

# Relevant Level Method

Rule Change Proposal  
Presentation to the Market  
Advisory Committee

11 June 2019

DMS#

Agenda Item 9



Economic Regulation Authority

WESTERN AUSTRALIA

# Agenda

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## **Current progress**

Proposed changes to the market rules (Appendix 9)

**02**

## **Estimate of implementation costs**

AEMO's preliminary estimate

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## **Sensitivity analyses**

Changes in generation mix and planned outages

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## **Design options**

Robustness of the method

Market rules vs market procedure

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## **Expected submission to RCP**

# 1. Current progress

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- The ERA has developed the proposed changes in Appendix 9 of the market rules.
- AEMO provided feedback on the changes proposed.
- Guideline (for transparency):
  - Pseudocode
  - Example calculations
- The ERA Secretariat also met with the PUO to discuss the balance of implementation in the market rules vs in a market procedure.

## 2. Implementation costs

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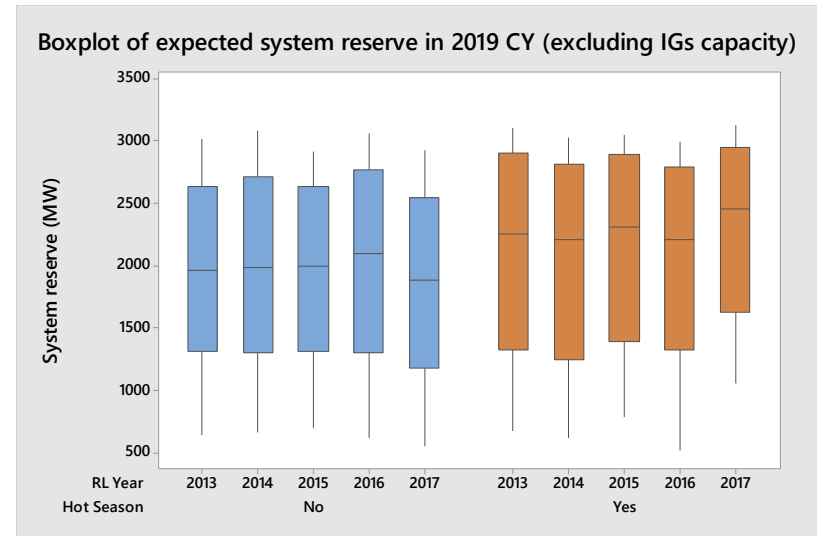
- AEMO's estimate of implementing changes proposed by Collgar wind farm was \$170,000.
  - Collgar proposed a change in the current method: use peak demand periods instead of peak LSG periods as the basis of calculation.
- AEMO's [AR5 submission](#): Cost estimate for BAU rule changes

Table 3: AEMO's internal project size criteria

<b>Small</b> <ul style="list-style-type: none"><li>• Little impact, complexity or risk.</li><li>• Primarily involves one-two divisions.</li><li>• Cost typically ~&lt;\$150,000.</li></ul>	<b>Medium</b> <ul style="list-style-type: none"><li>• Some impact, complexity or risk.</li><li>• May involve three or more divisions.</li><li>• Cost typically ~&lt;\$500,000.</li></ul>
<b>Large</b> <ul style="list-style-type: none"><li>• May have impact on market(s) / participants, and or on AEMO's reputation.</li><li>• Involves multiple stakeholder groups.</li><li>• Material complexity (e.g. technology, resourcing, stakeholders etc.).</li><li>• Contains significant risks (e.g. financial, technology, AEMO reputation, or impact to participants).</li><li>• Cost typically ~&gt;\$500,000.</li></ul>	<b>Major</b> <ul style="list-style-type: none"><li>• Executive leadership-driven projects.</li><li>• Significant direct impact on the market(s) / participants.</li><li>• Significant impact on AEMO's reputation.</li><li>• Significant complexity (e.g. across technology, resourcing, stakeholders etc.).</li><li>• Contains significant or critical residual risks (e.g. financial, resourcing, technology, AEMO reputation, or impact to participants).</li><li>• Cost typically ~&gt;\$2.5 million.</li></ul>

# 3. Sensitivity analyses

- **Effect of planned outages**
  - Our preliminary analyses show that planned outages may affect capacity values.
  - System reserve (ex. IG capacity) is on average lower during the non-Hot Season period.



the horizontal lines in the middle of boxes show median. Box whiskers show the range of system reserve distribution. The bottom and top of the boxes respectively show 5<sup>th</sup> and 95<sup>th</sup> percentiles of the system reserve distribution.

System Reserve=Demand-Available Capacity

## Should we address the effect of planned outages on the capacity values for IGs now?

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- We can (simply) address the possible effect now but can result in more complexity.
  - Multiple COPT based on expected Available Capacity of scheduled generators (may be an overkill).
- **Can the outage planning method be improved?**
- **Is there room in the system such that planned outages can be run without a material effect on the LOLE? (part (a) of the planning criterion)**
- ERA will review the method for scheduling planned outages (MR 3.18.18).
- Better to address this possible effect after the ERA reviews the method for outage planning.

# Changes in the generation mix

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## Changes in scheduled generation mix

- This effect is not material.
- We ran the sample model including and excluding Muja\_G5 and G6.
- In very extreme cases (large entry and exit of scheduled generators) IG fleet capacity value changed 1 to 2 per cent.

## Changes in IG mix (still in progress)

- Developed the sample model with and without Badgingarra wind farm. (a large IG)
- Approx. 2 per cent change to the capacity value of remaining IGs.
- Currently investigating the effect of entry/exit of multiple IGs.

Sensitivity analyses results will be provided as part of the rule change proposal.

# 4. Design options

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**Should the proposed method be designed to be robust to changes in the system?**

For example, we can design the method to be suitable for the current technology mix only (biogas, solar, wind).

Simplicity is the advantage.

Or we can design it to remain robust: the entry of storage, or hybrids.

More details to be specified.

**For a robust method:**

- **Input data:** we need to make sure we use an estimate of the “Available Capacity” of resources.
- Currently: the observed (or estimated) sent out generation of Facilities.
- the proposed method can be used for storage (and scheduled generation).
- **But we may not need to use the proposed method for storage.**



# Implementation in the market rules

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- We have currently developed the model with sufficient details in the market rules (Appendix 9).
- Sufficient to replicate the method.
- This can be supported by a guideline.
- There is an option to move the method to a market procedure if stakeholders need any further explanations (and specify the purpose and basis of the method in the market rules).

## 5. Expected submission to RCP

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The ERA expects to submit the rule change proposal in July 2019.

# Thank you

Ask any questions



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