

ENQUIRIES: DAVID SIMPSON
PROJECT NO: BD11084-MEL-M

6 August 2012

Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

Attention: Steven Graham

Dear Steven,

RE: CONSULTATION PAPER: NATIONAL ELECTRICITY AMANEDMENT (CONNECTING EMBEDDED GENERATORS) RULE 2012, AEMC, 14 JUNE 2012, SYDNEY

In reference to the above paper, Ref ERC0147, we are pleased to provide this submission in support of the proposed rule change.

Wood & Grieve Engineers are a national consulting engineering firm providing engineering services to the building industry. Two relevant specialist engineering areas we operate in are electrical design, including electrical infrastructure, as well as environmentally sustainable design.

Based on experience with Embedded Energy Systems design, we have experienced the following issues:

- Perceived lengthy application process to the Network Provider for grid connection.
- Not a fully defined information exchange process with the Network Provider. Perceived lack of technical support from the Network Provider.
- Costly application process with no certainty of outcome. In other words, it was not known whether a grid connection would be possible.
- Unknown upfront costs (including augmentation costs and network assessment costs). These are important inputs for the feasibility stage financial modelling.
- If augmentation costs were required, some concern over whether these works would be completed by the power authority in time to suit the project.

We refer to a couple of previous embedded energy projects we have been involved with:

Example 1: 321 Exhibition Street: Feasibility Stage of Project considering a Co-Generation System.

Following the feasibility stage and recognising the uncertainties in enabling a grid connection (including timelines of responses of the network provider, unknown augmentation costs, reliability, unknown generation licensing issues) an "island mode" solution was adopted without connection to the grid to quarantine a low risk solution to the building owner.

WGE - vital experience

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Example 2: Victorian Comprehensive Cancer Centre (current project).

We have commenced the feasibility works for the project.

Preliminary responses for the DBSP indicate that the initial application process will be 6-8 months. This is significantly in excess of the Victorian Electrical Distribution Code Timeframe of 65 days. There is a separate and non-refundable application fee without surety that grid connection will be possible.

A network analysis study will be required and initial indications are that the costs will be \$50,000 upwards.

The project would like to incorporate true embedded energy with input to the grid.

Technical requirements for the submission are onerous and in some areas cumbersome. We believe this could be standardised better.

In relation to technical issues, there is an unknown fault level headroom in the grid, if this was known this would provide the design team an indication of the likelihood of being able to install embedded systems with minimal augmentation costs. It would be beneficial if this data for the grid was published.

We have separately applied for permanent power connection to the site and been informed that augmentation costs will increase because the project is likely to incorporate embedded energy systems. This is due to a reduced revenue stream for the DNSP.

We view these current limitations as a hindrance to building owners considering embedded energy systems based on our experience. We therefore fully support the proposed rule change.

We also make the following comments in response to some of the specific questions raised in the Consultation Paper:

Question	Comment
Question 3 – Publishing Details of information requirements	
(a) What are the costs and benefits to distributors and embedded generators in requiring distributors to publish information on its connection process including an application form and information on application fees and calculation of connection costs?	There are numerous benefits to embedded generators – known application information to avoid delays and known fees and charges so that financial feasibility can be calculated up front.

Question	Comment
(b) How would the proposal to add a clause that each party /must provide the other with information the other reasonably requires in order to facilitate connection to the network' address any problems? What are the details and examples of the current communication issues that stakeholders have experienced with the connection process?	There are some previous examples of DNSP's, spending a period of time reviewing the application information, going back and asking for more information. This can lead to delays during the application phase of the project.
(c) Noting that there are currently provisions under the NER for the exchange of information, what are the deficiencies of the current arrangements?	Information is not currently accurately and comprehensively defined.
(d) Should the proposed changes apply generally to all network service providers?	We believe that consistency is important because owners, suppliers and engineers work on assets in various jurisdictions.
Question 4 – Response to connection enquiries	
(d) To what extent would the requirements for distributors to publish the demand side engagement document resolve any issues?	Identification of clear up front requirements so that the total information can be provided as part of the initial submission.
Question 5 – Information to be included in offers to connect	
(b) How would the proposed rule add to an 'itemised statement of connection costs' improve the current arrangements? How would stakeholders be impacted if this requirement were to be introduced?	Known costs up front. This would provide accurate financial inputs which would provide greater certainty to assist the financial feasibility of the project.
(c) Should this requirement apply to all types of connections?	Yes, because virtually all projects would need to undergo a financial feasibility study.
Question 7 – Providing an offer to connect within 65 business days	
(a) What are the factors that affect the timeframe within which offers to connect may be made? What are the factors that impact the process for negotiating negotiated access standards?	The DNSP stipulates the timeframe. Based on our experience on the VCCC project, the timeframe is non-negotiable with the DNSP.

