

# IMPACT IMPLEMENTATION REPORT (IIR)

## Summary Section

<b>Issue Number</b>	IN004/18		
<b>Impacted Jurisdiction(s)</b>	South Australia (SA)		
<b>Proponent</b>	Arjun Pathy	<b>Company</b>	AEMO
<b>Affected Gas Market(s)</b>	Retail	<b>Consultation process (Ordinary or Expedited)</b>	Ordinary
<b>Industry Consultative forum(s) used</b>	GRCF	<b>Date Industry Consultative forum(s) consultation concluded</b>	Thursday, 21 March 2019
<b>Short Description of change(s)</b>	Change of Adelaide weather station and change from actual to forecast sunshine hours		
<b>Procedure(s) or Documentation impacted</b>	Retail Market Procedures (SA) – V13 Register of Weather Related Information		
<b>Summary of the change(s)</b>	Modify any reference to actual sunshine hours in the Retail Market Procedures (SA) to refer instead to forecast sunshine hours. Modify the weather station for Adelaide in the Register of Weather Related Information to refer to West Terrace rather than Kent Town.		
<b>I&amp;IR Prepared By</b>	Arjun Pathy	<b>Approved By</b>	Michelle Norris
<b>Date I&amp;IR published</b>	1 April 2019	<b>Date Consultation under 135EE or 135EF concludes</b>	2 May 2019
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## IMPACT & IMPLEMENTATION REPORT

### CRITICAL EXAMINATION OF PROPOSAL

#### 1. DESCRIPTION OF CHANGE AND REASONS FOR CHANGE

##### Context regarding change of Adelaide weather station

In 2017, AEMO received advice that the Bureau of Meteorology (BoM) would be changing its weather station for the Adelaide region from Kent Town to West Terrace. From 14 June 2017 the West Terrace weather observation station became Adelaide's official observation station. The two stations have been operating in tandem, and the Kent Town station is earmarked to close around the middle of 2019. In preparation for this change, AEMO proposed the creation of a new Register of Weather Related Information, which (instead of Clause 177 of the RMP SA) would document the weather station data in use for calculation of the heating degree day (HDD). This proposal was adopted by the GRCF in IN007-17.

##### Current weather station use

The Register of Weather Related Information currently lists "Kent Town / ngayirdapira" as its weather station for the Adelaide Region and Adelaide Metropolitan HDD zones. This needs to be changed to list "Adelaide (West Terrace / ngayirdapira)" as its weather station for the Adelaide Region and Adelaide Metropolitan HDD zones.

##### Forecast and actual sunshine hours

During conversations regarding the change in weather station from Kent Town to West Terrace, BoM gave advice that it no longer publishes actual sunshine hours (only forecast sunshine hours). Whenever actual sunshine hours have not been available, the SA Gas Retail Market System has used forecast sunshine hours instead to calculate the HDD. As per the RMP SA, AEMO is to use "hours of sun", taken to mean actual sunshine hours, in certain calculations for the HDD. AEMO sent advice to SA market participants on this matter on 17 July 2017 and no participant raised concerns that forecast data had been used instead of actual data.

In late 2018, AEMO performed an analysis to determine the materiality of using forecast instead of actual sunshine hours. This analysis determined that the estimated maximum daily error at the time that revised statements are issued from using forecast rather than actual sunshine hours would be  $\pm 34\text{GJ}$  for the Adelaide STTM. This is because only approximately 2 per cent of winter load comes from basic meters for which there are no actual readings at the time of revision, and because HDD only impacts estimates of heating load (not of base load) (refer to Attachment C for this presentation).

Given the relative immateriality of using forecast compared with actual sunshine hours for estimates at the time of issuing revised settlements along with the absence of data for actual sunshine hours, AEMO proposes the RMP SA be amended such that HDDs be calculated using forecast rather than actual sunshine hours.

Anyone wishing to make a submission for this second stage consultation are to use the response template provided in Attachment E. Submissions close 2 May 2019 and should be emailed to [grcf@aemo.com.au](mailto:grcf@aemo.com.au).

