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9 August 2012

Our Ref : Energy and Climate Change
Your Ref : AEMC

Anita Lai
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Dear Anita,

NATIONAL ELECTRICITY AMENDMENT (CONNECTING EMBEDDED GENERATORS) RULE 2012

Please find enclosed submission to the above consultation paper.

Yours sincerely,

Allan Jones.

Allan Jones MBE
Chief Development Officer, Energy and Climate Change

NATIONAL ELECTRICITY AMENDMENT
(CONNECTING EMBEDDED GENERATORS) RULE 2012

1 Introduction

This submission is made in response to the above consultation paper on the ClimateWorks Australia, Seed Advisory and the Property Council of Australia rule change request.

5 Issues for Consultation

My comments on the questions outlined in the consultation paper are, as follows:-

5.1.1 Complying with Chapter 5

Question 1 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?

This clause was written with large generators in mind and imposes onerous conditions regarding the technical requirements which they must comply with in order to connect to the distribution network. This may be appropriate for large generators but totally inappropriate for small embedded generators such as cogeneration, trigeneration and renewable energy.

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

Application of the above technical requirements is burdensome, time-consuming and costly and in many cases making the project unviable or seriously compromised.

(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?

In order to alleviate this burden the proposed amendment should provide for a standing exemption for generators below both the 5MW (exemption) and 30MW (registered exemptions) exempt limits. The practical effect of this exemption would enable small generators (below 30MW) not being required to comply with the onerous requirements imposed and intended for large generators (above 30MW).

(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 effectively vests discretion in the Distribution Network Service Providers (DNSP's) to impose the technical requirements in Schedule 5.2 on otherwise

exempt smaller generators. This allows DNSP's to determine if a connection is likely to cause a material degradation in the quality of supply to other uses connected to the distribution network.

The viability of smaller generators can therefore, be undermined if this discretion is exercised to impose unduly onerous technical requirements. Also, in the absence of an applicable access standard, DNSP's can also apply jurisdictional requirements with the effect of imposing even more onerous additional technical requirements on smaller generators.

5.1.2 Good Faith Provisions

Question 2 Good Faith Provisions

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

Not known.

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

Not known.

5.1.3 Information Requirements

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 proposed rule change should significantly improve the connection process for embedded generators by make it clearer, more consistent across jurisdictions, more certain, more efficient and more cost effective for both parties. In particular, the requirement for DNSP's to publish annual reports identifying constraints in their networks for connecting embedded generators.

(b) How would the proposal to add a clause that each party 'must provide the other with information the other reasonable 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?

The proposed clause would increase the clarity, consistency and certainty of the connection process and would reduce the costs currently borne by the project proponent for the design and preparation of the documentation for proposed connections and the management of the connections application process.

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

The deficiencies of the current provisions in the NER for the exchange of information include the protracted holding times for connection approval, resulting in higher costs for both new and existing developments and higher required rents from the ultimate tenants, re-working and re-designing connection applications in response to subsequent changes required by the DNSP's and confusion as to what information had already been provided to DNSP's. To address this latter point DNSP's should be required to only request information that has not already been provided.

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

Not known.

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

Yes.

Question 4 Response to Connection Enquiries

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

Not yet, but the City is aware of problems with this elsewhere in Eastern Australia.

(b) 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?

Not yet, but the City is aware of problems with this elsewhere in Eastern Australia.

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

Not yet, but the City is aware of problems with this elsewhere in Eastern Australia.

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

Not known but an offer to connect must also include an itemised statement of connection costs including standard connection charges, meter type and cost, costs of system extension, details of upstream augmentation and any other costs..

Question 5 Information to be Included in Offers to Connect

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

Not applicable yet with the City of Sydney trigeneration project.

(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?

Not applicable yet with the City of Sydney trigeneration project but the City would support an 'itemised statement of connection costs' in the interests of clarity and avoiding future unexpected additional technical requirements and costs.

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

Yes.

5.1.4 Timeframe for Completing Connections

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?

Not applicable yet with the City of Sydney trigeneration project but the City would support the proposed timeframes in the proposed rule change.

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

Not applicable yet with the City of Sydney trigeneration project but the City would support the proposed timeframes in the proposed rule change.

(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?

Yes but this information is not applicable yet with the City of Sydney trigeneration project but the City would support specific timeframes to finalise offers to connect at the time of preparing the preliminary program.

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

Yes.

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 City of Sydney would support the proposed imposition of outer limits on the timing of decisions to accept or reject connection applications.

