

Tracking Australia's Emissions

Projections show that Australia is on track to meet its Paris target emissions reduction targets of 5 per cent below 2000 levels by 2020, and is targeting 26–28 per cent below 2005 levels by 2030.

The [Federal Department of Environment and Energy](#) publishes Australia's National Greenhouse Accounts. This data is used to meet Australia's reporting commitments under the United Nations Framework Convention on Climate Change (UNFCCC), track the nation's progress under the Kyoto Protocol, and inform policy makers and the public. Continuing reductions in electricity emissions is key to Australia's commitment to meet the Paris target.

International commitments

The UNFCCC is the primary framework for international climate change cooperation. Its primary objective is to stabilise greenhouse gas concentrations. The Convention is a framework document updated by subsequent agreements, including:

- [Paris Agreement](#): adopted in 2015, this agreement set in place a framework requiring all country Parties to take climate action. Australia ratified the Paris Agreement in 2016, committing the nation to reduce emissions by 26-28 per cent below 2005 levels by 2030. This represents a halving of emissions per person and a two-thirds reduction per unit of GDP.
- [Kyoto Protocol](#): Ratified by Australia in 2007, the Protocol binds developed country Parties to targets to limit and reduce greenhouse gas emissions – known as Quantified Emissions Limitation or Reduction Obligations (QELROs). Under its first commitment period, from 2008 to 2012, Australia adopted a QELRO limiting Australia's emissions growth over the first commitment period to 108 per cent of 1990 levels. Australia's QELRO under the second commitment period, from 2013 to 2020, is 99.5 per cent of 1990 levels. Australia met and exceeded the first commitment period, and is on track to exceed the second.

Emission projections

The [Federal Government's 2018 projections](#) forecast progress to emissions reduction targets. Australia will surpass its 2020 target (5 per cent below 2000 levels) and the challenge in meeting the 2030 target (26–28 per cent below 2005 levels) has declined.

This change is expected to be due to the decline of emissions, driven by:

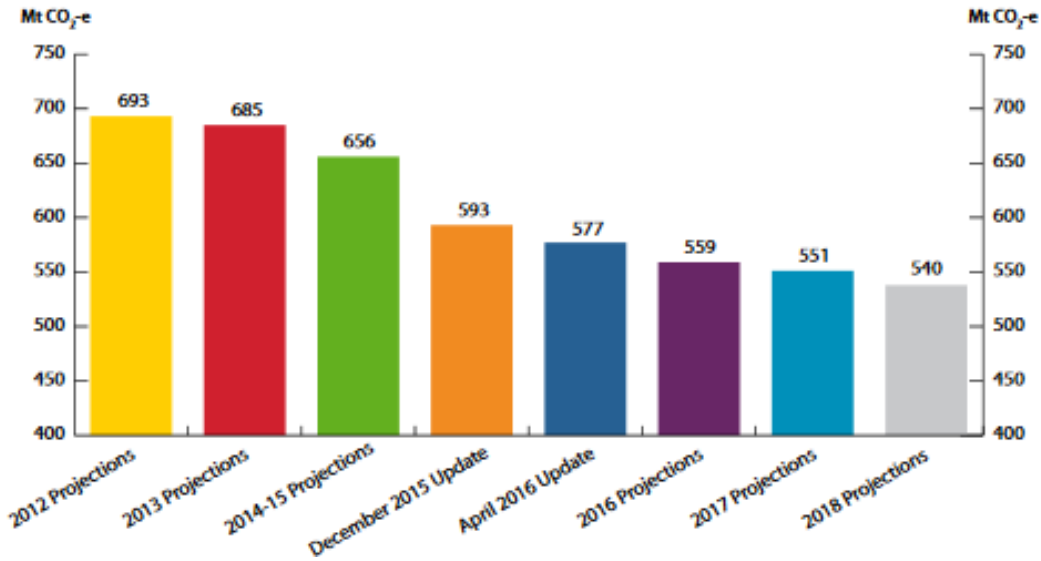
- Higher than expected build for large scale renewables to the early 2020s;
- An increased forecast of small scale solar PV uptake; and,
- Lower than previously forecast electricity demand.

Yet projections also show that Australia is not on track to meet its emission reduction target of 26 per cent by 2030 from a 2005 baseline (more below).

Projected 2020 emissions target

Australia's emissions are projected to grow 1 per cent above current levels to 2020. This growth is expected to be due to an increase in LNG production and an increase in emissions from the land sector. However these increases are offset by falling emissions in the electricity sector as a result of higher renewable builds and lower than previously forecast electricity demand (figure 1).