#### 2. REFERENCE DOCUMENTATION

Retail Market Procedures (SA) – V13

Register of Weather Related Information



### 3. HIGH LEVEL DETAILS OF CHANGES TO THE EXISTING PROCEDURES

AEMO proposes to amend the RMP SA to:

- Modify clause 177(3)(c) to refer only to “hours of sun forecast” as opposed to referring to both “hours of sun” and “[hours of sun] forecast for a gas day”.
- Replace references to “hours of sun” in clauses 177(5)(b), 177(5)(c), 177(5)(d), and 177(5)(f) with references to “hours of sun forecast”.

AEMO proposes to amend the Register of Weather Related Information to:

- Change the observation station for the Adelaide Region and Adelaide Metropolitan Heating Degree Day (HDD) zones from “Kent Town / ngayirdapira” to “Adelaide (West Terrace / ngayirdapira)”.

See Attachments A and B for further details.

### 4. ORDER OF MAGNITUDE OF THE CHANGE PROPOSED

This change will involve minor wording changes to the Retail Market Procedures (SA) and to the Register of Weather Related Information as well as a minor configuration change to the SA Gas Retail Market System. AEMO therefore considers this change to be *non-material*.



## ASSESSMENT OF LIKELY EFFECT OF PROPOSAL

### 5. OVERALL INDUSTRY COST / BENEFIT (TANGIBLE / INTANGIBLE / RISK) ANALYSIS AND COST ESTIMATES

Amending the weather station to West Terrace will provide the tangible benefit of AEMO's continuing to have the required data to calculate heating degree days. Amending the RMP SA to require use of forecast rather than actual sunshine hours will have the intangible benefit of making AEMO's current practices compliant.

Section 9 of this IIR describes the consultation steps undertaken by AEMO prior to issuing this IIR. During the Proposed Procedure Change (PPC) consultation period, no participant raised any concerns in relation to industry cost impacts or to the benefits identified. AEMO has therefore concluded that there are no significant costs to implement the proposed changes and that the above benefits should be realised over time.

### 6. THE LIKELY IMPLEMENTATION EFFECT OF THE CHANGE ON STAKEHOLDERS

These changes will ensure AEMO is compliant with the RMP SA.

These changes will also ensure that AEMO can continue to calculate HDDs by using the appropriate weather station data.

There will be no process impact for AEMO (the SA Gas Retail Market System already uses forecast sunshine hours in HDD calculation) or participants.

### 7. TESTING REQUIREMENTS

There will be no testing requirements for AEMO or participants.

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

Consistency with the NGL and NGR

AEMO's view is that the proposed RMP changes are consistent with the NGL and cover matters that the RMP may address under Section 135EA(1) of the NGR.

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 proposed changes described in this IIR will assist the efficient operation of the retail gas market and are in the long-term interests of consumers, as they promote retail competition.

Applicable Access Arrangements

AEMO's view is that the proposed changes in this IIR are not in conflict with existing Access Arrangements. The Distributor did not raise concerns with the proposed amendments in relation to their Access Arrangement.



## **9. CONSULTATION FORUM OUTCOMES**

On 28 February 2019, AEMO published a PPC that recommended the changes described in Attachments A and B. Registered participants and interested stakeholders were invited to make submissions by 21 March 2019.

AEMO received one submission from AGL, which raised no objections to AEMO's proposed changes. AGL also suggested that additional changes be made to the RMP SA, and these suggestions are addressed in Attachment D.



## RECOMMENDATION

### 10. SHOULD THE PROPOSED PROCEDURES BE MADE, (WITH OR WITHOUT AMENDMENTS)?

AEMO recommends that the changes proposed in Attachments A and B be made in accordance with the consultative forum outcome.

### 11. PROPOSED EFFECTIVE DATE FOR THE PROPOSED CHANGE TO TAKE EFFECT.

The BoM has advised that they will stop providing weather data for Kent Town by mid-2019. As such, subject to all necessary approvals, AEMO proposes to have implemented the proposed changes by 11 June 2019. To achieve this, AEMO proposes the following consultation timeline:

- Impact and Implementation (IIR) issued 1 April 2019.
- IIR responses due 2 May 2019.
- Notice of decision – 14 May 2019.
- Effective date – 28 June 2019.



