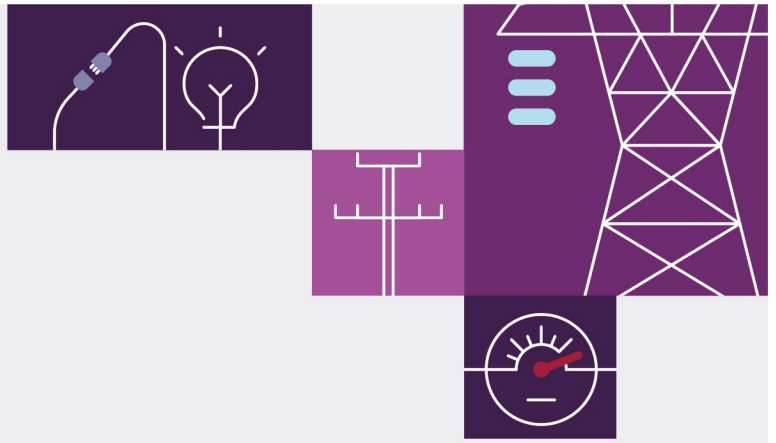


# Final Report: New South Wales market suspension on 17 March 2023

March 2024

A market event report for the National Electricity Market





# Important notice

## Purpose

AEMO has prepared this final market event report in accordance with clauses 3.14.3(c)-(d) and 3.14.4(f)-(g) of the National Electricity Rules, using information available as at the date of publication unless otherwise specified.

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## Abbreviations

Abbreviation	Term
AEMO	Australian Energy Market Operator
AEST	Australian Eastern Standard Time
FCAS	frequency control ancillary service
ICCP	Inter-Control Centre Communications Protocol
MSPS	Market Suspension Pricing Schedule
NEM	National Electricity Market
NER	National Electricity Rules
NSP	network service provider
SCADA	Supervisory Control and Data Acquisition
TNSP	transmission network service provider



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# 1 Overview

This is the final report relating to AEMO's suspension of the spot market in New South Wales on 17 March 2023. It consolidates and updates AEMO's preliminary report on the market suspension published in April 2023<sup>1</sup> and is based on information available to AEMO on 28 February 2024.

At approximately 1930 hrs<sup>2</sup> on 17 March 2023, the Inter-Control Centre Communications Protocol (ICCP) link between Transgrid<sup>3</sup> and AEMO failed. As a result, AEMO lost all Supervisory Control and Data Acquisition (SCADA) visibility from Transgrid for all of New South Wales. AEMO subsequently suspended the spot market in New South Wales on 17 March 2023 from 2015 hrs to 2110 hrs. During the suspension period, New South Wales prices were set using market suspension schedule pricing.

As required by National Electricity Rules (NER) 3.14.3(c) and 3.14.4(f), AEMO has conducted a review of the market suspension. This final report includes the matters required by NER 3.14.3(c) and (d), namely:

- AEMO's assessment of the adequacy of the provision and response of facilities and services, and actions taken to maintain power system security, which is in Section 3.
- Details of the payments and compensation made to each Market Suspension Compensation Claimant and the share of compensation costs recovered from each Market Customer in New South Wales, Victoria and Queensland. These details were not available at the time of the preliminary report and are provided in Section 4.

The reason for the suspension and its effect on the operation of the spot market, as required by NER 3.14.4(g), remains unchanged since the publication of the preliminary report in April 2023. This information is, therefore, not included in this report, and, together with the sequence of events, not repeated in Section 2.

This report also includes, in Section 5, an update on the progress of actions or recommendations set out in the preliminary report.

## 2 Event summary

No new information became available to AEMO with regards to the sequence of events since the publication of the preliminary report in April 2023.

## 3 Adequacy of actions taken

Under NER 3.14.3(c), AEMO has reviewed the adequacy of the provision and response of facilities and services during the market suspension, and the appropriateness of actions taken to restore or maintain power system security, and has concluded all responses and actions were adequate in the circumstances.