(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?

Not applicable yet with the City of Sydney trigeneration project.

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

The proposed amendment would provide clarity, consistency and certainty of the connection process in a timely manner.

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

Yes.

5.1.5 Terms and Conditions

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?

The City of Sydney would support amending the NER to make it clear that the terms and conditions that must be included in a connection agreement are those that are set out in schedule 5.6 and that these apply to all DNSP's.

(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?

If clause 5.6 is to have any point in the NER then the terms and conditions must be honoured and be the same across all DNSP's. There is no excuse for not providing terms and conditions such as details of connection points, metering arrangements, access standards and connection service charges that relates to any differences in network requirements.

5.2 Technical Standards

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?

The City of Sydney would support standardised technical standards for all classes of embedded generators. These standards are required urgently. In the UK, standardised technical standards have been available for more than the 20 years. The UK Electricity Act 1989 places a legal duty on distribution network operators (DNO's, equivalent to DNSP's in Australia) to provide a connection for embedded

generators. This is called a 'Duty to supply on request' and sets out the DNO's obligations to provide connections for electricity supply, including embedded generators. This is set out in more detail in the UK Distribution Code[1].

Standard licence conditions also sets standards in terms of timescale for the DNO to provide quotes, respond to design submissions and complete final works and phased energisations. The standards become effective when the DNO has the required information and payment. There are technical standards for microgenerators, below 5MW and above 5MW. The main technical standard is G59/2 for embedded generators above 5MW. Technical standards are available from the UK Electricity Networks Association. See Distributed Generation Connection Guide[2].

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

Yes, standardised technical standards should be provided for microgenerators, below 5MW and above 5MW similar to the UK which could be used as a blueprint for Australia.

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

Separate standardised technical standards should be provided for microgenerators, below 5MW and above 5MW similar to the UK. There should be no specific jurisdictional or local requirements.

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

The scope of such standards should include on-site and off-site (ie, precinct scale) cogeneration, trigeneration, renewable energy and fuel cells connected to the distribution network. All relevant technical requirements can be standardised.

5.3 Right to Export to the Grid

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?

Although embedded generators have the 'technical' ability to export to the grid, in practice, some embedded generators have been prevented from doing so due to the imposition of inappropriate requirements that have disallowed them from exporting electricity into the distribution network. These include inappropriate safety and technical issues, in particular, insufficient 'fault level headroom'.

[1] The Distribution Code 2012 http://www.energynetworks.info/storage/dcode/dcode-pdfs/Distribution%20Code%20v%2018r1.pdf

[2] Electricity Networks Association Distributed Generation Connection Guide 2011 http://www.energynetworks.org/modx/assets/files/electricity/engineering/distributed%20generation/DGCG%20G59%20Nov2011.pdf

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

The impacts on embedded generators and other participants when exporting is not allowed include undermining the economics and carbon abatement of the project and greater exposure to network charges and carbon pricing than would have otherwise been the case with exporting surplus electricity to the distribution network.

(c) Are there circumstances where the ability of embedded generators to export electricity to the network be limited? What conditions could be reasonably imposed to limit exporting?

No, in a modern democratic industrialised economy there should be no impediment to embedded generators exporting electricity to the distribution network. Local electrons simply replace remote electrons without the grid losses and can improve the performance and efficacy of the distribution network. The only conditions that could be reasonably applied is not exporting more electricity than the current capacity of the distribution network can allow (ie, up to 100% of the distribution network capacity for the particular embedded generator connection) without further augmentation of the network.

The UK, or indeed Europe, has not fallen over because it allows embedded generators to export surplus electricity into distribution networks without impediment. Indeed, it is one of the principles in decarbonising economies and reducing electricity costs.

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

Although there may be some initial costs to DNSP's the costs are far outweighed by the benefits to DNSP's and their customers, particular in relation to avoided capital investment in networks and new remote inefficient power stations trying to address growth and peak power. Additional benefits in allowing embedded generators to export electricity into the distribution network include reduced energy consumption and energy costs, reduced carbon emissions, reduced transaction costs, improved project economics and improved security of supply.

The significant benefits of embedded generators exporting to the distribution network would be lost and replaced by significant additional costs imposed on consumers if embedded generators were not allowed to export electricity to the distribution network. An example of the latter is the huge capital investment in networks during the current 5 year determination period which is driving up electricity bills and making electricity unaffordable for some consumers.

