

# ENERGY ADEQUACY ASSESSMENT PROJECTION

SEPTEMBER 2014 UPDATE

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## IMPORTANT NOTICE

### Purpose

The purpose of this publication is to quantify the impact of energy constraints on energy availability over the period from 1 October 2014 to 30 September 2016 under a range of scenarios. This will indicate if there are likely to be issues in meeting the National Electricity Market (NEM) Reliability Standard<sup>1</sup> due to energy constraints.

The Australian Energy Market Operator (AEMO) publishes this projection update in accordance with 3.7C of the National Electricity Rules (Rules). This publication is based on information available to AEMO as at 18 August 2014, although AEMO has endeavoured to incorporate more recent information where practical.

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<sup>1</sup> AEMC. Available at: [www.aemc.gov.au/Media/docs/Fact-sheet---reliability-standard-d451eb88-58bf-4efd-8b18-f3bc38b24fbb-0.pdf](http://www.aemc.gov.au/Media/docs/Fact-sheet---reliability-standard-d451eb88-58bf-4efd-8b18-f3bc38b24fbb-0.pdf). Viewed: 24 September 2014.



## Background

The Australian Energy Market Operator (AEMO) publishes the September 2014 Energy Adequacy Assessment Projection (EAAP) update to analyse the potential effects of water availability and other fuel supply limitations on the electricity system over the period from 1 October 2014 to 30 September 2016. The following three scenarios are considered:

- Scenario 1: Low rainfall – based on rainfall between 1 July 2006 and 30 June 2007 for all regions except New South Wales. New South Wales is based on rainfall between 1 June 2006 and 31 May 2007.<sup>2</sup>
- Scenario 2: Short-term average rainfall – based on the average rainfall recorded over the past 10 years.
- Scenario 3: Long-term average rainfall – based on the average rainfall recorded over the past 50 years, or the longest period for which rainfall data is available, if less than 50 years.

The analysis uses probabilistic modelling to determine regional unserved energy (USE) at an hourly resolution, and compares these results with the National Electricity Market (NEM) Reliability Standard.<sup>3</sup> The Reliability Standard states that annual USE for each NEM region must not exceed 0.002% of the total energy consumed in that region.

In 2010, the EAAP replaced the former AEMO Drought Study, which had been published quarterly from 2007. This study was initiated to assess the adequacy of generation capacity given supply limitations in general, and water availability in particular. Market conditions, including the availability of water for generators, have changed since that time.

AEMO welcomes comment and feedback on the value, frequency, and content of the EAAP updates, by email at [planning@aemo.com.au](mailto:planning@aemo.com.au).

AEMO will commence a consultation on the best approach to modelling and presenting EAAP information in future. All stakeholders are invited to participate in the process. Further information will be provided once the engagement plan has been finalised.

## Energy adequacy update

AEMO's September 2014 EAAP results show that the NEM has adequate energy supplies to meet projected electricity consumption over the next two years. Forecast USE across this period falls within the Reliability Standard across all regions, and in all three scenarios. USE is observed in South Australia under the low rainfall scenario, and remains well below the 0.002% reliability level.

Table 1 provides USE as a percentage under the worst-case scenario of low rainfall.

**Table 1: Unserved energy for Scenario 1, low rainfall, in percentage terms**

Low rainfall		NSW	Queensland	SA	Tasmania	Victoria
Year 1	June 2014 Update	-	0.0001%	-	-	-
	September 2014 Update	-	-	-	-	-
Year 2	June 2014 Update	-	0.0002%	-	-	0.0001%
	September 2014 Update	-	-	0.0001%	-	-

<sup>2</sup> Analysis of this period ensures the lowest rainfall for New South Wales is reflected in the low rainfall scenario.

<sup>3</sup> AEMC. Available at: [www.aemc.gov.au/Media/docs/Fact-sheet---reliability-standard-d451eb88-58bf-4efd-8b18-f3bc38b24fbb-0.pdf](http://www.aemc.gov.au/Media/docs/Fact-sheet---reliability-standard-d451eb88-58bf-4efd-8b18-f3bc38b24fbb-0.pdf). Viewed: 24 September 2014.



## Key modelling inputs

The guidelines for modelling inputs and assumptions used in the EAAP analysis are provided in the EAAP Guidelines.<sup>4</sup>

The September 2014 EAAP analysis is based on the following key inputs and assumptions:

- Electricity supply estimates submitted by NEM scheduled generators through the Generator Energy Limitation Framework (GELF) between 16 July 2014 and 18 August 2014.
- Planned changes in capacities for existing scheduled and semi-scheduled generation as advised for use in the Medium-term Projected Assessment of System Adequacy (MT PASA).
- Demand profiles consistent with the energy and demand projections published in the 2014 National Electricity Forecasting Report (NEFR).<sup>5</sup>

The assumptions for changes to existing generating unit availability are listed in Table 2.

Modelling updates to forecast committed scheduled and non-scheduled generating units are listed in Table 3.

**Table 2: Changes in generating plant availability**

Station	State	Capacity (MW)	Outage duration
Swanbank E	Queensland	385	From December 2014.
Wallerawang C (Unit 7)	NSW	500	From January 2014.
Wallerawang C (Unit 8)	NSW	500	From April 2014 with a three-month recall.
Morwell/Energy Brix (Unit MOR3)	Victoria	75	Available on a 30-day recall.
Tarong (Unit 2)	Queensland	350	Return to service from 6 June 2015.
Playford B	South Australia	240	Available on a 90-day recall.
Northern	South Australia	546	Northern will return to normal service in October 2014 after having been on a three-week recall for the 2013 and 2014 winter seasons.

**Table 3: Committed scheduled and semi-scheduled generating units**

Station	State	Capacity (MW)	Commercial operation date
Taralga Wind Farm	NSW	107	2014–15
Boco Rock Wind Farm	NSW	113	March 2015
Nyngan Solar Farm	NSW	102	Winter 2015
Broken Hill Solar Farm	NSW	53	Winter 2015
Moree Solar Farm	NSW	56	Summer 2015–2016

<sup>4</sup> Determined following Electricity Rule Consultation Procedures. Available at: [http://www.aemo.com.au/Electricity/Resources/Reports-and-Documents/-/media/Files/Other/electricityops/EAAP\\_Guidelines.ashx](http://www.aemo.com.au/Electricity/Resources/Reports-and-Documents/-/media/Files/Other/electricityops/EAAP_Guidelines.ashx). Viewed: 19 June 2014.

<sup>5</sup> AEMO. Available at: <http://www.aemo.com.au/Electricity/Planning/Forecasting/National-Electricity-Forecasting-Report>. Viewed: 25 September 2014.