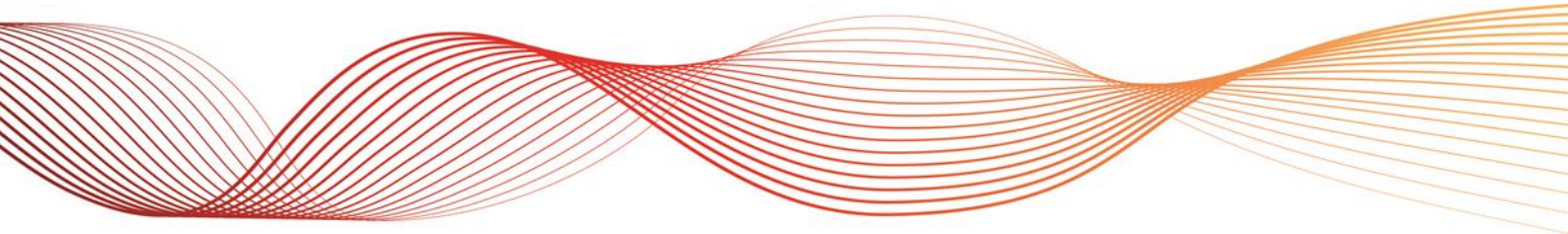




# *RELIABILITY STANDARD* IMPLEMENTATION GUIDELINES

FINAL REPORT AND DETERMINATION

Published: **December 2015**



## EXECUTIVE SUMMARY

This report contains the Australian Energy Market Operator's (AEMO's) final determination on the *reliability standard implementation guidelines* (RSIG) to be published under clause 3.9.3D and 11.78.4 (a) of the National Electricity Rules (NER).

The RSIG sets out how the *Australian Energy Market Operator* (AEMO) implements the *reliability standard* and specifically the approach and assumptions in relation to:

- Demand for electricity.
- *Reliability* of existing and future *generation*.
- *Intermittent generation*.
- *Energy constraints*.
- The treatment of extreme weather events.
- *Network constraints*.

### RSIG DOCUMENTS CONSULTATION

Under clause 3.9.3D (c) AEMO must develop and amend the RSIG in consultation with the *Reliability Panel*, *Registered Participants* and other interested persons in accordance with the *Rules consultation procedures*.

AEMO published a Notice of First Stage of Consultation: Reliability standard implementation guidelines on 11 June 2015. One submission in response to the First Stage Notice was received by 30 September 2015.

AEMO published its draft report and determination (Draft Report) on 30 October 2015. AEMO did not receive any submissions on the Draft Report.

In accordance with the NER requirement, AEMO consulted with the Reliability Panel. The Draft Report was presented at a Reliability Panel meeting held by the Australian Energy Market Commission (AEMC) on 11 November 2015. After considering the matters raised in that meeting, AEMO has made a final determination on the RSIG that does not differ materially from the Draft Report.

In making the determination, AEMO is satisfied that the amended RSIG are consistent with NER requirements.

The final determination includes three changes from the Draft Report, which are summarised below:

- In Section 2 (Reliability Standard Implementation Processes), the wording in section 2.1.2. - ESOO Intermittent Generation – was changed to emphasise that adopting a more probabilistic approach for modelling intermittent generation is a priority activity for AEMO.
- In section 2.3 - Projected Assessment of System Adequacy – reference to power system security and reliability of supply was removed and wording changed to more accurately reflect clause 3.7.1(c)(3) of the NER.
- Table 3 in section 2.4 - Summary of Assumptions Network constraints – reference to outage constraints from the network outage schedule was removed.

### DETERMINATION

AEMO'S determination is to make and publish the RSIG in the form of Attachment 1 to this report.



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# 1. INTRODUCTION

As required by clause 3.9.3D (c) of the NER, AEMO consulted on the *Reliability Standard Implementation Guidelines* (RSIG) in accordance with the *Rules consultation procedures* in rule 8.9.

The table below outlined the consultation steps undertaken by AEMO:

deliverable	indicative date
Notice of first stage consultation and appendix published	11 June 2015
First stage submissions closed	17 July 2015
Draft Report & Notice of second stage consultation published	30 October 2015
Submissions due on Draft Report	13 November 2015
Final Report published	31 December 2015

The publication of this Final Report and determination marks the completion of the consultation.

Note that there is a glossary of terms used in this Report at **Appendix A**. Words in italics have the same meaning as prescribed in the NER.



