

Mr John Pierce  
Chairman, Australian Energy Market Commission  
PO Box A2449  
SYDNEY SOUTH NSW 1235

9 August 2012

**Re: National Electricity Amendment (Connecting embedded generators) Rule 2012  
Project Reference ERC0131**

Dear Mr Pierce

The Australian Energy Market Commission (AEMC) has sought comment on the ClimateWorks Australia "Proposal to amend the National Electricity Rules for connecting embedded generators" (hereafter referred to as the 'Rule Change Proposal').

The Energy Efficiency Council (EEC) is the peak body for energy efficiency, demand response and cogeneration, and brings together Australia's top expertise in demand-side to support the development of policy and programs. Incorporating expert advice into the design of demand-side programs significantly improves their effectiveness. The EEC submission is focussed on cogeneration and trigeneration, although the comments are applicable to other forms of embedded generation.

The EEC strongly supports this Rule Change Proposal. The Rule Change Proposal is essential to reduce significant barriers to connecting embedded generators to the network. These barriers have materially impeded the deployment of cost-effective embedded generation options, reducing the economic efficiency of the National Electricity Market (NEM).

The National Electricity Objective (NEO) states:

*"The objective of [the National Electricity Law] is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to-*

- a) price, quality, safety, reliability and security of supply of electricity; and*
- b) the reliability, safety and security of the national electricity system"*

The current processes for connecting embedded generators to the network are considered to vary between Distribution Network Service Providers (DNSPs) and even between resources within DNSPs. The connection process is typically ad hoc, uncertain, lengthy and inequitable. As a result, many cost-effective embedded generation projects have been either significantly delayed or completely impeded. Cost-effective embedded generation can reduce the costs of electricity services for energy users supplied by the embedded generation and, if the embedded generation unit reduces the need for network augmentation, also for other parties connected to the network.

Therefore, the current process for connecting embedded generators reduces the efficiency of investment in, and efficient operation and use of, electricity services. The Rule Change Proposal would increase the efficiency of investment in, and efficient operation and use of, electricity services, and is therefore consistent with the NEO. The costs of implementing the Rule Change Proposal are modest, and the benefits are potentially substantial.

The Proposal has the potential to:

- Reduce connection costs for generation proponents and DNSPs
- Support innovation and boost the adaptability of the electricity market
- Reduced demand on the electricity network, especially peak demand
- Limit increases in electricity prices and economic and energy productivity enhance
- Reduce barriers to low-carbon energy options, lowering the cost of reducing emissions
- Increase the diversity of generation and dependence on the network, increasing security of supply

The Rule Change Proposal would:

- Improve the consistency of the process and timeframe for connecting distributed generation
- Reduce the inequalities in negotiation power between monopoly DNSPs and embedded generation proponents.
- Allow Distribution Network Service Providers (DNSPs) to charge for certain services

The Rule Change Proposal will need to be followed by three significant pieces of work

- Developing the conditions for automatic access;
- Developing Schedules of the information that embedded generators need to provide to DNSPs. The AER will need to approve the schedule required by all DNSPs, and will need to check to determine if DNSPs are asking for additional, unnecessary information that is not included in the schedule; and
- Developing a clear process for determining fair allocation of the costs for connection, (including deep augmentation), ongoing network charges (DUOS and TUOS) and determining fair allocation of the benefits of avoided / deferred network augmentation.

These projects require considerable work, and the EEC recommends that the appropriate energy market body allocate resources immediately to these projects.

In particular, the process for determining the charges and avoided costs of connecting embedded generation, including ongoing network DUOS and TUOS charges, will require substantial work, as the current system is highly inequitable. For example, under the current system, the first generator to connect into a region with limited fault level headroom could pay the full costs of augmenting the system, and generators that connect after the augmentation would pay very limited augmentation costs, creating a clear first-mover disadvantage. Alternatively, the first connection could soak up all the available fault level head room, requiring subsequent connections to pay for augmentation.

The scale of DUOS and TUOS charges is very material, particularly for precinct-scale cogeneration and trigeneration schemes that can be more cost-effective than individual building systems but face significantly greater barriers in the electricity market. This project should separately analyse the issues faced by in-building generation and precinct-scale generation.

These changes would also need to be accompanied by a requirement on DNSPs to publish detailed maps of network constraints, demand projections and augmentation needs at the sub-station level.

However, the full benefits of the Rule Change Proposal will only be realised if the Australian Energy Regulator (AER) undertakes more proactive regulation of DNSPs. The current system relies on embedded generation proponents taking complaints about connection processes to the AER. However, embedded generation proponents are reluctant to damage their relationship with DNSPs, given that they are likely to be obligated to deal with them again in the future.

