



Mr John Pierce  
Australian Energy Market Commission  
Level 6, 201 Elizabeth Street  
Sydney NSW 2000  
Lodged via [www.aemc.gov.au](http://www.aemc.gov.au)

Wednesday, 12 April 2017

Dear Mr Pierce,

**RE: Generating System Model Guidelines (ref ERC0219)**

ENGIE appreciates the opportunity to comment on the Australian Energy Market Commission (AEMC) consultation paper on generating system model guidelines (consultation paper).

The consultation paper sets out a rule change proposal from the Australian Energy Market Operator (AEMO) that seeks to increase both the scope and the level of detail of model data that AEMO may request from registered participants. More specifically the propose rule change would require:

- more detailed electromagnetic transient (EMT) models from generators
- broader scope of modelling data, potentially including models of network equipment, generator protection and governor systems.

AEMO have stated that these changes are required to understand how the power system will function under certain power system conditions, particularly a reduction in system strength. AEMO also note that the current obligations on participants do not provide sufficient modelling data to undertake these more detailed power system studies.

The consultation paper notes that the additional obligations would generally, only be applied to new connecting generators. Generators that carry out changes to existing plant through rule 5.3.9 would not need to provide additional modelling data unless *“in AEMO’s reasonable opinion, there is a risk that the plant will adversely affect network capability, power system security, quality or reliability of supply, inter-regional power transfers or the use of a network by another Network User”*.

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ENGIE appreciates and supports the requirement for AEMO and the network service providers (NSPs) to have access to sufficient modelling data to ensure the ongoing secure operation of the power system. As the industry transitions from synchronous generating equipment to new forms of non-synchronous generating plant, it is also clear that the nature of the modelling task is changing, along with the type of data needed.

Whilst ENGIE supports the need to maintain adequate power system models, the rule change if approved would leave a large amount of discretionary power with AEMO in deciding on what modelling data must be provided from individual generators. Given AEMO's responsibilities for maintaining power system security, it is likely that in deploying such discretionary powers AEMO would err on the side of caution, leading to potentially onerous demands on generators for detailed and extensive modelling data. ENGIE is therefore not convinced that this approach will result in the need for effective modelling data being appropriately balanced against the cost of compliance.

ENGIE would prefer that the rules mandate the minimum level of modelling data that all participants must provide in all cases, which is essentially what the current rules achieve. Where AEMO believe that they require additional modelling data above and beyond the mandated minimum, there needs to be a clear process to ensure that the proposed benefits are weighed up against the compliance costs and that the proponent has timely advice of its obligations.

Schedule 5.2 of the rules for the conditions for connection of generators establish a negotiation framework between a minimum access standard to an automatic access standard. This framework could be extended to establish the minimum and maximum levels of modelling data that AEMO would require. This would still leave AEMO with some discretion, but at least there would be boundaries placed on the level of discretion, and would allow negotiation to take place as part of the generators application to AEMO for registration as a generator in the NEM.

ENGIE is also concerned that placing a rule obligation on generator participants to provide detailed modelling information could lead to a duplication of costs and subsequent barriers to entry. For example, suppose that participant X is proposing to connect a new generator purchased from manufacturer M, and AEMO requires detailed modelling data. Participant X would then need to purchase the detailed model from manufacturer M, and then provide this to AEMO. Suppose that a second participant Y then also proposes a new generator from the same manufacturer M and AEMO again requires detailed modelling data. Participant Y would need to purchase the same modelling data from manufacturer M, but this would be potentially a duplication of the data and cost incurred by participant X.

ENGIE understands that the above example is overly simplistic and that in reality, every new generator installation will be unique to some extent. Nevertheless, there are likely to be some categories of modelling data that are common to a number of generators, and it would therefore be desirable if an



approach could be found that allowed AEMO to obtain this 'generic' data from the manufacturers, therefore avoiding the need for proponents to seek the same data multiple times.

ENGIE is very concerned at the level of discretion being proposed for AEMO in relation to existing generators that choose to carry out plant modifications under current rule 5.3.9. The rule change proposal is that the new modelling requirements would not apply to such cases unless "*in AEMO's reasonable opinion, there is a risk that the plant will adversely affect network capability, power system security, quality or reliability of supply, inter-regional power transfers or the use of a network by another Network User*".

ENGIE is concerned that the proposed limitations on AEMOs application of this discretionary power are broad, and that potentially AEMO may be able to seek the additional data for almost every plant modification. This could lead to the unintended consequence of 'barriers to improvement', where participants avoid making upgrades and improvements to existing plant for fear that they may not be able to economically meet more onerous data obligations.

A further matter that needs to be considered with regard to plant modifications is the requirements for electrical testing, which is currently required to confirm that the modified plant characteristics match with the modelling data (known as R2 testing).

Currently, when a generating unit is modified under rule clause 5.3.9 the participant is required to provide AEMO with the updated generator model, and then carry out electrical testing to confirm that the measured performance is consistent with the model. These tests are typically quite complex and can take several days to complete, which has significant commercial implications for the participant. The rule change proposal to require increased scope and detail of modelling data raises a question as to what additional verification testing (if any) would be expected, and how the costs for these tests will be considered.

ENGIE suggests that a process should be established in the rules to consider the costs and benefits of additional testing. ENGIE does not support leaving this decision to AEMO's discretion since as noted earlier, AEMO are likely to place greater emphasis on their requirements than the cost and commercial impact on a participant.



Our final point relates to how the proposed new rule would be applied to generator proponents that commenced their application process with AEMO prior to the time of the rule being approved. ENGIE suggests that it would not be reasonable to impose new obligations on generators that have already negotiated with NSPs and AEMO on their connection and registration requirements. This would be a form of retrospective regulation which would be a retrograde approach, and would impose additional risks for potential new investors.

ENGIE trusts that the comments provided in this response are of assistance to the AEMC in its deliberations. Should you wish to discuss any aspects of this submission, please do not hesitate to contact me on, telephone, 03 9617 8331.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Chris Deague".

**Chris Deague**  
Wholesale Regulations Manager