



# DER Register overview & NSW DNSP implementation

New South Wales installers seminars | 29 November 2019

*We acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture.*

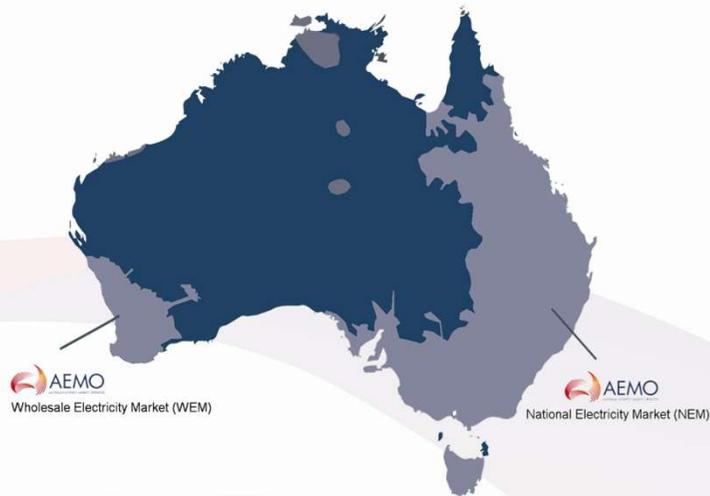
*We pay our respects to their Elders past, present and emerging.*

# Agenda

Timing	Topic	Speaker
8:00am	Welcome and introductions	NECA
8:15am	AEMO DER Register overview	Australian Energy Market Operator
8:30am	Distribution Network overview	Distribution Networks
9:00am	Panel Q&A session	All
9:20am	Networking	All
10:00am	Close	

# About AEMO

*Shaping a better energy future for all Australians*



We operate Australia's National Electricity Market and power grid in Australia's eastern and south-eastern seaboard, and the Wholesale Electricity Market and power grid in south-west WA.

Both markets supply more than 220 terawatt hours of electricity each year.

We also operate retail and wholesale gas markets across south-eastern Australia and Victoria's gas pipeline grid.

Collectively traded more than A\$20 billion in the last financial year.

