documentation impacted	Wholesale Market Procedure listed in section 2.		
IIR Prepared By	Luke Stevens	Approved By	Violette Mouchaileh
Date IIR published	30 October 2023	Date Consultation under 135EE or 135EF concludes	28 November 2023
Email Address for Responses	GWCF_Correspondence@aemo.com.au		

aemo.com.au

New South Wales | Queensland | South Australia | Victoria | Australian Capital Territory | Tasmania | Western Australia

Australian Energy Market Operator Ltd ABN 94 072 010 327

Impact and Implementation Report – Detailed Report Section

Critical Examination of Proposal

1. Description of issue

1.1. Background.

AEMO is amending the Wholesale Market Procedures as a consequence of the:

- (a) AEMC's review into extending regulatory frameworks to Hydrogen;
- (b) DWGM Distribution Connected Facility rule change;
- (c) Minister's request to implement Zonal Heating Values in Victoria; and
- (d) Essential Services Commission review of the Gas Distribution System Code of Practice.

Background on each of these changes are provided below.

1.1.1. AEMC's Hydrogen and DWGM Distribution Connected Facility rule changes

In August 2021, Energy Ministers agreed that the national gas regulatory framework be reviewed and extended to accommodate hydrogen, biomethane and other renewable gases. This agreement meant that changes would need to be made to documents that underpin the framework so that they recognise and facilitate natural gas equivalents. This also meant that:

- (a) Jurisdictional officials would review the National Gas Law (NGL), National Energy Retail Law and National Energy Retail Regulations;
- (b) AEMC would review the arrangements in the National Gas Rules (NGR) which include a request to incorporate distribution connected facilities (DCF) into the Victorian declared wholesale gas market (DWGM); and
- (c) AEMO would review its market Procedures for the DWGM, Short Term Trading Market (STTM) and Retail Market (excluding Western Australia).

Those reviews concluded in September 2022 whereby AEMC and AEMO published final recommended changes to their respective regulator instruments. AEMO's final recommendation report outlines AEMO's final recommended changes to the each of the above procedures.

In October 2022 the Energy Ministers agreed to amendments to extend the NGL and NERL to hydrogen and other renewable gases.

AEMO is undertaking a consultation on the DWGM's Wholesale Market Procedures and the Retail Market Procedures (Victoria) required as a result of the AEMC's [review into extending the regulatory frameworks to hydrogen and renewable gases](#) and the AEMC's [DWGM distribution connected facilities](#) rule change.

Having considered the recommendation contained in section 2 of [AEMO's final recommendation report](#), the recommended changes have been made to Wholesale Market Procedures. Section 3 of this IIR provides a summary of these proposed amendments.

AEMO is undertaking this Procedure consultation on the basis that the draft National Energy Laws Amendment (Other Gases) Bill 2022 and the AEMC’s recommended Rules for extending the regulatory frameworks to hydrogen and renewable gases (including the recommended transitional rules) are made as published.

1.1.2. Ministers request to implement Zonal Heating Values in Victoria

AEMO has received a request from the Victorian Minister Hon Lily D’Ambrosio (the Minister) requesting the Procedures be amended to implement zonal heating values (ZHV) for tariff V consumers and that these changes need to take effect before the Hydrogen Park Murray Valley project commences operation (Click [Minister’s letter link](#)).

These changes require changes to the Energy Calculation Procedures detailed in chapter 3 of the Wholesale Market Metering Procedures to detail the operation and determination by AEMO of heating values for each heating value zone by the heating value allocation model. These changes are reflected in the ‘Package 3A Retail Market IIR’ document which provides detailed background on the proposed changes.

1.1.3. Essential Services Commission review of the Gas Distribution System Code of Practice

The Victorian Essential Service Commission’s review of the Gas Distribution System Code of Practice, which require administrative changes to the Wholesale Market Distribution UAFG Procedure to be consistent with the Distribution Code.

1.2. How to make a submission

Anyone wanting to make a submission for this second consultation stage (Wholesale Impact and Implementation Report (IIR)) are requested to use the response template provided in Attachment D. Submissions are due **COB 28 November 2023** and should be e-mailed to GWCF_Correspondence@aemo.com.au.

In relation to the ZHV changes, the Wholesale Market Procedure changes overlap with the Retail Market Procedure (RMP) changes. Details about the RMP changes are described in Package 3A Retail Market IIR. In relation to feedback on the proposed amendments to the RMP changes, please use the Retail Market IIR responses template.¹

2. Reference documentation

The following Procedures, provided in Attachment A, are being consulted on as part of this Procedure change process. This includes the Procedure changes from the initial consultation published on 15 September 2023 and those Procedures published in the Part 2 consultation on 26 September 2023.

AEMO is also making changes to technical documents, as detailed in Attachment B. AEMO will only republish documents that change at each stage of the Procedure consultation.

¹ Submissions close **COB 28 November 2023** and should be e-mailed to grcf@aemo.com.au.

Title	Legal Requirement
Wholesale Market Connection Approval Procedures (Victoria)	Connection Approval Procedures (Victoria) required by rule 272(6) of the NGR.
Wholesale Market Distribution Operation Procedures (Victoria)	This Procedure contains the: <ul style="list-style-type: none"> - Distribution Operational Coordination Procedures required by rule 317A(1) of the NGR. - Net Bidding Facility Procedures required by rule 204B(3) of the NGR.
Wholesale Market Gas Quality Monitoring Procedures (Victoria)	This is a new Procedure, required by rule 289B(1) of the NGR that contains the content from the existing: <ul style="list-style-type: none"> - Gas Quality Guidelines Version 10. - Gas Quality Standard and Monitoring Guidelines Declared Transmission Systems.
Wholesale Market Maintenance Planning Procedures (Victoria)	Maintenance Planning Procedures (Victoria) required by rule 326(2) of the NGR.
Wholesale Market Management Procedures (Victoria)	This Procedure contains the: <ul style="list-style-type: none"> - Additional Reporting Procedures required by rule 324A(1) of the NGR. - Electronic Communication procedures required by rule 319(4) of the NGR. - Gas Ownership Rules required by clause 91BO of the NGL. - Rule Change Consultation Procedures required by rule 357(2) of the NGR.
Wholesale Market Metering Procedures (Victoria)	This Procedure contains the: <ul style="list-style-type: none"> - Metering Uncertainty Limits and Calibration Requirements Procedures (Victoria) made under rule 297 of the NGR. - Energy Calculation Procedures (Victoria) made under rule 303(6) of the NGR. - Metering Communications Procedures (Victoria) made under rule 308(4) of the NGR. - Installation Database Procedures (Victoria) made under rule 309(3) of the NGR. - Metering Installation Coordination Procedures made under rule 292A of the NGR. - Metering Register Procedures (Victoria) made under rule 311(4) of the NGR. - Data Validation Procedures (Victoria) made under rule 314(2) of the NGR.
Wholesale Market Operations Procedures (Victoria)	This Procedure contains the: <ul style="list-style-type: none"> - Accreditation Procedures required by rule 210(8) of the NGR. - Administered Pricing Procedures required by rule 224(1) of the NGR. - Capacity Certificates Auction Procedure required by rule 328D(1) of the NGR. - Capacity Certificates Transfer Procedure required by rule 331(2) of the NGR. - LNG Reserve Procedures required by rule 286A(1) of the NGR. - Gas Scheduling Procedures required by rule 206(4) of the NGR.
Wholesale Market Settlement Procedures (Victoria)	This Procedure contains the: <ul style="list-style-type: none"> - Ancillary Payment Procedures required by rule 239(1) of the NGR. - Uplift Payment Procedures required by rule 240(1) of the NGR.

Title	Legal Requirement
	<ul style="list-style-type: none"> - Distribution Unaccounted for Gas Procedures required by rule 317(1) of the NGR. - Compensation Procedures required by rule 237(10) of the NGR.
Wholesale Market System Security Procedures (Victoria)	Wholesale Market System Security Procedures (Victoria) required by rule 205(1) of the NGR

3. Overview of changes

The marked-up Procedure changes are provided in Attachment A of this document.

A summary of all proposed changes from participants’ PPC submissions for each Wholesale Market Procedure is provided in Attachment E.

AEMO has also provided a summary of the responses to questions posed in the PPC consultation along with material changes to the Procedures below.

AEMO has provided the “Attachment D DWGM IIR consultation response template” for participants to make their submissions in response to this consultation.

3.1. Response to specific questions from PPC consultation

AEMO asked the following questions in the PPC consultation. Response to these questions are summarised in Attachment E in sections E.2, E.3 and E.4 respectively.

3.1.1. Question 1 - Do participants consider the 5TJ/d constraint materiality threshold for inclusion of a constraint in the scheduling window?

AGL and Red/Lumo Energy supported this proposal. Origin Energy opposed the proposal and has requested further analysis on the proposal.

AEMO notes demand in the DTS during the:

- (a) Winter period generally exceeds 1000TJ/d.
 - (i) Specifically, the VGPR has reported a peak 1-in-20 winter gas day demand for 2022 is 1249 TJ/d.
- (b) Summer period is approximately 300TJ/d.

Therefore 5TJ/d represents approximately 0.5% (of a 1000TJ/d) or 1.67% (of a 300TJ/d) summer day. On average this reflects approximately 1% of demand. AEMO considers that a reasonable proxy to understand the market price sensitivity, using existing market data, is the MIBB report INT037b indicate market prices.

The INT037b report shows the market price, market pricing assuming demand is 90% of demand forecast, and market price assuming demand is 110% of demand forecast for each schedule. AEMO has provided a summary of the market price outcomes for the period 1 January 2017 to 19 October 2023, excluding calendar year 2022, in the table below.

Difference from Market Price	\$0 < \$1	\$1 < \$2	\$2 < \$3	\$3 < \$4	\$4 < \$5	\$5 < \$6	\$6 < \$7	\$7 < \$8	\$8 < \$9	\$9 < \$10	> \$10
90% Demand Price (events)	8,027	1,929	450	107	27	6	12	12	4	5	6
Percentage (%)	75.8	18.2	4.3	1.0	0.3	0.1	0.1	0.1	0.0	0.0	0.1
Cumulative (%)	75.8	94.1	98.3	99.3	99.6	99.6	99.7	99.9	99.9	99.9	100.0
110% Demand Price (events)	8,111	1,631	504	192	83	19	12	8	3	3	19*
Percentage (%)	76.6	15.4	4.8	1.8	0.8	0.2	0.1	0.1	0.0	0.0	0.2
Cumulative (%)	76.6	92.0	96.8	98.6	99.4	99.6	99.7	99.8	99.8	99.8	100.0

* The majority of these events occurred in 20 and 21 April 2021 caused by urgent maintenance at Iona UGS and 8, 9, 10 July 2021 caused by concurrent high demand (due to cold weather and high GPG demand) which overlapped with Longford increasing gas production capacity.

As the table above shows, 99% of market price outcomes, resulting from a 10% variation in demand, would lead to an expected \$4/GJ price variation. Therefore, AEMO considers this shows that the market price sensitivity to an approximately 1% materiality threshold (a tenth of the demand forecast variation) should have minimal market price impact to market participants.

In the event of a general supply shortage, such as occurred in Winter 2022, AEMO would be actively engaging with DWGM facility operators to ensure gas supply is available and appropriately reflected in the operating schedule. AEMO would also be seeking to understand additional gas supply availability (including of non-firm gas) to ensure the supply and demand within the market would remain balanced. AEMO considers in such a scenario, all known constraints would be accounted for, as not including them in the operating schedule could potentially cause a threat to system security.