Question	Comment
(b) Have there been cases (particularly in Victoria) where 65 business days was not sufficient to finalise an offer to connect? What were the reasons for requiring more than 65 business days?	Yes, we are currently experiencing a 6-8 month application process on the Victorian Comprehensive Cancer Centre project in Melbourne. No reasons were provided by the DNSP.
(c) How would network service providers and connection applicants be affected by the proposed amendment?	This would speed up the application process by reducing required response times from the DNSP which enables financial feasibility studies in a timely manner.
(d) Should this requirement apply to all network service providers for all connections?	Yes, again to enable consistency with the application process.
Question 9 – Technical standards for embedded generators	
(a) Without technical standards currently being in place for embedded generators, how well has the connection process under Chapter 5 worked in practice? How urgently are standards needed?	<p>Ch5 is very much open to interpretation by the DNSP's and affords them much discretion. This can result in multiple requests for additional information with little or no advanced notice during the process. Standards are needed to reduce uncertainty.</p> <p>The standards will provide greater certainty to suppliers to engineer their systems accordingly.</p>
(b) Would standards for different types/classes of embedded generators be required?	Yes. There would be different standards for engines, wind generators, PV etc. In addition because of differing impacts on the grid, we would expect the standards to be different at, say, the 30kVA to 5MVA range and the 5MVA to 30MVA range.
(c) What factors should be taken into consideration in developing such standards? Are there any specific jurisdictional or local requirements?	<p>Safe, reliable supply, protection to grid.</p> <p>At this stage, we believe that there would not be any specific jurisdictional requirements.</p>
(d) What should be the scope of such standards? Can all relevant technical requirements be 'standardised'?	<p>The scope of such standards should cover the generation of the power supply waveform, reliability and grid protection measures and installation requirements.</p> <p>In principle and in concept, they would be similar to AS 4777 for inverter systems as these are referred to by NER Ch5A. It is possible to standardise the technical requirements, however they would be more extensive than AS 4777.</p>

Question	Comment
Question 10 – Embedded generators having an automatic right to export to the grid	
(b) What are the impacts on the embedded generators and other participants when exporting is not allowed?	<p>This would limit options available to the project. For example, “island mode” operation of the co-gen plant, or removal of the co-gen system from the project altogether.</p> <p>It also encourages smaller plant, which is less efficient and less financially feasible.</p>
(c) Are there circumstances where the ability of embedded generators to export electricity to the network should be limited? What conditions could be reasonably imposed to limit exporting?	<p>None from the demand/investor side. From our experience, some export is required to allow the system to parallel with grid. This results in more stable power delivery systems.</p> <p>If there was excessive exporting to the grid, consideration of network augmentation would be required.</p>
(d) Is there any basis for embedded generators to be treated differently to load or other generators? For what reasons?	<p>No. To reduce CO₂ emissions, mechanisms to encourage greater use of natural gas engines and renewable sources could be considered.</p>
Question 11 – Allowing distributors to change an optional fee for service	
(a) What are the barriers that prevent network service providers from charging a ‘fee for service’ under the current arrangements?	<p>None.</p>
(b) Is the proposed rule sufficient in identifying what services would be provided for the ‘fee for service’? If not, how should the relevant service be specified?	<p>It may be difficult to identify a standard fee. The fee could be time based or design stage based and identified in line with fee guidelines.</p>
(c) What factors should be considered on how such a service should be classified? That is should it be direct control service or negotiated service? Should the service be on a cost recovery basis only?	<p>We believe the industry would be prepared to pay a fair fee for the service.</p>

Question	Comment
(d) Should the NER provide any guidelines on how such a fee should be determined or should it be negotiated between a distributor and embedded generator? Should the fee be approved by the AER and, if so, on what basis?	Guidelines would be good. Otherwise fees may creep up over time. Because the capability and experience of the applicant's team would vary, we recommend a fee structure as identified above.
Question 12 – Shared network augmentation costs	
(a) Is the current approach to attributing connection costs, particularly in relation to shared network augmentation costs, inefficient, inequitable and not cost-reflective? For what reasons?	We have experienced some inconsistency. Negative costs due to postponement or elimination of impending network upgrade as a result of feeding a Co-gen system into the grid do not appear to be considered in these costs.
(b) Should embedded generators (noting that embedded generating installations can encompass a broad range of installations) be exempt from paying shared network augmentation costs? Why or why not?	Yes, to formally encourage the take up of embedded energy. This may reduce augmentation costs in the long term due to the postponement of network upgrades particularly when district solutions are considered, or solutions for multiple buildings.
(c) If embedded generators are exempt from shared network augmentation costs, how should these costs be allocated?	This could be addressed through the government's 5 year review period into which DNSP's submit their 5 year capital expenditure requirements.

Please do not hesitate to contact me, should you wish to discuss or if you require further information.

Yours faithfully



David Simpson
for **Wood & Grieve Engineers**