AEMC

RULE

Australian Energy Market Commission

CONSULTATION PAPER

NATIONAL ELECTRICITY AMENDMENT (TRANSPARENCY OF NEW PROJECTS) RULE

PROPONENTS

Australian Energy Council
Australian Energy Market Operator
Energy Networks Australia

18 APRIL 2019

INQUIRIES

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Reference: ERC0257

CITATION

AEMC, Transparency of new projects, Consultation paper, 18 April 2019

ABOUT THE AEMC

The AEMC reports to the Council of Australian Governments (COAG) through the COAG Energy Council. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the COAG Energy Council.

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1 INTRODUCTION

This introductory chapter sets out:

- the consolidated rule change requests
- the purpose of this consultation paper
- the timing of the rule change process
- the structure of the consultation paper

1.1 The rule change requests

The Australian Energy Market Commission (AEMC or Commission) has received three rule change requests relating to the transparency of new projects in the National Electricity Market (NEM):

- On 15 December 2018 the Australian Energy Council (AEC) submitted a rule change request to the Commission seeking to increase the transparency of new projects and improve information provision in the NEM.[1] The request has four key elements:
  a. Codifying AEMO's generation information page in the National Electricity Rules (NER or Rules).
  b. Imposing a requirement on intending participants[2] to notify AEMO of any change to the information they provided during the intending participant registration process (for example, when the nature of their projects change).
  c. Broad reforms to the intending participant category (for example, requiring new project developers to register as an intending participant), consistent with the proposals made by AEMO (discussed below).
  d. Changes to assist AEMO in disclosing confidential information, where that information has subsequently reached the public domain.
- On 31 December 2018 the Australian Energy Market Operator (AEMO) submitted a rule change request seeking to allow a developer to register as an intending participant for the purposes of building a grid-scale generating system or an industrial development (e.g. a load), despite such a person never intending to register as market participant.[3]
- On 15 March 2019 Energy Networks Australia submitted a rule change request seeking to explicitly allow transmission network service providers (TNSPs) to publish certain information[4] they have received from connection applicants regarding new and proposed connections.[5]

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1 This rule change request is available on the AEMC website under project code ERC0257. See: https://www.aemc.gov.au/rule-changes/transparency-new-projects

2 Intending participants are a class of registered participants. Entities may register as intending participants if they intend to participate in a registered category (e.g. generator) in the future.

3 This rule change request is available on the AEMC website under project code ERC0260. See: https://www.aemc.gov.au/rule-changes/nem-information-project-developers

4 This project information would include: proponent name, size, location, estimated completion date, primary technology and broad function.

5 This rule change request is available on the AEMC website under project code ERC0268. See: https://www.aemc.gov.au/rule-changes/tnsp-exemptions-confidentiality-requirements

This consultation paper covers the proposals in the three rule change requests set out above. In accordance with s.93 of the National Electricity Law (NEL), the Commission has consolidated these three rule changes requests into one request (the "consolidated rule change request") as it is desirable to deal with these proposals together. The proposals all consider the related issue of how to increase transparency of new generator connections coming into the system.

1.2 Purpose of this consultation paper

This consultation paper has been prepared to facilitate public consultation on the consolidated rule change request and to seek stakeholder submissions.

This paper:

- sets out a summary of, and a background to, the rule change requests submitted by AEC, AEMO and Energy Networks Australia
- identifies a number of questions and issues to facilitate the consultation on the consolidated rule change request
- outlines the process for making submissions.

We welcome submissions on this consultation paper. We also welcome interested stakeholders to contact us if they would like to meet with us to discuss this consultation paper or related issues. All enquiries on this project should be addressed to Thomas Lozanov on (02) 8296 7824 or thomas.lozanov@aemc.gov.au.

1.3 Timing of rule change process

The consolidated rule change request will follow the timeline shown in the table below. Consolidating the three rule change requests will assist stakeholders to engage with the overlapping issues raised in each of the requests and address them in a coordinated manner.

Table 1.1: Proposed project timeline

MILESTONE	DATE
Rule changes initiated and consolidated, consultation paper published	18 April 2019
Submissions to consultation paper close	23 May 2019
Draft determination and draft rule published	1 August 2019
Submissions to draft determination close	12 September 2019
Final determination and final rule published	24 October 2019

1.4 Structure of consultation paper

The remainder of this consultation paper is structured as follows:

- Chapter 2 sets out background information relevant to the AEC, AEMO and Energy Networks Australia rule change requests
- Chapter 3 summarises these rule change requests
- Chapter 4 sets out the proposed assessment framework for consideration of the consolidated rule change request
- Chapter 5 sets out a range of issues relevant to the three proposals for stakeholder comment
- Chapter 6 sets out how stakeholders can respond to this consultation paper.

2 BACKGROUND

This chapter sets out:

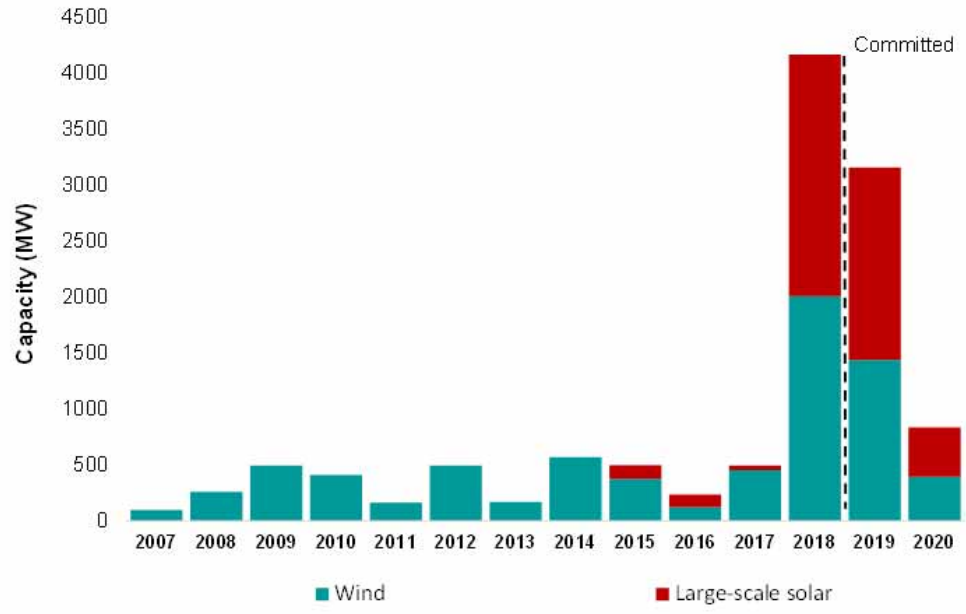
- the relevant context for the rule change
- AEMO's generation information page
- the intending participant category
- information provision
- business models for generation projects
- relevant Commission decisions.

2.1 Context

There are significant changes underway in the NEM with the increasing penetration of renewable generation (such as wind and solar) a key trend. There are vast amounts of potential generation projects that could connect to the system in the near future. As shown in Figure 2.1, approximately 4GW of committed new renewable generation is expected to be available over the next few years. AEMO's 2018 Electricity Statement of Opportunities (ESOO) identified that a further 50GW of proposed projects (mostly renewable generation) are in various stages of development.[6] To put this in perspective, this is roughly equivalent to the current capacity of the NEM.

6 AEMO, 2018 ESOO, September 2018.

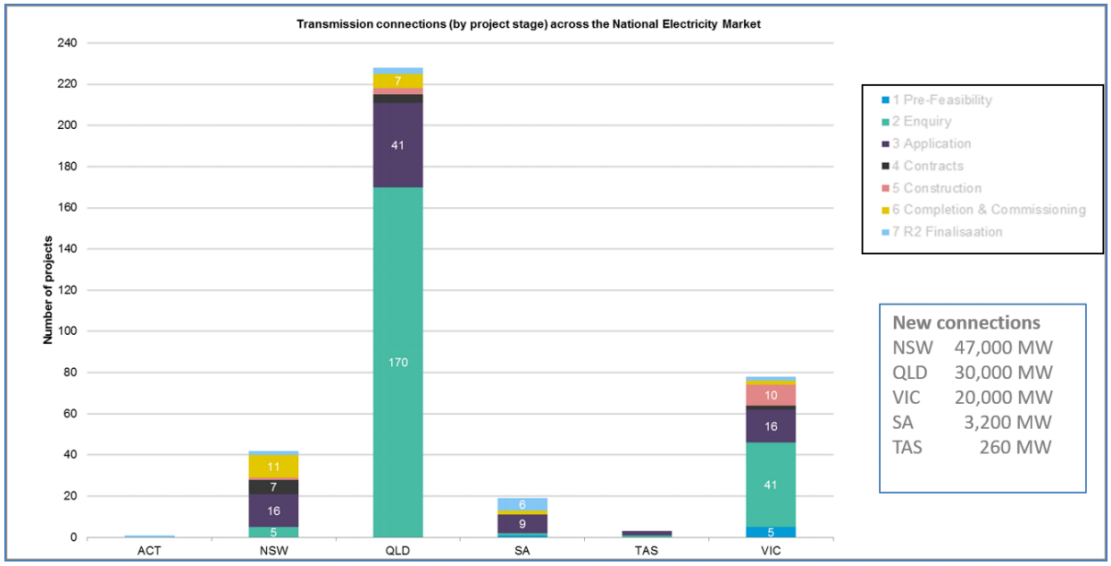
Figure 2.1: New entrant renewable generation - historic and forecast



Source: Based on information from AEMO's generation information page.

The increasing penetration of renewable generation is also affecting AEMO and TNSPs who are receiving an unprecedented volume of generation connection enquiries. While this is occurring across the NEM, it is most pronounced in Queensland (see Figure 2.2). In Queensland the increase in generation connection enquiries has been especially dramatic - in 2014/15 there were less than 20 connection enquiries while in 2017/18 over 170 enquires were received by Powerlink.

Figure 2.2: Transmission connections across the NEM



Source: AEMO presentation, 'Is bigger really better? The outlook for utility-batteries in Australia, Australian Clean Energy Summit, 1 August 2018.

These trends in new generation have significant implications for the operation of the power system as:

- The technical characteristics of these new renewable generators differ from thermal generators.
- Many of these new projects are connecting (or planning to connect) to different parts of the network to traditional generation centres.

It is also worth noting that the construction time for renewable energy projects is far shorter than that of conventional thermal generators, which suggests the pace of change will be rapid.

