

TRACKING 2 DEGREES

Quarterly report Q2/FY2018

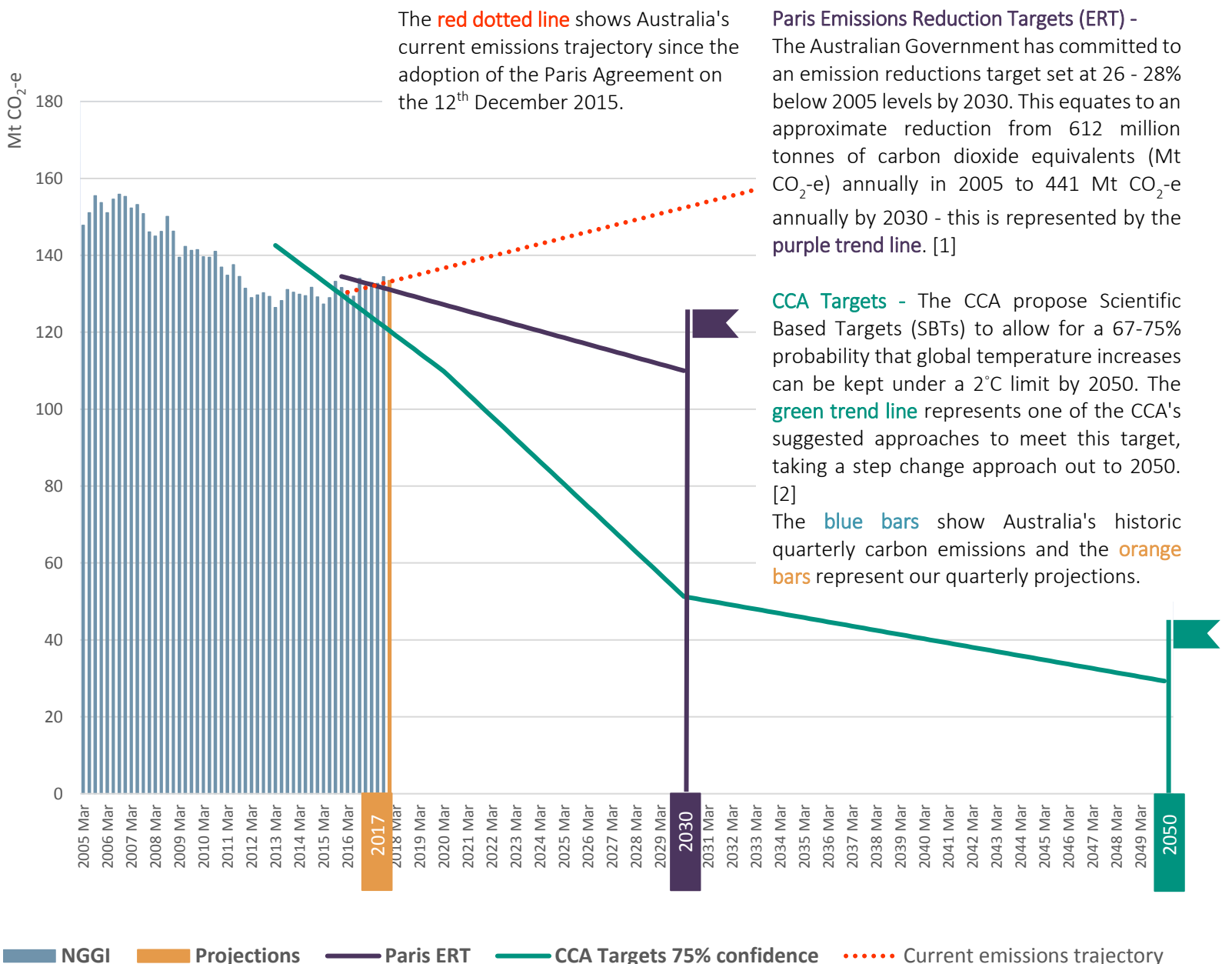
Under the Paris Agreement, the Australian Government has legally committed to reducing our emissions by 26-28% by 2030. However, to ensure global warming remains under 2 degrees, independent body the Climate Change Authority (CCA) has proposed Australia set a national Science Based Target (SBT). This is a target calculated from Australia's share of emissions for a 2°C global outcome. Ndevr Environmental has used this target to model a quarterly emissions budget for Australia.

