Methodology for AEMO Intervention Event Compensation

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Current version release details

Version	Effective Date	Summary of Changes
1.0	1 August 2022	Initial methodology, made in accordance with NER 11.146.2

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

1. Introduction

1.1. Purpose and scope

This Methodology is made under clause 3.12.2(n) of the National Electricity Rules (NER). It outlines AEMO's methodology and approach for calculating *AEMO intervention event* compensation required by the NER for *Affected Participants* (including *eligible persons*), *Market Customers*, and *Ancillary Service Providers* who are dispatched differently as a result of an *AEMO intervention event*.

This Methodology does not address:

- the calculation of compensation payments to *Directed Participants* (other than how those calculations are affected by intervention pricing);
- how compensation is paid to Directed Participants, Affected Participants, Market Customers and Ancillary Service Providers;
- how compensation payments made by AEMO are recovered from *Market Participants*;
- procedural steps that must be followed in processing compensation claims; or
- the process used by AEMO for participants to claim and for AEMO or an independent expert to determine additional compensation amounts.

This Methodology has effect only for the purposes set out in the NER. 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 this Methodology. Terms defined in the NER (in Chapter 10 or clause 3.12.2(a00)) are intended to be identified in this Methodology by italicising them, but failure to italicise a defined term does not affect its meaning.

In addition, the words, phrases and abbreviations in the table below have the meanings set out opposite them when used in this Methodology.

Term	Definition
AEMO	Australian Energy Market Operator Limited
Intervention pricing	The setting of *spot prices* and *ancillary service prices* under clause 3.9.3(b), in accordance with the intervention pricing methodology published by AEMO under clause 3.9.3(e). A *trading interval* in which intervention pricing applies is an *intervention price trading interval* under the NER.
Methodology	This document, which is the methodology and approach for calculating *AEMO intervention event* compensation made for the purposes of NER 3.12.2(n).
NEMDE	*NEM* dispatch engine
NER	National Electricity Rules. 'NER' followed by a number refers to the clause or rule of the NER with the corresponding number.
What-if	Describes a value or outcome produced from a what-if run
What-if run	See section 2.1 of this Methodology.

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
Intervention Pricing Methodology	https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/system-operations/dispatch-information/policy-and-process-documentation
ISP Inputs and Assumptions Workbook	https://aemo.com.au/en/energy-systems/major-publications/integrated-system-plan-isp/2022-integrated-system-plan-isp/current-inputs-assumptions-and-scenarios

2. Intervention compensation background

2.1. Application of intervention pricing

When an *AEMO intervention event* occurs for the purpose of obtaining a market service (i.e. *energy* or *market ancillary services*), or a direct substitute for a market service, AEMO implements intervention pricing in accordance with NER 3.9.3(b). This involves running the National Electricity Market Dispatch Engine (NEMDE) twice: once for the intervention dispatch run and once for the intervention pricing run (what-if run)[1]. This creates two data sets that can be used for determining compensation outcomes for *Affected Participants*, *Market Customers*, and *Ancillary Service Providers*.

The difference between the two runs relates to the existence of different intervention *constraint* equations. The dispatch run is used to set dispatch targets and the pricing run is used to set the *spot price* and *ancillary service price* at the value that would have applied had the *AEMO intervention event* not occurred[2].

2.2. Intervention compensation principles

In accordance with NER 3.12.2(a0), for each *intervention price trading interval*, *Affected Participants, Market Customers*, and *Ancillary Service Providers* are, as far as practicable, to be put into the position they would have been in had the *AEMO intervention event* not occurred. However, *Affected Participants*, *Market Customers*, or *Ancillary Service Providers* are not entitled to receive from, or required to pay to, AEMO if:

(a) dispatch outcomes are identical between the intervention dispatch run and intervention pricing run as outlined in NER 3.12.2(b2); or

(b) the compensation amount in respect of a single *AEMO intervention event* is less than $5,000 as outlined in NER 3.12.2(b).

