

9 August 2012

Australian Energy Market Commission  
PO Box A2449  
Sydney South NSW 1235

By email: [aemc.gov.au](mailto:aemc.gov.au)

Dear Sir/Madam

**Connecting Embedded Generators**

Project reference code: ERC0147

Endeavour Energy appreciates the opportunity to comment on the proposed National Electricity Amendment (Connecting embedded generators) Rule 2010 as part of the consultation conducted by the Australian Energy Market Commission.

Endeavour Energy supports additional clarification in the National Electricity Rules (NER) on the connection of non-registered embedded generators to the national grid.

Endeavour Energy notes currently non-registered embedded generators can choose the mechanism by which they can connect to the national grid, and that the forthcoming implementation of the National Energy Customer Framework (NECF) will provide an additional mechanism for connection. Chapter 5A to the NER is intended to accommodate the connection of non-registered embedded generation to the national grid in distributor model standing offers for standard connection services and negotiated connection services.

Whilst no quantitative analysis has been provided by the proponents in support of the Rule change proposal, other than a limited reference to their 2011 Unlocking Barriers to Cogeneration (UBC) Project, Endeavour Energy supports the development of technical standards to apply to specific classes of non-registered embedded generation as a priority in facilitating connection of non-registered embedded generation to the national grid.

Attached are Endeavour Energy's detailed comments on the proposed National Electricity Amendment (Connecting embedded generators) Rule 2010.

If you have any questions regarding this submission, please contact Mr Erik Beerden, Regulatory Affairs Manager, on telephone number (02) 9853 6904.

Yours sincerely



Rod Howard  
Interim Chief Operating Officer

## APPENDIX

The Australian Energy Market Commission paper titled “Consultation Paper, National Electricity Amendment (Connecting embedded generators) Rule 2012” dated 14 June 2012 (Consultation Paper) sets out the background and certain issues for consideration of a Rule change request for connecting embedded generators in the National Electricity Market (NEM).

The Rule change request from Climate Works Australia, Seed Advisory and the Property Council of Australia (the proponents) primarily seeks to address the connection of co/trigeneration projects (although passing reference is made to embedded generators more broadly) and draws heavily on their limited report titled “Unlocking Barriers to Cogeneration Report” (UBC project).

The AEMC has sought advice on the following issues in respect of the Rule change proposal:

### **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?*

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

*(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?*

*(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?*

Chapter 5 provides the framework for connection to a transmission network or a distribution network and access to the national grid. Among its aims is to address a Connection Applicant’s reasonable expectations of the level and standard of power transfer capability that the relevant network should provide, and to establish processes to ensure ongoing compliance with the technical requirements of the Chapter to facilitate management of the national grid.

This relates to all persons connected to a transmission network or a distribution network.

All Registered Participants (including Network Service Providers) are required to comply with Chapter 5 of the NER.

Non-registered embedded generators have the right to elect to comply with Chapter 5 as a part of a connection agreement<sup>1</sup>. However, both non-registered embedded generators and exempt embedded generators (up to 30MW) may be subject to jurisdictional arrangements for connection.

Endeavour Energy has connected non-registered embedded generators who have elected to comply with Chapter 5 to its network under connection agreements. These non-registered embedded generators have also elected to follow the procedures in clause 5.3 (covering connection enquiry, connection application, connection offer and finalisation of connection agreement) to ensure their connected generators do not adversely impact power transfer capability and power system safety and security.

Where a non-registered embedded generator chooses not to comply with Chapter 5, they do so because they are unwilling (for commercial or other reasons) to ensure their connected generators do not adversely impact power transfer capability and power system safety and security.

The proponents have primarily identified commercial barriers to connection in the UBC project.

The proponents have conceded that certain non-registered embedded generation does not technically comply with the requirements to ensure their connected generators do not adversely impact power transfer capability and power system safety and security, stating “*compliance with these requirements can result in significant costs and even undermine the viability of a cogeneration project*”<sup>2</sup>.

