

9 August 2012

Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

Project Number ERC0147

www.aemc.gov.au

Dear Sir/Madam,

AEMC Consultation Paper – National Electricity Amendment (Connecting Embedded Generators) Rule 2012

Essential Energy appreciates the opportunity to respond to the *Australian Energy Market Commission's (AEMC's) consultation paper – National Electricity Amendment (Connecting embedded generators) Rule 2012* ('the paper').

Essential Energy has provided input to the Energy Networks Association's (ENA's) submission and generally supports the comments and specific suggestions made in the ENA proposal in the context of an overall industry position on the proposed rule change request. Essential Energy has also participated in the preparation and application of its own and other ENA guideline documents relating to the connection of embedded generation, and has significant experience in achieving the connection of a wide range of embedded generation projects.

The comments and suggestions included in this submission endorse Essential Energy's support of the ENA submission, expanding on the points made in it or adding further comment from Essential Energy's specific circumstances and the NSW jurisdictional situation.

Safety, Technical and Network Performance

Historically the distribution networks in Australia have been designed for the one-way flow of energy. This increases the importance of fully assessing and understanding the impacts and benefits of connecting embedded generation to the network. Therefore, it is important for customers and proponents associated with the installation of embedded generation to understand the diligence process that a distribution network service provider (DNSP) is obliged to undertake. DNSP's must ensure that embedded generation does not adversely affect safety, power quality and reliability of the distribution network.

Defining the technical requirements and assessing both the generator and network connection performance are an essential part of the diligence process for the connection of any embedded generator to the distribution network. All embedded generation connections must comply with requirements identified to avoid risks associated with public and employee safety and damage to equipment.

The connection of embedded generation is dependent on a number of factors:

- The voltage and electrical characteristics of the network at the point of connection, and possibly up-stream and downstream from the point of connection
- The type and capacity of generation system to be connected
- The types and capacities of generation systems already connected

Achieving an effective outcome in relation to the consideration of these factors is plant and location specific which Essential Energy believes requires a negotiated connection process. It cannot be readily achieved through a proponent nominating an automatic connection entitlement in accordance with some predetermined set of criteria.

Essential Energy acknowledges that proponents require both network and generation installation information to develop a generation connection proposal which will meet both the proponent and network requirements and obligations. This is reflected in the development and publication of guideline and network connection procedure documents that are now provided by the ENA and individual DNSP's.

Embedded generation connection proposals generally result from three main drivers (with some being a combination), these being:

- To provide customer security of supply by the installation of generation capacity within the customer's installation
- To support energy market trading by utilising available energy sources through the installation of appropriate generation plant
- To address an identified network constraint as an alternative to network expansion or augmentation

All categories of generation installation can potentially affect the needed network technical capabilities and the supply quality and reliability provided to other network users. DNSP's are responsible for ensuring satisfactory outcomes for these requirements, which becomes more significant where the generation is accepted as a non-network alternative solution to a network constraint.

At present embedded generators are not subject to the same network performance (reliability and power quality) and security regimes as those imposed by licence conditions on DNSP's. Additionally DNSP's are subject to a "Service Target Performance Incentive Scheme" (STPIS). This means that the DNSP is exposed to penalties for any shortfalls in reliability and quality of power supply performance arising as a consequence of embedded generation failure to meet performance requirements, either in accordance with a network support contract or otherwise as a user of network connection services. Essential Energy's view is that the current protocol involving the negotiation of generation connections is appropriate to preserve the integrity of the network, given that the DNSP has responsibility for the impacts of generation installation on the fault level, voltage and power quality on the distribution network associated with the connection.

Essential Energy believes that any risk to a DNSP's obligations to provide network services and ensure power quality to other network users posed by the connection and operation of embedded generators should be covered by an appropriate obligation placed on the embedded generator involved. This would ensure that DNSP's would not be penalised through either licence conditions or the STPIS when an embedded generator is at fault and can best be covered by inclusion in a connection negotiation process.

Connection process and terms & conditions

Essential Energy believes that the current connection processes applied by NSW DNSP's in association with the National Energy Rules (NER) Chapter 5 procedures, give prospective embedded generation proponents sufficient information to initiate and effectively complete the connection process.

The general sequence of connection enquiry, application, offer and agreement has been demonstrated to provide a logical approach to the connection of embedded generation, and loads. Essential Energy also believes that it does have scope to improve the outcomes with a greater focus on consultation at the enquiry stage. This could be achieved through a "preliminary enquiry" step which initiates discussion to allow the proponent to gain a full understanding of the network characteristics and performance requirements at the indicated point of connection, and the DNSP to confirm the aims of the proponent. This would lead to an "agreed project" which both the proponent and the DNSP consider would meet the generation objectives and network performance needs, and which would become the subject of the formal enquiry/application and response procedures generally as per Chapter 5 of the NER.

This amended procedure could in essence, meet the aims of the rule change proposal. "Agreed projects" with relatively straight forward connection requirements and acceptable network impacts could be progressed with minimal concern and conditions whilst more complex proposals would be subject to more detailed investigation and agreement. Essential Energy believes that this process is used informally now and has assisted the connection completion. The benefits could be extended by its formal consideration and inclusion in the connection procedures.

Where a proponent is interested in providing network support, NSW DNSP's are currently required to publish an annual Electricity System Development Review (ESDR) which outlines the forecast demand and capacity data relating to the subtransmission system together with the identified constraints and potential solutions. This document is available on request by prospective proponents who may be interested in offering non-network solutions.

DNSP's also publish information relating to specific network constraints and options for solutions as part of the new network asset project consultation process which also assist generation proponents in developing generation connection proposals.

In addition, the requirements relating to the publication of a Distribution Annual Planning Report (DAPR) and Demand Side Engagement Strategy (DSES) under the provisions of the draft NER Distribution Network Planning Framework rule change will further enhance the network and embedded generation connection information available to proponents.

Specifically, the introduction of the Regulatory Investment Test for Distribution (RIT-D) and the distribution network data (for both subtransmission and medium voltage assets) to be included in the DAPR will give prospective embedded generation proponents the opportunity to identify areas on the distribution system that may benefit from the introduction of a non-network solution and to actively engage with the DNSP to provide this support.

Technical requirements

Essential Energy believes that it currently publishes clear connection requirement documentation on our web site and encourages proponents connecting to the distribution network to actively engage with the business should they require more

detailed information. It should be noted that no two connection applications will be identical particularly for embedded generation. As indicated above, "what" is proposed to be connected and "where" needs to be advised and assessed as part of the process of ensuring the effective operation of the generator and maintaining satisfactory supply to all network service users.

Connection and augmentation costs

Essential Energy believes the current connection and contestability guidelines applicable in NSW, the current Australian Energy Regulator (AER) approved Essential Energy connection policy and the recently published AER Connection Charge Guideline effectively outline the processes a DNSP undertakes when publishing and applying connection charges.

Essential Energy would be pleased to discuss the matter of the embedded generation connection rule change request further. Should you require further information or clarification on any of the above points, please feel free to contact Natalie Lindsay on 02 6589 8419

Yours sincerely



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