



UFE Reporting Guidelines Consultation

Final Report and Determination

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

Australian Energy Market Operator Ltd ABN 94 072 010 327

Notice of Conclusion of Final Stage Consultation – UFE Reporting Guidelines Consultation

National Electricity Rules – Rule 8.9

Date of Notice:

The publication of this Final Report and Determination (Final Report) concludes AEMO's consultation (Consultation) on the current changes (Changes) to the Unaccounted for Energy (UFE) Reporting Guidelines (Guidelines) under clause 3.15.5B of the National Electricity Rules (NER). .

Publication

All submissions will be published on AEMO's website, other than confidential content.

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Executive Summary

The publication of this Final Report concludes the standard consultation procedure conducted by AEMO to consider the Changes to the UFE Reporting Guidelines.

The National Electricity Amendment (Global Settlements and Market Reconciliation) Rule 2018 requires AEMO to publish the UFE Trends Report at least once a year. NER 3.15.5B(d) and (e) require AEMO to maintain and consult on the Guidelines and set out AEMO's approach to preparing and publishing the UFE Trends Report.

AEMO's determination is to make the Changes to the Guidelines, which are as follows:

- Production of the formal UFE trends report under NER 3.15.5B (Report), covering a 24-month rolling period, to be published on 1 May each year. The Report will be based on the final versions of settlements metering data for each local area. The Report will cover the period which ends in the last trading week in February.
- Provision of source data, from which are derived the Report and the related charts, through AEMO's UFE Information and Reports webpage¹.
- Provision of monthly UFE data with high level trend information through AEMO's UFE Information and Reports webpage.
- Provision of monthly and seasonal (quarterly) comparisons based on daily aggregations of UFE components, to provide insights into variations that may occur over a year.
- Provision of median, average, upper limit, and lower limit UFE weekly values, as benchmarks for each local area.
- Provision of, for each local area, a chart of the changes to UFE which are related to changes in metering data versions for settlements (Prelim, Final, Rev 1 and Rev 2). The charts analyse the quality of the metering data (actual vs estimations) which is used in UFE calculations.
- In addition to the variables that modify the metering data identified by AEMO to be analysed, inclusion of the following variables:
 - emergency unmetered generation use; and
 - review/audit of unmetered load calculation methodologies.
- Facilitation by AEMO of discussion forums, prior to the release of the Report, which identify UFE reduction actions. AEMO will initially prioritise the analysis of UFE variance between settlements metering data versions as the top variable to be investigated as the source of UFE.

The Distribution Loss Factors for each financial year that are published around 1 April each year on AEMO's website² will provide the required information to assist in making accurate assessments of UFE.

A UFE Fact Sheet that provides Participants a high-level overview of how UFE is calculated is available through AEMO's UFE Information and Reports webpage.

¹ <https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/data-nem/metering-data/unaccounted-for-energy-ufe-information-and-reports>

² <https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/market-operations/loss-factors-and-regional-boundaries>

AEMO has made the Changes to the Procedures as follows:

Summary of Change Proposals Procedure	Type of Change	Proposed Effective Date	Change Proposal
UFE Reporting Guidelines	Amendment	1 March 2023	UFE Reporting Guidelines

Finally, AEMO notes that the Retail Electricity Market Glossary and Framework document is not required to be changed. This document satisfies AEMO’s obligation under NER 7.16.1(f) to list the procedures authorised under NER Chapter 7. The Guidelines are required under NER Chapter 3. Accordingly, the Guidelines do not need to be listed in this document.

1. Stakeholder consultation process

AEMO conducted the consultation in accordance with NER 8.9, on the following timeline:

Table 1 Consultation process and timeline

Consultation steps	Dates
Issues Paper published	8 September 2022
Submissions due on Issues Paper	7 October 2022
Draft Report published	18 November 2022
Submissions due on Draft Report	19 December 2022
Final Report published	27 February 2023

AEMO's consultation webpage for the proposal is at [UFE reporting guidelines consultation](#)³. This webpage contains all published papers and reports, written submissions and other consultation documents or reference material, other than material identified as confidential.

AEMO thanks all stakeholders for their feedback, which has been considered in preparing this Final Report.

³ <https://aemo.com.au/consultations/current-and-closed-consultations/ufe-reporting-guidelines-consultation>

2. Background

2.1. NER requirements

NER 3.15.5B provides that AEMO must publish the Report at least once each year in accordance with the Guidelines.