In addition, the scale of generator connections is exacerbating issues with the current framework since the scale of connection enquiries is creating increased uncertainty, costs and delays for connecting parties. TNSPs need to address connections on a 'first come' basis. As more and more parties connect, TNSPs need to manage more 'moving parts'. A party's particular connection arrangements may change as a result of existing generators that are already connected to the grid, or generators that connect while the party's own connection process is still on foot. As the arrangement to connect changes, financing that has been previously agreed may be undermined or harder to finalise in a timely manner.[7] This is a necessary consequence of the current access framework which allows for access to all who seek to connect to it, meaning that generators compete for access to the transmission

7 *AEMC, 2019, Coordination of generation and transmission investment - access and charging, consultation paper, p. 11.*

network.[8] This then means that generators typically do not want confidential information to be shared with others.

2.2 AEMO's generation information page

AEMO's generation information page[9] reports information on the capacity of existing, withdrawn, committed[10] and proposed generation projects in the NEM. This data is categorised according to region, technology and classification (or dispatch type, e.g. scheduled).

AEMO collects generation information from industry participants, via a web-based online system, and AEMO "is committed to publishing updates of information collected every six months or as required".[11] The intent of this page is to promote the continuous disclosure of information between editions of the ESOO which is published annually. The page has generation data dating back to July 2012.

Currently, under the NER, AEMO is not obliged to produce its generation information page.

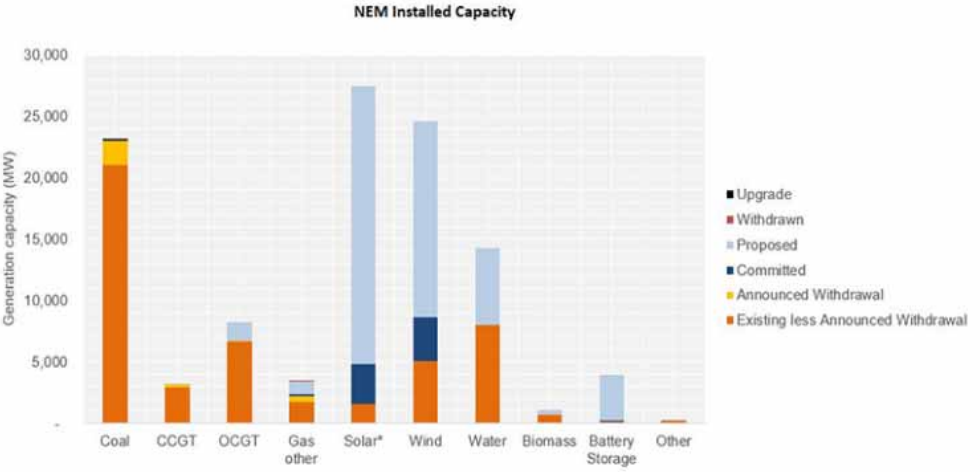
8 The NEM currently operates under a regime where generators have no right to be dispatched in the wholesale market. The Commission's *Coordination of generation and transmission investment - access and charging* review is currently considering a suite of reforms to the access framework in the NEM.

9 AEMO's generation information page is available at: https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Planning-and-forecasting/Generation-information

10 Projects are considered "committed" if they satisfy AEMO's commitment criteria. This criteria includes: size, contracts for major components, planing and approvals, financial arrangements and commencement dates.

11 As stated on AEMO's generation information page.

Figure 2.3: Summary chart and table provided as part of AEMO's generation information page



Status	Coal	CCGT	OCGT	Gas other	Solar*	Wind	Water	Biomass	Battery Storage	Other	Total
Existing	23,006	3,144	6,717	2,155	1,547	5,049	8,021	665	155	185	50,645
Announced Withdrawal	2,000	208	34	480	-	-	-	-	-	-	2,722
Existing less Announced Withdrawal	21,006	2,936	6,683	1,675	1,547	5,049	8,021	665	155	185	47,923
Upgrade	180	-	-	-	-	-	-	-	-	-	180
Committed	-	-	-	210	3,267	3,622	-	24	77	-	7,201
Proposed	-	60	1,556	990	22,649	15,980	6,219	385	3,700	29	51,568
Withdrawn	-	-	-	3	-	-	-	-	-	-	3

Note: Existing includes Announced Withdrawal. This data is current as at 21 January 2019. However, minor amendments have recently been made to the following data files: QLD(04-Feb-19), SA(04-Feb-19).

* Solar excludes rooftop PV installations

Source: AEMO's generation information page

2.3 The Intending participant category

The NER permit AEMO to provide certain information to registered participants, including intending participants. Under clause 3.13.3(k) of the NER, a registered participant may request certain information from AEMO, including information reasonably required to carry out power system simulation studies and modelling.[12]

Under rule 2.7 of the NER, a person that wishes to act in any registered participant category may apply for registration as an intending participant.[13]The person must satisfy AEMO that they are eligible to participate in a specific category, for example participate in the NEM as a generator. AEMO undertakes a merit-based assessment on a case-by-case basis when registering intending participants. AEMO has published guidelines on the information a party

12 This information includes: (i) bid and offer validation data; (ii) information that is reasonably required by the registered participant to carry out power system simulation studies (including load flow and dynamic simulations) for planning and operational purposes; (iii) operation and maintenance procedures and practices for transmission network or distribution network operation, to enable the Registered Participant to carry out power system modelling under normal, outage and emergency conditions.

13 The person must reasonably satisfy AEMO that it intends to carry out an activity in respect of which it must or may be registered as a Registered Participant - see clause 2.7(a) of the NER.

must provide to AEMO as evidence of intent to conduct a business, the key criteria presented in these guidelines are summarised in Table 2.1.

AEMO may require a party to demonstrate that they continue to meet the registration criteria or the party may face de-registration.[14]

Table 2.1: **Summary of key criteria for intending participants**

IF INTENDING TO BE A GENERATOR	IF INTENDING TO BE A CUSTOMER
• **Land** – Evidence that the applicant has a long-term arrangement in place to use the land. • **Connection** – A copy of the connection inquiry and favourable response from the Network Service Provider (NSP). • **Connection** – Sign off from AEMO's connections team that the project has technical merit. • **Project plan** – Project milestones which demonstrate to AEMO's satisfaction an intent to progress the project to completion in the near future. These milestones must represent a program of work that is consistent with the planning and development processes for the project.	• Board approved **business plan** including key milestones. • Evidence of **funding/finance**. • Evidence of application to obtain a **retail license**. • A list of **policies and procedures** in place that demonstrate an ability to **comply with the Rules**.

Source: AEMO Intending Participant Gu8idelines - Customer and Generator, available at: https://www.aemo.com.au/-/media/Files/Electricity/NEM/Participant_Information/New-Participants/Intending-Participant-Guidelines—-Customer-and-Generator.docx

2.4 Information provision

There is a significant amount of transparent information about generators once they have connected i.e. once the connection agreement has been entered into. For example, TNSPs are obliged to create a register of connections and AEMO publishes a range of information to the market through the ESOO and the ISP. In addition, the *transmission connections and planning arrangements* rule change request sought to promote transparency of the connections process.[15]

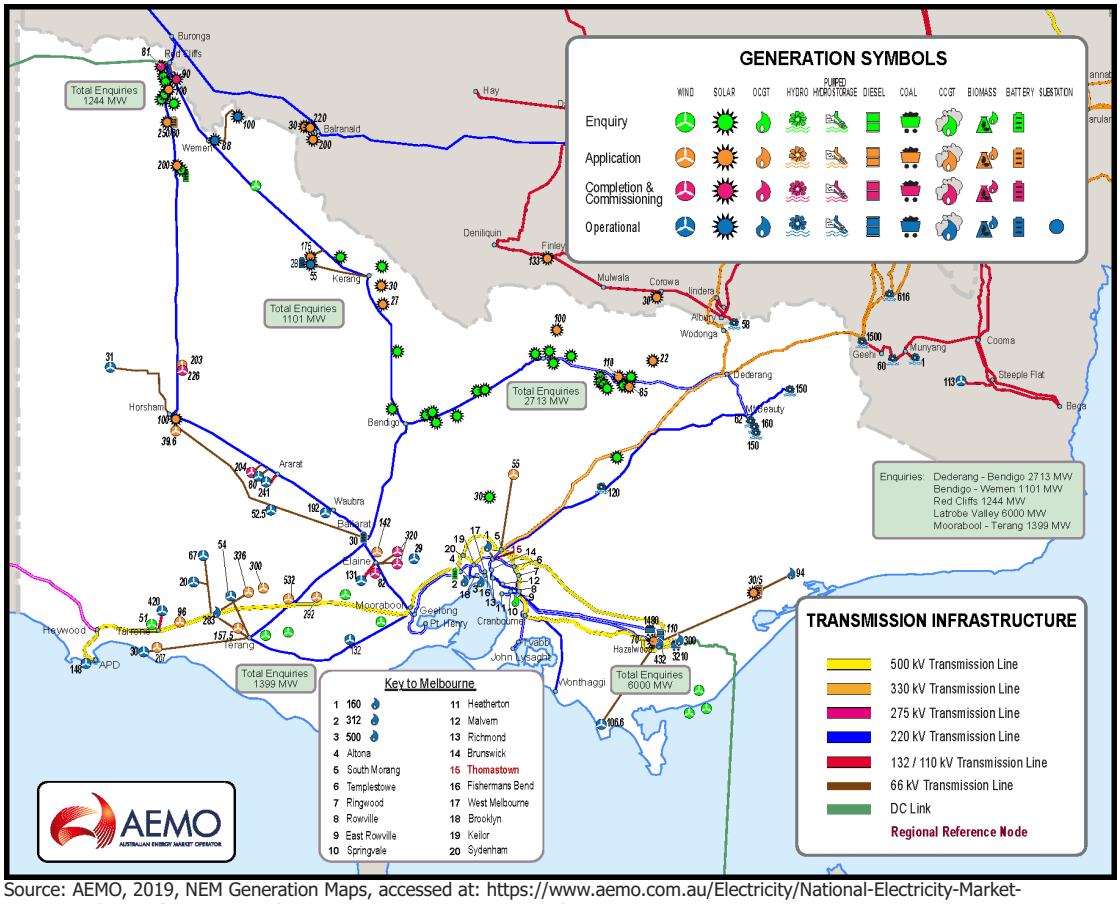
However, we understand there is limited information available to market participants about prospective generators, prior to the connection agreement being signed. AEMO has recently

14 Clause 2.7(b) of the NER

15 For more information on the transmission connections and planning arrangements rule change refer to the project page: https://www.aemc.gov.au/rule-changes/transmission-connection-and-planning-arrangements.

started to publish connection maps which detail the location and technology type of prospective generators (noting those generators that have submitted connection enquiries and connection applications).[16] These maps are overlaid with transmission infrastructure. According to AEMO, the connection maps are intended to: facilitate more informed decision-making by potential investors, allow NSPs to consider potential future network expansion, and enable AEMO to identify potential operational constraints and emerging security issues.[17] The generation connection map for Victoria can be seen in the figure below.