## Ownership

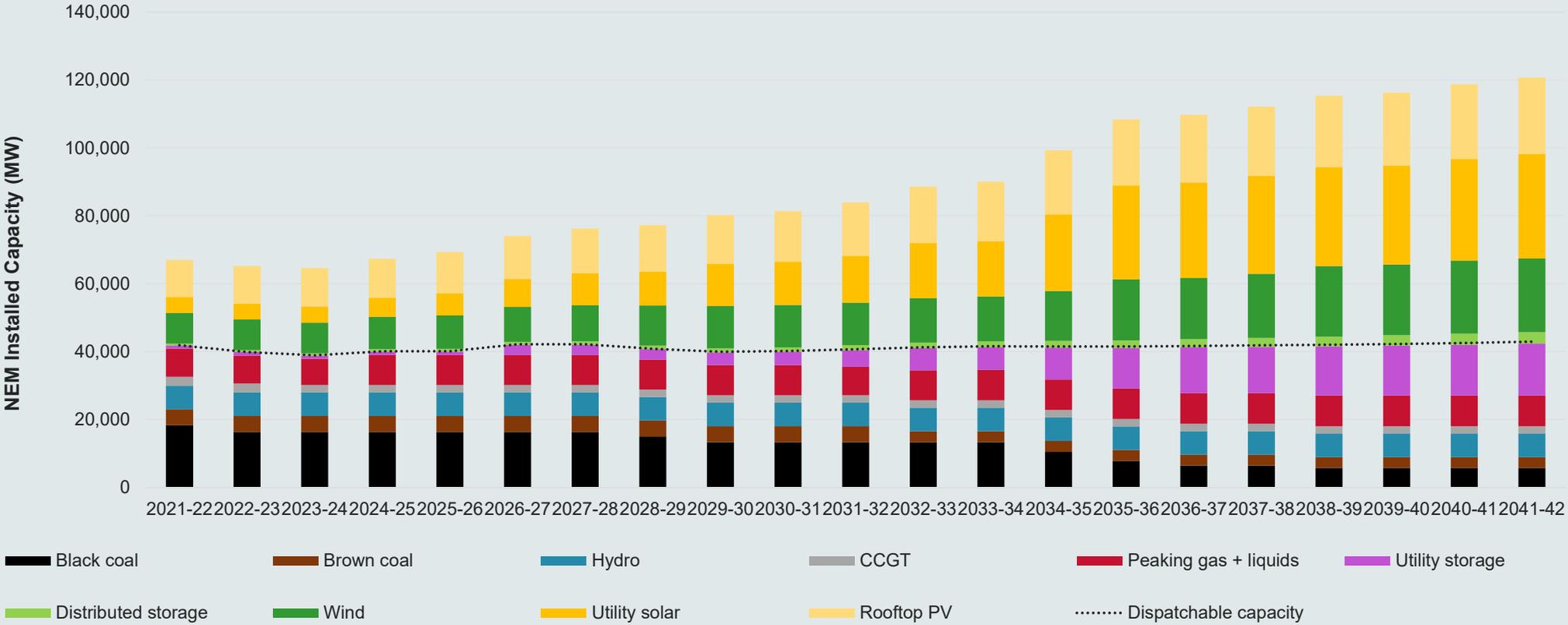
**40%**

Market participants

**60%**

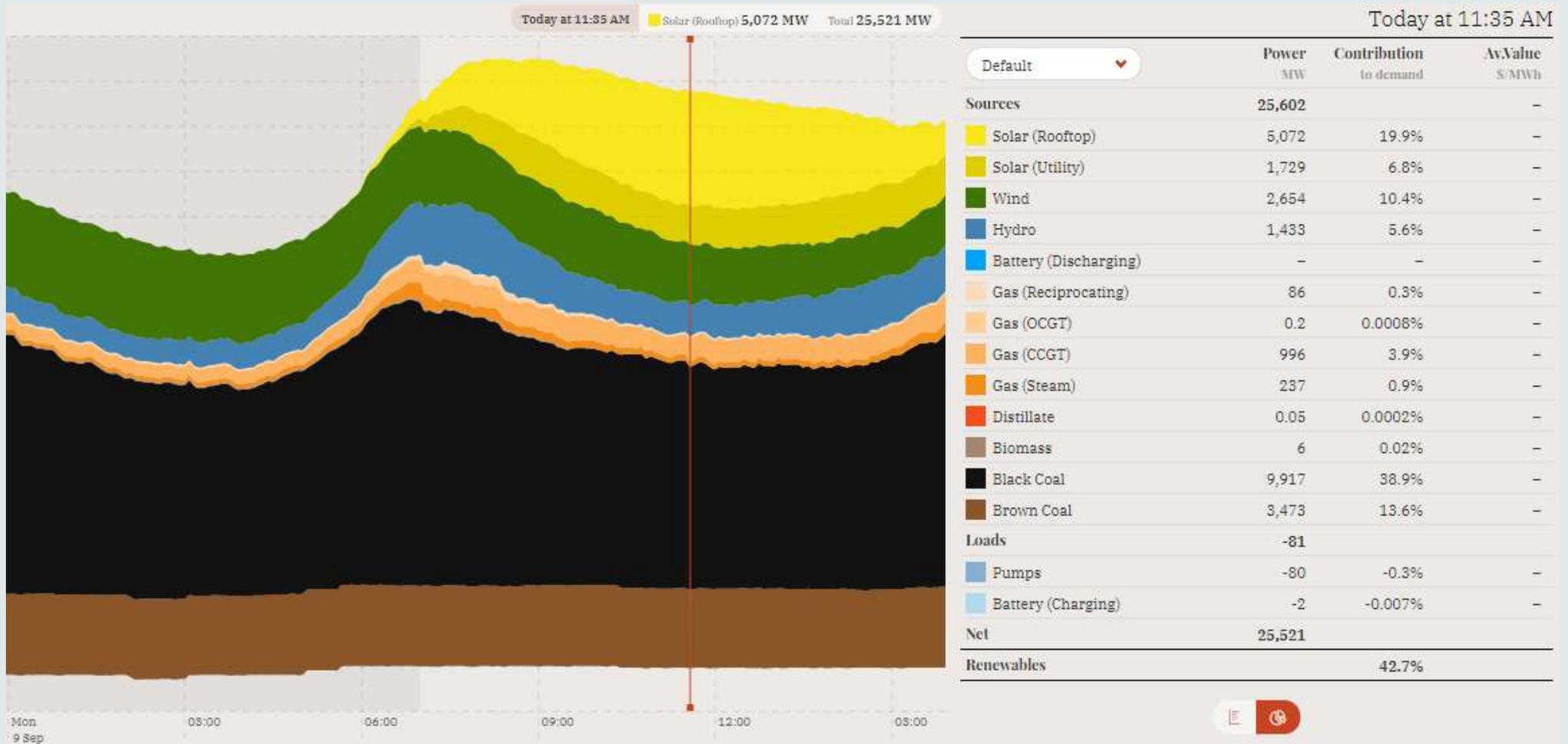
Governments of Australia

# The growing level of consumer choice



Source: AEMO 2019 ISP Insights, neutral scenario

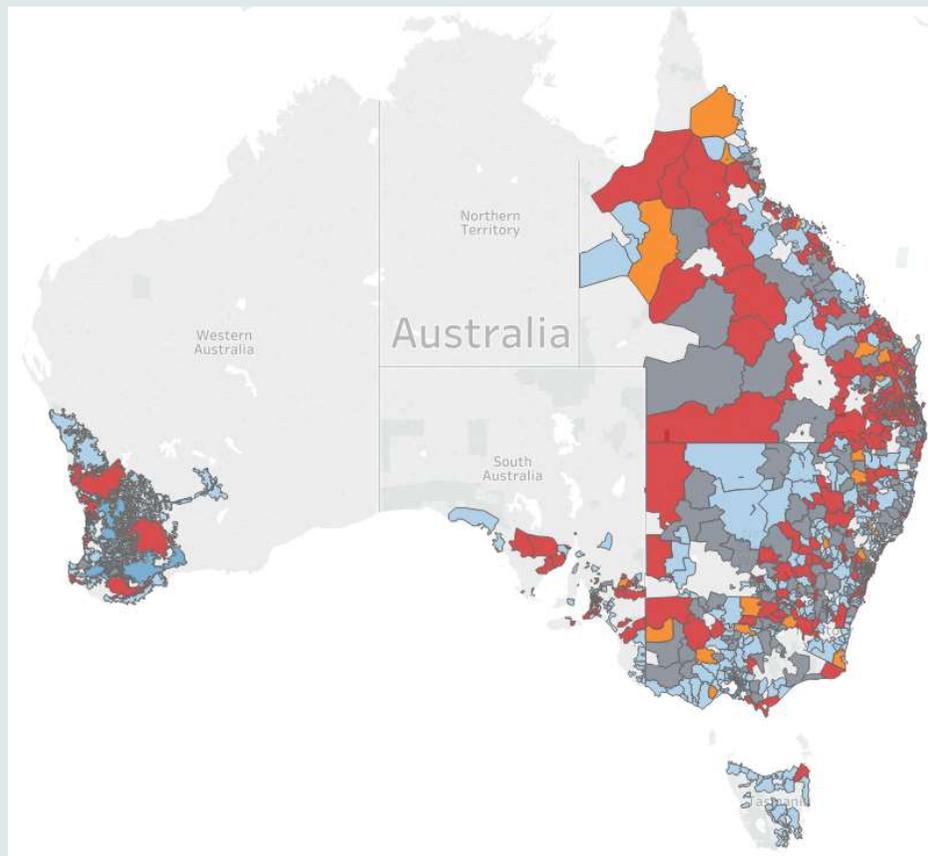
# High rooftop PV in the operational domain