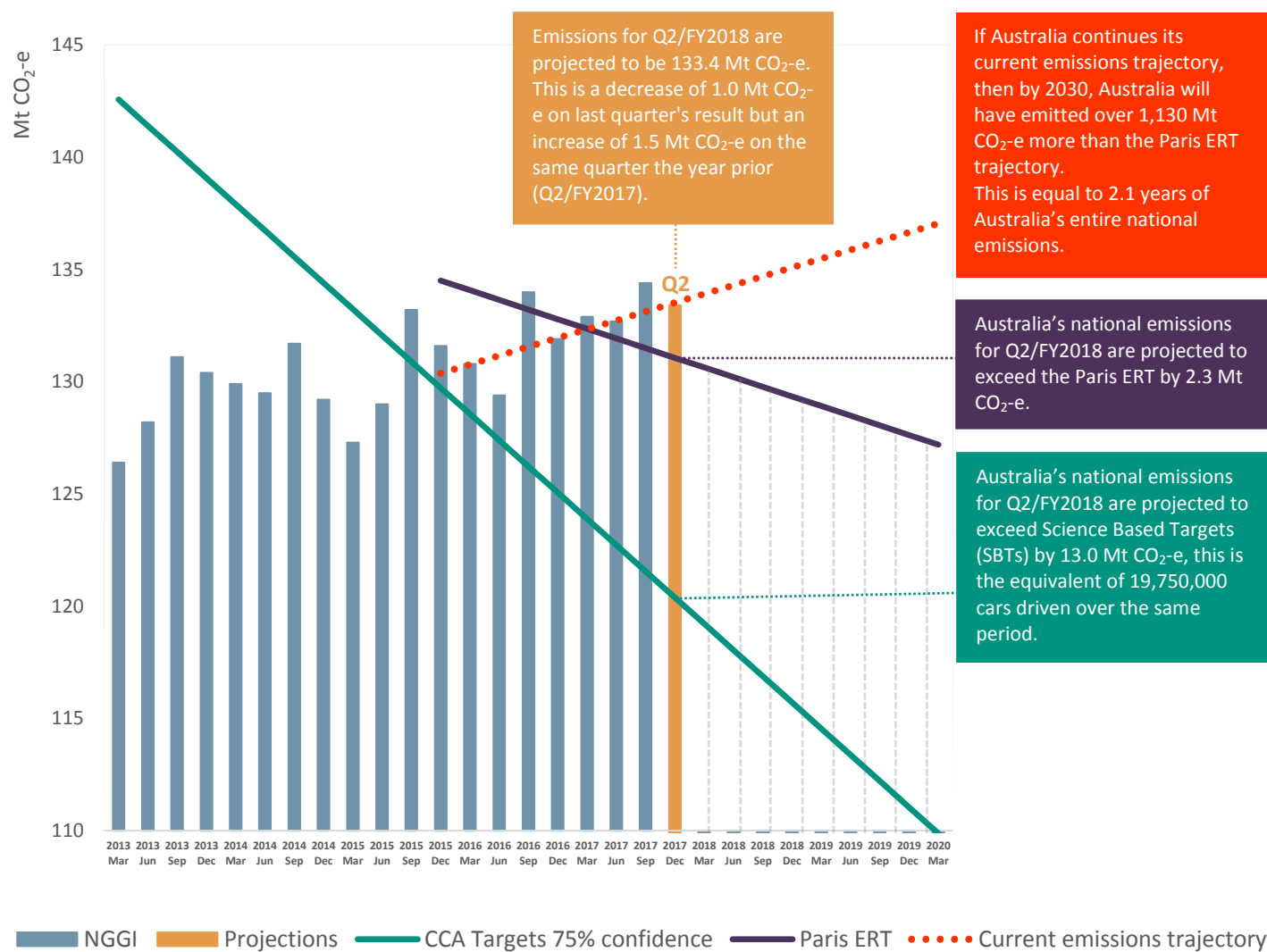
This report tracks Australia's performance against our Paris target and the CCA's carbon budget based on the latest available data, trends and industry movements **for the months of October, November and December 2017 (Q2/FY2018)**. Our results are presented in tonnes of carbon dioxide equivalents (t CO₂-e), 1t CO₂-e is equal to the emissions of a standard 5-seat passenger vehicle driving around 5,400km.

