



## Australian Energy Market Commission

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COAG Energy Council Secretariat  
GPO Box 9839  
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**By email:** [energycouncil@industry.gov.au](mailto:energycouncil@industry.gov.au)

Dear COAG Energy Council Secretariat,

### **Consultation paper on energy storage registration**

The Australian Energy Market Commission (AEMC) welcomes the opportunity to make a submission to the *Energy Storage Registration* consultation paper.

The AEMC has two roles. It makes and amends the rules that govern the National Electricity Market (NEM) and elements of the gas markets. To support energy market development, it also provides advice to the Council of Australian Governments' (COAG) Energy Council. It is worth noting that while the general safety of the energy markets and the public is an important consideration under the various energy market objectives that we operate under<sup>1</sup>, ultimately, we do not directly consider issues involving safety or emergency response in energy markets. 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.

The AEMC welcomes the Energy Market Transformation Project Team's (EMTPT) initiation of a work program to identify and understand key regulatory and policy issues in the context of energy storage including safety, installation, connection, maintenance, operation and disposal. The AEMC has itself been looking at these issues through our technology work program, most notably our work on the Integration of Storage.<sup>2</sup>

### **Scope of this submission**

The purpose of the consultation paper is to seek stakeholder views on whether it is necessary to establish an energy storage register so that relevant authorities and organisations have access to critical data to fulfil their regulatory obligations. The EMTPT considers that energy storage data should be collected and made available for three main reasons:

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<sup>1</sup> Specifically, the national electricity objective, the national gas objective and the national retail objective, in each of the National Electricity Law, National Gas Law and National Energy Retail Law respectively. Each of these describes the objective of the relevant law to be the achievement of economic efficiency in the long-term interests of consumers specifically to promote efficient investment, and efficient operation and use of, energy services for the long-term interests of consumers of energy with respect to – price, quality, safety, reliability and security of supply; and the reliability, safety and security of the national energy systems.

<sup>2</sup> See: <http://www.aemc.gov.au/Major-Pages/Technology-impacts>

1. Power system planning and operation
2. Emergency response
3. Safety and industry integrity

As noted above, it is not within the AEMC's remit to comment on whether or not a register is needed to support emergency response or safety and industry integrity. The majority of the comments in this paper therefore focus on the question of whether there is a need to establish an energy storage register for the purposes of power system planning and operation.

However, we do consider that the three reasons articulated above are not necessarily synonymous and derive from very different regulatory obligations and frameworks. Treating these reasons synonymously risks conflating what energy storage data, if any, may or may not be necessary in relation to each one. It is likely that the 'objective' for any storage register considered necessary for each of the above reasons would be very different. In developing these objectives, various issues such as whether there is a way that the data can be accessed currently; what are the benefits of the data; and what are the related costs will need to be considered. Inevitably, considering these questions, for each identified reason, will result in differing outcomes and so differing objectives. Differing objectives may drive differing designs for any register.

### ***Registration of proponents of new types of generation rule change***

The consultation paper refers to a rule made by the AEMC in May 2016 to amend the definition of *generating unit* in the National Electricity Rules (NER). The purpose of amending the definition was to clarify that non-traditional generation technologies like battery storage and solar PV can be registered as a generator for participation in the National Electricity Market (NEM).

The consultation paper states that this rule change does not capture energy storage devices that fall below the 5 MW registration exemption threshold. While the driver for the rule change was to clarify that storage devices could be registered as a *Generator* for the purposes of participating in the NEM, the term *generating unit* is used throughout the NER to refer to generation technologies of all sizes, including those that fall below the registration threshold. For example, the definition of *embedded generating unit* used in Chapter 5A of the NER also utilises the definition of *generating unit* discussed above. Therefore, the revised definition of *generating unit* captures storage devices, and does not differentiate between those devices both behind the meter at a customer's premises and on the distribution network, and below the NEM registration threshold or otherwise.

The consultation paper also notes that there may be some uncertainty about whether the definition of *generating unit* captures energy storage in jurisdictional legislation. It is not within the AEMC's rule making powers or ambit to address such issues. We suggest that jurisdictions address any ambiguity about this in relevant legislation and regulation so there is no doubt that this is the case.

