

Connecting embedded generators

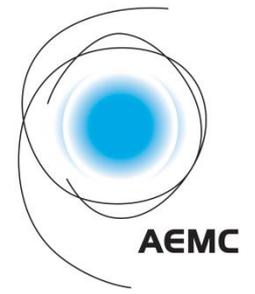
Workshop on the connection process/independent expert appraisal/technical register – 1 November 2013



AUSTRALIAN ENERGY MARKET COMMISSION

Agenda

- Chapter 5 connection process
 - Overview of changes from last workshop
 - Flowchart of the connection process
 - Connection process changes from last workshop
 - Proposed changes to the schedules
- Independent expert appraisal process
- Technical register of compliant equipment and/or plant
- Way forward



Chapter 5 connection process



Overview of changes from the last workshop (I)

- **Unchanged**

- Two-stage enquiry process for the Chapter 5 connection process remains
- The specified timeframes for DNSPs to provide the preliminary and detailed enquiry responses is unchanged
- The connection application process remains unchanged

- **Amended**

- Timeframes for receipt of acknowledgement (now 5 business days)
- Provide the ability for timeframes between stages in the process to be extended by agreement, including:
 - Preliminary response timeframe;
 - Detailed response timeframe;
 - Timeframe for the making of a connection offer.

Overview of changes from the last workshop (II)

