DER Register

Delivery Team 2 – Process Design
March 2019

Update on project

DER Rule Change

The aim of the 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.

- On **13 September 2018** the AEMC made a final rule determination on NER clause 3.7E
- The rule places obligations on AEMO and NSPs for delivery by **1 December 2019**:

AEMO	NSPs
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) Collect the data outlined in the DER Register Information Guidelines b) 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.

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

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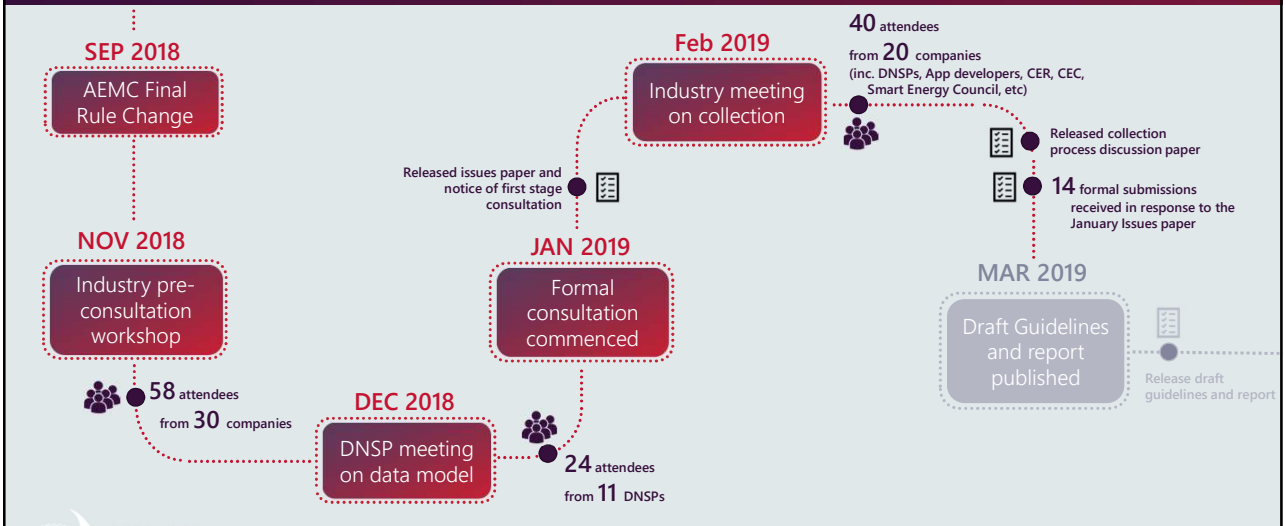
Summary of stakeholder engagement

Previous engagement



Summary of stakeholder feedback

Initial views expressed – DNSPs

- Support compliance with installation requirements, preferably with on-site input
- Support DNSPs to comply with regulatory obligations, exception handling preferred
- Accommodate diverse existing collection processes, but keep cost effective for customers
- Keep information collection easy, opportunity for a single source of truth
- Connection agreements may not capture all installed equipment
- Need to test use cases (for DER disconnection for example)

Summary of stakeholder feedback

Initial views expressed – OEMs and DER proponents

- Concerned about installer burden/capabilities
- Concerned about data quality issues – 100% accuracy unachievable, statistical approaches may be just as effective
- Need to ensure training is appropriate
- Financial incentives needed to drive accuracy, but experience shows low participation even where they are in place
- More work can be done with manufacturers to access DER data
- Installers may not have access to the information requested
- Practical challenges such as address alignment could challenge use of the register
- Need to show alignment to existing collection processes and avoid duplication

Summary of stakeholder feedback

Submissions to information guidelines – various

- 11 of the 14 submissions received in response to the issues paper commented on the collection process
- All supported a process that reduced duplication and minimised costs to parties
- Majority of submissions supported an expanded CER process for STC generation
- There was a mix of submissions that supported (a) only NSPs or (b) NSPs (aggregate information) and installers (equipment information) submitting information to the DER Register
  - Of the NSP-only submissions, most were in favour of collecting information for installers, however noted that this information should pass to NSPs before being submitted to the register

