

22nd Edition World Energy Markets Observatory: Australia

In pursuit of a "better normal"

Region: **Australia**

Population: **25,710,610**
(Oct. 2020)

GDP: **US \$1,392.7B**
(2018-2019)

At a Glance

Total CO₂ emissions: **532 MtCO₂ -e**

GHG emission growth rate: **+0.4%**

Share of renewables in electricity mix: **21% (+ >2%)**

EV market growth (2014-19): **+408.16%**

Australia is warming faster than the global average.

2019 was the warmest and driest year on record with temperatures climbing **1.52°C** above the long-term average.



In 2019, emissions per capita, as well as emissions intensity, reached their lowest levels in 30 years.

-2.9% Emissions from the electricity sector

-4.3% reduction in coal generation

+10% renewable generation capacity

Coal-fired electricity generation

60% of total generation in 2018

71% in 2010

14 coal power stations are set to close over the next 30 years in Australia.



Total Closures between 2012-17: 12 stations
Total Capacity Closure: 5,589 MW

Existing coal-fired power stations: 22 stations
Existing Total Capacity: 23,650.4 MW

Closure in 2017
Existing plants between the age of 10-20 years

Closures: 1
240 MW
Existing: 4
891 MW



Closures: 3
710 MW
Existing: 10
8,153.4 MW

Closures in 2012
Existing plants between the age of 11-45 years

Closures: 3
1,744 MW
Existing: 5
9,920 MW

Closures in 2014 and 2012
Existing plants between the age of 25-47 years

Closures: 3
2,109 MW
Existing: 3
4,716 MW

Closures in 2014, 2015 and 2017
Existing plants between the age of 25-43 years

Note: As on until June 2019

Investment in renewables has increased significantly in Australia with green energy sources now responsible for **21%** of Australia's total electricity generation.

As of year-end 2019:

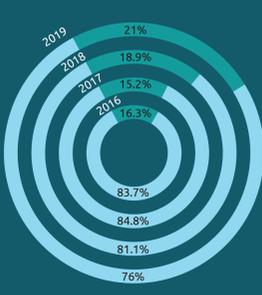
11.1GW of new generation are under construction or financially committed

14,500 jobs created

\$20.4B green energy investments

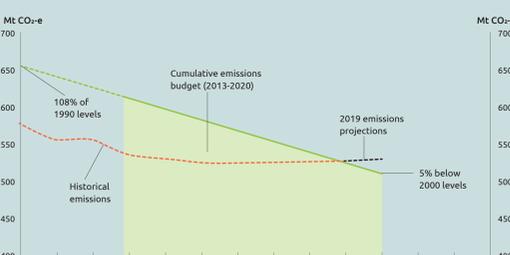
34 renewable energy projects completed

Australia is set to add **1.2 gigawatt-hours** of energy storage capacity in 2020 — more than **2X** the installations in 2019.



In 2019, Australia met its 2020 renewable energy target of 23.5% and 33 terawatt-hours (TWh), and will achieve its 2020 emission reduction target. Achievement of the 2030 emissions reduction target remains unclear.

Hydrogen is gaining importance in Australia with a plan for it to become part of Australia's renewable energy mix, but its growth will depend on technology advancement and cost reductions.



Affordability of electricity in Australia remains a concern as wholesale prices reached record highs in 2019.

However, annual residential bills are expected to decrease by 7.1% between 2019 and 2022 as new capacity enters the system, including 2,338 MW of solar and 2,566 MW of wind.

300%

2019 sales of electric vehicles tripled in Australia — a trend that is expected to continue in 2020.



Impact of COVID-19

COVID-19 has increased the default risk of multiple power retailers due to an increase in costs and nonpayment.

Demand for electricity dropped during the second quarter of 2020, reducing wholesale electricity prices by 46-68% compared to 2019.

In 2020, the Minister for Energy and Emissions Reduction introduced a new investment roadmap expanding the investment focus to include low emission technologies. Top priorities include:

1. Hydrogen production under \$2 per kilogram
2. Long duration energy storage (6-8 hours or more) dispatched at less than \$100 per MWh
3. Low carbon materials, including low emissions steel production under \$900 per tonne and low emissions aluminum under \$2,700 per tonne
4. CCS – CO₂ compression, hub transport, and storage under \$20 per tonne of CO₂

Utilities transformation roadmaps must be reconsidered in a post-COVID world.

Energy Transition, Carbon Neutrality Priority #1



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"The challenge of energy policy is to maintain affordable, reliable, and sustainable energy whilst enabling the transition to new generation technologies."

Jan Lindhaus
Vice President, Head of Energy & Utilities Australia

About WEMO

The World Energy Markets Observatory (WEMO) is Capgemini's annual thought leadership and research report that tracks the development and transformation of electricity and gas markets in Europe, North America, Australia, Southeast Asia, India and China. Now in its 22nd edition, WEMO examines the following topics: climate change & regulatory policies; energy transition; infrastructure & adequacy of supply; supply & final customer; transformation; financials; and, for the first time, the oil & gas industry. This edition also includes data and analysis for the first half of 2020 due to the extraordinary events related to COVID-19.

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