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# NEM Event – Directions 17 to 24 February 2019

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**October 2019**

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# Important notice

## PURPOSE

Where the Australian Energy Market Operator (AEMO) intervenes in the National Electricity Market (NEM) through the use of directions, AEMO must publish a report in accordance with National Electricity Rules (NER) clauses 4.8.9(f) and 3.13.6A(a). This report satisfies those NER obligations, and is based on information available to AEMO at 03 October 2019.

Unless otherwise indicated, terms in this report have the same meanings as those defined in the NER.

All references to time in this report are based on Australian Eastern Standard Time (AEST).

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## ABBREVIATIONS

Abbreviation	Expanded name
AEMO	Australian Energy Market Operator
AEST	Australian Eastern Standard Time
DI	Dispatch Interval
MN	Market Notice
NEM	National Electricity Market
NER	National Electricity Rules

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# 1. Summary

To ensure adequate system strength for secure operation of the South Australian power system, certain combinations of synchronous generating units must be in service at all times<sup>1</sup>.

Clause 4.8.9 of the National Electricity Rules (NER) allows AEMO to intervene in the market by issuing directions or clause 4.8.9 instructions, if AEMO is satisfied that it is necessary to maintain or re-establish the power system to a secure, satisfactory, or reliable operating state. Section 116 of the National Electricity Law allows AEMO to issue directions to take certain action if AEMO considers that it is necessary to maintain power system security or for reasons of public safety.

Between 17 and 24 February 2019, AEMO issued three directions to South Australian Market Participants to maintain power system security across two events. The directions are summarised in Table 1.

**Table 1 Summary of the three South Australia directions between 17 and 24 February 2019**

Direction	Directed Participant	Event No.	Issue time	Cancellation time	Direction instruction
Torrens Island A unit 1	AGL SA Generation Pty Ltd	1	0910 hrs, 17 February 2019	1320 hrs, 17 February 2019	To synchronise and follow dispatch targets from 0100 hrs on 18 February 2019. Direction was cancelled before effective.
Torrens Island A unit 2	AGL SA Generation Pty Ltd	2	1900 hrs, 23 February 2019	1045 hrs, 24 February 2019	To synchronise and follow dispatch targets from 0100 hrs on 24 February 2019.
Torrens Island B unit 2	AGL SA Generation Pty Ltd	2	1900 hrs, 23 February 2019	1045 hrs, 24 February 2019	To synchronise and follow dispatch targets from 0100 hrs on 24 February 2019.

## 2. Intervention assessment

### 2.1 The need for intervention

To ensure adequate system strength for secure operation of the South Australian power system, suitable combinations of synchronous generating units must be in service at all times<sup>1</sup>. AEMO continues to investigate system strength requirements in South Australia, and updates the set of viable combinations regularly. The need for intervention, and options considered, were assessed against the set of viable combinations available on 17 February 2019.

1. For the first direction event, the need for intervention arose due to
  - At 0907 hrs on 16 February 2019, Pelican Point Power Pty Ltd (ENGIE) submitted an initial bid to de-commit Pelican Point Power Station from 0100 hrs on 18 February 2019<sup>2</sup>.

<sup>1</sup> See <http://www.aemo.com.au/Media-Centre/South-Australia-System-Strength-Assessment>.

<sup>2</sup> 0907~P~ INITIAL OFFER~

- However, the direction was cancelled before it became effective, because Predispatch at 1230 hrs on 17 February indicated there would be adequate system strength in South Australia for the Predispatch period.
2. For the second direction event, the need for intervention arose due to:
- At 1600 hrs on 23 February 2019, ENGIE submitted a rebid to de-commit Pelican Point power station from 0100 hrs on 24 February 2019<sup>3</sup>.
  - As a result, AEMO determined that there would be insufficient online synchronous units available to meet system strength requirements from 0100 hrs on 24 February 2019.

## 2.2 Assessment of market response and latest time to intervene

Under NER clauses 4.8.5A(a) and (c), AEMO must notify the market of any anticipated power system security or reliability issue, and the latest time for market response before AEMO would need to intervene. For each of the direction events, AEMO issued this market notification as listed in Table 2.

AEMO contacted all participants who operate suitable generating units in South Australia to confirm their availability and the latest time to intervene. Those participants indicated they did not intend to adjust their market offers, but identified units that would be available if directed.

For each of the three direction events, AEMO assessed the latest time to intervene taking account of the advised lead times. The latest times to intervene are listed in Table 2.

## 2.3 Decision to intervene

As all participants contacted had indicated that no market response would be provided, AEMO evaluated the estimated costs, and issued the directions listed in Table 1.

