

Retail Impact & Implementation Report (IIR) - Zonal Heating Value



Summary Section

Ref# (if applicable)	Package 3A IN007-22		
Impacted jurisdiction(s)	Victoria		
Proponent	Danny Mcgowan	Company	AEMO
Proponent email	grcf@aemo.com.au		
Affected Gas Market(s)	Retail and Wholesale	Consultation process (ordinary or expedited)	Ordinary
Industry consultative forum(s) used	GRCF and GWCF	Date industry consultative forum(s) consultation concluded	16 October 2023
Short issue title	Modifications to the way AEMO determines Victorian heating value zones and the heating value information that AEMO will make available for basic metering energy calculation.		
Procedure(s) or Documentation impacted	Retail Market Procedures (Victoria) and Technical Protocols. See section 2 of this IIR for further information.		
IIR prepared by	Nandu Datar	Approved by	Meghan Bibby
Date IIR published	30 October 2023	Date consultation concludes	28 November 2023
Other key contact information			

aemo.com.au

Impact & Implementation Report (IIR) – Detailed Report Section

Critical Examination of Proposal

1. Description of issue

1.1. Background.

AEMO received a letter from Victorian Minister Hon Lily D'Ambrosio (the Minister) requesting the Victorian Retail Market Procedures (RMP) be amended to implement zonal heating values (ZHV) for tariff V¹ Victorian consumers and that these changes need to take effect before the Hydrogen Park Murray Valley project commences injecting Hydrogen into that network². The Minister's letter is available [here](#).

Tariff V consumers (basic meter non-daily read sites) currently have a single state-wide Heating Value (HV) applied to the energy calculation formula.

1.1.1. Existing regulatory arrangements and system processes.

The following summarises the existing regulatory arrangements and system processes.

The current regulatory arrangements are:

- In relation to the Essential Services Commission (ESC) Gas Distribution System Code of Practice³, this code currently determines the application of a single daily state-wide heating value to all non-daily metered (small and residential) customers;
- In relation to AEMO's Wholesale Market Metering Procedure⁴, this procedure provides details about energy calculations and includes any derogations from Part D (Heating Value) of the code in relation to basic meters; and
- In relation to AEMO's Retail Market Procedure (Victoria)⁵, this procedure requires Distribution businesses (DBs) to convert basic meter volumes to consumed energy in accordance with the Wholesale Market Metering Procedure.

The current process of applying the state-wide (HV) involves:

- AEMO calculating a state-wide HV and generating a report known as INT139 (Declared Daily State Heating Value). This daily report is published on the AEMO website. This report is available [here](#). The User Guide to Market Information Bulletin Board (MIBB) reports available [here](#) provides further details about the INT139 report; and
- DBs using the information in the INT139 report to convert basic meter volumes to consumed energy. The conversion of volume to energy for basic meters is based on the

¹ Tariff V - sites consuming less than 10,000GJ per annum. Distribution Businesses are the responsible party convert the measured volume into an energy reading (consumed energy) for these sites. These are basic metered distribution supply points.

² AGIG's website, on 11 September 2023, stated that Production from the Hydrogen Park Murray Valley Facility is expected to commence in early 2025. See <https://www.agig.com.au/hydrogen-park-murray-valley>

³ See Part D (Heating Value) of the ESC's of the Gas Distribution System Code of Practice. Click [here](#) to view.

⁴ See Chapter 3 (Energy Calculation Procedures) of AEMO's Wholesale Market Metering Procedure. Click [here](#) to view.

⁵ See Section 2.6 (Calculation and Provision of Energy Data) of AEMO's Retail Market Procedures (Victoria). Click [here](#) to view.

average of a daily declared state-wide flow weighted heating value calculated for the relevant 'ReadFrom' and 'ReadTo' dates. DBs take the average of the set of the daily declared state-wide flow weighted heating values that encompass the consumption reading period of the basic meter and uses this average to convert the measured volume into an energy reading (consumed energy) for retail billing and wholesale settlement purposes.

In relation to ZHV, AEMO already has in place a Heating Value Allocation Model (HVAM) that calculates a ZHV for tariff D⁶ for all consumers in Victoria at ~140 custody transfer meters (CTM) (which is then aggregated to the existing 34 heating value zones (and also used to calculate the current state-wide heating value)). AEMO is the responsible party to calculate consumed energy for tariff D consumers.

AEMO currently uses a "postcode to heating value zone" based approach to define areas of common gas flow for the state of Victoria and hence common heating value based on pipeline flow dynamics and an understanding of the likely postcodes supplied by each CTM determined in consultation with the DBs. These areas have been assigned to a unique Heating Value Zone (HVZ). The RMPs requires DBs to assign a HVZ number to all distribution supply points (ie Meter Installation Registration Number (MIRN)) and store this information in their database.

1.2. Zonal Heating Value (ZHV) Proposal.

Having considered the request to implement ZHV for tariff V consumers, AEMO is of the view that the above postcode-based approach is not an exact method to assign heating values to distribution supply points namely because postcodes are independent of gas flow boundaries in a distribution network.

In late 2022 AEMO hosted three ZHV workshops with DBs. The purpose of these workshops was to discuss the proposal to move from the state-wide heating value to the zonal heating value. At those workshops AEMO put forward a view that the current number of existing 34 heating value zones may not be appropriate, if a large number of Distribution Connected Facilities (DCFs) become operational. The reason for this change is that new DCFs may connect behind any Declared Transmission System (DTS) CTM, with each DCF potentially requiring both the supply CTM and the DCF CTM to have a separate heating value zone. AEMO expects that the existing 34 heating value zone would need to be disaggregated overtime as DCF become operational.

AEMO considered that the best outcome would be to move from the existing 34 heating value zones to use approximately 140 heating value zones (representing the 140 CTMs in the DTS). The only exception from the existing heating value zone is the non-DTS distribution systems for Bairnsdale (zone #50) which will need to be retained. The move to the 140 CTMs will ensure the heating value zones process can more easily accommodate new DCFs, as new heating value zones would only need to be established to represent the blended heating value zones applied for the new DCFs. The attributes of this proposal also meant that the DBs would have sufficient information to determine the primary supply when determining which heating value zone to assign to each distribution supply point. In early 2023, DBs indicated their support for the above proposal.

⁶ Tariff D – sites consuming 10,000GJ or more per annum. AEMO is the responsible party convert the measured volume into an energy reading (consumed energy). These are interval metered distribution supply points.

1.3. How to make a submission

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

IMPORTANT NOTE-1: Some RMP changes overlap with Wholesale Market Procedure changes. Details about the Wholesale Market Procedure changes are described within the IIR – DWGM Procedure changes for Hydrogen and DCF. Two documents that overlap are the Wholesale Market Metering Procedures (Victoria) and the DWGM Technical Specification. Details about the changes to these documents are described section 3.7 and Appendix D of the IIR – DWGM Procedure changes for Hydrogen and DCF which can be found [here](#). Any feedback on the proposed amendments to the Wholesale Market Procedure changes, please use the DWGM – IIR response template⁷ which can be [here](#).

