

# Register of distributed energy resources

## *Stakeholder workshop*

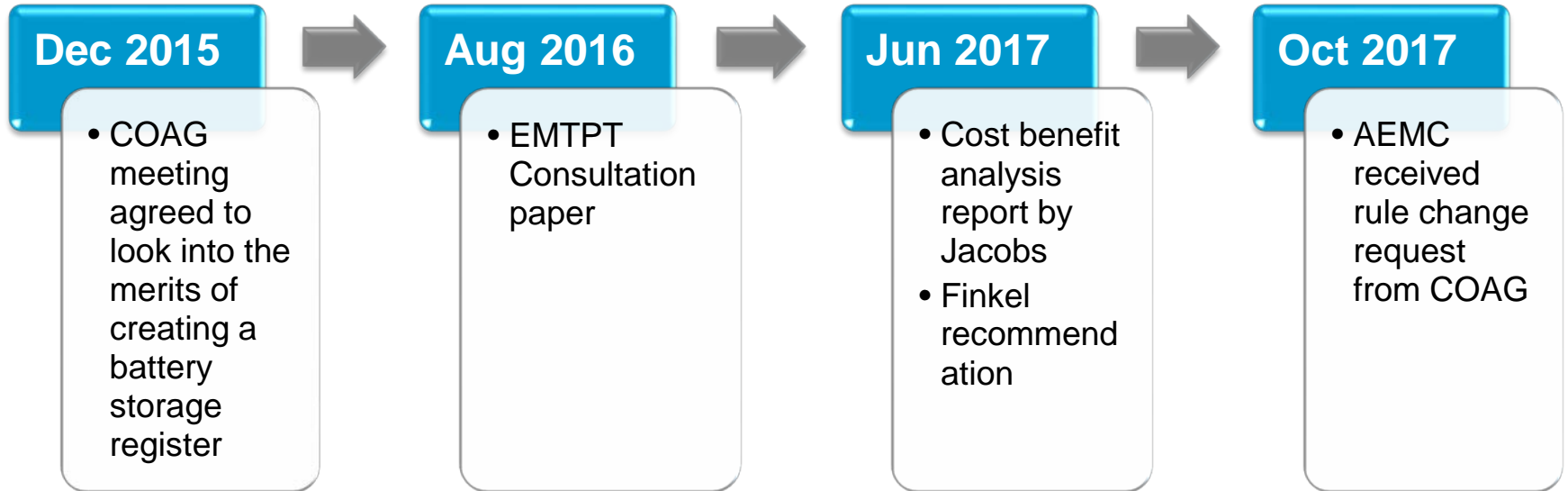


AUSTRALIAN ENERGY MARKET COMMISSION  
Sydney, 27 March 2018

# Agenda

Time	Agenda item	Presenter
10.00 am	Morning tea on arrival	
10.15 am	Welcome and introduction	<i>Richard Owens (AEMC)</i>
10.25 am	Expected benefits, definitions and governance	<i>Owen Pascoe (AEMC)</i>
10.45 am	Stakeholders' perspectives	<i>Rama Ganguli (AEMO)</i> <i>David Markham (AEC)</i>
11.00 am	Roundtable discussion	<i>All</i>
11.30 am	Coffee break	
11.45 am	Data collection and compliance, transparency and confidentiality, safety	<i>Daniela Moraes (AEMC)</i>
12.00 pm	Stakeholders' perspectives	<i>Dr. Stuart Johnston (ENA)</i> <i>Darren Gladman (CEC)</i>
12.15 pm	Roundtable discussion	<i>All</i>
12.50 pm	Next steps and closing remarks	<i>Charles Popple (AEMC)</i>

# Background to rule change request



# Next steps

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*5 October 2017*  
Receive  
**rule change  
request**

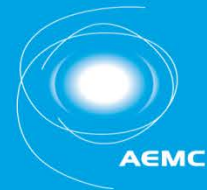
*6 March 2018*  
Publish  
**consultation  
paper**

*17 April 2018*  
**Submissions**  
due on  
consultation paper

*July 2018*  
Publish  
**draft  
determination**

*August 2018*  
**Submissions**  
due on draft  
determination

*September 2018*  
Publish  
**final  
determination**



# Session #1

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- Expected benefits
- Definitions
- Governance

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# Issues identified by COAG EC

- Three main problems were identified as a consequence of the lack of information on DER behind the meter:
  - **Overstated or understated demand forecasts** ignoring impact of behind the meter battery storage **may lead to inefficient market and network investment**, which can result in higher prices for consumers.
  - Market operators and distributors may not be able to develop reasonable estimates of short-term demand, making system control more difficult and expensive, leading to **inefficient market and network operation**.
  - **Safety risks to workers, installers and the general public**, through emergency services and line workers or electricians not having adequate information to respond effectively to emergency events on a site with a battery or other DER, such as fire, floods or other extreme conditions.