AEMO cancelled the directions when relevant synchronous generating units rebid into the market.

# 3. Intervention process

AEMO considers that it followed all applicable processes under NER clause 4.8 for the management of the directions between 17 to 24 February 2019<sup>4</sup>.

Table 2 provides a high-level timeline of the intervention event.

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<sup>3</sup> 1430~A~RESPOND TO PREDISPATCH D+1~

<sup>4</sup> AEMO. Power system operating procedure SO\_OP 3707, "Intervention, direction and clause 4.8.9 instructions", 11 September 2014, available at [http://aemo.com.au/-/media/Files/Electricity/NEM/Security\\_and\\_Reliability/Power\\_System\\_Ops/Procedures/SO\\_OP\\_3707---Intervention-Direction-and-Clause-4-8-9-Instructions.pdf](http://aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/Power_System_Ops/Procedures/SO_OP_3707---Intervention-Direction-and-Clause-4-8-9-Instructions.pdf).

**Table 2 Timeline of key events between 17 and 24 February 2019**

Time	Events / comments
<b>16 February 2019</b>	
0907 hrs	Pelican Point Power Pty Ltd (ENGIE) submitted an initial bid to de-commit Pelican Point power station from 0100 hrs on 18 February 2019.
1444 hrs	AEMO published a market notice seeking a market response and noting the latest time to intervene was yet to be determined (MN 67286). The latest time to intervene was subsequently updated to 0900 hrs on 17 February 2019 (MN 67287).
<b>17 February 2019</b>	
0910 hrs	<ul style="list-style-type: none"> <li>• Direction issued to AGL SA Generation Pty Ltd for Torrens Island A unit 1 to synchronise and follow dispatch targets from 0100 hrs on 18 February 2019.</li> <li>• AEMO published MN 67289 declaring a direction was issued to a South Australian participant.</li> <li>• AEMO published MN 67290 declaring that an AEMO intervention event had commenced from dispatch interval (DI) ending 0915 hrs on 17 February 2019 and that all DIs during the AEMO intervention event would be intervention price DIs.</li> </ul>
1320 hrs	<ul style="list-style-type: none"> <li>• The direction to Torrens Island A unit 1 was cancelled before taking effect.</li> <li>• AEMO published MN 67292 declaring the cancellation of the AEMO intervention event and the associated direction.</li> </ul>
<b>23 February 2019</b>	
1600 hrs	ENGIE submitted a rebid to de-commit Pelican Point power station from 0100 hrs on 24 February 2019.
1735 hrs	AEMO published a market notice seeking a market response and noting the latest time to intervene was 1900 hrs on 23 February 2019 (MN 67378).
1900 hrs	<ul style="list-style-type: none"> <li>• Direction issued to AGL SA Generation Pty Ltd for Torrens Island A unit 2 and Torrens Island B unit 2 to synchronise and follow dispatch targets from 0100 hrs on 24 February 2019.</li> <li>• AEMO published MN 67381 declaring directions were issued to a South Australian Participant.</li> <li>• AEMO published MN 67382 declaring that an AEMO intervention event had commenced from DI ending 1905 hrs on 23 February 2019 and that all DIs during the AEMO intervention event would be intervention price DIs.</li> <li>• Intervention constraints applied to Torrens Island A unit 2 and Torrens Island B unit 2 in central dispatch from DI ending 0105 hrs on 24 February 2019.</li> </ul>
<b>24 February 2019</b>	
1045 hrs	<ul style="list-style-type: none"> <li>• The directions to Torrens Island A unit 2 and Torrens Island B unit 2 were cancelled and intervention constraints were revoked.</li> <li>• AEMO published MN 67391 declaring the cancellation of the AEMO intervention event and the associated directions.</li> </ul>

### 3.1 Adequacy of responses to AEMO inquiries

NER clause 4.8.5A(d) permits AEMO to request information from Scheduled Network Service Providers, Scheduled Generators, Semi-Scheduled Generators, and Market Customers.

AEMO is satisfied with the timeliness, adequacy, and effectiveness of all responses to its requests from AGL SA Generation Pty Ltd for information prior to issuing the directions between 17 and 24 February 2019.

## 3.2 Participant ability to comply with the intervention

NER clause 4.8.9(d) requires that a Registered Participant must immediately notify AEMO of its inability to comply, or intention not to comply, with a direction or clause 4.8.9 instruction.

AEMO did not receive any indication that a Registered Participant would be unable to comply with the direction. AEMO is satisfied that AGL SA Generation Pty Ltd complied with the directions listed in Table 1.