### **Is there a need to establish an energy storage register?**

In our view, there is an assumption that sits underneath the questions that have been posed in the consultation paper regarding the need for an energy storage register. Specifically, to the extent AEMO needs information on such devices in order to manage power system security it has been unable to, or cannot, gather or otherwise access such information that may be necessary. Given that the establishment of a register is not without costs or regulatory burden, the EMTPT may wish to consider whether information to be included in any proposed register could already be obtained by AEMO under the existing regulatory framework. This would involve reviewing AEMO's current information gathering powers and other relevant obligations in the Rules that require market participants to provide AEMO with information, to ascertain whether there are any 'gaps' in the information that can already be obtained under the existing regulatory framework and obligations.

Some examples of these powers and related obligations that could be included in any such assessment are set out below.

### *Data collected through micro-embedded generation connections*

As the consultation paper notes, information about energy storage devices that fall below the NEM registration threshold for generators would not be captured through the AEMO registration process. However, if the ambiguities in jurisdictional legislation and regulation referred to above are addressed, arguably, information about storage devices that are connected to the distribution network by retail customers should be captured by distribution network service providers (DNSPs) when processing a connection application or amending an existing connection agreement. Consistent with the definition of generating unit, a storage device that is capable of exporting electricity to the grid would be considered to be a micro-embedded generator.<sup>3</sup>

The model terms and conditions for deemed standard connection contracts set out in the National Energy Retail Rules (NERR) require small customers to:

- inform the DNSP of any proposed change that it is aware of in plant or equipment, including metering equipment, or any change to the capacity or operation of connected plant or equipment that may affect the quality, reliability, safety or metering of the supply of energy to the premises or the premises of any other person; and
- inform either the retailer or the DNSP of any permanent material change to the energy load or pattern of usage at the premises.<sup>4</sup>

Therefore, the installation of battery storage as part of an existing connection arguably triggers these requirements. A customer intending to incorporate a storage device as part of a new connection would be required to provide the connecting DNSP with certain information when it submits its connection application. To the extent small customers do not inform the DNSP of such modifications to an existing connection, or otherwise may not have the incentive to do so, such issues are best addressed through consideration of appropriate compliance or enforcement measures.

### *AEMO's information gathering powers*

AEMO has information gathering powers under the National Electricity Law (NEL) in relation to its National Transmission Planner functions, and the capacity and reliability of the power system in Victoria, and so, to the extent that AEMO needs this information for these functions it could use these powers to collect information from the DNSPs.

The AEMC made a rule determination in 2015 that explicitly allowed AEMO to prepare demand forecasts at the connection point and regional level as part of its National Transmission Planner functions.<sup>5</sup> This meant that AEMO can use its information gathering powers under the NEL to develop demand forecasts at points on a distribution network where this relates to planning and investment of a transmission network, ie, where the powers are interpreted in the context of AEMO's National Transmission Planning. The consultation paper identifies that more data is needed for AEMO's planning purposes, so we consider it likely that AEMO, as National Transmission Planner, could request information at a distribution level, although the granularity of data accessed this way is likely to be limited.

However, AEMO's information gathering powers, as set out in the NEL, do not extend to power system security generally. Therefore, a law change would likely be required to extend AEMO's information gathering powers to battery storage information. A rule change seeking to give AEMO information gathering powers broader than those set out in the NEL would likely be considered inconsistent with the NEL.

<sup>3</sup> A "micro embedded generator" is defined in clause 5A.A.1 of the NER to "means a *retail customer* who operates, or proposes to operate, an *embedded generating unit* for which a *micro EG connection* is appropriate."

<sup>4</sup> See schedule 2, clause 6.2 (c) and (d) of the National Energy Retail Rules.

<sup>5</sup> AEMC 2015, AEMO access to demand forecasting information, Rule determination, 22 October 2015, Sydney.

### *AEMO's demand side participation guidelines*

Also in 2015, the AEMC made a rule determination that provides a process by which AEMO may obtain information on demand side participation from registered participants in the NEM.<sup>6</sup>

Registered participants in the electricity market will be required to provide information on demand side participation to AEMO, in accordance with guidelines. AEMO started consultation on what should be in those guidelines on 31 August 2016.