Figure 2.4: Generation map for Victoria



Source: AEMO, 2019, NEM Generation Maps, accessed at: https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Network-connections/NEM-generation-maps on 20 March 2019.

The AER's new Transmission Annual Planning Report guidelines (discussed in Box 4) also aim to improve the transparency of new generator connections. However, so as not to conflict

16 The connection maps also show generators that have reached the commissioning stage or already operational.

17 The generation connection maps for each region are available at: https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Network-connections/NEM-generation-maps

with the confidentiality provisions discussed in Section 5.2, the AER requires that information on new connections must be aggregated.[18]

2.4.1 Importance of information for developers

Under the NEL, AEMO has a statutory obligation to protect confidential information (known as 'protected information' under the NEL) from unauthorised use or disclosure.[19]

Confidential information that AEMO may provide to a registered participant includes:[20]

- Bid and offer validation data
- Power System Simulator for Engineering (PSSE) power flow snapshots
- Releasable User Guides (RUGS)
- Hourly line flows.

This data plays a key role in power system simulation studies that inform the development of a generation asset. New project proponents build models to understand how an asset may operate over time, under different conditions and how it interacts with neighbouring generators and the broader system. Proponents need access to information in order to effectively build these models.

BOX 1: GENERATING SYSTEM MODEL GUIDELINES RULE CHANGE

In response to a rule change from AEMO, on 19 September 2017 the Commission made a rule that clarifies the scope and level of detail of model data that registered participants and connection applicants are required to submit to AEMO and NSPs.

The rule:

- Clarifies and increases the range of circumstances in which parties must provide model data to AEMO and network service providers.
- Requires AEMO to set out, in its power system model guidelines, what model data will be required to be provided by participants and the specific circumstances or conditions under which that model data will be required.
- Sets out principles that AEMO must have regard to when it develops the guidelines and data sheets. The principles AEMO is required to consider are:
  - the costs faced by participants in providing model data
  - the protection of confidential model information
  - the range of modelling information needed by NSPs to fulfil their obligations under the NER or jurisdictional electricity legislation.

Source: For more detail see the project page: https://www.aemc.gov.au/rule-changes/generating-system-model-guidelines

18 The TNSP must only aggregate the information to the extent necessary to maintain the confidentiality of the information. AER, December 2018, *Transmission annual planning report guidelines, final decision,* p. 5-6

19 See section 54 of the NEL.

20 See clause 3.13.3(k) and (l) of the NER and AEMO rule change request p. 3

On a related note, the NER also requires parties seeking to connect to the power system to provide AEMO and network service providers (NSPs) with model data so the impact of proposed connections can be determined, for example proponents are required to submit system strength impact assessments. Hence, the initial provision of data from AEMO to intending participants enables intending participants to develop accurate and detailed models that reflect the operation of their generating asset — and these models are in turn provided to NSPs and AEMO so that impacts of proposed connections on the broader system may be assessed. This is important for system security.

2.4.2 Notification of changes to projects

Under the NER, there is no requirement on intending participants to notify AEMO if any information provided to AEMO during the registration process changes during project development, for example, a change in maximum capacity. The AEC noted in its rule change that AEMO currently undertakes media monitoring and regularly reviews the websites of developers to determine if they have released any new or updated information about their projects.[21]

2.4.3 Disclosure of protected information

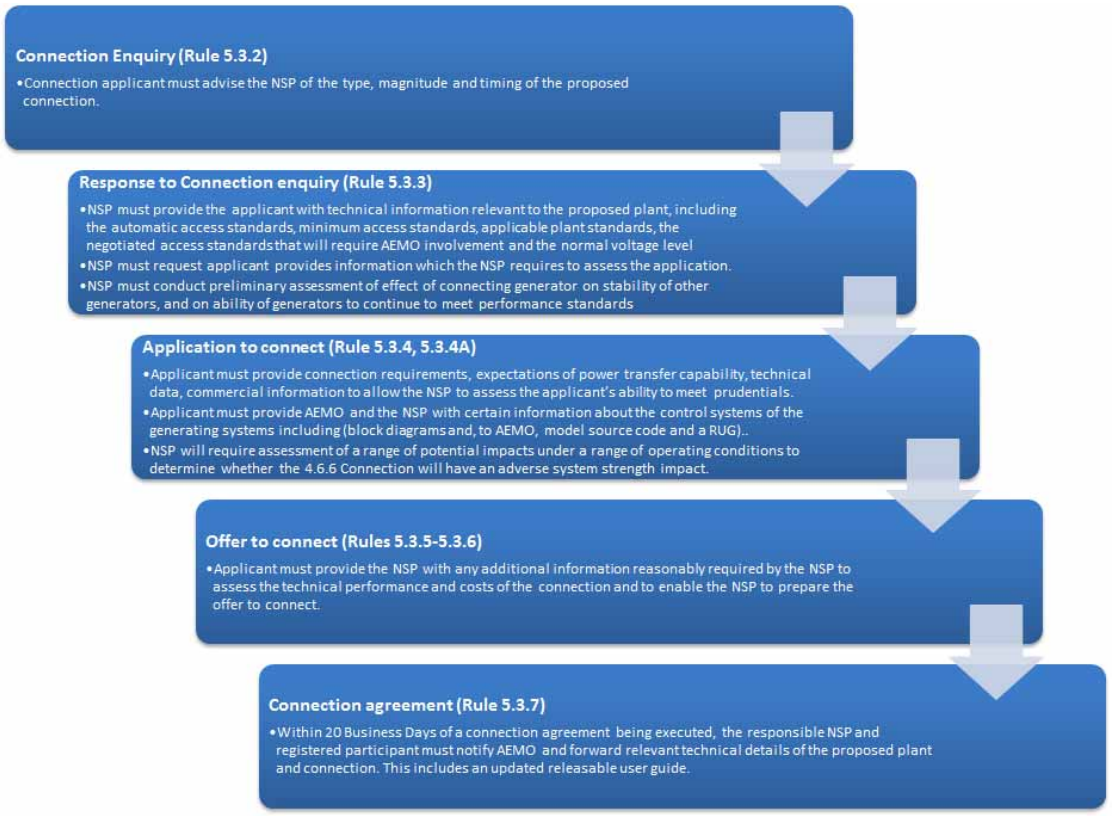
Section 54G(1)(d) of the NEL permits AEMO to disclose protected information if the protected information is already in the public domain. Currently there are no provisions that require a party to notify AEMO when protected or confidential information that they have provided to AEMO has entered the public domain.

2.4.4 Provision of confidential information to TNSPs

In accordance with the NER, any information received by an NSP as a result of a connection enquiry or application, must always be treated as confidential information. The figure below sets out the five critical steps in the connection process and the information that must be provided by prospective generators. Confidentiality requirements imposed on TNSPs limit their ability to share key connection information with prospective generators. This means existing generators and prospective generators have limited visibility of other generators seeking to connect in the same area.

21 AEC rule change request, p. 7.

Figure 2.5: The connection process



Confidentiality obligations and exceptions set out in the NER

Clause 8.6 of the NER sets out the confidentiality obligations of registered participants (including NSPs). Registered participants are obliged to:

- use all reasonable endeavours to keep confidential information confidential
- not disclose confidential information to any person except as permitted by the NER
- only use or reproduce confidential information for the purpose for which it was disclosed (or another purpose contemplated by the NER)
- not permit unauthorised persons to have access to confidential information
- use all reasonable endeavours to prevent unauthorised access of confidential information
- use all reasonable endeavours to ensure any person to whom it discloses confidential information observes the provisions of rule 8.6.

Clause 8.6.2 of the NER sets out various exceptions which allow registered participants (including NSPs) to disclose, use or reproduce confidential information in limited circumstances. Limited circumstances include:

- where the relevant information is generally publicly available (public domain exception).

- where consent of the person who provided information has been obtained (consent exception).

In addition to the exceptions above, clause 5.3.8 of the NER provides specific exceptions for NSPs in disclosing confidential information obtained as part of a connection enquiry or application. These additional exceptions include:

- disclosing for purposes relating to the provision of advice regarding ancillary services and assessment of power system performance, negotiated access standards and system strength connection works
- disclosing information to another NSP if the information or data is materially relevant to that provider for connection.

Both exceptions require the disclosing party to firstly advise the connection applicant (unless the information can be disclosed under rule 8.6).

3 DETAILS OF THE RULE CHANGE REQUESTS

The three rule change requests submitted by the Australian Energy Market Operator (AEMO), Australian Energy Council (AEC), and Energy Networks Australia are similar. Each considers the transparency of information for new projects. They differ in their focus on either the disclosure of, provision by, and access to this information by various parties associated with the NEM.

This chapter summarises the rationale for the rule change requests, the proposed solutions and the costs and benefits identified by the rule proponents. The rule change requests may be found on the AEMC website (www.aemc.gov.au). Stakeholders are encouraged to refer to the requests for further context and detail.

3.1 Rationale for the rule change requests

3.1.1 Rationale for the AEMO rule change request

AEMO proposes that rule 2.7 of the NER should be amended to allow persons with the purpose of building a generating system or a large load to register as an Intending Participant (despite not intending to be registered as a Generator or Market Customer).[22] AEMO notes that parties building either generating systems or large loads who intend to sell them prior to their connection to the grid currently do not meet NER requirements for the 'Intending Participant' category.

Building and selling assets prior to connecting them to the grid is becoming an increasingly frequent business model for developers (see Appendix A). A developer may engage with the relevant NSP to establish a connection agreement, but may not plan to own or operate the generating system or register with AEMO as the "Generator" for the asset.[23] In this scenario, they do not meet the requirements of Intending Participants under the NER.

