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# Guide to the Market Suspension Pricing Schedule

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**July 2019**

NER 3.14.5(e)(1)-(3)

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# Important notice

## PURPOSE

The Australian Energy Market Operator (AEMO) publishes the Guide to the Market Suspension Pricing Schedule to help market participants understand the calculation and publication of the market suspension pricing schedule, as at the date of publication. The market suspension pricing schedule is developed and published as required by clauses 3.14.5(e)(1)-(3) of the National Electricity Rules (Rules).

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## VERSION CONTROL

Version	Release date	Changes
2.0	12/07/2019	<ul style="list-style-type: none"><li>• Updated to new AEMO template</li><li>• Added EoY 2017 system changes</li><li>• Modified for 5-minute settlement</li></ul>

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# 1. Calculation

Under clause 3.14.5(e)(3) of the NER, AEMO must prepare and publish market suspension pricing schedules for use during a market suspension.

These schedules are calculated based on the market suspension pricing methodology<sup>1</sup> developed by AEMO in consultation with stakeholders and published on the AEMO website.

Each market suspension pricing schedule consists of two sets of trading interval prices over a calendar day for each region and market (energy and the eight FCAS markets). One set applies to weekday day-types, other than public holidays in the majority of the region. The other set applies to weekend day-types and public holidays in the majority of the region. From 1 July 2021 the current trading intervals will be renamed 30-minute periods, but the structure and calculation of the market suspension pricing schedule will not change.

Each trading interval (or, from 1 July 2021, 30-minute) price in a market suspension pricing schedule is calculated as the historical average of prices in the EMMS database for the relevant region, market, day-type and 30-minute period over the 28 day-period to the end of the NEM billing week (end of Saturday).<sup>2</sup>

For the calculation, reporting and application of the market suspension pricing schedule, time refers to market time (Australian Eastern Standard Time) and dates refer to calendar dates.

## 2. Reporting

### 2.1 Structure

#### 2.1.1 Website report

The market suspension pricing schedule report files are in AEMO's standard ".CSV" flat-file format.<sup>3</sup> Each file follows the naming convention and format shown below:

```
PUBLIC_MARKET_SUSPENSION_SCHEDULE_<#REPORT_DATETIME>_<#EVENT_QUEUE_ID>.CSV
```

Where:

- #REPORT\_DATETIME is the market date & time (YYYYMMDDhhmiss) when this report was created (usually last Saturday just after 2355 hrs when the last dispatch run for the calendar day is complete).
- #EVENT\_QUEUE\_ID is the unique job identification number for creating the report.

Inside each report file:

- In the first row, the first two cells across after 'PUBLIC' show the market date and time respectively when this report was created and published – which matches the #REPORT\_DATETIME in the filename.

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<sup>1</sup> The market suspension pricing methodology can be accessed here: <https://www.aemo.com.au/-/media/Files/Electricity/NEM/Data/MMS/2017/Estimated-Price-Methodology-Suspension-NER-3-14-5.pdf>

<sup>2</sup> AEMO consulted on the market suspension pricing methodology in 2018 and decided to add a final step in the calculations to cap and floor the market suspension prices at the prevailing administered price cap and floor (currently  $\pm$ \$300/MWh). The methodology will be updated when this change is implemented in AEMO's production systems. The consultation documents are available at <http://aemo.com.au/Stakeholder-Consultation/Consultations/Market-Suspension-Pricing-Consultation?Convenor=AEMO%20NEM>.

<sup>3</sup> The market suspension pricing schedule report files are available at: [http://www.nemweb.com.au/REPORTS/CURRENT/MKTSUSP\\_PRICING/](http://www.nemweb.com.au/REPORTS/CURRENT/MKTSUSP_PRICING/)

