DER Register

Briefing pack

6 August 2019

Background

Rule objectives

AEMC view that the DER Register will advance the NEO by increasing visibility of DER, leading to

- Enhanced planning and investment decisions and asset optimisation by NSPs
- Improve operational decisions by AEMO's with visibility of DER and its operational characteristics (i.e. trip and control settings)
- Enhance policy and investment decisions through public reporting on DER

Scope

- For DNSPs: All non-registered embedded generation below 30 MW
- For TNSPs: All non-registered generation below 30 MW

Rule obligations

New Rule 3.7E and amending changes to cl. 4.9.1, 5.3.3 and Chapter 5A made on 13 September 2018 places obligations on AEMO and NSPs, which AEMO has used to inform DER Register system design

AEMO must	NSP must
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 forecasting, planning, operational decisions f) Share information with emergency services	a) Adhere to AEMO's DER Register Information Guidelines to provide '*DER generation information*' b) Collect and submit '*DER generation information*' as it relates to 'connection points' c) Update connection frameworks to support provision of '*DER generation information*' from connection applicants (including offer terms) d) Provide AEMO with known existing '*DER generation information*' for their network

Design consultation

SEP 2018

AEMC Final Rule Change

NOV 2018

Industry pre-consultation workshop

58 attendees from 30 companies

DEC 2018

DNSP meeting on data model

24 attendees from 11 DNSPs

JAN 2019

Formal consultation commenced

Released issues paper and notice of first stage consultation

Feb 2019

Industry meeting on collection

40 attendees from 20 companies (inc. DNSPs, App developers, CER, CEC, Smart Energy Council, etc)

Released collection process discussion paper

14 formal submissions received in response to the January Issues paper

MAR 2019

Draft Guidelines and report published

12 formal submissions received to draft

MAY 2019

Final Guidelines and report published

Final Guidelines Implementation Planning

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

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DER Register Key documents

DER Register Information Guidelines (NER Rule 3.7E(g)-(k))

- Defines the data that NSPs are required to collect and provide to AEMO
- Specifies minimum requirements for data collection, access, storage and integrity
- Outlines AEMO's proposed reporting on the data

AEMO Final Determination Report

- Summarises stakeholder engagement across key issues related to the Information Guidelines
- Outlines AEMO's final Information Collection Framework design

AEMO Draft Technical Specification

- Provides technical information and parameters third parties require to implement data transfer to and from the DER Register systems

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Connection process interfaces