IMPORTANT NOTE-2: The scope of works is limited to the initiatives described in this IIR. The scope maybe expanded to pick up other minor typographical errors that are identified. A more thorough review of the other sections of the Procedures or the Technical Protocols is out of scope for this consultation.

2. Reference documentation

The following Procedures and Technical Protocols, provided in Attachment A and H, are being consulted on as part of this Procedure change process.

AEMO will only republish documents that change at each stage of the Procedure consultation.

AEMO is also updating the User Guide to MIBB Reports as part of the IIR – DWGM Procedure changes for Hydrogen and DCF consultation. As noted in that IIR, 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. Please refer to the Attachment C of the IIR – DWGM Procedure changes for Hydrogen and DCF for further information.

Title	Legal Requirement
Wholesale Market Metering Procedures (Victoria) Ver 1.0. Click here to view. (Chapter 3)	Energy Calculation Procedures (Victoria) made under rule 303(6) of the NGR.
Retail Market Procedures (Victoria) Ver 17.0. Click here to view	Retail Market Procedures (Victoria) required by rule 135EA (1) of the NGR.
Participant Build Pack 2 System Interface Definitions Ver 3.5. Click here to view.	Required by rule 135EA (1) of the NGR. Clause 1.2.2 of the RMP notes that the consultative process in Part 15B of the NGR applies when considering amendments to this document.
Participant Build Pack 3 System Interface Definitions Ver 3.9 Click here to view	Required by rule 135EA (1) of the NGR. Clause 1.2.2 of the RMP notes that the consultative process in Part 15B of the NGR applies when considering amendments to this document.
Participant Build Pack 1. Table of transactions Ver 3.9 Click here to view.	Required by rule 135EA (1) of the NGR. Clause 1.2.2 of the RMP notes that the consultative process in Part 15B of the NGR applies when considering amendments to this document.

⁷ Submissions close **COB 28 November 2023** and should be e-mailed to GWCF_Correspondence@aemo.com.au
aemo.com.au

Title	Legal Requirement
Participant Build Pack 1. Process flow diagrams Ver 3.8 Click here to view.	Required by rule 135EA (1) of the NGR. Clause 1.2.2 of the RMP notes that the consultative process in Part 15B of the NGR applies when considering amendments to this document.

As noted in section 1.3 of this IIR, some RMP changes overlap with Wholesale Market Procedure changes. Details about the Wholesale Market Procedure changes are described IIR – DWGM Procedure changes for Hydrogen and DCF which can be found [here](#).

3. Overview of changes

This proposal involves replacing the “state declared” HV method with the CTM based HV method. For this to occur AEMO and DBs will need to make systems changes which are summarised in section 3.1. AEMO will need to make amendments to various procedures and technical protocols which are summarised in section 3.2. Prior to the above changes taking effect, there will be a need for all DBs and AEMO to update their respective databases which will involve replacing the current postcode heating values zone numbers (34 zones) with the new CTM heating values zone numbers (approx. 140 zones). Section 3.3 provides further information about the update process.

3.1. Key ongoing processing steps

The following is an overview of what the key ongoing processing steps that need to change for the proposed HV approach.

For AEMO, the following is a summary of key ongoing process changes.

1. Publish a new report INT188 (CTM to Heating Value Zone Mapping) which will detail the heating value zone to CTM mapping. This report will provide a location description for each CTM and its equivalent heating value zone to inform the distributors mapping of distribution supply points to HVZ. There will be approximately 140 heating value zones listed in this report. This will replace the Postcode to Heating Value Zone Table Guideline which listed 34 heating value zones.
2. Replace the existing MIBB INT139 (Declared Daily State Heating Value) which is used in the process to calculate energy for basic meters with a new MIBB report INT139a (Daily Zonal Heating Value). The source data involved in generating INT139a is the same as the data used for INT139 and INT047 and the process used to generate each report is very similar. This process is to gather data via CTMs, via the Heating Value Allocation Model (HVAM) which is then aggregated and sent into the MIBB. This report will be published at 13:00 and contain 90 consecutive gas days’ worth of HV for each zone.

For DBs, the following is a summary of the key ongoing process changes.

1. For any newly created distribution supply points, assign the applicable zonal heating value number using the INT188 (CTM to Heating Value Zone Mapping) report which replaces the Postcode to Heating Value Zone Table Guideline.
2. In relation to consumed energy at a basic meter distribution supply point, using the new report INT139a (Daily Zonal Heating Value), the DB is to apply the applicable HV for the zone assigned to that site to convert the measured volume into consumed

energy for basic meters. This includes DB applying the applicable HV instances whereby the HVZ changed⁸ during the reading period.

3.2. Summary of documentation changes.

The marked-up Procedure and Technical changes are provided in Attachments of this document. AEMO has provided the Attachment I Package 3A IIR Retail procedure response template for participants to make their submissions in response to this consultation.

The following is a summary of the procedures and technical protocol that AEMO has identified that need to be amended to underpin the basic metering system and process changes to support changes described in 3.1.

Wholesale Market Metering Procedures (Victoria)

- Clause 1.4 – Addition and modification to some of the terms such as heating value zone. The terms are referenced in the Retail Market Procedures.
- Clause 3.4 – Add this new Heating Value section that describes how AEMO determines Heating Value Zones and Heating Values. This section also describes how Heating Value Zone will be assigned.
- Clause 3.6.3 – Modify this section (Basic Meter energy calculation) by including details about applying daily average zonal heating value rather than the current declared state-wide heating value.

See Attachment A for further information.

Retail Market Procedures (Victoria)

- Clause 1.1.1 - Add new definition called daily ZHV.
- Clause 1.1.1 – Modify existing heating value zone definition to reference the Wholesale Market Metering Procedure.
- Clause 1.1.1 – Add new definition called Wholesale Market Metering Procedure.
- Clause 1.1.2 (b) – Modify clause to include a reference the new definition daily ZHV
- Clause 2.6.1 – Modify this clause so that zonal heating values apply which include details about how HV are to be applied when a zone change occurs during a reading period.

See Attachment B for further information.

New reports required for the process described in section 3.1.

New, updated, and discontinued MIBB reports will be required in relation to ZHV for Tariff V.

- New report INT139A (Daily Zonal Heating Value) providing the heating value for each heating value zone used to determine the energy content of gas consumed within Victoria.
- Discontinue report INT139 since it is superseded by the new report INT139A.

⁸ This includes the 1 May 2024 change whereby the state-wide HV changeover to ZHV.

