

WORLD ENERGY MARKETS OBSERVATORY

Australia Energy ID Card

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Country Description: Australia

Quick introduction



Region: Australia

Population: 25,776,339 (Sept. 2021)

GDP: US \$1985.44 billion (2020)

Electricity

Total electricity generation (2020) : **265.2 TWh**

Average electricity price: **0.227 US\$/KWh**
(residential price)

Electrification share (average): **100%**

Gas

Total gas production: **142.5 bcm (2020)**

Total gas consumption: **40.9 bcm (2020)**

Energy

- Energy mix: Renewables 64.4TWh vs Fossil Fuels 147.4TWh vs Gas 53.1TWh (2020)
- Regulatory model: Australian Energy Regulator (AER) regulates the wholesale electricity and gas markets, and is part of the Australian Competition and Consumer Commission (ACCC). ACCC enforces the rules established by the Australian Energy Market Commission

Renewable energy

In 2020, renewable energy was responsible for **24%** of Australia's total electricity generation

Environment

- Total CO2 emissions: **372.3 MtCO2 e (2020)**
- CO2 emissions growth rate: **-7.4%**

Electric mobility

- Electric charging stations: **2,307 (2020)**
- Number of electric vehicles sold : **6900 (2020)**
- EV Market growth (2020): **2.7% increase**

Network (Regional sources)

- Length: 850,000 km of distribution grid and 45,000 km of transmission grid (2020)
- Tension: 216 - 253 V (households)
- Age: Electricity supply began during colonial era of 1880s and can be marked as an ~140 years old network





Energy Players

- Generation and Retail: “Big Three” AGL, Origin Energy and EnergyAustralia
- Market share: Big Three holds 64% of small electricity and 83% of small gas market
- Second tier’ retailers have built significant market share in some regions - Ergon Energy, Alinta Energy and Red Energy have emerged as strong ‘gentailers’
- 26 corporate power purchase agreements were announced in 2020, directly contracting 1.3 GW and supporting more than 4.5 GW of renewable energy generation

Country Highlights

Key policies:

- In Sep 2020, Technology Investment Roadmap released with a primary focus on Low Emissions Technology
- To support long-term fuel supplies, the Australian Government has developed a comprehensive fuel security package. It will increase domestic fuel storage.
- The National Energy Productivity Plan (NEPP) is a package of measures to improve Australia’s energy productivity by 40% between 2015 and 2030. The NEPP is delivered jointly between the Australian Government and the state and territory governments.
- The Australian Government is developing bilateral energy and emissions reduction agreements with state and territory governments to improve energy reliability and affordability which will help energy markets adopt lower emissions technologies.

Key facts:

- Due to Covid-19 as of March 2020, there were significant reduction in operational demand in the National Electricity Market (NEM). Overall, demand was down 6.7 per cent, with South Australia experiencing the biggest reduction of 11.1 per cent and a new record low

- There were 378,451 rooftop solar installations in 2020. The average system size also passed 8 kW for the first time in 2020, while the industry’s 3 GW of installed capacity easily beat the previous record of 2.2 GW set in 2019.
- Australian Government wants the private sector to step-up and make timely investments in the gas market. If the private sector fails to act, the Government will step in – as it has done for electricity transmission – to back these nation building projects
- The Australian Renewable Energy Agency has identified approximately 22,000 potential pumped hydro energy storage sites around Australia with merit for investigation.
- In 2020, 76 large-scale wind and solar projects were under construction, representing more than 8 GW of new capacity
- Australia’s Renewable Energy Target (RET) is a Federal Government policy designed to ensure that at least 33,000 gigawatt-hours (GWh) of Australia’s electricity comes from renewable sources by 2020.
- The battery storage sector rose to prominence in 2020, with 16 utility-scale batteries under construction at the end of 2020, representing more than 595 MW of new capacity.

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