Summary of stakeholder feedback

Submissions to information guidelines – various

- Areas raised for further consideration:
  - Collection of DER that does not lead to STC creation
  - Utilising other processes, including the connection application process for embedded generators under the National Energy Customer Framework (NECF)
  - Leveraging the ENA National Connection Guidelines or other relevant international standards.
  - Validate assumptions regarding the extent to which installers are able to meet collection requirements
  - Education of/ engagement with the installer base

Proposed collection process

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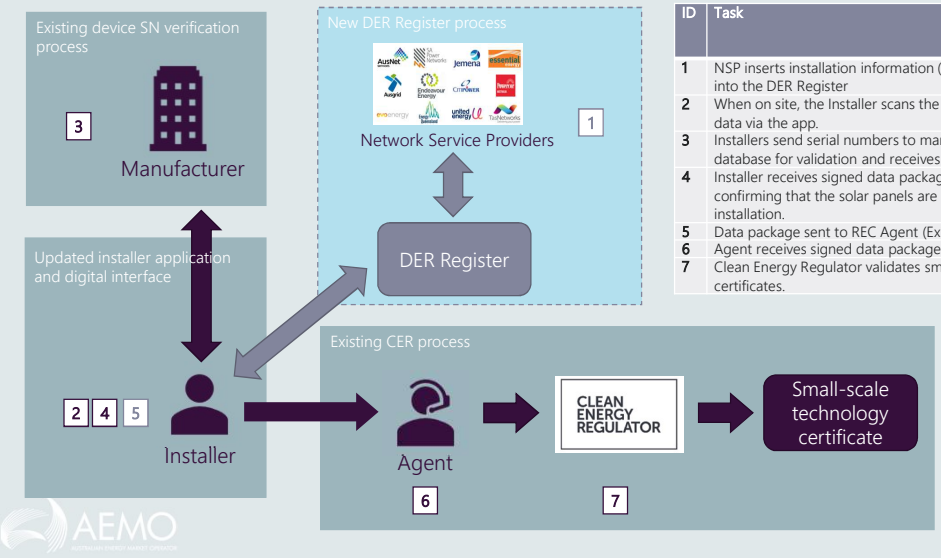
Proposed interaction with existing processes



ID	Task	Existing CER OR New DER process
1	NSP inserts installation information (from connection agreement) into the DER Register	New
2	When on site, the Installer scans the serial numbers and sends the data via the app.	Existing
3	Installers send serial numbers to manufacturers/ third party database for validation and receives data package.	Existing
4	Installer receives signed data package form the manufacturer confirming that the solar panels are genuine and finalises installation.	Existing
5	Data package sent to REC Agent (Existing) and DER Register (New).	Existing/ new
6	Agent receives signed data package and sends to the CER.	Existing
7	Clean Energy Regulator validates small-scale technology certificates.	Existing

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Overview of roles

DER Register builds on current connection frameworks

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- Establish and maintain DER Register
- Collecting and storing DER Register data
- Provide access for other parties (NSPs, emergency services)

Network Service Providers

- Connection process, including application assessment, approval and agreements (unchanged)
- Entry of connection agreement parameters
- Confirm DER register information, including exception handling

Installers

- Entry of details on DER system
- Validation or amendment of data in DER register at time of installation
- Confirming information submitted to DER register