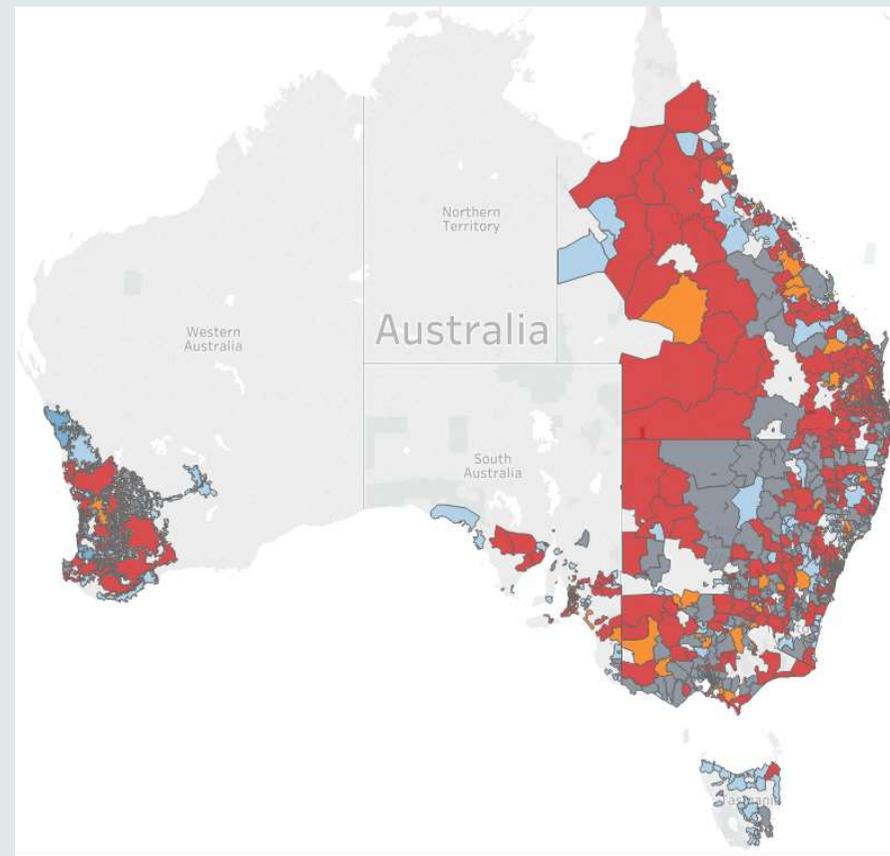
Source: OpenNEM

# Reversing the distribution network

Forecast 'reverse electricity flows' across Australia's distribution networks



Slow DER scenario



Fast DER scenario

Source: CSIRO 2019

## Years

- ≤2025
- ≤2030
- ≤2040
- ≤2050
- >2050

# AEMO's DER Register

# DER Register

- *Required to be implemented by the National Electricity Rules*
- *A national database of DER assets to enable the realisation of consumer value and enhance power system reliability via DER installed in homes and businesses across Australia*
- *Implemented from 1 December 2019*



# What kinds of data?

Level	Data types	Expected source of data	
		Network	Installer
Installation	Approved capacities, technologies and central control/protection (e.g. export limits)	✓	
	Installer licence number / ID		✓
AC interface	Inverter or generator manufacturer, model, serial number and capacities, and numbers of installed units		✓
	Inverter control modes and settings (e.g. volt-watt etc)	✓	
	Non-inverter generation control modes, settings and protection	✓	
	Date of commissioning	✓	
Device	Device (e.g. solar PV panels or battery) manufacturer, model and capacities, and numbers of installed units		✓