- New report INT188 (CTM to Heating Value Zone Mapping) containing the DWGM's Custody Transfer Meter (CTM) to Heating Value Zone mapping.

See Attachment C for further information.

Retail Market Technical Protocols (TP)

Minor amendments to the following documents:

- Participant Build Pack 2 System Interface Definitions. Modify section A.2 CSV Data Elements.
- Participant Build Pack 3 System Interface Definitions. Modify section A.2 CSV Data Elements.
- Participant Build Pack 1. Table of transactions. Modify the table of transaction tab to recognises the new INT139a MIBB report. Remove 'declared_heating_value' from the 'Elements' tab.
- Participant Build Pack 1. Process flow diagrams. Modify process flow diagrams 2.0 and 2.7 so that they recognise zonal heating values as an attribute to the basic meter consumed energy calculation.

See Attachment D to G for further information.

Guides

- Remove the Postcode to Heating Value Zone Table Guideline from AEMO.

See Attachment H for further information.

3.3. AEMO and DB transition plan

AEMO has e-mailed a copy of the initial draft of the transition plan to the Gas Retail Consultation Form (GRCF) on 24th October 2023. This document provides a 'once-off' process to enable synchronisation of the new Victorian Heating Value Zones (HVZ) between Distribution businesses and AEMO. The GRCF are currently reviewing this plan and have been invited to raise any material issues or concerns (if any) in relation to any of the details described in this plan by COB 8th November 2023. Participants can request a copy of this transition plan by e-mailing grcf@aemo.com.au.

4. Likely implementation requirements and effects

As described in section 3.1 of this IIR, AEMO change involves creating two new MIBB reports so that the DBs can fulfill their RMP obligation in relation to calculating consumed energy to sites with basic meters.

As described in section 3.1 of this IIR, DBs change involves modifying systems to use the new MIBB reports to calculate consumed energy to sites with basic meters. The value for the consumed energy along with the attributes that have been used to calculate the consumed energy are then sent to the Retailer and AEMO via the MeterDataNotification (MDN)⁹.

⁹ In relation to the Retailer MDN see Participant Build Pack 3: B2S System Interface Definitions. In relation to the AEMO MDN see Participant Build Pack 2 – Interface Definitions

5. Overall cost and benefits

Given that the proposed ZHV change is a request from the Victorian Minister, and that ZHV is prerequisite to accommodate hydrogen, biomethane and other renewable gases which is part of the AEMC's review¹⁰ which provided an assessment of cost and benefits of the rule changes, AEMO view is an assessment of the costs for the ZHV changes is not warranted in this instance.

In relation to benefits, AEMO has identified the following:

Effective use of existing processes that are operative today for some segments of the gas market (tariff D).

- The limited scope of this proposal leverages off existing processes, procedures and IT systems and this should present a cost-effective solution.
- A more complex HV methodology process could also be proposed but that's likely to add substantial costs and may not meet the desirable timeframe to allow DB's to implement such changes.

Harmonising both tariff V and D processes.

- This proposal promotes alignment of tariff V process with the existing tariff D process.

Future proofing the solution.

- In future, as new distribution connected facilities are added, AEMO will need to add new heating value zones to represent these facilities and the blending of gas between these different sources. There will be limited impact on other existing MIRNs as a result of moving to the CTM to heating value zone approach.

6. Magnitude of the changes

The initiative is part of the broad program related to accommodating Hydrogen as a renewable gas into the regulatory framework which requires the Distributors to calculate energy based on the ZHV instead of the state based heating value. This is a significant change for the Distributors. AEMO also required to develop two new MIBB reports. AEMO considers the magnitude of the change as material.

7. AEMO'S preliminary assessment of the proposal's compliance with Section 135EB

As part of the second-round consultation (IIR), AEMO put forward the following assessment regarding compliance with section 135EB of the National Gas Rules:

Requirement	AEMO's Preliminary Assessment
Consistency with National Gas Law (NGL) and NGR	As these ZHV changes are a precondition to Victorian hydrogen integration reform, AEMO's assessment is the same as those put forward in the IIR – DWGM Procedure changes for Hydrogen and DCF and the

¹⁰ AEMC review entailed review into extending the regulatory frameworks to hydrogen and renewable gases and DWGM distribution connected facilities

Requirement	AEMO's Preliminary Assessment
	Package 3B Retail Market IIR. The views specified in those IIR noted that the 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 (NGO)	As these ZHV changes are a precondition to Victorian hydrogen integration reform, AEMO's assessment is the same as those put forward in the IIR – DWGM Procedure changes for Hydrogen and DCF and the Package 3B Retail Market IIR. The views specified in those IIR noted 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.
Any applicable access arrangements	No Distributor raised concerns in relation to their Access Arrangement during AEMOs pre regulatory (Gas Market Issue v2.0) consultation on potential changes that will be required. On that basis it is AEMO's view is that the proposed change is not in conflict with existing Access Arrangements.

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 forum outcomes

The PPC was issued on 15 September 2023 and submissions in response to it were due by COB 16 October 2023. Submissions were received from the following organisations, AGL, AGN, Energy Australia, Origin Energy and Red/Lumo. All supported the proposed changes.

AGL noted in their response need for maintaining retailer MIRN information and process to update the retailer when MIRNs churn. AEMO has requested AGL to raise a new GMI for this request. Participant responses also identified typographic errors and other changes. AEMO has amended the text where appropriate.

Impact & Implementation Report – Recommendation(s)

9. Should the proposed procedures be made)?

AEMO recommends making the changes proposed in Attachments A to H.

10. 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 2024.¹¹ The Procedure consultation process is 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

¹¹ AEMC Final Rules Report, 24 November 2022, pg. 148

Attachment A – Wholesale Market Metering Procedure changes

Please refer to the Wholesale Market IIR which can be found [here](#) . Section 3.7 describes the Wholesale Market Metering Procedures (Victoria). Clauses 1.4, 3.4 and 3.6.3 have retail market impacts.

In relation to feedback on the proposed amendments to the Wholesale Market Procedure changes, please use the DWGM – IIR response' template¹². which can be [here](#) .

¹² Submissions close **COB 28 November 2023** and should be e-mailed to GWCF_Correspondence@aemo.com.au
aemo.com.au

Attachment B – Retail Market Procedures (Victoria).

Draft versions of the Procedure (extract) showing tracked changes between the current version and the proposed changes are shown below. Blue underline means addition and ~~red-strikeout~~ means delete.