[1] Pricing (What-if) run = Intervention 0 and Dispatch run = Intervention 1
[2] Intervention pricing methodology developed by AEMO under NER 3.9.3(e).

3. Compensation for Affected Participants

An *Affected Participant* is entitled to receive from AEMO, or must pay to AEMO, in respect of one or more of its *scheduled generating units* or *scheduled network services*, an amount as determined in accordance with NER 3.12.2.

3.1. Scheduled Generator

The methodology for calculating compensation payable to/from a *Scheduled Generator* for provision of energy from its *scheduled generating units* is set out below:

DC = (Δ MWh * MLF*DLF * RRP * ADJ) – (Δ MWh * Direct Cost)

Where:

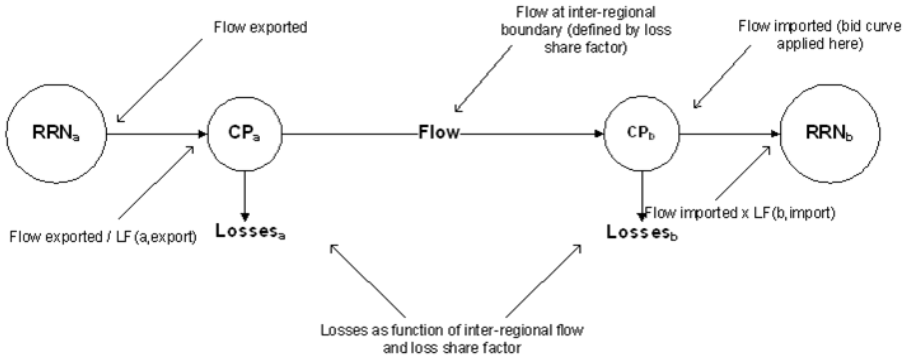
- **DC** is the compensation amount for the *Scheduled Generator* for the relevant intervention price trading interval.
- ***Δ MWh*** is the difference between the what-if target energy and the *dispatch* target energy.
- ***MLF*DLF*** is the relevant *intra-regional loss factor*.
- **RRP** is the *regional reference price* for the *regional reference node* to which the relevant transmission network connection point is assigned, expressed in dollars per MWh.
- ***ADJ*** represents potential discrepancies between SCADA metering and settlement *metering* and is determined as:

  AGE / Dispatch MWh

  where AGE is the adjusted gross energy
- ***Direct Cost*** as outlined in NER 3.12.2(a1) is calculated using data from AEMO's ISP assumption workbook[3].

3.2. Scheduled Network Service Provider

The import end of a *Scheduled Network Service Provider* connection point acts as *generation* (positive MWh - generation) and the export end acts as a *load* (negative MWh - consumption).



[3] Direct cost is calculated as (heat rate * fuel cost) + variable OPEX

The methodology for calculating compensation payable to/from a *Scheduled Network Service Provider* is set out below:

Compensation for $LINKID_{regiona}$

$$DC_a = (\text{What-if } LINKID_a\_RRN * TLF_a * RRP_a * ADJ) - TA$$

Compensation for $LINKID_{regionb}$

$$DC_b = (\text{What-if } LINKID_b\_RRN * TLF_b * RRP_b * ADJ) - TA$$

Where:

- ***DC*** is the compensation amount for a *Scheduled Network Service Provider* for the relevant *intervention price trading interval* for $region_x$.
- ***What-if LINKID_RRN*** (MWh) is the what-if *energy* at the *regional reference node* (RRN) at $region_x$.
- ***TLF*** is the *intra-regional loss factor* for the *Scheduled Network Service Provider*'s *connection point* at $region_x$.
- ***RRP*** is the *regional reference price* for the *regional reference node* to which the connection point is assigned, expressed in dollars per MWh.
- ***ADJ*** represents potential discrepancies between SCADA metering and settlement metering and is calculated as:

  AGE / Dispatch MWh

  where AGE is the adjusted gross energy
- ***TA*** is the trading amount for that *Scheduled Network Service Provider* at $LINKID_x$ as set out in NER 3.15.15.

