10 May 2011

Mr John Pierce
Australian Energy Market Commission
Level 5, 201 Elizabeth Street
Sydney NSW 2000

By electronic submission: www.aemc.gov.au

Dear Mr Pierce

Origin Energy Limited (Origin) welcomes the opportunity to respond to the Australian Energy Market Commission's (AEMC) draft Determination on the proposed Scale Efficient Network Extension (SENE) mechanism. Origin is appreciative of the AEMC's efforts in progressing this work stream through what has been an extensive consultation process.

Though Origin has been supportive of the SENE, we are concerned that the AEMC's proposed model essentially upholds the status quo, and is unlikely to address the problems associated with connecting generation clusters that are inherent to the current framework. The failure to address these issues could have negative implications for the market. We therefore recommend that the AEMC considers rolling the SENE work into its wider transmission frameworks review, which will allow for more time to resolve a number of outstanding issues.

Our detailed views are set out in the attached submission.

If you wish to discuss any of these issues further please contact me on (02) 8345 5250 or Steve Reid on (02) 8345 5132.

Yours Sincerely,

Tim O'Grady
Head of Public Policy

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Is there still a problem with connecting generation clusters?

Background to the SENE proposal

Origin notes that the initial SENE Rule change proposal was based on the findings of the AEMC's own review into the impacts of climate change policy on energy markets (Climate Change Review). Some key conclusions from this work were that[1]:

- *'The expanded RET will drive the establishment of clusters of new generators;*
- *Existing frameworks are not well structured to achieve potential efficiency gains from connecting clusters of generators, developed over time, using common connection assets. This is because there is no commercial incentive for network businesses to bear the risk associated with building efficiently sized connection assets; and*
- *There are potentially significant cost savings if connection works can be sized efficiently to allow for future connection activity.'*

To account for these issues, the AEMC recommended to the Ministerial Council on Energy (MCE) the development of a mechanism that would allow for the building of efficiently sized connection assets. To solve for the inherent disincentive for any party to bear the risk of stranding when building these assets, the costs would be partially underwritten by customers in the first instance, and recovered gradually as generators connected to the network. The MCE accepted the AEMC's recommendation and subsequently submitted a Rule change proposal for assessment.

Notwithstanding its previous findings/recommendations Origin acknowledges and supports the AEMC's obligation to assess the merits of the SENE proposal in accordance with the more thorough Rule making test, to ensure compatibility with the national electricity objective. Quite rightly this assessment should guide the AEMC in its acceptance/rejection of a particular SENE model or the advancement of a preferred model - as it has done in this case.

Whilst we have no issue with the process the AEMC has followed, we are concerned that its preferred model does not address the problems identified in the Climate Change Review and essentially maintains the status quo. This ostensibly suggests that the AEMC now considers (contrary to its earlier conclusion), that there are no issues associated with the connection of generation clusters. Upon closer examination of the draft Determination, however, we note that (despite delivering a draft Rule that offers no meaningful change), the AEMC has not refuted its earlier findings from the Climate Change Review. We would expect that if the AEMC now considers the current connections framework to be sufficient, it would simply opt to not make a Rule on the grounds that none is required and offer an explanation to that effect.

What is clear is that the AEMC does not consider appropriate, the various SENE models that have been discussed throughout this consultation, particularly as they relate to customers bearing the risk of stranding (our view on this will be discussed later). Despite, this, however, the perceived unsuitability of the previous design options should not preclude the need to find an optimum solution, given that the underlying problem still

[1] AEMC 2009, Review of Energy Market Frameworks in light of Climate Change Policies: Final Report, Executive summary

exists. Origin has taken the AEMC's decision to make a draft Rule in this matter as an acknowledgement that it still considers it necessary to improve the connections framework to better facilitate the connection of generation clusters. We intend to show, however, that the AEMC's proposed solution falls somewhat short in achieving this goal.

The AEMC's model

The Draft Rule places an obligation on transmission companies to undertake a locational study to unearth the possible efficiency gains of undertaking a coordinated connection of new generators. Origin agrees that one benefit of this proposal is that it will provide a means of informing the market of the benefits associated with a particular coordinated connection solution. Notwithstanding this, we fail to see the other perceived advantages of this model, which the AEMC has used as the basis for its adoption. These perceived advantages include that:

It will facilitate efficient coordination amongst generators

The mere publication of a study outlining the cost savings associated with a coordinated connection is not sufficient to facilitate such coordination. As we have stated previously the main issue here is that potential projects have varying connection timetables, based on their progress along the development pipeline. A project that is just about to commence the approval process will have little prospect of linking with one that has already made a final investment decision. The workability of the AEMC's approach is reliant on the coincidence of a number of prospective generators being ready to connect at the same time. This is only ever likely to occur in very limited circumstances. The reality is that potential generators are unlikely to be in a position to achieve simultaneous financial close, let alone come to a decision on the required transmission infrastructure.

