



Assessment of Australia's policies impacting  
its greenhouse gas emissions profile

---



# CLIMATE ACTION TRACKER

AUSTRALIA

---

Conducted by Ecofys and Climate Analytics  
29 November 2011

## The authors

This study was prepared by Ecofys and Climate Analytics. **Niklas Höhne**, Director Energy and Climate Policy at Ecofys, and **Bill Hare**, Director at Climate Analytics, designed and directed the analysis. The overall project is coordinated by **Marion Vieweg**, Policy Analyst at Climate Analytics, who also contributed to the analysis (transport, AFOLU and conclusions) and coordinated the review process. **Nadine Braun**, Consultant at Ecofys, coordinated the policy analysis (and contributed to analysis of electricity and industry). **Markus Hagemann**, Consultant at Ecofys, coordinated the modeling.

Other colleagues from Ecofys and Climate Analytics contributed to multiple aspects of the analysis and were instrumental in delivering the study. **Jan Grözinger** (buildings), **Vivian Schüler** and **Gesine Hänsel** (AFOLU), **Michiel Schaeffer** (modeling and AFOLU and review), **Hanna Fekete** and **Marcia Rocha** (data analysis).

### The analysis was conducted by

Niklas Höhne, Nadine Braun, Markus Hagemann, Hanna Fekete, Jan Grözinger, Vivian Schüler, Gesine Hänsel<sup>1</sup>  
Marion Vieweg, Bill Hare, Michiel Schaeffer, Marcia Rocha<sup>2</sup>

<sup>1</sup>Ecofys and <sup>2</sup>Climate Analytics

This analysis is part of the country assessment component of the Climate Action Tracker project, a joint project of Ecofys, Climate Analytics and the Potsdam Institute for Climate Impact Research (PIK). Ecofys and Climate Analytics are responsible for the country assessments.

## Acknowledgements

**T**he authors from the Climate Action Tracker team prepared this report and take full responsibility for all content.

Cindy Baxter edited the report and provided important input to the framing of the analysis. Vanessa Wagner also provided the team with editorial and technical support. Kirsten Macey provided valuable input for the analysis on agriculture and land use, land use change and forestry.

A review process including national experts was part of the analysis. Thanks to Mark Diesendorf, Andrew Macintosh, Georgina Woods, Chris Riedy, Julie Gilfelt, Steve Hatfield-Dodds, Tim Nelson, Emma Herd, Anna Skarbek, Frank Jotzo, Kirsten Macey and Tennant Reed for their constructively critical feedback. We have assessed all input received in writing and during the interviews and it has greatly helped to improve the overall quality of the report.

Special thanks to Erwin Jackson from the Climate Institute Australia who supported the analysis with valuable input and critical feedback. His contribution was also essential in establishing and conducting review process.

The work could not have been achieved without the substantial support from the European Climate Foundation, especially the advice and guidance provided by Bert Metz and the relentless work of Nikola Franke.

# EXECUTIVE SUMMARY

## What we evaluate

The Climate Action Tracker (CAT) provides information to help answer the question:

*“Will current – and pledged – international climate action be enough to limit the negative effects of climate change by holding long term global temperature increase below 2°C?”*

The CAT compares and assesses national and global action against a range of different climate targets across all relevant time frames, starting with an ongoing analysis of countries’ current emission reduction pledges<sup>1</sup>.

This report assesses Australia’s climate policies and is the first of a series of country analyses addressing the following questions:

- ▶ Are policies implemented to meet the country’s own targets and which approach the targets required for a global 2°C or lower (1.5°C) pathway in 2020?
- ▶ Do implemented policies lead towards a low carbon future in 2050?

While our focus is on domestic action, we acknowledge that international targets and pledges are often contingent on international mechanisms - international trading of carbon units for developed countries and international financial support for developing countries.

As with the broader Climate Action Tracker project, the CAT Country Assessments track progress in elements that contribute to the global efforts to hold warming below 2°C above pre-industrial temperatures.

## Australia’s Clean Energy Future Package makes break with the past

Australia has long been regarded as lagging behind the rest of the world in terms of implementing climate policies. Although it does have in place a number of policies established over the last decade, these have not had a significant effect on the trajectory of greenhouse gas emissions growth.

