7 October 2020.

Notice to all Registered Participants under the National Gas Rules (NGR)

This Notice is to advise Participants on AEMO's decision to approve amendments to the:

- New South Wales and Australian Capital Territory (NSW/ACT) Retail Market Procedures.
- Victoria Retail Market Procedures

This Notice advises Gas Market Registered Participants that consultation under the Ordinary Procedure Change Consultative Process prescribed under Rule 135EE of the NGR concluded on 18 September 2020 for:

- IN001/20 (Gas Weather Station Information).

As required under Rule 135EE of the NGR, Gas Market Registered Participants and other interested parties were invited to submit comments to AEMO on the Impact and Implementation Report (IIR) for this proposal.

Having considered each proposal, AEMO has approved the proposed amendments attached (attachment A) to this notice and has set the effective date for the changes to be 30 October 2020.

Updated versions of the RMPs pertaining to the changes described in Attachment A will be published on the AEMO website prior to the effective date.

Should you require any further information please contact Gareth Morrah on (07) 3347 3064.

ATTACHMENT A
Proposed changes: Retail Market Procedures

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:

$$DD = \begin{cases} 18 - T & \text{if } T < 18 \\ 0 & \text{if } T \geq 18 \end{cases}$$

Where:

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

  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 ~~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 *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 Information	An 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.

(ii) The degree day (DD) is calculated as follows:

DD = 21.0578 – T if T < 21.0578

0 if T ≥ 21.0578

Where:

- DD is degree day;
- T is the average of 8 three-hourly ~~Sydney~~ 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 the *Sydney Airport Weather Station* (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 70351)*~~;

  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

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 (RMPs). 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
Ref #2	Retail Market Procedures (RMP) Victoria	Published on AEMO website
Ref #3	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) (Location ID 23000)

5. VICTORIA WEATHER RELATED INFORMATION

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
T (Average Temperature)	Australian Government Bureau of Meteorology	Melbourne (Location ID 86338)
Average Wind	Australian Government Bureau of Meteorology	Moorabbin (Location ID 86077) And Laverton (Location ID 87031) weather stations
Sunshine Hours	Australian Government Bureau of Meteorology	Melbourne Airport (Location ID 86282)

6. NSW AND ACT WEATHER RELATED INFORMATION

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	T (Average Temperature)	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)
NSW	Sunshine Hours	Australian Government Bureau of Meteorology	Sydney Airport Weather Station (Location ID 66037)
ACT	T (Average Temperature)	Australian Government Bureau of Meteorology	Canberra Airport (Location ID 70351)

Location	Reference	Service Provider	Observation station
ACT	Average Wind	Australian Government Bureau of Meteorology	Canberra Airport (Location ID 70351)
ACT	Sunshine Hours	Australian Government Bureau of Meteorology	Canberra Airport (Location ID 70351)