The AEMC states that as a result of its model, the savings to generators from lower connection costs should translate into lower prices for consumers over time. If, however, the model does not facilitate the required level of coordination (as is our contention) these lower connection costs will not be realised, along with any resultant benefit to consumers. The net result therefore would be the inefficient duplication of connection assets as each generator opts to undertake its own dedicated connection.

Does not compel anyone to bear the risk and cost of stranded assets and allows the risk to be allocated to those parties that are best able and willing to manage that risk

Given the bulky nature of transmission assets, some risk of stranding is likely to be unavoidable if efficiently sized augmentations (that capture the requisite scale benefits) are to be built. The AEMC seems to have taken a view that the complete avoidance of the stranding risk is by default an efficient market outcome. We would argue that in many instances (particularly where generation clusters exist) if transmission assets are being built minus some level of stranding risk then this is an indicator that these assets have not been efficiently sized.

The over-sizing of connection assets is not a novel concept and already occurs where transmission companies undertake augmentations to the shared network. This effectively exposes customers to the risk of stranding which they are unable to manage themselves. Customers instead rely on the oversight of the Australian Energy Regulator (AER) and the application of the Regulatory Investment Test – Transmission (RIT-T) to mitigate this risk. Origin sees no reason why the above approach could not be applied to the connection of

generation clusters. Admittedly, this is more difficult given that the RIT-T is unlikely to be suitable for this purpose. The development of an appropriate cost benefit analysis should now therefore be one of the key focuses of this consultation. Whilst there has been mention of some type of economic test, not much effort has gone into exploring what form this would take, partly because there has been some doubt as to whether the RIT-T could be applied.

The draft Rule may assist in overcoming the first mover disadvantage

The AEMC states that '*the draft Rule may assist in overcoming the first mover disadvantage where the first generator is able to negotiate a charge that is lower than the amount it would be charged to connect to the network in the absence of a SENE. This might occur where there is considerable likelihood of other generators connecting soon after and so the risk of asset stranding is considered to be relatively low.*[2]'

Firstly, the above assumes that the draft Rule would lead to a SENE being built which we are not convinced is the case given that it does not resolve the coordination issues. Secondly, there is still a disincentive for an individual generator to overbuild a connection asset given the stranding risk. Even if we assume the most favourable situation where the first generator was reasonably certain that others would connect, the timing of such connections would also have to be taken into account. The generator would also have to determine the cost impacts of delayed connections versus the benefit of the initial overbuild. All this suggests that generators are not best place to manage the stranding risk often associated with transmission build.

The AEMC states that if no entity chooses to build a SENE then this could reflect that the risks outweigh the expected benefits, and thus this might be an efficient outcome. Whilst this might be true in certain circumstances, in the majority of cases irrespective of the benefits, the current connections framework is such that a commercial entity is unlikely to willingly oversize a transmission asset. Under the current framework there will always be a greater incentive to be a subsequent as opposed to a first mover.

The AEMC also points out that any entity including governments can choose to build a SENE if they wish. This sentiment is not entirely consistent with the AEMC's desire to encourage market driven outcomes. Additionally, if governments are compelled to undertake the building of transmission assets themselves it could be an indicator of some deficiency in the market framework that does not allow for this to occur naturally. It should also be noted that this outcome would still expose customers to the risk of stranding – notably, without the safety net of a cost benefit analysis or AER oversight.

Provides a change to the existing framework that is proportionate to the identified issues and that the draft Rule does not introduce significant complexity

The existence of complexity is in itself not necessarily an indicator of inefficiency, just as simplicity does not automatically equate to better outcomes. What is important is the magnitude of the problem that needs to be addressed relative to the complexity of the proposed solution. Origin is of the view that implicit in the various extensions to the consultation and the overall length of the process, is a recognition on the part of the AEMC of the importance of the issues the SENE seeks to address and the difficulties involved in finding an appropriate solution. The AEMC states that its proposed Rule

[2] AEMC 2011, Scale Efficient Network Extension: Draft Determination, Executive Summary

'provides a change to the existing framework that is proportionate to the identified issues.[3]' Origin disagrees, and is concerned that the AEMC has erred on the side of being too simplistic in its approach and runs the risk that the draft Rule will not effectively address the underlying problems. The content of the draft Determination is not reflective of the time and resource intensive nature of the consultation process.

As we have mentioned earlier, a suitable SENE will allow for the building of efficiently sized connection assets where generation clusters exist. Key to this is the initial over-building of these assets (in some circumstances) to ensure the avoidance of inefficient duplication and the achievement of economies of scales. If assets are to be built with excess capacity there will be some risk of stranding. How best to deal with this stranding risk has been the most contentious issue under this consultation. Notwithstanding this, not much time has gone into contemplating the design of an appropriate risk management tool such as an efficiency test/cost benefit analysis. This gap should now be addressed.