Headline Results

- Australia's national emissions for calendar year 2017, excluding land use change, were the highest since records began in calendar year 2002.
- Land use emissions estimations reported by the Australian Government in the previous quarterly update have been readjusted down in the most recent quarterly update by a total of 149.2 Mt CO₂-e over the entire 'unadjusted' emissions dataset.
- Fugitive sector emissions for Q2/FY2018 are projected to be the highest on record and have increased rapidly over the last four quarters.
- Transport sector emissions for Q2/FY2018 are projected to be the highest on record.
- Stationary energy sector emissions for Q2/FY2018 are projected to be equal highest on record with the previous quarter.
- Electricity sector emissions for Q2/FY2018 are projected to be the lowest on record.

AUSTRALIA'S QUARTERLY EMISSIONS PROJECTIONS TO A 2 DEGREE TARGET





Detailed Findings

- Australia's national emissions for calendar year 2017, excluding land use change, were the highest on record since records began in calendar year 2002. Despite electricity emissions falling to their lowest levels on record, emission in other sectors continue to increase, including transport, fugitives and stationary energy. Emissions resulting from the industrial, agriculture and waste sectors remains relatively stable.
- Transport sector emissions for Q2/FY2018 are the highest on record and have been steadily increasing since records commenced in Q1/FY2002. The increase in transport emissions was mainly driven by a rapid increase in diesel fuel usage in Australia, primarily in the automotive and freight industries. Aviation fuel usage has also been steadily increasing in Australia and contributing the increase in emissions. Unleaded petroleum usage in Australia has remained relatively stable since records began.
- Fugitive emissions for Q2/FY2018, which include emissions from the production, processing, transport, storage, transmission and distribution of fossil fuels, are projected to be the highest on record. Fugitive emissions have been rapidly increasing since Q3/FY2015 due to the rapid expansion in LNG production for the international export market that saw Australia become the world's second largest LNG exporter.¹ Publicly available NGER data shows that Scope 1 direct emissions from a single LNG production facility, Chevron's Gorgon LNG Project, had jumped from 2.6 Mt CO₂-e in FY2016 to 7.9 Mt CO₂-e in FY2017.²
- Stationary energy sector emissions for Q2/FY2018 are the equal highest on record with Q1/FY2018. Emissions from the stationary energy sector have been steadily increasing over the last three years due to an increase in domestic gas production, a rapid expansion of LNG production for the international export market and a steady rise in stationary energy used by the commercial, industrial and residential sectors.
- Electricity sector emissions for Q2/FY2018 are the lowest on record and are 0.3 Mt CO₂-e less than the second lowest result recorded in Q2/FY2014.

¹ APPEA, Export Revenue; Available at: <https://www.appea.com.au/oil-gas-explained/benefits/benefits-of-lng/export-revenue/>