## ATTACHMENT A PROPOSED CHANGES: RETAIL MARKET PROCEDURES – SOUTH AUSTRALIA

Blue underline represents additions ~~red-strikeout~~ represents deletions

### 177. Calculation of heating degree day

- (1) In performing the calculations under this clause 177, AEMO must use the values set out in Appendix 11 for the following coefficients:
  - (a)  $C_1$ ;
  - (b)  $C_2$ ;
  - (c)  $C_3$ ;
  - (d)  $C_4$ ;
  - (e)  $C_5$ ;
  - (f)  $C_6$ ;
  - (g)  $C_7$ ; and
  - (h)  $C_8$ .
- (2) AEMO must, at least once every five years or following a change in the source of weather data used, recalculate the value for each coefficient listed in clause 177(1) using linear regression of historic weather data, and as soon as practicable after the recalculation, AEMO must publish to *participants* an update to Appendix 11 specifying the recalculated values.
- (3) In performing the calculations under this clause 177, unless otherwise specified, AEMO must use the most recent available weather data prior to the time of calculation, which it must obtain from the Australian Bureau of Meteorology or another external agency, determined by AEMO as a *reasonable and prudent person* to be a suitable supplier of weather data for each of the following weather data items:
  - (a) the maximum air temperature for a *HDD zone* for a *gas day*, or forecast for a *gas day*, in degrees Celsius (" $T_{max}$ ");
  - (b) the minimum air temperature for a *HDD zone* for a *gas day*, or forecast for a *gas day*, in degrees Celsius (" $T_{min}$ "); and
  - (c) the hours of sun forecast for a *HDD zone* for a *gas day*, ~~or forecast for a gas day~~ (" $H_{sun}$ ").
- (4) For each *gas day D* for each *HDD zone*, AEMO must:
  - (a) by 17 hours before the end of *gas day D*, calculate the *forecast heating degree day* under clause 1(5)(j) for *gas day D+1* for use in clause 204;



- (b) within 30 minutes before the end of the third, sixth, ninth and twelfth hours of *gas day D*, recalculate the *forecast heating degree day* under clause 1(5)(j) for *gas day D* for use in clause 216(1); and
- (c) by 4 hours after the end of *gas day D*, calculate the *actual heating degree day* for *gas day D* under clause 177(5)(h) for use in clause 224.
- (5) In this clause 177, for each *HDD zone* for each *gas day D*:
- (a) the *EDD* for *gas day D* (“ $E_{(D)}$ ”) is calculated as follows:

$$E_{(D)} = \max \left( 0, 18 - \left( \frac{T_{\max(D)} + T_{\min(D)}}{2} \right) - (C_8 \times H_{sun(D)}) \right)$$

where:

- $E_{(D)}$  = the *EDD* for the *HDD zone* for *gas day D*;
- $T_{\max(D)}$  = the maximum air temperature forecast for the *HDD zone* for *gas day D* in degrees Celsius;
- $T_{\min(D)}$  = the minimum air temperature forecast for the *HDD zone* for *gas day D* in degrees Celsius; and
- $H_{sun(D)}$  = the hours of sun forecast for the *HDD zone* for *gas day D*,

- (b) the *EDD* for *gas day D-1* (“ $E_{(D-1)}$ ”) is calculated as follows:

$$E_{(D-1)} = \max \left( 0, 18 - \left( \frac{T_{\max(D-1)} + T_{\min(D-1)}}{2} \right) - (C_8 \times H_{sun(D-1)}) \right)$$

where:

- $E_{(D-1)}$  = the *EDD* for the *HDD zone* for *gas day D-1*;
- $T_{\max(D-1)}$  = the maximum air temperature for the *HDD zone* for *gas day D-1* in degrees Celsius;
- $T_{\min(D-1)}$  = the minimum air temperature for the *HDD zone* for *gas day D-1* in degrees Celsius; and
- $H_{sun(D-1)}$  = the hours of sun [forecast](#) for the *HDD zone* for *gas day D-1*,

- (c) the *EDD* for *gas day D-2* (“ $E_{(D-2)}$ ”) is calculated as follows:

$$E_{(D-2)} = \max \left( 0, 18 - \left( \frac{T_{\max(D-2)} + T_{\min(D-2)}}{2} \right) - (C_8 \times H_{sun(D-2)}) \right)$$

where:

- $E_{(D-2)}$  = the *EDD* for the *HDD zone* for *gas day D-2*;
- $T_{\max(D-2)}$  = the maximum air temperature for the *HDD zone* for *gas day D-2* in degrees Celsius;
- $T_{\min(D-2)}$  = the minimum air temperature for the *HDD zone* for *gas day D-2* in degrees Celsius; and
- $H_{sun(D-2)}$  = the hours of sun [forecast](#) for the *HDD zone* for *gas day D-2*, and

- (d) the *EDD* for *gas day D-3* (“ $E_{(D-3)}$ ”) is calculated as follows:





$$E_{(D-3)} = \max \left( 0, 18 - \left( \frac{T_{\max(D-3)} + T_{\min(D-3)}}{2} \right) - (C_8 \times H_{sun(D-3)}) \right)$$

where:

- $E_{(D-3)}$  = the *EDD* for the *HDD* zone for *gas day D-3*;  
 $T_{\max(D-3)}$  = the maximum air temperature for the *HDD* zone for *gas day D-3* in degrees Celsius;  
 $T_{\min(D-3)}$  = the minimum air temperature for the *HDD* zone for *gas day D-3* in degrees Celsius; and  
 $H_{sun(D-3)}$  = the hours of sun [forecast](#) for the *HDD* zone for *gas day D-3*.

- (e) the “**average temperature**” for the period of 30 *gas days* between *gas day D-30* and *gas day D-1* is calculated as follows:

$$T_{30} = \frac{\sum_{i=D-1}^{D-30} (T_{\max i} + T_{\min i})}{60}$$

where:

- $T_{30}$  = the *average temperature* for the *HDD* zone for the period of 30 *gas days* between *gas day D-30* and *gas day D-1* in degrees Celsius;  
 $T_{\max i}$  = the maximum air temperature for the *HDD* zone in degrees Celsius for *gas day i*;  
 $T_{\min i}$  = the minimum air temperature for the *HDD* zone in degrees Celsius for a *gas day i*; and  
*i* = a *gas day i* in the range of 30 *gas days* between *gas day D-30* and *gas day D-1*.

- (f) the “**total sun hours**” for the period of 7 *gas days* between *gas day D-7* and *gas day D-1* is calculated as follows:

$$SSH_{sun7} = \frac{\sum_{i=D-1}^{D-7} H_{sun i}}{7}$$

where:

- $SSH_{sun7}$  = the *total sun hours* for the *HDD* zone for the period of 7 *gas days* between *gas day D-7* and *gas day D-1*;  
 $H_{sun i}$  = the hours of sun [forecast](#) for the *HDD* zone for a *gas day*;  
*and*  
*i* = a *gas day i* in the range of 7 *gas days* between *gas day D-7* and *gas day D-1*.

- (g) the “**proxy ground temperature**” (“ $T_{gnd}$ ”) for *gas day D* is calculated as follows:

$$T_{gnd} = \frac{[C_4 \times \max(0, 18 - T_{30})] + [C_5 \times (18 - T_{30})]}{(C_4 + C_5)} + (C_6 \times SSH_{sun7})$$

where:



$T_{gnd}$  = the *proxy ground temperature* for the *HDD zone* for *gas day D* in degrees Celsius;  
 $T_{30}$  = the *average temperature* for the *HDD zone* for the period of *30 gas days* between *gas day D-30* and *gas day D-1* in degrees Celsius calculated under clause 1(5)(e); and  
 $SSH_{sun7}$  = the *total sun hours* for the *HDD zone* for the period of *7 gas days* between *gas day D-7* and *gas day D-1* calculated under clause 1(5)(f).