AEMO suggests that the primary function of the Intending Participant category is to allow proponents to access information deemed confidential under the NER, such as network modelling data and system operating conditions, which proponents require to build a generation asset, or to establish themselves as market customers.[24]

Therefore, AEMO states that the NER should be changed to expand the eligibility criteria for Intending Participants to include developers, so that necessary system information can be both disclosed by AEMO and accessed by developers.[25]

3.1.2 Rationale for the AEC rule change request

The AEC has proposed a rule change recommending amendments to how the veracity and frequency of information provided to and by AEMO, particularly on new projects, should be managed. The proposal is underlined by concerns that "gaps" in the NER addressing how

22 AEMO, Electricity Rule Change Proposal, Providing NEM Information to Project Developers, December 2018. p. 2
23 AEMO, Electricity Rule Change Proposal, Providing NEM Information to Project Developers, December 2018. p. 6
24 AEMO, Electricity Rule Change Proposal, Providing NEM Information to Project Developers, December 2018. p. 6
25 AEMO, Electricity Rule Change Proposal, Providing NEM Information to Project Developers, December 2018. p. 7

information is provided to, and disclosed by AEMO, diminish levels of transparency in the NEM.[26] The AEC emphasise that a variety of parties in the NEM rely on accurate project information and that use of this information impacts an array of business and regulatory activities that depend on the reliability of AEMO's data.[27]

To address these gaps, the AEC proposes a rule change comprising five parts.

Part one recommends codifying AEMO's generation information page as NEM standing data.[28] The AEC considers this will help to consolidate new project information and ensure AEMO is capable of presenting a comprehensive status of all generating projects.[29]

Part two intends to ensure Intending Participants notify AEMO if information provided during a proponent's registration process changes during project development. The AEC notes there is currently no NER obligation outlined that requires Intending Participants to provide AEMO with updates if details initially provided are revised.[30] This may lead to instances where AEMO's data on new projects is out of date and inaccurate, with implications for AEMO's operational processes and broader market transparency.

Part three requests the AEMC consider whether reforming the Intending Participant category is required. The AEC notes that projects are increasingly built by developers and are then sold prior to connecting them to the grid. Further, developers may operate a generation asset on behalf of an owner who is a Registered Participant. In these scenarios, a developer does not satisfy the requirements of an Intending Participants under the NER, so is not obligated to disclose information to AEMO, and cannot access necessary network data to aid in an asset's construction. With the aim of enhancing project visibility in the NEM and consistent with AEMO's proposal (described above), the AEC asks the Commission to consider whether developers and special purpose vehicles should be required to register as Intending Participants, and whether registration should occur at a particular time. To better manage the flow of confidential information, the AEC proposes strengthening provisions around deregistration and requirements on deregistered parties to destroy system data.[31]

Part four intends to clarify that AEMO may publish confidential information that is in, or has entered, the public domain. It is not uncommon for developers to publicly publish media releases or annual reports containing information previously deemed confidential. AEMO may be unaware of the publication of such information, and as such, does not know that it can disclose this information — meaning, the information it shares with the market (e.g. via the generation information page) may not be current. The AEC suggests Intending Participants should be required to notify AEMO as soon as reasonably practicable, or within 10 business

26 AEC, Transparency of New Projects Rule Change Request, December 2018, p. i

27 AEC, Transparency of New Projects Rule Change Request, December 2018, p. i

28 NEM standing data is formally set out in the NER and refers to specific datasets that AEMO, NSPs and registered participants must establish, maintain, update and publish. The NER provisions (cl. 3.13.3) around standing data are specific and clear, and so, NEM standing data plays a critical role in promoting market transparency.

29 AEC, Transparency of New Projects Rule Change Request, December 2018, p. 2

30 AEC, Transparency of New Projects Rule Change Request, December 2018, p. 3

31 AEC, Transparency of New Projects Rule Change Request, December 2018, p. 3

days, after they become aware 'protected' or 'confidential' information has entered the public domain.[32]

Part five seeks to establish transitional arrangements that facilitate the collection of updated information from Intending Participants to AEMO in order to support improved transparency.

3.1.3 Rationale for the Energy Networks Australia rule change request

Energy Networks Australia has proposed a rule change that would allow Transmission Network Service Providers (TNSPs) to publish information regarding the name, size, location, estimated completion date, primary technology and broad function of a connection enquiry or application.[33] Energy Networks Australia suggests that enabling TNSPs to publish basic and non-commercially sensitive information about new and proposed connections will facilitate efficiencies in the connection application process and more optimal network outcomes.[34]

Energy Networks Australia notes that TNSPs are currently required to keep information obtained as part of the generator connection process confidential. This information, which could assist connecting parties, is dispersed across various sources, is inconsistent in detail, and of varying veracity. Meanwhile, the connection of other generators in the same proximity cannot be coordinated by TNSPs, which could achieve a more efficient solution.[35]

Energy Networks Australia explains previous AEMC determinations[36] clarified that NSPs may disclose information in certain circumstances to Registered Participants to facilitate coordinated applications and enquiries, but not to disclose basic generator information. At the time, the AEMC expected it to be likely that connection information would be made public prior to a connection agreement, and that this information would be sufficiently accessible.

However, Energy Networks Australia suggests there is an increasing need for customers and stakeholders to be able to access connection information that is easily understood and is in one location.[37] Energy Networks Australia considers this information would inform commercial decisions around connection (such as, where and when to locate) and promote efficient collaboration among connecting parties.[38] Further, the practical limitations associated with applying exceptions to the current confidentiality framework make their use ineffective. According to Energy Networks Australia, applying the public domain exclusion requires TNSPs to exhaust time and resources undertaking searches of publicly available data sources. The significant increases in generation connection applications, and the need for technical requirements and system planning processes to be shared, make the general confidentiality provision inefficient and impractical in optimising outcomes.[39]

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32 AEC, Transparency of New Projects Rule Change Request, December 2018, p. 3.
33 ENA, TNSP Confidentiality Exclusion Rule change request, March 2018, p. 3.
34 ENA, TNSP Confidentiality Exclusion Rule change request, March 2018, p. 3.
35 ENA, TNSP Confidentiality Exclusion Rule change request, March 2018, p. 11.
36 Rule Determination, National Electricity Amendment (Confidentiality Provisions for Network Connections), Rule 2009, November 2009, p. vi-vii.
37 ENA, TNSP Confidentiality Exclusion Rule change request, March 2018, p. 6.
38 ENA, TNSP Confidentiality Exclusion Rule change request, March 2018, p. 17.
39 ENA, TNSP Confidentiality Exclusion Rule change request, March 2018, p. 8.

Energy Networks Australia subsequently proposes that this rule change would help TNSPs provide ongoing support to customers, while minimising additional costs and delays, without requiring significant changes or expenses for TNSPs or stakeholders.[40]

3.2 Proposed solutions

3.2.1 Proposed solutions by AEMO

AEMO proposes a rule change that expands the eligibility criteria for Intending Participants to include developers of relevant generating systems or large loads. Specifically, AEMO suggests this expansion cover any parties that "intend to develop plant to be connected to a transmission or distribution system in respect of which another person must or may be registered as a Registered Participant." This would ensure, according to AEMO, that a person building a generating system or large load can access NEM information required as a registered Intending Participant.

3.2.2 Proposed solutions by AEC

For part one of its proposal, the AEC proposes the generation information page is codified in the NER as formal standing data. AEMO would continue to define various 'unit status' categories of projects that reflect their level of development, and provide market participants a comprehensive view of the status of all projects. AEMO would essentially administer a collation service. The AEC's proposed solution also requires AEMO to update its generation information page more frequently, revising it on monthly intervals, which it considers would provide benefits to market participants.

Part two would require Intending Participants to provide updates to information provided in relation to clause 2.7(a) or 2.7(b) to AEMO as soon as reasonably practicable, and no later than 10 business days. If the participant fails to do so, their registration as an Intending Participant will cease on the date specified by AEMO via written notice. The AEC considers this change will aid the efficiency and accuracy of AEMO's operational and forecasting processes, and provide other market participants greater access to information of significant interest.

On concerns expressed in part three, the AEC requests the AEMC consider reforms to the Intending Participant category. The AEC recommends consideration of the following measures:

- requiring any person or special purpose vehicle proposing to develop a new project to be registered as an Intending Participant[41]
- establishing a formal time for registration to occur
- requiring the de-registration of Intending Participants who have not taken positive steps to develop their project in a specified period
- requiring deregistered parties to return or destroy any data received while registered.[42]

40 ENA, TNSP Confidentiality Exclusion Rule change request, March 2018, p. 9.
41 As proposed by AEMO in its rule change request.
42 AEC, Transparency of New Projects Rule Change Request, December 2018, p. 3.

Regarding part four, noting that Section 54G(1)(d) of the NEL already permits AEMO to disclose protected information if it is in the public domain, the AEC seeks clarification that disclosure of information that is both protected and confidential information is permitted under both s. 54G(1)(d) of NEL and Chapter 8 of NER[43], and information deemed only confidential (i.e it is not also protected information) can be disclosed by AEMO if it is in the public domain. The AEC proposes that any person who has provided AEMO protected or confidential information in the past must notify AEMO as soon as reasonably practicable, and no later than 10 business days, upon becoming aware the information has entered, or is in, the public domain.[44]

To assist with the implementation of these changes, the AEC proposes transitional arrangements including:

- Entities that are registered as intending participants on the commencement date of the proposed rule must notify AEMO of any changes to information previously provided within one month of the commencement date
- Entities that have provided AEMO with confidential information prior to the commencement date must notify AEMO within one month of the commencement date of the proposed rule if the information has since entered the public domain.

3.2.3 Proposed solutions by Energy Networks Australia

Energy Networks Australia's solution is an amendment to clause 5.3.8, proposing to explicitly allow TNSPs to publish and release the proponent name, size, location, completion date, primary technology and function information regarding a connection enquiry or connection application. This information would be published in a TNSP's Transmission Annual Planning Report (TAPR). Energy Networks Australia outlines that, under the proposal, TNSPs must release any new information (as listed above) following the publication of the last TAPR to participants that provide a connection enquiry or an application to connect. This information must then be published on the TNSP's website as soon as reasonably practicable.[45] Energy Networks Australia states that publication of the above information at the enquiry stage of the connection process would provide market participants in the area sufficient notice to collaborate and explore mutually beneficial connection arrangements.[46] AEMO and other TNSPs would also then be made aware of potential forthcoming impacts on the network, assisting in efficient network planning.

Given the significant number of connection enquiries and applications currently fielded by TNSPs, Energy Networks Australia proposes that transitional arrangements are also required to ensure potential benefits are realised as soon as possible.[47] These transitional arrangements state that the exception to the confidentiality obligations should also apply

43 s. 54 of the NEL permits the NER to set out circumstances in which the protected information may be disclosed
44 AEC, Transparency of New Projects Rule Change Request, December 2018, p. 3.
45 ENA, TNSP Confidentiality Exclusion Rule change request, March 2018, p. 19.
46 ENA, TNSP Confidentiality Exclusion Rule change request, March 2018, p. 12.
47 ENA, TNSP Confidentiality Exclusion Rule change request, March 2018, p. 15.

with respect to information that has been obtained by TNSPs before the commencement of the rule but limited to:

- information that has been published by TNSPs in their last TAPR
- any information obtained since publication of the last TAPR only if consent has been obtained.