*** Extract***

1.1.1 Definitions

daily ZHV means the daily zonal heating value (ZHV) information provided by AEMO under clause 1.1.2.(b). ↵

Note: For the avoidance of doubt the meaning of this definition also applies to areas that form part of Non-DTS distribution systems. ¶

~~heating value zone~~, in relation to a ~~supply point~~, means the heating value zone (if any) which is determined by AEMO as the heating value zone assigned to for that ~~supply point~~ in accordance with clause 3.4.3 means for the purpose of this Procedure the same as it means in section 1.4 (Definitions and interpretation) of the Wholesale Market Metering Procedure (Victoria). ¶

Note: For the avoidance of doubt the meaning of this definition also applies to areas that form part of Non-DTS distribution systems. ¶

Wholesale Market Metering Procedures means the Wholesale Market Metering Procedures published on AEMO's website which comprise amongst other things, the metering register procedures and the energy calculation procedures. ¶

1.1.2 Interpretation ¶

(b) → AEMO publishes, on the market information bulletin board, a ~~daily flow weighted heating value~~ daily ZHV for each heating value zone by 5pm on the gas day following the gas day to which ~~the daily flow weighted heating value~~ the daily ZHV value relates. The average of these values over a billing period is used by the Distributors in the conversion of volume values to energy. Index reads are deemed to have occurred at 6:00 am on each gas day and therefore bounds the energy consumed to the end of the previous gas day. Hence the average ~~daily flow weighted heating value~~ of the daily ZHV for each heating value zone published by AEMO on the day of the index read, represents the final average ~~daily flow weighted heating value~~ daily ZHV in the set of average ~~daily flow weighted heating values~~ daily ZHV used by the Distributor in calculating the average heating value over the billing period. ¶

2.6.1 Calculation of Energy Data

(a) → Where a *Distributor* has obtained or made a *validated meter reading* (the *reference reading*), the *Distributor* must calculate the *consumed energy* in relation to that *meter* during the period (the *reading period*) commencing on the date of the immediately preceding *validated meter reading* which is included in its *meter data database* in respect of that *meter* (the *base reading*) and expiring on the date of the *reference reading* as follows:

(i) → the *Distributor* must calculate the *flow* during that *reading period* on the basis of the *reference reading* and the *base reading*;

(ii) → where the *meter* is calibrated in imperial units the *Distributor* must convert the *flow* to metric units;

(iii) → the *Distributor* must apply the applicable *pressure correction factor* to that *flow*; and

(iv) → the *Distributor* must apply the *average heating value* for the *reading period* in (b) to the pressure corrected *flow* so as to obtain the energy deemed to be consumed (*consumed energy*) in relation to that *meter* during that *reading period*;

(v) → subject to paragraph (vi), the *average heating value* must be the *average daily ZHV* for the *heating value zone* for the *distribution supply point* applicable to that *meter* is located; and

(vi) → if the relevant *heating value zone* assigned to that *distribution supply point* changes during the *reading period*, the *Distributor* must:

(A) → using the *daily ZHV* information in (b), calculate the total of all the *daily ZHV values* for the *heating value zone* for each *gas day* for the period for which each *heating value zone* applied during the *reading period*; and

(B) → divided the total of all the *daily ZHV values* under (A) by the total number of days for the *reading period* and apply that average (*average heating value*) to obtain the energy to be consumed under (iv) above.

Note: The application of *heating value zones* came into effect on 1 May 2024. Prior to that, a *daily flow weighted heating value* for the state applied. In relation to paragraph (vi) this clause also applies when the *daily flow weighted heating value* for the state changed to *zonal heating values*.

(b) → The *average heating value* for a *reading period* is to be calculated by the *Distributor* as the average, over the *reading period*, of the average *daily flow weighted heating values* *daily ZHV values* published by AEMO on the *market information bulletin board*. Where the *average daily flow weighted heating value* *daily ZHV* information for *heating value zone* for a day is not available, the *Distributor* must use the average *daily ZHV* information *heating value zone* *daily flow weighted heating value* for the previous day.

(c) → The *consumed energy* at *meters* and *metering installations* shall **must** be calculated according to the energy calculation procedures made by AEMO pursuant to Part 19 of the Rules.

↵

Note: Made under NGR 303 (6). See Chapter 3 (Energy Calculation Procedures) of the *Wholesale Market Metering Procedure* (Victoria) for information about calculating *consumed energy* for *basic meters*. For the avoidance of doubt, these calculation procedures, also apply to *Non-DTS Distribution Systems*.

Attachment C – DWGM Technical Specifications

Please refer to the Wholesale Market IIR which can be found [here](#) . Section 4 (a) (ii) (A) and (B) and Attachment C for detail about the DWGM Technical Specifications. This document provides details about the new MIBB reports INT139a (Daily Zonal Heating Value) and INT188 (CTM to Heating Value Zone Mapping) relate to retail market processes and systems.

In relation to feedback on the DWGM Technical Specifications please use the DWGM – IIR response' template¹³ which can be [here](#)

¹³ Submissions close **COB 28 November 2023** and should be e-mailed to GWCF_Correspondence@aemo.com.au
aemo.com.au

Attachment D – Participant Build Pack 2 System Interface Definitions.

Draft versions of the Technical Protocol (extract) showing tracked changes between the current version and the proposed changes are shown below. Blue underline means addition and ~~red strikethrough~~ means delete.

*** Extract***

A.2 → CSV Data Elements¶

The table below specifies the column designators for CSV data elements to be carried inside of some of ~~aseXML~~ transactions. Note, the order of CSV column designators is fixed and is as per definition of CSV files given by this document. All CSV data elements that convey time stamps represent them as Market Time, i.e. EST; no time zone information is required.¶

CSV DESIGNATOR¶	COLUMN	TABLE TRANSACTIONS ELEMENT NAME¶	OF	DESCRIPTION¶	ATTRIBUTES/FORMAT¶	LENGTH/¶ DECIMAL PLACES¶	ALLOWED VALUES¶
Adjustment Reason Code¶		Adjustment Reason code¶		A code that the Distributor provides to the retailer which identifies the reason for the revised reading¶	String¶	2¶	"UR" = Under Read¶ "OR" = Over Read¶ "UE" = Under Estimated¶ "OE" = Over Estimated¶ "NC" = No Change¶
Average Heating Value¶		Average Heating Value¶		Is the sum of the <u>daily average heating value for each heating value zone</u> Daily Weighted Flow Heating Value for the applicable heating value zone assigned to the distribution supply point divided by the number of days for the reading/billing...¶	Numeric¶	4,2¶	¶
Base Load¶		Base Load¶		Non weather sensitive Gas usage per day (MJ)¶	Numeric¶	9,1¶	¶

Attachment E – Participant Build Pack 3 System Interface Definitions.

Draft versions of the Technical Protocol (extract) showing tracked changes between the current version and the proposed changes are shown below. Blue underline means addition and ~~red strikethrough~~ means delete.

*** Extract***

A.2 → → CSV-Data-Elements³

The table below specifies the column designators for CSV data elements that are carried inside of some of a XML transactions. Note, the order of CSV column designators is fixed and is as per definition of CSV files given by this document. All CSV data elements that convey time stamps represent them as Market Time, i.e. EST; no time zone information is required.