Participant’s PPC submissions are summarised in section E.2 of this Impact and Implementation Report.

3.1.2. Question 2 - Do participants consider the 5TJ/d constraint materiality threshold for sending a SWN is appropriate as AEMO already publishes all constraints at schedule approval?

AGL and Red/Lumo Energy supported this proposal. Origin Energy opposed the proposal.

AEMO also notes that all constraints used in an operating schedule by AEMO are published to the public MIBB reports:

- (a) INT111 - Supply and Demand Point Constraint (SDPC) (which will include distribution connected facility supply and demand point constraints);
- (b) INT112 - Directional Flow Point Constraints (DFPC);
- (c) INT112b - Net Flow Transportation Constraints (NFTC); and
- (d) INT112c - Supply Source Constraint (SSC).

Therefore, registered participant will be aware of all constraints that are provided to AEMO and are used in the operating schedule. AEMO considers that the use of System Wide Notices (SWNs) to inform the market of significant constraints remains an appropriate tool, as it can prompt market participants to make a response by changing bids in the market.

AEMO does not expect in the normal market conditions for a constraint impacting a gas day by less than 5TJ/d to cause a material market impact, as per the discussion of the market price impact in section 3.1.1. Therefore, in AEMO's reasonable opinion they do not need to be sent via SWN and publication of the constraints on AEMO's MIBB is sufficient.

AEMO publishes all constraints used in an operating schedule when the schedule is approved. Therefore, Market Participants will be able to monitor all constraints via these reports, even those less than 5TJ/d that are provided to AEMO.

AEMO notes participants can raise issues, such as changing the materiality threshold, via the GWCF. AEMO can then consider whether a Procedure change would be appropriate in consultation with Market Participants.

Participant's PPC submissions are summarised in section E.3 of this Impact and Implementation Report.

3.1.3. Question 3 – Do Registered Participants agree that a 3 monthly communication limit is appropriate for routine notifications concerning Responsible Persons notifications under rules?

AGL supported this proposal. No other participant provided a response to this question.

AEMO notes this communication process is concerned with the notifications AEMO is required to send on behalf of a responsible person for a metering installation under rule 318A but also allows for AEMO sending other notifications if AEMO considers it appropriate.

AEMO notes participants can raise issues, such as changing the routine communication frequency, via the GWCF. AEMO can then consider whether a Procedure change would be appropriate in consultation with Market Participants.

Participant's PPC submissions are summarised in section E.4 of this Impact and Implementation Report.

3.2. Wholesale Market Connection Approval Procedures

The **Connection Approval Procedures** amendments are scoped to:

- (a) Add commentary in section 1.1 to acknowledge that APA has separate design requirements for a DTS connection which are outside the scope of these Procedures.
- (b) Amended the Safety requirement to state “the risk of a connection resulting in an unplanned loss of supply (or interruption) to a customer must be ALARP.”
- (c) Please see Attachment E.5 for details of participant responses to the PPC.

3.3. Wholesale Market Distribution Operation Procedures

The **Net Bidding Facility Procedures** has a minor amendment to:

- (a) Clarify that a net injection meter is a market injection point for the purposes of the accreditation procedures.
- (b) Incorporated an example of how the metering configuration would work for a net bidding facility.
- (c) Please see Attachment E.6 for details of participant responses to the PPC.

3.4. Wholesale Market Gas Quality Monitoring Procedures

AEMO has made the following substantive amendments to the Wholesale Market Gas Quality Monitoring Procedures:

- (a) AEMO has amended section 2.4.3 (Hydrogen) and 2.4.4 (Biomethane) to clarify the list of potential gas quality parameters that may be included in a responsible gas quality provider's gas quality monitoring plan.
- (b) The gas quality parameters (including for various compounds) that need to be measured and monitored for each hydrogen and biomethane gas production facility will be determined based on the production technology and/or feedstock. AEMO will assess proposed gas quality monitoring plans on a case-by-case basis using a risk-based approach.
- (c) AEMO's case-by-case assessment and approval of the gas quality monitoring plan will also be to determine the Confirm, Notify, Mitigate and Curtail levels for each parameter as required by the standard gas quality specifications.

Please see Attachment E.7 for details of participant responses to the PPC.

3.5. Wholesale Market Maintenance Planning Procedures

AEMO has not made a substantive change to these Procedures. Please see Attachment E.8 for details of participant responses to the PPC.

3.6. Wholesale Market Management Procedures

AEMO has not made a substantive change to these Procedures. Please see Attachment E.9 for details of participant responses to the PPC.

3.7. Wholesale Market Metering Procedures

The procedures have the following substantive amendments:

- (a) **Energy calculation procedures:**
 - (i) AEMO has reformatted these sections for readability by marking each paragraph in section 3.4.1, 3.4.2 and 3.4.3 as paragraph (a) to (x). This is discussed in response E.10.4 of Attachment E.10 of this Report.
 - (ii) Clarification of the Distributor's ability to change a metering installation's heating value zone:
 - (A) AEMO has clarified that an amendment to a metering installation's heating value zone, as detailed section 3.4.3 of the energy calculation procedures,

can only be amended for a permanent change to the DDS network configuration.

(B) This is also discussed in response E.10.2 of Attachment E.10 of this Report.

(b) **Metering installation coordination procedures:**

(i) Timing of DM and CTM metering installation setup has been defined in the Procedure in section 6.3.1:

(A) AEMO has amended the process for setting up a new metering installation to provide the timing requirement for the setup of a DM and CTM (which includes market injection points and market withdrawal points) as per existing process timelines.

(B) AEMO has incorporated this requirement as the time for setup of a CTM that is a market injection point or a market withdrawal point requires approximately 60 business days to allow for pipeline modelling, communication link setup to the *metering installation* (i.e. SCADA setup) and scheduling system setup (including testing in UAT and PREPROD).

(C) This is also discussed in response E.10.2 of Attachment E.10.

Please see Attachment E.10 for details of participant responses to the PPC.

3.8. Wholesale Market Operation Procedures

The procedures have the following substantive amendments:

(a) **Accreditation Procedures:**

(i) Added a footnote to clarify that a net bidding facility's net injection meter is a market injection point for the purpose of the *accreditation procedures*.

(b) **Capacity Certificates Auction Procedure:**

(i) Amendments to the Procedure to clarify AEMO's head of power for requesting information under the Procedure.

(ii) Amending wording to use the terms distribution connected facility's market injection point or market withdrawal point within the Procedure.

Please see Attachment E.11 for details of participant responses to the PPC.

3.9. Wholesale Market Settlement Procedures

AEMO has not made changes to these Procedures, except for amendments to the **Distribution UAFG Procedures**, which include amendments to:

(a) Section 5.4.1 to include Special Revisions issued by AEMO.

(b) Section 5.6.1 has been amended to clarify AEMO will resend all data if a Special Revision settlement occurs for a DUAFG period.

(c) Section 5.6 has reinstated the text for a reconciliation amount dispute in section 5.6.5 which must be reported to AEMO with 10 business days otherwise AEMO will issue the final DUAFG reconciliation amount statements (see section 5.6.6).

Please see Attachment E.12 for details of participant responses to the PPC.

3.10. Wholesale Market System Security Procedures

The **System Security Procedure** has the following substantive amendments:

- (a) AEMO has added a definition for linepack zone to the System Security Procedure to clarify the difference between a withdrawal zone and a linepack zone.

Please see Attachment E.13 for details of participant responses to the PPC.

3.11. Technical Documents

AEMO has only received comments on specific reports in the User Guide to MIBB Reports. AEMO has provided revisions to the User Guide with the IIR publication. All other technical documents have not been republished since the PPC, as they have not changed.

3.11.1. Amendments to the User Guide to MIBB Reports

AEMO has provided the amended User Guide to MIBB Reports in Attachment B. The format of the User Guide to MIBB Reports has been amended reflecting the style of the document management system which will control the document in future.

AEMO has responded to participant submission on the MIBB reports in Attachment E.14.

AEMO has amended the following MIBB reports since the PPC was published:

MIBB Report Name	PPC Requirement	Change in IIR
INT139 – Statewide Heating Value	This report was indicated to be decommissioned after 1 May 2024.	AEMO has clarified that the report will not produce new data from 1 May 2024 and will be decommissioned in December 2024. This aligns to the DWGM settlement revision period for April 2024.
INT139a – Daily Zonal Heating Value	A report providing the heating value for each heating value zone used to determine the energy content of gas consumed within Victoria. This is consistent with the Energy Calculation Procedures and part of the Wholesale Market Metering Procedures (Victoria). Report was time triggered daily at 13:00 hrs in the PPC.	Report is now event triggered following completion of zonal heating value calculation each day. AEMO’s process, as noted in the User Guide, to produce the zonal heating value data each day is triggered at approximately 9:30AM. Therefore, AEMO considers that it is appropriate to move to an event trigger of completion of zonal heating value calculation. AEMO considers this trigger will be consistent with the Retail Market Procedure requirement for the report to be published by 5:00PM on the gas day following the gas day to which the daily zonal heating value relates.
INT188 – CTM to Heating Value Zone Mapping	A report containing the DWGM’s Custody Transfer Meter (CTM) to Heating Value Zone mapping. This report is a register of all commissioned CTMs in the market that are the physical meters that exist at transfer points, transmission delivery points or receipt points for gas within the Markets.	AEMO considers the report should be changed to 3:30 AM each day to better account for the timing of report inputs.

MIBB Report Name	PPC Requirement	Change in IIR
	Report was time triggered daily at 3:00 AM in the PPC.	

The amendments to these reports are also published in the latest DWGM Technical Specification in Attachment C.

4. Likely implementation requirements and effects

The market system changes being undertaken by AEMO are detailed in:

- (a) The amended User Guide to MIBB Report is attached in Attachment B as this is required to be amended under the existing electronic communication procedures process.
- (b) This DWGM Technical Specification, provided in Attachment C, provides the new and existing report changes as required by the new process defined in the amended electronic communication procedures.
 - (i) This is provided for participant reference so they will know what to expect from the new process in future consultations.
- (c) The changes to these MIBB reports since the PPC was published are discussed in section 3.11 of this Report.
- (d) The release dates for these reports are described in the DWGM Technical Specification and User Guide to MIBB Reports.

In the DWGM context, for Registered participants the proposed changes, above, represent documentation and system changes for AEMO. AEMO has not identified any existing Registered participants that will be required to make any modifications to their IT systems or business processes, except:

- (a) The change to the energy calculation procedures requires Distributors to update each customer’s metering installation heating value zone assignment. The initial step of this change is to move from the existing 34 heating value zones to ~140 heating value zones (e.g. a heating value zone per CTM).
 - (i) AEMO notes this move will reduce the long-term impact of new distribution connected facilities on customers supplied by each distribution system.
 - (ii) A new connection by distribution connected facility, after 1 May 2023, will only require the heating value zone of those impact customers downstream of that facility to have their heating value zone changed.
 - (iii) The ‘Package 3A Retail PPC – Zonal Heating Value’ considers the IT system and business process impact of the move from statewide heating value to zonal heating value on the Retail Market.
- (b) Responsible persons for metering installations will be required to provide AEMO their existing calibration procedures by 1 May 2024 and within 20 business days of these documents changing after this.

The IT system testing requirements for this change are:

- (a) Distributors are to test the move from using INT139 Declared Daily State Heating Value to using the zonal heating values determined in INT139A Daily Zonal Heating Value and

the INT188 CTM to Heating Value Zone Mapping for the calculation of energy content for basic meters (i.e. Tariff V meters).