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<sup>1</sup> AEMO, *Preliminary report: New South Wales market suspension on 17 March 2023*, at [https://aemo.com.au/-/media/files/electricity/nem/market\\_notices\\_and\\_events/market\\_event\\_reports/2023/preliminary-suspension-nsw.pdf?la=en](https://aemo.com.au/-/media/files/electricity/nem/market_notices_and_events/market_event_reports/2023/preliminary-suspension-nsw.pdf?la=en).

<sup>2</sup> National Electricity Market (NEM) time (Australian Eastern Standard Time [AEST]) is used in this report.

<sup>3</sup> Transgrid is a transmission network service provider (TNSP) for New South Wales.

## 4 Payments and compensation

### 4.1 Market suspension pricing schedule payments and compensation payments

Table 1 shows the Market Suspension Pricing Schedule (MSPS) energy and frequency control ancillary service (FCAS) payments and compensation payments for energy and FCAS made to each Market Suspension Compensation Claimant, as required by NER 3.14.3(d)(1)(i) and (ii). During the market suspension period there were 26 Market Suspension Compensation Claimants, being the scheduled generators and ancillary service providers who supplied energy or provided FCAS in an affected region. The Market Suspension Compensation Claimants span New South Wales (the suspended region) as well as Victoria and Queensland (regions in which spot prices were affected in accordance with NER 3.14.5(f)).

The compensation payments shown in the table represent formula-based payments made under NER 3.14.5A, using the schedule of benchmark values published by AEMO and current for the period when the suspension occurred. These payments compensate a Market Suspension Compensation Claimant for any additional amount of costs it is deemed to have incurred based on its plant type, in excess of the payments received under the MSPS for energy and FCAS.

No additional compensation claims were made by any Market Suspension Compensation Claimant under NER 3.14.5B or 3.15.7B.

Values in Table 1 and Table 2 rounded to the nearest whole dollar value.

**Table 1 MSPS payments and compensation payments**

Participant Name	MSPS Payment (Energy)	MSPS Payment (FCAS)	Compensation Payment (Energy and FCAS)
AETV Pty Ltd	\$9,334	\$0	\$5,813
AGL Hydro Partnership	\$45,598	\$50	\$4,411
AGL Loy Yang Marketing Pty Ltd	\$163,635	\$127	\$0
AGL Macquarie Pty Limited	\$302,756	\$241	\$0
AGL Sales (Queensland Electricity) Pty Limited	\$3,789	\$2,363	\$0
Alinta Energy Retail Sales Pty Ltd	\$114,512	\$628	\$0
Arrow Southern Generation Pty Ltd And Arrow Braemar 2 Pty Ltd	\$24,202	\$0	\$5,420
Berrybank 2 Asset Pty Ltd As The Trustee For Berrybank 2 Asset Trust	\$275	\$76	\$0
Braemar Power Project Pty Ltd	\$22,965	\$0	\$5,093
Bulgana Wind Farm Pty Ltd	\$0	\$2,031	\$0
CleanCo Queensland Limited	\$73,168	\$2,943	\$0
CS Energy Limited	\$240,588	\$5,513	\$0
Delta Electricity	\$70,968	\$106	\$0
EnergyAustralia Ecogen Pty Ltd	\$60,274	\$0	\$37,742
EnergyAustralia Pty Ltd	\$115,849	\$6,199	\$4,098
EnergyAustralia Yallourn Pty Ltd	\$108,451	\$1,268	\$0
Ergon Energy Queensland Pty Ltd	\$15	\$0	\$0
GSP Energy Pty Ltd	\$2,405	\$0	\$0
Iberdrola Australia Wallgrove Pty Limited	\$1,120	\$347	\$0
Millmerran Energy Trader Pty Ltd	\$81,519	\$0	\$0
Origin Energy Electricity Limited	\$355,001	\$212	\$7,581
RTA Yarwun Pty Ltd	\$15,275	\$0	\$0
Shell Energy Retail Pty Ltd	\$16,998	\$0	\$3,836
Snowy Hydro Limited	\$137,080	\$1,189	\$0
Stanwell Corporation Limited	\$254,448	\$3,727	\$0
Victorian Big Battery Pty Ltd	\$179	\$4,172	\$0
<b>Total</b>	<b>\$2,220,403</b>	<b>\$31,194</b>	<b>\$73,995</b>



