

GENERATION INFORMATION GUIDELINES

CONSULTATION PAPER

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EXECUTIVE SUMMARY

The publication of this Issues Paper commences the first stage of the Rules consultation process conducted by the Australian Energy Market Operator (AEMO) to develop Generation Information Guidelines (the Guidelines) under clause 3.7F the National Electricity Rules (NER).

As required under NER clause 11.117.3(b), AEMO published Interim Generation Information Guidelines (the Interim Guidelines) on 5 December 2019. The Interim Guidelines were developed without formal consultation, and the publication of this Consultation Paper commences the development of new Guidelines, via a full Rules consultation procedure process. The requirements for the contents of both Guidelines is the same, covering three areas:

1. Particulars of AEMO's Generation Information page, including the contents, data sources and the intervals for updating the page.
2. The provision of Key Connection Information (KCI) to AEMO by Transmission Network Service Providers (TNSPs), including the manner, timing and format of the KCI submission.
3. Guidance on the information necessary to be classified by AEMO as a Project Developer.

Regarding issues one and three, AEMO proposes to adopt the same provisions contained in the Interim Guidelines, noting that Intending Participants have similar obligations as those of Registered Participants to submit ESOO information under NER 3.13.3A. Regarding the manner in which TNSPs provide KCI to AEMO, AEMO proposes to implement a robust, reliable and secure solution, replacing email submission of a spreadsheet.

AEMO invites stakeholders to provide feedback on whether the provisions contained in the Interim Guidelines are appropriate for the purpose of the Generation Information Page, and to meet industry expectations in general.

The questions below can be used as a guide.

Stakeholders are invited to submit written responses on the issues and questions identified in this paper by 5.00 pm (Melbourne time) on 3 April, 2020, in accordance with the Notice of First Stage of Consultation published with this paper.

Questions for consultation

- Question 1** Considering the intended purpose of the Generation Information Page, are the inclusions and exclusions of the various contents, data sources and guidance appropriate and well explained?
- Question 2** Given the purpose of the Generation Information Page as an information resource as outlined in Section 2.1, is the approach for reporting the current levels of existing and new developments of NEM generation capacity within the "Summary Status" categories appropriate?
- Question 3** AEMO could ask for a 10-year seasonal scheduled capacity forecast for all new developments.
- What are the pros and cons for such as request?
 - In particular, is it feasible for participants to estimate this with a reasonable level of confidence?



- How might AEMO validate the information provided?

Question 4 Is the application of the commitment criteria used to determine whether a generation project is categorised within either the NEM Generation Summary Status of “Proposed” or “Committed” appropriate? And if not:

- What alternative approaches could be considered?
- What data should be used for such assessments and where should it be sourced?

Question 5 What additional Generation Information from data collected through the Generator Survey process should AEMO consider reporting on? Should AEMO seek additional data from participants for reporting purposes only?



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1. STAKEHOLDER CONSULTATION PROCESS

AEMO is consulting on the development of the Guidelines in accordance with the Rules consultation process under NER 8.9. This consultation process follows the publication of the Interim Guidelines on 5 December 2019. AEMO was not required to undertake any public consultation on the development of the Interim Guidelines (under NER 11.117.3(c)) but did engage directly with TNSPs to seek comment.

AEMO's indicative timeline for this consultation is outlined below. Dates may be adjusted depending on the number and complexity of issues raised in submissions and any meetings with stakeholders.

Deliverable	Indicative date
Consultation Paper published	27 February, 2020
Submissions due on Consultation Paper	3 April, 2020
Draft Guideline published	5 May, 2020
Submissions due on Draft Guideline	10 June, 2020
Final Guideline published	23 July, 2020

Prior to each of the submission due dates (above), stakeholders can request a meeting with AEMO to discuss any issues and proposed changes raised.

This consultation process aims to ensure that:

- the Generation Information page¹ continues to be a valuable resource to the market,
- new requirements regarding KCI are implemented as effectively as possible, and
- appropriate guidance is provided for the process of being deemed a project developer.

Note that Appendix A includes a glossary of terms used in this Consultation Paper.