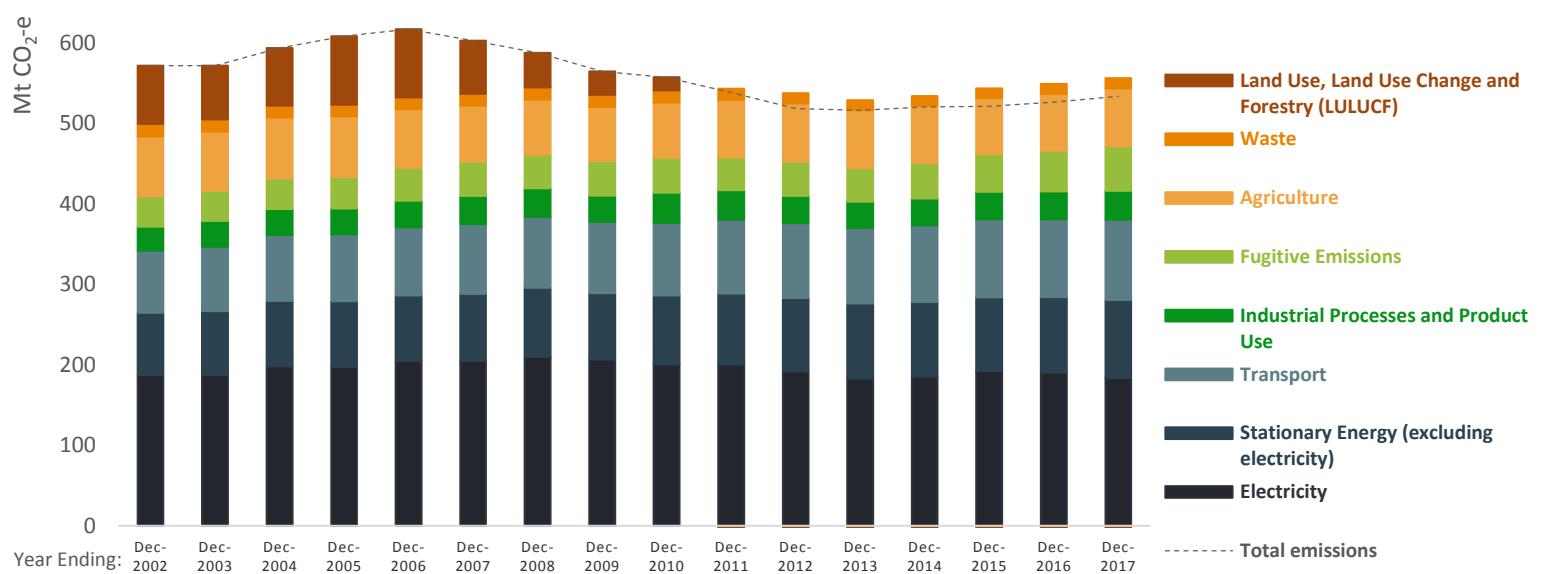
² Clean Energy Regulator, Corporate emissions and energy data 2016, Available at: <http://www.cleanenergyregulator.gov.au/NGER/National%20greenhouse%20and%20energy%20reporting%20data/Corporate%20emissions%20and%20energy%20data/corporate-emissions-and-energy-data-2016-17>

- » Victoria's total emissions from electricity generation continue to fall since the closure of the Hazelwood brown coal power plant. Although renewable energy generation fell from 14.0% last quarter to 10.3% this quarter, total electricity generation for the State was significantly lower and the net result was an emissions reduction. Victoria's total sent out electricity for Q2/FY2018 was 9.5 TWh, this is 20.9% lower than the 12.0 TWh sent out in Q2/FY2017.
- » New South Wales's emissions from electricity also fell despite a drop in renewable energy generation from 7.1% last quarter to 4.5% this quarter, with wind energy generation falling by almost half and hydro generation falling by a third. Despite the drop in the percentage of renewable generation, total electricity generation for the State was significantly lower than last quarter and the net result was an emissions reduction. New South Wales's total sent out electricity decreased from 15.1 TWh last quarter to 14.6 TWh this quarter.
- » Queensland electricity generation and the associated emissions remained stable since last quarter, with only 0.5% of the State's electricity being generated from renewable sources. Total sent out electricity in Queensland was 14.0 TWh.
- » South Australia's renewable energy generation fell from 39% last quarter to 31% this quarter and had 2.8 TWh of total sent out electricity. Tasmania's renewable energy generation fell from 96% last quarter to 87% this quarter and had 2.4 TWh of total sent out electricity.