3.3 Proponents' expected costs and benefits of the proposed rule changes

3.3.1 Expected benefits identified by AEMO

By registering developers as Intending Participants, NER confidentiality obligations and Registered Participant status would apply to developers with minimal amendment required to the NER. AEMO expects this change would not affect other parties seeking to register as Intending Participants, but would concurrently accommodate emerging business models without additional delay or complexity.[48]

Further, AEMO considers this proposal to contribute towards the National Electricity Objective, predominately by facilitating direct access to NEM information for all potential proponents irrespective of their business model.[49] Aiding developers in swiftly identifying issues with their project location or viability will lower barriers to entry and reduce the potential for wasted cost in project development. [50] These efficiencies will promote investment in electricity services that are in the long-term interest of consumers.

3.3.2 Expected costs identified by AEMO

Stakeholders engaged in producing the AEMO EGES Stakeholder Paper raised concerns about risks regarding misuse of confidential information by developers. AEMO notes that control of this information relies on compliance with NER confidentiality obligations, and believes the proposed rule does not increase the risk or consequence of confidentiality breaches.[51]

As a part of implementing the proposed rule, AEMO states that application form and guideline updates would be conducted to advance this change. This would accrue an estimated cost of $10,000.[52]

3.3.3 Expected benefits identified by the AEC

The AEC considers the proposed changes will provide AEMO with heightened visibility of the progress of new projects.[53] The additional information obtained from these changes will be available for incorporation into existing forecasts and operational processes. New project proponents are provided an increased level of transparency of other proposed projects and

48 AEMO, Electricity Rule Change Proposal, Providing NEM Information to Project Developers, December 2018. p. 10.
49 AEMO, Electricity Rule Change Proposal, Providing NEM Information to Project Developers, December 2018. p. 9.
50 AEMO, Electricity Rule Change Proposal, Providing NEM Information to Project Developers, December 2018. p. 9.
51 AEMO, Electricity Rule Change Proposal, Providing NEM Information to Project Developers, December 2018. p. 4-5.
52 AEMO, Electricity Rule Change Proposal, Providing NEM Information to Project Developers, December 2018. p. 10.
53 AEC, Transparency of New Projects Rule Change Request, December 2018, p. 11.

are able to make more informed decisions on how this information can affect their own business case.[54]

Existing generators will be able to factor in particulars of forthcoming projects into their business decisions, such as fuel procurements, expected running profile and budgeting related to Marginal Loss Factors.[55]

The AEC notes that all market participants rely on AEMO to provide timely and accurate information that supports an array of operating and investment decisions. Concurrently, the veracity of AEMO's forecasts depend on the information they procure and are provided, influencing forecasts for mechanisms like the Reliability and Emergency Trader (RERT).[56]

The AEC suggests this proposal aligns with the National Electricity Objective. The price, quality, safety and security of electricity supply and the system will be enhanced by improving the breadth, accuracy and expediency of new generation project information, which supports market participants in driving efficiencies in planning, investments and operations for the long-term benefit of the consumer.[57]

3.3.4 Expected costs identified by the AEC

AEC anticipates the proposal changes would have minimal costs, given proponents of new projects already possess the information this rule change proposes to disseminate. The AEC notes the viability of AEMO's proposed new information online portal as a means to reduce the costs of compliance and provide an interface to update and access project details. AEC explicitly notes that its proposal does not propose the publishing of commercially-sensitive information about projects in their early stages. Rather, it advocates the exchange of information about advanced projects that proponents have on hand.[58]

3.3.5 Expected benefits identified by Energy Network Australia

Energy Networks Australia examines potential benefits of this rule change with respect to the National Electricity Objective. Energy Networks Australia considers the proposed changes will promote efficient investment in and operation of electricity guided by the long-term interests of consumers by making the connection process more efficient, providing greater transparency of connections to the market, and facilitating the potential for collaboration between connecting parties.[59] Energy Networks Australia asserts these measures will support more efficient assessment of renewable energy zones and help investors make more informed decisions in adding physical generation assets to the NEM.[60] These outcomes will result in better services and lowers costs for proponents and customers.

Energy Networks Australia asserts the changes will also:

54 AEC, Transparency of New Projects Rule Change Request, December 2018, p. 11
55 AEC, Transparency of New Projects Rule Change Request, December 2018, p. 11.
56 AEC, Transparency of New Projects Rule Change Request, December 2018, p. 10.
57 AEC, Transparency of New Projects Rule Change Request, December 2018, p. 10.
58 AEC, Transparency of New Projects Rule Change Request, December 2018, p. 10
59 ENA, TNSP Confidentiality Exclusion Rule change request, March 2018, p. 16
60 ENA, TNSP Confidentiality Exclusion Rule change request, March 2018, p. 16

- assist consultants to assess technically competent applications
- provide greater transparency for AEMO to inform forecasts and processes
- assist TNSPs in their connection application, network planning and system security functions.[61]

3.3.6 Expected costs identified by Energy Networks Australia

Energy Networks Australia acknowledges practical implementation issues must be considered when exploring the possibility of releasing and publishing information. It expects costs associated with the changes to be minimal, given TNSPs that possess the key information referred to in this rule change are already currently working to implement compliance mechanisms with new TAPR requirements to facilitate publication of information through website and supporting updates.[62]

3.4 Consolidation of Rule Change Requests

The Commission has determined to consolidate these three rule changes under s.93 of the NEL, as it is desirable to deal with these requests together.

The Commission recognises that the proposals from AEMO, AEC and Energy Networks Australia are similar in that they each consider the transparency of information for new projects in the NEM. By assessing these rule change requests together the Commission considers it will be best able to develop a holistic solution. Consolidating the rule changes will also help stakeholders to better engage in the rule change process and address overlapping issues.

61 ENA, TNSP Confidentiality Exclusion Rule change request, March 2018, p. 17
62 ENA, TNSP Confidentiality Exclusion Rule change request, March 2018, p. 18

4 ASSESSMENT FRAMEWORK

The Commission's assessment of this Rule change request must consider whether the proposed rule promotes the national electricity objective (NEO).

4.1 Rule making test

4.1.1 Achieving the NEO

Under the NEL, the Commission may only make a rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the NEO.[63] This is the decision making framework that the Commission must apply.

The NEO is:[64]

> To promote efficient investment in, and efficient operation and use of, electricity services for the longer term interests of consumers of electricity with respect to -
>
> (a) price, quality, safety, reliability and security of supply of electricity; and
>
> (b) the reliability, safety and security of the national electricity system.

Based on a preliminary assessment of this rule change the Commission considers that the relevant aspects of the NEO are the efficient investment in, and efficient operation and use of electricity services with respect to the price and reliability of supply of electricity, and reliability of the national electricity system because:

- Timely and straightforward access to accurate information plays a crucial role for parties that:
  - seek to build generation assets and contribute to the reliable supply of electricity
  - operate existing generation assets and make informed business decisions that will affect the price of electricity.
- Increasing AEMO's visibility of new projects promotes more accurate information that could be used for supply forecasts. This may have an impact on AEMO's exercise of the RERT — with RERT costs ultimately recovered from consumers.
- Coordinating generation projects and improving the efficiency of the connection process will promote reliable supply at lower costs.

4.1.2 Relevant assessment criteria

In assessing the rule change request, the Commission proposes to consider whether the rule change could improve the efficiency with which new generation projects are developed, and in turn may contribute to improved reliability of the power system. In particular, it will consider the following principles:

63 Section 88 of the NEL.
64 Section 7 of the NEL.

- **Efficient investment in, and operation of, energy resources:** Improving the provision of information in the NEM both in terms of timeliness and accuracy can assist in promoting efficiency of investment in, and operation of generation capacity. The Commission will consider the degree to which the proposed changes could make available information that could assist market participants to make more efficient investment and operational decisions.
- **Promoting transparency:** The transparency of information is a key feature of the efficient operation of the NEM. Market participants need access to clear and current information to make efficient commercial and operational decisions. The Commission will consider whether improvements to transparency outweigh the risks associated with sharing potentially sensitive commercial information about projects. In assessing these risks the Commission will consider the extent to which this project information is commercially sensitive, which parties might benefit from its publication and any implications for investment outcomes.
- **Balancing the benefits of increased transparency against the regulatory and administrative costs:** As noted above, increasing transparency will have benefits. For example, the proposed changes may reduce the administrative burden on AEMO associated with monitoring media releases and directly contacting developers. However imposing regular reporting on new project proponents may impose new costs on these proponents. The Commission will consider the cost impacts of the proposed changes on AEMO and proponents, and balance these against the benefits.

QUESTION 1: ASSESSMENT FRAMEWORK

(a) Do stakeholders agree with the proposed assessment framework? Alternatively, are there additional principles that the Commission should take into account?

4.2 Making a more preferable rule

Under s. 91A of the NEL, the Commission may make a rule that is different (including materially different) to a proposed rule (a more preferable rule) if it is satisfied that, having regard to the issue or issues raised in the rule change request, the more preferable rule will or is likely to better contribute to the achievement of the NEO.

4.3 Northern Territory

Under the Northern Territory legislation adopting the NEL, the Commission may make a differential rule if, having regard to any relevant MCE statement of policy principles, a different rule will, or is likely to, better contribute to the achievement of the NEO than a uniform rule. A differential rule is a rule that:

- varies in its term as between:
  - the national electricity system, and
  - one or more, or all, of the local electricity systems, or

- does not have effect with respect to one or more of those systems

but is not a jurisdictional derogation, participant derogation or rule that has effect with respect to an adoptive jurisdiction for the purpose of s. 91(8) of the NEL.

As the rule change is unlikely to relate to parts of the NER that currently apply in the Northern Territory, it is unlikely that the Commission will need to assess the rule change against additional elements required by the Northern Territory legislation.[65]

65 From 1 July 2016, the NER, as amended from time to time, apply in the NT, subject to derogations set out in regulations made under the NT legislation adopting the NEL. Under those regulations, only certain parts of the NER have been adopted in the NT. (See the AEMC website for the NER that applies in the NT.) National Electricity (Northern Territory) (National Uniform Legislation) Act 2015.

5 ISSUES FOR CONSULTATION

Taking into consideration the assessment framework, a number of issues have been identified for initial consultation. Stakeholders are encouraged to comment on these issues as well as any other aspect of the rule change request or this paper, including the proposed assessment framework.

This chapter outlines:

- Information sharing between AEMO, network service providers and new project proponents
- Confidentiality provisions
- Improvements to the generator information page.