¹ See <https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-planning-data/generation-information>.



2. BACKGROUND

2.1 NER requirements

Under NER 3.7F(e), AEMO is required to develop, publish on its website and maintain guidelines in relation to the Generation Information page (the Guidelines). NER 3.7F(e) clauses (1-4) outline four issues that the guideline must include, being:

- the type of information to be included in the Generation Information page and the source of the information;
- the intervals for updating the Generation Information page;
- the manner, timing and format in which TNSPs will provide KCI to AEMO;
- guidance as to the evidence that is required to be submitted to AEMO to apply to be a project developer for the purpose of accessing standing data under NER 3.13.3 clauses (k), (k1), (l), (11) and (p1) only.

2.2 Context for this consultation

On 24 October, 2019, the Australian Energy Market Commission (AEMC) made a final rule (*National Electricity Amendment (Transparency of new projects) Rule 2019 (No. 8)*) to improve publicly available information about new grid-scale generation projects. The rule also allows a broader set of generation developers direct access to important system information required to build grid-scale assets.

As part of the transitional arrangements, AEMO was required to develop Interim Guidelines² by 5 December, 2019, which will remain in place until the publication of the final Guidelines developed through this consultation.

The existence of the Interim Guidelines changes the context of this Consultation Paper, in that proposed content is already available for comment. This Consultation Paper includes additional detail about long term solutions for TNSPs to submit KCI data to AEMO, whereas the Interim Guidelines has only provided for a temporary submission mechanism.

The Interim Guidelines are available on the Generation Information page on AEMO's website and is also published with this Consultation Paper. Some of the questions refer directly to the Interim Guidelines.

² See https://www.aemo.com.au/-/media/Files/Electricity/NEM/Planning_and_Forecasting/Generation_Information/Interim-Generation-Information-Guideline.pdf.



3. GENERATION INFORMATION PAGE

AEMO has published the Generation Information page on its website since July 2012.

The Interim Guidelines outline the requirements for the Generation Information page as follows:

Section 2 - Requirement and purpose;

Section 3 - Content to be published and source;

Section 4 - Updates and timing;

Section 5 – Key Connection Information.

3.1 Sources for the Generation Information page

As outlined in Section 3.1 of the Interim Guidelines, AEMO conducts a comprehensive generator survey process (the Generator Survey). The Generator Survey is a central part of the information gathering process contemplated in rule 3.13.3A(d) (related to the development of the Electricity Statement of Opportunities (ESOO)) and AEMO's Reliability Forecast Guideline.³ A major Generator Survey is completed annually, with updates requested quarterly, or as soon as practicable when Participants become aware there is a material change in the information previously provided.

Under rule 3.13.3A(e), all Registered Participants are to provide the information to AEMO. AEMO also contacts known proponents of new generation projects to seek submission of a Generator Survey. (In future, new generation projects that require a new connection under NER 5.3.8 will be identified from the Key Connection Information provided to AEMO by the TNSPs as outlined in section 3.2.1 Key Connection Information, below.)

3.2 Contents of the Generation Information page

As outlined in Section 3.2 of the Interim Guidelines, the Generation Information page includes data collected via the Generator Surveys, either raw or further aggregated to protect confidential information, as necessary.

As shown in Table 1 below, the Generation Information page presents a summary of existing generating units (or generating systems) by NEM dispatch type (scheduled (S), semi-scheduled (SS) and non-scheduled (NS)) according to six broad Summary Status categories (Existing, Announced Withdrawal, Upgrade / Expansion, Committed, Proposed and Withdrawn).

AEMO differentiates between Committed and Proposed categories using five project commitment criteria, covering site acquisition, contracts for major components, planning and other approvals, financing and dates (for construction and full commercial use). Further detail about these criteria is included in the Background Information tab of the Generation Information "NEM" spreadsheet published on the Generation Information page.