CSV-ELEMENT-NAME ^α	ELEMENT-NAME ^α	DESCRIPTION ^α	ATTRIBUTES/FORM AT ^α	LENGTH/ [¶] DECIMAL-PLACES ^α	ALLOWED-VALUES ^α
Average_Heating_Value ^α	Average-Heating-Value ^α	Is the sum of the Daily-Weighted-Flow-Heating-Value <u>daily average heating value for each heating value zone for the applicable heating value zone assigned to the distribution supply point</u> divided by the number of days for the reading/billing. ^α	Numeric ^α	4,2 ^α	^α
Billing_Days ^α	Billing-Days ^α	In relation to tariff "V" DUoS [¶] charges, the number of days [¶] in the bill period — calculated [¶] as the difference between [¶]	Numeric ^α	3,0 ^α	^α

Attachment F – Participant Build Pack 1. Table of Transactions changes.

Draft versions of the Technical Protocol (extract) showing tracked changes between the current version and the proposed changes are shown below. Blue underline means addition and ~~red strikethrough~~ means delete.

*** Extract***

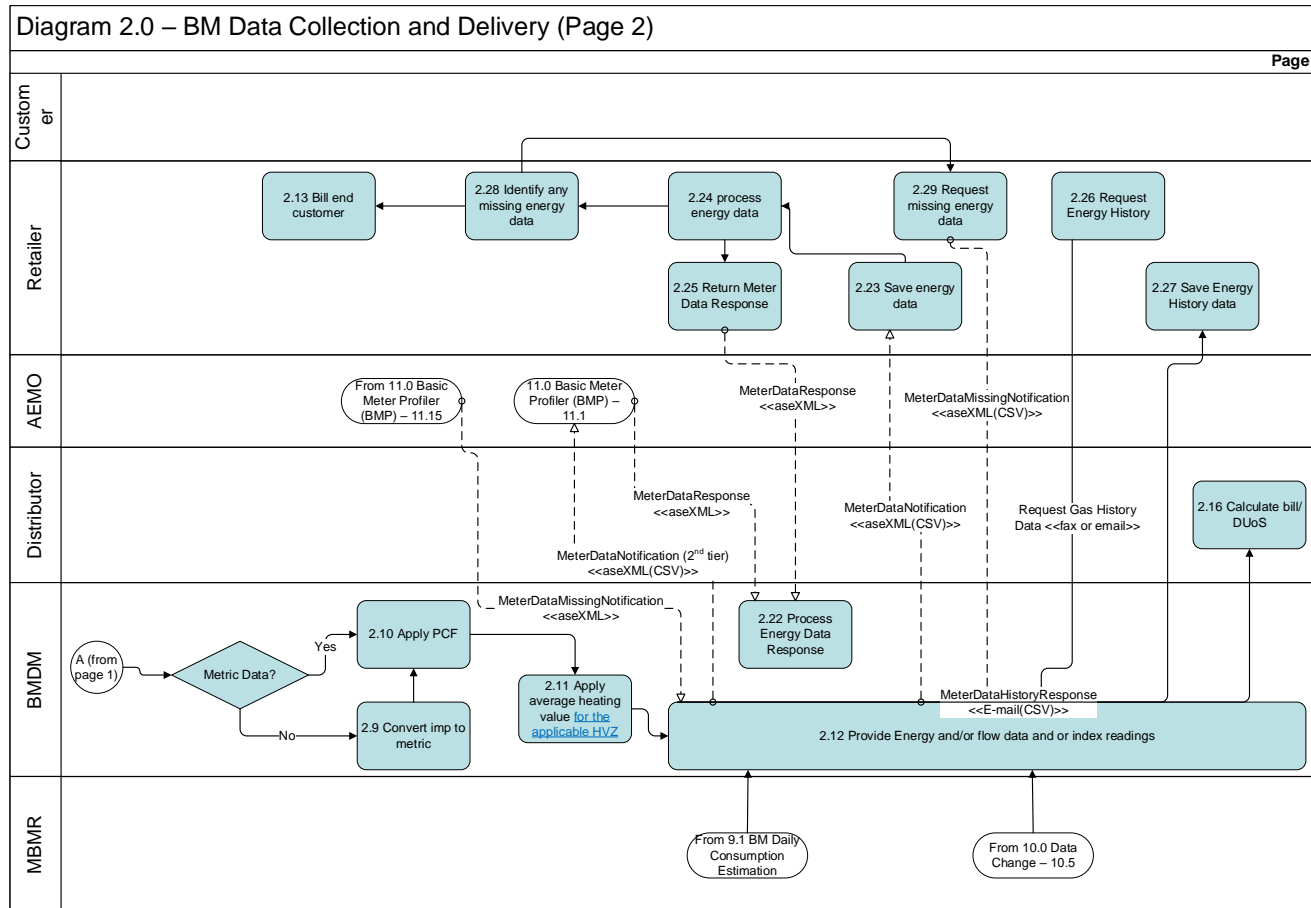
VERSION #3.9 Effective 10 October 2022																					
Ref No	X Ref	Basic, Interval or Both	GIP NON-GIP	Category	Procedure Ref	Comment in ref to procedure	Process Map ID	PBP2&3 Inter Defn ref	Trans Type	Trigger	From	To	Purpose	Type	Method	Data Elements - Received (MIR/NMI Interchangeable)	Data Elements - Sent back	Timing	Volume /Freq	Priority - H, M, L	Comments
39	57	Basic	GIP	2. Basic Meter Data Collection and Delivery	2.6.1(a) (iv) 2.6.1(b) Calculation of Energy Data		2.7.6-2.7.3		Heating Value for the day		Market Operator	Distributor	BMDM Accesses Heating Value from AEMO	M2B	MIBB-INT139 <u>MIBB-INT139a</u>	gas_date declared_heating_value <u>lv_zone</u> <u>lv_zone_desc</u> <u>heating_value</u> <u>current_date</u>		Before end of day processing	1000 <u>Over 10,000</u>	H	Existing Transaction as per MIBB
57	39	Basic	GIP	2.7 Estimation/Substitution	2.6.1(a) (iv) 2.6.1(b) Calculation of Energy Data		2.7.6-2.7.3		Heating Value for the day		Market Operator	Distributor	BMDM Accesses Heating Value from AEMO	M2B	MIBB-INT139 <u>MIBB-INT139a</u>	gas_date declared_heating_value <u>lv_zone</u> <u>lv_zone_desc</u> <u>heating_value</u> <u>current_date</u>		Before end of day processing	1000 <u>Over 10,000</u>	H	Existing Transaction as per MIBB

