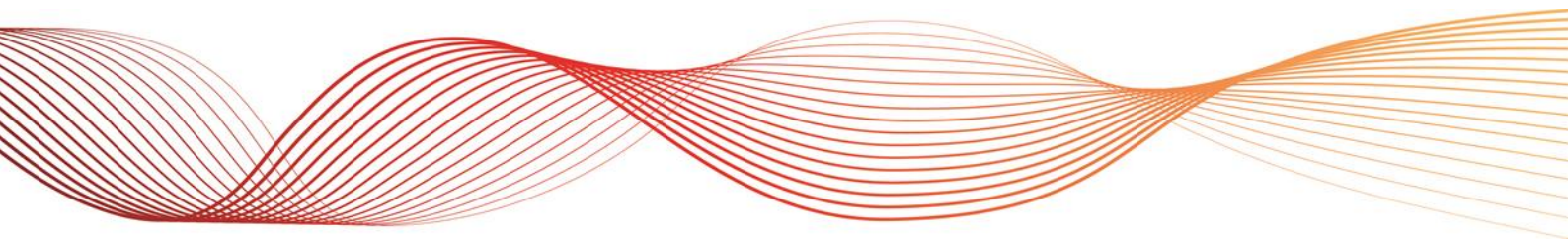




NEM EVENT – DIRECTION 24-26 MARCH 2018

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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) clause 4.8.9(f) and 3.13.6A(a). This report satisfies those NER obligations, and is based on information available to AEMO at 28 May 2018.

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

AEMO has made every reasonable effort to ensure the quality of the information in this report but cannot guarantee its accuracy or completeness. Any views expressed in this report are those of AEMO unless otherwise stated, and may be based on information given to AEMO by other persons.

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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 times¹.

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 24 March 2018 and 26 March 2018, AEMO issued three directions to South Australian Market Participants to maintain power system security. The directions are summarised in Table 1.

Table 1 Summary of the South Australia direction between 24 March 2018 and 26 March 2018

Direction	Directed Participant	Issue time	Cancellation time	Direction instruction
Osborne Power Station (PS)	Origin Energy Electricity Limited	1350 hrs, 24 March 2018	0700 hrs, 26 March 2018	Remain synchronised and follow dispatch targets effective from 2030 hrs on 24 March 2018.
Pelican Point Gas Turbine (GT) 12	Pelican Point Power Limited (ENGIE)	1903 hrs, 24 March 2018	0400 hrs, 26 March 2018	Remain synchronised and follow dispatch targets effective from 0030 hrs on 25 March 2018.
Torrens Island B unit 2	AGL SA Generation Pty Ltd	1906 hrs, 24 March 2018	0500 hrs, 26 March 2018	Remain synchronised and follow dispatch targets effective from 0030 hrs on 25 March 2018.

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 times¹. 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 on 24 March 2018.

The 1400 hrs Pre-Dispatch (PD) run on 23 March 2018 indicated that there would be insufficient online synchronous generating units available to meet these requirements from 2030 hrs on 24 March 2018 due to the de-commitment of generating units on 24 March 2018 and 25 March 2018. AEMO determined that, should a market response not be provided, multiple directions would be required to maintain power system security.

2.2 Assessment of market response and latest time to intervene

Under NER clause 4.8.5A(a) and (c), AEMO must notify the market of any anticipated power system security or reliability issue that may require intervention, and the latest time for market response before

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



AEMO would need to intervene. AEMO issued this market notice (MN 61799) at 1410 hrs on 23 March 2018, and updated the notice (MN 61817) at 1324 hrs on 24 March 2018².

AEMO contacted the Registered Participants who operate eligible synchronous generating units in South Australia to seek their availability for the relevant periods. Those Registered Participants indicated they did not intend to adjust their market offers, but identified units that would be available if directed. Based on advised lead times, AEMO assessed that the latest time to intervene was 1350 hrs on 24 March 2018.

2.3 Decision to intervene

With insufficient market response provided, AEMO evaluated the estimated costs provided for eligible synchronous generating units, and issued the following directions:

- Origin Energy Electricity Ltd for Osborne Power Station (PS) to remain synchronised and follow dispatch targets from 2030 hrs on 24 March 2018.
- Pelican Point Power Limited for Pelican Point Gas Turbine (GT) 12 to remain synchronised and follow dispatch targets from 0030 hrs on 25 March 2018.
- AGL SA Generation Pty Ltd for Torrens Island B unit 2 to remain synchronised and follow dispatch targets from 0030 hrs on 25 March 2018.

3. INTERVENTION PROCESS

AEMO considers that it followed all applicable processes under NER 4.8 for the management of the direction between 24 March 2018 and 26 March 2018³. Table 2 provides a high level timeline of the intervention event.