³ Reliability Forecast Guideline

Table 1 Generation information published according to Summary Status and NEM Dispatch Type

Summary Status	List of generating units	Project commitment status	10-year seasonal forecast of generating unit capabilities ⁴	Changes in generating unit capability and service availability ⁵	Expected closure year
Existing	S, SS, NS	n/a	S, SS	S, SS, NS	S, SS
Announced Withdrawal	S, SS, NS	n/a	S, SS	S, SS, NS	S, SS
Upgrade / Expansion	S, SS, NS	n/a	n/a	S, SS, NS	n/a
Committed	S, SS, NS	S, SS, NS	S, SS	S, SS, NS	n/a
Proposed	S, SS, NS	S, SS, NS	n/a	n/a	n/a
Withdrawn ⁶	S, SS, NS	n/a	S, SS	n/a	S, SS

3.2.1 Key Connection Information

The *National Electricity Amendment (Transparency of new projects) Rule 2019 (No. 8)* introduced a new requirement for KCI from Connection Applicants to be published on the Generation Information page (rule 3.7F(b)(3)).

Key Connection information is provided to TNSPs by Connection Applicants, who in turn submit it to AEMO in accordance with the Guidelines. Section 5 of the Interim Guidelines outlines a temporary process and Section 4.1 of this Consultation Paper, below outlines AEMO’s proposed long term solution.

3.3 Timing of updates to the Generation Information page

NER 3.7F(d) states that AEMO must update the information contained in Generation Information page no less than quarterly, i.e. at intervals of at most up to 1 quarter (3 months) of a year.

Under NER 3.7F(e)(2), the intervals for updating the Generation Information page are to be included in the Guidelines. Accordingly, Section 4.1 of the Interim Guidelines specifies that updates within the Interim period will occur quarterly in January, April and July 2020. This timing revolves around the need for the major update of the Generation Information page to occur in July each year, in support of production of the ESOO which is required by 31 August each year.

AEMO proposes to continue to update the generation information page no less than quarterly, as required under NER 3.7F(d), and more frequently in the event that a Participant notifies AEMO of a material change to information required for publication under NER 3.13.3A(a) as outlined in the following section.

⁴ The forecast indicates the capability (and hence availability) of generating units under seasonal conditions within the given Demand Region. Refer to the Scheduled Capacities table in the NEM data file, available on AEMO’s Generation Information Page: <https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-planning-data/generation-information>.

⁵ The Asset Type and Unit Status report the generating unit capability and service availability at the time of the SurveyEffectiveDate. Refer to the Existing Generation and New Developments table in the NEM data file, available on AEMO’s Generation Information Page: <https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-planning-data/generation-information>.

⁶ Information regarding Withdrawn generating units is maintained within relevant tables for a period of up to 1 year after permanent withdrawal from Service.



3.4 Updates to information

3.4.1 Information from Generator Surveys

Section 4.2 of the Interim Guidelines places a requirement on Generators (including Intending Participants) and project developers to inform AEMO of corrections required to the information (other than KCI) published on the Generation Information Page regarding their existing or proposed generating systems, where that information is inaccurate or misleading, incomplete or out of date. (For Intending Participants, this requirement is subject to the Intending Participant being reasonably able to provide the relevant information as under the Schedule of rights and obligations of Intending Participants⁷.) This must occur as soon as practicable and within no more than 10 business days of becoming aware.

The Interim Guidelines further note that this requirement is consistent with the equivalent provision for Registered Participants to update information collected for the ESOO and other purposes, as required under NER 3.13.3A(f).

3.4.2 Updates and material changes to KCI

As outlined in section 4.3 of the Interim Guidelines, rules 5.3.8(d1) and 5.3.8(e) provide that a Connection Applicant must promptly notify its Network Service Provider of any material change to information contained in or relevant to a connection enquiry or an application to connect respectively. The Interim guideline further states that this includes any changes to KCI.

For these purposes, the Interim Guidelines provide examples of what constitutes a material change (while noting that this guidance is not limiting or prescriptive on what constitutes a material change). Those examples are shown in Table 2, below.

The process by which TNSPs provide updated information to AEMO is addressed in Section 4 of this Consultation Paper.