The Rule Change Proposal will clarify acceptable processes and timelines, making it simpler to determine if a DNSP has breached reasonable processes for connection. However, without enforcement of these processes and timelines it will not fully address the risk of DNSPs not satisfying the reasonable process criteria. Therefore, the Council recommends that the AER take up a more proactive reporting and regulatory regime for connecting embedded generation. DNSPs should report all of the following to the AER:

- Timeframes for meeting different stages of all connection enquiries
- Fee-for-service agreements for each embedded generation project
- The connection costs proposed for each embedded generation project
- The network augmentation costs proposed for each embedded generation project

Reporting is critical. For example, while the EEC supports the concept that DNSPs could charge for some forms of network connection work on a fee-for-service basis, as DNSPs are monopolies it is appropriate that the AER has an oversight role to determine if the fee-for service is reasonable.

The EEC believes that an automated system for reporting would enable this to proceed with low ongoing costs, but in general the AER will need to be resourced properly to take a more proactive role in regulation. The EEC is aware that funding of the AER is beyond the AEMC's remit, and

Australian governments will need to increase the funding available to the AER, preferably through a statutory charge on electricity.

Finally, while the EEC supports the urgent passage of the Rule Change Proposal, the Council has some specific amendments to the rule change proposal that will make it more effective and efficient. Firstly, the EEC supports a change in the process for determining whether an embedded generator should be allowed to supply electricity to the network. Currently, the DNSP determines whether it believes the costs of augmenting the network to enable an embedded generator to supply into the network exceed the benefits. This system is suboptimal.

However, the Rule Change Proposal recommendation to force DNSPs to augment the network so that it can receive the supply of electricity an embedded generator (Section 5.5(db)), irrespective of the costs, could impose unreasonable costs on energy users. Therefore, the EEC recommends that Change 5.5(db) be redrafted to the effect of:

*"A Distribution Network Service Provider must seek permission from the AER if it wishes to maintain its distribution network in a state where it is not able to receive the supply of electricity from an Embedded Generator."*

Secondly, the EEC recommends clarification to Section 5.3.6(b) of the Rule Change Proposal by adding in:

*iv) details of upstream augmentation required to provide the connection service and associated cost. Once the AER has set up guidelines around the allocations of cost for connection and upstream augmentation, the costs charged by the DNSP must be in line with these guidelines*

*v) an itemised statement of payments for network support services, including any savings from avoidance / deferral of network augmentation*

In summary, the EEC strongly recommends urgent passage of the Rule Change Proposal, and recommends resources be allocated to undertake the work that is necessary to implement the Rule Change Proposal effectively. Please contact me on 03 8327 8422 should you require further information on any of the issues raised in this submission.

Yours sincerely



Rob Murray-Leach  
Chief Executive Officer

## Responses to Questions in the AEMC Consultation Paper

### Question 1 Complying with Chapter 5

**(a) currently any person can require a network service provider to comply with Chapter 5 or elect to use the connection procedure under Chapter 5. Are there any problems or barriers to how this is applied in practice?**

Although any person can require a service provider to comply with Chapter 5, very few parties are aware of their rights, particularly as they are spread out throughout the rules. As a result, embedded generation projects do not go ahead or generation owners are unfairly charged during the connection process.

Creating clear, explicit statement of rights for distributed generators in the rules has no negative impacts and could help address this issue. However, this outcome could be better addressed through a national 'plain English' guide on embedded generation in the NEM.

**(b) If so, what are the problems and/or barriers? What are the costs and impacts on stakeholders?**

See answer to question 1.a

**(c) How would the proposed amendment to specify that an embedded generator has the right to require a network service provider to comply with Chapter 5 resolve these problems and/or barriers?**

See answer to question 1.a

**(d) Given that any person can elect to use the connection process under Chapter 5, when, and why, do non-registered embedded generators choose not to use this process**

As noted in the answer to question 1.a, many individuals that wish to install embedded generation are not aware of their full rights, as this would require an extensive knowledge of the NER and any relevant state-based provisions.

### Question 2 Good faith provisions

**(a) The current NER sets out that network service providers and connection applicants must conduct negotiations in 'good faith'. Are there any problems associated with the application of this provision?**

The evidence suggests that a "good faith" criterion is subjective and compliance with not always evident, despite the current provisions. The most important mechanism to ensure that DNSPs act in good faith is to increase the power and pro-activity of the Australian Energy Regulator (AER).

Adding an additional 'good faith' clause is highly unlikely to materially improve DNSP behaviour, but if it simply duplicates existing clauses the duplication will not have any negative impacts.

**(b) How would the proposed amendment for an additional 'good faith' impact stakeholders?**

See above.