Due to the special provisions of the Kyoto Protocol’s Article 3.7, Australia was able to account for the reduction in its deforestation emissions that occurred in the early 1990s without significantly slowing the growth of greenhouse gas emissions from the energy and other industrial sectors. Australia is therefore well within reach of meeting its Kyoto target for the period 2008 to 2012, taking into account energy and industrial greenhouse gas emissions<sup>2</sup>, afforestation, reforestation and deforestation emissions and removals.

The passage of the 18 Acts that form the Clean Energy Future Legislative Package through the House of Representatives on October 18, 2011 and the Senate on November 8 is a ground breaking development that we estimate is likely to change the trend of emissions in a positive direction. This legislation establishes a framework for significant and long-lasting emission reductions.

The Clean Energy Future Plan has the potential to become the cornerstone instrument for low carbon development in Australia - but requires substantial enhancement. The policies differ significantly in stringency and do not completely cover some areas that could potentially have a large impact on emissions.

With very high per capita emissions and a rising population, Australia’s starting point is difficult – and shows that the longer a country delays strong policies, the more difficult it will be.

<sup>1</sup> Results are published and constantly updated under [www.climateactiontracker.org](http://www.climateactiontracker.org).

<sup>2</sup> This refers to sources of greenhouse emissions listed in Annex A to the Kyoto Protocol (<http://unfccc.int/resource/docs/convkp/kpeng.html>), principally carbon dioxide from fossil fuel combustion and other greenhouse gases from this source, industrial and agricultural activities. This does not include greenhouse gas emissions and or removal from land use, land use change and forestry (LULUCF) activities.

We recognise that the threat by Australia's Leader of the Opposition to withdraw the current efforts does create uncertainty for investment and decreases effectiveness of the instrument. However, we have evaluated the impact of policies under the assumption that the currently implemented measures and efforts continue at the present level, independent of possible changes in the administration.

Given the dynamic nature of policy development and implementation, the analysis in this report must be seen only as a snapshot.

### How does current policy compare to a long-term low-carbon future?

Prior to the adoption of the Clean Energy Future plan, there was insufficient policy effort to significantly change the upward trajectory of emissions (Figure A). Australia was lagging behind the European Union, Japan, Norway and other industrialised countries, and behind the policy frameworks that China has put in place.

The comprehensive Clean Energy Future Plan defines a legislated strategy that, if fully implemented, would almost reach the 5% reduction from 2000 levels by 2020 'unconditional' target through domestic action. The Clean Energy Future Plan involves deep and far-reaching policy changes:

**Carbon price** - The centrepiece of the strategy is the introduction of a carbon price for the biggest polluters. It is scheduled to start on 1 July 2012 with a fixed price, moving to an emissions trading system (ETS) in 2015.

**Renewable energy** - The Renewable Energy Target of 20% share of renewable electricity production was reaffirmed.

The new Australian Renewable Energy Agency will support activities and administer a A\$ 3.2 billion budget to promote renewable energy.

A new 'Clean Energy Finance Corporation' will be set up to enhance private investment in efficiency and renewable energy technology.