Does the design of such a risk management tool introduce a new level of complexity in the market? The answer to this question may well be yes. Is it worth the effort to do so? Again we would say yes, mainly because of the changing nature of the market and the increasing emergence of generation clusters. It should also be noted that the development of the RIT-T required a number of years and a few iterations, and it may still need to be refined further. The point is that the resolution of some issues by their nature is in fact complex, but is necessary in maintaining an efficient market architecture.

Is a change to the current framework required?

AEMO's hub proposal

Origin has previously argued that perhaps the most compelling reason for adopting the SENE is as a means of enabling the efficient connection of remote generation. This might have fuelled much of the criticism of the SENE as the potential construction of long extension assets was seen to exacerbate the stranding risk to customers. Again the key is the development of an appropriate risk management tool.

Remote generation aside, it is becoming increasingly clear that the connection of generation clusters generally, presents some complication for the current framework. This is evidenced by the work currently being undertaken by AEMO under its Victorian Connections Initiative project, which has identified the connection of generation clusters as a main issue. In a technical paper entitled *Connecting Generator Clusters to the Victorian Electricity Network*, AEMO made the following observations:

'In response to government initiatives on carbon policy, many new generation projects are seeking access to the Victorian Electricity Declared Shared Network. A large number of these projects seek connection in the same part of the network namely along the 500kV transmission line…there are technical and economic issues associated with the connection of many generation projects in the same area. It is not desirable to establish many connections on a high voltage transmission line, nor is it the most economic outcome overall.'[4]

[3] AEMC 2011, Scale Efficient Network Extension: Draft Determination, Executive Summary

[4] AEMO 2010, Connecting Generation Clusters to the Victorian Electricity Transmission Network: A Technical Perspective, 17 June 2010 , p. 5

Specifically, AEMO also outlined the following technical difficulties associated with connecting each new generator through its own dedicated terminal station[5]:

- When a large number of generators need to connect to the shared network, their relatively close proximity to each other potentially affects the reliability of the network for those already connected; and

- The network's availability is reduced by the many planned outages needed when connecting new generators to the shared network.

To account for the above issues AEMO is in the process of developing a proposal that would allow for the creation of strategically located new terminal stations (hubs) to facilitate the connection of generation clusters. This is similar in intent to the SENE and brings into question the inter-relation between these two processes.

Origin notes the similarities in the four hub design options put forward by AEMO and the five SENE design options examined under this consultation.

AEMO Hub design options

Option 1 – fully negotiated service	First party pays for all initial terminal station costs
Option 2 – Initially negotiated then prescribe	If additional expansion required these costs will be prescribed subject to a cost benefit analysis
Option 3 – Predominantly prescribed	At initial connection all costs are prescribed subject to a cost benefit analysis
Option 4 – Negotiated with incremental requirements prescribed	Initial connecting party pays for terminal station costs required for a default dedicated connection, with additional costs prescribed subject to a cost benefit analysis.

AEMO's hub initiative highlights that concerns surrounding the adequacy of the current framework to facilitate the connection of generation clusters are real and require immediate attention. In its 2010 Annual Planning Report, AEMO noted that *' A solution is required in advance of a decision about the new SENE currently being considered by the AEMC given the immediate needs of generators requiring connection of the Victorian electricity declared shared network[6].'*
The AEMO work also emphasises, however, the need for a cohesive national approach to resolving these issues, as opposed to jurisdictional TNSPs devising their own sets of rules.

[5] *Ibid*
[6] AEMO, Victorian Annual Planning Report: Victoria's Electricity and Gas Transmission Network Planning Document, p. 32

AEMO's work plan seems to suggest the development of a SENE-type approach that would apply in Victoria only, which is somewhat confusing.

A jurisdictional led approach is likely to create confusion and further enhance the differences between regions in connecting to the network, which is an added burden, particularly for generators that operate across the NEM. It is also not clear if AEMO would require a Rule change to effect some of the changes being contemplated, and how then this work will interact with the SENE Rule change and the AEMC's wider transmission review.

Conclusion

Origin recommends that the AEMC consider rolling the SENE work into the wider transmission review which would allow for:

- More time to develop a detailed SENE design, including a suitable cost benefit analysis to mitigate the stranding risk;
- The sorting out of issues surrounding the classification of transmission services and access rights which are relevant to the SENE. In fact it is unlikely that anyone would choose to build a SENE until these issues have been resolved; and
- Time to determine the interplay between the AEMO work stream, the SENE and the TFR and allowance for a national approach to resolving these issues.
- Attachment 1 sets out, the decision making process that have led to the above conclusions.

Attachment 1

SENE DECISION MAKING PROCESS