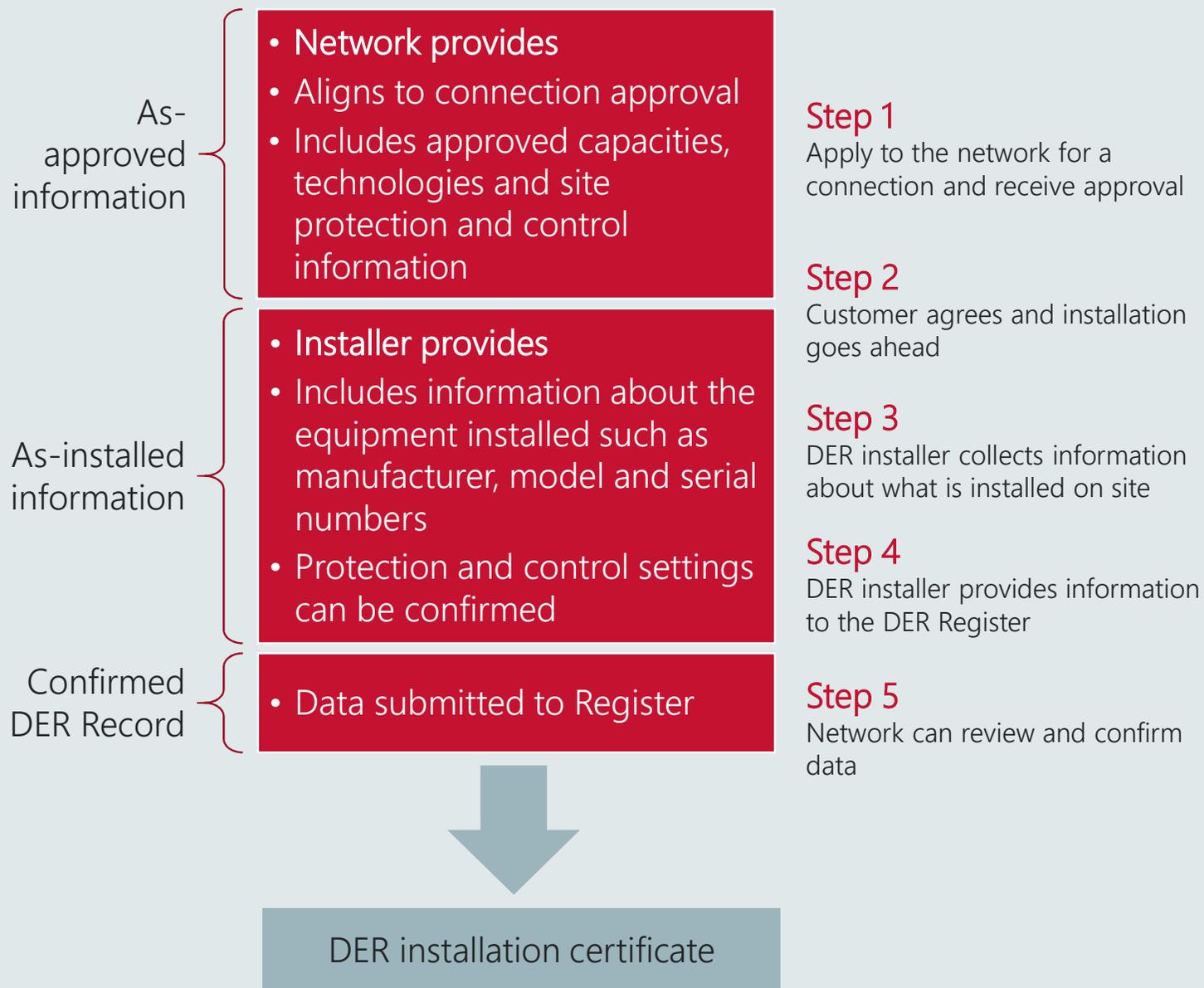
Data source ✓

Review 

# What changes?

# Workflow

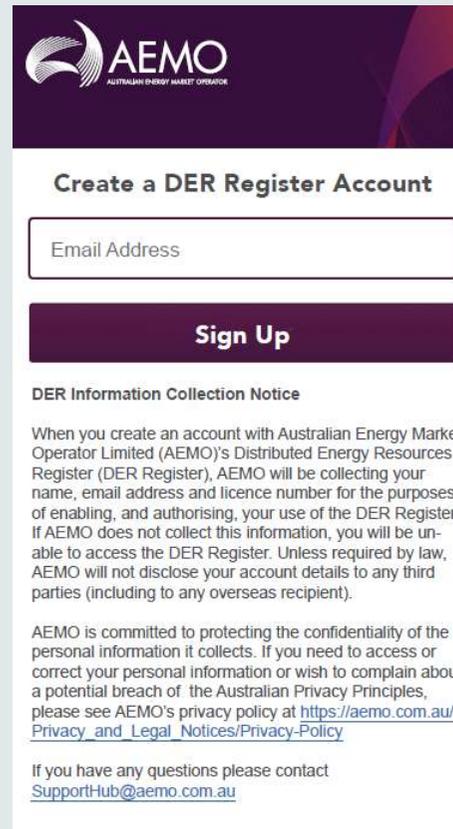
*From 1 December 2019 a condition of the connection of all small generator and battery installations to the network will require DER installers and electrical contractors to provide information for the DER Register*