- (h) the “**actual heating degree day**” (“**HDD<sub>A</sub>**”) for *gas day D-1* is calculated as follows:

$$HDD_A = (C_1 \times E_{(D-1)}) + (C_2 \times E_{(D-2)}) + (C_3 \times E_{(D-3)}) + (C_7 \times T_{gnd})$$

where:

$HDD_A$  = the *actual heating degree day* for the *HDD zone* for *gas day D-1*, provided that for each *positive HDD zone*, if that value is less than zero,  $HDD_A$  shall be treated as zero;  
 $E_{(D-1)}$  = the *EDD* for *gas day D-1* calculated under clause 1(5)(b);  
 $E_{(D-2)}$  = the *EDD* for *gas day D-2* calculated under clause 1(5)(c);  
 $E_{(D-3)}$  = the *EDD* for *gas day D-3* calculated under clause 1(5)(d);  
and  
 $T_{gnd}$  = the *ground temperature* for the *HDD zone* for *gas day D-1* in degrees Celsius calculated under clause 1(5)(g).

- (i) the “**forecast EDD**” for *gas day D+1* is calculated as follows:

$$F_{(D+1)} = \max \left( 0, 18 - \left( \frac{T_{\max(D+1)} + T_{\min(D+1)}}{2} \right) - (C_8 \times H_{sun(D+1)}) \right)$$

where:

$F_{(D+1)}$  = the *forecast EDD* for the *HDD zone* for *gas day D+1* in degrees Celsius;  
 $T_{\max(D+1)}$  = the *maximum air temperature forecast* for the *HDD zone* for *gas day D+1* in degrees Celsius;  
 $T_{\min(D+1)}$  = the *minimum air temperature forecast* for the *HDD zone* for *gas day D+1* in degrees Celsius; and  
 $H_{sun(D+1)}$  = the *hours of sun forecast* for the *HDD zone* for *gas day D+1* at 0900 hours CST on *gas day D*.

- (j) the *forecast heating degree day* (“**HDD<sub>F</sub>**”) for *gas day D+1* is calculated as follows:

$$HDD_F = (C_1 \times F_{(D+1)}) + (C_2 \times E_{(D)}) + (C_3 \times HDD_A) + (C_7 \times T_{gnd})$$

where:

$HDD_F$  = the *forecast heating degree day* for the *HDD zone* for *gas day D+1*, provided that for each *positive HDD zone*, if that value is less than zero,  $HDD_F$  shall be treated as zero;  
 $F_{(D+1)}$  = the *forecast EDD* for the *HDD zone* for *gas day D+1* in degrees Celsius calculated under clause 1(5)(i);  
 $E(D)$  = the *EDD* for *gas day D* calculated under clause 1(5)(a);



$HDD_A$  = the *actual heating degree day* for the *HDD zone* for *gas day D-1* calculated under clause 1(5)(h); and

$T_{gnd}$  = the *proxy ground temperature* in degrees Celsius for the *HDD zone* for *gas day D-1* calculated under clause 1(5)(g).



## ATTACHMENT B PROPOSED CHANGES: REGISTER OF WEATHER RELATED INFORMATION

Blue underline represents additions ~~red-strikeout~~ represents deletions

### 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).

##### Weather Observation Stations

Heating Degree Day (HDD) zone	Service Provider	Observation station
Northern	Australian Government Bureau of Meteorology	Ceduna
Adelaide Region	Australian Government Bureau of Meteorology	<u>Adelaide (West Terrace</u> <del>Kent Town</del> / ngayirdapira)
Riverland	Australian Government Bureau of Meteorology	Mildura
Mount Gambier	Australian Government Bureau of Meteorology	Mount Gambier
Adelaide Metropolitan	Australian Government Bureau of Meteorology	<u>Adelaide (West Terrace</u> <del>Kent Town</del> / ngayirdapira)

#### 4.2 HDD Coefficients

The following is a list of HDD Coefficients applicable to Appendix 11 (Heating Degree Day for South Australia) of the RMP (SA) (Ref #1)

**The numbering has been corrected below. This amendment has been confirmed by SA instructions of 30/01/09.**

- (a)  $C_1 = 0.62$ ;
- (b)  $C_2 = 0.2$ ;
- (c)  $C_3 = 0.18$ ;
- (d)  $C_4 = 1$ ;
- (e)  $C_5 = 0.44$ ;
- (f)  $C_6 = -0.385$ ;
- (g)  $C_7 = 0.38$ ; and
- (h)  $C_8 = 0.11$ .



