



Market Suspension Compensation Methodology

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Current version release details

Version	Effective date	Summary of changes
4.1	TBD	Minor updates to reflect the National Electricity Amendment (Integrating energy storage systems into the NEM) Rule 2021 and Rule 2023 No. 2. Effective 3 June 2024

Note: There is a full version history at the end of this document.

1. Introduction

1.1. Purpose and scope

This document is the *market suspension compensation methodology* (**Methodology**) made by Australian Energy Market Operator Limited (**AEMO**) under 3.14.5A(h) of the National Electricity Rules (**NER**).

This Methodology has effect only for the purposes set out in the National Electricity Rules. The NER and the National Electricity Law prevail over this Methodology to the extent of any inconsistency.

1.2. Definitions and interpretation

1.2.1. Glossary

Terms defined in the National Electricity Law and the NER have the same meanings in these Procedures unless otherwise specified in this clause.

Terms defined in the NER are intended to be identified in these Procedures by italicising them, but failure to italicise a defined term does not affect its meaning.

1.2.2. Interpretation

This Methodology is subject to the principles of interpretation set out in Schedule 2 of the National Electricity Law.

1.3. Related documents

Title	Location
AEMO Integrated System Plan (<i>Inputs, Assumption, and Scenarios</i>)	https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Planning-and-forecasting/Integrated-System-Plan
Schedule of Benchmark Values	https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Emergency-Management/Guide-to-Market-Suspension-in-the-NEM
<i>Integrated System Plan (ISP)</i>	https://aemo.com.au/en/energy-systems/major-publications/integrated-system-plan-isp

2. NER requirements

2.1. Methodology requirements

The requirements for participant compensation following market suspension in the *NEM* are specified in clause 3.14.5A of the NER.

Under NER 3.14.5A(h), AEMO must develop this Methodology to include:

- (a) the classes of *Scheduled Generator*, *Scheduled Integrated Resource Providers*, and *Ancillary Service Provider* to be used for the purpose of calculating benchmark values to be applied in the calculation of compensation during a *market suspension pricing period*;
- (b) AEMO's approach in calculating the benchmark values for each class of *Scheduled Generator*, *Scheduled Integrated Resource Providers* and *Ancillary Service Provider* in each *region*, including determining the equivalent *ISP inputs* for the purpose of clause 3.14.5A(e); and
- (c) AEMO's approach in selecting the class of *Scheduled Generator* to be used when determining the value of BC_{av} (capacity-weighted average of the benchmark costs) for *wholesale demand response* for the calculation in clause 3.14.5A(f1); and
- (d) AEMO's administrative fees associated with a claim for compensation under clause 3.14.5B or the manner in which those fees are to be determined.

2.2. Participant compensation following market suspension objective

The objective for the payment of compensation under NER 3.14.5A and 3.14.5B is (NER 3.14.5A(a)):

“..to maintain incentive for:

1. *Scheduled Generators and Scheduled Integrated Resource Providers* to supply energy;
2. *Ancillary Service Providers* to supply *market ancillary services*; and
3. *Demand Response Service Providers* to supply *wholesale demand response*, during *market suspension pricing schedule periods*.”

3. Scheduled Generator, Scheduled Integrated Resource Providers and Ancillary Service Provider classes

- (a) Benchmark prices apply only to scheduled market participants. AEMO will calculate benchmark values for the following classes of *Scheduled Generator*, *Scheduled Integrated Resource Providers* and *Ancillary Service Provider* based on the *generating system fuel source or technology type*:
 - Black coal
 - Brown coal
 - Open cycle gas turbine
 - Combined cycle gas turbine
 - Hydro
 - Wind
 - Solar photovoltaic

- ~~Large scale batteries~~ Bidirectional units
 - ~~Biomass~~
 - ~~Solar thermal~~
 - Liquid fuel
- (b) The individual components of combined *generating systems* with multiple energy sources will be accounted for in the benchmark values for each applicable *Scheduled Generator*, *Scheduled Integrated Resource Providers*, and *Ancillary Service Provider* class.

4. Calculation of benchmark values

4.1. Benchmark value process

The benchmark values for *generation* and *market ancillary services* are calculated in accordance with NER 3.14.5A(e) and 3.14.5A(f) and the following process:

- (a) A benchmark cost is calculated for each individual *generating system* of a *Scheduled Generator* and *Scheduled Integrated Resource Providers*.
- (b) Individual benchmark costs are aggregated to a capacity-weighted average figure for each *region* and *Scheduled Generator* and *Scheduled Integrated Resource Provider* class.
- (c) Final benchmark figures for *generation* and *ancillary services* are calculated.