To avoid paying for compliance with technical requirements, the proponents are seeking to transfer these costs (and potentially greater costs) to other network users through rules:

- providing an automatic right of connection for embedded generation;
- giving embedded generators ineligible for automatic access to the grid a connection;
- giving embedded generation the right to export electricity to the grid;
- preventing embedded generation from contributing to shared network augmentations; and

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<sup>1</sup> Clause 5.1.2(b)

<sup>2</sup> P12 of the proposal

- requiring DNSPs to connect embedded generation to their networks.

The legal incidence of these proposed rule changes would fall on DNSPs and be reflected in increased network costs to ensure power system security and quality of supply. However, their economic incidence would fall on all network users.

The submission of the proponents fails to recognise the costs to distributors and network users of impeded power transfer capability and a failure of power system safety and security, including:

- loss of supply;
- unstable and poor quality supply;
- damaged plant and equipment;
- direct and indirect loss of profits; and
- reputational damage

The costs associated with each of these outcomes are expected to far outweigh any marginal cost incurred by the non-registered embedded generator associated with connecting unsuitable embedded generation to the network.

Further, it is not reasonable for the proponents to expect that where a non-registered embedded generator elects not to each seek a connection under Chapter 5 of the NER (which applies in all participating jurisdictions), that each jurisdiction should alter their jurisdictional arrangements to provide identical alternative connection arrangements. This expectation fails to recognise that each jurisdiction has its own constitution and has developed its own jurisdictional specific connection regime (such as the contestability regime for connection services applying in NSW).

While implementation of Chapter 5A will provide a uniform alternative to connection under Chapter 5, by applying model standing offers for standard connection services, it must take into account the condition of the network to which the embedded generator is seeking connection. For this reason, each DNSP can frame their model standing offers for standard connection services under Chapter 5A, prior to their submission for approval to the AER.

Additionally, an embedded generator may choose a negotiated connection framework under Chapter 5A to arrange their connection to the network.

Therefore, an embedded generator has at least two (2), if not three (3), options to arrange a connection to the network. As such, it is clear that 'no gap' exists in the provisions for connection for generators with a nameplate rating of between 10kW and 30 MW.

Pre-empting model standing offers for standard connection services under Chapter 5A by seeking amendments to the Chapter 5 connections process applying to large

generation is both unnecessary and inappropriate. This is especially the case where the proponents offer no standards to be met by embedded generation, as currently applies to large generation in Schedule 5.2

A better approach would be to require the establishment of Australian Standards for these non-registered embedded generators (similar to Schedule 5.2 of the NER) as a prerequisite for additional rules for connection of non-registered embedded generation. This would also provide the clear guidance sought by the non-registered embedded generators, as acknowledged by the proponents.

## **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?*

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

Under clause 5.3.6(f) of the NER, a Network Service Provider and a Connection Applicant conduct negotiations for connection services in 'good faith'. Clause 5.5 makes it clear that the 'good faith' negotiations relate to the preliminary enquiry, application to connect and any subsequent negotiation of a connection agreement.

Endeavour Energy has not encountered any problems associated with the 'good faith' negotiation provisions for connection services in Chapter 5.

There is no discussion in the Rule change proposal on the application of 'good faith' in negotiations and no deficiencies in the 'good faith' provisions of the NER have been identified.

Other than in the drafting of clauses 5.1.3(ca) and 5.1.3(cb) proposed for insertion in the Rules, there is only one mention of 'good faith' in the entire Rule change proposal.

This mention occurs in a single comment on a DNSP and a non-registered embedded generator agreeing a deadline to an alternative processing, if the DNSP is not sufficiently resourced to develop and publish a process, where no standardised process currently exists<sup>3</sup>.

This absence of discussion on 'good faith' negotiations reflects the fact that the Rule Change proposal does not attempt to amend the 'good faith' negotiation provisions.

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<sup>3</sup> P21 Rule Change proposal

Rather, the Rule Change proposal introduces an 'act in good faith' provision<sup>4</sup> in order to connect to the network. This provision seeks to place an additional onus on DNSPs to connect non-registered embedded generation to the network.

Under clause 5.1.3(ca), each party must act in good faith to connect to the network. This positive obligation on a DNSP to act to connect to the network appears intended to circumvent/address the action (or lack thereof) of the parties in implementing measures to facilitate connection to the network.

