

# NON-SCHEDULED GENERATION AND LOAD IN CENTRAL DISPATCH RULE 2016 CONSULTATION: AEMO SUBMISSION



# CONTENTS

<b>1.</b>	<b>INTRODUCTION</b>	<b>2</b>
<b>2.</b>	<b>PROPOSED REVIEW</b>	<b>2</b>
<b>3.</b>	<b>RESPONSES TO CONSULTATION</b>	<b>3</b>
3.1	Dispatch and pre-dispatch	3
3.2	ENGIE's proposed solutions	4
3.3	Alternative solutions	5
3.4	Costs	5

## 1. INTRODUCTION

AEMO welcomes the opportunity to provide a submission on the AEMC's consultation paper on the National Electricity Amendment (Non-scheduled generation and load in central dispatch) Rule 2016.

AEMO is concerned with the number of related or overlapping proposals relating to central dispatch, integration of renewable energy, and energy settlement that are being addressed through independent consultations. AEMO considers a broad review of the relevant aspects of the wholesale electricity market would allow the underlying issues to be defined and addressed. There is a risk narrowly-focussed solutions could be more costly, address only symptoms, and create other problems in the process.

This submission also responds to questions raised in the AEMC's consultation.

## 2. PROPOSED REVIEW

AEMO agrees with the AEMC that the proposal interacts with other recent rule change proposals (including compliance with dispatch instructions, 5 minute settlement, demand side response mechanism and ancillary services unbundling). These proposals have highlighted that there may be other issues impacting the efficiency and effectiveness of the wholesale electricity market, which may not be addressed by several narrowly-focussed rule change processes.

Dispatch and pre-dispatch fall into a complex area, with various inputs and adjustments used to determine market outcomes. Quantifying the impact of each input is difficult even with clear definitions for each. A change in this area may thus have unintended consequences in the market. This gives rise to the need for a problem definition and then thorough analysis in order to address any current and forecast underlying issues. This analysis should take into account the impact to the entire NEM and associated processes.

AEMO notes this consolidated proposal, unless applied retrospectively, would not take into account potentially price responsive generation and load such as:

- Wind farms (non-scheduled and semi-scheduled) that can reduce output in response to low prices.
- Generators above 30 MW that are subject to exemption from central dispatch for practical or technical reasons.
- Existing large price-responsive loads.

These can impact on power system security and the cost of frequency control ancillary services (FCAS). AEMO has not attempted to analyse how these factors might interact under different rule change scenarios.

A review would clarify policy objectives and define the key issues the market is seeking to resolve. This will provide an opportunity to consider a broader range of solutions, identify the impact on dispatch, system security, pricing, and settlement, and select the most efficient approach to meet the policy objectives. For example, a review could provide an opportunity to consider applying solutions retrospectively, which would otherwise appear to limit the effectiveness of the current proposals to address the issues raised.

## 3. RESPONSES TO CONSULTATION

### 3.1 Dispatch and pre-dispatch

#### Questions 1 to 3

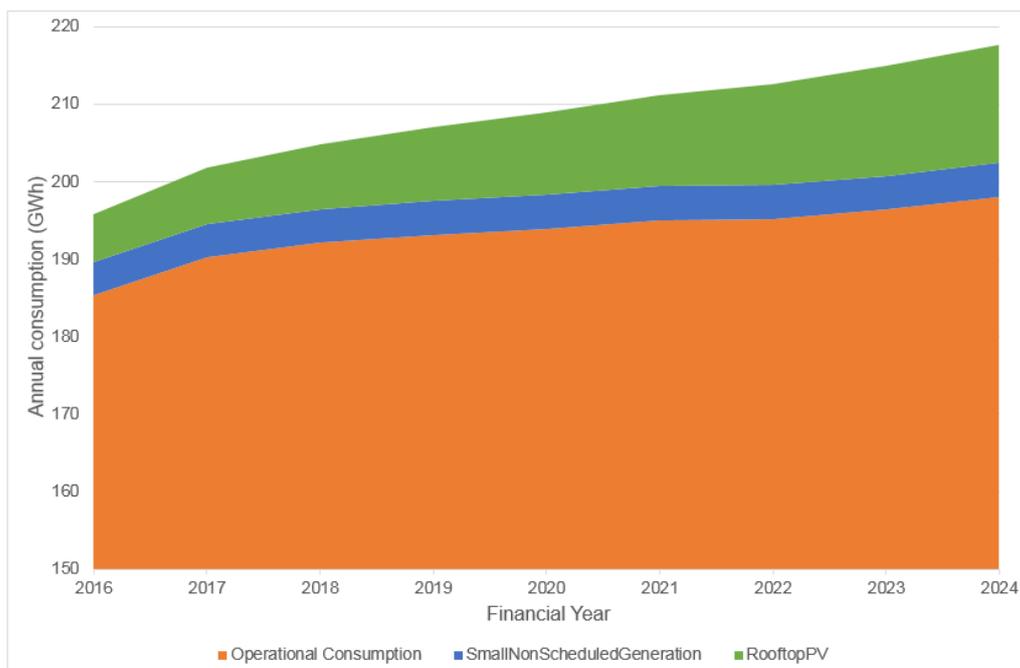
AEMO has not undertaken sufficient analysis to answer these questions in detail, and this may not be possible with the data available to AEMO. Instead, we offer the following comments and clarifications.

