

BRIEFING PAPER

OPERATION OF THE INTERVENTION PRICE PROVISIONS IN THE NATIONAL ELECTRICITY MARKET

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Table of Contents

1.	Introduction	4
2.	Declaration of Intervention Prices	4
3.	Operation during an Intervention Price Period in a Region	4
4.	Priority of Price Modifiers	5
5.	Effect on Connected Regions	6
6.	End of Intervention Price Period	6
7.	Compensation	6
8.	Compensation Recovery	6

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1. Introduction

The intervention price provisions of the National Electricity Rules form an important component of market pricing. They operate during periods of market intervention through direction or reserve contracting to set prices at levels that would have been posted if the direction or reserve contracting had not occurred. This paper summarises the market operation features of such intervention price periods.

2. Declaration of Intervention Prices

An intervention price dispatch interval (IPDI) is declared¹ when AEMO intervenes² in the market to direct a participant to operate plant other than in accordance with dispatch instructions, or activates a reserve contract. AEMO is provided some time (of up to two dispatch intervals (DIs)) to commence intervention pricing after the intervention takes effect, but must use reasonable endeavours to do so as soon as practicable.

For some interventions the Rules³ provide that intervention pricing is not invoked and normal price setting continues. These circumstances apply in situations where equivalent intervention in respect of plant located at the regional reference node would **not** have removed the need for the intervention actually given. Thus, if a generator is directed to operate its generating plant to address a supply deficiency that is confined to a part of the network that does not include the regional reference node, then intervention pricing is not invoked. This might occur for example if a network constraint was restricting supply to a remote area near the directed generator.

3. Operation during an Intervention Price Period in a Region

When an IPDI is declared and intervention pricing is invoked, AEMO publishes a market notice to advise of the commencement of an intervention price period. Two special constraint equations (known as what-if and intervention) are invoked in the NEMDE⁴ to determine the pre-intervention dispatch (ie what-if the intervention had not occurred) of the scheduled plant subject to the intervention and the required intervention dispatch level. In the case of demand-side and non-scheduled reserve contract activation, these special constraint equations relate to a dummy 'reserve trader' generator, to represent the effect of the intervention. The two constraint equations are mutually incompatible, however the CVP⁵ of the intervention constraint is set at a higher value so that it prevails over the what-if constraint.

¹ See National Electricity Rules clause 3.9.3(a)

² For AEMO's procedure see System Operation Procedure SO_OP3707: Intervention, Direction and Clause 4.8.9 Instructions (<http://www.aemo.com.au/electricityops/3707.html>)

³ See National Electricity Rules clause 3.9.3(d)

⁴ National Electricity Market Dispatch Engine, which determines dispatch and pricing outcomes for each 5-minute DI.

⁵ Constraint Violation Penalty factor, which indicates the 'cost' of violating the constraint equation

Market prices and dispatch targets of generation and interconnectors are calculated twice for each DI.

The first calculation⁶ takes into account all of the constraint equations, including the intervention and what-if constraint equations. The dispatch targets from this run are used to dispatch the market a way that is consistent with AEMO's intervention. The intervention flag is set to 1 in all output records relating to the intervention run.

The second calculation ignores the intervention constraint equation, so that the what-if constraint can take effect. The dispatch targets from this run are published but can be ignored for practical purposes. The important information from this run is the regional energy and ancillary service prices which are published as the official market prices for the DI. The intervention flag is set to 0 in all output records relating to the what-if run. NB the regional prices for all regions (not just those regions subject to the intervention) are taken from the what-if run, to ensure consistency of pricing between energy and FCAS markets and across regions. Energy Regional Reference Price (RRP) is capped to market price cap (MPC) or floored to market floor price (MFP), while FCAS price is capped to MPC or floored at \$0.

As dispatch targets from the what-if run can diverge from the actual power system measured values, the initial values for all dispatchable entities are taken to be the dispatch target values from the previous DI ie all plant is assumed to conform with dispatch exactly in each what-if run.

AEMO has published the Intervention Price Methodology as the outcome of a consultation at <http://www.aemo.com.au/electricityops/140-0071.html>

4. Other Price Modifiers

Intervention pricing is only one of several market conditions that can affect the final price that is published for a particular DI. Other conditions include:

- Mandatory restrictions⁷ (price is set to MPC when mandatory restriction offer is dispatched)
- Overconstrained dispatch⁸ (when price is set by constraint violation penalty factors)
- MPC over-ride⁹ (price set at the market cap during load shedding)
- Price scaling¹⁰ (when the adjacent region is capped or floored)
- Price rejection due to Manifestly Incorrect Input¹¹

⁶ Called the outturn run because it sets dispatch outcomes for all scheduled plant

⁷ See Rule 3.12A.6 regarding pricing during a restriction price trading interval

⁸ See Rule 3.8.1(c) regarding treatment of infeasible dispatch outcomes

⁹ See Rule 3.9.2(e)(1) regarding setting price at MPC

¹⁰ See Rule 3.9.5(c) regarding price scaling for adjacent regions

¹¹ See Rule 3.9.2B

- Administered price cap and floor¹² (when the region or an 'adjacent region' is in an Administered Price period)

Intervention price outcomes could be modified by any or all of these processes if the relevant conditions exist at the time.

5. Effect on Connected Regions

Energy and FCAS prices for all regions are taken from the intervention pricing run as a consistent set to minimise the risk of price dislocation between regions. Higher priority price modifiers such as those listed in section 4 above, may cause significant movement in some regional price outcomes, in which case the scaling arrangements are invoked as required under the Rules¹³ to override the intervention prices calculated for adjacent regions.

6. End of Intervention Price Period

An intervention price period ends when the direction or reserve dispatch or activation ceases and is advised by Market Notice. When the intervention constraint equations are revoked the intervention pricing run is not triggered for subsequent DIs.

7. Compensation

Intervention pricing does not trigger compensation directly. If any scheduled generating units, scheduled network services (such as Basslink) or scheduled loads (apart from those subject to a direction or reserve contract) are dispatched to different targets or settlements residue distributions are directly and materially¹⁴ changed because of the intervention, then AEMO determines¹⁵ the compensation to be paid by or paid to each Affected Participant¹⁶.

Affected Participants may make submissions to AEMO claiming additional amounts taking into account direct costs¹⁷ such as fuel, incremental maintenance and manning costs, energy and ancillary service payments at the regional reference price.

8. Compensation Recovery

Any compensation that AEMO pays due to intervention in the market is recovered¹⁸ from Market Customers in the regions benefitting from the intervention (ie direction or reserve contracting). Compensation payments and recovery amounts are shown on preliminary and final settlement statements for the billing week in which the compensation determination is published to the market.

¹² See Rule 3.14.2

¹³ See Rule 3.9.5(c) for market price cap scaling and 3.14.2(e) for administered price cap scaling

¹⁴ The compensation must be at least \$5,000 per trading interval – Rule 3.12.2(b)

¹⁵ See Rule 3.12.2

¹⁶ For full definition see glossary reference of the National Electricity Rules

¹⁷ See Rule 3.12.2(j)

¹⁸ See Rule 3.15.8