Under this provision, irrespective of whether or not the non-registered embedded generator has 'acted in good faith' in seeking to connect to the network, the DNSP has a positive obligation to 'act in good faith' to connect the non-registered embedded generator to the network.

Further, under proposed clause 5.1.3(cb), an embedded generator need not give information to a DNSP if it (the embedded generator) does not consider it is reasonably required by the DNSP.

This provision appears intended to address the failure of non-registered embedded generators to provide sufficient information to facilitate a connection by giving them the discretion to withhold information from a DNSP if they do not consider the request for information to be reasonable.

'Good faith' requires that that the parties act co-operatively, honestly and reasonably. If not mentioned, good faith is implied in contracts in NSW and other participating jurisdictions in the NEM.

As such, the proposed clauses 5.1.3(ca) and 5.1.3(cb) in the Rule change proposal should be deleted.

### **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?*

*(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?*

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

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<sup>4</sup> Clause 5.1.3(ca)

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

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

The publication of information on the connection process, including an application form and information on application fees and calculation of connection costs, reflect the requirements for connection under Chapter 5A.

The Chapter 5A requirements for connection are intended to accommodate non-registered embedded generation, and provide for a preliminary enquiry information process to enable the enquirer to make an informed application. For the same reasons, a preliminary enquiry process also applies to generator connection under Chapter 5 of the NER.

This preliminary enquiry process recognises, among other things, the nature of non-registered embedded generation and the additional information that would reasonably be sought with respect to the site. Because the existing infrastructure and capacity of networks can vary both within a DNSP's network and between distribution networks, the connection of different generation on different parts of the network can have different implications. Similarly, the nature and extent of non-registered embedded generation can also vary significantly. Accordingly, it is not unusual for different DNSPs to have different requirements for connection to parts of their network. By doing so, the DNSP facilitates the protection of other customers plant connected to the network, and ensures the safety, security and stability of the network.

As such, it is not unusual for a DNSP to require additional information to satisfy its legal obligations with respect to connection. Where a proponent fails to provide the necessary information or fails to appreciate the necessity to provide sufficient information, it "may be under the impression that the information requirements had already been fulfilled". This situation would arise where a proponent either has an insufficient understanding of their project or its implications for the network and other network customers.

The complaint by the proponents that "*DNSPs may impose significant technical requirements on the basis that these are required to protect the DNSPs network infrastructure and the integrity of the grid more generally. However, compliance with these requirements can result in significant costs and even undermine the viability of a cogeneration project*"<sup>5</sup> reflects a lack of project preparation and understanding which the preliminary enquiry process seeks to redress.

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<sup>5</sup> P12

It is not a reasonable or appropriate policy response to propose the network be jeopardised to accommodate the commercial interest of the cogeneration sector. Network customers would incur the costs for damage to their plant arising from the cogeneration connection, and any consequent increase in network costs to secure the network would ultimately be borne by all end use customers. This inefficient allocation of resources is contrary to the National Electricity Objective.

To the extent that a cogeneration proponent is not equipped to provide sufficient information they may seek this information and expertise from the market. In NSW, a contestability regime ensures this service is available to Connection Applicants.

#### **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?*

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

*(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?*

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

Endeavour Energy's experience is that DNSP responses to connection enquiries are both clear and reasonable. Information sought by DNSPs in response to a connection enquiry is based on necessity to enable the DNSP to meet its statutory obligations with respect to the distribution system.

Where a Connection Applicant cannot advise the DNSP of the number of generating units and transformers it intends to be connected to the network, it should not be the responsibility of the DNSP to undertake an options analysis for the Connection Applicant.

Endeavour Energy has experienced instances where Connection Applicants claim that they are being required to provide information which has been previously submitted. This is most often associated with information which was:

- insufficient when it was initially provided by the Connection Applicant; or
- where information is changing and requires updating during the connections process; or
- where information is submitted for one purpose within a project and is relied upon by the Connection Applicant to address a different purpose or purposes in a project; or

- where information is submitted for one project and is relied upon by the Connection Applicant for different projects or subsequent connection applications; or
- where the Connection Applicant becomes aware during the connection process that its project will not be suitable for connection (without alteration) and for commercial or other reasons seeks to change the project without addressing the information requirements.