However, NER 11.112.3(b) provides that AEMO was not required to comply with the Guidelines when preparing the Report that was published on 1 June 2022.

NER 3.15.5B(d) and (e) require AEMO to consult on the relevant development and amendment of the Guidelines which AEMO uses to prepare and publish the Report.

2.2. Context for this consultation

AEMO is required to produce the Report to provide information and analysis of UFE in each local area to facilitate the management and efficient decreases in UFE over time.

At least once each year, AEMO must, in accordance with the Guidelines, prepare and publish on its website the Report, setting out:

- AEMO's summary and analysis of the total UFE amounts in each local area over the reporting period;
- AEMO's analysis of the UFE amounts in each local area in the reporting period against benchmarks determined by AEMO acting reasonably;
- AEMO's analysis of the sources of UFE in each local area;
- AEMO's recommendations to improve visibility of UFE in each local area; and
- AEMO's recommended actions to reduce the amounts of UFE in each local area.

2.3. First stage consultation

On 8 September 2022, AEMO issued the Notice of First Stage Consultation and published the Issues Paper, as well as the initial draft of the Guidelines.

The Issues Paper summarised the proposed Guidelines, requesting feedback on the following:

- UFE Reporting timeframes.
- Metering data versions and reporting periods to form the basis of analysis of UFE.
- UFE benchmark analysis to include mean, average, upper limit and lower limit UFE values for each local area per reporting period.
- Metering data variables for UFE source analysis.
- UFE visibility improvements including more granular reporting of UFE values than local area level and presentation of seasonal variance information and associated benefits.
- UFE reduction actions that should be explored and holders of the information to support these actions.
- Additional proposed charts to support UFE analysis in each local area and holders of this information.

In response, AEMO received nine written submissions and one confidential submission. AEMO has published copies of all written submissions (excluding any confidential information) on AEMO's website at [AEMO | UFE Reporting Guidelines Consultation](#)⁴.

2.4. Second stage consultation

On 18 November 2022, AEMO commenced the second stage consultation, publishing the Draft Report and draft amended Guidelines. AEMO agreed to the Changes to the Guidelines, as detailed above in the Executive Summary.

AEMO sought further feedback on:

- the publication of the Report on 1 May annually; and
- the methodology to determine illegal energy consumption as a source of UFE.

In response, AEMO received 3 submissions. AEMO has published copies of all written submissions (excluding any confidential information) on AEMO's website at [AEMO | UFE Reporting Guidelines Consultation](#)⁵.

3. Summary of material issues

The key material issues are as follows.

Table 2 Summary of material issues

No.	Issue	Raised by
1.	Reporting Timings and Frequency	Multiple Respondents
2.	Reporting UFE Analysis	Multiple Respondents

A detailed table of issues raised by stakeholders in written submissions to the Draft Report, together with AEMO's responses, is contained in Appendix B.

The material issues are discussed in Section 4.

⁴ <https://aemo.com.au/consultations/current-and-closed-consultations/ufe-reporting-guidelines-consultation>

⁵ <https://aemo.com.au/consultations/current-and-closed-consultations/ufe-reporting-guidelines-consultation>

4. Discussion of material issues

4.1. Reporting timings and frequency

4.1.1. Issue summary and submissions

AEMO intends to produce the formal Report annually on 1 May, covering a rolling 24-month period, to ensure a substantial period covered by the Report. The Report will include charts which are related to Preliminary, Final, Revision 1 and Revision 2 UFE information.

As the Guidelines are to be published by 1 March 2023, AEMO proposed to produce the 2023 Report by 1 May 2023, as requested by one respondent. This 2023 Report would cover a period which ends on 25 February 2023 (being the end of the last trading week in February 2023).

All three respondents – AGL, Alinta and Red Lumo – fully supported the 1 May publication of the Report. AGL added that the purpose of the Report is to be a mechanism to:

- support other processes, including forecasting and pricing; and
- provide the basis for the analysis and reduction of the causes of UFE.

In addition, AGL recommended the quarterly publication of UFE trends to be considered as a developing document, which lead to the Report. Red Lumo strongly recommended that AEMO publish Loss Factors on 1 May each year as well.