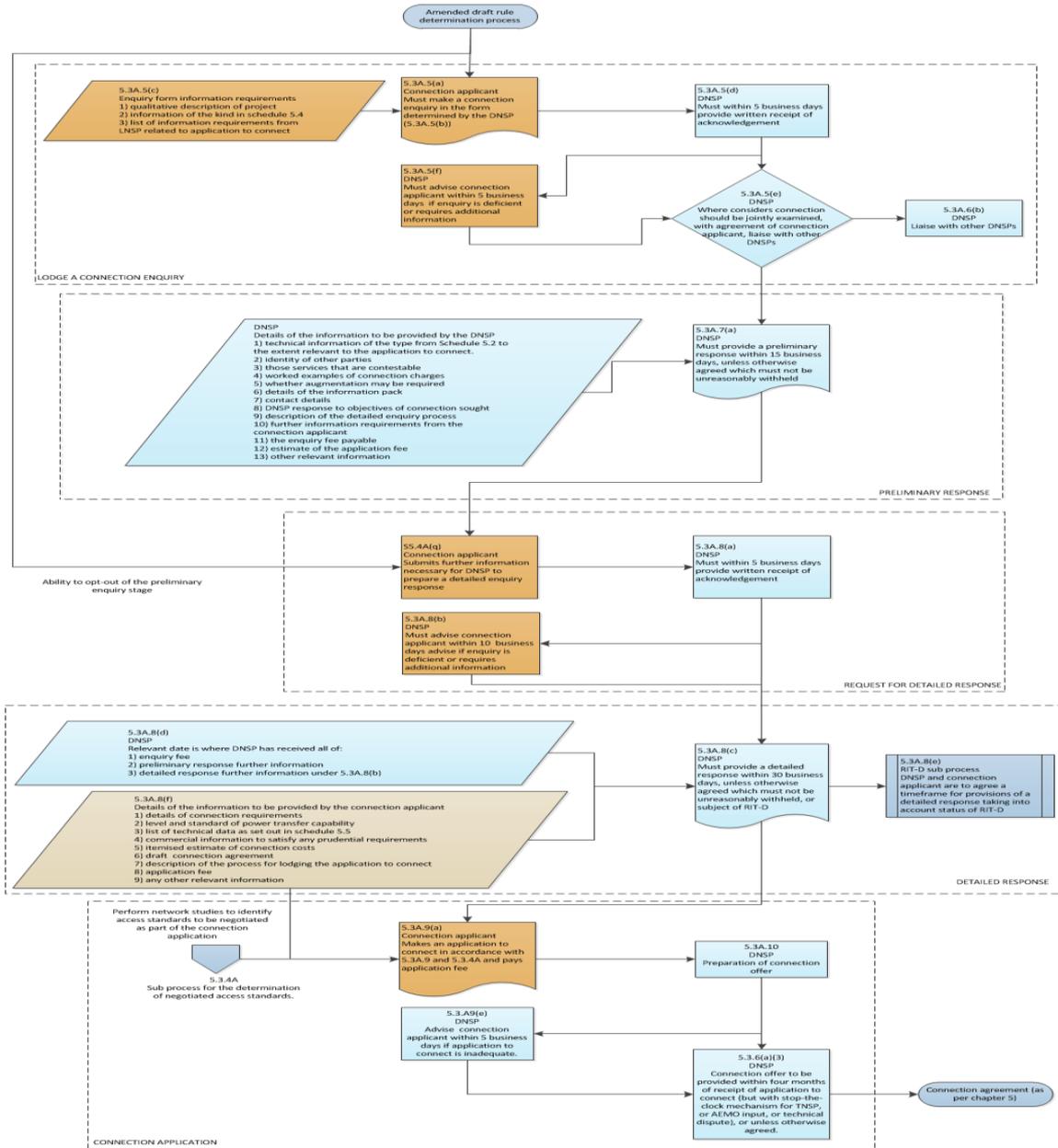
- **Changed**

- Ability to opt out of the preliminary enquiry stage has been included
- Remove the validity periods between the preliminary and detailed enquiry response stages
- Remove the 'agreed project' concept, as a result, remove the ability to undertake a fast-tracked connection application
- Reinstate ability for the connection applicant to submit (with the application to connect) a proposal for a negotiated access standard for each such requirement

- **Proposed changes**

- Amend the information requirements in Schedules 5.4A and 5.4B

Flowchart of proposed Chapter 5 connection process for workshop 1 November 2013



Connection process changes from last workshop (I)

- Connection applicants noted that the validity periods between the preliminary enquiry and detailed enquiry stages were too short. It did not allow them sufficient time to meet their requirements before the next stage of the process.
- We considered extending these timeframes; however, doing so,
 - implied that DNSPs would be required to hold open space on their network for a particular connection;
 - Implied that DNSPs would not be able to use that space on the network for other connections (either generation or load); and
 - could inadvertently lead to the queuing of applications, which is not current practice in the NEM.
- We are therefore proposing to remove these validity periods from the final rule.
- This reinstates the current circumstance that places the onus on the connection applicant to undertake its due diligence and undertake any additional analysis as quickly as possible and provide this information to the DNSP.

Connection process changes from last workshop (II)

- Connection applicants noted that between receiving the detailed enquiry response from the DNSP and submitting its application to connect, that it must undertake network studies/analysis to determine the negotiated access standards for its application. This implies that:
 - realising an ‘agreed project’ at the end of the detailed enquiry stage would be unlikely; and
 - therefore negates the need for a fast-tracked connection application process.
- We are therefore proposing to remove the ‘agreed project’ and fast-tracked connection application process from the final rule.
- We do not consider that this removes the ability for the connection applicant and the DNSP to agree on a similar concept during their negotiation throughout the connection process.

Proposed changes to Schedule 5.4A (I)

- **Information in schedule 5.4A**
 - Connection applicants noted that important information was often provided too late in the process for them to identify ‘show-stoppers’
 - Connection applicants requested that more information provided up-front to allow them the opportunity to evaluate the business case – whether to pursue a connection or not
- **Policy intent in draft rule determination**
 - For DNSPs to provide high level information in the preliminary enquiry response sufficient for connection applicants to evaluate business case
 - Predicated on the existing information requirements in schedules 5.2 and 5.5 of Chapter 5 of the NER
 - Be additional to the information requirements in the DAPR
 - Not intended to be onerous on DNSPs, nor require them to undertake detailed analytical evaluation

(continued)