Endeavour Energy has also experienced receiving connection applications for non-registered embedded generation without even a 'single line' (schematic) diagram of the proposed connection or advice on the project's own protection/control systems in support of the application.

Clear information deficiencies should not be remedied by requiring a DNSP to assist Connection Applicants to develop their project (as proposed by the proponents). Besides any disputation relating to the amount of the 'fee for service' (and hence the efficiency of the service), DNSPs should not be in the business of providing project development consulting services to non-registered embedded generation proponents. These services may be obtained by non-registered embedded generation proponents elsewhere in the market.

Similarly, the provision of insufficient information by non-registered embedded generation proponents in a connection enquiry or connection application should not be addressed through a Rules requirement (as proposed in Rule 5.3.3(c)) whereby a DNSP must prepare and obtain in conjunction with a Connection Applicant information to enable the DNSP to assess the application to connect (within 20 days after receipt of the request) to the extent that the information has not already been provided by the Connection Applicant and it is reasonably necessary to assess the application to connect.

No reason other than inconvenience or cost shifting has been provided by the proponents for their Rule change proposal that a DNSP gather their information to underpin their project.

A requirement for distributors to publish a demand side engagement document would not resolve these issues. Rather, it would merely facilitate an increase in the amount of consultancy services, project options and studies that a DNSP would need to undertake for a Connection Applicant (as proposed by the proponents in their Rule change submission).

#### **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?*

*(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?*

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

An itemised statement of connection costs would offer little improvement to the connection arrangements in NSW, due to the existing contestability regime for connection services.

In NSW, a contestability regime for connection services has been in operation since 1995. Under this regime, connection customers can purchase connection services from persons other than the DNSP. These services are provided by accredited service providers (ASPs) who contract with the customer directly. The NSW legislative framework for the provision of contestable works has ensured that they are reasonable, provide a user pays signal to reflect the efficient costs of providing the connection services (being the market price), limit cross subsidies and are competitively neutral.

To the extent that a DNSP undertakes upstream augmentation works (to ensure the safety and security of the network) to accommodate connection of non-registered embedded generation, it is not unreasonable for the Connection Applicant of the non-registered embedded generation to contribute towards its direct costs of connection.

This includes the costs of system extension to accommodate the connection of non-registered embedded generation which are a direct cost and should be borne by the embedded generator.

References to metering type and cost properly should be addressed by the Financially Responsible Market Participant and the Responsible Person. Where the DNSP will not be the Responsible Person, it is reasonable to require meter type and cost information to be contained in the connection offer.

As such, there is no deficiency in this arrangement for connection of non-registered embedded generation, noting the Connection Applicant can shop around and choose the service provider from the market place.

#### **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?*

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

*(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?*

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

The purpose of a connection enquiry is to ascertain and assess the nature of, and requirements for, connection to ensure efficient investment in, and efficient operation and use of electricity services as it relates to the reliability, safety and security of the national electricity system and the supply of electricity to consumers. Where a connection enquiry reveals matters to be addressed in order to effect a connection, the customer is informed of these matters.

Chapter 5.3 relating to the establishment and modification of connection, sets out the requirements and timeframes applicable to connection under Chapter 5

Clause 5.3.2 provides that where information submitted with a connection enquiry is inadequate to enable the LNSP to process the enquiry, the LNSP must within 5 business days, advise the applicant what other relevant preliminary information (of the kind listed in schedule 5.4) is required before the connection enquiry can be further progressed.

Additionally, a LNSP would provide information in accordance with the relevant requirements of schedule 5.1, 5.2, 5.3 or 5.3a.

Within 10 days after receipt of the connection enquiry and all additional information (if any), the NSP would provide, among other things, a preliminary program showing milestones for connection and access activities<sup>6</sup>.

Within 20 business days after receipt of the connection enquiry and all additional information (if any) advised under clause 5.3.2, the NSP would write to the Connection Applicant seeking further information it would need in order to assess an application to connect<sup>7</sup>.