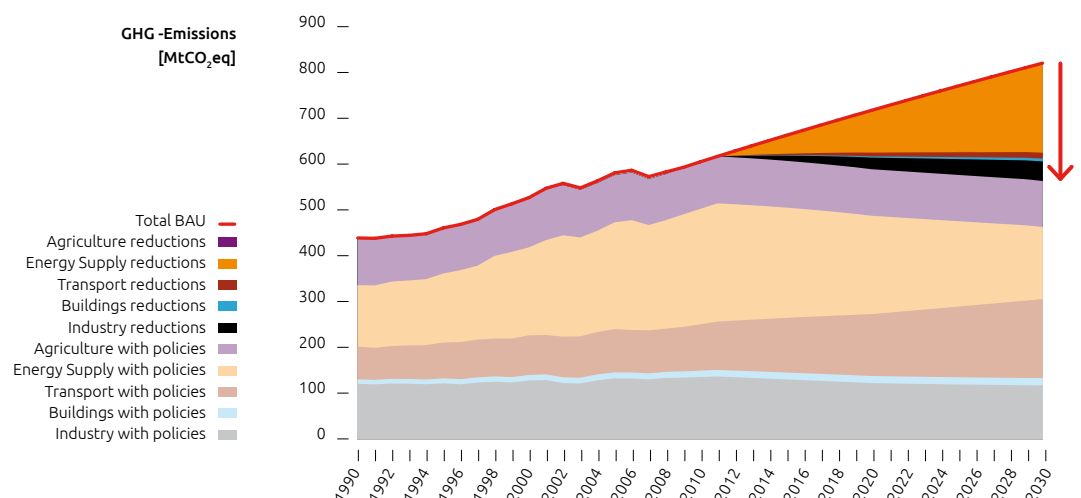
**Energy efficiency** - Energy efficiency efforts by households, industry and the electricity sector will be affected by the carbon price. Additional support will be provided through the 'Low Carbon Communities' program and an energy savings initiative.

Closure of 2000 MW of highly polluting coal-fired electricity production plants will improve efficiency of the energy sector.

**Land use** - Agriculture and forestry are not subject to the carbon price. The 'Carbon Farming Initiative' will instead allow farmers and land managers to create Kyoto-compliant credits from activities to reduce emissions or to increase carbon storage.

**Figure A**

Emissions and emission reductions (excl. LULUCF) for 'Policies including Clean Energy Future' up to 2030



We have scored how well Australia is doing in the various sectors and policy areas, as seen in the Table A below. We rate policies in each area against a predefined low carbon policy package that would be needed to be on a pathway towards 2°C.

As can be seen from Table A, highlights in Australia's current policy compared to the low carbon policy package are its general climate strategy (rated B) and its support for renewables in electricity generation (rated A).

**Table A**

Rating against the low carbon policy package<sup>3</sup>

|                                   | Changing activity | Energy efficiency | Renewables | Low carbon               | Other    |
|-----------------------------------|-------------------|-------------------|------------|--------------------------|----------|
| <b>General</b>                    | -                 | -                 | -          | -                        | <b>B</b> |
| <b>Energy supply</b>              | -                 | <b>E</b>          | <b>A</b>   | LC <b>F</b> REN <b>G</b> | -        |
| <b>Industry</b>                   | <b>G</b>          | <b>D</b>          | <b>F</b>   | LC <b>F</b> REN <b>G</b> | <b>F</b> |
| <b>Buildings</b>                  | <b>F</b>          | <b>D</b>          | <b>E</b>   | No score                 | -        |
| <b>Transport</b>                  | <b>F</b>          | <b>F</b>          | <b>E</b>   | <b>G</b>                 | -        |
| <b>Agri-culture/<br/>Forestry</b> | <b>E</b>          | -                 | -          | -                        | <b>D</b> |

#### Scoring matrix

|      | Rating   | Interpretation  |
|------|----------|---|
| >=   |          |   |
| 0    | <b>G</b> | No or very limited policies   |
| 0.57 | <b>F</b> | Few policies, ambition level low  |
| 1.14 | <b>E</b> | Some policies with medium ambition level                                  |
| 1.71 | <b>D</b> | Comprehensive package or good ambition level for a wide range of policies |
| 2.29 | <b>C</b> | Comprehensive policy package, ambition level good                         |
| 2.86 | <b>B</b> | Pathway is set, minor improvements required                               |
| 3.43 | <b>A</b> | Consistent with low carbon development                                    |

<sup>3</sup> Size of the symbols indicate importance (mitigation potential), letter indicates stringency compared to low carbon policy package (A= emission development consistent with a global path towards 2°C with or without external support, G=no or very limited policies). The low carbon policy package has two alternatives. One version suggests using carbon capture and storage (CCS) as well as nuclear energy (left score under "low carbon"), the other sees CCS and nuclear energy as a barrier to renewable energy (right score under "low carbon").

