DER Register

Delivery Team 1 – Data Model

Meeting #2 - May 2019

Update on project

Rule Change

Distributed Energy Resources (DER) Register (the Register) is to improve power system operation and security through greater visibility of where DER are connected in the NEM

- Rule made on **13 September 2018**, placing obligations on AEMO and NSPs for delivery by **1 December 2019**

AEMO obligations	NSP obligations
a) Establish, maintain and update a DER Register b) Develop, maintain and publish DER Register Information Guidelines c) Share disaggregated data with NSPs d) DER Register Report on website e) Consider DER information in load forecasts f) Share information with emergency services	a) Adhere to AEMO's DER Register Information Guidelines b) Collect and submit 'small generator information' as it relates to 'connection points' c) Update connection frameworks to support provision of information from connection applicants d) Provide AEMO with their known information about existing DER in their network

DER Guidelines Consultation

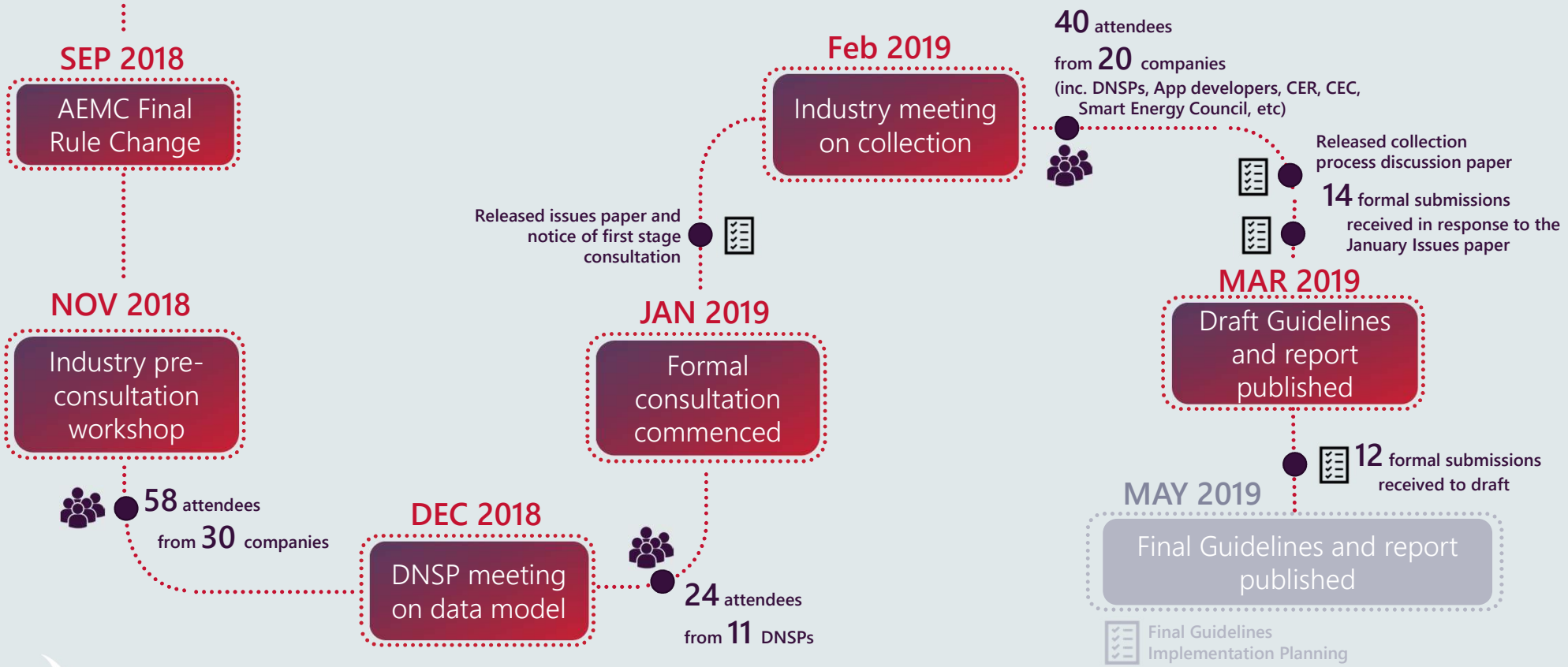
NER 3.7E specifies the minimum requirements for the DER Register.

To achieve efficient outcomes, as intended by the Rules, we also need to look at all existing users and processes, and avoid duplication as much as possible.