- **Proposed changes for the final rule**
 - 5.4A(a) – amend leading paragraph to
 - “technical information to the extent relevant to the application to connect to any or all of the following matters”... and retain the list of requirements
 - 5.4A(b) – retain (note it currently states “... to the extent the DNSP holds...”)
 - 5.4A(c) – move to the detailed enquiry response (S5.4B)
 - 5.4A(d) – move to the detailed enquiry response (S5.4B)
 - 5.4A(e) – 5.4A(l) – retain
 - 5.4A(m) – delete (not appropriate at this time in the process)
 - 5.4A(n) – 5.4A(o) – retain
 - 5.4A(p) – delete (not for the DNSP to advise on)
 - 5.4A(q) – 5.4A(t) – retain

Proposed changes to Schedule 5.4B

- **Information in schedule 5.4B**

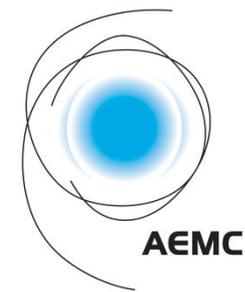
- Connection applicants noted that the propose/negotiate process in Chapter 5 required the applicant to propose negotiated access standards
- This process was likely to cost more than the benefits of the negotiation process
- Suggested it better for connection applicants to either opt upfront for the DNSPs specified standards or alternatively to propose and negotiate

- **Intent in the draft rule determination**

- Reverse the intent of Chapter 5, requiring DNSPs to propose a negotiated access standard for each technical requirement
- Provide the remaining relevant information from schedule 5.5 of Chapter 5

(continued)

- **Proposed changes for the final rule**
 - 5.4B(a) – retain
 - 5.4B(b) – delete
 - 5.4B(c) – 5.4B(d) – retain
 - 5.4B(new clause) – insertion of clause 5.4A(c) and 5.4A(d)
 - 5.4B(new clause) – replication of clause 5.4A(q)(3)
 - 5.4B(e) – 5.4B(k) – retain



Independent expert appraisal process



Independent expert appraisal and dispute resolution

Draft rule determination

- Introduce expert appraisal process for applicants or distributors to appoint an independent engineer to assess the reasonableness of any technical requirements and aid in resolving technical disputes.
 - To address embedded generator concerns suggesting the existing dispute resolution (DR) process is not effective and presents unnecessary risks to relationship between DNSPs and proponents.

Stakeholder feedback

- Submissions *supporting* noted:
 - Embedded generation proponents supported the proposed expert appraisal process, but considered the small number of experts in this area may risk their independence where they undertake work for DNSPs or connection applicants.

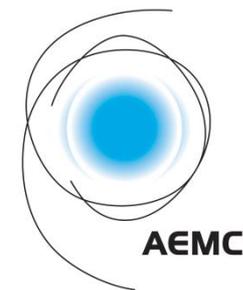
Independent expert appraisal and dispute resolution

- *continued:*
 - Some DNSPs accepted there is merit in the proposal and noted these arrangements are not exclusive (a party may use the general dispute resolution process under rule 8.2). Suggested the NER provide that any party raising a dispute found to be frivolous, vexatious or manifestly unfounded be liable for the cost of engineer's report.
- Submissions *not supporting* noted:
 - ENA noted there is no need for additional dispute resolution process considering the dispute resolution process under Chapters 5, 5A and 8 (NER). ENA noted there is a process that runs independently of the AER and is effective at mediating technical disputes.
 - DNSPs also submitted the dispute resolution provisions under Chapter 8 were appropriate and should be the avenue to settle disputes between an embedded generator applicant and a DNSP.

Independent expert appraisal and dispute resolution – revised approach

Final rule revised approach

- Maintain existing dispute resolution process
 - Existing Chapter 8 dispute resolution (DR) process provides a framework for the staged use of DR that encourages early, informal resolution of disputes.
 - Stage 1: negotiation, mediation, or non-binding evaluation. Stage 2: binding expert determination by a DR panel with limited appeal rights.
 - Participants are familiar with this process and it provides flexibility for parties, by agreement, to tailor it to meet their needs.
 - Availability of National Energy Market Dispute Adviser provides a workable process for evaluating and resolving technical disputes.