# Expected benefits

## – load forecasting

- COAG EC indicated that the proposed changes will contribute to the achievement of lower costs, improved security and safety and more reliable supply outcomes through having greater visibility of behind the meter systems.
- COAG EC expects that AEMO would benefit from the improved **static** information about DER that a register could provide by:
  - having more information about load profile and response to better manage the system within the technical envelope, including scheduling generation, and managing voltage and contingency events
  - having the necessary information to identify and respond to non-credible contingency and protected events, such as DER unexpectedly disconnecting at a certain frequency, and expected but rare events, such as extreme weather incidents and solar eclipses
  - reducing the cost of FCAS, by improving forecasting and dispatch of FCAS.

# Expected benefits

## – network security and operation

- COAG EC expects that the improved **static** information about DER that a register could provide to DNSPs will contribute to:
  - Improved efficiency of network investments
  - Better medium to long term network planning.
- The Jacobs cost benefit analysis found that a register could improve DNSPs ability to forecast peak demand, which could consequently lead to greater efficiencies in the network augmentation expenditure.
  - This is because the presence of DER within a distribution network is likely to depress peak demand, forestalling the need for system augmentation.



# Types of systems in the register

- Proposed rule change seeks to improve the visibility of **‘small-scale’ ‘behind the meter’ ‘DER’** in the NEM. These terms are not defined in the rules or the rule change request:
  - What types of systems should be included (e.g. solar, batteries, home energy management systems, electrical vehicles, air conditioners)?
  - Should the definition of eligible DER include both generation and load?
  - Should the definition include both ‘smart’ and ‘passive’ systems?
  - Could eligible DER be any device with an inverter (subject to other size and locational constraints)?
  - Should the definition be restricted by location, e.g. ‘behind the meter’?
  - Should there be a minimum capacity threshold (e.g. 1kW, 5kW)?
  - Is 5MW an appropriate maximum capacity threshold?
- The Commission will need to consider how the above terms should be defined (if a rule is made); specifically, whether they are prescribed within the rules or whether another body, such as the administrator of the register, determines the eligible types of DER.

# Types of information in the register

- COAG EC proposed that AEMO use a guideline to specify the data that should be collected.
- The types of data AEMO previously indicated it may need include:
  - **Location:** information about each installation at the NMI level
  - **Capacity:** important to forecast generation and load shifting
  - **Technical characteristics:** These include the electronic settings such as frequency and voltage trip settings, as well as other modes that may be enabled. This is most important for the inverters interfacing with the network, because these will determine the response to system disturbances.
- Other information may be required for the purposes of power system security or to address safety concerns.

# Scope of the rules and guidelines

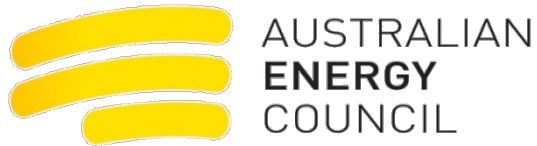
- What matters need to be included in the rules and what matters should be set out in guidelines or procedures?
  - Generally speaking, the rules set out the substantive aspects of a particular area of a regulatory framework, such as the key rights and obligations of various participants, and requirements for the development of related guidelines or procedures.
  - Guidelines and procedures are introduced to govern matters that may be subject to change over relatively short periods of time, for example, as technology changes or as the market develops.
- Under the proposed rule, AEMO would be required to consider principles and other requirements set out in the NER, and undertake a consultation process with stakeholders, when developing guidelines that specify the types of information on distributed energy resources that is collected and recorded.