NER 3.7E focuses on these **key areas** for inclusion in the DER Register Guidelines

Summary of stakeholder engagement

Previous engagement



Summary of stakeholder feedback

Data structure

Stakeholder views on data model structure

- General structure
  - Support for change from 4 to 3 levels
  - Support for use of pre-population and auto-population of fields
  - Query re difficulty in mapping AC Connection to device, and propose merging levels, especially for combined units
  - Clarification on what information will be required for non-inverter connections.
- Need to what fields should be mandatory
- Provisions in relation to who can edit fields, ie NSP and/or Installer
- Seek confirmation that that if a National Metering Identifier with DER is abolished without update of the installation status in the DER Register, AEMO will assume the DER is inactive

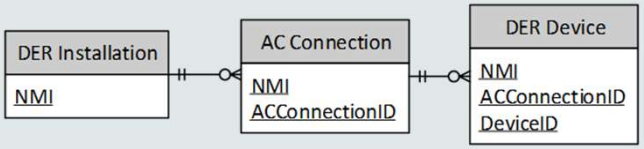
Stakeholder views on data model structure

- Protection related issues:
  - Consider the need for addition of an NSP approved total inverter/ generation capacity limit or export capacity limit to Level 1 for sites that do not have central protection requirements. For example;
    - NSP approved export capacity limit
    - NSP approved total generation capacity limit (usually taken as the total inverter capacity)
  - The protection control modes defined under L1 should be moved to L2. (Note: This information is repeated in L2 for non-inverter connections).
  - L1 information should be entered by the DNSPs (including the phase information).

Current Data Model structure

	Description
Level 1: DER Installation	• This level applies to a DER at a NMI DER installation in aggregate. • Records the Master NMI record information as per the MSATS Procedures. • Each NMI may have many DER Installations referenced to it. • Each DER Installation may only be associated with 1 NMI. • Each DER installation may have many AC connections related to it.
Level 2: AC connection	• Each Inverter is uniquely identified by NMI and ACconnectionID. • Each AC connection may only be associated with 1 DER Installation. • Each AC connection may have many DER devices related to it. • A DER installation comprises an AC Connector and the DER Devices connected to it.
Level 3: DER Devices	• Each DER Device is uniquely identified by NMI, ACconnectionID and DeviceID. • Contains information relating to the DER Device specifications (e.g. solar panel, battery cell, etc), including device type, nominal capacity, etc. • A DER device may be one or many devices that have exactly the same specifications. • Each DER Device is related to a single AC connection.

Relationships between levels



Data fields

Stakeholder views on data fields

- Data field changes proposed:
  - Flag to indicate battery as V2G-capable EVs
  - Connection point next export limit
  - Depth of discharge, battery capacity
  - Identification of solar PV and battery energy storage systems are designed with the ability to island themselves from the grid during grid outages
  - Clarification on details on non-inverter connections
  - Suggest aligning status codes with NMI standing data

Stakeholder views on data fields

- Suggest trip values to be expressed as percentage
- Disconnection time for under and over frequency events
- Rename “Export Limit” as “Nominal generation capacity”, or “Rated generation capacity”, or simply “Nominal capacity”.
- Removal of “Voltage vector shift” - emerging evidence that this protection scheme can lead to unintended disconnection of DER during system events.

Other issues

Definition

- Definition of minimum size of small generating unit for capture
  - Some agreement with proposed value of 1 kW
  - A few NSPs propose no lower limit, ie 0 kW.
  - Is there a need for us to collect 5-30MW data in the DER Register? Do we already have access to data through connection negotiations?

Other issues

- Existing small generator information
  - A numbers of NSPs have noted that there existing data collected on DER devices is incomplete in relation to the data requirements specified for collection under the DER Information Guidelines.
- DSP Information
  - Include (at a minimum) a flag against the NMI at Level 1 in the DER register that indicates whether the NMI is included in either Data Model 1 or Data Model 2 of the DSP Information Guidelines.
  - Alternate suggestion to do consultation post DERR to bring the two closer

Next steps

Key Dates

Item	Indicative Date	Action
Submissions on Issues paper close	7 March 2019	Consultation
Submissions on data collection process discussion paper due	18 March 2019	Stakeholder Feedback
Draft Guidelines (inc data model) and report published	29 March 2019	Consultation
Draft technical specification	April 2019	System Implementation
Submissions on draft guidelines and report close	15 April 2019	Consultation
Final Guidelines (inc data model) and report published	31 May 2019	Consultation
Final technical specification	June 2019	System Implementation
System go-live in pre-production	September 2019	System Implementation
System go-live in production	31 November 2019	System Implementation

Contact

https://www.aemo.com.au/Stakeholder-Consultation/Consultations/NEM-Distributed-Energy-Resources-Information-Guidelines-Consultation

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