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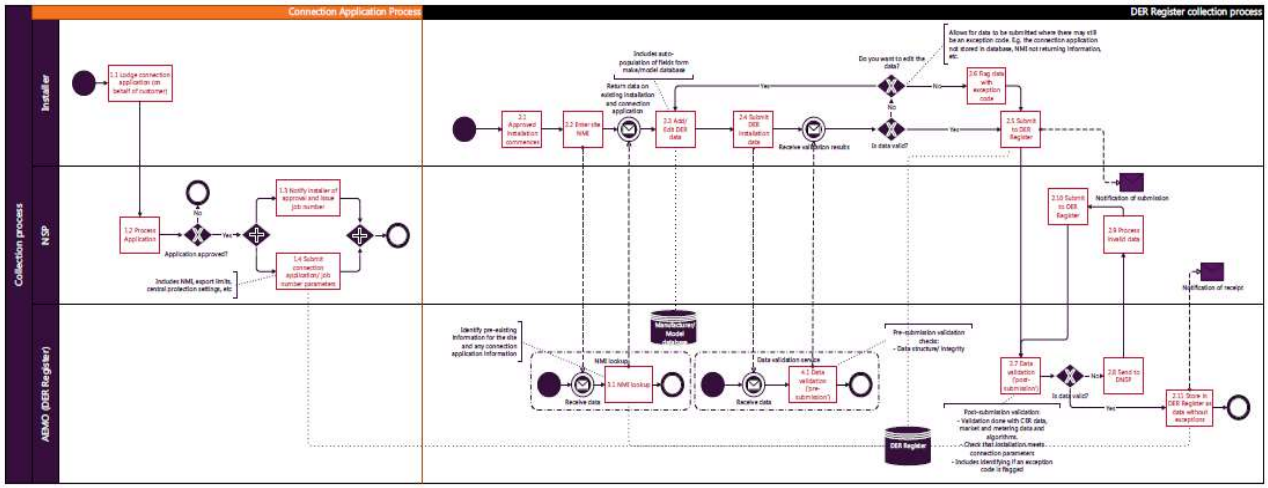
Proposed collection process



https://www.aemo.com.au/-/media/Files/Stakeholder_Consultation/Consultations/NEM-Consultations/2019/DER-register/Data-collection---high-level-process.pdf

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Interfaces with connection processes

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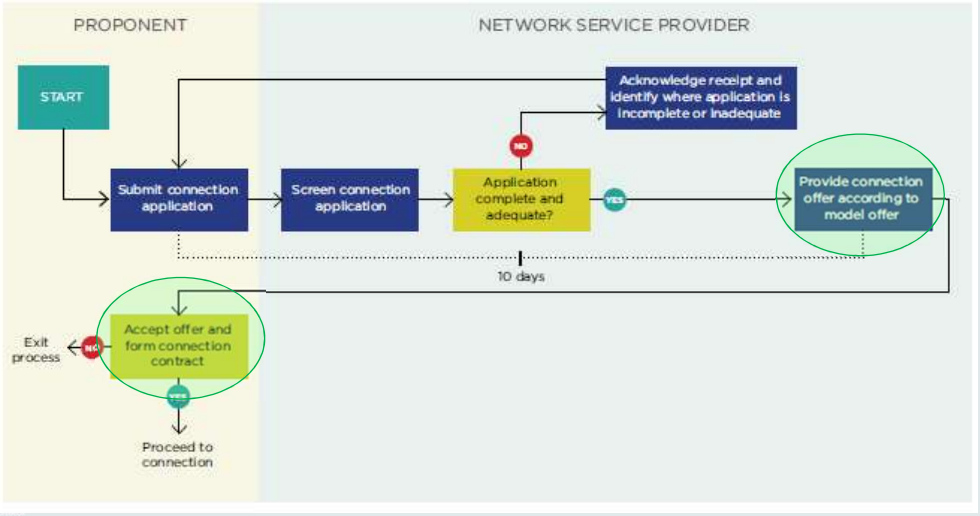
DNSP connection processes – generalised view from ENA Guidelines Framework

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	

DNSP-DERR touch points - Basic and Standard connections

Figure 2 – Basic connections process



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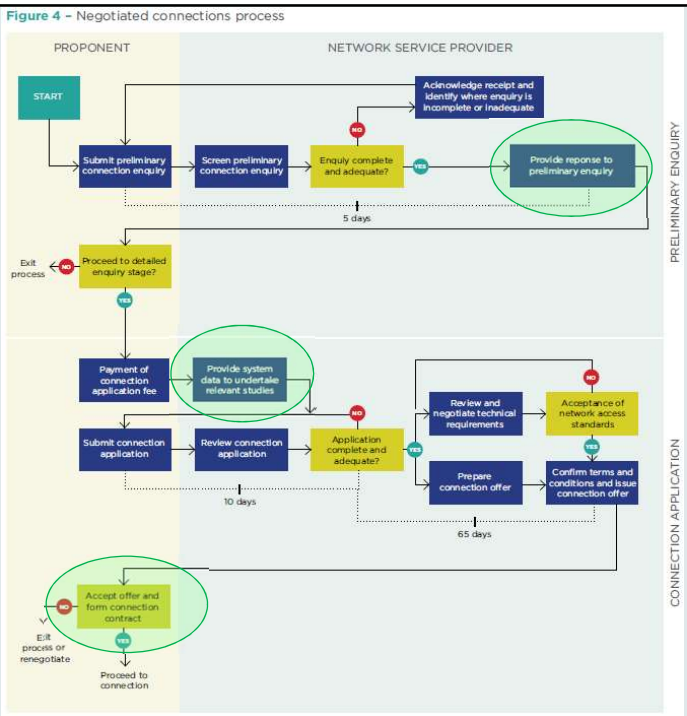
DNSP-DERR touch points – negotiated connections