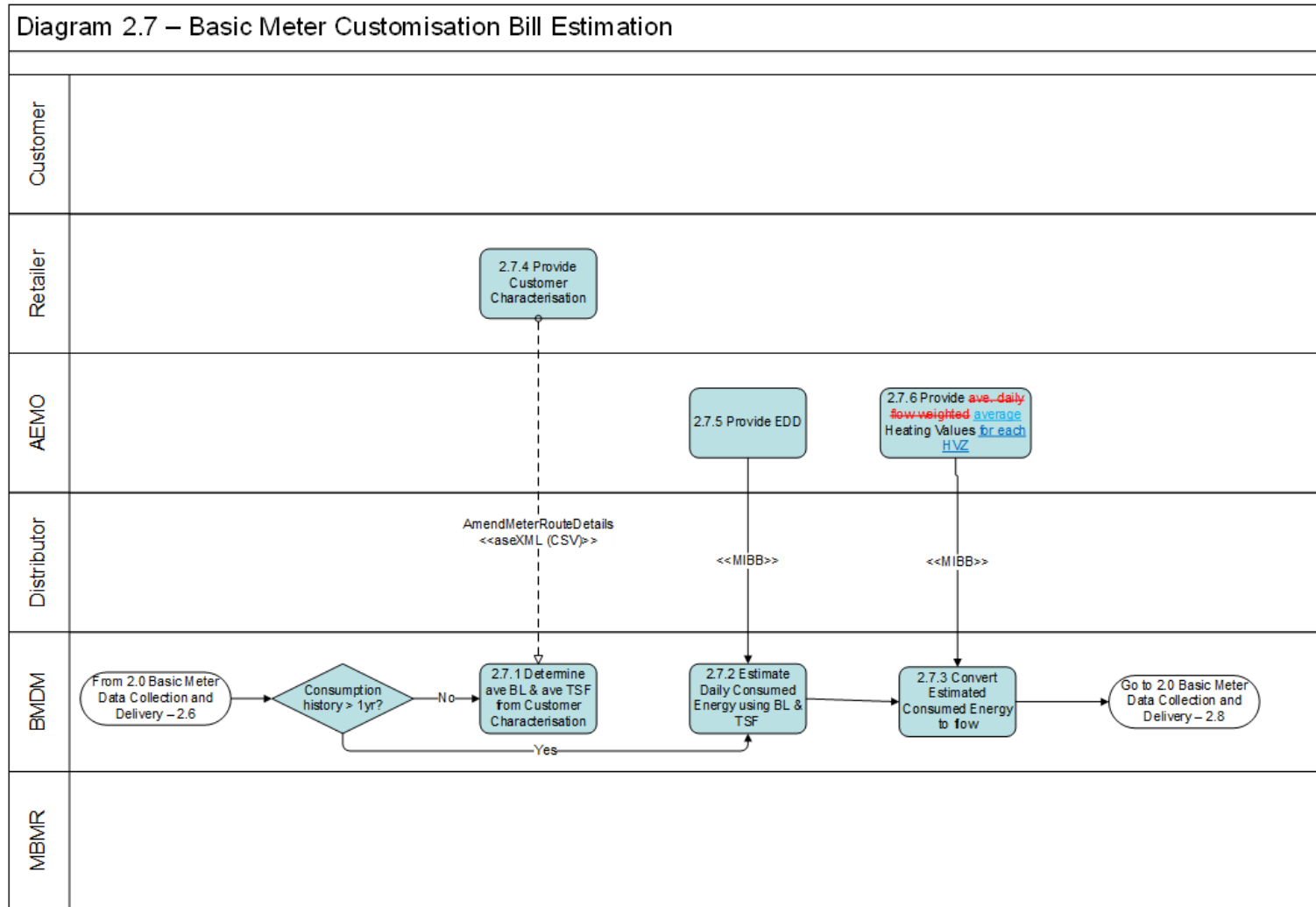
Element	Description	Attributes / Format	Length/ Decimal Places #1	Code Used (Y/N)	If Code Valid Values are: #2
declared_heating_value	The Heating Value for a given day which is obtained from the AEMO MIBB				Defined in MIBB report documentation

Attachment G – Participant Build Pack 1. Process Flow Diagram changes.

Draft versions of the Technical Protocol (extract) showing tracked changes between the current version and the proposed changes are shown below. Blue underline means addition and ~~red strikethrough~~ means delete.

*** Extract***






Attachment H – Postcode to Heating Value Zone Table Guide.

Draft versions of the Guide (extract) showing tracked changes between the current version and the proposed changes are shown below. ~~Red-strikeout~~ means delete.

Note - This guide is replaced by new MIBB report INT188 CTM to Heating Value Zone Mapping. See Attachment C for further details.



~~POSTCODE TO HEATING VALUE
ZONE TABLE (VIC) GUIDELINE~~

~~PREPARED BY: AEMO Strategy & Markets~~
~~DOCUMENT REF: RETAILMARKET-12-30304~~
~~VERSION: 6.0~~
~~EFFECTIVE DATE: Apr 2020~~
~~STATUS: FINAL~~

Australian Energy Market Operator Ltd ABN 94 072 010 327 www.aemo.com.au info@aemo.com.au
NEW SOUTH WALES | QUEENSLAND | SOUTH AUSTRALIA | VICTORIA | AUSTRALIAN CAPITAL TERRITORY | TASMANIA | WESTERN AUSTRALIA

Attachment I – Package 3A IIR Retail Procedure Response Template.

The Package 3A IIR Retail procedure 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 in sections 1–9 of this IIR.

Section 2 seeks feedback on the proposed changes listed in attachment A and B

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

Some RMP changes may overlap with Wholesale Market Procedure changes such as Wholesale Market Metering Procedures (Victoria) (Attachment A in this IIR) and the DWGM - Technical Specification (Attachment C in this IIR). Details about the Wholesale Market Procedure changes are described IIR – DWGM Procedure changes for Hydrogen and DCF. In relation to feedback on the proposed amendments to the Wholesale Market Procedure changes, please use the DWGM – IIR response' template. which can be [here](#) . Submissions are due **COB 28 November 2023** and should be emailed to GWCF_Correspondence@aemo.com.au.

Attachment J – Proposed Procedure Change (PPC) collated responses for IN007/22.

IN007/22 initiative entails modifications to the way AEMO determines heating value zones and the heating value information that AEMO will make available for energy calculation purposes.