The timeframe within which an offer to connect would be made to the customer would depend upon whether a properly completed application (including the necessary information) had been received. Where a properly completed application is received, enabling the DNSP to assess the application, the DNSP would provide an offer to connect within the timeframes specified in the preliminary program<sup>8</sup>

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<sup>6</sup> Clause 5.3.3(b)

<sup>7</sup> Clause 5.3.3(c)

<sup>8</sup> Clause 5.3.6

Generally, a non-registered embedded generator chooses not to seek a connection under Chapter 5. As a result, other jurisdictional arrangements apply, and timeframes for connection will vary depending upon the timelines and sufficiency of information provided by the applicant.

Where a non-registered embedded generator seeks a standard connection service under a Chapter 5A, a DNSP must make a connection offer within 10 business days of receiving a properly completed application and additional information the DNSP reasonably requires to assess the application, or agree some other period with the Connection Applicant<sup>9</sup>.

Where a non-registered embedded generator seeks a negotiated contract under Chapter 5A, a DNSP must use its best endeavours to make a connection offer within 65 business days after the date of the application for connection, excluding time for any additional information required to be provided by the applicant<sup>10</sup>.

Mandating a timeframe within which a DNSP must provide a connection offer without having received sufficient information to properly assess the connection may have the effect of compromising the reliability, safety and security of the network and the quality safety and security of supply to customers, and would appear contrary to the National Electricity Objective.

It should also be noted that parties other than the DNSP and the Connection Applicant, may be consulted in order to obtain information to facilitate the connection. These parties are not bound by timeframes in the NER. As such, it is important that any the connection timeframes are sufficiently flexible to accommodate these circumstances and other factors impacting on the ability of the parties to provide sufficient information and assess the connection.

Accordingly, Endeavour Energy submits that any timeframe within which a DNSP must provide a connection offer must be based on a properly completed connection application and the provision of sufficient information by the Connection Applicant to properly assess the connection.

### **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?*

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<sup>9</sup> Clause 5A.F.1(a)

<sup>10</sup> Clause 5A.F.4(a)

*(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?*

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

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

The factors that affect the timeframe within which offers to connect may be made and which impact on the process for negotiating negotiated access standards include:

- knowledge of the capabilities of the planned installation and its ongoing operation and maintenance;
- the level of engagement by the Connection Applicant and their consultants in the connection processes and embedded generator design;
- the appropriateness of equipment design and standards
- the completeness and quality of the information provided to the DNSP;
- the complexity of the connection; and
- consultations with other parties; and
- the time needed to assess the application.

It is inappropriate to mandate 65 business days within which a DNSP must provide a connection offer under Chapter 5. Connections effected under Chapter 5 relate not only to non-registered embedded generation but also to large generation and, due to the size and complexity of these connections, it is not practicable to complete the required detailed assessments and provide a connection offer within the 65 business day timeframe. This would apply even for a 30MW non-registered embedded generator, where it would not be unusual for a distribution system to require augmentation to facilitate a connection.

Additionally, the quality and sufficiency of information provided by the Connection Applicant to enable a DNSP to assess the technical requirements for connection and any works that need to be undertaken by the Connection Applicant or the DNSP will influence the time needed to finalise an offer to connect. This will vary on a case by case basis as Connection Applicants refine their project requirements and costings, and DNSPs analyse, assess, plan and program works for connection to the network.

Accordingly, Endeavour Energy considers that an amendment to Chapter 5 for a 65 business days time period for connection should not apply to all or any connection enquiries.

## 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?*

*(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?*

The proponents of the Rule change proposal have identified the absence of standard terms and conditions as a difficulty in anticipating the requirements and, therefore, the costs associated with connection<sup>11</sup>.

Clause 5.3.6(b)(2) of the NER requires specific terms and conditions (set out in Schedule 5.6) which must be included in a connection agreement. These specific conditions are those that have been agreed to by the parties for connection to and access to the network.

Connection Applicants for non-registered embedded generation have the choice of seeking a connection under Chapter 5, where the terms and conditions to be included in a connection contract are known to them.