5.1 Information sharing between AEMO, network service providers and new project proponents

5.1.1 Changes to flow of information from AEMO to new project proponents

As noted in Appendix A, the business models for new project proponents have evolved in recent times. One of the popular business models that has emerged is for developers to build generating systems and sell them prior to connection to the grid.

In many cases, a developer cannot be classified as an intending participant as a developer has no intention of participating in the market or formally registering as a generator in the future. AEMO suggests that this is an issue as developers cannot directly access information needed to design and build a generating system or large load. The AEC also notes this may be an issue of importance and encourages the Commission to consider AEMO's proposed reforms to the intending participant category.

The information AEMO is proposing that developers would have access to if they could register as an intending participant includes:[66]

1. Bid and offer validation data.
2. Information that is reasonably requested to carry out power system simulation studies (including load flow and dynamic situations) for planning and operational purposes. For example, Power System Simulator for Engineering (PSSE) snapshots, releasable user guides and hourly line flows.
3. Operation and maintenance procedures and practices for transmission network or distribution network operation, to enable power system modelling under normal, outage and emergency conditions to be carried out.

66 As outlined in Clause 3.13.3(k) of the NER with respect to registered participants.

BOX 2: FEEDBACK AS PART OF AEMO'S EMERGING GENERATION AND ENERGY STORAGE INITIATIVE

As part of AEMO's Emerging Generation and Energy Storage (EGES) initiative, AEMO asked stakeholders whether project developers should be provided with the necessary NEM information to design and construct grid-connected facilities. The majority of stakeholder feedback in written submissions and in the two stakeholder sessions held in November 2018 indicated positive support for AEMO's proposal. Of the 20 public submissions received as part of this consultation, only AGL did not support AEMO's proposal. AGL considered that a developer is fundamentally not an intending participant given a developer's likely objective is to obtain NEM information for the purposes of building a generating station for sale prior to NEM registration and operation. Further AGL cited a potential risk that once a generating system is sold to a third party a developer may still retain and act on the NEM information obtained from AEMO. A further three stakeholders (Clean Energy Council, Origin, TasNetworks) indicated concern about confidentiality requirements (confidentiality requirements are discussed in more detail in Section 5.2).

Source: AEMO rule change request, pp. 3-4 and AGL submission to Emerging Generation and Energy Storage stakeholder paper, p. 5.

On one hand, requiring new project proponents to register as intending participants may lead to more clarity and consistency around prospective developments. It also recognises that in the early stages of project development there is an inherent uncertainty and lack of detail around aspects such as finance and land acquisition, which form part of the eligibility requirements for the intending participant category. AEMO considers that allowing developers to gain access to the above information has the potential to minimise project delays and reduce complexity.[67] AEMO considers that improving access to information should likely lead to a greater amount of generation entering the market, and entering the market more informed, which supports security and reliability.

On the other hand, AEMO's proposed change raises questions as to the function of the intending participant category if entities are required to register as intending participants when they have no intention of participating in the market. Including any new project proponent in the intending participant category would also require changes to AEMO's intending participant guidelines (summarised in Table 2.1). Also, by broadening the intending participant category to include developers there may be a risk that new parties are granted access to sensitive information which may have an effect on the interests of existing and prospective generators.

QUESTION 2: INFORMATION PROVISION FOR DEVELOPERS

(a) Do stakeholders consider that developers do not have access to information necessary to

67 AEMO rule change request, p.10

construct and connect generation assets or large loads?

(b) Should developers be allowed to register as intending participants? If so, what other considerations should be taken into account?

(c) Do stakeholders consider that the information needs of intending participants and developers are identical? What information should developers receive? What information should developers *not* receive?

(d) Do stakeholders have any views on the criteria outlined in AEMO's intending participant guidelines?

Considerations for the intending participant category in relation to new business models, the timing of registration and the deregistration process are discussed below.

New business models for generation

Some stakeholders have circumvented restrictions around the intending participant category by registering as a special purpose vehicle (e.g a company or trust), in order to register as an intending participant with AEMO.

Given the emergence of new business models for generation (such as special purpose vehicles) and new market players, there may be solutions other than the one proposed by AEMO. Consideration will be given to whether the intending participant category broadly remains fit for purpose. For example, AGL suggested an option whereby a developer might have a relationship with a purchaser that could register as an intending participant to access information on the developer's behalf.[68] There may also be scope for developers to be subject to some of the provisions that registered participants are subject to, without expressly being classed as a registered participant.

Stakeholders are encouraged to provide examples of cases where they *have* been able to, and where they *have not* been able to access the information outlined above, including the effect it has had on their projects.

QUESTION 3: NEW BUSINESS MODELS

(a) Do stakeholders have views on special purpose vehicles registering as intending participants?

(b) Can stakeholders suggest any generation business models that should be prohibited from registering as intending participants?

Timing of registration

68 AGL, 2018, Submission to the EGES Stakeholder Paper. AEMO's assessment of this option identified three issues: (i) possible new compliance issues re: confidentiality obligations (ii) potential barrier to developer if a purchaser is required to be lined up before a developer can access information (iii) Less desirable for the person using the information to obtain it via an intermediary.

The AEC suggests that if a new project proponent is required to register as an intending participant, it may be appropriate for registration to occur at a particular time, for example, when submitting a connection application to a NSP.[69] Attaching a timeframe to registration would improve the clarity and consistency of the process and help to ensure that projects are registered at a similar stage in the life-cycle. Providing information to an intending participant at an early stage of development may also help in putting together and assessing the business case for a project.

In considering the appropriate time for the registration of an intending participant to be completed, the interactions with Energy Networks Australia's proposal that project information should be disclosed once a proponent makes a connection enquiry will be considered.

> QUESTION 4: TIMING OF INFORMATION PROVISION
>
> (a) Do stakeholders have any views on when information should be provided to intending participants?

Deregistration

AEMO may currently request that an intending participant proves that they continue to satisfy the criteria for registration. The AEC proposes that intending participants who have not taken any positive steps to develop their project for a specified period should be de-registered.[70] The AEC also considers that a party that has been de-registered must be required to return or destroy any data that they received as an intending participant.

A clear de-registration process may discourage parties that may register as intending participants solely to gain access to information that might give them a commercial advantage (rather than as a precursor to developing generation projects). Requiring de-registered parties to return or destroy information obtained as an intending participant will also reduce the likelihood of confidential information being shared.

> QUESTION 5: DE-REGISTRATION
>
> (a) Do stakeholders have views on the current de-registration process for intending participants? Should it be enhanced?
>
> (b) Do stakeholders have any views on what might be considered 'positive steps' in relation to developing a project?

69 AEC rule change request, p. 3.
70 AEC rule change request, p. 3.

5.1.2 Changes to flow of information from new project proponents to AEMO

The AEC proposes that all intending participants must notify AEMO of any change to information previously provided[71] to AEMO as soon as reasonably practicable (and no later than 10 business days). In applying for registration, an intending participant must provide to AEMO limited project information (for example, project milestones and evidence of government approvals).

This information can change throughout project development.[72] However, as noted in Section 3.1.2, there is currently no NER obligation requiring intending participants to notify AEMO of any changes. This can give rise to a situation where AEMO's records of key information become outdated. The AEC considers that it is essential for AEMO to have up to date information about new projects to ensure the accuracy of AEMO's forecasting and operational processes.[73] Further, to the extent information is shared with the market, accurate information is critical for market participants to assess their own participation in the NEM.

The AEC states that AEMO has had only limited success in contacting new project proponents and asking that they voluntarily provide information about new projects.[74] It is also inefficient for AEMO to monitor developer media releases and regularly review the websites of new project proponents for more information. The AEC considers that AEMO's task of collecting the latest generation project information is made even tougher by the sheer number of projects and the rapid speed of development.

Given the number of proposed projects and potential changes to projects, it may be difficult to enforce any potential requirement requiring updates to be provided within ten business days. So that any obligation to report on proposed project changes is not too onerous the nature of project changes that are required to be reported may need to be restricted to core project data only. The use of an online portal, established by AEMO, that participants could access to provide updates could reduce any potential administrative burden.

QUESTION 6: NOTIFICATION OF PROJECT CHANGES

(a) What are stakeholders views on imposing a requirement on intending participants to provide AEMO with revised information when their project changes? Is it feasible for participants to comply with such a requirement?

(b) Should such a requirement also be extended to new project proponents that are not intending participants?

(c) The AEC propose that AEMO is notified of any changes to projects within ten business days - do stakeholders have any views on this timeframe?

71 As part of the registration process.

72 For example, the maximum capacity of a project may change based on the information received by a developer from a NSP.

73 AEC rule change request, p. 8.

74 AEC rule change request, p. 7. Prior to the person commencing any other registration of generation performance standard processes.

(d) Is there information that would be more important to notify AEMO of as it changes e.g. what would be considered core project data?

(e) Do stakeholders consider that an online portal, as described above, would be useful?

5.1.3 Role of NSPs in coordinating generation connections and facilitating information transfers

As noted in Section 2.1, there is currently a significant amount of generation capacity that is seeking to connect to the network. Investors are planning generation where transmission has limited, or no capacity for the generation to connect. This can be seen in Figure 2.4 in Section 2.4.

Energy Networks Australia notes that in the current environment, multiple parties are seeking to connect to networks in the same location at similar times.[75] In these circumstances, prospective connection applicants may be unaware of opportunities to collaborate and potentially reduce costs by combining with others at the same location or by otherwise benefiting from economics of scale for connection services at a particular location. Currently TNSPs are unable to release any information that would facilitate these types of efficient arrangements even though it may reduce the level of investment and cost involved.

A specific example is the aspect of system strength. As noted earlier, system strength in some parts of the power system has been decreasing as fewer conventional synchronous generators are operating or being commissioned. This can mean that system strength is not sufficiently high to keep the remaining generators stable and connected to the power system following a major disturbance. The relative stability of the power system can also reduce when additional non-synchronous generators connect to the network. In 2017, the Commission made a rule that, amongst other things, requires new connecting generators to 'do no harm' to the security of the power system. This is defined in relation to any adverse impact on the ability to maintain system stability, or on a nearby generating system to maintain stable operation. The rule allows for remediation to be provided as a service to connecting generators. However, we understand that in practice, generators are increasingly being asked by NSPs and AEMO to build synchronous condensers for the purposes of system strength remediation. While NSPs collect information on the impact connecting generators will have on the system they are unable to share this information, or more basic information around proposed project size and location, with other generators. This may contribute to multiple synchronous condensers being built by multiple connecting generators, resulting in a potential degree of overbuild; that is, it may be more efficient for one larger synchronous generator to be built and its fault current to be "shared" between generators. However, generators are typically reluctant to do this given commercial concerns. The sharing of this additional information by NSPs would likely complement the rule made by the Commission in 2017.