- In the second row, the data fields "AUTHORISEDDATE" and "LASTCHANGED" refer to the date time that the data in the report was determined and written in AEMO's internal database. The publication date time is generally a few seconds after the "AUTHORISEDDATE" and "LASTCHANGED" date time.
- In the third row, the data field "EFFECTIVEDATE" refers to the start date that the pricing schedules will apply from. The start date is at least two weeks from the report's publication date (typically it is the Monday two weeks after publication of the report). The report is effective until another report published at a later time becomes effective. The period that the report applies to is typically one week as the reports are generated weekly, but it can be shorter if another report is triggered due to price revision (discussed in section 2.2).
- In the second row, the data fields "SOURCE\_START\_DATE" and "SOURCE\_END\_DATE" refer to the start date time and end date time of the period that the calculation is based on. This period is the previous 28 days up to the end of the billing period (midnight Saturday).
- From the second row, the second column provides the name of the EMMS Data Model package and the third column provides the name of the EMMS Data Model table where the information in the corresponding row can be found.
- "PERIODID" in the report is based on the calendar day starting at midnight, not the NEM trading day starting at 0400 hrs market time. For example, Period ID 1 is for the 30-minute period ending at 0030 hrs and Period ID 2 is for the 30-minute period ending at 0100 hrs.

An extract from a sample Market Suspension Pricing Schedule report file is shown in Figure 1 below.

**Figure 1 Market suspension pricing schedule**

C	NEMP_WORLD	SUSPENSION_SCHEDULE	AEMO	PUBLIC	27/04/19	23:55:09	307232234	FORCE_MAJEURE	307232234				
I	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE_TRK	1	EFFECTIVEDATE	SOURCE_START_DATE	SOURCE_END_DATE	COMMENTS	AUTHORISEDDATE	LASTCHANGED				
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE_TRK	1	13/05/19 0:00	31/03/19 0:00	28/04/19 0:00		27/04/19 23:55	27/04/19 23:55				
I	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	EFFECTIVEDATE	DAY_TYPE	REGIONID	PERIODID	ENERGY_RRP	R6_RRP			LREG_RRP	LASTCHANGED
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	1	70.85	4.07			18.05	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	2	68.82	5.03			18.44	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	3	71.39	4.76			17.99	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	4	74.83	5.9			19.11	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	5	70.74	4.76			18.82	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	6	69.62	4.59			20.1	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	7	66.42	4.39			21.27	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	8	67.74	4.26			20.13	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	9	62.35	4.07			20.36	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	10	60.78	4.05			18.87	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	38	106.15	6.55			17.7	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	39	90.64	6.28			20.8	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	40	93.46	6.89			21.51	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	41	87.21	4.18			20.24	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	42	79.54	6.01			21.7	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	43	76.29	5.44			20.08	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	44	73.72	5.93			20.91	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	45	83.99	7.78			17.14	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	46	73.94	5.55			17.86	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	47	72.67	4.15			17.13	27/04/19 23:55
D	FORCE_MAJEURE	MARKET_SUSPEND_SCHEDULE	1	13/05/19 0:00	BUS_DAY	NSW1	48	70.57	4.48			16.32	27/04/19 23:55

Note:

- The above schedule was published on Saturday 27/04/2019 at 23:55:09
- The schedule will be effective from Monday 13/05/2019, 14 days after its publication.
- The schedule was calculated based on the data in the previous 28-day period from Sunday 31/03/2019 at 0000 hours to Sunday 28/04/2019 at 0000 hours (midnight Saturday 27/04/2019).
- The row and column containing "..." represents rows of data not included, to shorten the length of the report image.

### 2.1.2 MMS Data Model

There are two MMS Data Model tables in relation to the market suspension pricing schedule. These are:

- MARKET\_SUSPEND\_SCHEDULE\_TRK
- MARKET\_SUSPEND\_SCHEDULE

The structure of the MMS Data Model tables is similar to that of the CSV file discussed in section 2.1.1.

The MARKET\_SUSPEND\_SCHEDULE\_TRK table provides information for tracking purposes. The EFFECTIVEDATE, SOURCE\_START\_DATE, SOURCE\_END\_DATE, AUTHORISEDDATE and LASTCHANGED in the table have the same definition and data as those in the second and third rows of the CSV file discussed in section 2.1.1.

The MARKET\_SUSPEND\_SCHEDULE table provides the market suspension pricing schedules. The data in the table matches the data provided from the fourth row in the CSV file discussed in section 2.1.1. The PERIODID has the same definition as the CSV file and the period count starts from midnight (not from 0400 hrs market time).

Sample data from the tables are shown in Figure 2 and Figure 3 below.