4.1.2. AEMO's assessment

All respondents fully supported the formal publication of the UFE Trends Report on 1 May each year.

4.1.3. AEMO's conclusion

Distribution Loss Factors are published on AEMO's website around 1 April each year, so they will be available to Participants when the Report is published. A reference to the location of the related document will be included in the Guidelines.

As outlined in the Draft Report, AEMO considers that the monthly provision of UFE data with high level trend information will be of more value to Participants than the production of a formal monthly or quarterly report. This is because the production of a formal report would be based on final metering data and would require approximately one month to prepare. Accordingly, a formal report would be based on a reporting period ending two months in the past.

4.2. Reporting UFE analysis

4.2.1. Issue summary and submissions

The illegal consumption of energy has been identified by some Participants as a source of UFE that should be ranked as a top priority variable to be investigated. However, there is no head of power for a specific party to manage the discovery of illegal energy consumption. In addition, AEMO has no visibility of illegal energy consumption. Accordingly, AEMO requested stakeholders to provide details of a systematic way to discover illegal energy consumption.

Of the three respondents, AGL observed that recent analysis of UFE trends between final and revision settlements shows a marked difference, indicating that meter data profiling is one issue which is

creating “noise” in UFE values. AGL considers minimising or removing this “noise” to be a top priority, to enable the true causes to be more readily identified and acted upon.

Alinta and Red Lumo did not offer a mechanism for a systematic way to discover illegal energy consumption. Instead, these respondents recommended that AEMO work together with networks and other market participants to determine a preferred method.

4.2.2. AEMO’s assessment

AEMO notes the respondent’s comments, particularly as they relate to the initial prioritisation of the analysis of UFE variance between settlements metering data versions.

4.2.3. AEMO’s conclusion

AEMO will initially prioritise the analysis of UFE variance between settlements metering data versions.

5. Other matters

AGL raised another issue, identified by TasNetworks, that UFE reduction actions by DNSPs may be impeded by regulatory change cycles and pricing determinations. AGL suggested that AEMO should, in preparing the UFE information and reports, include the market price x UFE volumes for the initial UFE allocations to show the Initial UFE Value. AGL considers this initial value would provide a consistent reference value to support UFE assessment and mitigation actions.

AEMO considers that expressing UFE as a percentage of ADME, as proposed in Appendix A.1.1 of the Guidelines, will provide a reference value to indicate the effect of UFE mitigation activities.

6. Final determination

Having considered the matters raised in submissions to the Draft Report, AEMO's final determination is to make the Changes to the Guidelines, including:

- AEMO will initially prioritise the analysis of UFE variance between settlements metering data versions as the top variable to be investigated as the source of UFE.
- AEMO will provide a link to the Distribution Loss Factors which are published for each financial year.

AEMO has published the Guidelines to incorporate the Changes. The change-marked versions are available at [AEMO | UFE Reporting Guidelines Consultation](#)⁶.

⁶ <https://aemo.com.au/consultations/current-and-closed-consultations/ufe-reporting-guidelines-consultation>

Appendix A. Glossary

Term or acronym	Meaning
ADME	ADME is the aggregate of energy flows, expressed in MWh, for each connection point in a <i>local area</i> adjusted by the applicable <i>distribution loss factor</i> .
DLF	Distribution Loss Factor
DNSP	Distribution Network Service Provider
FRMP	Financially Responsible Market Participant
LNSP	Local Network Service Provider
TNI	Transmission Network Identifier
UFE	Unaccounted for Energy