Australia's binding target of 80% reduction by 2050 provides guidance on the intended long-term trajectory, which is in line with our low carbon vision. The Renewable Energy scheme with a target of 20% in 2020 is likely to be achieved due to high penalties for participating parties if they don't comply. Further highlights are presented in Table B.

There are policy areas that the Government has covered inadequately, e.g. energy efficiency in transport or non-energy emissions in industry, both with significant emission reduction potential but both rated F.

Australia has not yet implemented emissions standards for light vehicles - and the levels it is proposing are too low and would be introduced too late. There are very limited incentives for efficiency improvements for heavy vehicles apart from some information programmes.

Efforts to reduce methane from mining would only stabilise those emissions, not reduce them. Further gaps between the low carbon policy package and the policies of Australia are provided in Table C.

We identified further policies and actions that could contribute substantially to increasing greenhouse gas emission (GHG) reductions. They include:

## Climate strategy

---

- ▶ Australia could agree on the more ambitious end of its short-term targets for 2020 (e.g. 25% below 2000) to be better prepared to reach its 2050 target of -80%. While the legislation puts the appropriate instruments in place to achieve the necessary change, it is only a first step to meet the 5% target. Its long-term effectiveness will depend on the ability of successive Governments to increase stringency and coverage of the instruments over time.
- ▶ Australia could decide not to include deforestation emissions in their base year for their international pledge (2000) whilst maintaining the same target. This would increase the level of effort required to meet their target and reduce the allowed energy and industrial greenhouse gas emissions in 2020.

## Electricity supply

---

- ▶ Given the vast renewable resources available in Australia, the government could give significantly more support to renewable energy, in particular in industry, buildings and transport with deeper targets for 2020 and 2030. Additional incentives to those already introduced could help development in such direction. The Clean Future Energy Plan only provides limited additional incentives for renewable energy.
- ▶ Changing a centralised distribution structure to a decentralised and smart grid oriented system is necessary to ensure a fast deployment of renewable energy. When considering large-scale geothermal and solar thermal generation in remote areas, high voltage direct current (HVDC) transmission line technology would be particularly necessary.



## Industry



- ▶ Energy efficiency in industry and electricity generation could be further stimulated by a national white certificate scheme, which is already in planning but it's unclear if it will be implemented. Some states have introduced similar schemes, so there is already significant experience to draw on.
- ▶ Additional financial support for research in methane-capturing technologies in the mining sector would lead to more emission reductions. Waste emissions could also be targeted with policies that increase recycling rates to avoid landfilling and methane capturing at landfill sites.

## Buildings



- ▶ More attention needs to be given to activities in non-residential buildings. This includes incentive schemes that could also cover commercial buildings, as well as the inclusion of commercial equipment in performance standards. Overall performance standards for appliances could be increased and a system for regular revision and update (e.g. Top-runner approach) implemented.
- ▶ Incentives for energy-related retrofit could be improved and implemented at national level.

## Transport



- ▶ The inclusion of heavy transport in the carbon price mechanism is already envisioned by the Government, but still requires a final decision and implementation.
- ▶ The Government is considering the implementation of light vehicle GHG emission standards in 2015. The envisaged standard could already start as early as 2012, which would allow a swifter uptake of more efficient vehicles. The system could be further improved with an inbuilt system of review and improvement over time.
- ▶ Massive infrastructure investment in urban public transport, bike and pedestrian infrastructure and rail infrastructure would be required to ensure a long term transition to low carbon transport modes.






## Agriculture and forestry



- ▶ Australia could take further action to ensure that deforestation emissions are reduced by addressing land clearing emissions in urban areas, addressing illegal deforestation by providing incentives to land holders and stop old growth forest clearing.
- ▶ Australia could move to stop old growth forest logging (e.g. in Tasmania) as these forest systems are significant carbon stores.
- ▶ Australia could further enhance agriculture policies to promote sustainable land management through good farm and rangeland management.