- (i) In relation to transitioning to the new heating value zones, AEMO has prepared a transition plan. This plan provides a ‘once-off’ process to enable synchronisation of the new Victorian Heating Value Zones (HVZ) between Distribution businesses and AEMO. For further about this plan please refer to retail market Package 3B Impact and Implementation Report (IIR) which can be found [here](#).
 - (ii) AEMO, as Meter Data Agent for data logger meters (i.e. interval meters or Tariff D meters), will apply the updated heating value zones to all data logger meters.
- (b) Registered participants will need to update their IT systems to receipt the new hydrogen field from the gas quality reports (INT140 and INT176).
- (i) INT140 : A new row will be added to INT140 to report hydrogen values, but this will NOT be present until a hydrogen gas production facility is commissioned.
 - (ii) INT176 : A new column will be added to INT176 to show hydrogen composition, and this will report a NULL or zero value from 1 May 2024, until a hydrogen gas production facility is commissioned in the reported Heating Value Zone.
 - (iii) The first hydrogen gas production facility, AGIG’s Hydrogen Park Murray Valley, will be commissioned in 2025.²
- (c) Distributors will need to receipt the new disaggregated demand forecast reports (INT240 and INT241) to inform each Distributor’s distribution constraint methodology for distribution connected facility constraints.

5. Overall cost and benefits

AEMO considers that the AEMC’s [review into extending the regulatory frameworks to hydrogen and renewable gases](#) and the AEMC’s [DWGM distribution connected facilities](#) rule change provides the assessment of cost and benefits of the rule changes as required by the National Gas Objective (NGO).

In addition, AEMO has received a request from the Victorian Minister Hon Lily D’Ambrosio (the Minister) requesting the Procedures be amended to implement ZHV for tariff V. AEMO notes this request will ensure more accurate billing for customers and therefore is consistent with the NGO.

The Victorian Essential Service Commission’s review of the Gas Distribution System Code of Practice, which requires administrative changes to the Wholesale Market Distribution UAFG Procedure to be consistent with the Code. AEMO considers these administrative changes are consistent with NGO.

Participant’s submissions have not identified concerns with the overall cost and benefits of this proposal as detailed in AEMO’s Proposed Procedure Change.

² See <https://www.agig.com.au/hydrogen-park-murray-valley>, accessed 16/10/2023.

6. Magnitude of the changes

AEMO is making this Procedure under the ordinary process for making Procedures under rule 135EE of the NGR as material changes are required to the Wholesale Market Procedures and the Distributors calculation of energy content for basic meters (as required by the Energy Calculation Procedures).

7. Consistency with National Gas Rules and National Gas Objective

Regarding these changes, AEMO’s preliminary assessment of the proposal’s consistency with the NGR and NGO is:

Requirement	AEMO’s Preliminary Assessment
Consistency with National Gas Law (NGL) and NGR	AEMO’s view is that the proposed procedure change is consistent with the NGL as required by the Energy Ministers and NGR as amended in the AEMC’s rule changes.
National Gas Objective	In relation to the Victorian hydrogen and distribution connected facility rule changes, it is AEMO view’s that the changes are expected to contribute to the achievement of the NGO by promoting efficient investment in the safe and efficient operation and use of covered gas services for the long-term interests of consumers.

No participant submitted any opposing views in relation to AEMO’s assessment during the first-round consultation. AEMO therefore maintains its original assessment as described above.

8. Consultation outcomes

AEMO published proposed procedure change and informed, by email, to the Gas Wholesale Consultative Forum on 15 September 2023. This proposed procedure change was consulted on jointly with the Retail Market Procedure (Victoria) changes Packages 3A and 3B.

These changes were presented to a joint Gas Wholesale Consultative Forum and Gas Retail Consultative Forum meeting on 20 September 2023.

AEMO published a PPC – Part 2 on 26 September 2023 which included only the Wholesale Market Gas Quality Monitoring Procedures, Wholesale Market Maintenance Planning Procedures and Wholesale Market System Security Procedures.

Submissions to these PPCs were due on 16 October 2023.

AEMO received 5 submissions that are published on the consultation webpage and issues raised in these submissions are summarised in Appendix E.

9. Supporting Documentation

The documents can be found in:

- Attachment A – Wholesale Market Procedure changes

- Attachment B – DWGM technical document changes
- Attachment C – DWGM Technical Specifications
- Attachment D – Request for DWGM IIR response
- Attachment E – Summary of PPC submissions and AEMO's responses

10. Impact and Implementation Report – Recommendations

10.1. Should the proposed Procedures be made?

AEMO recommends that the Procedures should be published as set out in the draft Procedures published in Attachment A of this IIR.

10.2. Proposed timelines

The AEMC's rule change requires AEMO to have published the Wholesale Market to take into account the amending rule by no later than 1 February 2024.³

The Procedure consultation dates are as follows:

- IIR publication date: 30 October 2023
- IIR consultation submissions due: 28 November 2023
- Expected Decision published: 15 December 2023
- Effective Date of Procedures: 1 May 2024

³ AEMC Final Rules Report, 24 November 2022, pg. 148

Attachment A. Wholesale Market Procedure Changes

The following Procedures are provided in track change format. AEMO has only included a new version with the IIR for those Procedure that have changed in response to PPC submission responses. The version issued for this consultation is attached separately to this document:

- Wholesale Market Connection Approval Procedures (Victoria)
- Wholesale Market Distribution Operation Procedures (Victoria)
- Wholesale Market Gas Quality Monitoring Procedures (Victoria)
- Wholesale Market Maintenance Planning Procedures (Victoria)
- Wholesale Market Management Procedures (Victoria)
- Wholesale Market Metering Procedures (Victoria)
- Wholesale Market Operation Procedures (Victoria)
- Wholesale Market Settlement Procedures (Victoria)
- Wholesale Market System Security Procedures (Victoria)

Attachment B. Technical Documents

The following technical documents are provided in track change and clean format. The changes to these technical documents represent AEMO's initial review of the changes required for this rule change. Additional changes may be identified and consulted on with the connection of AGIG's Hydrogen Park Murray Valley project, expected in 2025.⁴

AEMO has provided updates to the following document on the basis of responses to the PPC:

- User Guide to MIBB Reports

The following technical documents remain unchanged since the PPC was published, and therefore have not been republished with the IIR:

- AEMO Victorian Pressure Correction Factors
- DWGM Heating Value and Gas Composition Data Sources
- Gas Metering – CTM Data Requirements

AEMO is updating the User Guide to MIBB Reports as part of the consultation integrating finalised MIBB report updates. At the conclusion of this consultation AEMO will communicate additional MIBB report changes via the DWGM Technical Specification, as may be updated via the process outlined in the electronic communication procedures.

The DWGM Technical Specification is summarised in Attachment C.

⁴ See <https://www.agig.com.au/hydrogen-park-murray-valley>, accessed 16 October 2023

Attachment C. DWGM Technical Specifications

The Wholesale Market Electronic Communication Procedure has proposed that changes to the User Guide to MIBB Reports will be performed via AEMO releasing updates to the DWGM Technical Specifications, periodically published as part of the project implementation.

These DWGM Technical Specifications can be found on AEMO's webpage: [IT change and release management](#) under the heading "Gas Markets and Systems" under the "Declared Wholesale Gas Market (DWGM)" heading.

This will be the primary communication forum for DWGM IT releases in future. These changes notifications are sent to Gas Wholesale Consultative Forum contacts along with Gas IT Development Forum contacts. The DWGM Technical Specification for this IT change can be found on the link: [DWGM Technical Specification](#).

This document will be updated from time to time.

Attachment D. DWGM – IIR response template

The 'DWGM – IIR response template' has been attached separately to this document. There are two sections in the template:

- Section 1 seeks general feedback on AEMO's examination of the proposal and each Procedure.
- Section 2 seeks specific drafting proposals for the Procedure change.

Anyone wanting to make a submission for this consultation stage (Wholesale Impact and Implementation Report (IIR)) are requested to use the response template provided in Attachment D. Submissions are due **COB 28 November 2023** and should be emailed to GWCF_Correspondence@aemo.com.au.

In relation to the ZHV changes, the Wholesale Market Procedure changes overlaps with the Retail Market Procedure (RMP) changes. Details about the RMP changes are described Package 3A Retail Market IIR. In relation to feedback on the proposed amendments to the RMP changes, please use the IIR Retail procedure response template.

Anyone wanting to make a submission for this first stage consultation stage (Retail Impact and Implementation Report (IIR)) are requested to use the response template provided. Submissions are due **COB 28 November 2023** and should be emailed to grcf@aemo.com.au

Attachment E. Summary of PPC submissions and AEMO’s responses

The following responses were received from participants in response to the Proposed Procedure Change.

E.1 General comments

Reference	Submitter	Submission details	AEMO response
Does your organisation support AEMO’s assessment of the proposal?			
E.1.1	AGL	AGL is generally supportive of AEMOs assessment of this proposal from a wholesale perspective. AGL does note that there seems to be no mechanism within the retail changes to ensure that Retailers are kept aware of a MIRNS HVZ and any changes to that HVZ as customers churn or HVZs are changed. This lack of information will impact Retailers forecasting outcomes, which in turn impacts their origination and bidding processes. This has been flagged in the retail response.	Noted. In regard to the retail market changes, AEMO notes Package 3A of the retail market which responds to AGL’s submission.
E.1.2	Red & Lumo Energy	Red Energy and Lumo Energy support the assessment of the proposal, with minor amendments provided.	Noted.

E.2 Responses to PPC’s Question 1

Reference	Submitter	Submission details	AEMO response
Question 1: Do participants consider the 5TJ/d constraint materiality threshold for inclusion of a constraint in the scheduling window?			
E.2.1	AGL	At this stage, 5TJs seems like a reasonable quantity, but this quantity should be tempered with overall load levels on that network section. If its 5TJs on a 1000, it may be appropriate, but if its 5TJs on 10TJs, then potentially this level is too high. This might apply to new network sections with low load or following a network reconfiguration. AGL suggests that some assessment should be undertaken when facilities are connected to the Distribution network to determine the impact of such a constraint threshold and whether the threshold should be adjusted for that network area or a period of time.	Noted. AEMO notes constraints are applied on a facility basis and treated as if they are supplying the entire market (not any withdrawal zone or Distributor). AEMO has considered this response in section 3.1.1 of this Report.
E.2.2	Red & Lumo Energy	Red and Lumo consider 5TJ/day an appropriate threshold.	Noted.

Reference	Submitter	Submission details	AEMO response
E.2.3	Origin Energy	<p>Origin is not supportive of applying the proposed materiality threshold of 5TJ for including a constraint in the scheduling window and sending a system wide notice (SWN). The Declared Wholesale Gas Market (DWGM) has established mechanisms to physically manage deviations from operating schedules and financially penalise responsible parties with an effective causer pays feedback loop.</p> <p>These mechanisms rely on the timely sharing of quality information. The proposed threshold could undermine these mechanisms by reducing market participants' visibility of the supply / demand balance, which may affect their ability to effectively assess and respond to market changes. Not reflecting constraints in the scheduling window could also lead to less efficient allocation of gas to the extent it impacts clearing prices and / or leads to deviations. The impact of the above distortions would likely be amplified during seasonal extremes when the supply / demand balance is tighter.</p> <p>To the extent AEMO considers thresholds are required, further analysis should be conducted and published to allow market participants to better assess the potential implications / costs of the change. There should also be scope to review the suitability of any new thresholds over time as the proliferation of DCFs increases and their aggregate impact can be better assessed.</p>	Noted. AEMO has considered this response in section 3.1.1 of this Report.