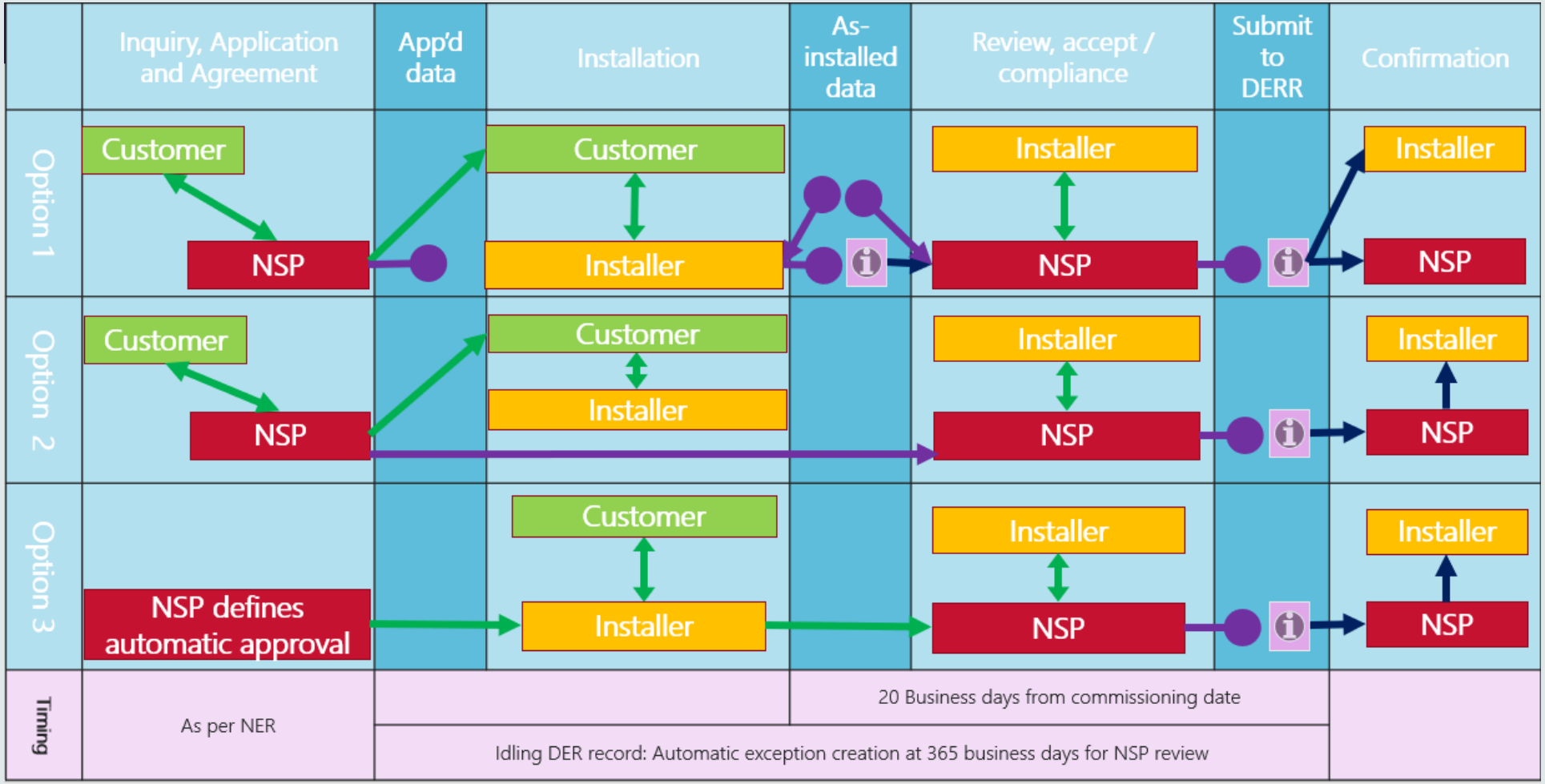
DER connection frameworks

- To achieve efficient implementation AEMO is seeking to avoid duplication
- Existing connection frameworks create context
- ENA Connection guidelines:

Type	Voltage	Technology Type	Capacity	NER Ch 5 Process
Basic micro EG	Typically 230V	Micro EG (AS4777 compliant IES)	Less than 30kVA three phase / Less than 10kVA single phase	Basic / Standard
Low voltage	Up to 1kV	IES	> 30kVA three phase / Greater than 10kVA single phase (up to network hosting capacity specified by DNSP)	Negotiated
		Non-inverter based	Any size (up to network hosting capacity specified by DNSP)	
Medium voltage	1kV - 35kV	Any	Any size (up to network hosting capacity specified by DNSP)	
High voltage	>35kV	Any	Less than 5MW for NEM and less than 10MW for WEM	
Registered generator	>35kV	Any	Greater than 5MW for NEM and greater than 10MW for WEM	

AEMO is enabling optionality

- NSP implementation of connection rules has led to different business processes
- DER Register system design caters for these differences



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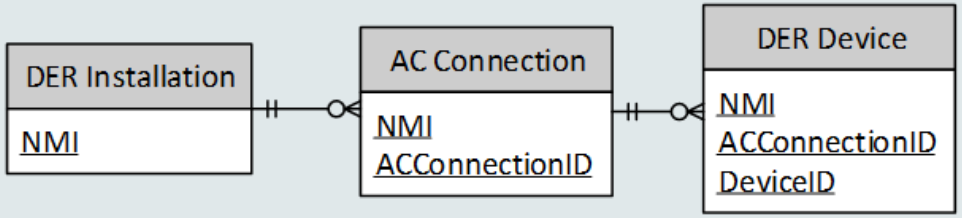
Data

Data model to be provided with connection and DER commissioning

	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 source

Connection process	Expected users	Role of NSP default data	Role of databases (e.g. CEC)	Role of AEMO
Basic / Standard	DER Retailers Electrical contractors Electricians/installers	Very high	Very high	Very low
Negotiated	Electrical contractors Engineering firms	Low	Very low	Very low
>5MW	Developers Electrical contractors Engineering firms	Very low	Very low	Very low

Expectations for NSPs

Network Service Providers

To support data collection AEMO expects NSPs to:

- Revise their model standing offers for Basic connection agreements - cl. 5A.B.2(b)(7)(iv)
- Revise their model standing offers for Standard connection agreements - cl. 5A.B.4(c)(1a)
- Revise connection offers for embedded generation to include data provision - s5A.1.B.(a)(2a)
- Revise negotiated connection processes to include data to be provided by applicants, and by when - cl. 5A.C.3(a)(1a)
- Provide AEMO with existing data prior to 1 December 2019 - cl. 11.108.3
- Revise business processes support the provision of data on an ongoing basis for the DER Register
- Define and include appropriate default standards data prior to implementation

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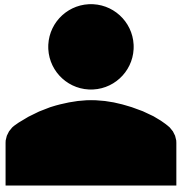
Installer roles