Figure 4 – Negotiated connections process



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DNSP connection processes – applicable exemptions

AEMO view

- DER Register applies to all exempt generation (standing and applicable)
- AEMO is currently investigating the data that we already receive through the connection process for applicable exempt generation (5MW-30MW)
- The DER Register may rely on DNSPs to captured some data

DNSP connection processes – discussion

Discussion Questions

1. Is the ENA generalised view representative of processes that will be in place by December 2019?
2. What are the major differences in data entry / input in a basic or negotiated process?
3. Negotiated processes
   - Can parameters for centralised protection for larger DER be captured in the same way across the NEM?
   - What type of DER installation relies on network outcomes, rather than specific technical settings?
4. Basic/standard processes
   - DNSP installation and equipment parameters standardised and potentially auto-populated for standard technical requirement – are there significant differences across the NEM?

Interfaces with DER installation

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Installation practices and actors

- AEMO has identified three potential DER installation processes…
- Basic connections: DER Sales business

Actors	Customer	Customer DER Sales business	DER Sales business	DNSP	DNSP DER Sales business	DER Sales business DER Installer	DER Installer	DNSP DER Installer
DERR Access				DNSP access to existing DER data	DNSP enters approved installation and DER Data		Installer accesses DER register to update / confirm / add DER data (TBC)	DNSP reviews data exceptions and confirms data

- Actor identities?
- Can installation and connection agreement process in parallel?

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Installation practices and actors

- Basic connections: Electrical contractor

Actors	Customer	Customer Electrical contractor	Electrical contractor	DNSP	DNSP Electrical contractor	Electrical contractor DER installer	DER Installer	DNSP DER Installer
DERR Access				DNSP access to existing DER data	DNSP enters approved installation and DER Data		Installer accesses DER register to update / confirm / add DER data (TBC)	DNSP reviews data exceptions and confirms data

- Actor identities?
- Can installation and connection agreement process in parallel?

Installation practices and actors

- Negotiated connections

Actors	Customer	Customer Engineering firm	Engineering firm	DNSP	DNSP Engineering firm	Customer Engineering firm Electrical contractor	Electrical contractor	DNSP Engineering firm Electrical contractor
DERR Access				DNSP access to existing DER data	DNSP enters approved installation and DER Data		Installer accesses DER register to update / confirm / add DER data (TBC)	DNSP reviews data exceptions and confirms data

- Actor identities?
- Can installation and connection agreement process in parallel?

Installation practices and actors – discussion

Discussion questions

1. AEMO developing legal views based on NEL, privacy expectations and data governance
2. Are there additional considerations in DER commissioning?
3. Are there other DER installation actors?
4. What identifying data do DNSPs already collect in the connection enquiry/application/offer stages? Does this differ by DNSP?

Further streamlining opportunities

Options for standardisation

1. Are there other databases that we should consider outside of available product lists (i.e. CEC, SEC)
2. Default settings for each DNSP
3. Parallel vs linear data entry processes
4. Additional steps to avoid/remove duplication
5. What additional benefits can the DER Register provide to DNSPs? Others? (e.g. connection processes?)
6. Emergency services access expectations?
7. Other views?

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Next steps

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Next steps

- Consider feedback and respond to group
- Program of work for the process
- Next meeting proposed for late April (following draft Information Guidelines)

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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