

What is 5 minute settlement?

This factsheet provides an overview of what 5 Minute Settlement (5MS) is, and how AEMO is going about implementing the change. This overview is intended to be high-level and generic. More fact sheets will explain specific topics in the 5 Minute Settlement Program.

How is the NEM settled?

AEMO is responsible for settlement of the NEM, and acts as the principal for all electricity that is bought and sold through the wholesale electricity pool. Retailers and wholesale customers pay AEMO on a weekly basis, and AEMO subsequently pays generators. For more information, please refer to the NEM Fact Sheet at <http://www.aemo.com.au/-/media/Files/Electricity/NEM/National-Electricity-Market-Fact-Sheet.pdf>.

What is the issue?

Since the start of the NEM in 1998, the dispatch process by which generators are scheduled has operated on a 5-minute basis, but the settlement process has operated on a 30-minute basis. The difference in time period was primarily due to historical arrangements prior to market start, including limitations on metering and data communications.

The difference in time period, sometimes referred to as the 5/30 problem, is a pricing anomaly that can cause inefficient pricing outcomes and has been identified as a contributing factor to disorderly bidding. In the long-term, the pricing anomaly may lead to inappropriate investment and higher prices for consumers.

What is 5 Minute Settlement?

Many of the limitations that existed at NEM start are no longer present, with technology making it possible for settlement to occur on a 5-minute basis.

In November 2017, the Australian Energy Market Commission (AEMC), the rule-maker for the NEM, decided 5 Minute Settlement should be implemented in the NEM and come into effect on 1 July 2021. They tasked AEMO with the role of implementing changes to market procedures and systems necessary to perform 5 Minute settlement, as well as obligations on participants to adopt the changes.

Which participants are impacted by 5 Minute Settlement?

While varying in its level of impact, 5 Minute Settlement affects all participants in some way. Further fact sheets will follow to provide more detail on how each participant segment is impacted.

What are the benefits of 5 Minute Settlement?

The benefits of 5 Minute Settlement, stated by the AEMC in making the rule¹, were:

- Improved price signals for more efficient generation and use of electricity.

¹ See <https://www.aemc.gov.au/rule-changes/five-minute-settlement> for further details.

- Improved price signals for more efficient investment in capacity and demand response technologies to balance supply and demand.
- Improved bidding incentives.

What will change as a result of 5 Minute Settlement?

5 Minute Settlement will require changes to metering, settlement, prudentials, and bidding processes, as well as electricity retail and wholesale market systems. Implications include:

Metering

- Central systems' acceptance of 5-minute metering data from the market.
- Adjusting some groups of interval meters to deliver data at 5-minute intervals.
- Controlled Load Profile (CLP) and Net System Load Profile (NSLP) change from 30-minute to 5-minute.

Settlement Calculation

- Profiling algorithms introduced to derive 5-minute energy data.
- Transactions will need to be calculated for each 5-minute period.
- Settlement estimation will calculate energy transactions for every 5-minute period.
- Inter-regional and intra-regional residue will be calculated on a 5-minute basis.
- A number of non-energy transactions, such as market ancillary services (i.e. FCAS) and compensation recovery, will be completed using 5-minute energy volumes.

Dispatch and Market Information

- Daily bidding intervals to increase from 48 to 288. AEMO will create new data structures to receive, use and store 5-minute bids and offers.
- 30-minute pre-dispatch and PASA processes that use bid information will be provided with 5-minute data.
- Market participant systems will need to be updated to submit and receive confirmations of 5-minute bid and offer data.
- AEMO will publish 5-minute data.

How is 5 Minute Settlement being implemented?

AEMO is responsible for the implementation of 5 Minute Settlement.

As the Rule has now been made, AEMO does not have discretion on whether or not to implement 5 Minute Settlement, nor do market participants have the ability to opt out of 5 Minute Settlement.

There will, however, be several areas in which AEMO will be able to influence the implementation to improve outcomes.

AEMO intends to consult on all aspects of the program, and has set up an engagement structure that will ensure market participants can be as involved in helping to shape the final procedures and systems as they wish to be, or as their resources allow (see table below).

AEMO is also cognisant of the resource constraints on smaller participants, as well as the interactions between various change programs in the NEM, and has strategies in place to deal with both these issues.

5 Minute Settlement engagement structure

Engagement method	Purpose
Forums, working groups, and focus groups	Program co-ordination, information-sharing, procedure and system development
One-on-one meetings	In-depth and confidential discussions with participants
Information sessions	General information on the program, open to all
Targeted briefing sessions	Subject-specific briefings
Email updates	Fortnightly information on current events
Website	General program information and repository

Which procedures are impacted by 5 Minute Settlement?

AEMO has identified around 70 procedures that need to be updated due to the Rule change. Approximately 20 of these will require a formal Rules procedure consultation, However, AEMO intends to consult with participants on all procedure changes².

Which AEMO systems will be impacted by 5 Minute Settlement?

A large number of AEMO systems will be impacted by 5 Minute Settlement to implement the functional changes outlined above.

The core systems impacted are:

- Electricity Market Management System (EMMS).
- Market Settlement and Transfer Solution (MSATS).

The changes mirror the procedures workstreams and include metering, dispatch, settlements and power system operation³.

What about Global Settlement?

Global Settlement is currently the subject of a Rule change through the AEMC⁴.

Should the Global Settlement Rule change be successful, AEMO intends to utilise the 5 Minute Settlement Program and engagement structure to implement Global Settlement.

Further information

For any further enquiries, please contact AEMO's 5MS team at 5ms@aemo.com.au.

² See <http://aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Procedures-Workstream> for further details.

³ See <http://aemo.com.au/Electricity/National-Electricity-Market-NEM/Five-Minute-Settlement/Systems-Workstream> for further details.

⁴ See <https://www.aemc.gov.au/rule-changes/global-settlement-and-market-reconciliation> for more information.