Section 1 - General Comments on the Proposed Procedure Change

Topic	Ref	Respondent	Participant Response	AEMO Response
<p>Sections 1 to 9 of the PPC sets out details of the proposal.</p> <p>Does your organisation support AEMO's assessment of the proposal?</p> <p>If no, please specify areas in which your organisation disputes AEMO's assessment (include PPC section</p>	1	AGL	<p>AGL considers that some aspects of this proposal have been considered appropriately, however, there are no proposed or identified changes to ensure retailer MIRN information is maintained correctly seems to be a major oversight.</p> <p>AGL does note that a critical process in implementing this change will be the transitional process to update all participants MIRN Information with the correct Heating Value Zone and the process to maintain retailer information on the MIRN – HVZ relationship.</p> <p>AGL also notes that receiving earlier information on the MIRN allocation and zonal Heating Values will be important to retailer forecasting processes which directly drive retailer wholesale market processes and longer term gas purchases.</p>	<p>AEMO notes AGL's comment.</p> <p>AEMO requests AGL to raise a GMI for maintaining retailer MIRN information.</p> <p>AEMO noted during the PPC consultation that AEMO in consultation with participants will develop a transition plan that details the process steps and timing for transitioning to the new HVZs. AEMO released the transition plan on 24 Oct 2023.</p> <p>The daily zonal heating value and CTM to HVZ mapping reports are provided every day.</p>

reference number) of the proposal and include information that supports your organisation's rationale why you do not support AEMO's assessment.	2	AGL	<p>General Comment</p> <p>Maintaining MIRN – HVZ relationship in Retailer database</p> <p>There is no proposed change within this retail change pack to cover off the following:</p> <ol style="list-style-type: none"> 1. Process to update the Retailers existing MIRN lists for transitional purposes; 2. Process to update the Retailer when MIRNS churn (needs an effective date for each HVZ) 3. Process to update the retailer when the HVZ changes (needs an effective date for each HVZ) <p>One potential option is to amend the MIRN Standing Data transaction to include an effective date and for Network businesses to push the standing data to retailers when a churn occurs (rather than require the retailers to make a standing data request in each instance of churn) and for Networks to push the Standing Data transaction whenever the details in the Standing Data change.</p>	<p>AEMO notes AGL's comment and provides the following response.</p> <ol style="list-style-type: none"> 1. AEMO released the transition plan on 24 Oct 2023 that includes process for updating retailers existing MIRNs. 2. Regarding the process to update the retailer when MIRNs churn, AEMO requests AGL to raise a new GMI. 3. The proposed MIBB report for CTM to HVZ mapping includes the effective date.
	3	AGN	AGN supports AEMO's assessment.	AEMO notes AGN's support.
	4	Energy Australia	Energy Australia supports these changes, our wholesale and data teams agree that these changes support a framework to support the introduction of hydrogen.	AEMO notes Energy Australia's support.
	5	Origin Energy	Origin Supports AEMO's assessment.	AEMO notes Origin's support
	6	Red/Lumo	Red Energy and Lumo Energy question the need for the proposed amendment to the definition of Market Participant in the RMP, but	AEMO notes Red/Lumo's support.

			otherwise support the assessment of the proposal by AEMO with minor amendments offered below.	AEMO notes Red/Lumo's comment regarding definition of Market Participant and refers to its response in ref #24.
--	--	--	---	---

Section 2 - Feedback on the documentation changes in the Attachments B, D, E to G.

Attachment B in Retail Market PPC - Retail Market Procedures (Victoria).

Retail Market Procedures (Victoria) Feedback only the changes described in clause 1.1.1, 1.1.2 (b) and 2.6.1.						
Ref #	Clause #	Respondent	Issue / Comment	Proposed text Red strikeout means delete and <u>blue underline</u> means insert	AEMO Response (AEMO only)	
7	1.1.1	AGL	Definition CTM Poorly worded, eg over use of 'means'	custody transfer meter means <u>for the purpose of this Procedure has the same meaning as</u> means the same as it means in section 1.4 (Definitions and interpretation) of the Wholesale Market Metering Procedures. Note: For the avoidance of doubt the meaning of this definition also applies to areas that form part of <i>Non-DTS distribution systems</i> .	AEMO agrees with AGL and has amended the text as required.	
8	1.1.1	AGL	Definition Distributor 'that' not deleted	Distributor means: <u>(a) the service provider for the whole or any part of a declared distribution system;</u> <u>(b) the service provider for a Non-DTS distribution system in Victoria</u> that; <u>and</u> <u>(c) the Albury Gas Co Limited (ACN 000 001 249) and any successor service provider for the distribution pipelines that serve Albury and its environs (the Albury gas distribution system),</u>	AEMO agrees with AGL and has amended the text as suggested.	
9	1.1.1	AGL	Definition DTS / Non-DTS DTS is not defined within this procedure or in Part 19 of the NGR	A DTS or Declared Transmission System is a transmission system Declared by the Victorian Minister under the National Gas (Victoria) Act; Non-DTS is a Transmission System pipeline in Victoria which is not declared by the Minister under the National Gas (Victoria) Act;	AEMO notes AGL's comment. AEMO notes that the term DTS is used in the context of Non DTS and	

					that it is already defined in National Gas Law (NGL).
10	1.1.1	AGL	Definition Retailer 'that' not deleted	<p>Retailer means:</p> <p>(a) a Retailer as defined in Part 19 of the Rules;</p> <p>(b) a user of a <i>Non-DTS distribution system</i> in Victoria that; and</p> <p>(c) a user of the <i>Albury gas distribution system</i>,</p> <p>but does not include a user of the distribution pipelines that serve Mildura and its environs.</p>	AEMO agrees with AGL and has amended the text as suggested.
11	1.1.1	Origin	Heating Value Zone Definition Recommend using similar wording as contained in the Wholesale Metering Procedures (s.3.4.1 (a)) and reference Heating Value zones assigned to each settlement metering point.	heating value zone, in relation to a supply point, means the heating value zone assigned to that supply point each <i>settlement metering point</i> in accordance with clause 3.4.3 of the Wholesale Market Metering Procedure (Victoria).	AEMO notes Origin's comment and has amended the definition as follows, <i>'heating value zone</i> means for the purpose of this <i>Procedure</i> the same as it means in section 1.4 (Definitions and interpretation) of the <i>Wholesale Market Metering Procedures</i> .'
12	1.1.1	Red/Lumo	Minor amendment to remove duplicate use of the word 'means' and add punctuation.	custody transfer meter means, for the purpose of this Procedure, means the same as it means in section 1.4 (Definitions and interpretation) of the Wholesale Market Metering Procedures.	AEMO notes Red/Lumo's comment and refers to its response in Ref #7.
13	1.1.1	Red/Lumo	Minor amendment of the definition of Retailer is required to remove 'that;' and insert a comma.	<p>Retailer means:</p> <p>(a) a Retailer as defined in Part 19 of the Rules;</p> <p>(b) a user of a Non-DTS distribution system in Victoria, that ; and</p>	AEMO notes Red/Lumo's comment and refers to its response in Ref #10.