# Stakeholders' perspectives

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**Rama Ganguli**

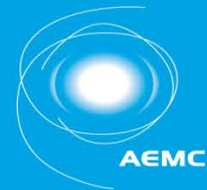


**David Markham**

# Key questions

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- What are the likely uses & benefits of a DER register?
- What features does a register need to have in order to meet the objectives outlined by COAG EC?
- Which party should be accountable for the management of the register?
- How should the types of DER systems that are included in the register and the information that is required to be reported on those systems be determined?
- How should DER be defined?
- What scope of powers should be given to the party managing the register?



## Session #2

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- Data collection and compliance
- Transparency and confidentiality
- Safety

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# Data collection

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- COAG proposed that DNSPs collect information about DER at customer sites and report this to AEMO for the register.
- Obligations on one or more parties may need to be considered in order for a DER register to collect a sufficient amount of data.

# Compliance

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- Challenging to achieve 100% compliance. Stakeholders should consider how incomplete data will affect the benefits of the register.
- Changes in technology also influence compliance with reporting obligations.
  - Monitoring devices on inverters may be able to automatically report data
  - Some battery systems may be able to be installed without an electrician (e.g. plug and play systems are under development)



# Transparency and confidentiality

- AEMO to share information in a DER register with 3<sup>rd</sup> parties, subject to existing privacy laws.
- COAG suggested a list of stakeholders who could benefit from access to the register:
  - **emergency services:** *assist with effective responses to emergency events on sites with a battery storage device or other DER*
  - **public sector bodies:** *lead to more informed policy decisions and improved market and network efficiency*
  - **private sector entities:** *promote innovation and make it easier to conduct DER product recalls.*

# Safety

- COAG considers safety as a secondary objective of the register.
  - Suggests it would help protect the safety of consumers, workers and first responders in the event of emergencies involving DER affected by fire, floods or other extreme conditions.
- NEO/NERO refers to safety in the context of the power system being safe if it is maintained and is operating in a secure condition. The regulation of electrical safety and emergency response matters falls within the ***remit of jurisdictional departments or jurisdictional safety regulators in each state and territory.***
- While the safety aspects outlined in the proposed rule change may be beyond the scope of the Commission's rule-making powers, we recognise that ***sharing of this information*** may improve the safety of consumers, workers and first responders in the event of emergencies involving DER.
- The Commission proposes to consider how the sharing of information collected by a DER register could be facilitated if evidence suggests it would be useful.

# Stakeholders' perspectives

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**Dr. Stuart Johnston**



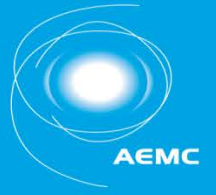
**Darren Gladman**

# Key questions

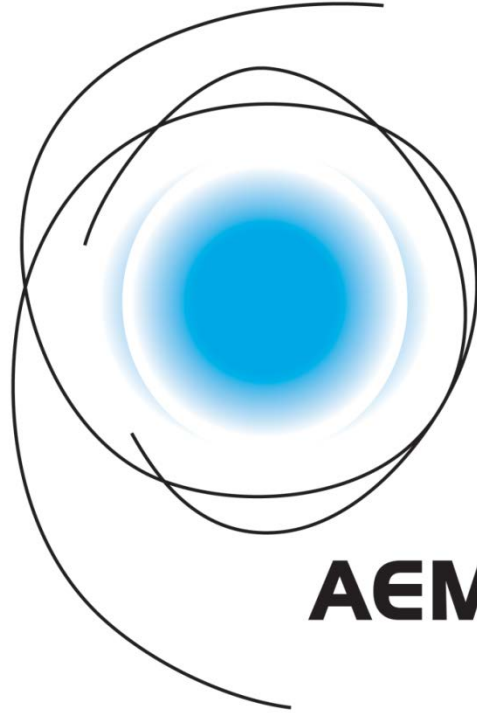
- How often does the data need to be collected and updated?
- If DNSPs' connection application processes are used to collect data, what changes are needed to existing processes?
- Should obligations on parties other than DNSPs be considered to support data collection? If yes, which parties are best placed to collect and report this data?
- Should the NER limit, on the basis of confidentiality concerns, the information required to be provided to AEMO, or how AEMO may use or disclose information provided?
- To what extent is energy related information already shared between relevant bodies (e.g. AEMO/CER) and emergency services for safety reasons?
- Would the sharing of data collected under a DER register provide additional benefits to emergency services?

# Closing remarks

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