**Table B**  
Highlights of Australian policy

|  | Changing activity   | Energy efficiency  | Renewables   | Low carbon  | Other  |
|--|---|--|--|---|--|
| <b>General</b>   | <ul style="list-style-type: none"> <li>▶ The binding target of 80% by 2050 is in line with low carbon vision.</li> <li>▶ Clean Energy Finance Cooperation with a budget of A\$ 10 billion will invest in businesses seeking for funding of innovative clean energy and technologies.</li> </ul> |  |  |   |  |
|  <b>Electricity supply</b>     | –   | <ul style="list-style-type: none"> <li>▶ Generator Efficiency Standards which set efficiency standards for new entrants</li> <li>▶ The Clean Energy Investment plan for generators receiving free permit in the ETS</li> </ul>   | <ul style="list-style-type: none"> <li>▶ The Renewable Energy scheme with a target of 20% in 2020, including a strict implementation with high penalties for participating parties</li> </ul>  | <ul style="list-style-type: none"> <li>▶ Carbon price mechanism will stop the new construction of coal power plants. Gas will be used in future</li> <li>▶ Closure of 2000 MW brown coal power plants and replacement by highly efficient gas power plants</li> </ul> | –  |
|  <b>Industry</b>               | –   | <ul style="list-style-type: none"> <li>▶ Energy Efficiency Opportunity Program (EEOP) - an energy efficiency audit scheme</li> <li>▶ The carbon price mechanism</li> </ul>   | <ul style="list-style-type: none"> <li>▶ The A\$ 200 million Clean Technology Innovation Program, which is foreseen to support R&amp;D for renewable energy, low pollution technology and energy efficiency in industry</li> <li>▶ The carbon price mechanism</li> </ul> | <ul style="list-style-type: none"> <li>▶ Clean Energy Initiative: A\$ 1.7 billion for CCS in Industry, funding to support construction and demonstration of large-scale integrated carbon capture and storage projects in Australia</li> </ul>                        | <ul style="list-style-type: none"> <li>▶ the Carbon Price mechanism will fully cover CH<sub>4</sub>, N<sub>2</sub>O and PCF as well as emissions from landfill</li> <li>▶ HFCs and SF<sub>6</sub> will be covered by a tax</li> <li>▶ carbon farming initiative covering landfill before 2012</li> </ul> |
|  <b>Buildings</b>            | <ul style="list-style-type: none"> <li>▶ The <i>National Urban Policy</i> analyses major cities and the population strategy. Strategic plans are to be in place from 1 January 2012</li> </ul>  | <ul style="list-style-type: none"> <li>▶ Several programmes for energy efficiency improvements as Equipment Energy Efficiency Programme, Phase-out inefficient lighting, High Efficiency Strategy for Heating, ventilation and air condition, the National energy savings initiative, with a focus on households</li> <li>▶ Phase-out of GHG-intensive water heaters, Rebates for residential buildings in many states to support the exchange of water heating systems</li> <li>▶ Building Code of Australia (BCA), the Low Carbon Communities programme and Tax Breaks for Green Buildings programme.</li> </ul> | <ul style="list-style-type: none"> <li>▶ Phase-out of GHG-intensive water heaters also supports renewable water heaters.</li> <li>▶ Renewable Energy Bonus Scheme - Solar Hot Water Rebate (REBS)</li> <li>▶ National Solar Schools Programme</li> </ul>                 | No relevance for Australia.   | –  |
|  <b>Transport</b>            | <ul style="list-style-type: none"> <li>▶ TravelSmart initiative in WA provides a good concept in directly working with communities to address travel behaviour (both activity and efficiency)</li> </ul>  | –  | <ul style="list-style-type: none"> <li>▶ Mandatory bioethanol (10%) and biodiesel (2%) quotas in NSW</li> </ul>  | –   | –  |
|  <b>Agriculture/Forestry</b> | <ul style="list-style-type: none"> <li>▶ Insufficient measures to promote sustainable consumption</li> <li>▶ Implement consistent land use strategy on a national level</li> </ul>  | –  | –  | –   | <ul style="list-style-type: none"> <li>▶ Increase non-offsetting activities in the sector</li> <li>▶ Provide intensive complementary activities to ensure uptake of farmers and landowners, e.g. information dissemination, training, research and development</li> </ul>                                |