Total Compensation for LINKID:

$$DC = DC_{a+} DC_b$$

3.3. Eligible person

An *eligible person* is an *Affected Participant* that is entitled to compensation where there has been a change in flow of a regulated directional *interconnector* as a result of the *AEMO intervention event*, for which the eligible person holds Settlements Residue Distribution Agreement (SRDA) units for the *intervention price trading interval*.

The methodology for calculating compensation payable to/from an *eligible person* is set out below:

Compensation for Inter-Regional Settlements Residue (IRSR) for each regulated directional interconnector (IC):

IC Compensation Region$_{a->b}$

$$DC_{a->b} = \text{What-if IRSR Region}_{a->b} - \text{Settlement IRSR Region}_{a->b}$$

Where:

$$\text{What-if IRSR Region}_{a->b} = max\ (0,\ IF\ (Export\_MWh > 0,\ THEN\ RRP_b * |Import\_MWh| - RRP_a * |Export\_MWh|,\ ELSE\ 0))$$

IC Compensation Region$_{b->a}$

$$DC_{b->a} = \text{What-if IRSR Region}_{b->a} - \text{IRSR Region}_{b>a}$$

Where:

$$\text{What-if IRSR Region}_{b->a} = max\ (0,\ IF\ (Export\_MWh < 0,\ THEN\ RRP_a * |Import\_MWh| - RRP_b * |Export\_MWh|,\ ELSE\ 0))$$

- ***DC*** is the compensation amount for IRSR for each regulated directional interconnector from region a → b or b → a for the relevant *intervention price trading interval*.
- **What-if IRSR Region** is the what-if IRSR.
- **Settlement IRSR Region** is the settlement IRSR.
- ***Export_MWh*** and ***Import_MWh*** is the export and import what-if energy flow for each regulated directional *interconnector*.
- ***RRP*** is the *regional reference price* for the *regional reference node* to which the connection point is assigned, expressed in dollars per MWh.

IRSR compensation amount for each directional region's eligible person

$$IRSR\ compensation_{directional\ region's\ eligible\ person} = IRSR\ compensation * \frac{SRDA\ units\ purchased}{Total\ SRDA\ units}$$

4. Compensation for Market Customers

A *Market Customer*, other than a *Market Customer* which was the subject of any *direction* that constitutes the *AEMO intervention event*, is entitled to receive from AEMO, in respect of one or more of its *scheduled loads*, an amount as determined in accordance with NER 3.12.2.

The methodology for calculating compensation payable to *Market Customers* follows the formula set out in full in NER 3.12.2(d), and is therefore not repeated in this document.

5. Compensation for Ancillary Service Providers

An *Ancillary Service Provider*, other than an *Ancillary Service Provider* which was the subject of any direction that constituted the *AEMO intervention event*, is entitled to receive from AEMO, or must pay to AEMO, in respect of one or more of its *ancillary service generating units* or *ancillary service loads* that is also classified as a *scheduled generating unit* or *scheduled load* respectively, an amount as determined in accordance with NER 3.12.2.

The methodology for calculating compensation payable to/from *Ancillary Service Provider* is set out below:

$$DC = \Delta MWh * RRP$$

where:

- ***DC*** is the compensation amount for an *Ancillary Service Provider* for the relevant *intervention price trading interval*.
- ***Δ MWh*** is the difference between the market ancillary service what-if enablement and the dispatch enablement.
- ***RRP*** is the *ancillary service price*, expressed in dollars per MWh.

Version release history

(Most recent version displayed first)

Version	Effective Date	Summary of Changes
1.0	[1 Aug 2022]	First issue – Initial methodology under NER 11.146.2