Table 2 Timeline of key events between 23 March 2018 and 26 March 2018

Time	Events / comments
23 March 2018	
1410 hrs	AEMO published market notice seeking a market response and noting the latest time to intervene was at 1900 hrs on 24 March 2018 (MN 61799).
24 March 2018	
1324 hrs	AEMO published a market notice update seeking a market response and noting the latest time to intervene was at 1350 hrs on 24 March 2018 (MN 61817).
1350 hrs	Direction issued to Origin Energy Electricity Ltd for Osborne PS to remain synchronised and follow dispatch targets from 2030 hrs on 24 March 2018.
1401 hrs	AEMO published MN 61819 declaring a direction was issued to a South Australian participant at 1350 hrs.
1406 hrs	AEMO published MN 61820 declaring an AEMO intervention event commenced from DI ending 1355 hrs and that all DIs during the AEMO intervention event would be intervention price DIs.
1903 hrs	Direction issued to Pelican Point Power Limited for Pelican Point GT 12 to remain synchronised and follow dispatch targets from 0030 hrs on 25 March 2018.
1906 hrs	Direction issued to AGL SA Generation Pty Ltd for Torrens Island B unit 2 to remain synchronised and follow dispatch targets from 0030 hrs on 25 March 2018.
1909 hrs	AEMO published MN 61847 declaring a direction was issued to a South Australian participant at 1903 hrs.
1911 hrs	AEMO published MN 61848 declaring a direction was issued to a South Australian participant at 1906 hrs.
26 March 2018	

² AEMO Market Notices are at <http://www.aemo.com.au/Market-Notices>.

³ 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.



Time	Events / comments
0400 hrs	AEMO published MN 61877 declaring that the direction to Pelican Point Power Limited (Pelican Point GT 12) was cancelled at 0400 hrs on 26 March 2018. Intervention constraints revoked for Pelican Point GT 12.
0500 hrs	AEMO published MN 61879 declaring that the direction to AGL SA Generation Pty Ltd (Torrens Island B unit 2) was cancelled at 0500 hrs on 26 March 2018. Intervention constraints revoked for Torrens Island B unit 2.
0700 hrs	AEMO published MN 61904 declaring that the direction to Origin Energy Electricity Limited (Osborne PS) was cancelled at 0700 hrs on 26 March 2018. Intervention constraints revoked for Osborne PS.
0702 hrs	AEMO published MN 61906 declaring the cancellation of intervention pricing.

3.1 Adequacy of responses to AEMO inquires

NER 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 for information prior to issuing the directions between 24 March 2018 and 26 March 2018.

3.2 Participant ability to comply with the intervention

NER 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 a direction issued between 24 March 2018 and 26 March 2018.

4. CHANGES TO DISPATCH OUTCOMES

The directions for Osborne PS, Pelican Point GT 12, and Torrens Island B unit 2 to remain synchronised and follow dispatch targets resulted in approximately 10,310 megawatt hours (MWh) of generation being added to the market.

Under NER 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 minimised⁴. AEMO considered the application of counter-action constraints to achieve this objective, but concluded this was not practical due to limited online units and potential for all to be at technical minimums during the period of direction counter-action.

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

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 most regions other than Tasmania. The Basslink interconnector was unavailable during the direction period.

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

	QLD	NSW	VIC	SA	TAS
Without direction	225,650	208,769	167,383	34,345	35,055
Actual	223,182	205,190	163,823	34,360 + 10,310 ^A	35,054
Change	-2,468	-3,579	-3,560	+10,325	-1

A. 10,310 MWh is the directed energy.

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

	Terranora	QNI	VIC-NSW	Heywood	Murraylink	Basslink
Without direction^A	-2,046	-14,199	21,465	3,407	-195	0
Actual^A	-1,709	-12,117	27,921	-5,091	-1,929	0
Change^B	337 MWh less to NSW	2082 MWh less to NSW	6,456 MWh more to NSW	8,498 MWh more to VIC	1,735 MWh more to VIC	Unavailable

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

B. Change = |Actual - Without direction|.

4.1 Application of intervention pricing

AEMO declares intervention pricing for periods subject to an AEMO intervention event. Under intervention pricing, NER 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 Methodology⁵.

Intervention pricing was declared for this event in accordance with NER 3.9.3(b) for the full intervention period from DI ending 1355 hrs on 24 March 2018 until DI ending 0700 hrs on 26 March 2018.

5. CONCLUSIONS AND FURTHER ACTIONS

Between 24 March 2018 and 26 March 2018, AEMO issued three directions to South Australian Market Participants to maintain power system security in response to a generator trip in the region resulting in insufficient system strength.

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 informing the market to the extent reasonably practical within time constraints.

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

⁵ Intervention Pricing Methodology is at <https://www.aemo.com.au/-/media/Files/PDF/Intervention-Pricing-Methodology-October-2014.pdf>.



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
PD	Pre-Dispatch
PS	Power Station
SA	South Australia