

IMPACT & IMPLEMENTATION REPORT (IIR)

| Issue number | IN001-20 | | | | |
|--|---|--|-----------------------|--|--|
| Impacted jurisdiction(s) | NSW/ACT and Victoria | | | | |
| Proponent | Gareth Morrah | Company | AEMO | | |
| Affected gas market(s) | NSW and ACT, Victoria | Consultation process (ordinary or expedited) | Ordinary | | |
| Industry consultative forum(s) used | GRCF | Date industry consultative forum(s) consultation concluded | Friday, 7 August 2020 | | |
| Short description of change(s) | Remove specific weather observation station locations from Retail Market Procedures (RMP) in Victoria and NSW/ACT. | | | | |
| Procedure(s) or | Retail Market Procedures (Vic) | | | | |
| documentation impacted | Retail Market Procedures (NSW/ACT) | | | | |
| | Register of Weather Observation Stations | | | | |
| Summary of the change(s) | Amend VIC and NSW/ACT Retail Market Procedure (RMP) to remove specific weather observation station locations and adding a new clause that places an obligation on AEMO to maintain and publish on its website a register of weather observation station locations. Placing the weather observation station locations in a centralised register which can easily maintained and updated. This will negate the need to facilitate a full RMP consultation should a station location change. This change will bring VIC and NSW/ACT into line with SA. | | | | |
| IIR prepared by | AEMO | Approved by | Michelle Norris | | |
| Date IIR published | 24 August 2020 | Date consultation concludes | 18 September 2020 | | |
| Email address for responses | grcf@aemo.com.au | | | | |
| Other key contact information | | | | | |

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IMPACT & IMPLEMENTATION REPORT

CRITICAL EXAMINATION OF PROPOSAL

1. DESCRIPTION OF ISSUE

Having completed a consultation process with participants in mid-2019, AEMO approved changes to the Retail Market Procedures (RMP) South Australia (SA) that removed the "hard coding" of weather station location in the RMPs, and instead, committed to maintaining and publishing a separate register of weather station locations.

The changes described in this Impact and Implementation Report (IIR) effectively leverages the changes made to the RMP (SA) and (largely) apply the same changes to the Victoria and NSW/ACT RMPs. The amendments involve removing specific weather observation station locations and adding a new clause that places an obligation on AEMO to maintain and publish on its website a register of weather observation station locations.

The main reason that AEMO has proposed these changes is to improve the efficiency of making changes when weather observation station locations are changed by negating the need to facilitate a full RMP consultation.

The proposed changes in this IIR will also bring the Vic and NSW/ACT RMP's into line with South Australia RMPs Reference documentation.

2. OVERVIEW OF CHANGES

Proposed amendments to the RMP (Vic), RMP (NSW/ACT), and Register of Weather-Related Information are as follows:

Victoria:

- Add new definition in clause 1.1.1 called "Register of Weather-Related Information".
- For Attachment 6 of the RMPs, add new clause 2.5.1A that requires AEMO to maintain and publish a register. Also amend clauses.3.2.2 (average temperature), 3.2.3 (average wind) and 3.2.4 (sunshine hours) to change the reference from an individual weather station(s) to instead refer to the Register of Weather-Related Information.

NSW/ACT:

- Add new definition in clause 1.2.1 called "Register of Weather-Related Information".
- For Attachment 2 of the RMPs, add new clause A2.3.(a) (i) and (ii) that requires AEMO to maintain
 and publish a register. Also amend clauses A2.3(b)(ii) (average temperature),(iii) (average wind),(iv)
 (sunshine hours); A2.3(c)(ii(average temperature),(iii) (average wind) ,(iv) (sunshine hours); and
 A2.3(d) to change the reference from an individual weather(s) station to instead refer to the
 Register of Weather-Related Information.

3. OVERALL COST AND BENEFITS

Changes to weather stations by the Bureau of Meteorology (BoM) are rare, however when they do make changes these often happen on short notice. Continuing with the status quo requires AEMO to undertake a RMP consultation whenever the BoM makes changes to a weather observation station. Not making the proposed change to the RMP will mean that AEMO would potentially be non-compliant with current requirements of the RMP each time a weather observation station is changed.