While these terms and conditions are included in a connection agreement and applied by DNSPs, their details may vary between DNSPs (and are intended to vary between DNSPs) to accommodate different non-registered embedded generation and differing site specific arrangements of a Connection Applicant.

It is appropriate for DNSPs to have varying details in their contracts to manage their statutory obligations with respect to the security and quality of supply. Failing to recognise the necessity of these variations demonstrates either a lack of understanding or disregard for system security and the quality of supply and its impact on other connection customers. Further, the notion that there should be no difference between the details in terms and conditions for connection for different sites implies a greater cross-subsidisation from other network users to underpin security and quality of supply associated with the connection of the non-registered embedded generation.

Also among the terms and conditions which a connection agreement would contain is connection service charges. The proponents should be aware that connection charging by DNSPs is regulated by the AER and varies between network service providers. As such, it would be expected to vary between jurisdictions and DNSPs.

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<sup>11</sup> P13

### 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?*

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

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

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

The absence of technical standards for non-registered embedded generators has resulted in DNSPs undertaking additional work and incurring additional costs in planning and assessing embedded generation connection to their networks. For Connection Applicants for non-registered embedded generation, the absence of technical standards for non-registered embedded generation has resulted in them having limited information upon which they can make an informed business decisions.

Endeavour Energy considers technical standards for non-registered embedded generation between 10 kW (single phase) or 30 kW (3 phase) and 30MW should be the first step in any review of connections for non-registered embedded generation. Recognising the different forms of generation and distribution system configuration, differing technical standards should be applied within this range.

These standards should be informed by various factors including:

- size and type of generation to be connected;
- voltage level at which the generator is to be connected (i.e. low voltage, 11kV, 33kV, 66kV, 132 kV);
- protection system; and
- nature of the connection (import/export)

Australian Standard AS4777 applies to micro generation (up to 10 kVA for a single phase and 30 kVA for three phases).

Endeavour Energy considers different technical standards should apply to each class of embedded generation as follows:

- 30kVA – 100kVA (which may be managed on a low voltage level);

- 100kVA - 1MW (which may be managed on a single existing 11kv feeder through a dedicated distribution substation);
- 1MW – 5 MW (which may be managed on a dedicated 11kv feeder);
- 5MW – 30 MW (which may be managed by a 33kv feeder or a more complicated arrangement).

The development of these technical standards should not be confused with any proposal to apply automatic access standards for non-registered embedded generation (in which jurisdictions also have a particular interest).

#### **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?*

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

*(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?*

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

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

Circumstances when non-registered embedded generation has not been allowed to export to the network have been where the reliability, safety or security of the network would be adversely impacted, or the quality of supply adversely affected.

Preventing non-registered embedded generation from connecting in these circumstances protects other connection customers of the network and the integrity of the electricity system. The proponents of the Rule change proposal acknowledge this outcome, however, they are concerned that the work necessary to address this issue may “*result in significant costs and even undermine the viability of a cogeneration project.*”<sup>12</sup>

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<sup>12</sup> P12

To suggest that non-registered embedded generators be given an automatic right to export electricity to the grid and propose that the NER be amended to explicitly give non-registered embedded generators this right without qualification, is effectively to propose that the safety, security, reliability of the network and the quality of supply to customers may be compromised in order to meet the commercial imperatives of an embedded generator Connection Applicant.

Alternatively, it is advocating a significant cross-subsidisation for connecting non-registered embedded generation by network users (as infrastructure works necessary to accommodate energy export into the network from the non-registered embedded generation would be required to be undertaken by DNSPs).

In both these instances, it is inefficient, poor public policy and poor practice, and contrary to the National Electricity Objective.

### **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?*

*(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?*

*(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?*

*(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?*

In NSW a contestability regime for the provision of connection services to a Connection Applicant has been in place since 1995. It has operated successfully, providing timely and cost effective delivery of services to Connection Applicants and benefiting the long term interests of consumers and the community generally.

The NSW legislative regime framework for the provision of contestable services has ensured they are reasonable, provide a user pays signal to reflect the efficient costs of providing the services (being the market price), limit cross-subsidies and are competitively neutral.