Appendix B. List of submissions and AEMO responses

No.	Heading/Definition	Respondent	Participant Comment	AEMO response
1	Purpose and Scope	AGL	<p>AGL notes the ongoing provision of UFE data and fully supports the 1 May publication, which is critical for other processes, such as pricing processes, but also recommends publication of quarterly trends on UFE to assist forecasting, ongoing assessment and ongoing analysis of causes. This might be considered a developing document leading up to the annual document, which would allow AEMO and participants to start considering information and format prior to the annual report.</p> <p>AGL notes that the purpose of the UFE reporting is not in itself a goal, but rather a mechanism to support other processes (eg forecasting, trend consideration, pricing etc) and to provide a basis for the analysis and reduction of the causes of UFE.</p>	AEMO notes the respondent's support for UFE Trends Report publication by 1 May each year and additional comments.
2	Purpose and Scope	Alinta	Publishing UFE Trends ahead of the end of the financial year is preferable. Alinta Energy is supportive of this timing.	AEMO notes the respondent's support for UFE Trends Report publication by 1 May each year.
3	Purpose and Scope	Red Lumo	<p>Red Energy and Lumo Energy (Red and Lumo) support a publication date of 1 May each year for the UFE Trends Reports. We would strongly recommend that AEMO also publish the Loss Factors on 1 May each year.</p> <p>The preference for 1 May (or earlier), for both the UFE Trends Reports and the Loss Factors, is to allow time for the information to be evaluated and accounted for when assessing the financial impacts on items being reviewed around the same period - such as VDO and DMO. Both inputs are critical and dependent to make an accurate assessment.</p> <p>Can AEMO please confirm if they are able to also deliver the Loss Factors on this date?</p>	<p>AEMO notes the respondent's support for UFE Trends Report publication by 1 May each year.</p> <p>Distribution Loss Factors are published on AEMO's website around 1 April each year, so they will be available to Participants when the UFE Trends Report is published. A reference to the DLF document location will be included in the UFE Reporting Guidelines.</p>
4	Feedback on Reporting UFE Analysis	AGL	<p>AGL notes that while there may be no specific regulatory clauses which specify illegal consumption, the fact that the consumption is illegal, means that it is contrary to all the regulations which dictate how energy is sold and settled between the market. AGL therefore considers that AEMO and all participants have an obligation identify and manage illegal consumption.</p> <p>In saying this, however, AGL considers illegal consumption to be one of a number of causes, but not a top priority. There is UFE within predominantly interval metered areas (eg Victoria) and predominantly non-interval metered areas (elsewhere), showing that the causes are quite fundamental.</p> <p>For illegal consumption to be a main cause of UFE would indicate that there is significant and continual theft in every jurisdiction. Which does not seem likely.</p> <p>Recent analysis of UFE trends between final and revision settlements show a marked difference, which indicates that meter data profiling is one issue which is creating a 'noise' in UFE values. Until that noise is minimised or removed, it will be extremely difficult to identify other causes.</p>	AEMO notes the respondent's comments, particularly related to initially prioritising the analysis of UFE variance between settlements metering data versions.

No.	Heading/Definition	Respondent	Participant Comment	AEMO response
			As such, AGL considers that the top priority should be to remove the noise appearing in UFE so that the true causes can be more readily identified and acted on.	
5	Feedback on Reporting UFE Analysis	Alinta	Alinta Energy believes that identification of and responsibility to investigate illegal energy consumption is a component of UFE that needs attention. Historically, LNSPs often undertook this activity in conjunction with retailers. While we have no specific suggestions to systemically identify illegal consumption, this issue should be discussed among LNSPs/DNSPs, MCs, MPs, MDPs and FRMPs to determine a consistent method to identify this component of UFE.	AEMO notes the respondent's comments.
6	Feedback on Reporting UFE Analysis	Red Lumo	The main starting point for identification & confirmation of illegal consumption are the networks. Red and Lumo recommend that AEMO works together with networks to develop a systematic approach of having the information provided to them.	AEMO notes the respondent's comments.
7	Other Related Issues: TasNetworks has identified the ability to implement UFE actions by DNSPs may be hampered by regulatory change cycles and pricing determinations.	AGL	<p>Noting this issue, AGL suggests that AEMO, in preparing the UFE information and reports, should include the market price x UFE volumes for the initial UFE allocations, to show the Initial UFE Value.</p> <p>AGL considers that this Initial UFE Value would provide a clear, visible and consistent value which would allow consideration of business cases to be developed to undertake analysis and mitigation actions.</p> <p>AGL considers that having a reference value which is consistently used in the assessment of actions to be taken in UFE mitigation and management is worthwhile in ensuring that various programs are considered on a consistent basis.</p> <p>AGL notes that while the volumes of UFE will change over revisions, there is still a cash flow impact on market participants as a result of the initial allocation, which makes this initial allocation of UFE highly relevant.</p>	<p>AEMO notes the respondent's comments.</p> <p>AEMO considers that expressing UFE as a percentage of ADME, as proposed in Appendix A.1.1 of the Guidelines, will provide a reference value to indicate the effect of UFE mitigation activities.</p>
8	Other Related Issues:	Alinta	N/A	