# 4. Dispatch and pricing outcomes

## 4.1 Changes to dispatch outcomes due to the directions

The directions to AGL SA Generation Pty Ltd resulted in approximately 674 megawatt hours (MWh) of generation being added to the market.

Under NER clause 3.8.1(b)(11), AEMO must ensure that, as far as reasonably practicable, the number of participants affected by the intervention and the resulting changes to interconnector flows are minimised<sup>5</sup>.

AEMO considered the application of counter-action constraints to achieve this objective, but concluded this was not practical during this intervention.

Tables 3 and 4 summarise the estimated change to dispatch outcomes resulting from this direction. These have been estimated by comparing against a simulated dispatch with the direction removed.

Directions in one region can cause dispatch changes to other regions. In particular, these changes are driven by economic co-optimisation within the market, and by the interplay between network constraint equations across multiple regions.

Of note is that while these directions displaced market-based generation in South Australia, they also increased exports into Victoria. The increased exports, coupled with an impact on network constraints, resulted in displacement of generation in all NEM regions.

**Table 3 Estimated changes to local generation in each region (MWh)**

	QLD	NSW	VIC	SA	TAS
Without direction	64,517	64,394	43,375	8,064	5,452
Actual	63,998	64,010	43,429	8,111 +674 <sup>A</sup>	5,445
Change	<b>-519</b>	<b>-384</b>	<b>54</b>	<b>721</b>	<b>-7</b>

A. 674 MWh is the directed energy.

<sup>5</sup> AEMO's power system operating procedure SO\_OP 3707 "Intervention, Direction and Clause 4.8.9 Instructions" describes this objective. In practice, AEMO meets the objective by selecting generating units located in the same region as the directed generation (and, if possible, belonging to the same participant), and then constraining the dispatch of the selected generating units by an equal and opposite amount to that of the directed generating units.

**Table 4 Estimated changes to interconnector flow between regions (MWh)**

	Terranora	QNI	VIC-NSW	Heywood	Murraylink	Basslink
Without direction <sup>A</sup>	-563	-4,237	196	2,636	558	-3,654
Actual <sup>A</sup>	-516	-3,779	1,024	2,008	451	-3,661
Change <sup>B</sup>	<b>47 MWh less into NSW</b>	<b>459 MWh less into NSW</b>	<b>828 MWh more into NSW</b>	<b>628 MWh less into SA</b>	<b>108 MWh less into SA</b>	<b>7 MWh more into TAS</b>

A. Positive numbers are for flows flowing north or west, negative for flows flowing south or east.

B. Change = |Actual - Without direction|.

## 4.2 Application of intervention pricing

AEMO declares intervention pricing for periods subject to an AEMO intervention event. Under intervention pricing, NER clause 3.9.3(b) requires that AEMO set the dispatch price and ancillary service prices at the value which AEMO, in its reasonable opinion, considers would have applied had the intervention event not occurred. AEMO determines and publishes these prices in accordance with the Intervention Pricing Methodology<sup>6</sup>.

Intervention pricing applies whenever the direction meets the regional reference node test, that is, a direction at the regional reference node would have avoided the need for the direction.

AEMO's transfer limit advice on South Australia System Strength provides a number of feasible combinations of generating units that provide the needed level of system strength. All combinations of plant in the limit advice can be fully substituted by directing at the regional reference node (Torrens Island) in the current system strength scenarios. Accordingly, system strength directions in South Australia pass the regional reference node test and intervention pricing is appropriate.

Intervention pricing was applied for this event in accordance with NER 3.9.3(b), and for the full intervention period from DI ending hrs on 0105 hrs on 24 February 2019 until DI ending 1045 hrs on 24 February 2019.

# 5. Conclusions and further actions

Between 17 and 24 February 2019, AEMO issued directions to a South Australia Participant to maintain power system security.

AEMO is satisfied that all applicable procedures and processes were followed in assessing the need for intervention, determining the latest time to intervene, enacting and managing the intervention, applying appropriate intervention pricing, and seeking market response from all generators capable of meeting the system strength requirements. The market was informed after each direction was issued.

AEMO is also satisfied with the timeliness and adequacy of participant responses and communication throughout.

<sup>6</sup> Intervention Pricing Methodology is available at [http://www.aemo.com.au/-/media/Files/Electricity/NEM/Security\\_and\\_Reliability/Dispatch/Policy\\_and\\_Process/2019/Intervention-Pricing-Methodology.pdf](http://www.aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/Dispatch/Policy_and_Process/2019/Intervention-Pricing-Methodology.pdf).