AEMO understands Figure 3.1 in the consultation paper uses 2014 National Electricity Forecast Report data. Figure 1 uses data from the 2015 NEFR. This shows solar photovoltaic (PV) generation for any size up to 30 MW (including rooftop). Other (non-PV) small non-scheduled generation is shown separately:<sup>1</sup>

- Small non-scheduled generators are those with a capacity less than 30 MW. In 2015, non-PV small non-scheduled generation was not forecast to grow.
- The Rooftop PV forecast includes installations sized from 100 kW to 30 MW, and this was forecast to grow in line with other PV installations.
- Generation to supply operational consumption, which is supplied by scheduled, semi-scheduled and significant non-scheduled generation, was forecast to grow.

PV installations from 100 kW to 30 MW will be incorporated into the small non-scheduled generation forecast in future.

**Figure 1 Forecast of small non-scheduled generation in comparison with operational consumption and rooftop PV.**



<sup>1</sup> <http://www.aemo.com.au/Electricity/Planning/Forecasting/National-Electricity-Forecasting-Report/~media/Files/Electricity/Planning/Reports/NEFR/2015/2015%20Demand%20side%20participation.ashx>

The rule change proposal excludes intermittent generation. While these are accounted for in improvements to the Australian Wind Energy Forecast System (AWEFS) and the Australian Solar Energy Forecast System (ASEFS) as inputs to dispatch, as discussed in Section 1 these may still be price sensitive. The price response of these generators is not accounted for in dispatch and pre-dispatch processes.

There is no clear basis for using 5 MW as a threshold for central dispatch. This is presumably based on AEMO's criteria for exempting small generators from registration and is unrelated to the existing 30 MW threshold for central dispatch. AEMO recommends specific consultation and consideration of the threshold rather than using an unrelated threshold by default.

With regard to FCAS prices:

- Contingency FCAS requirements would not be affected by the rule.
- AEMO has not attempted to analyse whether regulation FCAS requirements under the proposal would be affected, although AEMO considers it unlikely that regulation FCAS requirements would change.

## 3.2 ENGIE's proposed solutions

### Question 4

In theory, any increase in the scope of generation covered by the central dispatch process would improve market efficiency and power system security, provided the additional generation has the ability to respond to dispatch instructions. The proposal would not alter existing exemptions from central dispatch for practical or technical reasons, so the main consideration is whether the remaining generation affected by the proposal will be material.

AEMO's exemption criteria of 5MW has no technical or economic basis for determining the appropriate level for the central dispatch process. The threshold for inclusion in dispatch would need to be separately determined and not associated with the registration exemption criteria. A review would identify the best approach to account for small generation.

### Question 5

AEMO does not support creating a new category of registration—soft-scheduled generation.

- It increases complexity and confusion in the registration process, particularly given there would be soft-scheduled and semi-scheduled generating unit classifications.
- It would require a new bid type and forecasting process that would have unwarranted implementation risks.
- By not including soft-scheduled generation in network constraint equations, the effectiveness of the proposal to address the issues identified by the proponent would be reduced.
- Soft-scheduled generation would not be incorporated into AEMO's current non-conformance process.

AEMO also notes the proposal for dispatch inflexibility profiles is inconsistent with the proposal for a one-hour gate closure for this registration type.

### Question 6

AEMO does not currently have the capability to implement proxy bids. Developing a process and implementing systems changes for this requirement would require a rigorous framework for guiding AEMO on what it should take into account. This would need to consider whether it is appropriate for an independent market operator to bid into the market and under what circumstances. Developing a price responsive estimate for non-intermittent, non-scheduled generation is unlikely to be reliable given the sample size for historical events is small and each event differs substantially. Each price response differs due to:

- magnitude of price increase,
- how much warning is provided to non-scheduled generators and loads,
- whether generators and loads receive this warning, and
- external factors beyond NEM prices, such as contract position, production commitments, and plant flexibility.

AEMO also does not believe it has sufficient data at 5-minute resolution to produce a bid except at a regional level.

## 3.3 Alternative solutions

### Question 7

Two rule change proposals relating to improved demand side information (complete) and the demand side mechanism (current subject to AEMC consultation) are alternatives to scheduling generation and loads. AEMO is currently preparing guidelines in relation to improved demand side information.

This again highlights that a broad review to properly define and address the issues could provide stakeholders with a more optimal and efficient solution.

## 3.4 Costs

### Question 8

Any changes to dispatch and pre-dispatch processes have costs associated with systems, admin, resources, and capability.

For Options 2 and 3, AEMO would be required to develop new systems and expertise to implement these changes. AEMO has not costed the project yet, but would consider this to be a large capital expenditure project requiring resources from a number of internal and external resources and involve some significant implementation risks and will require consequential changes to existing processes. The proposal would also involve a compliance burden on small owners of small generation and large loads.