**ATTACHMENT C**  
**AEMO'S PRESENTATION ON ESTIMATED BASIC METER WITHDRAWALS**

# Estimated basic meter withdrawals

Adelaide Metro area (STTM)

## Estimated basic withdrawals

Month	Year	Estimated %
Dec	2016	0%
Jan	2017	0%
Feb	2017	0%
Mar	2017	0%
Apr	2017	0%
May	2017	0%
Jun	2017	0%
Jul	2017	0%
Aug	2017	0%
Sep	2017	0%
Oct	2017	0%
Nov	2017	0%
Dec	2017	0%
Jan	2018	0%
Feb	2018	0%
Mar	2018	0%
Apr	2018	0%
May	2018	10%
Jun	2018	100%

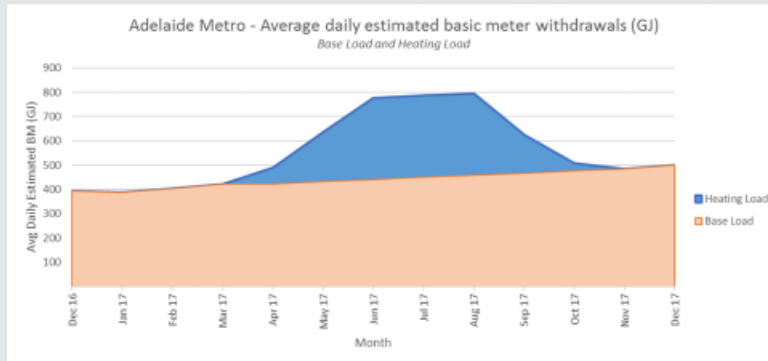
- Initially high % estimated withdrawals reduce as meter readings are received

Month	Year	Estimated %
Dec	2016	1.8%
Jan	2017	1.7%
Feb	2017	1.9%
Mar	2017	1.7%
Apr	2017	1.7%
May	2017	1.6%
Jun	2017	1.9%
Jul	2017	1.5%
Aug	2017	1.6%
Sep	2017	1.7%
Oct	2017	1.7%
Nov	2017	1.7%
Dec	2017	1.9%

- Estimates settle down in 1.5% to 2% range well before STTM Revision
  - Latest revision August 2017



## Components of estimated basic withdrawals



- HDD has a limited impact on estimated basic withdrawals
  - Estimates = base rate + Heating Load x HDD
  - Heat Load component for limited period (mainly in winter)
  - Max daily average heat load component for a month is only 340GJ

## Components of HDD

- HDD calculated from:
  - effective degree day in reducing proportions for last three days
    - Derived from maximum temperature, minimum temperature and hours of sun
  - Proxy ground temperature derived from temperatures
    - Derived from 30 day average temperature and 7 day average hours of sun
  - Coefficients that apply across all weather stations
    - C1 to C8

$$HDD_A = (C_1 \times E_{(D-1)}) + (C_2 \times E_{(D-2)}) + (C_3 \times E_{(D-3)}) + (C_7 \times T_{gnd})$$



## Actual hours of sun no longer available

- The BOM no longer reports actual hours of sun for any weather station
- They do report a forecast hours of sun
- Actual hours of sun used in
  - Effective degree day (EDD) for last three days
  - Proxy ground temperature
- These feed into HDD calculation
- AEMO proposing to use the forecast hours of sun instead of actual hours of sun
  - Limited impact from using actual vs forecast HOS
    - Estimated basic meter withdrawals are low
    - Heating load only in winter average ~340GJ per day

## Impact of using forecast HOS

- Based on coefficients, maximum impact of Hours of Sun on HDD is
  - $-C8 \times \text{HOS} + C6 \times C7 \times \text{HOS}$
  - $0.11 \times \text{HOS} + (-0.385 \times 0.38) \times \text{HOS}$
  - $-0.2563 \times \text{HOS}$
- Assuming:
  - difference between actual HOS and forecast HOS at 10%
  - average forecast HOS in winter 2017 of 4.
- Impact on heat load component is  $\pm 0.1051$  per GJ
  - $\pm 0.2563 \times 4.1 \times 10\%$
- With average daily estimated heat load of 340 GJ impact is
  - $340 \times \pm 0.1051 = \pm 35.7\text{GJ}$
- **Considered to be minimal**