If this initiative is not implemented, procedures may not refer to a functioning weather station for a period.



IMPACT & IMPLEMENTATION REPORT (IIR) ISSUE No: [TEXT]

The benefit of maintaining a register as opposed to "hard coding" weather observation station locations in the RMPs is that it will provide AEMO with the flexibility to respond to any future changes made by the Bureau of Meteorology (BoM) in a timely manner without having to run a RMP consultation which can be unnecessarily costly and time consuming.

4. MAGNITUDE OF THE CHANGES

AEMO considers the order of magnitude of this change is 'non-material'.

5. AEMO'S PRELIMINARY ASSESSMENT OF THE PROPOSAL'S COMPLIANCE WITH SECTION 135EB:

AEMO's view is that the proposed change is consistent with the National Gas Law (NGL) and the National Gas Rules (NGR). The proposed changes also promote consistency across four jurisdictions (NSW/ACT, Victoria and SA).

National Gas Objective: "to promote efficient investment in, and efficient operation and use of, natural gas services for the long-term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas."

It is AEMO's view that the benefits from proposed changes described in the IIR promotes efficient operation of natural gas services for the long-term interests of consumers with respect to safety, reliability and security of supply of natural gas.

AEMO's view is that the proposed change is not in conflict with existing Access Arrangements.

6. CONSULTATION FORUM OUTCOMES

AEMO received a total of three submissions to the Proposed Procedure Change (PPC), those being from Origin Energy, AGL and Multinet Gas Networks. All submissions supported the proposed changes in principle, and there were no dissenting views. AGL also provided suggested drafting edits, and these are discussed in Appendix C.





IMPACT & IMPLEMENTATION REPORT – RECOMMENDATION(S)

7. SHOULD THE PROPOSED PROCEDURES BE MADE)?

AEMO recommends making the changes proposed in Attachment A.

8. PROPOSED TIMELINES

Subject to all necessary approvals, AEMO is targeting to implement this initiative on 30 September 2020. In order to achieve this timeline, AEMO proposes the following key milestones:

- Issue IIR for consultation on 24 August 2020.
- Submissions on IIR close 18 September 2020.
- AEMO decision on 12 October 2020.
- Effective date 6 November 2020.



IMPACT & IMPLEMENTATION REPORT (IIR) ISSUE No: [TEXT]



ATTACHMENT A – DOCUMENTATION CHANGES (SEE SECTION 3)

Blue represents additions Red and strikeout represents deletions – Marked up changes.

• Retail Market Procedures (Victoria)

Definitions section:

Register of Weather Related Information is an industry reference document that specifies which weather station data must be used for the purposes of these Procedures.

Attachment 3

- (a) 2.5.1A AEMO must:
 - (b) (a) maintain and publish a *Register of Weather Related Information* used to measure weather data; and
 - (c) (b) at least 10 *business days* prior to making any amendment to the list of weather observation stations described in the *Register of Weather Related Information*, inform the Gas Retail Consultative Forum (GRCF) of the change.

3.2.2. The degree day is calculated as follows:

DD = 18 – T if T < 18 0 if T ≥ 18

Where:

- DD is degree day;
- T is the average of 8 three-hourly <u>Melbourne</u> temperature readings (in degrees Celsius) from midnight (<u>day -1</u>) to 9.00 pm (<u>day +0</u>) inclusive as measured—<u>at the Weather Bureau</u> <u>Melbourne-Station:</u>, at the weather observation station(s) specified for this purpose in the <u>Register of Weather Related Information</u>;

Note: The gas day is defined as 6:00am day-0 to 6:00am day+0 so the effective degree day formula implies a 6 hour lag in demand to changes in ambient temperature.

and

• 18 degrees Celsius represents the threshold temperature for residential gas heating.

The colder the average temperature the higher the degree day and, accordingly, *effective degree day*.