### 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?**

The EEC believes that requiring DNSPs to publish information on the connection process will increase transparency and simplify assessment of whether a DNSPs process is reasonable and equitable. Furthermore, requiring DNSPs to public this information will ensure that they have undertaken thorough preparatory work internally to ensure that the process is appropriate, rather than processing connection requests on an ad-hoc basis.

**(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?**

Currently, DNSPs frequently request information from embedded generator proponents, then once that information has been provided the DNSP asks for further information. This is often caused by

- Limited incentive for DNSPs to keep to a timetable and only ask for essential information
- Lack of experience within DNSPs
- Poor coordination and communication within DNSPs - often several individuals within the DNSP require information but have not coordinated their needs at the beginning.

This creates unacceptable and entirely avoidable delays that increase the cost of embedded generation projects and can make them unviable.

**(c) Noting that there are currently provisions under the NER for the exchange of information, what are the deficiencies of the current arrangements?**

The current requirements are simply insufficient to drive appropriate information disclosure by DNSPs. However, even with clearer arrangements the AER will need to be proactive to ensure that DNSPs comply with the rules.

**(d) Would the demand side engagement document under the distribution network planning and expansion framework rule change address these information requirements?**

The demand-side engagement document does not appear to be sufficiently specific to address information requirements.

**(e) Should the proposed changes apply generally to all network service providers?**

The EEC is not aware of any justifiable reasons that any network service providers should be exempt from these processes.

## Question 4 Response to connection enquiries

**(a) In stakeholders' experience, have the response that the network service providers provided in response to connection enquiries been clear and reasonable?**

The EECs members have noted many instances where DNSPs have provided unclear and unreasonable responses to connection enquiries. However, the behaviour of DNSPs varies between DNSPs and even between the staff that EEC members deal with at DNSPs, indicating that clear processes could substantially improve performance.

**(b) Have there been experiences where a connection applicant has been asked to provide information that it has already submitted and, if so, why?**

No comment

**(c) Have there been experiences where a connection applicant has been asked to provide information that it did not consider was 'reasonable'? How was this situation resolved?**

No comment

**(d) To what extent would the requirements for distributors to publish the demand side engagement document resolve any issues?**

A requirement for distributors to publish a demand-side engagement document would improve this processes, but the requirement currently lacks sufficient detail to ensure that information requirements are met.

## Question 5 Information to be included in offers to connect

**(a) In practice to date, what information on connection costs are provided in offers to connect? How are the requirement of confirming to rule 5.5 being met? How are the current arrangements deficient?**

EEC members have reported significant lack of clarity on connection costs until very late in the connection process. As a result, they have often wasted considerable time and resources waiting for an answer that could have been provided much earlier.

It is appreciated that in some cases the extent of a Network Study by the DNSPs varies in relation to the complexity of the proposed connection and its location within their network thus impacting on costs. However, there would be much benefit in the DNSPs standardising their designs and therefore their costs for various sizes and types of connections. Thus even a clear order of cost budget estimate for each stage of the design, installation and sign-off connection process together with timelines would assist all parties greatly. We note that some DNSPs are better than others and that standardisation provides many efficiencies and cost savings for all organisations.

**(b) How would the proposed rule to add an 'itemised statement of connection costs' improve the current arrangements? How would stakeholders be impacted if this requirement were to be introduced?**

An itemised statement of connection costs would increase transparency and help to ensure that DNSPs are not passing on unreasonable connection costs to embedded generators.

**(c) Should this requirement apply to all types of connections?**

No comment.

## **Question 6 Setting out the time to connect in the preliminary program**

**(a) Under the current arrangements (either under the NER or jurisdictional arrangements), what are the typical timeframes within which offers to connect are made by distributors?**

The timeframes for offers to connect vary between both DNSPs and individual staff within DNSPs. Offers to connect can be provided within two months, but can take up to two years. EEC members report particularly extensive delays in Victoria, where offers to connect often take 12-24 months.

**(b) What are the factors that affect the timeframe for finalising an offer to connect?**

There are no clear factors that determine the timeframe for finalising an offer to connect, and even very small systems can often take significant time to connect. Which specific DNSP is involved appears to be the most significant determining factor.

**(c) Is it feasible or practical to include a specific timeframe to finalise an offer to connect at the time of preparing the preliminary program? What information is currently provided in preliminary programs?**

It is both feasible and necessary to include a specific timeframe to finalise an offer to connect.

**(d) If adopted, should this requirement apply to all connection enquiries?**

The EEC support the proposed two-track approach in the Rule Change Proposal.

## **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?**

While the complexity of a project can affect the time for an offer to connect, in practice, as mentioned above, which DNSP you engage with appears to be the major determinant in connection timeframes.

**(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?**

There have been cases where an offer to connect has not been received within 65 days, and there has often been no adequate reason to warrant this delay.