## Review of Coefficients

- Coefficients defined to apply to all weather stations in use for all HDD zones
  - Currently four separate weather stations for five zones
- Coefficients defined are  $\leq 1$  and no more than two decimal places
- Only those coefficients directly related to measured components may change as a result of weather stations
- Impact of one weather station changing will have a limited impact on coefficients that are applied to all weather stations
- Coefficients impact on HDD calculation used for heat load only
- A 10% error in HDD would result in a maximum residual daily heat load error of approximately  $\pm 34\text{GJ}$ 
  - $340\text{GJ} \times \pm 10\%$
- AEMO is therefore proposing that coefficients are not recalculated
  - Expensive, external consultants required
  - Limited impact



## ATTACHMENT D – SUBMISSIONS RECEIVED FOR CHANGE IN004/18

#	Participant	Clause #	Issue / Comment	Proposed text <del>Red-strikeout</del> means delete and <u>blue underline</u> means insert	Rating <sup>1</sup> (H/M/L)	AEMO Response (AEMO only)
1	AGL	RMP (SA) clause 177(2)	<p>Clause 177(2) requires AEMO to recalculate the forecasting coefficients (listed in clause 177(1)) every five years or following a change in weather station data.</p> <p>In this instance, there is a change in weather station location, a change from actual to forecast hours of sunshine, and it is understood that the coefficients have not been recalculated in more than five years.</p> <p>AGL also notes that the review undertaken by AEMO indicate that the value in recalculating the coefficients will be unnecessarily high and onerous for insufficient benefit.</p> <p>Nevertheless, AGL does not believe that the coefficients can remain static.</p> <p>As such, AGL suggest that clause 177(2) be modified to require AEMO to undertake an initial review following the identified triggers (change in data/every five years) to determine if a recalculation is required.</p>	<p>(2) AEMO must, at least once every five years or following a change in the source of weather data used, <u>review the impact of these changes on the value of each coefficient listed in clause 177(1) and publish the outcome to participants;</u></p> <p><u>(2B) If the review determines that the coefficients are no longer suitable, then AEMO must</u> recalculate the value for each coefficient listed in clause 177(1) using linear regression of historic weather data, and as soon as practicable after the recalculation, AEMO must publish to <i>participants</i> an update to Appendix 11 specifying the recalculated values.</p>		<p>The scope of this IIR is to amend clauses 177(3)–177(5) and the Register of Weather Related Information to ensure AEMO is able to use BoM data to calculate HDDs.</p> <p>Changes to 177(2) with respect to coefficient review timeframes are therefore out of scope for this IIR and will not be addressed as part of this change.</p> <p>If AGL believes that number of estimated reads that use the HDD are (or will become) unacceptably high, then AGL is entitled to submit a GMI to have monthly reporting on this if the GRCF considers that there is merit in doing so.</p>

<sup>1</sup> L = Low: - Not critical. Issues / Comments are minor. They add clarity to the document. No major concern if not included in any further revisions  
M = Medium: - Important. Strong case that issue / comments should be consider and an update to the document is desirable, but not critical.  
H = High – Critical. The issue / comments are fundamental and failure to make necessary changes has the potential to impact consensus.

#	Participant	Clause #	Issue / Comment	Proposed text <del>Red-strikeout</del> means delete and <u>blue underline</u> means insert	Rating <sup>1</sup> (H/M/L)	AEMO Response (AEMO only)
			<p>There may also be value in determining that if no recalculation has been done over a 10-year period then the process should be undertaken to ensure that the coefficients are still fit for purpose.</p> <p>AGL also notes that failing to recalculate the coefficients would mean that AEMO was non-compliant with clause 177(2).</p>			



## **ATTACHMENT E – IIR RESPONSE TEMPLATE**

The IIR response template has been attached separately to this document. There are two sections within the template. Section 1 seeks feedback on the on the IIR itself. Section 2 seeks feedback on each of the changes to each of the procedures. Anyone wishing to make a submission for this second and final stage consultation is to use this response template. Submissions close 2 May 2019 and should be emailed to [grcf@aemo.com.au](mailto:grcf@aemo.com.au).