Land use emissions estimations reported by the Australian Government in the previous quarterly update have been readjusted down in the most recent quarterly update by a total of 149.2 Mt CO₂-e over the entire 'unadjusted' emissions dataset. The land use emission for FY2017 have been adjusted down from 0.4 Mt CO₂-e to -21.5 Mt CO₂-e (carbon sink). This drastic reduction in emissions estimations for the Land use sector has resulted in Australia being much closer to meeting its Paris commitments, although the emissions trajectory remains steadily upward, and targets are unlikely to be met without further emissions reductions in other sectors.

The NGGI report states: "As processed satellite images are not yet available to support the calculation of emissions estimates for 2017 and 2018, these preliminary estimates are subject to change and have a greater level of uncertainty than the other sectors in the national inventory (see Section 5: Quarterly Uncertainty)."³ For this reason, it is possible that the Land use emissions estimations may be adjusted again in the next quarterly NGGI update for the March 2018 quarter.

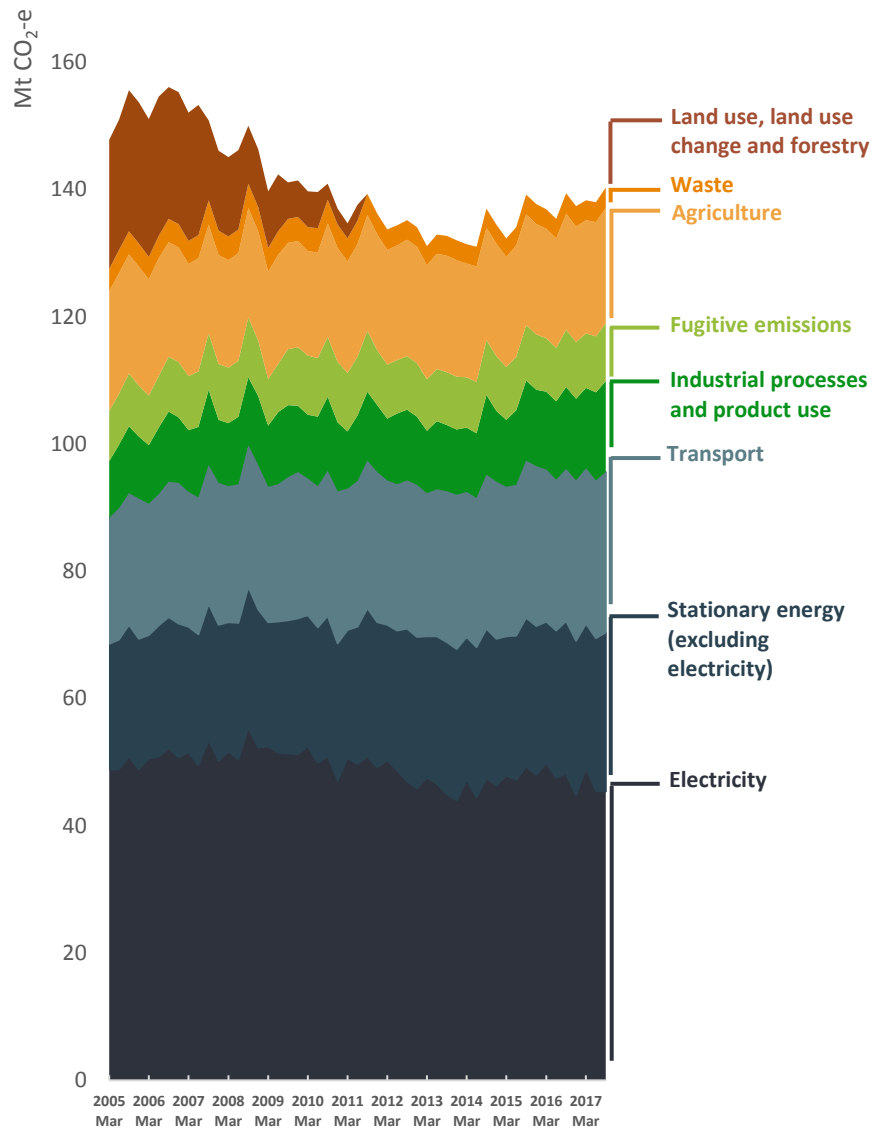
AUSTRALIA'S ANNUAL EMISSIONS, CALENDAR YEAR TO DECEMBER 2017*



* This graph includes both published Government NGGI data and Ndevr Environmental projections for Q2/FY2018.