The Institute of Sustainable Futures, University of Technology Sydney 'Close to Home: Potential benefits of Decentralised Energy for NSW Electricity Consumers' report[3] established that over 2010-15, electricity network businesses in Australia are spending over $46 billion, more expenditure than the proposed $34 billion National Broadband Network.

[3] Institute of Sustainable Futures, University of Technology Sydney 'Close to Home: Potential Benefits of Decentralised Energy for NSW Electricity Consumers November 2010'
http://www.isf.uts.edu.au/publications/dunstanlangham2010closetohome.pdf

In NSW, electricity networks are undertaking capital expenditure of $17.4 billion over the 5 years to 2013/14. This represents $2,400 per person and an 80% increase on the previous 5 year period. Average electricity prices in the Sydney electricity distribution network area are expected to increase by 83% during this period with the proportion of electricity bills that goes to pay network charges to rise from 40% to 60%.

The Institute of Sustainable Futures estimates that the City's plans to supply 70% of the Local Government Area's electricity needs from a 360MWe trigeneration network by 2030 could achieve savings in deferred electricity network costs and avoided costs of new power station capacity to serve the city's growing demand in the order of $1.5 billion by 2030.

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

Yes, embedded generators should be incentivised to implement embedded generation, particularly for carbon abatement and/or where it reduces demand on electricity consumption and electricity peak demand such as trigeneration which in turn reduces the need to invest in networks and new remote inefficient power stations.

5.4.1 Optional Fee for Service

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?

Although DNSP's can charge for a connection application fee they do not have any incentive to work with embedded generators in the development and improvement of a connection enquiry or application. In order to address this issue and to incentivise DNSP's to collaborate constructively with embedded generators, the National Electricity Rules (NER) should allow DNSP's to charge an optional fee-for-services provided in the development of a connection application. This fee would be in addition to the connection application fee. However, the connection application fee currently charged should be reduced to take account for the improved alignment between the project and the DNSP's connection requirements when connection is ultimately achieved.

(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, the 'fee for service' would need to be subject to agreement with the connection applicant, who would also need to agree to the type, and duration of the services required.

(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?

For a monopoly regulated utility the service should be provided 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?

The National Electricity Rules should provide guidelines on how such a fee should be determined to aid negotiations between the distributor and embedded generator. The fee does not need to be approved by the Australian Energy Regulator (AER) but the embedded generator should have the right of appeal to the AER on any claimed over-charging by the distributor. The AER guidelines would be used for this purpose and would act as a test of the 'good faith' provision.

5.4.2 Shared Network Augmentation Costs

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-effective? For what reasons?

The current approach to attributing connection costs, particularly in relation to shared network augmentation costs, is inefficient, discriminatory and not cost-effective. The standard attribution of shared network augmentation costs to co/trigeneration projects is based on a fallacy that only co/trigeneration projects contribute to network congestion. For example, to higher fault levels. This is incorrect as even standard supply only connections contribute towards fault levels in the network.

(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, embedded generators should be exempt from paying shared network augmentation costs. The current approach of the 'last in, worst dressed' basis of charging shared network augmentation costs is inequitable as it penalises the connection application that requires a marginal augmentation without considering the contribution of previous connections or successfully requiring contributions from future connections to offset the costs initially borne by the project proponent.

The current approach to co/trigeneration connection charging does not contribute towards the efficiency of the distribution network as a shared augmentation cost provides no meaningful locational signal. Co/trigeneration developments in the energy dense CBD and city fringe will be preferred to developments elsewhere, as both electricity consumption and peak electricity demand can be reduced, particularly where electric air conditioning is replaced by thermally driven air conditioning from the waste heat of trigeneration. For example, the City's trigeneration project will reduce electricity consumption by 30% and peak electricity demand by 60% in the CBD and Green Square.

The recent CSIRO report[4] commissioned by the Electricity Networks Association also raises the question about the extent to which co/trigeneration projects raise fault levels and the appropriateness of the requirement for a safety margin.

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

Costs should be allocated in line with the Victorian Government's position under Guideline 15 and other jurisdictions should only charge connection costs and not shared network augmentation costs.

Allan Jones MBE
Chief Development Officer, Energy and Climate Change
9 August 2012

[4] Electricity Networks Association Impacts and Benefits of Embedded Generation in Australian Electricity Distribution Networks 2011
http://www.ena.asn.au/udocs/Final%20Report%20on%20IBEG%202490%20REV012%20March%202011.pdf