75 ENA rule change request, p. 8.

The information Energy Networks Australia is proposing that TNSPs be allowed to share includes:[76]

- proponent name
- proposed size
- location of asset
- estimated completion date
- primary technology (e.g. gas, wind)
- function (e.g. baseload or peaking generator).

By publishing the information listed above in their Transmission Annual Planning Reports (TAPRs), Energy Networks Australia states TNSPs would facilitate the transfer of information in an efficient and coordinated process. TNSPs would then be able to reallocate resources to considering other connection enquiries.[77]

Energy Networks Australia also notes that TNSPs are well-placed to manage the disclosure of connection related information to support more information to support more efficient and comprehensive planning information processes.[78]

QUESTION 7: PUBLICATION OF DATA BY TNSPS

(a) Do stakeholders have any views on the information that TNSPs are proposing to disclose? Should additional information be required to be disclosed? Is any of this information not relevant?

(b) Would this information be helpful to proponents and generators in helping them to coordinate developments?

(c) Do stakeholders consider TNSPs' TAPRs are the appropriate place for the above information to be published?

(d) Do stakeholders consider there may be unintended consequences of publishing this information?

Timing of information provision

Energy Networks Australia proposes that TNSPs be required to publish basic connection information from receipt of a valid connection enquiry made in accordance with the NER. Energy Networks Australia states that publication at this stage:[79]

- Provides potential applicants early notice that other proponents or developers may be interested in connecting in a certain area which creates and opportunity for them to

76 ENA rule change request, p. 15.

77 ENA rule change request, p. 12.

78 ENA rule change request, p. 13. TNSP planning information forms an input to the actioning the current Integrated System Plan (ISP) and developing future ISPs to support the assessment of potential investment in REZs.

79 ENA rule change request, pp. 12-13

collaborate and explore mutually beneficial arrangements prior to lodging a formal connection application.

- Makes other TNSPs and AEMO aware of potential impacts on the network which assists with more efficient network planning.

Energy Networks Australia claims the information is unlikely to be commercially sensitive as this type of information would usually form the basis of development applications and other project related approvals which are publicly available at the time connection enquiries are made.

There is a trade-off regarding when this information should be published. Publishing this data at an early stage, i.e. when a connection enquiry is made, helps to provide maximum notice to other parties and offers the greatest opportunity for coordination. Any changes to the project plan or business case as a result of this coordination are likely to be more easily incorporated at this early stage. However, information provided to the TNSP at an early stage may be of a preliminary nature and may be more prone to change than if it was provided at a later date. From a commercial perspective, there may be a risk that providing this data at early stage may afford rival generators the time to develop strategies to counter the arrival of the new generator.

QUESTION 8: PUBLICATION OF DATA BY TNSPS

(a) Do stakeholders consider the connection enquiry stage is an appropriate time for the above information to be published?

(b) Do stakeholders agree with Energy Networks Australia's statement that basic connection information is not commercially sensitive?

Cooperation amongst generators

Energy Networks Australia notes that while existing regulatory arrangements do allow generators to coordinate their connections to the transmission network, historically competitive tensions[80] and commercial challenges have acted as disincentive for generators to do so.

However, there are a number of issues have recently emerged that would be addressed by better coordination between transmission and generation. These are discussed in detail in Box 3, and solutions to address this coordination are being considered in the Commission's *coordination of generation and transmission - access and charging* review. Some of these issues could partly be addressed by generators acting more cooperatively with each other. Improved information transparency may help with this.

80 For example, "first mover" advantage, with generators competing for transmission network capacity (given the current open access arrangements).

BOX 3: THE NEED FOR COORDINATION

Investors in generation are currently experiencing a range of issues that highlight the need for better coordination between transmission and generation:

- **Congestion** - Investors are planning generation where transmission has limited or no capacity for the generation to connect, which may limit the ability of the lowest cost generators to access the wholesale market. This exacerbates congestion, resulting in costs for consumers.
- **Outages** - TNSPs are required to maintain and upgrade their equipment in order to provide services in line with relevant network performance requirements, which often requires planned outages on the power system to facilitate the safe maintenance and upgrade of network infrastructure. Where outages are extended or prolific, this can cause significant effects on a generator's revenue - with no compensation available.[a]
- **Marginal loss factors** - To investors, these represent a "multiplier" of revenue - the marginal loss factor calculates the difference between how much is produced by a generator, which is measured at its meter, and how much is estimated to be delivered to customers at the regional reference node. This then affects how much is paid by AEMO to the generators, which impacts its revenue stream and therefore the generator's commerciality.[b]
- **System strength** - System strength in some parts of the power system has been decreasing as conventional synchronous generators are operating less or being decommissioned. This can mean that system strength is not sufficiently high to keep the remaining generators stable and connected to the power system following a major disturbance. The relative stability of the power system can also reduce when additional non-synchronous generators connect to the network. In accordance with a rule made by the Commission in 2017, new connecting generators are required to 'do no harm' to the security of the power system.[c] The rule allows for remediation to be provided as a service to connecting generators. However, we understand that in practice, generators are increasingly being asked to build synchronous condensers for the purposes of system strength remediation. Multiple synchronous condensers are being built by multiple connecting generators - it may be more efficient for one larger synchronous generator to be built and its fault current to be "shared" between generators.[d]
- **Disorderly bidding** - The absence of intra-regional price signals can give rise to disorderly bidding. Disorderly bidding arises when generators know that the offers they make will not affect the settlement price they receive as a result of congestion between them and the rest of the market.[e] This can result in inefficient dispatch through higher cost generation resources being dispatched instead of lower cost resources.
- **Storage** - Disorderly bidding may become particularly prevalent and result in inefficiencies if grid scale storage devices become commonplace in the NEM. Storage devices behind a constraint have an incentive to disorderly bid (as a seller of electricity, i.e. analogous to a generator) in order to receive the region wide market price.[f]

- **Connection enquiries** - AEMO, TNSPs and DNSPs are receiving an unprecedented volume of connection enquiries, which has created some resourcing issues at these organisations. As a result developers are experiencing increased uncertainty, costs and delays.
- **Generators sharing the costs of transmission infrastructure or REZs** - Currently, connecting parties are directly responsible for the payment of costs associated with any new (or upgraded) equipment to enable their connection to the transmission network and to meet their performance standards. These are "connection assets", and are paid for by the connecting party or parties. There are existing mechanisms in place to facilitate the coordination of connection assets, including from prospective REZs in the shared network, such as the arrangements for scale efficient network extensions.[g] The existing scale efficient network extension framework has been unused since it was established in 2013 due to generator commercial tensions and disparate generator project timing.

Note: a) TNSPs provide information on the timing of planned outages through AEMO's network outage scheduling tool and in 13 month plans. b) Given the large number of generators connecting at the moment, and the fact that marginal loss factors inherently change after a new generator connects to the network, this is resulting in significant year-on-year fluctuations in the marginal loss factors in some places. For example, the Broken Hill GT 1 generator experienced a change in loss factors of more than 17 per cent between 2017-18 and 2018-19. c) This is defined in relation to any adverse impact on the ability to maintain system stability, or on a nearby generating system to maintain stable operation. d) Also, given these assets are private and operated only by the generators when they are exporting active power to the grid, this could result in a shortfall when the synchronous condensers are shut down (e.g. solar farms at night). e) Disorderly bidding can involve a generator behind a constraint bidding at the market floor price to maximise its dispatch quantity. f) Not only might this be more inefficient than were the storage not there (when the storage device has a higher resource cost than a generator which it displaces in dispatch), it is even more inefficient compared to a scenario where the storage device charged. g) For more information refer to Scale Efficient Network Extensions project page, available at: https://www.aemc.gov.au/rule-changes/scale-efficient-network-extensions

In its rule change request Energy Networks Australia identifies recent changes to system security arrangements as being a key driver - with greater coordination likely as generators seek ways to manage system strength obligations. Energy Networks Australia believes TNSPs are well-placed to facilitate these cooperative approaches and improved outcomes through efficient, consistent and coordinated information sharing. A coordinated approach to generation investment should minimise the risk of asset stranding.

QUESTION 9: COOPERATION AMONGST GENERATORS

(a) Do stakeholder consider the publication of data by TNSPs, as proposed by Energy Networks Australia, will assist generators to coordinate with each other?

5.2 Confidentiality provisions

The AEC's proposal seeks to clarify that AEMO may publish confidential information that enters the public domain.[81] By clarifying that AEMO may publish confidential information (irrespective of if it is protected information) once it is in the public domain, the proposal

81 AEC rule change request, p. 9.

seeks to improve the accuracy of AEMO's data reporting (either through forecasts, reports or the generator information page).

The proposed changes merit consideration of the circumstances in which the confidential information reached the public domain and the validity of such data. Also there may be confusion around what information AEMO is expected to publish if data that has reached the public domain is inconsistent with AEMO's records.[82]

The AEC's proposal also seeks to require parties to notify AEMO (as soon as practicable and no later than ten days) once they become aware that confidential information related to their project has reached the public domain. So as not to be too onerous the proposed rule does not require parties to undertake media monitoring to determine if information has been released.

Given potential confidentiality concerns[83], the Commission is seeking stakeholders' views on the extent to which information typically published for new projects in the generation information page is likely to be commercially sensitive. Information fields could include:

- Project owner
- Unit status
- Nameplate capacity
- Technology type
- Fuel type
- Dispatch type
- Full commercial use date.

> QUESTION 10: CONFIDENTIALITY PROVISIONS
>
> (a) What are stakeholders' views on the proposed changes to confidentiality provisions?
>
> (b) Do stakeholders think any of the information listed above is likely to be commercially sensitive?

5.2.1 Exceptions to confidentiality provisions

As noted in Section 2.4.4, two exceptions (among others) to the confidentiality requirements are: Public Domain and Consent. In its rule change request Energy Networks Australia asserts that the associated practicalities and limited scope of these exceptions makes them ineffective in achieving efficient and timely assessment of connections that deliver optimal outcomes at a lower cost to consumers.[84]

82 There may be instances where preliminary or data not yet validated reaches the public domain.
83 Such as those expressed by a few stakeholders as part of the EGES
84 ENA rule change request, p. 5.

It is worth noting, the existence of these confidentiality exceptions was key to the Commission's reasoning in determining not to make the rule as proposed by Grid Australia in 2009 (discussed in Appendix B).