# Providing information

1. **Create account**
2. Access records
3. Provide data

## Step 1: Create an account with AEMO



**Create a DER Register Account**

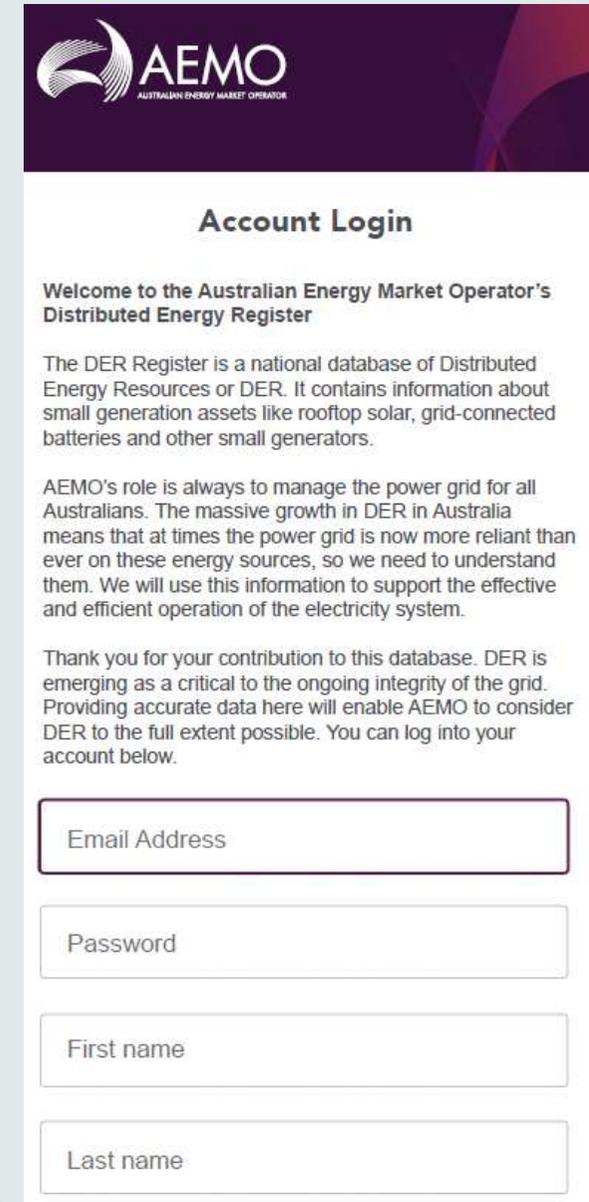
**Sign Up**

**DER Information Collection Notice**

When you create an account with Australian Energy Market Operator Limited (AEMO)'s Distributed Energy Resources Register (DER Register), AEMO will be collecting your name, email address and licence number for the purposes of enabling, and authorising, your use of the DER Register. If AEMO does not collect this information, you will be unable to access the DER Register. Unless required by law, AEMO will not disclose your account details to any third parties (including to any overseas recipient).

AEMO is committed to protecting the confidentiality of the personal information it collects. If you need to access or correct your personal information or wish to complain about a potential breach of the Australian Privacy Principles, please see AEMO's privacy policy at [https://aemo.com.au/Privacy\\_and\\_Legal\\_Notices/Privacy-Policy](https://aemo.com.au/Privacy_and_Legal_Notices/Privacy-Policy)

If you have any questions please contact [SupportHub@aemo.com.au](mailto:SupportHub@aemo.com.au)



**AEMO**  
AUSTRALIAN ENERGY MARKET OPERATOR

### Account Login

Welcome to the Australian Energy Market Operator's Distributed Energy Register

The DER Register is a national database of Distributed Energy Resources or DER. It contains information about small generation assets like rooftop solar, grid-connected batteries and other small generators.

AEMO's role is always to manage the power grid for all Australians. The massive growth in DER in Australia means that at times the power grid is now more reliant than ever on these energy sources, so we need to understand them. We will use this information to support the effective and efficient operation of the electricity system.

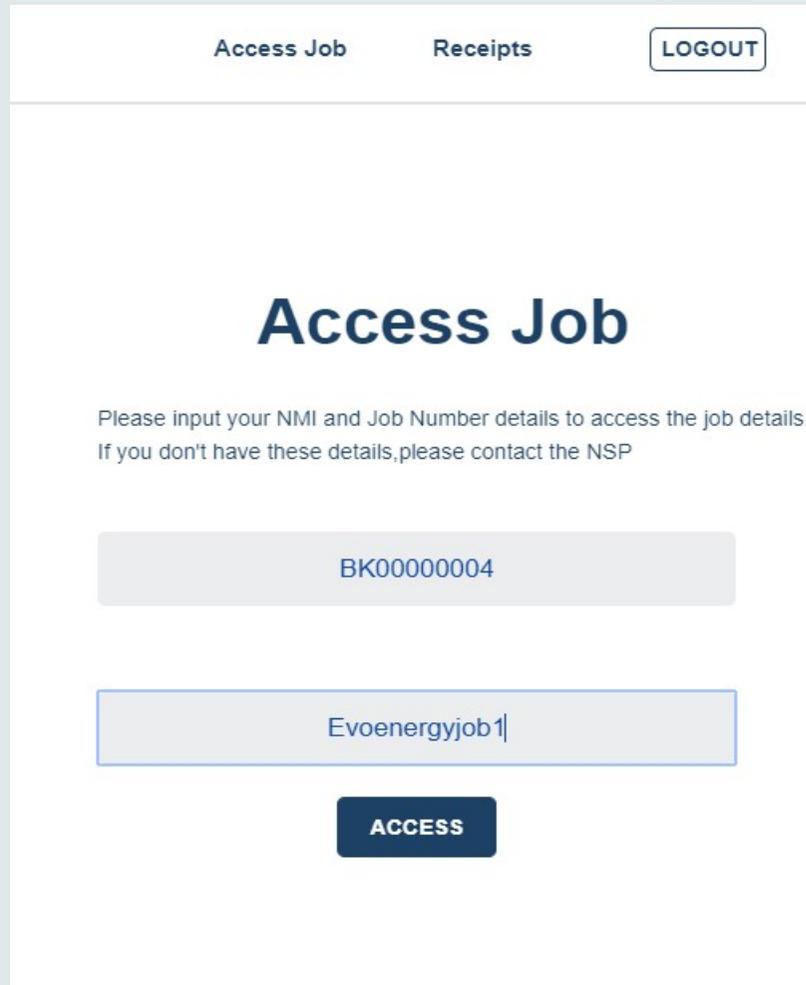
Thank you for your contribution to this database. DER is emerging as a critical to the ongoing integrity of the grid. Providing accurate data here will enable AEMO to consider DER to the full extent possible. You can log into your account below.

