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Document 17

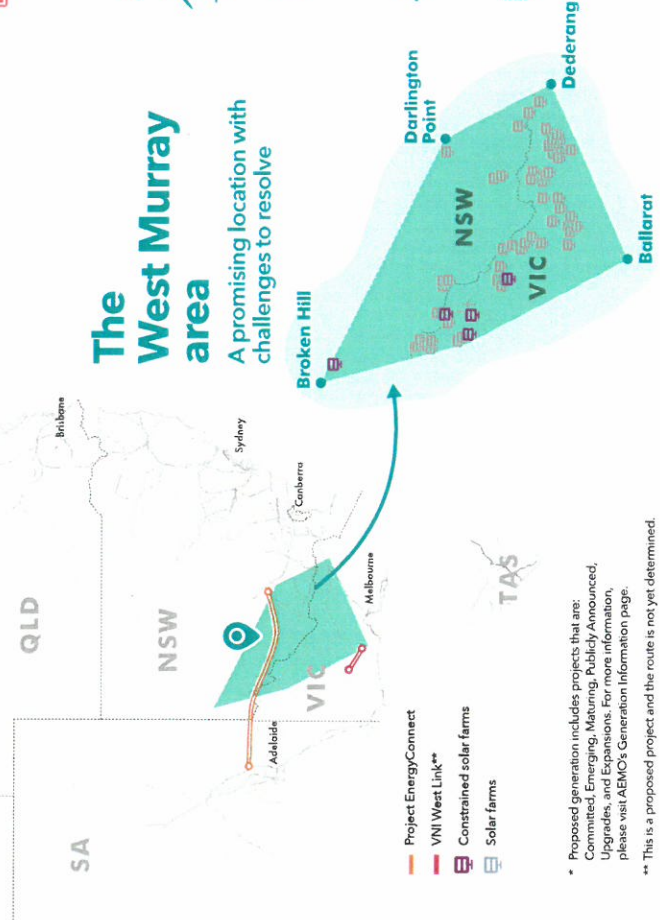
This page and the subsequent 4 pages have been redacted on the basis that they are exempt from release.

Transforming Australia's Energy system

Australia's energy system is transforming faster than anywhere else in the world. New generation in geographically diverse locations are producing world-first challenges that need to be solved for a better energy future for Australia.

Generation capacity by NEM region

	Existing (MW)	Proposed (MW)**
NSW	~17,000	+19,000
QLD	~15,000	+18,000
VIC	~12,000	+12,000
SA	~6,000	+10,000
TAS	~3,000	+4,000
Total	~54,000	+65,000



The West Murray area

A promising location with challenges to resolve

- Project EnergyConnect
- VNI West Link**
- Constrained solar farms
- Solar farms

* Proposed generation includes projects that are Committed, Emerging, Maturing, Publicly Announced, Upgrades, and Expansions. For more information, please visit AEMO's Generation Information page.
** This is a proposed project and the route is not yet determined.

National Electricity Market (NEM)

A power system like no other

About the NEM

+5,000 km
The NEM is the world's longest interconnected energy system.

The grid's transformation will require new energy infrastructure and services to power Australia's bright future.

~54,000 MW
of generation capacity

New generation

2017 → 2019
x6
Australia has gone from having six to **45 grid-scale solar farms** in just 2 years. This is enough to power over 1 million homes for over a year.

2017 → 2019
x52
Australia has gone from 36 to **52 wind farms** in just 2 years. This is enough to power over 1.3 million homes for over a year.

+65,000 MW of new generation wanting to connect.

New challenges for the network

Scale and pace of inverter-based generation connected in electrically remote areas of the NEM is presenting unprecedented technical issues.

World-first challenges need to be solved to ensure secure and reliable energy for all Australians.

In 2009 the NEM had **298 registered participants**. Today there are **463 registered participants**.

Why network constraints have been applied

In September 2019, post-fault performance was found to cause **unsatisfactory voltage fluctuations**. This threatened power system security.

As the power system operator, AEMO applied **network constraints to maintain power system security**.

What AEMO is doing to restore operational stability

AEMO continues to work closely with the solar generators, their equipment suppliers and Network Service Providers (Powercor and TransGrid) to **test and develop solutions** that would restore secure operation requirements.

Once this is restored, AEMO will work with Network Service Providers to connect **as many generators as can be connected securely**.

Two major interconnector projects will deliver critical benefits for the West Murray area and aid with system strength gap closure:

- **Project EnergyConnect:** interconnector between South Australia and between Victoria and New South Wales.
- **VNI West link:** interconnector between Victoria and New South Wales.



For more information, please visit aemo.com.au or contact us at 1300 236 600 or media@aemo.com.au
10 February 2020