3.2.3. The average wind is the average of the 8 three-hourly <u>Melbourne</u> wind (measured in knots) from midnight (day-1) to 9.00pm inclusive (day+0), at the weather observation station(s) specified for this purpose in the Register of Weather Related Information. The average wind is represented by the following formula: as measured at the Bureau of Meteorology Moorabbin and the Laverton weather stations. Average wind is represented by the following formula:







Average wind = 0.604 x average (Moorabbin, Laverton) wind across specified stations

3.2.4 Sunshine hours is the number of hours of sunshine above a standard intensity as measured at the Bureau of Meteorology Melbourne Airport weather station for the same duration of time between midnight (day-1) to 9.00 pm inclusive (day+0), as measured at the weather observation station(s) specified for this purpose in the *Register of Weather Related Information*.

Retail Market Procedures (NSW/ACT)

Definitions

Register of Weather
Related InformationAn industry reference document that specifies which weather station
data must be used for the purposes of these Procedures.

A2.3 Calculation of EDDs

(a) Purpose of Effective Degree Day

Effective degree days are required for the calculation of the sensitivity factor. The effective degree day is used to measure coldness which is directly related to gas demand for area heating. The effective degree day is a composite measure of weather coldness incorporating the effect of temperature, wind, sunshine and day of the year.

(a1) AEMO must maintain and publish a *Register of Weather Related Information* used to measure weather data.

(a2) At least 10 *business days* prior to making any amendment to the list of weather observation stations described in the *Register of Weather Related Information*, AEMO must inform the Gas Retail Consultative Forum (GRCF) of the change.

(b) Calculation for NSW

- (i) The effective degree day (EDD) for NSW is calculated as follows:
 - EDD = DD (temperature effect)
 - + 0.0092 x DD x average wind (wind chill factor)
 - 0.0628 x sunshine hours (warming effect of sunshine)
 - + 5.0805 x Cos ((2π(day-198)) / 365) (seasonal factor)

Where:

- EDD is the effective degree day;
- DD is the degree day and is described in paragraph (ii);
- average wind is described in paragraph (iii);
- sunshine hours is described in paragraph (iv);
- Cos is cosine and is described in paragraph (v); and.
- day is the day number of a calendar year where 1st January is 1.





EDD will be 0 if the calculated value is negative.

The degree day (DD) is calculated as follows:

DD = 21.0578 - T if T < 21.0578

0 if T ≥ 21.0578

Where:

(ii)

- DD is degree day;
- T is the average of 8 three-hourly <u>Sydney</u>-temperature readings (in degrees Celsius) from 3.00am (<u>day-1</u>) to midnight (<u>day+0</u>) inclusive, at the weather observation station(s) specified for this purpose in the <u>Register of Weather Related</u> <u>Information</u>as measured at the <u>Sydney Airport Weather Station</u> (Location ID 66037);

Note: The gas day is defined as 6:00am day-1 to 6:00am AEST day+0 so the effective degree day formula implies a 3 hour lag in demand to changes in ambient temperature.

 21.0578 degrees Celsius represents the threshold temperature for residential gas heating.

The colder the average temperature the higher the degree day and, accordingly, effective degree day.

(iii) The average wind is the average of the 8 three-hourly Sydney NSW-wind (measured in knots) from 3:00 am (day-1) to midnight inclusive (day+0), at the weather observation station(s) specified for this purpose in the *Register of Weather Related Information*. -The average wind is represented by the following formula: as measured at the Sydney Airport weather station (Location ID 66037). Average wind is represented by the following formula:

Average wind = 1.000 x average (Sydney Airport) wind.

- (iv) Sunshine hours is the number of hours of sunshine above a standard intensity as measured at the Sydney Airport weather station (Location ID 66037) for the same duration of time between 3:00am (day-1) to midnight inclusive (day+0), at the weather observation station(s) specified for this purpose in the Register of Weather Related Information.
- (v) The cosine term models seasonality in *Customers'* response to different weather. Residential *Customers* more readily turn on the heaters or leave heaters on in winter than in other seasons (early spring, late autumn) for the same change in weather conditions. This change in *Customers'* behaviour is captured in the cosine term in the effective degree day formula, which implies that for the same weather conditions heating demand is higher in winter than in the shoulder seasons or in summer.