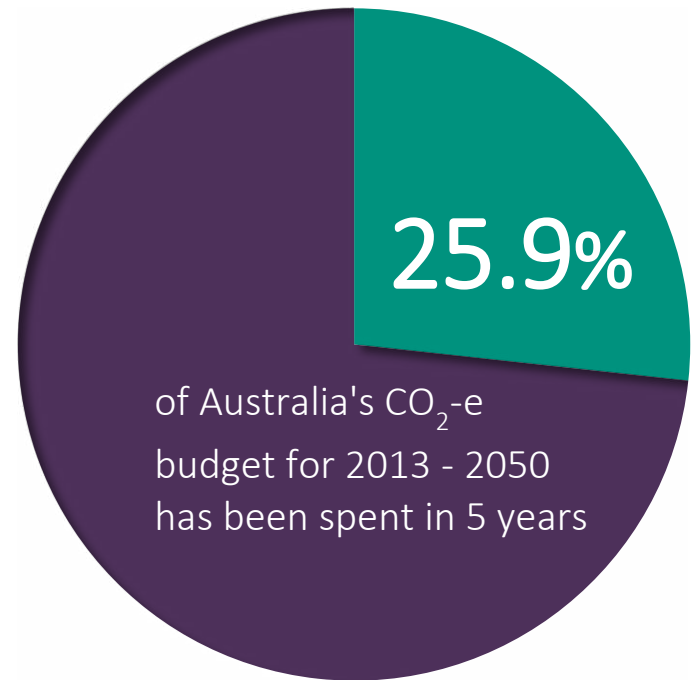
³ Department of the Environment and Energy, Quarterly Update of Australia's National Greenhouse Gas Inventory: September 2017 (incorporating December 2017 quarter emissions from the National Electricity Market), Available at: <https://www.environment.gov.au/climate-change/climate-science-data/greenhouse-gas-measurement/publications/quarterly-update-australias-national-greenhouse-gas-inventory-sep-2017>

AUSTRALIA'S QUARTERLY EMISSIONS BY SECTOR*



* Negative land use emissions are represented as 0 in the above chart

2 DEGREE BUDGET EXPENDITURE TO DATE



This report has been compiled by Ndevr Environmental, using the latest information available from: AEMO, Office of the Chief Economist, Australian Petroleum Statistics and the Department of the Environment and Energy's National Greenhouse Gas Inventory (NGGI) reports. Detailed electricity generation data for the National Energy Market (NEM) are sourced from Global-Roam's NEM-Review™ tool.

GDP trends are sourced from Trading Economics, information about Australian car use is sourced from the National Transport Commission, 2016 and the Australian Bureau of Statistics. Emission factors are sourced from National Greenhouse and Energy Reporting (Measurement) Determination 2008.

Government and CCA target information is available at the following sources:

[1] - Australian Government (2015), Australia's 2030 Climate change target, Commonwealth of Australia

[2] - CCA (2013), Historical emissions from the Treasury and DIICSRTE

This work is copyright. Apart from any use permitted under the Copyright Act 1968, no part may be reproduced by any process, nor may any other exclusive right be exercised, without the permission of Ndevr Environmental, L2 27-31 King Street, Melbourne VIC 3000; 2017

We're tracking Australia's carbon budget, find out how we can help you monitor and reduce yours...

www.ndevrenvironmental.com.au

Ndevr Environmental is a specialist carbon, energy and sustainability focused consultancy firm that partners with clients to achieve positive business and environmental outcomes.