Table 2 Examples of material changes to key connection information

Category of KCI	Example of material change
Name, ABN and ACN of proponent	Any change of name, ABN or ACN of proponent
Type of <i>plant</i> in respect of each relevant <i>generating unit</i>	Any change of: <ul style="list-style-type: none"> • Generating Unit Energy Conversion Technology • Generating Unit Fuel Type
Site location or preferred site location	Any change of: <ul style="list-style-type: none"> • Site Location Description, and / or • Latitude / Longitude coordinates more than 5 kilometres from previously advised preferred location
Maximum power <i>generation</i> of whole <i>plant</i>	Change to maximum power generation of ± 5 megawatts.

⁷ Schedule of rights and obligations of Intending Participants, July 2010, available at: https://www.aemo.com.au/-/media/files/electricity/nem/participant_information/new-participants/schedule-of-rights-and-obligations-of-intending-participants.pdf?la=en



Category of KCI	Example of material change
Forecast completion date of proposed <i>connection</i>	Change to forecast completion date (earliest and / or latest) values, (where the original or revised Forecast completion date falls within the next 12-month period), by: a) one month or more, and / or b) the subsequent Financial Year in which the forecast completion date would occur.
Technology of each relevant generating unit	Change of Electricity Generation Technology Type and / or manufacturer
Other information relevant to a <i>connection enquiry or application to connect</i>	When a connection enquiry or application to connect is "Withdrawn"

4. PROVISION OF KEY CONNECTION INFORMATION TO AEMO BY TNSPS

Rule 3.7F(e)(3) states that the Guidelines must specify the “manner, timing and format” in which KCI is to be provided to AEMO by TNSPs. Each of these issues was dealt with separately in the Interim Guidelines.

As outlined below, for the Guidelines being developed through this consultation, the timing and format of how TNSPs provide KCI to AEMO will closely mirror the parameters outlined in the Interim Guidelines. However, an alternative manner in which TNSPs will provide KCI is proposed, with an Application Program Interface (API) and webform solution proposed instead of the current email submission.

4.1 The manner of submission of Key Connection Information

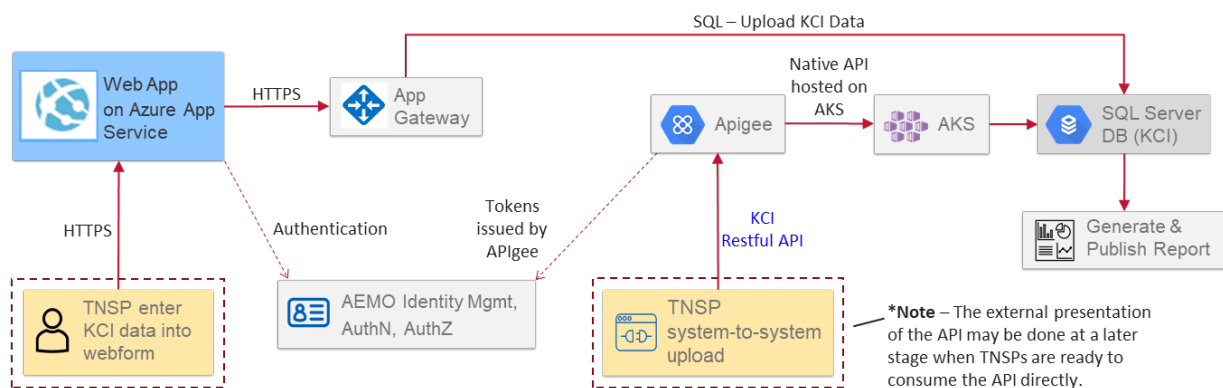
Like most enterprise businesses, AEMO has embraced the use of APIs as the connective technology to provide IT systems integration. In AEMO’s experience, API’s provide an industry standard, secure and consistent way to connect to and interact with the required IT systems. AEMO currently uses APIs for a number of participant and industry-facing portals, such as the Metering Settlement and Transfer Solution (MSATS) system.

AEMO acknowledge that the use of the API channel may take some development and implementation time before the TNSPs are ready to consume this method. As such AEMO will, in the first instance, implement a web portal that utilises web forms for the secure and convenient entering of the KCI data. This webform capability will be provided initially to replace the existing email and spreadsheet method to obtain KCI data.