Public domain

Energy Networks Australia states that to apply the public domain exclusion TNSPs are required to undertake searches of various publicly available data sources (e.g. proponent project announcements and other media releases, project planning and development applications) to identify relevant project information and subsequent steps to verify the information to the associated enquiry or application. Energy Networks Australia notes this process is inefficient in terms of time and use of TNSPs' resources, and adds to the complexity.[85]

Consent

Energy Networks Australia notes TNSPs' assessment of technical requirements and connection, network and system planning processes is greatly complicated by the increased volume of connections, with multiple proponents seeking to connect in similar locations at similar times moving along different timeframes. In these circumstances the Energy Networks Australia considers it is not practical, efficient or possible for TNSPs to obtain consent from multiple proponents to enable connection information to be shared under the existing general confidentiality provision exceptions to coordinate connections and optimise outcomes.[86]

QUESTION 11: CONFIDENTIALITY EXCEPTIONS

(a) Do stakeholders have any views on the current confidentiality exceptions?

BOX 4: INTERACTIONS WITH AER'S TAPR GUIDELINES

Energy Networks Australia considers its proposal to be complementary to the objectives of recent changes to TAPR requirements as outlined in the Australian Energy Regulator's (AER) new TAPR guidelines.[a]

The new TAPR Guidelines require TNSPs to provide detailed information relating to transmission connection points, transmission line segments and new generator connections.[b] The provision of this information is intended to provide generators and large transmission customers with practical and consistent information they need to make informed connection decisions and support non-network service providers offer alternative solutions to identified transmission needs. Energy Networks Australia asserts the confidentiality provisions under the Rules restricted the potential broader benefits that the AER's review of the TAPR Guidelines was seeking to achieve to facilitate improved and consistent provision of information by

85 ENA rule change, pp. 6-7.
86 ENA rule change, p. 8.

TNSPs across the NEM.

Note: a) The final decision on the guidelines was made on 18 December 2018. b) The data required includes historical and forecast demand information for transmission network connection points and details about the location and size of applicant generator connections.

5.3 Improvements to the generation information page

In its rule change request the AEC recognises the renewed importance of the generation information page given there are currently too many proposed generation projects in the NEM for an individual participant to identify and monitor (to assess the likely impact of these projects on their business).[87]

The AEC notes the irregularity with which the generation information page is updated. The longest time between consecutive revisions is 378 days while the shortest time is 70 days. The AEC consider that the absence of regular and predictable reporting reduces the value of the page and the market's confidence that data provided remains current and accurate.

The frequency of reporting is also an issue, the AEC considers AEMO's current six month commitment to updating the page is not appropriate given that renewable projects can be completed in a matter of months.[88] In particular, the AEC argues more frequent updates to the page would allow for more precise reporting of unit status.[89]

If intending participants were required to provide project updates to AEMO as outlined earlier in Section 3.1.2, the generation information page may be the ideal mechanism to report these updates to the market.

In considering whether to require AEMO to update the generation information page on a more regular basis the Commission will consider the trade-off between the benefits of more regular reporting (such as more accurate information) with the increased administrative costs on AEMO.

QUESTION 12: AEMO'S GENERATION INFORMATION PAGE

(a) Should AEMO be required under the NER to maintain the generation information page?

(b) Should AEMO be required to update the generation information page on a regular basis? And if so, how frequently, e.g. monthly, bi-monthly or quarterly?

87 AEC rule change request, p. 5.

88 For example, Chillamurra Solar Farm was constructed in four months. Accessed at: http://jamartin.com.au/project/chillamurra-solar-farm/ on 16 March 2019.

89 AEC rule change request, pp. 5-6.

6 LODGING A SUBMISSION

Written submissions on the rule change request must be lodged with Commission by 23 May 2019 online via the Commission's website, www.aemc.gov.au, using the "lodge a submission" function and selecting the project reference code ERC0257.

The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated.

Where practicable, submissions should be prepared in accordance with the Commission's guidelines for making written submissions on rule change requests.[90] The Commission publishes all submissions on its website, subject to a claim of confidentiality.

All enquiries on this project should be addressed to Thomas Lozanov on (02) 8296 7824 or thomas.lozanov@aemc.gov.au.

90 This guideline is available on the Commission's website www.aemc.gov.au.

ABBREVIATIONS

AEC	Australian Energy Council
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Commission	See AEMC
EGES	Emerging generation and energy storage
ESOO	Electricity Statement of Opportunities
ENA	Energy Networks Australia
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Rules
REZ	Renewable energy zone
Rules	see NER
SENE	Scale efficient network extensions
TAPR	Transmission Annual Planning Report
TNSP	Transmission Network Service Provider

A BUSINESS MODELS FOR GENERATION PROJECTS

As noted in Section 2.1, Australia's energy sector is transforming. Traditional energy generation, network and retail models are adapting to changing market and system dynamics. As part of this transformation, there has been an emergence of new development approaches, financing structures and operational arrangements for new generation assets.

Some of the new business models, or 'paths to market', for generation assets emerging in response to risks and opportunities in the market are summarised below. It is important for the NER to provide a flexible framework that accommodates different business models, where appropriate, to support efficient investment and operation of electricity services. In many cases the different business models reflect the different characteristics of different generation technologies.

Common business delivery models for generation, some established, some new, include:[91]

- **Construct Only** — A principal completes a design for a project, and subsequently engages a contractor to build the project consistent with the design.
- **Design and Construct** — A principal engages a contractor who assumes the risk for both the design and construction of a project.
- **Engineer, Procure, Construct (EPC) and maintain (EPCM)** — Under an EPC model, a principal engages a contractor to design, build and deliver a project in complete operational condition. Commonly used in projects where significant engineering expertise is required. Under an EPCM model, a principal typically engages a contractor as a consultancy or via a project management agreement. The contractor generally does not take full responsibility for the works of the project.
- **Alliances** — Participants on a project cooperate and collectively share in the project's risks and benefits. This model is typically used in complex projects, or projects which fluctuate in scope.
- **Public Private Partnerships (PPP)** — PPPs allow governments and the private sector to work together and share resources on projects identified as in the national interest. The private sector typically establishes a Special Purpose Vehicle (SPV); a financing structure typically used for large infrastructure projects. SPV usually involve the creation of a legal entity with specific objectives.[92] By establishing a SPV as the contracting entity for any of the design, construction, financing, operation and maintenance elements of a project, the project's principal, equity investors, debt providers and other sources are all able to efficiently contribute and own the asset.
- **Build, Own, Operate and Transfer (BOOT)** — After constructing an asset, a contractor retains ownership of the project. This transfer of ownership, operating and funding risk to the contractor distinguishes the BOOT model from others, as the contractor operates the asset for a designated term.

91 McCullough Robertson Lawyers, Renewable Energy in Australia – Funding and Investment, June 2017, pp. 20-21.

92 SPVs are commonly used to isolate a parent firm from financial risk.

B RELEVANT COMMISSION DECISIONS

Two decisions made by the Commission that are relevant to the rule change requests include:

- *Confidentiality provisions for network connections rule 2009.*[93]
- *Generator three year notice of closure rule 2019.*[94]

B.1 Confidentiality provisions for network connections

On 1 April 2009 Grid Australia made a rule change request that sought to amend clause 5.3.8 of the NER to allow NSPs to disclose:

- confidential information to third parties under limited circumstances[95] authorised in the Rules (i.e. by drawing a link to the confidentiality exclusions in clause 8.6.2 of the NER)
- basic information regarding connection applications that under existing arrangements was treated as confidential information by NSPs.

In the final rule, the Commission adopted Grid Australia's proposal to provide an explicit cross-reference in clause 5.3.8 of the NER to the confidentiality exceptions to the general confidentiality obligations on registered participants under rule 8.6 of the NER. The Commission considered the cross-reference in clause 5.3.8 of the NER will promote efficient coordinated connection applications.

The Commission did not adopt Grid Australia's proposal to include a new clause that would allow NSPs to disclose basic generator information regarding the size, location, completion date, primary technology and broad function in respect of an application to connect. The Commission noted:[96]

- NSPs may already publish this information[97] in certain circumstances to the extent permitted by the confidentiality exclusions to rule 8.6 under clause 8.6.2(a) (Public domain) and 8.6.2(c) (Consent).
- There was a high likelihood that connection information will be public prior to a connection agreement.[98]
- There were legitimate commercial reasons for some connection information to be maintained in confidence — in particular, to protect a generator's 'first mover' advantage.[99]

Therefore, the Commission considered there was sufficient transparency and public information available for prospective connecting generators and did not consider it

93 *For more information see: https://www.aemc.gov.au/rule-changes/confidentiality-provisions-for-network-connections.*

94 *For more information see: https://www.aemc.gov.au/rule-changes/generator-three-year-notice-closure.*

95 These circumstances include: information in the public domain, information provided to an employee, advisor or consultant, and information where consent is given to disclose.

96 AEMC, 2009, *Confidentiality Provisions for Network Connections, final determination,* p. 19.

97 The NSP receives basic generator information by virtue of Schedule 5.4 of the NER.

98 With connection information likely to be published in AEMO's ESOO or TNSPs' annual planning reports.

99 A failure to maintain adequate protection may weaken the confidence of generators who wish to invest in the market.

appropriate that a NSP disclose or publish information that has a legitimate claim of confidentiality.

The Commission also did not adopt Hill Michael Associates Consulting's proposal to allow the disclosure of data and information by NSPs directly to consultants.[100] This was because consultants may obtain information with the consent of registered participants who provided the relevant information.

B.2 Generator three year notice of closure

On 6 March 2018, the Chair of the Energy Security Board, made a request to change the NER to assist in managing the retirement of the existing coal-fired generators as they reach the end of their economic lives.

In response, the Commission made a final rule requiring generators to advise AEMO of the expected closure year for all their scheduled and semi-scheduled generation units. The rule also required generators to give AEMO at least three years' notice of their intention to permanently close a generating unit unless they are granted an exemption by the AER. The Commission considered the provision of this information to the market would promote efficiency in the investment in and operation of generation capacity and demand response in the NEM because it would provide market participants a clearer expectation of future generation capacity and how best to respond/adapt to changes.[101]

The AEC sees its rule change request as a complementary measure to the generator three year notice of closure rule change. Whereas the three year notice of closure rule change sought to increase transparency at the end of the generator life cycle, the AEC proposal aims to increase transparency at the start of the process.

100 This proposal was made by Hill Michael Associates Consulting in a submission following the initiation of the rule change.

101 AEMC, 2019, Generator three year notice of closure rule change, final determination, pp. 10-11.