Technical register of compliant equipment/plant



Register of compliant equipment

Draft rule determination

- In the absence of minimum access standards for embedded generators, DNSPs must establish a register of generating plant or associated equipment that has been connected to their network and complies with minimum access standards.
 - Objective is to increase transparency and allow connection applicants to better understand the requirements for connecting to a distribution network.

General stakeholder feedback

- Submissions *supporting* noted:
 - the register would increase transparency in the absence of minimum technical standards for embedded generators;
 - register should not be too costly or burdensome for DNSPs to maintain; and
 - should focus on interface equipment and generator performance, not the type of generator.

Register of compliant equipment

- Submissions *not supporting* noted the register:
 - would provide limited benefits due to differences at each connection point and may mislead proponents; and
 - would require constant updating and monitoring to ensure accuracy and impose a heavy compliance burden on DNSPs.

Proposed approach

- The Commission considers that a register of compliant equipment, if appropriately designed, may benefit EG proponents by increasing the information available at the early stages of considering whether to invest.
 - We are aware of limitations due to potential locational implications and the importance of minimising compliance burden for DNSPs.
- Register may also allow EG proponents to make more informed connection enquiries to DNSPs and therefore reduce the time and resources required by DNSPs to respond.

Register of compliant equipment

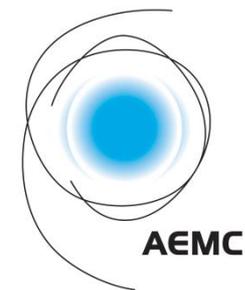
Potential register design – for discussion

- DNSPs to publish a register of compliant equipment annually as part of the DAPR process.
- Register to include the following information for each generator connected to a DNSP's network since January 2008:
 - Technology of generating unit (e.g. synchronous generating unit, induction generator etc.)
 - Maximum power generation of whole plant
 - Fault level contribution
 - Transformer (size and rating)
 - Circuit breaker arrangement
 - Any special protections
 - Voltage control and reactive power capability
 - Site specific implications

Register of compliant equipment

Questions for discussion

- Would the above information be useful for potential embedded generation proponents?
- Is this information readily available to DNSPs?
- Would using embedded generators that have been connected to distribution networks since 2008 be a useful sample of connections?
- Are there any potential confidentiality issues to be aware of with the data?

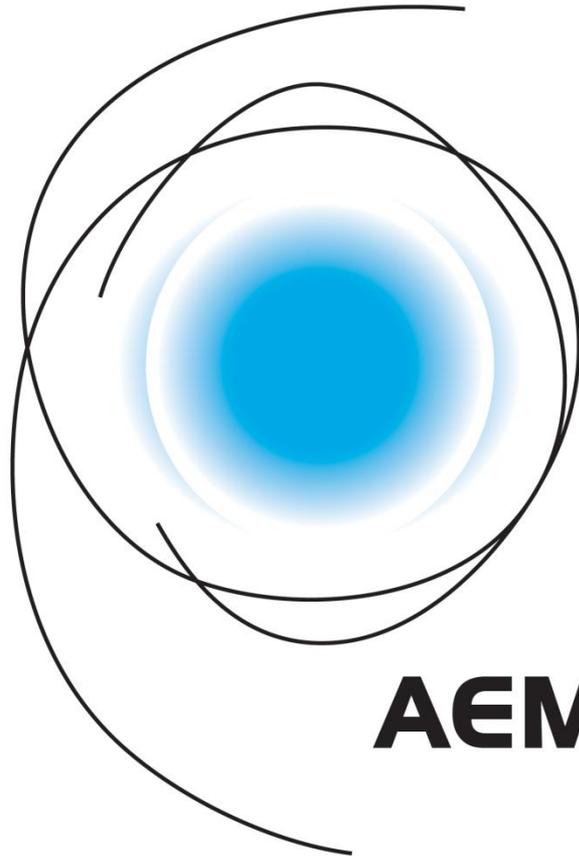


Way forward



Way forward

- Provide a summary of today's meeting on the AEMC's website;
- Consultation with stakeholders where required; and
- Publish the final rule determination by 19 December 2013.