- To pre-register for an alert when the account system is open email [DERRegister@aemo.com.au](mailto:DERRegister@aemo.com.au)

# Providing information

1. Create account
2. **Access records**
3. Provide data

## Step 2: Access a DER Record



The screenshot shows a web interface for accessing DER records. At the top, there are navigation links for 'Access Job' and 'Receipts', and a 'LOGOUT' button. The main heading is 'Access Job'. Below the heading, there is a prompt: 'Please input your NMI and Job Number details to access the job details. If you don't have these details, please contact the NSP'. There are two input fields: the first contains 'BK00000004' and the second contains 'Evoenergyjob1'. Below the input fields is a dark blue 'ACCESS' button.

Or, register your AEMO account with your smartphone application provider to access DER records and provide the data

# Providing information

1. Create account
2. Access records
3. **Provide data**

## Step 3: Provide DER data

Connection Agreement

[DER Installation Details](#) [Connections & Devices](#) 1

DER Installation

NMI (National Metering Identifier)

BK00000004

Connection Agreement 'Job Number'

Installer identification

Approved Capacity (KVA)

Number of phases available

Number of phases with DER connected

Islandable installation

Central protection and control



# Providing information

1. Create account
2. Access records
3. **Provide data**

## Step 3: Provide DER data

### Connection Agreement

DER Installation Details Connections & Devices 1

Connections & Devices 1

+ Add AC Connection

+ Add DER Device

AC Connection-1

ID:100000000002867

Validation status: Initial

Type: Inverter

Connection status:

Edit

Remove

DER Device

ID:100000900005912

Validation status:

Type: Solar PV

Device status:

Parent AC Connection 1

Edit

Remove

## Providing information – App Providers

- Formbay
- Solar Scope
- Kickstart Agile

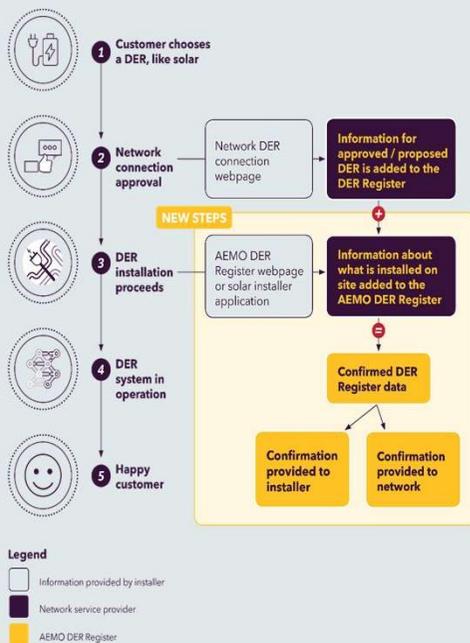
- **Work is in progress with Formbay, Solar Scope & Kickstart Agile app developers to create a more seamless process for uploading data into the DER Register.**

- **Further information on the availability of this function will be provided shortly.**