E.3 Responses to PPC's Question 2

Reference	Submitter	Submission details	AEMO response
Question 2: Do participants consider the 5TJ/d constraint materiality threshold for sending a SWN is appropriate as AEMO already publishes all constraints at schedule approval?			
E.3.1	AGL	<p>Whatever threshold is established, a SWN is an appropriate notification process.</p> <p>This may be particularly important for the first few connected facilities. AGL suggest that this be reviewed with participants after the first one or two facilities are connected.</p>	Noted. AEMO has considered this response in section 3.1.2 of this Report.
E.3.2	Red & Lumo Energy	Red and Lumo support the 5TJ/d threshold for SWN as it ensures participants are not provided with notifications below a level relevant to the market.	Noted.
E.3.3	Origin Energy	See Origin's response E.2.3 which does not support this change.	Noted. AEMO has considered this response in section 3.1.2 of this Report.

E.4 Responses to PPC’s Question 3

Reference	Submitter	Submission details	AEMO response
Question 3: Do Registered Participants agree that a 3 monthly communication limit is appropriate for routine notifications concerning Responsible Persons notifications under rules? If not please nominate an alternate timeframe (including a justification) for routine communications?			
E.4.1	AGL	At this stage a 3-monthly process seems appropriate. Again, experience with Distribution connected facilities will determine if this needs amendment.	Noted. AEMO has considered this response in section 3.1.3 of this Report.

E.5 Wholesale Market Connection Approval Procedures

Reference	Submitter	Submission details	AEMO response
E.5.1	AGL	General comment: AGL supports the assessment	Noted.
E.5.2	AGL	Procedure Clause 1.1 DTSSP is not defined or enunciated before acronym used nor is it listed as a defined term.	Noted. AEMO has updated the Procedure.
E.5.3	AGL	Figure 1 Having the process end on rejection of application is an incomplete concept, as the rejection is likely technical and further information is sought.	<p>Noted. AEMO only has two options under rule 272(2), to approve or reject the connection application within the 20 business days.</p> <p>AEMO may seek additional information under rule 272(5) to inform its decision. However, a request for further information does not allow AEMO to pause the process. AEMO’s decision to approve or reject must be made within 20 business days of the decision. Therefore, AEMO considers the process flow diagram adequately reflects the Connection Approval Procedure process requirements.</p> <p>Please note the process flow diagram acknowledges the consultation between AEMO and the DTS SP regarding new proposed connections stating “DTSSP to consult with AEMO regarding the proposed connection.”</p> <p>For the avoidance of doubt, if a connection application is rejected by AEMO, then the connection applicant can restart the connection application process at any time after rejection by AEMO.</p>
E.5.4	AGL	Section 3.6	Noted. AEMO has amended section 3.6(c) of the Procedure to:

Reference	Submitter	Submission details	AEMO response
		The safety assessments (i.e. loss or interruption in any circumstance) is far reaching and inconsistent with managing hazards and risks to ALARP levels.	c) The risk of a connection resulting in an unplanned loss of supply (or interruption to supply) to a Customer must be ALARP. The connection must not result in an unplanned loss of supply (or interruption) to a customer in any circumstance.
E.5.5	APA	Clause 2.2 Figure 1 DTS Connection Approval Process Schematics As a general comment, the connection application submitted to the DTSSP will be reviewed by the DTSSP from the technical assurance perspective. It can be rejected if the required technical specifications are not met. Considering DTSSP has its internal processes for connection design technical assurance and commercial negotiations in line with NGR, APA proposes to add the following caption for the clarification: 'The process flow outlines the steps relevant for AEMO/DTSSP and AEMO/Connection Applicant interactions. The DTSSP internal processes for design approval and commercial negotiations are not included in the process schematics.'	AEMO has added the following text to section 1.1 of the Procedures: The DTS SP has design requirements for the Connection Applicant as per rule 270(2)(a). The design requirements of the DTS SP are not defined in this Procedure and will be communicated by the DTS SP during the connection application process.
E.5.6	APA	Clause 3.6.1 APA would like to note, recognizing the procedures specify AEMO's specific safety criteria assessment steps, that as a part of the new connection design process, DTSSP may also determine the need for HAZOP based on its internal approval processes.	AEMO has made the following amendment to the Procedures: A HAZOP is to be performed with the <i>Connection Applicant</i> , the DTS SP and AEMO, as AEMO deems necessary. A HAZOP can be requested by the DTS SP or AEMO.

E.6 Wholesale Market Distribution Procedures

Reference	Submitter	Submission details	AEMO response
E.6.1	AEMO	The following amendment was made to clarify the net injection meter is a market injection point for the purpose of the accreditation procedures. Clause 3.5(a)(iii)(C) has been amended: (C) accredit Market Participants to inject gas at the meter as if the meter is a market injection point as required by the accreditation procedures; A consequential footnote was also added to <i>accreditation procedures</i> . See reference E.11.2.	Noted. AEMO considers this change provides clarity that a net injection meter will be treated as a market injection point in the accreditation procedures.
E.6.2	AGL	General comment: AGL supports the assessment	Noted.
A.6.3	AGL	Section 2.2.4 If a request for a review is warranted, then the party seeking the review should be notified by AEMO that the Distribution Network has been requested to undertake such a review.	Noted. AEMO has amended the Procedure.
A.6.4	AGL	Section 2.3 Check heading – has 2.2.1 in title	Noted. AEMO has amended the Procedure.

Reference	Submitter	Submission details	AEMO response
A.6.5	AGL	Section 3.3 Can the facility operate in quantities of less than 1 GJ/hour or only whole GJs ?	Noted. The interpretation in section 1.4.2(c) of the Procedure states a facility will be scheduled and allocated in whole GJ terms.
A.6.6	AGL	Section 3.4 As the wholesale market operates in GJ/hour, are the hourly quantities in this section in GJ or less than a GJ ?	
A.6.7	AGL	Section 3.9 Check heading – has 3.9 in title	Noted. AEMO has amended the Procedure.
E.6.8	APA	Clause 3.3(a) APA acknowledges that AEMO's definition of the net bidding facility includes DTS and DDS connected blend processing facility, which reflects the proposed rule 204(B) 'Classification of net bidding facilities' of the NGR. APA would like to note that, while included in the DWGM under the proposed rules for Hydrogen and Renewable Gases Framework Extension, the technical and safety assurance, including the gas quality specifications, must apply for a blend processing facility to receive approval to connect to DTS.	Noted. AEMO agrees that a net bidding facility is subject to the Wholesale Market Connection Approval procedure and Wholesale Market Gas Quality Monitoring Procedures.
E.6.9	APA	Clause 3.5 APA suggests further clarification of 3.5(a)(iii) and 3.5(a)(iv) to be incorporated into the Procedures by AEMO, including an explanation of how the metering point (iii) is to be differentiated from the metering point (iv), and potential example of the interplay of (A) (E) under 3.5(a)(iii).	Noted. AEMO has added two examples in section 3.5 of the net bidding facility procedures (chapter 3 of the Procedure) for a positive net injection quantity and a negative net injection quantity.

E.7 Wholesale Market Gas Quality Monitoring Procedures

Reference	Submitter	Submission details	AEMO response
E.7.1	AGL	General comment: AGL supports the assessment	Noted.
E.7.2	AGL	Section 2.5.1 Final sentence – 2 x full stops	Noted. AEMO has updated the Procedure.
E.7.3	AGL	Section 2.7.5(c) Likely lack of contact details. A responsible gas quality monitoring provider is unlikely to have current or correct contact details for all registered participants. The responsible Gas Monitoring Provider has already notified AEMO of planned changes to any monitoring system. It is more efficient for AEMO to provide that notification to Registered Participants.	Noted. AEMO under the rules is responsible for gas quality within the DTS. Distributors are responsible for gas quality within the DDS. The responsibility to send gas quality notifications to registered participant is:

Reference	Submitter	Submission details	AEMO response
		(c) <i>After being advised of the following information by the The responsible gas quality monitoring provider AEMO must send notifications to Registered participants of any change, in regard to a gas quality monitoring system, including the following information:</i>	1. AEMO's responsibility as it related to system injection points. 2. Distributors responsibility as it related to DDS injection points.
E.7.4	AGL	Section 2.7.5(d) Clause (d) does not remove the obligation embedded in clause © for the responsible gas quality monitoring provider to send notifications, it simply allows an additional pathway for notification to be sent. A more efficient and effective process is for the provider to supply the information and AEMO to notify the relevant participants through its channels.	AEMO cannot adopt the proposed amendment to the Procedures.
E.7.5	APA	We agree with the inclusion of Clause 2.4.3 'Hydrogen gas production facility and blend processing facility' and Clause 2.4.4 'Biomethane gas production facility' in the Procedures, which addresses our earlier point on DTS blend processing facility (section 'Wholesale Market Connection Approval Procedures ') and its current technical feasibility.	Noted
E.7.6	APA	Clause 2.10.2 APA suggests excluding the clause from the Procedures as the provision for the gas quality monitoring plan already addresses the compliance monitoring of the gas quality monitoring systems. The online gas quality monitoring by description represents automated measurement via gas quality monitoring equipment. The gas quality monitoring plan sets out the requirement for automated sampling frequency and monitoring point information provision. Regarding an offline monitoring system, the gas quality monitoring plan must include the offline monitoring test frequency. Compliance monitoring is inherent in providing a gas quality monitoring plan with such requirements. Any additional reference (e.g., Clause 2.10.2) of the compliance monitoring is unnecessary and, in our view, should be excluded for the simplicity and avoidance of repetition.	AEMO has made amendments to section 2.10 of the Procedure to clarify the processes that may result in AEMO requesting an audit by the responsible gas quality monitoring provider. AEMO has also amended section 2.10.2 to cross reference the other sections of the procedure to clarify the process is about applying the Procedures.
E.7.7	APA	Clause 2.10.5 Before AEMO issues a requirement to a responsible gas quality monitoring provider (RGQMP) to undertake an audit of the gas quality monitoring system (GQMS), APA would see it reasonable to include the provision for AEMO to engage with a responsible gas quality monitoring provider prior such request to address all the relevant gas quality monitoring concerns. Noting the costs associated with an audit are to be borne by a provider, AEMO should work with the responsible GQMP as a first step to identify the root causes of the issues,	AEMO considers that the cross references adequately define that there is an entire process in section 2.10 that would lead into AEMO requesting an audit by a responsible gas quality monitoring provider.
E.7.8	Bioenergy Australia	Section 2.4.4 We note that Standards Australia is currently seeking to update AS4564: General-purpose Natural Gas Specifications. We have sought that the specification be amended to better support biomethane injection. Amendments we recommended include: - inclusion of a definition of biomethane; - increased limitation of oxygen, nitrogen and inert limits;	AEMO has adopted the currently published version of AS4564. AEMO may agree an alternate gas quality standard for a system injection point under rule 287(1). This alternate gas quality standard can be implemented under rule 287(1) and section 2.7.3 of the Procedures. AEMO has provided its overview of potential additional gas quality monitoring parameters in section 2.4.3 for Hydrogen and section 2.4.4 for Biomethane.