				(c) a user of the Albury gas distribution system, but does not include a user of the distribution pipelines that serve Mildura and its environs.	
14	1.1.2 (b)	AGL	Grammar – missed ‘the’, insert ‘s’ in ZHVs as plural	(b) AEMO publishes, on the market information bulletin board, a daily ZHV for each heating value zone by 5pm on the gas day following the gas day to which the daily ZHV value relates. The average of these values over a billing period is used by the Distributors in the conversion of volume values to energy. Index reads are deemed to have occurred at 6:00 am on each gas day and therefore bounds the energy consumed to the end of the previous gas day. Hence the average of the daily ZHV for each heating value zone published by AEMO on the day of the index read, represents the final average daily ZHV in the set of average daily ZHVs used by the Distributor in calculating the average heating value over the billing period.	AEMO agrees with AGL and has amended the text as suggested.
15	1.1.2 (b)	Red/Lumo	Red and Lumo note that the word ‘value’ after ZHV is superfluous, since the term ‘ZHV’ is Zonal Heating Value, meaning that this paragraph refers to ‘Zonal Heating Value value’.	(b) AEMO publishes, on the market information bulletin board, a daily ZHV for each heating value zone by 5pm on the gas day following the gas day to which the daily ZHV value relates.	AEMO agrees with Red/Lumo and has amended the text as suggested
16	2.6.1	AGL	grammar	(a)(v) subject to paragraph (vi), the average heating value must be the average daily ZHV for the heating value zone for the distribution supply point applicable to where that meter is located; and	AEMO notes AGL’s comment and refers to its response in ref #21.
17	2.6.1	AGL	Grammar, the word ‘values’ is redundant after ZHV	(a)(vi) if the relevant heating value zone assigned to that distribution supply point changes during the reading period, the Distributor must: (A) using the daily ZHV information in (b), calculate the total of all the daily zonal heating ZHV-values for the heating value zone for each gas day for the period for which each heating value zone applied during the reading period; and (B) divided the total of all the daily zonal heating ZHV values under (A) by the total number of days for the	AEMO agrees with AGL and has amended the text to delete the word ‘values’.

				<p><i>reading period</i> and apply that average (<i>average heating value</i>) to obtain the energy to be consumed under (iv) above.</p> <p>Note: The application of <i>heating value zones</i> came into effect on 1 May 2024. Prior to that, a daily flow weighted heating value for the state applied. In relation to paragraph (vi) this clause also applies when the daily flow weighted heating value for the state changed to zonal heating values.</p>	
18	2.6.1	AGN	Typo	<p>(vi) if the relevant <i>heating value zone</i> assigned to that <i>distribution supply point</i> changes during the <i>reading period</i>, the <i>Distributor</i> must: (A) using the <i>daily ZHV</i> information in (b), calculate the total of all the <i>daily ZHV</i> values for the <i>heating value zone</i> for each <i>gas day</i> for the period for which each <i>heating value zone</i> applied during the <i>reading period</i>; and</p> <p>(B) divide the total of all the <i>daily ZHV</i> values under (A) by the total number of days for the <i>reading period</i> and apply that average (<i>average heating value</i>) to obtain the energy to be consumed under (iv) above.</p>	AEMO agrees with AGN and has amended the text as suggested.
19	2.6.1	AGN	Typo	<p>Note: Made under NGR 303 (6). See Chapter 3 (Energy Calculation Procedures) of the <i>Wholesale Market Metering Procedure</i> (Victoria) for information about calculating <i>consumed energy</i> for <i>basic meters</i>. For the avoidance of doubt, these calculation procedures, also apply to <i>Non-DTS Distribution Systems</i>.</p>	AEMO agrees with AGN and has amended the text as suggested.
20	2.6.1	Origin	<p>2.6.1 Calculation of Energy Data</p> <p>For avoidance of doubt, the Retail Market Procedure can benefit with examples of a Heating Value calculation when a change in Heating Value Zone occurs during a read period. These examples could be contained in 1.1.2 Energy Calculation examples.</p>		<p>AEMO notes Origin's comment and provides the following example,</p> <ol style="list-style-type: none"> 1. Assume the basic meter read period is 60 days.

					<ol style="list-style-type: none"> 2. The Distributor changes the basic meter heating value zone assignment for one of the reasons outlined in section 3.4.3(d) of the Wholesale Market Metering Procedures on day 13. 3. The Distributor will calculate the energy content using the formulae outlined in section 3.6.3 of the Wholesale Market Metering Procedures: <ol style="list-style-type: none"> a. The first 12 days of the meter read period uses the heating value from heating value zone 1. b. The next 48 days of the meter read period uses the heating value from heating value zone 2.
--	--	--	--	--	--

21	2.6.1	Red/Lumo	<p>HVZ should be applicable to the meter, OR to the HVZ applicable to where the meter is located</p>	<p>(v) subject to paragraph (vi), the average heating value must be the average daily ZHV for the heating value zone for the distribution supply point applicable to that meter is-located; and OR (v) subject to paragraph (vi), the average heating value must be the average daily ZHV for the heating value zone for the distribution supply point applicable to <u>where</u> that meter is located; and</p>	AEMO agrees with Red/Lumo and has amended the text as per the first option.
22	2.8.2	AGL	grammar	<p>(b) AEMO must apportion the <i>consumed energy</i> in relation to each <i>meter</i> that relates to a <i>supply point</i> connected to a <i>Non-DTS distribution system</i> in accordance with <u>the published profile methodology</u> procedures agreed from time to time between AEMO, the relevant <i>Distributor</i> and other affected <i>Market Participants</i>.</p>	AEMO agrees with AGL and has amended the text as suggested.
23	Att 6 – 1.1	AGL	grammar	<p>in accordance with of the <i>Distribution Code</i>.</p>	AEMO agrees with AGL and has amended the text as suggested.
24		Red/Lumo	<p>This definition appears to be problematic, contradicting NGR cl. 91LA Retail market participation</p> <p>While there may not currently be ‘any specific assigned retail market obligations within the scope of the RMPs’ is it necessary to make this change?</p>	<p><u>Market Participant</u>.</p> <p>Market Participant for the purpose of this Procedure means the same as it means in Part 19 excluding the registerable capacity of Producer, Storage Provider and Trader.</p>	AEMO does not agree with Red/Lumo as the Procedures have been drafted with particular participant types in mind and the participant types excluded do not have a role in the market.

Attachment F in Retail Market PPC - Participant build pack 1. Table of transactions

Participant build pack 1. Table of transactions							
Ref #	Section #	Respondent	Issue / Comment	Proposed text <small>Red strikeout means delete and blue <u>underline</u> means insert</small>			AEMO Response (AEMO only)
	Elements	Red/Lumo	Red and Lumo note that declared_heating_value is defined in the Elements tab of PBP1 ToT and suggest that this should be removed.	declared_heating_value	The Heating Value for a given day which is obtained from the AEMO MIBB	Defined in MIBB report documentation	AEMO agrees with Red/Lumo and has amended the text as suggested.