(c) Calculation for ACT

- (i) The effective degree day (EDD) for ACT is calculated as follows:
 - EDD = DD (temperature effect)
 - + 0.0163 x DD x average wind (wind chill factor)







- 0.1326 x sunshine hours (warming effect of sunshine)

+ 3.1277 x Cos ((2π(day-195)) / 365) (seasonal factor)

Where:

- EDD is the effective degree day;
- DD is the degree day and is described in paragraph (ii);
- average wind is described in paragraph (iii);
- sunshine hours is described in paragraph (iv); and
- day is the day number of a calendar year where 1st January is 1
- Cos is cosine and is described in paragraph (v).
- EDD will be 0 if the calculated value is negative.
- (ii) The degree day (DD) is calculated as follows:

DD = 14.6057 - T if T < 14.6057

0 if T ≥ 14.6057

Where:

- DD is degree day;
- T is the average of 8 three-hourly Canberra temperature readings (in degrees Celsius) from 3.00am (day-1) to midnight (day+0) inclusive, at the weather observation station(s) specified for this purpose in the Register of Weather Related Information—as measured at Canberra Airport (Location ID 70357);

Note: The *gas day* is defined as 6:00am day-0 to 6:00am AEST day+0 so the effective degree day formula implies a 3 hour lag in demand to changes in ambient temperature.

• 14.6057 degrees Celsius represents the threshold temperature for residential gas heating.

The colder the average temperature the higher the degree day and, accordingly, effective degree day.

(iii) The average wind is the average of the 8 three-hourly Canberra ACT wind (measured in knots) from 3:00am (day-1) to midnight inclusive (day+0), at the weather observation station(s) specified for this purpose in the *Register of Weather Related Information*.-The average wind is represented by the following formula: as measured at *Canberra Airport (Location ID*- Average wind is represented by the following formula:

Average wind = 1.000 x average (Canberra Airport) wind_

(iv) Sunshine hours is the number of hours of sunshine above a standard intensity-as measured at *Canberra Airport (Location ID 70351)* for the same duration of time between 3:00am (day-1) to midnight (day+0) inclusive), at the weather observation station(s) specified for this purpose in the *Register of Weather Related Information*.

The cosine term models seasonality in *Customers'* response to different weather. Residential *Customers* more readily turn on the heaters or leave heaters on in winter than in other seasons (early spring, late autumn) for the same change in weather conditions. This change



IMPACT & IMPLEMENTATION REPORT (IIR) ISSUE No: [TEXT]



in *Customers'* behaviour is captured in the cosine term in the effective degree day formula, which implies that for the same weather conditions heating demand is higher in winter than in the shoulder seasons or in summer.

(d) Sunshine hours for ACT

Where there is no There is not a physical sensor located in Canberra to obtain sunshine hour values, therefore these are derived from meter and synoptic data based on cloud cover at the specified weather station(s), at Canberra Airport (Location ID 70351).

1. PURPOSE AND SCOPE

The National Gas Rules (NGR) allow for AEMO to make Retail Market Procedures (RMP_S). RMPs are statutory instruments the approved regulatory standards that regulate retail gas markets. place fundamental obligations on AEMO, Distributors and Retailers. The RMPs describe various obligations of AEMO, distributors, retailers and other parties that facilitate interaction between parties in relation to the supply of gas to end users in those markets the market.

In relation to meter data, the RMPs contain obligations that apply if meter data is not available or unable to be obtained. These obligations often set out requirements to produce an estimated read. Weather data is often used in the calculation of an estimated read.

This document contains weather related information applicable for each jurisdiction where they are not prescribed in the RMP. Definitions and interpretation

2. RELATED DOCUMENTS

| Reference | Title | Location |
|---------------|---|---------------------------|
| Ref #1 | Retail Market Procedures (RMP) South Australia | Published on AEMO website |
| <u>Ref #2</u> | Retail Market Procedures (RMP) Victoria | Published on AEMO website |
| <u>Ref #3</u> | Retail Market Procedures (RMP) (New South Wales and ACT) | Published on AEMO website |

4. SOUTH AUSTRALIAN WEATHER RELATED INFORMATION.

4.1. Weather Observation Stations

The following is a list of the weather observation stations applicable to Appendix 11 (Heating Degree Day for South Australia) of the Retail Market Procedures (RMP) (SA) (Ref#1).