Reference	Submitter	Submission details	AEMO response
		<ul style="list-style-type: none"> - introduction of a siloxane limit that aligns with international standards; and - introduction of a risk-based approach tailored to the biogas production source. <p>These amendments are aligned with well-researched international standards and would reduce implementation and operational costs, and improve upgrading conversion efficiency, facilitating biomethane injection and ultimately supporting the decarbonisation of the Australian gas industry.</p> <p>You can read our full submission to the Standards Australia AS4564 consultation here.</p> <p>We recommend that this section ensures compliance with any subsequent revision of AS4564.</p>	<p>The process outlined in section 2.4.3 for Hydrogen and 2.4.4 for Biomethane requires consultation with the jurisdictional regulator and DTS SP. This is also reflected in the agreement of a permanent modification to a gas quality monitoring arrangement in section 2.7.3.</p> <p>AEMO notes a Distributor, for a distribution connected facility, can also agree an alternate gas quality standard under Rule 287A(1).</p> <p>AEMO expects that a change to the standard AS4564 will likely result in a change to the Procedure as stated in section 1.1 of the Procedure.</p>
E.7.9	Bioenergy Australia	<p>Section 2.4.4</p> <p>We recommend using updated resources that have been developed with an evidence-based approach after the formation of EN 16723. We note that while EN 16723 is an appropriate starting point, this standard is currently seeking an update.</p> <p>Contaminants depend on the source of biogas, with many coming from landfills and wastewater treatment plants. Some testing regimes for these contaminants may not be online or in Australia, making compliance with interval sampling difficult. When setting limits, AEMO should be cautious and consider the wide variations in acceptable concentration limits, as well as the appropriate dilution of biomethane into the existing natural gas flow. This caution is necessary as there is significant range of acceptable concentration levels for these contaminants, which may vary depending on different factors.</p>	<p>AEMO has adopted the currently published version of EN 16723.</p> <p>AEMO has made an amended to section 2.4.4 to acknowledge the source of the Biomethane would be a consideration in its assessment:</p> <p>“Biomethane connections will be assessed on a case-by-case basis (including the source of the biomethane).”</p> <p>AEMO has made further changes to this section on the basis of the AGIG submission. See response E.7.14.</p> <p>AEMO expects that a change to the standard EN16723 may result in a change to the Procedure in section 2.4.4.</p>
E.7.10	Bioenergy Australia	<p>Section 2.4.4 “and its compounds”</p> <p>The reference to “and its compounds” in relation to various elements lacks clarity and definition. Some of these elements are associated with a wide range of different compounds, which could significantly increase the cost of analysis.</p>	<p>A Biomethane gas production facility’s gas quality monitoring plan must set out the gas quality monitoring parameters that AEMO, under section 2.7.3, can approve as an alternate gas quality monitoring arrangement. These gas quality monitoring parameters will be determined by a risk-based assessment of the biomethane gas production facilities feedstock.</p> <p>AEMO would seek to determine the compounds that would likely be injected into the DTS based on the biomethane gas source using a risk-based assessment, using existing industry standards, to ensure that any risks to public safety are minimised.</p>
E.7.11	Bioenergy Australia	<p>Section 2.5.4</p> <p>It is unclear whether site specific low and high limits and “Confirm, Notify, Mitigate and Curtail” limits would be provided for biomethane. We seek further clarification.</p>	<p>As part of the process to determine an alternate gas quality arrangement under section 2.7.3, AEMO will also need to</p>

Reference	Submitter	Submission details	AEMO response
			determine any Confirm, Notify, Mitigate and Curtail limits to be applied for a Biomethane or Hydrogen gas production facility.
E.7.12	AGIG	<p>We have made several detailed comments below. More generally we note that references to embrittlement are not accurate for the distribution system and care should be taken to ensure these references do not extend to the distribution system. See for example section 4.2 of Australian Hydrogen Centre 100% Hydrogen Distribution Networks: Victoria Feasibility Study https://arena.gov.au/assets/2023/09/AHC-100-Hydrogen-Distribution-Networks-VictoriaFeasibility-Study.pdf</p> <p>We also have concerns that the approach to contaminants/impurities may lead to an inflexible approach overly reliant on outdated standards for biomethane and/or failing to take account of verified electrolyser performance in the case of hydrogen. See detailed comments below.</p>	AEMO has amended the Procedure in section 2.4.4 to clarify that “a key concern is the potential for hydrogen embrittlement on existing transmission pipeline infrastructure.”
E.7.13	AGIG	<p>Section 2.4.3:</p> <p>We note that although the contaminants listed may exist at very low concentrations, however as the DNV Hydrogen Purity study and standard makes clear the hydrogen produced through electrolysis would meet the adopted standard in Section 3.2 Implications of the Proposed Hydrogen Purity Standard with the following statement “Hydrogen produced by electrolysis and then dried will meet this standard.”</p> <p>This is further corroborated in Section 3.3.1 of the report on hydrogen production routes via electrolysis and their associated impurities. Given the above there would not be any benefit sampling hydrogen from electrolysis for those contaminants that would fall well within the range presented by the proposed DNV Hydrogen Purity Standard.</p> <p>Most electrolysis would likely to achieve ISO 14687-2 which would have magnitude lower contaminant levels and this would be in significant contrast to the contaminants likely to exist within the natural gas stream.</p>	<p>AEMO has made adopted a requirement for hydrogen purity between 98% and 100% on the basis of metering accuracy requirements in existing documentation. AEMO’s review of metering documentation suggests below 98% hydrogen purity leads to issues with metering of hydrogen gas flows.</p> <p>The adoption of a hydrogen purity standard allows for a mixture of hydrogen gas production technology across the DTS. A plant may have between 98% and 100% pure hydrogen. The purity of the hydrogen supply will be a key input to the gas production facilities gas quality monitoring plan and inform the gas quality monitoring equipment required for that injection point.</p>
E.7.14	AGIG	<p>Section 2.4.4</p> <p>AGIG recommends utilising updated resources which have been developed using evidence based approach subsequent to the formation of EN 16723. EN 16723 has not been adopted in other regions due to issues associated with the standard. It is noted that Future Fuels CRC (RP3.2-09) researched 13 international standards and found that contaminants within biomethane were not uniformly addressed across the standards i.e. Gas Networks Ireland – Biomethane Producers Technical Handbook (includes a Biomethane Specification) Biomethane-Producers-Technical-Handbook.pdf (gasnetworks.ie) was released in 2020.</p> <p>We note that while EN 16723 is an appropriate starting point, however, the standard which is currently seeking an update. It is also noted that contaminants are dependant on biogas sources and a majority of those contaminants listed would be landfills and wastewater treatment plants. The testing regimes for some listed contaminants may also not be possible on-line or in Australia as such compliance to interval sampling would not be possible. When adopting limits, we recommend that AEMO use caution as there are wide variations on appropriate concentrations limits in addition to factoring in the appropriate dilution of the biomethane within the existing natural gas flow.</p>	<p>AEMO has made amendments to section 2.4.4 to clarify:</p> <p>“AEMO may agree, under rule 287(1), a gas quality standard in respect of a system injection point for a Biomethane gas production facility. Biomethane connections will be assessed on a case-by-case basis (including the source of the biomethane). The gas quality specifications may need additional parameters to be specified, which may includeing:”</p> <p>AEMO has also added the statement:</p> <p>The measurement and monitoring of the other gas quality monitoring parameters (e.g. online and offline monitoring), above, is to be addressed in the gas monitoring plan for each biomethane gas production facility as per the process defined in section 2.7.3 (along with whether monitoring should be online or offline, as per section 2.9).</p>

Reference	Submitter	Submission details	AEMO response
			Biomethane connection will be assessed on a case by case basis. Biomethane gas production facility connection approval to the DTS will be made by AEMO in consultation with the DTS SP and ESV.
E.7.15	AGIG	<p>Section 2.4.4 “and its compounds”</p> <p>The uses of “and its compounds” against several elements are unclear or undefined. Several have wide ranging underlying compounds that would have significant impact on cost of analysis, these are also directly extracted from EN 16723. However, the table in EN 16723 is used only as an “example of common practices” as per C.3 of EN 16723. It is noted that the Table 1 of EN 16723 is more applicable as it clearly states “Table 1 – Applicable common requirements and test methods for biomethane at the point of entry into H gas and L gas networks”</p>	Please see response E.7.10.
E.7.16	AGIG	<p>Section 2.4.4</p> <p>Some contaminants listed are likely to exist within the natural gas supply, existing concentrations of polycyclic aromatic hydrocarbons and monoaromatic hydrocarbons such as benzene, toluene, ethylbenzene and xylene are likely to exist within natural gas.</p> <p>Section 2.4.4 – We would recommend the following contaminants would be more appropriate and much clearer to set clear limits:</p> <p>Ammonia</p> <p>Heavy Metals:</p> <p>Mercury</p> <p>Arsenic</p> <p>Volatile Organic Compounds (VOC):</p> <p>Benzene</p> <p>Toluene/Xylene</p> <p>Fluorine</p> <p>Chlorine</p> <p>Semi Volatile Organic Compounds (SVOC):</p> <p>Limonene</p> <p>Pinene</p> <p>Halocarbons</p> <p>Total Siloxanes (as Si)</p> <p>Total Bacteria</p> <p>AS4564 will seek to adopt guidance for biomethane contaminants and it is recommended that this section allows compliance with any subsequent revision of AS4564.</p>	<p>AEMO considers AGIG's proposed list of contaminants is more specific than the general list of contaminants provided by AEMO proposed on the basis of EN 16723.</p> <p>AEMO will undertake a risk-based assessment of the Biomethane gas production facility's feedstock to determine the appropriate gas quality parameters that should be applied at the biomethane facility. These parameters should be reflected in that facility's gas quality monitoring plan must set out the gas quality monitoring parameters that AEMO, under section 2.7.3, can approve as an alternate gas quality monitoring arrangement for that plant's system injection point.</p>

Reference	Submitter	Submission details	AEMO response
E.7.17	AGIG	Section 2.5.2 Compliance with interval sampling may not be possible for listed contaminants in Section 2.4.4 as some contaminants require special laboratory analysis, offline sampling should be acknowledged here.	AEMO has clarified that some gas quality monitoring parameters, as listed in 2.4.4, may be required by online or offline monitoring and will be defined in the gas quality monitoring plan.
E.7.18	AGIG	Section 2.5.4 It is unclear whether site specific low and high limits and Confirm, Notify, Mitigate and Curtail limits would be provided for biomethane and hydrogen, clarification to be provided.	As part of the process to determine an alternate gas quality arrangement under section 2.7.3, AEMO will also need to determine any Confirm, Notify, Mitigate and Curtail limits to be applied for a Biomethane or Hydrogen gas production facility.
E.7.19	AGIG	Section 2.6.1 on-line gas quality monitoring would not be available for some contaminants in Section 2.4.4	AEMO has clarified in section 2.4.3 (hydrogen) and section 2.4.4 (Biomethane) that online and offline monitoring will be subject to the gas quality monitoring plan.
E.7.20	AGIG	Section 2.8.1 Section 2.8.1 states “Offline or manual measurement of gas quality specifications parameters must be provided to AEMO in timely manner, or at such times AEMO agrees (provided that the measurement is within the gas quality specifications)” but rule 289G(3) requires continuous communication, can a caveat for offline measurements be inserted or repeated in this section.	AEMO has clarified that online monitoring is subject to clause 2.8.1. The statement regarding the offline monitoring or manual measurement is required to be provided in a timely manner.
E.7.21	AGIG	Section 2.8.4 This provision should include an allowance for offline measurements.	AEMO has clarified the data requirements are for online monitoring in section 2.8.4 as offline monitoring is expected to be delivered in a timely manner.
E.7.22	AGIG	Section 2.8.8 With the inclusion of offline contaminants in 2.4.4, it is noted that existing laboratory methodologies have measurement uncertainties for some of these contaminants due to reporting limits and sampling complexities.	As part of the process to determine an alternate gas quality arrangement under section 2.7.3, gas quality measurement uncertainty limits will need to be determined for any additional gas quality parameters proposed in a gas quality monitoring plan.
E.7.23	AEMO	Section 1.1 AEMO has added information to clarify the role of the Procedure in relation to the Victorian Gas Safety Act 1997. The following paragraphs have been added: The application of the standard gas quality specifications in relation to the DTS was developed by incorporating the requirements of the: (a) standard gas quality specifications (AS 4564). (b) Victorian Gas Safety (Safety Case) Regulations 2018 (Regulations). These Procedures provide general information about gas quality and how AEMO will respond to short term gas quality excursions outside the standard gas quality specifications. The off-specification gas injection process, outlined in section 2.5.1 of these Procedures, seek a critical balance between risks to public safety by the supply of off-specification gas, and risks	AEMO considers this clarifies the role of the Gas Quality Monitoring Procedures in relation to this Victorian legislation.