Chapter 5A provides for the connection of non-registered embedded generation, including a negotiation framework.

The AER has recognised that where these services are provided in a competitive or contestable market they may be an 'unclassified service' or a 'negotiated service'

where Connection Applicants would be free to negotiate an outcome with the DNSP or applicable third party provider<sup>13</sup>.

### **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?*

*(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?*

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

The current approach to attributing connection costs, particularly in relation to shared network augmentations, is approved by the AER as part of a DNSP's Distribution Determination. Under both Chapter 5 and Chapter 5A the treatment of shared network augmentation costs is efficient, equitable and cost reflective.

In June 2012, the AER has released its paper titled "*Connection charge guidelines for electricity retail customers, under Chapter 5A of the National Electricity Rules*" (AER Connection Charge Guidelines).

As stated above, Chapter 5A provides for the connection of non-registered embedded generation. The AER Connection Charge Guidelines sets out the treatment of connection charging for shared network augmentation costs under Chapter 5A.

The purpose of the AER Connection Charge Guidelines is to ensure that connection charges:

*"(1) are reasonable, taking into account the efficient costs of providing the connection services arising from the new connection or connection alteration and the revenue a prudent operator in the circumstances of the relevant Distribution Network Service Provider would require to provide those connection services; and*

*(2) provide, without undue administrative cost, a user-pays signal to reflect the efficient cost of providing the connection services; and*

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<sup>13</sup> AER, "Connection charge guidelines for electricity retail customers, under Chapter 5A of the National Electricity Rules, June 2012", p12

*(3) limit cross-subsidisation of connection costs between different classes (or subclasses) of retail customer; and*

*(4) if the connection services are contestable – are competitively neutral.<sup>14</sup> “*

The AER considered that non-registered embedded generators, like all Connection Applicants, should be provided with user pays signals and that the connection charge guideline should ensure they receive no cross-subsidy from existing customers and vice versa<sup>15</sup>.

It would appear that the proponents of the Rule Change proposal fail to understand both the AER's rationale on this matter and the connection charging for shared network connections under the contestability regime operating in NSW.

The rationale provided by the AER is:

*“The key difference between embedded generators and load customers, which requires different treatment with respect to connection charges, is that embedded generators do not contribute to the cost of the shared network through DUoS charges.*

*The AER considers that (consistent with transmission connected generators), non-registered embedded generators will not generally be required to make a contribution towards the historical costs of the shared network, which are funded through DUoS charges to network users. This is appropriate because embedded generators have no firm right of access to the shared network and are subject to network constraints for exporting electricity. As such, the cost-revenue-test under section 5 of the connection charge guideline will only include connection services which relate to customer specific incremental costs.*

*However, if a non-registered embedded generator is connecting (or already connected) to the network and seeks to remove constraints in the upstream shared network, the non-registered embedded generator should meet the cost of removing these constraints. This is appropriate because the constraint would be removed for the benefit of the embedded generator only and the AER considers that if equipment is added for generators, which no other customers require, then the embedded generators should meet the cost. Otherwise all existing electricity users would fund the requirements, which is not consistent with user pays principles and may also create cross subsidies between classes of users.”*

For this reason, non-registered embedded generation which seeks to remove a specific network constraint will generally be required to pay for the cost.

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<sup>14</sup> Clause 5A.E.3(b)

<sup>15</sup> AER Final Decision, p64-65

Where a DNSP prepares a technical specification for a shared network augmentation to allow a connection service to be performed on a contestable basis (such as occurs in NSW), then the connection service would be performed at the least cost technically acceptable standard or at the Connection Applicant's required capacity, unless the distribution network service provider makes arrangements to fund the additional cost of achieving the higher standard, or capacity. The costs incurred by a DNSP in this instance would be funded by all existing energy users.

Consequently, Endeavour Energy considers non-registered embedded generation should not be exempt from shared network augmentation costs. Further, in the event non-registered embedded generation obtains a firm right of access (as outlined in the Rule change proposal), the NER should be amended to require non-registered embedded generation to pay NUOS services charges.