Figure 1: Projected emissions in 2020 overtime



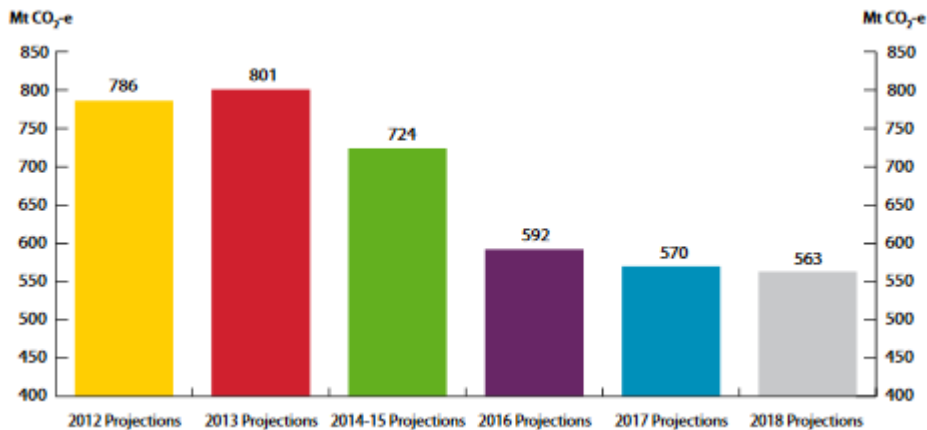
Source: [Federal Government's 2018 projections update](#)

Projected 2030 emissions target

Shown in figure 2 below, Australia's total emissions in 2030 are forecast to drop to 563 Mt CO₂-e (7 per cent below 2005 levels). The current estimate is that cumulative emissions reductions of 695 Mt CO₂-e (-26 per cent) to 762 Mt CO₂-e (-28 per cent) will be required from 2021–2030 to meet the 2030 target. This suggests that Australia is not on track and that additional efforts will need to be taken.

Emissions to 2030 are expected to grow 4 per cent above 2020 levels, driven by higher emissions from LNG production, increased transport activity, a declining forest sink in the LULUCF (land use, land use change and forestry) sector, and growth in agricultural activity after a return to average seasonal conditions.

Figure 2: Projected emissions in 2030 overtime



Source: [Federal Government's 2018 projections update](#)

Carry-Over Credits

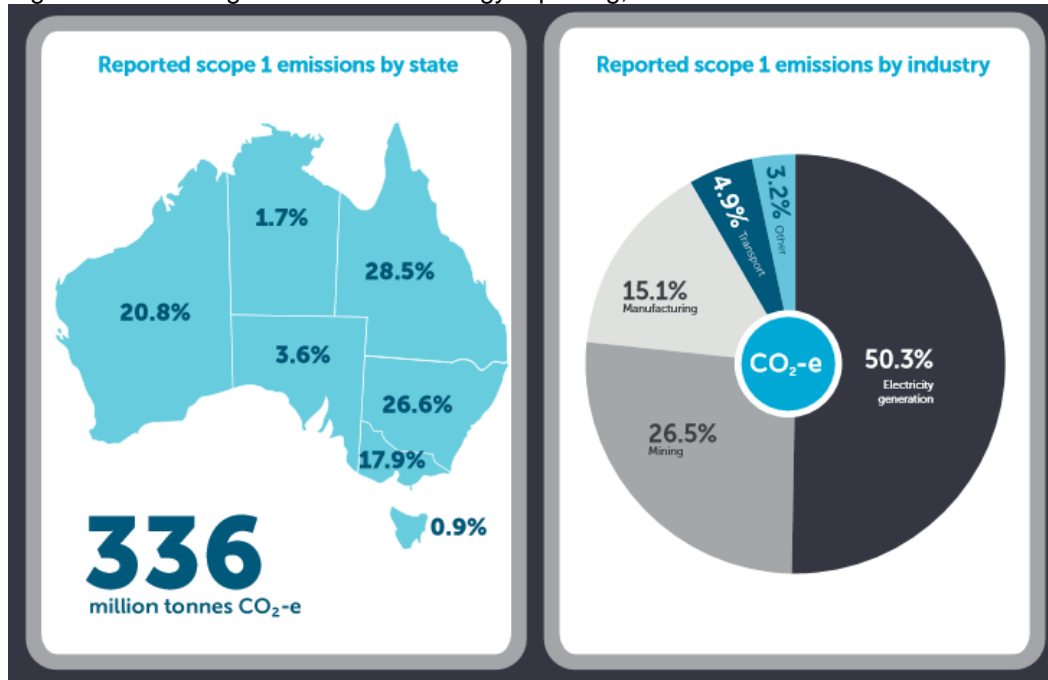
The government's projections rely heavily on the use of 367 Mt of "carry-over credits". These are credits from the amount by which Australia beat the 2020 target applied to the 2030 target. In December 2018, the Government said it will use these surplus credits to extinguish 52.8 per cent of its target.

Drawing upon the beating of a historical target to lessen the challenge in a new target is a controversial matter domestically and internationally. The federal opposition does not support this approach, and international discussions are yet to be held on its legality.