Reference	Submitter	Submission details	AEMO response
		<p>to public safety associated with curtailment of the injection, subsequent system disruption and re-lights in gas consumer premises. See also the following provisions of the Victorian Gas Safety Act 1997:</p> <p>(a) section 32(c) – a ‘gas company’ must manage and operate each of its facilities to minimise, as far as ‘practicable’, the hazards and risks to the safety of the public and customers arising from interruptions to the supply of gas and the reinstatement of an interrupted gas supply; and</p> <p>(b) section 33 - a ‘gas company’ must ensure that, as far as ‘practicable’, the gas which it conveys meets the prescribed standards of ‘quality’.</p> <p>Under rule 289(5), AEMO may accept delivery of off-specification gas, such as where, in AEMO’s reasonable opinion, acceptance is necessary to ensure safety, security or reliability of the DTS (and the relevant Registered participant has accurately notified AEMO of relevant information under rule 289(4)).</p> <p>However, AEMO may also refuse to accept delivery or continued delivery of all or some off-specification gas under rule 289(2), for such a period as AEMO may determine.</p>	

E.8 Wholesale Market Maintenance Planning Procedures

Reference	Submitter	Submission details	AEMO response
E.5.1	AGL	General comment: AGL supports the assessment	Noted.
E.7.1	AGL	Section 2.5.1 Final sentence – 2 x full stops	Noted. AEMO has updated the Procedure.
E.8.1	AGL	Section 1.3: Grammar – commas in the wrong places These Procedures, as required by Rule 326(2) of the NGR, must, with respect to maintenance, include the following:	Noted. AEMO has updated the Procedure.
E.8.2	AGL	Section 1.3: Paragraphs following (i) Given that the section is numbered, it could be taken that the newly inserted paragraph starting Rule 326A is part of point (i). If it’s a new concept, then the section should be re-written with new numbering to clarify the differentiation.	Noted. AEMO has amended the formatting to apply to each paragraph to clarify the three sources of parties subject to the Procedures.
E.8.3	AGL	Section 1.4.2: Clarity – days	Noted. AEMO notes all of the days are referenced are either calendar days, gas days or specific days of the week. Business

Reference	Submitter	Submission details	AEMO response
		The term days is used within the definitions and procedures, but it is not clear if these are calendar, gas or national days. For the avoidance of doubt, it is suggested that the term days is clarified – most likely as Victorian Business days.	days are not used in this Procedure. This has been defined in section 1.4.2: (c) References to a day are references to a calendar day, unless specified otherwise.
E.8.4	AGL	Section 2.3.1 It is unclear if this section is intended to capture maintenance works for metering installations and gas quality monitoring as 2.2(a) and (d) are the only section which clearly call out facility operators. The same issue applies in other parts of the document. Facility operators Parties identified in Clause 2.2 must send a notification to AEMO of maintenance where, in AEMO's reasonable opinion, work carried out by the relevant party facility operator may affect:..... Facility operators The relevant parties must consult with AEMO if they are unsure if work is considered maintenance., or alternatively the facility operator relevant party may	AEMO has a defined term of 'facility operator' in the Procedure which means: A facility operator includes a DWGM facility operator, distribution connected facility operator, responsible person for a metering installation and a responsible gas quality monitoring provider. Therefore, AEMO does not consider the change to be appropriate.
E.8.5	AGL	The final paragraph which requires all the same timings as a DWGM facility operator seems to be tacked on to the section. 2.3.3. Timing of forecast maintenance submissions The parties identified in Clause 2.2 DWGM facility operators that intend to perform maintenance must provide AEMO with notification of the maintenance forecasts in accordance with rule 324(4), given as follows:... Strike (e)	AEMO considers the most appropriate approach is to apply the rule 324 requirements for DWGM facility operators in the Procedure. AEMO will then use the Procedure to extend the requirement to distribution connected facility operators, responsible persons for metering installations and responsible gas quality monitoring providers.
E.8.6	AGL	Section 2.3.4 Same issue as 2.3.1.	See AEMO's response to E.8.4.
E.8.7	AGL	Section 2.3.4: Statement around updated maintenance as planned or unplanned The definitions of planned and unplanned use a 5 day window as the determinator. This statement seems to allow AEMO more flexibility in determining planned or unplanned maintenance. As long as an update is provided more than 5 days prior to the scheduled work commencing, then the work should be treated as planned maintenance.	Noted. Planned maintenance (defined in Rule 326(3)(a)) and unplanned maintenance (defined in Rule 326(3)(b)) are defined in the Maintenance Planning Procedure glossary. AEMO considers moving the definition to the glossary increases the readability and usability of the Procedure.

E.9 Wholesale Market Management Procedures

Reference	Submitter	Submission details	AEMO response
E.5.1	AGL	General comment: AGL supports the assessment	Noted.
E.9.1	AGL	Section 1.4.1 Glossary DTS SP This term is inconsistent with the term used in other procedures – DTSSP – Suggest aligning terms through procedures.	Noted. AEMO has updated all the Procedures to use DTS SP.
E.9.2	AGL	Section 2.1 Purpose Explanation convoluted and not clear Clause 2.3 provides a much clearer explanation of why these parties are identified.	Noted. AEMO considers the introduction to this Procedure is a restatement of the rule 324A(1) and (2) of the NGR requirement. As such AEMO considers the text appropriate. AEMO notes the purpose of the Procedure is to clarify the Rule, as such the clearer explanation in clause 2.3 of the Procedure is appropriate.
E.9.3	AGL	Section 3.3.4(a) Wording: AEMO will follow use the following	Noted. AEMO has updated the Procedure.
E.9.4	AGL	Section 3.3.4(b) Proposed process to publish a change AGL notes the process to provide 10 b/days notice of a change, but considers that if the change involves changes to bidding systems, report usage and other more complex processes, 10 b/days is unlikely to be sufficient time for a Registered Participant to make system changes to implement the changes made by AEMO.	AEMO notes the Electronic Communication Procedure change which implemented the 10 business day requirement was consulted on via a procedure change that concluded when the existing Procedure became effective on 11 November 2020. Therefore, 10 business day requirement is beyond the scope of this Procedure change. As background, the 10 business day requirement was included in the 2020 consultation to avoid creating an additional regulatory consultation in parallel with the Rule and Procedure consultations. Participants considered this outcome appropriate in the 2020 consultation, as AEMO has been required to undertake most IT changes, in recent years, as a result of Rule changes requiring consequential IT development to be completed in parallel with AEMO Procedure changes. AEMO notes AGL has not raised concern with the inclusion of minor defect or documentation errors incorporated into this clause.

Reference	Submitter	Submission details	AEMO response
E.9.5	Red & Lumo Energy	Section 1.6. Technical Documents – Table 3 Related Technical Documents Red and Lumo observe that the hyperlink for the DWGM Build Pack link is incorrect - leading to the pipeline capacity trading policies and guidelines page rather than the 'Procedures, policies and guides' page under Technical Documents.	Noted. The Procedure has been updated.
E.9.6	Red & Lumo Energy	Section 3.3.2. Electronic communication system technical documents – Table 5 Technical Documents Red and Lumo observe that the hyperlink for the User Guide to MIBB Reports link is incorrect - leading to the market portals directory page rather than the 'Procedures, policies and guides' page.	Noted. The Procedure has been updated.
E.9.7	APA	Clause 4.3 APA recognizes AEMO's proposal to expand Clause 4.3 with the additional wording to reflect on the rule 343(1)(d) provisions. As 'title to gas' concept does not apply to a Facility Operator, for the avoidance of doubt, APA proposes the following amendment to the proposed wording: 'A Registered participant, who is not a Market Participant, may be directed by AEMO to inject non-firm gas pursuant to rule 343(1)(c) or off-specification gas pursuant to rule 343(1)(d) if that Registered participant has title to that gas. Title to gas injected by such a Registered Participant that is not a Market Participant is taken to pass as if the Registered Participant was a Market Participant.'	AEMO has amended to text to clarify rule 243(1)(c): <i>A Registered participant, who is not a Market Participant, may be directed by AEMO to inject gas which is available and to which the Registered participant is entitled but has not been bid into the market, or is non-firm gas pursuant to rule 343(1)(c) or off-specification gas pursuant to rule 343(1)(d).</i> The Procedures can't override the Rules, therefore, AEMO has amended the drafting in the Procedures so that it more accurately reflects the Rules.
E.9.8	APA	Clause 4.3 AEMO should advise a gas allocation process when a Registered Participant is directed to inject the gas due to AEMO's system security threat intervention. The Registered Participant's directed gas will be registered by a relevant system meter, however, in the absence of a MIRN for Registered Participants, an allocation of the directed gas to this Registered Participant cannot occur automatically. The gas allocation process for system security threats should not impact and require changes to the existing allocation systems for Allocation agents.	AEMO understand APA has concerns around this scenario occurring. AEMO considers the allocation of gas to a Registered Participant directed by AEMO to be beyond the scope of this Procedure change. AEMO notes that rule 229(16) to 229(21) details a process for the determination of allocation in this scenario. AEMO is happy to discuss the scenario separately to this consultation.