AEMC

Schedule 5.4A Preliminary Response

- **Preliminary Response**

For the purposes of clause 5.3A.5(c), the following information must be included in the preliminary response:

- a) technical information relevant to the *application to connect*, including minimum requirements necessary to maintain system security and reliability of supply relevant to any or all of the following matters:
 - 1) design at the *connection point*;
 - 2) physical layout adjacent to the *connection point*;
 - 3) primary protection and backup protection;
 - 4) control characteristics;
 - 5) communications *facilities*;
 - 6) insulation co-ordination and lightning protection;
 - 7) fault levels and fault clearance;
 - 8) switching and *isolation* facilities;
 - 9) interlocking and *synchronising* arrangements; and
 - 10) *metering installations*.
- b) if not otherwise provided in accordance with paragraph (a), to the extent the *Distribution Network Service Provider* holds technical information necessary to facilitate the processing of a *connection enquiry*, that information.
- c) written details of each technical requirement relevant to the proposed plant as relevant to:
 - 1) the *automatic access standards*;
 - 2) the *minimum access standards*;
 - 3) the applicable *plant standards*; and
 - 4) The *normal voltage* level, if that is to change from the nominal voltage level

- d) whether *negotiated access standards* may be required and if so:
 - 1) the aspects of the standards that will be the subject of negotiation; and
 - 2) the standards that will require *AEMO's* involvement in accordance with clause 5.3.4A;
- e) the identity of other parties that the *Distribution Network Service Provider* considers:
 - 1) will need to be involved in planning to make the *connection* or must be involved under clause 5.3A.10(c); and
 - 2) must be paid for *transmission services* or *distribution services* in the appropriate jurisdiction;
- f) whether it will be necessary for any of the parties identified in subparagraph (e) to enter into an agreement with the *Connection Applicant* in respect of the provision of *connection* or other *transmission services* or *distribution services* or both, to the *Connection Applicant*;
- g) whether any service the *Distribution Network Service Provider* proposes to provide is *contestable* in the relevant *participating jurisdiction*;
- h) worked examples of *connection service* charges relevant to the enquiry and an explanation of the factors on which the charges depend;
- i) information regarding the *Distribution Network Service Provider* and its *network*, system limitations for sub-transmission lines and zone substations and other information relevant to constraints of the *network* as such information is relevant to the *application to connect*;
- j) whether *network augmentation* may be required;
- k) a hyperlink to the *Distribution Network Service Provider's* information pack;
- l) the contact details for the person within the *Distribution Network Service Provider* managing the *connection* enquiry;
- m) a description of how the *Distribution Network Service Provider* proposes to amend its model *connection agreement* to address the *connection* sought in the enquiry;
- n) the *Distribution Network Service Provider's* response to the objectives of the *connection* sought as included by the *Connection Applicant* in its enquiry under clause 5.3A.5(c)(1);