**Figure 2 MARKET\_SUSPEND\_SCHEDULE\_TRK table**

EFFECTIVEDATE	SOURCE_START_DATE	SOURCE_END_DATE	COMMENTS	AUTHORISEDDATE	LASTCHANGED
12/02/2018	31/12/2017	28/01/2018	...	27/01/2018 23:55:07	27/01/2018 23:55:07
19/02/2018	07/01/2018	04/02/2018	...	03/02/2018 23:55:10	03/02/2018 23:55:10
26/02/2018	14/01/2018	11/02/2018	...	10/02/2018 23:55:07	10/02/2018 23:55:07

**Figure 3 MARKET\_SUSPEND\_SCHEDULE table**

EFFECTIVEDATE	DAY_TYPE	REGIONID	PERIODID	ENERGY_RRP	R6_RRP	R60_RRP	RS_RRP	RREG_RRP	L6_RRP	L60_RRP	L5_RRP	LREG_RRP	LASTCHANGED
26/02/2018	BUS_DAY	NSW1	1	61.65000	2.15000	1.04000	2.34000	13.60000	0.02000	0.05000	0.19000	16.29000	10/02/2018 23:55:07
26/02/2018	BUS_DAY	NSW1	2	58.75000	2.14000	1.11000	2.56000	14.48000	0.02000	0.05000	0.19000	17.24000	10/02/2018 23:55:07
26/02/2018	BUS_DAY	NSW1	3	60.20000	1.78000	0.97000	2.16000	13.67000	0.02000	0.06000	0.20000	17.33000	10/02/2018 23:55:07
26/02/2018	BUS_DAY	NSW1	4	62.65000	2.09000	1.34000	1.97000	14.36000	0.02000	0.07000	0.20000	18.21000	10/02/2018 23:55:07
26/02/2018	BUS_DAY	NSW1	5	65.89000	1.98000	1.28000	1.88000	15.28000	0.02000	0.08000	0.24000	18.36000	10/02/2018 23:55:07
26/02/2018	BUS_DAY	NSW1	6	65.81000	2.13000	1.30000	1.94000	15.09000	0.02000	0.08000	0.21000	18.16000	10/02/2018 23:55:07
26/02/2018	BUS_DAY	NSW1	7	66.27000	1.86000	1.21000	1.85000	14.80000	0.02000	0.07000	0.22000	18.15000	10/02/2018 23:55:07
26/02/2018	BUS_DAY	NSW1	8	65.68000	1.82000	1.14000	1.82000	13.84000	0.02000	0.07000	0.19000	18.07000	10/02/2018 23:55:07
26/02/2018	BUS_DAY	NSW1	9	67.21000	1.75000	1.18000	1.76000	18.34000	0.02000	0.07000	0.20000	17.05000	10/02/2018 23:55:07
26/02/2018	BUS_DAY	NSW1	10	68.17000	1.82000	1.51000	1.81000	18.60000	0.02000	0.07000	0.22000	16.50000	10/02/2018 23:55:07
26/02/2018	BUS_DAY	NSW1	11	68.64000	2.51000	2.01000	1.76000	21.11000	0.02000	0.07000	0.22000	17.55000	10/02/2018 23:55:07
26/02/2018	BUS_DAY	NSW1	12	69.14000	2.13000	1.05000	1.72000	20.34000	0.01000	0.04000	0.21000	16.91000	10/02/2018 23:55:07
26/02/2018	BUS_DAY	NSW1	13	70.71000	2.28000	1.18000	2.22000	20.43000	0.01000	0.03000	0.19000	17.37000	10/02/2018 23:55:07

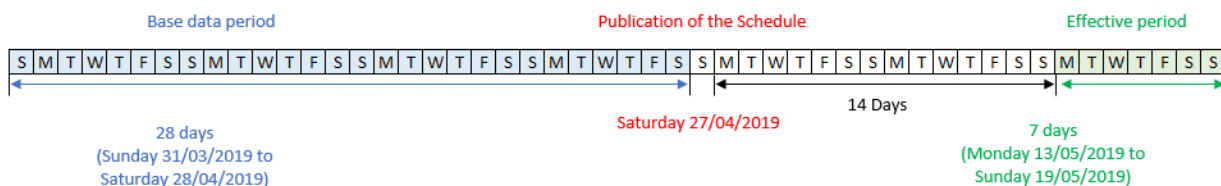
## 2.2 Publication Timing and Frequency

In accordance with NER clause 3.14.5(e)(3), AEMO is required to publish the market suspension pricing schedule at least 14 days in advance of the first day to which the schedule relates.