**Table C**

Gaps in policies compared to the low carbon vision

|  | Changing activity   | Energy efficiency   | Renewables  | Low carbon   | Other   |
|--|---|---|---|--|---|
| <b>General</b>   | <ul style="list-style-type: none"> <li>▶ Ambitious binding greenhouse gas reduction target, consistent with major effort-sharing approaches (-80% to -95% by 2050 for developed countries)</li> <li>▶ Comprehensive and consistent long term strategy beyond 2020</li> </ul>                                |   |   |  |   |
|  <b>Electricity supply</b>       | –   | <ul style="list-style-type: none"> <li>▶ Active support for CHP</li> <li>▶ Enhancement of grid development and further efforts to reduce distribution losses</li> <li>▶ Removing subsidies</li> </ul>   | <ul style="list-style-type: none"> <li>▶ While the rating is high, there is a risk of failure of the target in case of no or low incentives to improve grid access for Renewable Energies</li> <li>▶ The deployment of REN should be more differentiated</li> </ul>               | <ul style="list-style-type: none"> <li>▶ Policies, financing mechanisms and strategies that support the increasing use of CCS for coal and biomass</li> </ul>  | –   |
|  <b>Industry</b>                 | <ul style="list-style-type: none"> <li>▶ No policies in place to support increasing material efficiency, long product lifetime</li> </ul>   | <ul style="list-style-type: none"> <li>▶ No mandatory implementation of identified measures in EEOIP</li> <li>▶ Tax too low for stimulating energy efficiency</li> </ul>  | <ul style="list-style-type: none"> <li>▶ No direct support for renewable energy</li> <li>▶ No framework for sustainable biomass import</li> </ul>   | <ul style="list-style-type: none"> <li>▶ Low support for coal, gas, biomass and process emissions CCS</li> </ul>   | <ul style="list-style-type: none"> <li>▶ No absolute reduction in CH<sub>4</sub> from mining. These emissions are covered by policy but due to rapid expansion will only be stabilised</li> </ul>   |
|  <b>Buildings</b>                | <ul style="list-style-type: none"> <li>▶ Implementation of strategic plans and embedding of climate as a core element in urban planning</li> </ul>  | <ul style="list-style-type: none"> <li>▶ No or very low support for energy efficient retrofitting.</li> <li>▶ Buildings must fulfil the energy performance requirements according to 6 stars, but the path to 10 star buildings (nearly zero energy) is not defined.</li> <li>▶ The non-residential sector is not covered by all measures.</li> </ul> | <ul style="list-style-type: none"> <li>▶ Incentives for renewables are mainly for hot water. No coverage of all technologies (e.g. heating systems) and no national coverage.</li> </ul>  | –  | –   |
|  <b>Transport</b>              | <ul style="list-style-type: none"> <li>▶ Insufficient infrastructure investment and incentives to promote non-motorised transport.</li> <li>▶ Insufficient investment in public transport infrastructure and services</li> <li>▶ Low fuel prices provide little incentive for behavioural change</li> </ul> | <ul style="list-style-type: none"> <li>▶ Carbon emission standards for light vehicles under discussion are not yet implemented, below required levels and too late</li> <li>▶ Very limited incentives for efficiency improvements for heavy vehicles apart from some information programs</li> </ul>  | <ul style="list-style-type: none"> <li>▶ Strengthen incentives at national scale, especially for transport sectors that are not covered by the carbon price</li> <li>▶ Implement a framework that ensures sustainability and effective carbon reductions from biofuels</li> </ul> | <ul style="list-style-type: none"> <li>▶ Incentives for low carbon technologies are very limited and need to be strengthened to facilitate the required increase</li> <li>▶ There are currently no measures in place to promote electric mobility</li> </ul> | –   |
|  <b>Agriculture / Forestry</b> | <ul style="list-style-type: none"> <li>▶ Insufficient measures to promote sustainable consumption</li> <li>▶ Implement consistent land use strategy on a national level</li> </ul>  | –   | –   | –  | <ul style="list-style-type: none"> <li>▶ Increase non-offsetting activities in the sector</li> <li>▶ Provide intensive complementary activities to ensure uptake of farmers and landowners, e.g. information dissemination, training, research and development</li> </ul> |

## Analysing energy intensity and carbon intensity

Development of the energy intensity (energy use per GDP) - and carbon intensity (emissions per unit of energy) are important factors in evaluating a country's progress towards a low carbon economy.