E.10 Wholesale Market Metering Procedures

Reference	Submitter	Submission details	AEMO response
E.10.1	AGL	General comment: AGL supports the assessment	Noted.
E.10.2	AEMO	Section 6.3.1 should be enhanced to include the time periods required for registration of a metering installation for DMs and CTMs (including market injection points and market withdrawal points). AEMO has proposed the following new text in section 6.3.1:	AEMO considers this change is appropriate as it removes the gap of a distribution connected facility not having a minimum period for AEMO to complete the meter registration for a

Reference	Submitter	Submission details	AEMO response
		<p>The responsible person must register with AEMO its metering installations at settlement metering points, which includes both DTS connection points, DDS connection points at each distribution connected facility and DDS to DDS transfer points. These metering installations must be registered as they impact the settlement of the Market.</p> <p>This process requires a responsible person, or intending responsible person, to download from AEMO's website and submit the form for a CTM or DM called 'application for metering installation registration'.</p> <p>(d) For a DM this means:</p> <p>(i) When a metering installation is installed:</p> <p>(A) the responsible person must provide to AEMO and the MDA a fully completed 'Application for Metering Installation Registration - Gas (Vic)' form at least 2 business days before the expected commissioning date of the metering installation, or such date as agreed with AEMO;</p> <p>(B) AEMO and the MDA will setup the metering installation record in market systems with the status of 'commissioned' if all data is provided; and</p> <p>(C) the responsible person must obtain the applicable heating value zone from the Distributor and include the zone in the 'Application for Metering Installation Registration - Gas (Vic)' form before it is submitted to AEMO.</p> <p>(ii) When a metering installation is upgraded:</p> <p>(A) the responsible person must provide to AEMO and the MDA a fully completed 'Meter Installation Parameter Change Notice – Gas (Vic)' form for upgrading of the metering installation record at least 2 business days before the date the metering installation is actually upgraded, or such date as agreed with AEMO;</p> <p>(B) AEMO and the MDA will upgrade the metering installation record in market systems with the status of 'billing'; and</p> <p>(C) the upgrade date for the metering installation record must be a minimum of two business days after the commissioning date of the upgrade, specified in (a)(i)(A).</p>	<p>market injection point and/or market withdrawal point for a distribution connected facility.</p> <p>As DTS CTMs are subject to the Connection Approval Procedures, AEMO considers these changes are consistent with that Procedure, which require AEMO to be informed about a new connection agreement up to 6 months before a connection is commissioned.</p>

Reference	Submitter	Submission details	AEMO response
		<p>(e) For a CTM, market injection point, market withdrawal point, DTS monitoring point and DDS transfer monitoring point this means:</p> <p>(i) the responsible person and, if applicable, responsible gas quality monitoring provider must provide to AEMO a fully completed draft 'Application for Metering Installation Registration - Gas (Vic)' form at least 60 business days before the expected commissioning date of the metering installation, or such date as agreed with AEMO:</p> <p>(A) AEMO will review all information provided in the draft 'Application for Metering Installation Registration - Gas (Vic)' form and setup the metering installation record in AEMO's market systems:</p> <p>(B) AEMO will contact the responsible person and, if applicable, responsible gas quality monitoring provider to setup communication links from AEMO market systems to the metering installation and, if applicable, gas quality monitoring system:</p> <p>(C) AEMO will contact the responsible person and, if applicable, responsible gas quality monitoring provider to setup any market injection point or market withdrawal point in AEMO's market systems, including data validation parameters:</p> <p>(D) AEMO's will determine a new heating value zone for each new CTM, market injection point and market withdrawal point as required by section Error! Reference source not found. and</p> <p>(E) AEMO may request any additional information that is reasonably required to complete the setup in (b)(i)(A), (b)(i)(B), (b)(i)(C) and (b)(i)(D) above and the responsible person and the responsible gas quality monitoring provider as applicable must provide to AEMO the information requested as soon as possible.</p> <p>(ii) The responsible person and, if applicable, responsible gas quality monitoring provider must provide to AEMO the fully completed final 'Application for Metering Installation Registration - Gas (Vic)' form at</p>	

Reference	Submitter	Submission details	AEMO response
		<p>least 20 business days before the expected commissioning date of the <i>metering installation</i>, or such date as agreed with AEMO:</p> <p>(A) AEMO will setup the <i>metering installation</i> record and change the status from 'received' to 'registered' if all data in the 'Application for Metering Installation Registration - Gas (Vic)' form is provided as requested in (b)(i) above.</p> <p>(iii) The <i>responsible person</i> and, if applicable, <i>responsible gas quality monitoring provider</i> must provide to AEMO the fully completed 'Meter Installation Parameter Change Notice – Gas (Vic)' form for changing the meter status from 'registered' to 'commissioned' at least 5 business days before the actual commissioning date of the <i>metering installation</i>, or such date as agreed with AEMO:</p> <p>(A) AEMO will set the <i>metering installation</i> record status to commissioned, after confirming the communication links to the <i>meter installation</i> and, if applicable, <i>gas quality monitoring system</i> are functioning;</p> <p>(B) AEMO may change the <i>metering installation</i> commissioning date, in consultation with the <i>responsible person</i> and, if applicable, <i>responsible gas quality monitoring provider</i>, if the communication links are not functional; and</p> <p>(C) AEMO will implement the new heating value zone determined under (b)(i)(D) above.</p> <p>(iv) A <i>Market Participant</i> must complete the accreditation application process detailed in the <i>accreditation procedure</i> for any <i>market injection points</i> or <i>market withdrawal points</i> as follows:</p> <p>(A) each <i>Market Participant</i> must have a billing meter associated with the accreditation; and</p> <p>(B) the accreditation process can only be completed after the CTM metering installation record has the status of commissioned.</p>	
E.10.3	AEMO	AEMO has amended the format of all tables in the Procedure.	This has improved the readability of the Procedure.

Reference	Submitter	Submission details	AEMO response
E.10.4	AEMO	<p>AEMO has proposed an amendment to the formatting in sections 3.4.1, 3.4.2 and 3.4.3 of the Wholesale Market Metering Procedure to make each paragraph is number (a) to (x) as required in each section.</p>	<p>AEMO considers this amendment increases the readability and enhances the ability to reference these sections in the Procedure.</p> <p>Consequential changes were applied to other sections of the Procedure to ensure cross references remained appropriate.</p>
E.10.5	AEMO	<p>AEMO considers that the text in section 3.4.3 (c) and (d) (as amended in E.19.2) conflated the initial assignment of a metering installation and the reassignment of a metering installation. Therefore, AEMO has amended the Procedure to clarify the two processes.</p> <p>AEMO has proposed to amend the text in section 3.4.3 as shown below:</p> <ul style="list-style-type: none"> <li data-bbox="555 587 1361 788">(c) Each metering installation is assigned to a heating value zone, based on the primary supply for the metering installation in the previous year, unless there has been a CTM added or removed, or a change in network configuration. The initial assignment of each metering installation to a heating value zone is based on the primary supply for the metering installation in the previous year or on the basis of pipeline modelling in the case of a new metering installation. <li data-bbox="555 810 1361 1369">(d) The assignment of a metering installation to a heating value zone may change if: <ul style="list-style-type: none"> <li data-bbox="629 884 1361 1059">(i) a CTM is added to (or removed from) the DTS or DDS altering the primary supply source to the metering installation, then the responsible party (either AEMO or the Distributor as defined above), must review the assignment of metering installations to the heating value zone and adjust the metering installations assignment to each heating value zones according to pipeline modelling. <li data-bbox="629 1082 1361 1193">(ii) a permanent change to a DDS network configuration is made by the Distributor altering the primary supply source to the metering installation, which requires the reassignment of each impacted metering installation to a different heating value zone. <li data-bbox="629 1216 1361 1369">(iii) a new heating value zone is determined, via sampling, to be required in accordance with the process outlined in clause 3.4.1, and the metering installation is required to use the heating value zone for the purpose of maintaining compliance with the heating value uncertainty limit. 	<p>AEMO considers this amendment improves the clarity and readability of the Procedure without changing any existing obligations.</p>

Reference	Submitter	Submission details	AEMO response
E.10.6	AGL	There should be a clear time frame for procedures to be reviewed and a participant notified. AEMO should also advise the participant if the procedures meet the requirements of these Procedures. <i>(c) AEMO will review the Calibration Procedures submitted to it within 10 business days of receiving them and notify the responsible person of the result in writing;</i>	Noted. AEMO has amended 2.4.2 (c) to 2.4.2 (f) to be: (c) AEMO will review the Calibration Procedures submitted to it within 20 business days of receiving the Procedure, submitted under (b) above, and notify the responsible person of the result in writing; If the Calibration Procedures, submitted under (b) above, do not meet the requirements in these Procedures, AEMO will notify the participant in writing.
E.10.7	AGL	Section 2.4.2(c) If AEMO advises the participant that the submitted procedures do not meet the requirements of these procedures, the information detailing the points of failure should also be provided. <i>(dc) If the Calibration Procedures, submitted under (b) above, do not meet the requirements in these Procedures, AEMO will notify the responsible person participant in writing together with information as to why the Calibration Procedures fail to meet the requirements of these Procedures and request they be amended and resubmitted.</i>	(d) If AEMO determines the Calibration Procedures do not meet the requirements of these Procedures, the responsible person must resubmit the Calibration Procedures to AEMO within 20 business days of the notice, or such other date as agreed with AEMO.
E.10.8	AGL	Section 2.4.2(d) Clarity of obligation <i>(ed) If the Calibration Procedures, submitted under (b) above, do not meet the requirements in these Procedures, the responsible person must resubmit the Calibration Procedures to AEMO within 20 business days of the notice, or such other date as agreed with AEMO.</i>	(e) AEMO will review the Calibration Procedures submitted to it within 20 business days of receiving the Procedure, submitted under (d) above, and notify the responsible person of the result in writing.
E.10.9	AGL	Section 2.4.2(f) Amend numbering	(f) If AEMO determines the Calibration Procedures, submitted under (d), do not meet the requirements of these Procedures, AEMO may inform the AER.
E.10.10	AGL	Section 2.5(b) Grammar Plural For the avoidance of doubt, rule 298(2) requires that a metering installations at a distribution delivery points (excluding distribution connected settlement metering points as per (b) above) and heating values (as per (a) above) must satisfy the uncertainty limits Or singular rule 298(2) requires that a metering installation at a distribution delivery points	Noted. AEMO has updated the Procedure.
E.10.11	AGL	Section 3.6.1: Simplify For an Where the installation where is such that a temperature probe has not been installed, the actual temperature will be deemed to be 15°C and this figure will be used in calculations.	Noted. AEMO has updated the Procedure: For a metering installation Where the installation where is such that a temperature probe has not been installed, the actual temperature will be deemed to be 15°C and this figure will be used in calculations.

Reference	Submitter	Submission details	AEMO response
E.10.12	AGL	Section 3.6.2: Grammar The meter's heating value zone is assigned based to on the CTM primarily supplying the site.	Noted. The Procedure has been updated.