## 2. BACKGROUND

### 2.1 NER requirements

Under NER clause 3.9.3D, AEMO must develop, publish and amend from time to time RSIG that set out how AEMO will implement the *reliability standard*. NER clause 11.78.4(a) provides that AEMO must publish the first RSIG by 31 December 2015.

### 2.2 Context for this consultation

NER clause 3.9.3D requires AEMO to develop and publish the RSIG. NER clause 11.78.1 requires the RSIG to commence by 31 December 2015.

NER clause 3.9.3D requires the RSIG to detail its approach and a number of assumptions in the context of how AEMO implements the *reliability standard*, which is now specified in NER clause 3.9.3C.

AEMO currently assesses the future performance of the power system in the context of the *reliability standard* in accordance with a number of processes specified in the NER. AEMO proposed that the RSIG set out in a single document the way AEMO implements the reliability standard.

AEMO was seeking comment on the level of detail to which the RSIG should prescribe how AEMO implements the reliability standard. A high level guideline gives AEMO the flexibility to amend its approach if the environment changes or improved techniques are developed, whilst a prescriptive guideline provides a consistent predictable process.

### 2.3 First stage consultation

AEMO issued a First Stage Notice of consultation on 11 June 2015, seeking comments on the level of detail the RSIG should prescribe about how AEMO implements the *reliability standard*.

AEMO received one submission in response to the First Stage Notice, a copy of which is published on AEMO's website<sup>1</sup>.

### 2.4 Second stage consultation

AEMO issued a notice of Second Stage consultation together with a draft report and determination on 30 October 2005. AEMO received matters by a *Consulted Person* at a meeting of the Reliability Panel held by the AEMC. As a result, wording has changed to emphasise the priority for AEMO to seek a way forward and adopt a more probabilistic approach for modelling intermittent generation. The proposed RSIG change is:

#### 2.1.2 Electricity Statement of Opportunities (ESOO) intermittent generation

- Emphasising the priority that AEMO places on improving the intermittent generation methodology used in ESOO modelling. The amendment reads "As a matter of priority, AEMO is seeking a way to adopt a more probabilistic approach for modelling intermittent generation."

<sup>1</sup> See AEMO web page: <http://aemo.com.au/Consultations/National-Electricity-Market/Reliability-standard-implementation-guidelines>



### 3. SUMMARY AND DISCUSSION OF MATERIAL ISSUES

Throughout the consultation process, only one formal submission was received from GDF Suez Australian Energy (GDFSAE). The submission advocated that all processes involved in implementation of the *reliability standard* should be in the one document, namely the RSIG. GDFSAE cited comments from the AEMC's report published with Amending Rule 3 of 2015 that the RSIG will improve methodological transparency and guide implementation of the *reliability standard*.

AEMO was unable to limit the implementation of the standard to one document but addressed this concern through providing a high level description of the various processes in the RSIG, and then pointing the reader to detailed descriptions in related documents.

AEMO also considered a matter raised at a meeting of the Reliability Panel in relation to treatment of intermittent generation in the ESOO modelling. In the draft RSIG, AEMO acknowledged that it was seeking a way to adopt a more probabilistic approach for modelling intermittent generation. The Reliability Panel asked that the wording be changed to emphasise that this was a matter of priority for AEMO.

AEMO considers that the RSIG is compliant with the NER and easy to use.



## 4. CORRECTION OF MINOR ERRORS

Prior to publication of this report AEMO became aware of two minor errors in the draft RSIG, which have now been corrected in the final RSIG.

In section 2.3, the PASA introduction incorrectly included reference to informing the market about “power system security and reliability of supply”. This wording was recently changed in the NER to refer simply to “forecasts of supply and demand”. The wording in the final RSIG has been changed to reflect clause 3.7.1(c)(3) of the NER.

In the summary of assumptions listed in Table 3 under section 2.4, the EAAP assumptions incorrectly included “outage constraints from the Network Outage Schedule”. This has been removed in the final RSIG.



## 5. FINAL DETERMINATION

Having considered the matters raised by *Consulted Persons* in consultation on the draft RSIG, AEMO's determination is to make the RSIG in the form of **Attachment 1** in accordance with clause 3.9.3D of the NER.

In making the determination, AEMO is satisfied that the final RSIG are consistent with NER requirements.





## APPENDIX A. GLOSSARY

Term or acronym	Meaning
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
NEM	National Electricity Market
NER	National Electricity Rules
RSIG	<i>Reliability Standard Implementation Guidelines</i>



# APPENDIX B. ATTACHMENT 1 – *RELIABILITY* STANDARD IMPLEMENTATION GUIDELINES