Electricity sector declines

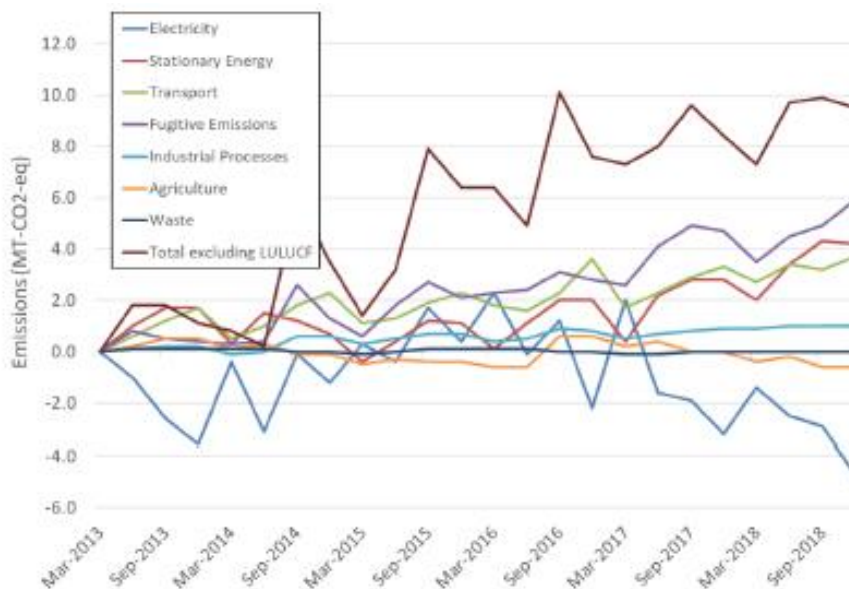
Australia is a world-leader in the transition towards renewable electricity. While the electricity sector, historically dominated by coal, makes up the largest proportion of Australia’s emissions (figure 3), across different sectors of the Australian economy, electricity is the only sector that has seen significant decreases in emissions (figure 4) and is projected to keep declining. However, in recent years, this decline is offset by other sectors that have experienced increases, resulting in a rise overall.

Figure 3: National greenhouse and energy reporting, 2017-18



Source: [Clean Energy Regulator](#)

Figure 4: Change in quarterly emissions for Australia



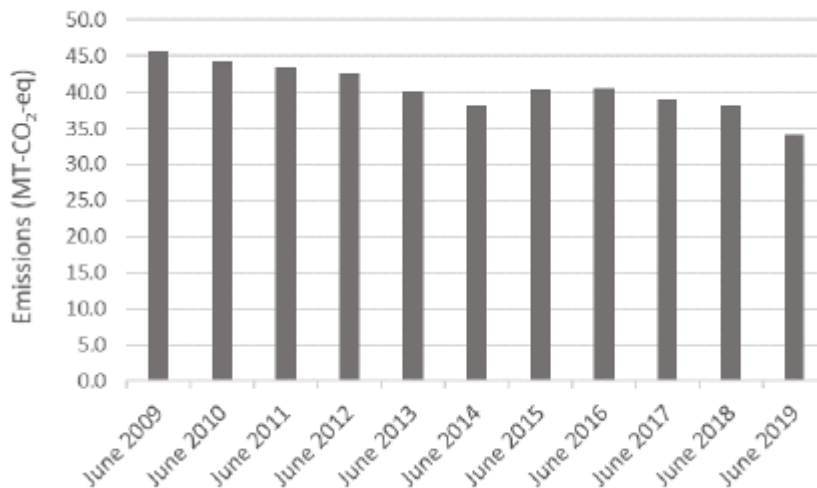
Source: ANU, Powering ahead: Australia leading in renewable energy build rates

NEM emissions

The National Electricity Market's five trading regions - New South Wales (including ACT) South Australia, Victoria, Tasmania and Queensland - are interconnected. Western Australia and the Northern Territory are not connected to the National Electricity Market (NEM), due to the large geographical distance between regions.

The Clean Energy Regulator (CER) collects emissions data from the Australian Energy Market Operator (AEMO) as part of its responsibility for Australia's National Greenhouse Accounts. Shown in figure 1 below, the CER data shows that the NEM recorded its lowest level of emissions of 34.1 MT of CO₂-e as at June 2019.

Figure 5: June quarter NEM emissions



Source: ANU, Powering ahead: Australia leading in renewable energy build rates

This decline in the NEM emissions is largely because of increased wind and solar deploymentⁱ. In 2019, new wind and solar were responsible for an additional 1,900 GWh of generation (+4 per cent from 2018). While brown coal, which is more carbon intensive generation, was reduced by 1,200 GWh.

Many forecasters have predicted considerable [further increases in renewable build rates](#) in the NEM and in Western Australia due mainly to falling technology costs. Work published by [RepuTex suggest](#), assuming no change in federal policy, renewable energy generation could grow to 52 per cent of electricity in the NEM by 2030.

ⁱ ANU, Powering ahead: Australia leading in renewable energy build rates, September 2019