E.11 Wholesale Market Operation Procedures

Reference	Submitter	Submission details	AEMO response
E.11.1	AGL	General comment: AGL supports the assessment	Noted.
E.11.2	AEMO	To clarify that a net injection meter in the net bidding facility procedures is a market injection point for the purposes of the accreditation procedures AEMO has added the following footnote to section 2.2(b) stating: This includes a net injection meter that is a market injection point for a net bidding facility as required by the net bidding facility procedures. This is consistent with the change in the net bidding facility procedure captured in E.6.1.	AEMO considers this change provides clarity on the operation of the Accreditation Procedure in relation to a net bidding facility's net injection meter.
E.11.3	AGL	Section 1.4 Glossary – Term DTS SP This term is inconsistent with the term used in other procedures – DTSSP – Suggest aligning terms through procedures.	Noted. AEMO has updated all Procedures to use the term 'DTS SP'.
E.11.4	Red & Lumo Energy	Section 4.9.2. Modelling Information Red and Lumo request clarification on the head of power under which “AEMO may request at any time additional information from Registered participants by notice in writing for the purpose of system capability modelling including” This doesn't appear to reflect NGR 324 which identifies what participants are required to provide	The head of power for AEMO to request additional information is in rule 328D(2)(j), which allows the Procedures to include any other matters necessary or convenient to deal with in the procedures. The text has been amended to clarify this link to rule 328D(2)(j). AEMO has amended 4.9.2(d) on the basis of this item and reference E.11.4 to be: (d) AEMO may request at any time, by notice in writing, additional information from Registered participants that AEMO considers is necessary or convenient for the purpose of system capability modelling including: (i) maximum <i>distribution connected facility's market injection point or market withdrawal point or system point(s)-delivery</i> capacity;

Reference	Submitter	Submission details	AEMO response
			<ul style="list-style-type: none"> (ii) maximum capacity of a <i>declared distribution system</i> to deliver to or receipt from a <i>distribution connected facility's market injection point or market withdrawal point – system point or collection of system point(s)</i>; (iii) <i>distribution connected facility</i> operating parameters, including injection and withdrawal rates, pressures and profiles and sustainability of those rates, pressures and profiles; and (iv) other information that may be required by AEMO to inform <i>system capability modelling</i>.
E.11.5	APA	<p>Clause 4.9.3(iii)</p> <p>For the avoidance of doubt, APA proposes to change the reference to the injection and withdrawal points for the distribution connected facility to 'DDS injected point' and 'DDS withdrawal point' accordingly, as the distribution connection facility can only inject or withdraw within DDS, but not DTS.</p>	<p>AEMO considers that the term: "distribution connected facility's market injection point and market withdrawal point" clearly defines the points being considered are connected to the DDS.</p> <p>In Part 19 of the Rules, a "distribution connected facility" means "a storage facility, gas production facility or blend processing facility connected to a declared distribution system."</p>
E.11.6	APA	<p>Clause 7.10.2</p> <p>The proposed changes are as in the above Clause 4.9.3(iii) comment: 'for application at a distribution connected facility market injection point or market withdrawal point' to replace with 'for application at a distribution connected facility DDS injection point or DDS withdrawal point.'</p>	<p>AEMO does not consider the development of a new "DDS withdrawal point" terms to be appropriate. Potentially AEMO could define the DDS withdrawal point term as "a distribution delivery point for a distribution connected facility". However, AEMO does not see additional clarity being provided to Registered Participants from the adoption of this term.</p> <p>AEMO has made amendments in section 4.9.2 (see reference E.11.4) and 4.9.3 (see below) to consistently use distribution connected facility's market injection point or market withdrawal point.</p> <p>(d) The capacity certificates for a capacity certificates zone that only includes a distribution connected facility available for allocation may be determined from either modelling determined in section 4.9.2 (d) or as the lower of either the Distributor determined:</p>

Reference	Submitter	Submission details	AEMO response
			<p>(i) maximum capacity of the DDS to deliver to or receipt from a distribution connected facility's market injection point and market withdrawal point facility, system point or a collection of system points;</p> <p>or</p> <p>(ii) maximum facility or distribution connected facility's market injection point and market withdrawal point system point(s) deliverable capacity.</p>

E.12 Wholesale Market Settlements Procedures

Reference	Submitter	Submission details	AEMO response
E.12.1	AGL	General comment: AGL supports the assessment	Noted.
E.12.2	AGL	Section 3.8.5(c) Cross reference not working	Noted. The Procedure has been updated.
E.12.3	AGIG	Section 5.4.1 The timing of these reports may also be delayed by special revisions issued by AEMO. "The dispute resolution processes and Special Revisions issued by AEMO may cause this process to be extended."	AEMO has amended the Procedure.
E.12.4	AGIG	Section 5.6.1 (third bullet point) "AEMO will send a settlement notification stating a later date for agreement of the final withdrawal data on which pricing data will be published for the DUAFG period where Special Revision settlement occurs."	AEMO has amended the Procedure to be: AEMO will send a settlement notification stating a later date for agreement of the final withdrawal data for the DUAFG period where a future date on which AEMO will provide data Special Revision settlement occurs as outlined in section 5.4.2, section 5.4.3 and section 5.4.4, as a result of Special Revision being published.
E.12.5	AGIG	Section 5.6.1 (formula "H =") Withdrawals are determined by distributors and agreed to by market participants – not advised by AEMO.	AEMO notes the Procedure appears to have been misread. The value H is to be advised <u>to</u> AEMO and is therefore appropriate. See text below:

Reference	Submitter	Submission details	AEMO response
		"H= the quantity of gas withdrawn by the Distributor for Market Participants at all Class B supply points for the DUAFG period as advised by AEMO. "	"H = the quantity of gas withdrawn by Distributor for Market Participants at all Class B supply points for the DUAFG period as advised to AEMO;"
E.12.6	AGIG	<p>Section 5.6.5</p> <p>AEMO can only issue the final DUAFG reconciliation amounts after distributors and market participants have agreed on draft reconciliation amounts.</p> <p><u>"Once Distributors and Market Participants agree on draft reconciliation amounts referred to in 5.6.4 then AEMO issues the final DUAFG reconciliation amounts statement to Distributors and Market Participants."</u></p>	<p>AEMO has amended the text to reinstate the disputes for reconciliation amounts section.</p> <p><u>5.6.5 Disputes on reconciliation amounts</u></p> <p><u>The Distributor and Market Participant may contact the Adviser to begin the process under Part 15C if they dispute the draft DUAFG reconciliation amounts statement. AEMO must be informed of the outcome of the dispute.</u></p> <p><u>Note: Disputes as to withdrawal data and DUAFG reconciliation amounts are "relevant disputes" within the meaning of rule 135F of the Rules and as such determined in accordance with Part 15C of the Rules.</u></p> <p>5.6.6 AEMO issues final DUFAG reconciliation amounts</p> <p><u>If there are no disputes on the draft DUAFG reconciliation amounts statement reported to AEMO within 10 business days, AEMO issues the final DUAFG reconciliation amounts statement to Distributors and Market Participants.</u></p>

E.13 Wholesale Market System Security Procedures

Reference	Submitter	Submission details	AEMO response
E.13.1	AGL	General comment: AGL supports the assessment	Noted.
E.13.2	AGL	<p>Section 4(d):</p> <p>It is better not to use an acronym in this list:</p> <p>Expand WZ to Withdrawal Zone (WZ)</p>	Noted. The Procedure has been updated to use Withdrawal Zones (WZs).
E.13.3	AGL	<p>Consistency of term across procedure</p> <p>'Gas-fired power generator' or 'gas fired generator'</p>	Noted. The Procedure has been updated.

Reference	Submitter	Submission details	AEMO response
E.13.4	Red & Lumo Energy	<p>Section 2.1. Declared Transmission System Overview</p> <p>Red and Lumo request clarification of the linepack zones and whether they do actually align to the WZ or only 'broadly' align with the WZ' as suggested?</p> <p>The Glossary defines Linepack as 'The amount of energy in the gas stored in the declared transmission system' and since the DTS is bounded by the WZ, it would follow that the WZ define the linepack zones, rather than 'broadly'.</p> <p>The linepack zones within the DTS include the Gippsland, Melbourne, Geelong, Ballarat and Northern zones, and broadly align to the WZs described in Table 4.</p>	<p>Noted. AEMO does not agree with this change. AEMO has defined linepack zone in the glossary of terms to provide clarity:</p> <p>linepack zone means a section of gas transmission pipeline which is defined by compressors, valves, regulators, market injection points and/or market withdrawal points in which linepack is located.</p> <p>For clarity on the difference, a withdrawal zone is a grouping of CTMs (specifically DTS to DDS transfer points and DTS delivery points).</p> <p>Therefore, each zone is represented by slightly different pipeline equipment, therefore AEMO considers the term "broadly aligns" would best define how the different zones are defined.</p>

E.14 MIBB Reports

Reference	Submitter	Submission details	AEMO response
E.14.1	AEMO	<p>INT139a</p> <p>AEMO has amended the report trigger from a time trigger at 13:00 hrs to an event triggered following completion of zonal heating value calculation each day. AEMO's calculation process, as noted in the updated User Guide, is to produce the zonal heating value data each day is triggered at approximately 9:30 AM.</p>	<p>AEMO discusses this change in section 3.11.</p>
E.14.2	AGL	<p>DWGM Technical Specification</p> <p>As there are multiple variances between these reports and the information provided in the User Guide to the MIBB, AGL suggests that this document be retired.</p>	<p>AEMO notes the adoption of the DWGM Technical Specification is the new process that will be followed in future. The variances between the DWGM Technical Specification are the result of the different release dates of this document versus the User Guide to MIBB Reports.</p> <p>AEMO notes an update to the DWGM Technical Specification was released on 19 September, shortly after the PPC was published on 15 September.</p> <p>AEMO has made efforts to ensure the DWGM Technical Specification (to be published after the IIR) aligns to the User Guide to MIBB Report (as published with the IIR).</p>

Reference	Submitter	Submission details	AEMO response
E.14.3	AGL	INT139 AGL notes that this report is scheduled to be retired post 1 May 2024 and suggests that it is left available until settlement revisions are completed for the period ending 1 May 2024.	The User Guide has been updated to reflect decommissioning in December 2024.
E.14.4	AGL	INT139a Check format of gas-date in comment - 30 Jun 2007 or 30-Jun-07	The User Guide published 15 September and DWGM Technical Specification published 19 September are correct.
E.14.5	AEMO	INT188 AEMO considers the report should be changed to 3:30 AM each day to better account for the timing of report inputs.	AEMO discusses this change in section 3.11.
E.14.6	AGL	INT188 The description of this report is inconsistent with the description of this report in the User Guide to the MIBB	The User Guide published 15 September and DWGM Technical Specification published 19 September are correct.
E.14.7	AGL	INT140 Value – clarify how the ‘ti’ relates to start of gas day. Time interval of the day 1-24 with 1 representing the hour prior to the start of Gas Day – i.e. 5:00am.	AEMO has updated the content note, consistent with other MIBB reports, to state: Time interval (which shows each hour in the gas day, where 1 = 6:00 AM to 7:00 AM, 2 = 7:00 AM to 8:00 AM, until the 24th hour) And the comment in the data content states: Time interval of the gas day 1-24
E.14.8	AGL	INT140 Update gas date by removing time to align with example Gas day being reported e.g. 30-June-2007-06:00:00	The User Guide has been updated.
E.14.9	AGL	INT140 Update Date example with time Date and Time Report Produced (e.g. 30 Jun 2007 17:00:00) for consistency with output example	The DWGM Technical Specification has been updated to move the text to the correct field.
E.14.10	AGL	INT176 Check format of gas-date in comment - 30 Jun 2011 or 30-Jun-11	The User Guide published 15 September and DWGM Technical Specification published 19 September are correct.
E.14.11	AGL	INT176 Check format of current_date in comment	The User Guide published 15 September and DWGM Technical Specification published 19 September are correct.
E.14.12	AGL	INT240 No report to comment on in this document	Noted. This report will only be published to Distributors in Production from 1 May 2024.

Reference	Submitter	Submission details	AEMO response
E.14.13	AGL	INT241 No report to comment on in this document	Noted. This report will only be published to Distributors in Production from 1 May 2024.
E.14.14	AEMO	INT253 AEMO has made a minor editorial amendment as AEMO has identified that the VARCHAR(8) should be a VARCHAR(10) following participant feedback.	The User Guide has been updated.
E.14.15	AEMO	INT139a AEMO has made a minor editorial amendment to update the field name in the user guide from 'current_datetime' to 'current_date' to be consistent with the report.	The User Guide has been updated.
E.14.16	AEMO	INT188 AEMO has made a minor editorial amendment to update the field name in the user guide from 'current_datetime' to 'current_date' to be consistent with the report.	The User Guide has been updated.
E.14.17	AEMO	The format of the User Guide to MIBB Reports has been amended reflecting the style of the document management system which will be used to control the document in future.	The User Guide has been updated.