AUSTRALIAN ENERGY COUNCIL

Australian Energy Market Operator
GPO Box 2008
MELBOURNE VIC 3001

4th December 2018

*Submitted via e-mail to eges@aemo.com.au*

Dear Sir/Madam,

**Emerging Generation and Energy Storage in the NEM**

The Australian Energy Council (the "**Energy Council**") welcomes the opportunity to make a submission in response to the Australian Energy Market Operator's ("**AEMO**'s") *Emerging Generation and Energy Storage in the NEM Stakeholder Paper*.

The Energy Council is the industry body representing 23 electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. These businesses collectively generate the overwhelming majority of electricity in Australia, sell gas and electricity to over ten million homes and businesses, and are major investors in renewable energy generation.

**Discussion**

The Energy Council and its members are supportive of the entry of emerging generation and energy storage in the National Electricity Market ("**NEM**"). The power system is in transition, and new technologies will deliver diversity which in turn will support reliability and security in the NEM. To facilitate the entry of these new technologies, it is important that they be integrated into the NEM alongside existing facilities, and be visible to the market to encourage competitive outcomes.

The Stakeholder Paper considers a number of different ways by which energy storage schemes, whether they be batteries, pumped hydro, flywheels or some other hitherto unused technology such as compressed air, can be integrated into the NEM. The Energy Council believes that both Option 1 (a new Registered Participant category) and as a further progression, Option 2a (a new Bidirectional Resource Provider Registered Participant category) offer promise for further development of a category suitable for the inclusion of grid-scale energy storage systems. Along the way, issues such as incorporating large quantities of energy storage technologies into the power system will need to be considered in AEMO's operations, as there may be market implications if these storage systems simultaneously deplete, then seek to replenish themselves. Matters such as this will need to be incorporated in AEMO's consideration of a new market participant category.

Further detailed comments are included in the attached Stakeholder Feedback Template.

Any questions about this submission should be addressed to the writer, by e-mail to Duncan.MacKinnon@energycouncil.com.au or by telephone on (03) 9205 3103.

Yours sincerely,

**Duncan MacKinnon**
Wholesale Policy Manager
Australian Energy Council

Level 14, 50 Market Street
Melbourne 3000
GPO Box 1823 Melbourne Victoria 3001

P +61 3 9205 3100
E info@energycouncil.com.au
W energycouncil.com.au

ABN 92 608 495 307

# Stakeholder Feedback Template

This template has been developed to enable stakeholders to provide their feedback on the Emerging Generation and Energy Storage stakeholder paper.

AEMO encourages stakeholders to use this template, so they can have due regard to the views expressed by stakeholders on each issue. Stakeholders should not feel obliged to answer each question, but rather address those issues of particular interest or concern.

Stakeholder submissions will be published on AEMO's website unless they are clearly marked as being confidential. Submissions should be sent to eges@aemo.com.au by Day DD MMM 2018.


Organisation: Australian Energy Council

Contact name: Duncan MacKinnon

Contact details (email / phone): Duncan.MacKinnon@energycouncil.com.au / 03 9205 3103


| Questions | | Feedback |
|---|---|---|
| Section 2 – Energy Storage System (ESS) definition | | |
| 1 | Do you have any views on whether a definition of ESS should be included in the National Electricity Rules (NER)? | It is appropriate to define ESS in the NER. |
| 2 | Do you have any views on whether a definition of ESS should be generic and encompass technologies other than batteries, for example, pumped hydro? | By necessity, and to account for technology developments, the definition of ESS must be generic in order to encompass technologies broader than simply batteries and even pumped hydro. For example, storage options could also include compressed air and thermal energy. |
| 3 | Do you have any views on AEMO's suggested definition of ESS? | Noting that AEMO has defined ESS as, "*A resource capable of receiving imported energy from the national grid or other energy source and storing it for later export of energy to the national grid or Customer located (or connected) at the same site*", the AEC does not have issue with the proposed definition. |
| Section 2 – Integrating ESS | | |

