# AUSTRALIAN ENERGY MARKET COMMISSION WHAT IS EMBEDDED GENERATION?

Embedded generation, also known as distributed or local generation, is any type of individual electricity generation unit that is connected to the electricity distribution network.



**ELECTRICITY GENERATION** 

TRANSMISSION NETWORK

DISTRIBUTION

RETAIL



CONSUMERS – INDUSTRIAL, COMMERCIAL, RESIDENTIAL



## **EMBEDDED GENERATORS**



#### Solar

More than 15% of Australian rooftops now have solar photovoltaic (PV) panels.



#### **Battery storage**

Batteries can be used to store electricity for later use. Excess electricity can be exported to the grid.



#### **Electric vehicles**

Electric vehicles parked in garages can potentially be used to store and export electricity.



#### Wind turbines

Wind turbines are generally located in rural and regional areas. They can be small stand-alone units or part of a larger commercial wind farm.



# Hydro

Hydro systems can generate electricity using a nearby flow of water. They are sometimes connected to distribution networks.



## **Gas turbines**

Gas turbines are used by businesses and industry for on-site electricity generation including cogeneration.



#### Cogeneration

Cogeneration is when a single fuel source, such as natural gas, is used to generate electricity and heat. Cogeneration is becoming more common, particularly in commercial buildings and shopping centres. If cooling is also generated, the process is called trigeneration.



# Diesel and oil generators

As with local gas turbines, diesel and oil generators can be embedded in the grid to provide emergency back up power and other grid support services.

Embedded generation can take many forms, such as solar photovoltaic (PV) rooftop panels, wind turbines, small-scale gas generators and diesel engines.

Electricity consumers are increasingly seeking to generate their own power. People with the ability to generate electricity may still need to source power from the grid or they might choose to sell their excess electricity back into the market.