The definition of “demand side participation information”, as set out in that rule, was broad and so was intended to accommodate possible emerging types of demand side participation and changing technology. The particular information, as well as the granularity of information provided, is to be specified in AEMO's guidelines, potentially providing a route through which AEMO could obtain data proposed to be included in the register. In developing the guidelines, and consulting with relevant parties, AEMO must also have regard to the reasonable costs compared to the likely benefits in collecting this information.

### **What are the data requirements?**

If the conclusion is reached that a register is required, then in relation to the data requirements, the AEMC considers that there is merit in further exploring what information and data is required in order to support power system planning and operation. For example:

- How granular does information need to be in order to be effective for power system planning and operation? Is it sufficient to just know the types of technology that are located behind a zone substation? We note that AEMO is currently undertaking a broad Future Power System Security program of work to assess and address the technical challenges that are likely to emerge as the NEM generation mix continues to change and consumers become increasingly active in how their demand is met. One component of this work program is looking at the information that AEMO needs to manage power system security, and so this existing work could be informative in this regard. The AEMC has been working cooperatively with AEMO on these issues.
- How useful will this data be? For example, it is very hard to predict how a battery would respond to various events in the wholesale market. Does this mean significant amounts of other information would be required in order to make the data collected useful?
- Why does this information need to be collected? AEMO does a broad range of forecasting (including for system security, planning and market operation) and more information for improved forecasting has merit if the current forecasting models and approaches can usefully incorporate them. It may be of assistance to understand the utility such additional information could have for the current forecasting processes.

Broadly, the AEMC considers that any establishment of a register containing data should be considered through a cost-benefit assessment: will the costs associated with establishing the register and collecting the data, outweigh the potential value or usefulness of the information being provided. Further, any data requirements should be specified in a technology neutral way, in order to accommodate future technologies that have similar characteristics.

### ***Who should establish the register?***

If it is determined that an energy storage register is needed, there are a number of important questions to consider in deciding who should establish the register:

1. Who would pay the costs associated with establishing and maintaining the register? Is it appropriate that those parties should pay? Are there any legal barriers to this establishing

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<sup>6</sup> AEMC 2015, Improving demand side participation information provided to AEMO by registered participants, 26 March 2015, Sydney.

party being given the task of creating a register? The current NEL provides a framework for AEMO's functions, and so any new functions given to AEMO would need to be consistent with that framework. Further, the NEL and the Rules set out a framework as to how AEMO can charge participants for carrying out these functions. How (or whether) cost recovery would fit within this current framework should be carefully considered, if AEMO is to be tasked with establishing and maintaining the register.

2. In the event that the party establishing the register is outside of energy markets, how will costs sharing arrangements work? How would information be shared with the relevant parties in the energy markets?
3. What issues might arise under privacy legislation from the collection and centralised storage of the data identified in the consultation paper? Are these privacy issues the same in each jurisdiction of the NEM, given state based privacy legislation? Is privacy legislation sufficient protection for the register or is there a need for an energy specific protection?
4. Who is able to access the data? The paper notes that the main beneficiary of information collected on energy storage systems would be AEMO. If it is determined that an energy storage register is needed to support power system planning and operation, in order to meet this objective, arguably only those with a role in power system planning and operation should be allowed access to information in the register. DNSPs and AEMO would fall within this category. It is difficult to see how allowing retailers or installers access to information about all energy storage devices would be necessary to meet an objective relating to power system planning and operation.
5. What incentives are on the party to maintain the register and its data over time, including the preservation of any privacy concerns? How will the data be collected in a consistent format?
6. Is any of the data to be collected and centrally stored confidential? If so, how will it be protected? Other registers that have been established under the Rules<sup>7</sup> are designed to ensure that confidentiality of data to be included in the register is maintained.

### **Next steps**

Once again the AEMC thanks you for the opportunity to make a submission on this important topic for the future of Australia's energy markets.

If you have any questions or require further information please contact Suzanne Falvi, Senior Director at [suzanne.falvi@aemc.gov.au](mailto:suzanne.falvi@aemc.gov.au) or on (02) 8296 7883.

Yours sincerely



Anne Pearson  
Chief Executive

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<sup>7</sup> For example, see clause 5.4.5.