| Questions | | Feedback |
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| 4 | Do you have any views on the appropriate participation model for integrating ESS into the NEM? | The Energy Council has no preference. Whatever is chosen needs to be simple for market participants to administer and allow the efficient management of resources, both existing and new, in complementary ways. |
| 5 | Would the proposed aggregation model meet your future needs, both in terms of participating in the NEM with an individual ESS or where multiple resources (e.g. ESS and generating units) are to be aggregated?<br>AEMO is particularly interested to understand the additional benefit that you would derive from aggregating hybrid systems and offering them to the market as a single resource that is not available by separately offering the components to the market. | While Option 2a has promise, its design needs to ensure that it doesn't introduce unnecessary complexity for plant operators, and there is a risk that its development is predicated on assumptions that particular types of business models will underpin the future structure of the industry. It may well be appropriate to develop Option 1 as well as Option 2, with the intention that Option 2 will be implemented at a later date. |
| 6 | Do you have any views on AEMO's proposed approach to implement a single participation model to integrate ESS and other 'new' business models into the NEM? | No |
| 7 | Do you have any views on the key requirements AEMO has identified for an ESS participation model? | No |
| Section 2 – NER recovery mechanisms | | |
| 4 | Do you have any views on how to integrate ESS into the NEM's recovery mechanisms? If so, please provide them. | There are no issues raised with regards to the proposed recovery arrangements as follows:<br>ESS non-energy recovery: charged on the basis of NEM imports and exports;<br>Participant fees and charges based on NEM imports and exports; and<br>TUoS should be determined by the TNSPs to provide the most efficient network charging for each user, in accordance with the National Electricity Rules, as overseen by the AER.[1] |

[1] See page 4 of the Australian Energy Council's submission to the AEMC's Coordination of Generation and Transmission Investment Options Paper, available at https://www.aemc.gov.au/sites/default/files/2018-10/Australian%20Energy%20Council.pdf

| Questions | | Feedback |
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| Section 3.1 – The application of performance standards to a generating system or load in an exempt network | | |
| 5 | Are there other options to address the issue identified for connecting plant in an exempt network? | There are no additional options raised by the AEC with regards to connecting plant to an exempt network. |
| 6 | Are there other costs, risks and benefits associated with the options presented? If so, please indicate what these are. | No response provided. |
| 7 | Which option to address the issue is your preferred option? Why? | Option 1 is supported – as it guarantees that all technical requirements are applicable to an ESS asset – even when connecting to an exempt network. This approach underpins the reliable operation of the power system. |
| Section 3.2 – Providing NEM information to project developers | | |
| 8 | Should a person intending to develop or build a generating system or ESS (and not subsequently register as a Generator) be allowed to register as an Intending Participant? | The question being asked here is whether a project developer should be able to register in order to access information required to build a generation asset.<br>Given the, sometimes, difficult task of building new generation assets in the NEM it would seem illogical that projects should be stymied by their inability to access requisite information to progress the project – even though the developer may have no intention of owning or operating a grid connected asset.<br>Accordingly, a developer should be allowed to register as an Intending Participant in order to access the information needed to build a new generation asset. |
| 9 | What is the market benefit associated with allowing a person intending to develop or build a generating system (and not subsequently register as a Generator) to be an Intending Participant? | The market benefit delivered by allowing a project developer to register as an Intending Participant is that it will, all else being equal, deliver a greater number of new generation capacity than would otherwise be the case. |

| Questions | | Feedback |
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| 10 | Referring to section 3.5.3, are there other options to provide a person intending to develop or build a generating system (and not subsequently register as a Generator) with the necessary NEM data? | The options identified in section 3.2.3 are appropriate. There are no additional options identified. |
| 11 | Are there other costs, risks and benefits associated with the options presented? If so, please indicate what these are. | There are no other costs and benefits identified with regards to the options presented in Table 12. The key issue is how confidential information will be managed – which is adequately addressed in the framing of both options (that AEMO is to provide the information after being satisfied that information is being used to connecting to the grid and that the developer is bound by the NER confidentiality requirements. |
| Section 3.3 – Separation of operational and financial responsibility | | |
| 12 | What is the market benefit associated with allowing the separation of operational and financial responsibilities? | The benefit of allowing separation of operational and financial responsibilities is that it can provide an appropriate model for investors seeking to exposure to the market without also having to take responsibility for the day to day operation of the asset in their portfolio. |
| 13 | What are the risks associated with allowing the separation of operational and financial responsibilities? | The risks associated with allowing separation are that, there may be issues associated with the ongoing operation and maintenance of the asset – as well as responding to compliance requests - if responsibilities are not clearly articulated between the two parties. |
| 14 | Are there other models of separate operational and financial responsibilities that should be considered? | No response provided. |
| Section 3.4 – Logical metering arrangements | | |
| 15 | What is the market benefit associated with using logical metering arrangements? | No response provided. |
| 16 | What are the risks associated with allowing the use of logical metering arrangements? | No response provided. |

| Questions | | Feedback |
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| 17 | If logical metering arrangements are permitted to be used instead of a NEM compliant metering installation, who should pay for this? Please identify any cost recovery arrangements that you consider appropriate. | No response provided. |
| Other Comments | | |
| 23 | Do you have any further comments? | No response provided. |