Once the webform capability is released, AEMO will develop a KCI-specific API(s) that TNSPs will call to upload the KCI information. This solution will replace the webform and be the default method for TNSPs to provide KCI data to AEMO. Once available, AEMO proposes to require data to be uploaded in JavaScript Object Notation (JSON) format and will adopt the industry-standard Representational State Transfer (REST) approach. AEMO use the Google Apigee⁸ API gateway service to provide API management and security. The API solution will be internet facing.

As shown in Figure 1, below, AEMO envisions that the strategic solution will be a system-to-system upload of KCI data utilising the TNSP middleware or other integration systems to authenticate and connect to the KCI API. A login to a KCI web portal will initially be provided to allow the TNSP to manually enter the KCI data securely via a webform. Once the KCI is submitted either via the webform or the REST API, AEMO will validate the uploaded data using automated business rules and then will load the data into our forecasting database. Data from the forecasting database will be extracted and used to create KCI datafiles published on the generation information page.

Figure 1 KCI API high-level conceptual view



⁸ Google Apigee is a platform for developing and managing APIs. More information is available at: <https://cloud.google.com/apigee>.



4.2 The timing of submission of Key Connection Information

Rule 3.7F(d) stipulates that “AEMO must update the information contained on the Generation Information page no less than quarterly”. Consistent with this requirement, section 4.1 of the Interim Guideline (which, as previously stated, is in effect until publication of the final Guideline by 31 July 2020) states that AEMO will publish updates to the Generation Information page in January 2020, April 2020 and July 2020. To facilitate these updates, the deadlines for TNSPs to submit KCI data to AEMO under the Interim Guideline are 19 December 2019, 19 March 2020 and 19 June 2020⁹.

As stated in section 3.3, above, AEMO proposes to continue with at least the same (quarterly) frequency of updates to the Generation Information page. Accordingly, it is proposed to retain the same (or similar) deadlines for the submission of KCI data by TNSPs to AEMO.

4.3 The format of submission of Key Connection Information

Section 5.4 of the Interim Guideline outlines the format of the KCI to be submitted by TNSPs to AEMO and explains that TNSPs must use best endeavours to ensure that KCI complies with the required format and is free from errors.

AEMO has provided a template KCI datafile (Excel spreadsheet) to TNSPs, for use while the interim Guidelines are in effect.

Table 4 in the Interim Guideline specifies the format in which the different elements of KCI must be provided to AEMO, including data field names and format values. AEMO proposes to retain the same format for the different elements of KCI in the Guidelines being developed as part of this consultation.

⁹ The TNSP KCI Submission deadline in preparation for the 2020 ESOO will be earlier than typical, due to the additional preparation required for AEMO to ensure it meets responsibilities under the Retailer Reliability Obligation (RRO) rule changes.



5. GUIDANCE ON EVIDENCE REQUIRED TO BE A PROJECT DEVELOPER

5.1 The creation of a Project Developer in the NER

The Final Rule stemmed from three consolidated rule changes, one of which was initiated by AEMO.¹⁰ AEMO's proposed rule change sought to address the fact that a person building new generation plant, but who expects to sell those assets before they begin exporting electricity, is not an Intending Participant. The Intending Participant registration category exists to facilitate the sharing of confidential power flow information with developers, without which a project cannot be fully designed. The inability of developers using this model to become Intending Participants was also the subject of the Australian Energy Council's rule change proposal.¹¹

The Final Rule responded to proposed changes to the Intending Participant category by creating a new definition within the NER, the project developer.¹² Rule 3.13.3AA deems project developers to be Registered Participants for the purposes of the rules related to sharing the relevant power system data only.¹³

The AEMC's Final Determination makes clear that if a developer intends to sell the company that is developing the assets (sometimes known as a Special Purpose Vehicle), that company is the Intending Participant and can be assessed and registered by AEMO accordingly.¹⁴ The project developer classification is for use only where the person developing the assets intends to sell the assets before they are connected to the NEM.