Table 1 Weather Observation Stations

| Heating Degree Day (HDD) zone | Service Provider | Observation station |
|-------------------------------|--|---|
| Northern | Australian Government Bureau of Meteorology | Ceduna (Location ID 18012) |
| Adelaide Region | Australian Government Bureau of Meteorology | Adelaide (West Terrace / ngayirdapira) (Location ID 23000) |







| Heating Degree Day (HDD) zone | Service Provider | Observation station |
|-------------------------------|--|--|
| Riverland | Australian Government Bureau of Meteorology | Mildura (Location ID 76031) |
| Mount Gambier | Australian Government Bureau of Meteorology | Mount Gambier (Location ID 23021) |
| Adelaide Metropolitan | Australian Government Bureau of Meteorology | Adelaide (West Terrace / ngayirdapira) <u>(Location ID 23000)</u> |

VICTORIA WEATHER RELATED INFORMATION <u>5.</u>

The following is a list of the weather observation stations applicable to Attachment 6 (Net System Profile Methodology) of the Retail Market Procedures (Victoria) (Ref#1).

| Reference | Service Provider | Observation station |
|--------------------------------|--|--|
| <u>T (Average Temperature)</u> | <u>Australian Government</u> <u>Bureau of Meteorology</u> | Melbourne (Location ID 86338) |
| Average Wind | Australian Government Bureau of Meteorology | Moorabbin (Location ID 86077) And Laverton (Location ID 87031) weather stations |
| Sunshine Hours | <u>Australian Government</u> <u>Bureau of Meteorology</u> | Melbourne Airport (Location ID 86282) |

NSW AND ACT WEATHER RELATED INFORMATION <u>6.</u>

The following is a list of the weather observation stations applicable to Attachment 2 (Approved Estimation Methodology) of the Retail Market Procedures (NSW and ACT) (Ref#3).

| Table 2 Weather Observation Stations | | | | | |
|--------------------------------------|--|--|--|--|--|
| Location | Reference | Service Provider | Observation station | | |
| NSW | <u>T (Average</u> <u>Temperature)</u> | Australian Government Bureau of Meteorology | Sydney Airport Weather Station (Location ID 66037) | | |
| NSW | Average Wind | Australian Government Bureau of Meteorology | Sydney Airport Weather Station (Location ID 66037) | | |
| <u>NSW</u> | Sunshine Hours | Australian Government Bureau of Meteorology | Sydney Airport Weather Station (Location ID 66037) | | |
| ACT | <u>T (Average</u> <u>Temperature)</u> | Australian Government Bureau of Meteorology | <u>Canberra Airport</u> (Location ID 70351) | | |



IMPACT & IMPLEMENTATION REPORT (IIR) ISSUE NO: [TEXT]



| Location | Reference | Service Provider | Observation station |
|------------|----------------|--|--|
| ACT | Average Wind | Australian Government Bureau of Meteorology | <u>Canberra Airport</u> (Location ID 70351) |
| <u>ACT</u> | Sunshine Hours | Australian Government Bureau of Meteorology | <u>Canberra Airport</u> (Location ID 70351) |



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IMPACT & IMPLEMENTATION REPORT (IIR) ISSUE No: [TEXT]



ATTACHMENT B – IIR RESPONSE TEMPLATE

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

• Section 1 seeks feedback on AEMO's examination of the proposed changes.

 \bullet Section 2 seeks feedback on the marked-up changes to the Technical Protocol described in Attachments A.

Anyone wishing to make a submission to this IIR consultation are to use this response template.