## 4.2 Compensation costs payable

Table 2 shows the share of compensation costs payable by each Market Customer to AEMO as required by NER 3.14.3(d)(1)(iii). Compensation costs were recoverable from Market Customers in New South Wales, Victoria and Queensland, as those regions benefited from the payment of compensation from the market suspension in accordance with NER 3.15.8(A).

Note that the total compensation cost payable in Table 2 is equal to the total compensation payments for energy and FCAS in Table 1, at \$73,995. Participants that had a compensation cost payable of less than \$0.50 were excluded from Table 2, making up the discrepancy between Table 1 and Table 2. These participants were:

- Ampol Energy (Retail) Pty Ltd.
- CleanTech Energy Pty Ltd.
- Ellis Air Connect Pty Ltd.
- Energy Services Management Pty Ltd.
- Gannawarra Solar Farm Pty Ltd.
- Localvolts Pty Ltd.
- M2 Energy Pty Ltd (T/As Commander Power & Gas).
- Onsite Energy Solutions Pty Ltd.
- Powow Power Pty Ltd.
- Radian Holdings Pty Ltd.
- Smart Energy Retail Pty Ltd.

One market customer listed in Table 2 changed its name after the market suspension:

- On 3 April 2023, Tango Energy Pty Ltd changed its name to Pacific Blue Retail Pty Ltd.



**Table 2 Compensation costs payable**

Participant name	Compensation cost
1st Energy Pty Ltd	\$102
AGL Hydro Partnership	\$1,126
AGL Sales (Queensland Electricity) Pty Limited	\$65
AGL Sales Pty Limited	\$10,573
Alcoa Portland Aluminium Pty Ltd	\$1,626
Alinta Energy Retail Sales Pty Ltd	\$2,594
Amber Electric Pty Ltd	\$29
Blue NRG Pty Ltd	\$125
CleanCo Queensland Limited	\$923
Covau Pty Limited	\$93
CPE Mascot Pty Ltd	\$13
CS Energy Limited	\$4,393
CSR Building Products Limited	\$87
Darlington Point Solar Farm Pty Ltd	\$3
Delta Electricity	\$695
Diamond Energy Pty Ltd	\$139
Discover Energy Pty Ltd	\$4
Electricity In A Box Pty Ltd	\$1
Enel Energy Australia Pty Ltd	\$14
Energy Locals Pty Ltd	\$124
EnergyAustralia Pty Ltd	\$4,468
EnergyAustralia Yallourn Pty Ltd	\$2,294
Ergon Energy Queensland Pty Ltd	\$4,469
GEE Power & Gas Pty Ltd	\$1
GloBird Energy Pty Ltd	\$121
Group Energy Pty Ltd	\$62
Hanwha Energy Retail Australia Pty Ltd	\$137
Hazelwood Power	\$5
Iberdrola Australia Energy Markets Pty Limited	\$432
Iberdrola Australia Holdings Pty Limited	\$61
Locality Planning Energy Pty Ltd	\$1
Lumo Energy Australia Pty Ltd	\$382