**(c) How would network service providers and connection applicants be affected by the proposed amendment?**

The proposed amendment would increase the pressure on DNSPs and connection applicants to provide all the information and work required within 65 days. Given that connection applicants normally want the connection to occur as quickly as possible, this would not affect them. Given that DNSPs do not currently have incentives to proceed rapidly with connection, this will address a major principle-agent distortion and align their interests with connection applicants.

**(d) Should this requirement apply to all network service providers for all connections?**

The EEC is not aware of any justifiable reasons that any network service providers should be exempt from this requirement.

## Question 8 Terms and conditions of connection

**(a) How are the current provisions under clause 5.3.6(b)(2) being applied? That is, are the terms and conditions for connection of the kind as set out in schedule 5.6?**

No comment.

**(b) In what ways are varying terms and conditions between distributors a problem? Is it appropriate for distributors to have different terms and conditions? Does this reflect relevant differences in network requirements?**

Varying terms and conditions between distributors are only marginally related to network requirements, and are largely avoidable. Varying terms and conditions increase transaction costs for connection proponents.

## 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?**

As mentioned, the connection process under Chapter 5 is clearly not functioning, and the standards are urgently required.

**(b) Would standards for different types/classes of embedded generators be required?**

These issues would need to be worked out in detail.

**(c) What factors should be taken into consideration in developing such standards? Are there any specific jurisdictional or local requirements?**

The standards would need to consider both the nature of the embedded generator and key technical parameters of the local network (e.g. fault level headroom).

**(d) What should be the scope of such standards? Can all relevant technical requirements be 'standardised'?**

These issues would need to be worked out in detail.

## Question 10 Embedded generators having an automatic right to export to the grid

### (a) Under what circumstances have embedded generators not been allowed to export electricity to the network?

No comment

### (b) What are the impacts on embedded generators and other participants when exporting is not allowed?

When embedded generators are not able to export to the grid it can often entirely prevent projects from proceeding.

### (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?

Where the network is not able to safely and reliably accommodate electricity exported by embedded distributors without high augmentation costs this should be limited.

The EEC supports a change in the process for determining whether an embedded generator should be allowed to supply electricity to the network. Currently, the DNSP determines whether they believe the costs of augmenting the network to enable an embedded generator to supply into the network exceed the benefits. This system is highly inequitable.

However, the Rule Change Proposal recommendation to force DNSPs to augment the network so that it can receive the supply of electricity an embedded generator (Section 5.5(db)), irrespective of the costs, could impose unreasonable costs on energy users. Therefore, the EEC recommends that Change 5.5(db) be recast as:

*"A Distribution Network Service Provider must seek permission from the AER if it wishes to maintain its distribution network in a state where it is not able to receive the supply of electricity from an Embedded Generator."*

### (d) What are the costs and benefits of allowing, and not allowing, embedded generators to export electricity to the network?

The cost of preventing an embedded generator from exporting electricity to the network is that cost-effective embedded generation projects have been either significantly delayed or prevented. Cost-effective embedded generation can reduce the costs of electricity services for both the generation owners and other parties connected to the network, because suitably located embedded generation can reduce the need for some types of network augmentation.

The cost of allowing an embedded generator to export to the network is any necessary network augmentation to enable that to occur.

Therefore, the costs and benefits of allowing an embedded generator to export to the network will depend on the location. For that reason, the EEC recommends that:

*"A Distribution Network Service Provider must seek permission from the AER if it wishes to maintain its distribution network in a state where it is not able to receive the supply of electricity from an Embedded Generator."*

### (e) Is there any basis for embedded generators to be treated differently to load or other generators? For what reasons?

No comment

## Question 11 Allowing distributors to charge 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?**

No comment

**(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?**

No comment

**(c) What factors should be considered on how such a service should be classified? That is should it be a direct control service or negotiated service? Should the service be on a cost recovery basis only?**

No 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?**

While the EEC supports the concept that DNSPs could charge for some forms of network connection work on a fee-for-service basis, as DNSPs are monopolies it is appropriate that the AER has an oversight role to determine if the fee-for service is reasonable.

## 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?**

The process for determining the costs and avoided costs of connecting embedded generation is highly inequitable. Under the current system, the first generator to connect into a region with limited fault level headroom could pay the full costs of augmenting the system, and generators that connect after the augmentation would pay very limited augmentation costs, creating a clear first-mover disadvantage.

Furthermore, while embedded generators should theoretically receive some form of payment where they defer network investment, in practice it is extremely rare for an embedded generator to receive payment for network augmentation deferral.

**(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?**

Embedded generators should pay some costs for network augmentation where it relates to the embedded generation project. However, significant work needs to be undertaken to determine what share of these costs is reasonable and equitable.

**(c) If embedded generators are exempt from shared network augmentation costs, how should these costs be allocated?**

See answer to 12b.