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# NEM Event – Direction Report 18 to 19 May 2019

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**June 2020**

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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 22 January 2020.

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).

## DISCLAIMER

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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
PS	Power Station
SA	South Australia
GT	Gas Turbine
ST	Steam Turbine

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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 18 and 19 May 2019, AEMO issued two directions to South Australian Market Participants to maintain power system security. These two directions are summarised in Table 1.

**Table 1 Summary of the two South Australia directions between 18 and 19 May 2109**

Direction	Directed Participant	Event No.	Issue time	Cancellation time	Direction instruction
<b>Pelican Point GT 12 and ST 18</b>	Pelican Point Power Pty Ltd (ENGIE)	1	1600 hrs, 18 May 2019	1400 hrs, 19 May 2019	Remain synchronised and follow dispatch targets from 0230 hrs on 19 May 2019
<b>Torrens Island B unit 4</b>	AGL SA Generation Pty Ltd	1	2100 hrs, 18 May 2019	1400 hrs, 19 May 2019	Remain synchronised and follow dispatch targets from 0030 hrs on 19 May 2019

## 2. Intervention assessment

### 2.1 The need for intervention

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. AEMO continues to investigate system strength requirements in South Australia, and updates the set of viable combinations on a regular basis. The need for intervention, and options considered, were assessed against the set of viable combinations available from 18 May 2019 for each of the direction events.

The requirement to intervene for the direction events in this report arose when the following rebids were submitted (the numbering corresponds to the directions events):

1. ENGIE submitted a rebid at 1307 hrs on 18 May 2019 for Pelican Point PS to de-commit at 0230 hrs on 19 May 2019<sup>2</sup>.
2. AGL SA Generation Pty Ltd submitted a rebid at 1603 hrs on 18 May 2019 for Torrens Island B unit 4 to de-commit at 0030 hrs on 19 May 2019<sup>3</sup>.

<sup>1</sup> See [https://www.aemo.com.au/-/media/files/electricity/nem/security\\_and\\_reliability/congestion-information/transfer-limit-advice-system-strength.pdf](https://www.aemo.com.au/-/media/files/electricity/nem/security_and_reliability/congestion-information/transfer-limit-advice-system-strength.pdf).

<sup>2</sup> Rebid reason: 1000~A~RESPOND TO PREDISPATCH D+1~

<sup>3</sup> Rebid reason: 1600~P~050 CHG IN UNIT OPERATION~501 SWAP OFF TIMES FOR B4 AND A

As a result, AEMO determined that there would be insufficient online synchronous units available to meet system strength requirements following these de-commitments and assessed all available options before directing.

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

Under NER clause 4.8.5A paragraphs (a) and (c), AEMO must notify the market of any foreseeable circumstances that may require AEMO to intervene, and the latest time for market response before AEMO would need to intervene.

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 directions, AEMO assessed the latest time to intervene taking account of the advised lead times.

The market notices and latest time to intervene are listed in Table 2.

## 2.3 Decision to intervention

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 direction between 18 and 19 May 2019. Table 2 provides a high-level timeline of the intervention event.

**Table 2** Timeline of key events between 18 and 19 May 2019

Time	Events/comments
<b>18 May 2019</b>	
<b>1307 hrs</b>	ENGIE rebid to decommit Pelican Point PS from 0230 hrs on 19 May 2019.
<b>1603 hrs</b>	AGL SA Generation Pty Ltd rebid to decommit Torrens Island B unit 4 from 0030 hrs on 19 May 2019.
<b>18 May 2019</b>	
<b>1336 hrs</b>	AEMO published a market notice seeking a market response and noting the latest time to intervene was 1600 hrs on 18 May 2019 (MN 68410).
<b>1600 hrs</b>	<ul style="list-style-type: none"> <li>• Directions issued to ENGIE for Pelican Point GT12 and ST18 to remain synchronised and follow dispatch targets from 0230 hrs on 19 May 2019.</li> <li>• AEMO published MN 68425 declaring a direction was issued to a South Australian participant.</li> <li>• AEMO published MN 68426 declaring that an AEMO intervention event had commenced from dispatch interval ending 1605 hrs on 18 May 2019 and that all dispatch intervals during the AEMO intervention event would be intervention price dispatch intervals.</li> <li>• Intervention constraints applied to Pelican Point PS in central dispatch from dispatch interval ending 0235 hrs on 19 May 2019.</li> </ul>

Time	Events/comments
2100 hrs	<ul style="list-style-type: none"> <li>• Directions issued to AGL SA Generation Pty Ltd for Torrens Island B unit 4 to remain synchronised and follow dispatch targets from 0030 hrs on 19 May 2019.</li> <li>• Intervention constraints applied to Torrens Island B unit 4 in central dispatch from dispatch interval ending 0035 hrs on 19 May 2019</li> </ul>
<b>19 May 2019</b>	
1400 hrs	<ul style="list-style-type: none"> <li>• The directions to Pelican Point GT12 and ST18 and Torrens Island B unit 4 were cancelled and intervention constraints were revoked.</li> <li>• AEMO published market notice 68437 declaring the cancellation of the direction.</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 ENGIE and AGL SA Generation Pty Ltd for information prior to issuing the directions between 18 and 19 May 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 is satisfied with all participants complying with the directions in Table 1.

## 4. Dispatch and pricing outcomes

### 4.1 Changes to dispatch outcomes due to the directions

The directions to ENGIE and AGL SA Generation Ltd, resulted in approximately 2,408 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. 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 the direction event. These are 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 from South Australia. The increased exports, coupled with an impact on network constraints, resulted in displacement of generation in other NEM regions.

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

	QLD	NSW	VIC	SA	TAS
<b>Without direction</b>	85,636	88,406	52,038	16,769	11,192
<b>Actual</b>	86,556	86,599	52,019	16,553+ 2,408 <sup>A</sup>	11,109
<b>Change</b>	-80	-1,807	-19	2,192	-83

A. 2,408 is the directed energy.

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

	Terranora	QNI	VIC-NSW	Heywood	Murraylink	Basslink
<b>Without direction</b>	-1,175	-9,110	-3,535	-2,783	-258	-3,885
<b>Actual<sup>A</sup></b>	-1,163	-9,044	-1,699	-4,615	-570	-3,968
<b>Change<sup>B</sup></b>	12 MWh less into NSW	66 MWh less into NSW	1,836 MWh less into VIC	1,832 MWh more into VIC	312 MWh more into VIC	83 MWh more into TAS

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

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 region reference node (Torrens Island) in the current system strength scenarios. Accordingly, system strength directions in South Australia pass the region reference node test and intervention pricing is appropriate.

Intervention pricing was applied for this event in accordance with NER clause 3.9.3(b), and for the full intervention period from DI ending 1605 hrs on 18 May 2019 until DI ending 1400 hrs on 19 May 2019.

# 5. Conclusions and further actions

Between 18 and 19 May 2019, AEMO issued two directions to South Australian Market Participants to maintain power system security, in response to a forecast lack of system strength in the region.

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.