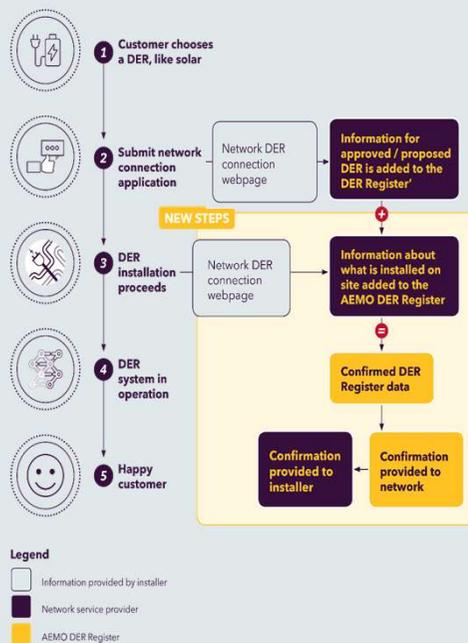


# State-by-State AEMO-DB process overview

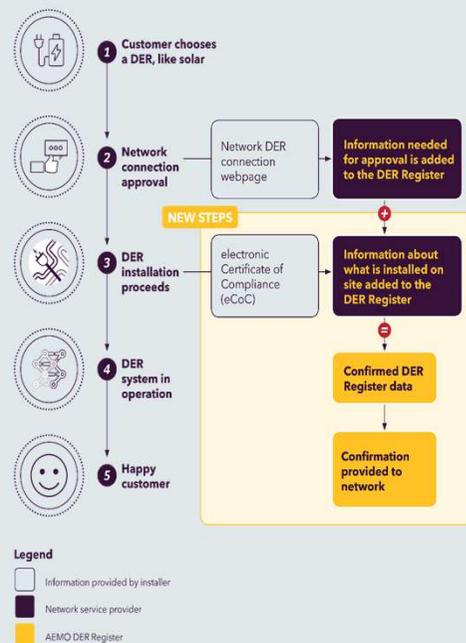
## New South Wales



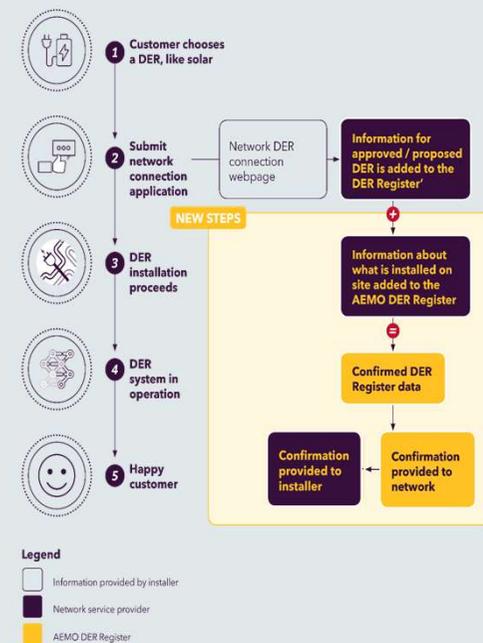
## Victoria and Tasmania



## South Australia

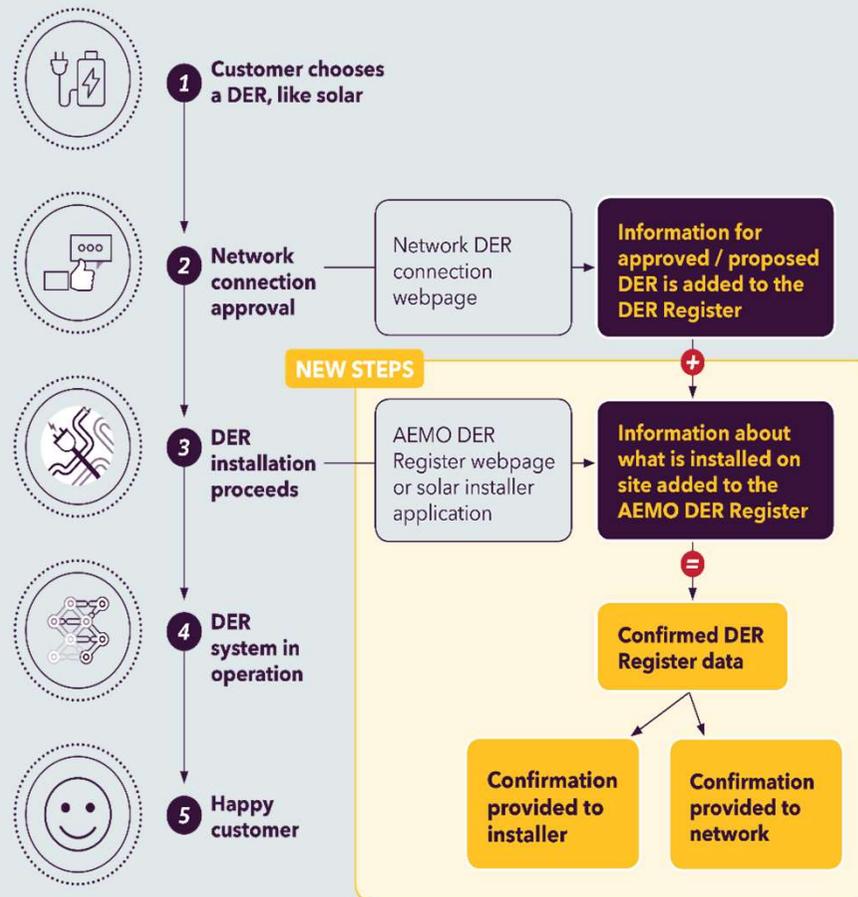


## Queensland



Note: In all cases the local network service provider is the first contact for a connection approval, as with current process.

# NSW AEMO-DB process overview



## Legend

- Information provided by installer
- Network service provider
- AEMO DER Register

Note: In all cases the local network service provider is the first contact for a connection approval, as with current process.

# Readiness

# Readiness

- Installers and electrical contractors should progress DER connection approvals with their local network as per current processes
- AEMO high level Fact Sheets are high level
- Your local distribution network will provide information on steps that are needed within their connection processes



**What is AEMO's DER Register?** Fact Sheet

**New Rules require a register to be created**  
The Australian Energy Market Operator (AEMO) is on track to launch Australia's first database of distributed energy resources (DER) at the start of December 2019.

AEMO is responsible for operating Australia's energy market and power system, including the delivery of affordable, secure and reliable energy to consumers, whilst pursuing new data-driven solutions to help shape a better energy future for all Australians.

In late 2018, the Australian Energy Market Commission (AEMC) amended the National Electricity Rules enabling AEMO to establish a DER Register to improve visibility and access to essential device information across Australia.

AEMO has worked with stakeholders across the electricity sector to design the DER Register, agree on DER data sets and data collection processes into the register.

The comprehensive DER data held securely in the DER Register database will enable AEMO to:

- Forecast, plan and operate the grid more efficiently, ensuring the system and market can deliver energy at an efficient price for all customers.
- Be more prepared for major disruptions to the system with a greater understanding of how DER assets will behave during these events.
- Prepare the grid for major innovations with DER such as virtual power plants, and enabling customers to consider and participate in new markets with their DER, and
- Allow networks to make better informed decisions about network investment options in the future as demand changes and DER increases.

\*Generation facilities that are only used as standby or back-up power and generation or energy storage that registers with AEMO for market participation are exempt.

© AEMO 2019 | What is AEMO's DER Register?



**What is AEMO's DER Register?** Fact Sheet

The DER Register system is designed to draw information from available data sets, such as the Clean Energy Council's approved product databases, to streamline data provision. Installers will be mostly be asked to confirm information, rather than enter it.

With better knowledge and visibility of DER, AEMO can better manage the grid and ensure that consumer-led energy investments can deliver their expected value to consumers and the energy system.