Installer roles



Installers

Note: installer roles are determined by the NSP's business process

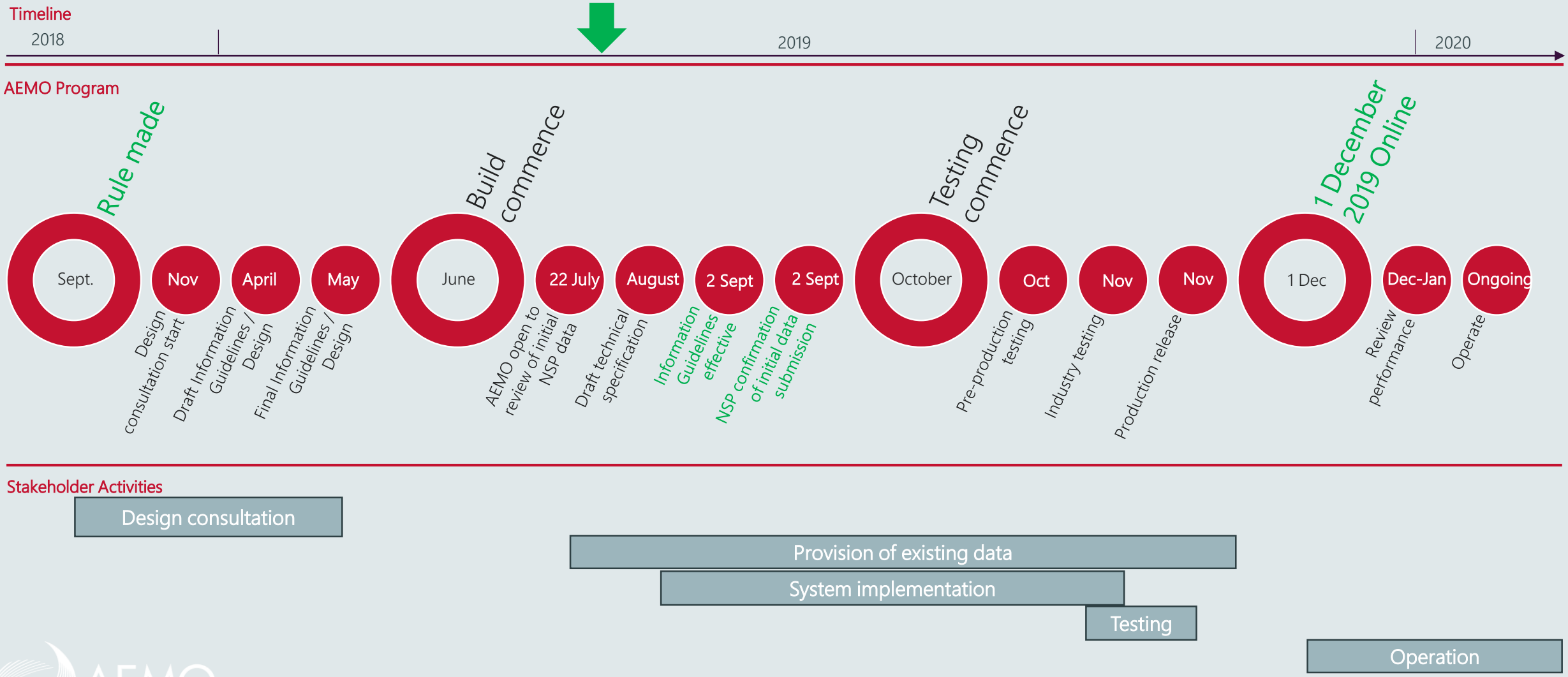
To support data entry and validation with as-installed DER data AEMO is creating the opportunity for electrical contractors and tradespeople to

- Create accounts for the purpose of providing information to the DER Register
- Log in, access and update DER Records for which they have the access keys
- Review and confirm the as-installed DER data

Alternatively NSPs can request the contractor or installer to provide the information directly to them for entry to the DER Register

Moving forward

Project status



Implementation consultation

May 31: Major publications released

Information Guidelines published to provide specific direction on what data AEMO requires

Final Report published to summarise consultation, decisions and to provide an overview of the information collection framework AEMO is progressing

June-August: AEMO focus

Technology focus:
- Interface design and prototyping
- Data models
- API development
- Data integration
- Technical specifications
- Prototyping

Implementation planning focus:
- Reset project to ready for implementation
- Confirm key stakeholders
- Define engagement activities
- Define communications and channels

Working groups

IT Implementation

Data Integration

Stakeholder Engagement

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Contact

Guidelines and Collection Framework consultation page
https://www.aemo.com.au/Stakeholder-Consultation/Consultations/NEM-Distributed-Energy-Resources-Information-Guidelines-Consultation

Implementation Project page
https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/DER-program/DER-Register-Implementation

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