Participant name	Compensation cost
M2 Energy Pty Ltd (T/As Dodo Power & Gas)	\$283
Maximum Energy Retail Pty Ltd	\$1
Mojo Power East Pty Ltd	\$9
Mojo Power Pty Ltd	\$35
Momentum Energy Pty Limited	\$1,380
MTA Energy Pty Limited	\$29
Next Business Energy Pty Ltd	\$249
Online Power And Gas Pty Ltd	\$1
Origin Energy Electricity Limited	\$13,715
OVO Energy Pty Ltd	\$67
Genuity Retail Pty Ltd	\$131
Powershop Australia Pty Limited	\$472
Progressive Green Pty Ltd	\$619
QEnergy Limited	\$74
ReAmped Energy Pty Ltd	\$13
Red Energy Pty Limited	\$3,245
RTA Yarwun Pty Ltd	\$290
Shell Energy Retail Pty Ltd	\$6,416
Simply Energy	\$1,127
SmartestEnergy Australia Pty Ltd	\$314
Stanwell Corporation Limited	\$4,887
Sumo Power	\$246
Sun Metals Corporation Pty Ltd	\$274
Sun Retail Pty Ltd	\$828
Tango Energy Pty Ltd	\$420
Telstra Energy (Retail) Pty Ltd	\$1
The Trustee For Finley Solar Trust	\$2
Tomago Aluminium Company Pty Ltd	\$3,242
TotalEnergies Gas & Power Australia Pty Ltd	\$279
WINconnect Pty Ltd	\$1
Y.E.S. Energy (SA) Pty Ltd	\$3
Zen Energy Retail Pty Ltd	\$179
<b>Total</b>	<b>\$73,994</b>



## 5 Actions taken since preliminary report

This section provides an update on progress of the actions or recommendations identified in the *Next Steps* section (Section 5) of the preliminary report.

### 5.1 Implementation of alarms and controls to alert the operators

#### 5.1.1 Preliminary report

Transgrid to implement the system controls it has identified to monitor the ICCP links and alert the SCADA operators of any ICCP link failure. These controls include:

- An alarm indicating a priority 1 situation to the operator.
- An ICCP heartbeat to continually monitor ICCP service state.

#### 5.1.2 Final report

In April 2023, Transgrid implemented the identified system controls and alarms to alert the operators of any ICCP link failures.

### 5.2 Reviewing SCADA auto-failover mechanism

#### 5.2.1 Preliminary report

Transgrid plans to review its SCADA auto-failover mechanism and consider whether a dual ICCP link failure should trigger an auto-failover.

#### 5.2.2 Final report

Transgrid has completed the review and has identified that no change to the internal logic was required.

### 5.3 Conducting a broad review of SCADA system operation and control

#### 5.3.1 Preliminary report

Transgrid is undertaking a broader review of the SCADA system operation and control to identify any additional system controls to be implemented to improve SCADA reliability/availability across the platform more broadly.

#### 5.3.2 Final report

Transgrid has completed a broader review of SCADA system operation and control in May 2023 and as a result has initiated a small number of low-level improvements that are tracked internally.

## 5.4 Advising control rooms regarding the work that could impact in-service SCADA and requesting permission to proceed

### 5.4.1 Preliminary report

Awareness of planned/unplanned works that could affect in-service SCADA equipment can expediate the fault identification and rectification process. AEMO recommends Transgrid review its procedures for working on data communication services and ensure necessary controls are implemented to:

- Advise Transgrid and AEMO control rooms in advance of any work which could impact in-service SCADA systems, and
- Require permission to proceed from both Transgrid and AEMO control rooms before commencing work which could impact in-service SCADA systems.

### 5.4.2 Final report

Transgrid implemented the necessary controls immediately following the SCADA failure in March 2023.

## 5.5 Mitigating the risks when carrying out work that could potentially impact the operation of power system

### 5.5.1 Preliminary report

When network service providers (NSPs) are carrying out work that could potentially impact the operation of the power system, AEMO recommends:

- NSPs arrange the work at times where key personnel are available to respond quickly and rectify any issues, and
- NSPs advise their control rooms and AEMO's control room in advance of this work and seek permission to proceed from the NSP and AEMO control rooms before commencing the work.

AEMO recommends that data communication providers review their SCADA systems and consider implementing suitable alarms and heartbeat displays to alert operators of ICCP link failures.

### 5.5.2 Final report

AEMO shared the recommendations with NSPs in the Power System Security Working Group meeting in May 2023 and advised NSPs to implement necessary controls and measures to minimise risks when carrying out work that could potentially impact the operation of power system.