Submissions close 18 September 2020 and should be emailed to grcf@aemo.com.au





ATTACHMENT C – PROPOSED PROCEDURE CHANGE FEEDBACK

Section 1 - General Comments on the Proposed Procedure Change

| Торіс | Ref # | Company | Response | AEMO Response |
|--|-------|------------------|---|---|
| Sections 1 to 9 of the PPC sets out details of the | 1 | AGL | AGL believes that the assessment for this change has been properly assessed | AEMO notes AGL's support. |
| Does your organisation | 2 | Origin Energy | Origin have no objections to the proposed changes | AEMO notes Origin Energy's support for the proposed change. |
| supports AEMO's assessment of the proposal? | 3 | Multinet | Yes Multinet Gas Networks support this proposal | AEMO notes Multinet Gas Networks support for the proposed change. |
| If no, please specify areas in which your organisation | | | | |
| (include PPC section reference number) of the | | | | |
| proposal and include information that supports | | | | |
| why you do not support AEMO's assessment. | | | | |





Section 2 - Feedback on the documentation changes in the Attachments of the PPC.

| Retail Market Procedures (Victoria) | | | | | |
|-------------------------------------|---------|---------------|--|---|--|
| Ref # | Company | RMP Clause # | Issue / Comment | Proposed text Red strikeout means delete and <u>blue underline</u> means insert | AEMO Response (AEMO only) |
| 4 | AGL | RMP CI 3.2.2 | The defined times (midnight and 9.000 pm) are described differently in clauses 3.2.2 and 3.2.3. Cl 3.2.2. describes the times as from midnight to 9.00 pm inclusive as measured Cl 3.2.3 describes the times as from midnight (day-1) to 9.00pm inclusive (day+0) AGL suggests that for consistency that Cl 3.2.2 be updated to align it. | AGL suggests the following edit T is the average of 8 three-hourly Melbourne temperature readings (in degrees Celsius) f from midnight (day- 1) to 9.00pm inclusive (day+0) inclusive as measured | AEMO agrees with the suggested changes and has updated the Victoria RMP accordingly. |
| 5 | AGL | RMP Vic 3.2.3 | Adjusted Clauses have removed the reference to Melbourne and instead referred to the specified weather station. Cl 3.2.3 still references Melbourne. It is suggested that Melbourne be deleted in line with previous clauses | AGL suggests the following edit 3.2.3 The average wind is the average of the 8 three-hourly Melbourne wind (measured in knots) from midnight (day-1) to 9.00pm inclusive (day+0), at the weather observation station(s) specified for this purpose in the <i>Register of</i> <i>Weather Related Information.</i> The average wind is represented by the following formula:as measured at the Bureau of Meteorology Moorabbin and the Laverton | AEMO agrees with the suggested changes and has updated the Victoria RMP accordingly. |



Retail Market Procedures (NSW/ACT) AGL RMP NSW Comment about consistent time reference Change to AEMO agrees with the suggested 6 changes and has updated the NSW RMP A2.3 (b) ii from 3.00am to midnight from 3.00am (day-1) to midnight accordingly inclusive (day+0) inclusive 7 RMP NSW Comment about consistent time reference AEMO agrees with the suggested AGL Change to changes and has updated the NSW RMP A2.3 (c) ii from 3.00am to midnight from 3.00am (day-1) to midnight accordingly inclusive (day+0) inclusive 8 AGL RMP NSW Comment about consistent time reference AEMO agrees with the suggested Change to changes and has updated the NSW RMP A2.3 (c) iv from 3.00am (day-1) to from 3.00am (day-1) to midnight accordingly midnight inclusive (day+0) inclusive Register of Weather_ Related Information 9 AGL 5 Weather Related AGL notes that the NSW Observation Station AEMO agrees with the suggested Information information specifies a weather station Location changes and has added the Location ID ID, but the Vic / SA stations do not specify a to the table for all jurisdictions. location ID. AEMO notes that the intention of this For accuracy of information, AGL suggests that procedure change is to bring the the weather station location ID be a separate Victorian, NSW and ACT jurisdictions column and completed for all Stations in all into alignment with the SA RMP and as jurisdictions, as this ensures that the weather such changes relating to the SA station is correctly identified by all parties now jurisdiction could be considered out of and in any future review. scope. AEMO considers that, for the purpose of harmonising the procedures across jurisdictions where possible, the inclusion of the location ID for the SA weather station in the Weather--Related Information document as recommended

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IMPACT & IMPLEMENTATION REPORT (IIR)

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ISSUE No: [TEXT]





IMPACT & IMPLEMENTATION REPORT (IIR) ISSUE NO: [TEXT]



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