**What is happening in the lead up to and after 1 December?**

OCT	NOV	DEC
<p><b>System implementation:</b></p> <p>Present → 31 October System build</p>	<p>4 November → 29 November System testing</p>	<p>1 December onwards Go live Celebrate and refine</p>
<p><b>Key dates for Networks:</b></p> <p>Present → 29 November Process systems and processes for DER implementation</p>	<p>4 November → 29 November Industry testing available and final data for testing DER to be uploaded by AEMO systems</p> <p>13 November User guides available</p>	<p><b>Key dates for DER installers:</b></p> <p>18 November onwards DER Register account system and training material available</p> <p>1 December onwards New installers provide information to networks apply</p>

**Want more information?**  
For more information and resources, visit: [AEMO website: \(https://www.aemo.com.au/energy/electricity/DER-Register-Implementation\)](https://www.aemo.com.au/energy/electricity/DER-Register-Implementation)  
Email questions to: [DERRegister@aemo.com.au](mailto:DERRegister@aemo.com.au)



**DER Register: Information for Installers in New South Wales** Fact Sheet

**How can DER installers access information about the new requirements?**  
Before 1 December 2019, AEMO is liaising with stakeholders and will have information available on the AEMO website to ensure a seamless transition to the new requirements. Networks will be able to link their DER connection webpages to the AEMO information. AEMO will also make training material available in advance.

**How does the new system change the DER connection process from 1 December?**  
The connection process will remain unchanged for customers, and the local network service provider should always be the first place to go to get connected. But the local network will be required to provide information into the DER Register and AEMO's systems will enable qualified electrical contractors and/or DER installers to provide information about what is installed on site into the DER Register.

AEMO will generate a confirmation receipt once the DER installation is registered in the DER Register. This confirmation receipt will be issued to the account holder that provided AEMO with the information within 20 business days of the installation being completed.

**Want more information?**  
Ask your local network service provider, or check the [AEMO website](https://www.aemo.com.au) for more information. You can also email us at: [DERRegister@aemo.com.au](mailto:DERRegister@aemo.com.au)

© AEMO 2019 | Fact Sheet - DER Register information for installers



**AEMO DER Register launching in December**

Small generators, like rooftop solar, have been so successful that AEMO needs visibility of these devices to operate the grid securely for all Australians.

Consultation and information sessions are ongoing with networks, installers and other key stakeholders across Australia.

Electrical contractors and solar installers should ask their local network operator for details of changes required to provide data to the DER Register.

The world's first DER Register will launch on 1 December 2019, giving AEMO visibility over small-scale solar, storage and other energy generation across Australia.

Stakeholders can also check out AEMO's project site for FAQs and more information <https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/DER-program/DER-Register-Implementation>

**Where can I find more information?** Check the [AEMO website](https://www.aemo.com.au) for more background on the DER Register or email your query to: [DERRegister@aemo.com.au](mailto:DERRegister@aemo.com.au)

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

# NSW DNSP overview

Introducing coming changes to implement the DER Register and changes to inverter requirements

# Contact points

For more information regarding the DER Register or MSO changes:

NSW DNSP	Contact
AusGrid	Phone: 13 13 65 <a href="http://www.ausgrid.com.au/Contact-Us">www.ausgrid.com.au/Contact-Us</a>
Endeavour Energy	Phone: 13 37 18 <a href="http://www.endeavourenergy.com.au/wps/portal/ee!/ut/p/a1/nVCxTsMwEP2VdugY2SG244wRkKQsCFUVtZfKjq-ui2On2AI-n7QwsBRUbjjpd7dvfeQRBskg3pzVmUXg_InLNm2u2na7paUzWPTLXG7vLtfM07K1ROeCGIi4AvV4r_2n5FEsg95zHskALbvoJPLsMD7OHZ32c9BAnhZYBdSVt67YGcpevV6OjlqCwaSs-GMemeQMjwQo0paUOCsIJOiQhO6K-ra6KrUIJGefUn43YSYXNaXbVRodeXPByStj_qcsHCH41G2UwwwZPjlaPP_HMZ hPfDDbuS4ot7O558mgv6X/dl5/d5/L2dBISEvZ0FBIS9nQSEh/">http://www.endeavourenergy.com.au/wps/portal/ee!/ut/p/a1/nVCxTsMwEP2VdugY2SG244wRkKQsCFUVtZfKjq-ui2On2AI-n7QwsBRUbjjpd7dvfeQRBskg3pzVmUXg_InLNm2u2na7paUzWPTLXG7vLtfM07K1ROeCGIi4AvV4r_2n5FEsg95zHskALbvoJPLsMD7OHZ32c9BAnhZYBdSVt67YGcpevV6OjlqCwaSs-GMemeQMjwQo0paUOCsIJOiQhO6K-ra6KrUIJGefUn43YSYXNaXbVRodeXPByStj_qcsHCH41G2UwwwZPjlaPP_HMZ hPfDDbuS4ot7O558mgv6X/dl5/d5/L2dBISEvZ0FBIS9nQSEh/</a>
Essential Energy	Phone: 13 23 91 <a href="http://www.essentialenergy.com.au/">www.essentialenergy.com.au/</a>
Australian Energy Market Operator (AEMO)	Email: <a href="mailto:DERRegister@aemo.com.au">DERRegister@aemo.com.au</a> <a href="http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/DER-program/DER-Register-Implementation">www.aemo.com.au/Electricity/National-Electricity-Market-NEM/DER-program/DER-Register-Implementation</a>