4.1.1. Individual benchmark costs

Individual benchmark costs are calculated for each *generating system* of a *Scheduled Generator* and *Scheduled Integrated Resource Providers* using the formula for ‘BC’ set out in NER 3.14.5A(e) and replicated below for convenience:

$$BC = (FC \times E) + VOC$$

where:

- (a) FC = the fuel cost (in \$/GJ) for the relevant *Generator* or *Scheduled Integrated Resource Providers*.
- (b) E = the efficiency (in GJ/MWh) for the relevant *Generator* or *Scheduled Integrated Resource Providers*.
- (c) VOC = the variable operating cost (in \$/MWh) for the relevant *Generator* or *Scheduled Integrated Resource Providers*.

In each case, the above inputs (FC, E and VOC) are to be the same as the equivalent *NTNDP-ISP* inputs. If there is no equivalent *NTNDP-ISP* input for “FC” or “E”, it will be deemed to be one. If there is no equivalent *NTNDP-ISP* input for “VOC”, it will be deemed to be zero.

Note that ‘relevant *Generator* or *Scheduled Integrated Resource Provider*’ in the descriptions of the terms FC, E and VOC refers to the *generating system* for which the calculation is being performed.

The source of the *NTNDP-ISP* inputs is described in section 4.2 of this Methodology.

4.1.2. Capacity-weighted average aggregation

- (a) The capacity-weighted average of the benchmark costs of all *generating systems* of *Scheduled Generators and Scheduled Integrated Resource Providers* in a specific class and specific *region* ($BC_{(av)}$) is calculated in accordance with the following formula:

$$BC_{(av)} = BC_1 \times \frac{C_1}{TC} + BC_2 \times \frac{C_2}{TC} + \dots + BC_m \times \frac{C_m}{TC}$$

where:

BC_i is the value determined under section 4.1.1 of this Methodology for the i^{th} *generating system* in the class for that *region*,

C_i is the i^{th} *generating system's* maximum capacity,

TC is the aggregate maximum capacity of all *generating systems* ($i=1$ to m) in the specific class and *region*.

4.1.3. Benchmark value for generation

The benchmark value for *generation* (BVG) for a specific *Scheduled Generator* class in a specific *region* is calculated in accordance with the following formula:

$$BVG = BC_{(av)} \times 1.15$$

where:

- (a) $BC_{(av)}$ is the value determined under section 4.1.2 of this Methodology for that the corresponding Scheduled Generator and Scheduled Integrated Resource Provider in the same class and *region*.

4.1.4. Benchmark value for ancillary services

The benchmark value for *market ancillary services* ($BVAS$) for a specific *Ancillary Service Provider* class in a specific *region* is calculated in accordance with the following formula:

$$BVAS = BC_{(av)} \times \left(\frac{0.15}{n} \right)$$

where:

- (a) $BC_{(av)}$ is the value determined under section 4.1.2 of this Methodology for the corresponding *Scheduled Generator and Scheduled Integrated Resource Provider in the same* class and *region*,
- n = the number of *trading intervals* within a one hour period.

4.2. Benchmark formulation inputs

NTNDP-ISP input values for the calculation of the benchmark values are sourced from the latest Integrated System Plan modelling and assumptions spreadsheet published by AEMO.

Input value	ISP Modelling assumptions spreadsheet location (tab)
Capacity	Maximum capacity
Fuel cost	Coal and Biomass price

Input value	ISP Modelling assumptions spreadsheet location (tab)
	Gas and Liquid fuel prices
Efficiency	Heat rates
Variable operating cost	Variable OPEX

5. Scheduled generator class for wholesale demand response

AEMO will use the following class of *Scheduled Generator* for the purpose of NER 3.14.5A(f1):

- ~~Large scale batteries~~ Bidirectional units.

6. AEMO’s administrative fees

Under NER 3.14.5B(e) AEMO may recover an administrative fee from a *Market Suspension Compensation Claimant*.

If a *Market Suspension Compensation Claimant* claims additional compensation under NER 3.14.5B(a), an administrative fee of \$3,500 excluding GST is payable on submission of the claim to cover AEMO’s administrative costs.

Version release history

Version	Effective date	Summary of changes
4.1	TBD	Minor updates to reflect the National Electricity Amendment (Integrating energy storage systems into the NEM) Rule 2021 and Rule 2023 No. 2. Effective 3 June 2024.
4.0	1 June 2022	Update the term bidirectional units, changed the term "NTNDP" to "ISP", and remove the fuel sources that are not eligible for benchmark compensation.
3.0	24 October 2021	Update for 'wholesale demand response mechanism' rule change: Selected a class of <i>Scheduled Generator</i> used for <i>wholesale demand response</i> compensation.
2.0	19 June 2019	Rules consultation procedures completed following <i>National Electricity Amendment (Participant compensation following market suspension) Rule 2018</i>
1.0	20 December 2018	First issue