It should be noted that Section 4.2 of the Interim Guidelines places a requirement on Generators (including Intending Participants) and project developers to inform AEMO of corrections required to the information (other than KCI) published on the Generation Information Page regarding their existing or proposed generating systems, where that information is inaccurate or misleading, incomplete or out of date. (For Intending Participants, this requirement is subject to the Intending Participant being reasonably able to provide the relevant information as under the Schedule of rights and obligations of Intending Participants¹⁵.) This must occur as soon as practicable and within no more than 10 business days of becoming aware.

The Interim Guidelines further note that this requirement is consistent with the equivalent provision for Registered Participants to update information collected for the ESOO and other purposes, as required under NER 3.13.3A(f).

5.2 Guidance on evidence required to be a project developer

Rule 3.13.3AA(c) gives AEMO the power to identify a person as a project developer if AEMO "is reasonably satisfied by the evidence provided" that the person intends to develop plant to be connected to a transmission or distribution system, in respect of which another person (other than an intermediary) must or may be registered as a Registered Participant.

Rule 3.7F(e)(4) stipulates that the Guidelines must contain "guidance on the evidence that is required to be submitted to AEMO for the purposes of clause 3.13.3AA(c)". That guidance is provided in Section 6 of the Interim Guidelines. The guidance includes the general nature of the assessment process and the functions

¹⁰ "Electricity rule change proposal: Providing NEM information to project developers", December 2018, available at: <https://www.aemc.gov.au/sites/default/files/2019-01/Rule%20change%20request.pdf>

¹¹ "Transparency of New Projects Rule Change Request", December 2018, available at: https://www.aemc.gov.au/sites/default/files/2018-12/Rule%20change%20request_4.pdf

¹² See NER Chapter 10 – Definitions.

¹³ Specifically, NER 3.13.3(k), (k1), (l), (l1) and (p1) only.

¹⁴ AEMC, "Transparency of New Projects: Final Determination", October 2019, 26.

¹⁵ Schedule of rights and obligations of Intending Participants, July 2010, available at: https://www.aemo.com.au/-/media/files/electricity/nem/participant_information/new-participants/schedule-of-rights-and-obligations-of-intending-participants.pdf?la=en.



of AEMO case managers. Guidance is also provided about types of evidence that AEMO generally requires to assess applications, including:

- evidence that the applicant has a long-term arrangement in place to use the land on which the plant is to be built;
- evidence of a valid connection enquiry with the local NSP and a positive response from the NSP;
- sign-off from AEMO's connections team that the project has technical merit; and
- a project plan, consistent with the development process in question, which demonstrates, to AEMO's satisfaction, an intent to progress the project to completion in a timely manner; and
- evidence of the applicant's relationship to the project
- Evidence that the intention is to develop the project and then sell the asset to another person. The project developer does not intend to be an Intending Participant or Generator in respect of the plant.

Finally, the Interim Guidelines note that AEMO will, on an annual basis, reassess whether the individual identification as a project developer remains appropriate. AEMO may require any information from project developers necessary to complete that assessment.

In AEMO's view, the text in Section 6 of the Interim Guidelines is appropriate for inclusion in the Guidelines that are being developed through this consultation. Stakeholder views are sought on this proposition.



APPENDIX A - GLOSSARY

Term or acronym	Meaning
AEMO	Australian Energy Market Operator
ESOO	Electricity Statement of Opportunities
Generation Information page	The resource published by AEMO, on its website, in accordance with NER 3.7F
Generator Survey	A process for the collection of information about existing generating systems and proposed generation projects from Generators and generation proponents for the purposes of the ESOO and associated reliability forecasts
Guidelines	The Generation Information Guidelines being developed by AEMO, through this consultation, in accordance with NER 3.7F(e)
Interim Guidelines	The Interim Generation Information Guidelines, published by AEMO on 5 December 2019, in accordance with NER 11.117.3(b)
KCI	Key Connection Information
NER	National Electricity Rules
TNSP	Transmission Network Service Provider
NSP	Network Service Provider