An automatic process calculates, creates and publishes a new market suspension pricing schedule report file as soon as the prices in the calculation period are determined. This is usually around 23:55 hrs every Saturday.

The timeline of the example in Figure 1 is summarised in Figure 4 below.

**Figure 4 Market suspension pricing schedule – timeline**



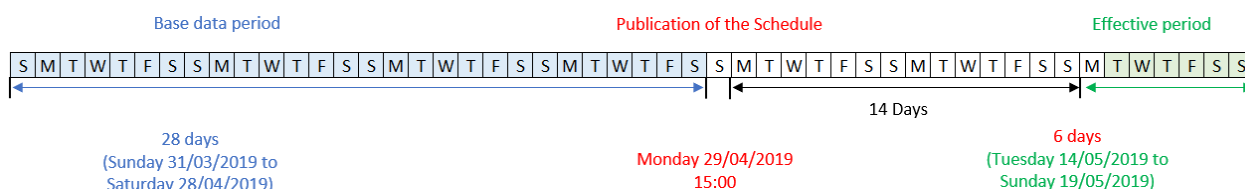
Note that the schedule prices are based on historical prices within a window of four NEM billing weeks (28 days) but are applied to a conventional week.<sup>4</sup>

<sup>4</sup> A NEM billing week runs from Sunday to Saturday, whereas a conventional week runs from Monday to Sunday.

If any energy or FCAS price within the 28-day calculation period is subject to review and AEMO performs an off-line after-the-event update to the price, AEMO's system would delay the calculation of the schedule until the final prices are entered into the EMMS database. The delay in the publication of the schedule may impact the effective date of the schedule.

For example, if a price within the 28-day calculation period in the above example was still subject to review at the end of that period, the schedule would not be published at 2355 hrs on Saturday. Instead, the schedule would be published when the final price is uploaded into the database. Figure 5 shows a case in which the final prices are uploaded to the database at 1500 hrs on Monday 29/04/2019 which triggers immediate publication of the schedule. In this case, the schedule will become effective on Tuesday 14/05/2019, 14 days after the publication. Thus, this schedule will be effective only for 6 days and the previous schedule will continue to be effective for 8 days until the end of Monday 13/05/2019.

**Figure 5 Market suspension pricing schedule – timeline – price revision**



If AEMO has published multiple market suspension pricing schedule report files effective on the same day, then the latest report (that is, the report with the latest #REPORT\_DATETIME in the filename) will take precedence for the overlapped period.

## 2.3 File Location and Archiving

Market suspension pricing schedules can be accessed in the following ways:

- The file is automatically posted onto the AEMO Website in zip file format. To navigate to that location, either:
  - From AEMO's website home page, select "Electricity > Data > Market Management System MMS > Market Suspension Pricing Schedule." On the Market Suspension Pricing Schedule page, there is a link to Market Suspension Pricing Schedules, listed in order of publication date.
  - Or, use the direct link: [http://www.nemweb.com.au/REPORTS/CURRENT/Mktsusp\\_Pricing/](http://www.nemweb.com.au/REPORTS/CURRENT/Mktsusp_Pricing/).
- The file is automatically issued via the Participant Server, to any market participant that requests receipt of these files.

Old Market Suspension Pricing Schedule report files archived from the website can be obtained from AEMO.

- MMS Data Model:

Market participants can subscribe to the market suspension tables via the MMS Data Model. The MARKET\_SUSPEND\_SCHEDULE\_TRK and MARKET\_SUSPEND\_SCHEDULE tables are available under the FORCE\_MAJEURE package.

# Glossary

This document uses many terms that have meanings defined in the National Electricity Rules (NER). The NER meanings are adopted unless otherwise specified.

Term	Definition
AEMO	Australian Energy Market Operator Limited
CSV	Comma separated values, a type of flat file format
EMMS	Electricity Market Management System
FCAS	Frequency Control Ancillary Service
NEM	National Electricity Market
NER or Rules	National Electricity Rules