- o) a description of the process for the provision of the detailed response, including:
 - 1) the further information to be provided and analysis to be undertaken by the *Distribution Network Service Provider* as part of the preparation of the detailed response; and
 - 2) an explanation that unless the *Connection Applicant* requests a detailed response within 3 months the preliminary response will become invalid and the *Distribution Network Service Provider* then has the right to request the *Connection Applicant* to lodge a new enquiry;
- p) using reasonable endeavours, all risks and obligations in respect of the proposed *connection* associated with planning and environmental laws not contained in the *Rules*;
- q) a statement of further information required from the *Connection Applicant* for the preparation of the detailed response, including:
 - 1) details of the *Connection Applicant's connection* requirements, and the *Connection Applicant's* specifications of the *facility* to be *connected*, consistent with the requirements advised in accordance with paragraphs (a), (b) and (c);
 - 2) details of the *Connection Applicant's* reasonable expectations of the level and standard of service of *power transfer capability* that the *network* should provide;
 - 3) a list of the technical data to be included with the *application to connect*, which may vary depending on the *connection* requirements and the type, rating and location of the *facility* to be *connected* and will generally be in the nature of the information set out in schedule 5.5 but may be varied by the *Distribution Network Service Provider* as appropriate to suit the size and complexity of the proposed *facility* to be *connected*;
- r) the enquiry fee payable by the Connection Applicant to request a detailed response, including details of how components of the fee were calculated;
- s) an estimate of the application fee which is payable on submitting an application to connect; and
- t) any additional information relevant to the enquiry.

Schedule 5.4B Detailed Response

- **Detailed Response**

For the purposes of clause 5.3A.8(f), the following information must be included in the detailed response:

- a) the contact details for the person within the *Distribution Network Service Provider* who will manage the *application to connect*;
- b) for each technical requirement where the proposed arrangement will not meet the:
 - 1) *automatic access standards*; or ;
 - 2) *minimum access standards*,nominated by the *Distribution Network Service Provider* pursuant to S5.4A(c), the *Distribution Network Service Provider* must propose a *negotiated access standard* for each such requirement to be determined in accordance with clause 5.3.4A;
- c) details of the *connection* requirements based on the *Connection Applicant's* specifications of the *facility to be connected*;
- d) details of the level and standard of service of *power transfer capability* that the *Distribution Network Service Provider* can ensure that the *network* provides;
- e) commercial information to be supplied by the *Connection Applicant* to allow a *Network Service Provider* (as is relevant) to make an assessment of the ability of the *Connection Applicant* to satisfy the prudential requirements set out in rules 6.21 and 6A.28;
- f) an itemised estimate of *connection* costs including, so far as is relevant:
 - 1) *connection services* charges;
 - 2) cost associated with the proposed *metering* requirements for the *connection*;
 - 3) costs of any *network extension*;
 - 4) details of *augmentation* required to provide the *connection* and associated cost; and
 - 5) other incidental costs and their basis of calculation;

- g) an explanation of the factors affecting each component of the itemised estimate of *connection* costs and the further information that will be taken into account by the *Distribution Network Service Provider* in preparing the final itemised statement of *connection* costs to be provided under clause 5.3.6(b2)(1);
- h) a draft *connection agreement* that contains the proposed terms and conditions for *connection* to the *network* including those of the kind set out in schedule 5.6 and:
 - 1) an explanation of the terms and conditions in the *connection agreement* that need to be finalised; and
 - 2) if relevant, further information necessary from the *Connection Applicant* to finalise the *connection agreement*;
- i) a description of the process for lodging the *application to connect*, including:
 - 1) the options open to the *Connection Applicant* in submitting an *application to connect* in accordance with clause 5.3A.9;
 - 2) the further analysis to be undertaken by the *Distribution Network Service Provider* as part of the *Distribution Network Service Provider's* assessment of the *application to connect*;
 - 3) further information required from the *Connection Applicant* for the *Distribution Network Service Provider* to assess the *application to connect*;
 - 4) an explanation that unless the *Connection Applicant* submits and *application to connect* within 4 months of receiving the detailed response, the detailed response will become invalid and the *Distribution Network Service Provider* then has the right to request the *Connection Applicant* to lodge a new enquiry; and
 - 5) a *preliminary program* showing proposed milestones for *connection* and access activities which may be modified from time to time by agreement of the parties, where such agreement must not be unreasonably withheld;
- j) the application fee payable when submitting an application to connect; and
- k) any additional information relevant to the application to connect.