Australian energy intensity has been steadily decreasing over the past 20 years. However, BAU projections indicate a slowing down of this trend. Policies implemented, specifically the renewables target, are projected to improve intensity beyond the long-term trend, approaching a 39% reduction from 2005 levels by 2035. While positive, this falls short of the (non-binding) target of APEC countries<sup>4</sup> of achieving a 45% reduction in energy intensity compared to 2005 levels by 2035.

Carbon intensity has declined historically, yet overall it remains at a high level. In the BAU this is projected to continue, but slower than the historical trend. Policies put in place with the Clean Energy Future package have the potential to accelerate decarbonisation and could reach around 3 kt CO<sub>2</sub>/ktoe by 2030, a 16% reduction below BAU and 6% below the policies in place before the package was introduced.

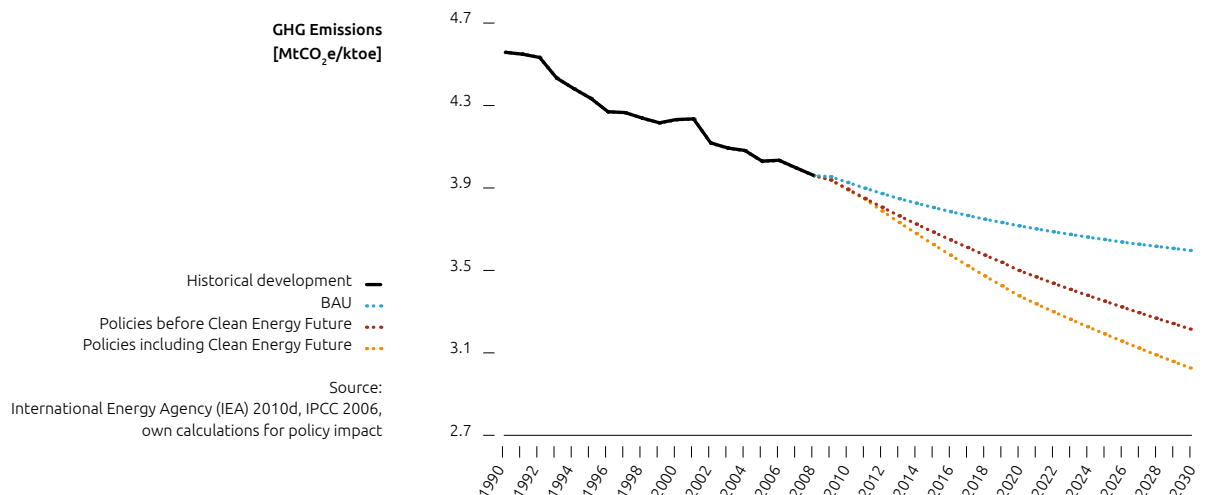
## Impact of policies on emissions and pledges

Australia's GHG emissions excluding LULUCF (Land Use, Land Use Change and Forestry) have increased by 75% since 1990 (2008 levels) and, under BAU, are projected to grow further to around 731 MtCO<sub>2</sub>e until 2030. This would represent an increase of 187% compared to 1990 levels.

With the new Clean Energy Future Plan, this emissions growth could be dramatically reduced, leading to 74% above 1990 levels in 2030 - a reduction of almost 200 Mt CO<sub>2</sub>e or 27% below BAU in 2030. Reductions in 2020 are expected to be 16% below BAU, but total emissions would still be 38% above 1990 levels.

Article 3.7 of the Kyoto Protocol allows Australia to calculate its base year emissions as the sum of energy and industrial GHG emissions in 1990 and its deforestation emissions in 1990<sup>5</sup>. The emission target for the first commitment period of an 8% increase relative to 1990 is applied to emissions in this base year. Effectively, Australia is allowed a 42% increase in energy and industrial GHG emissions in the period 2008-2012 compared to 1990.

**Figure B**  
Carbon intensity projections to 2030



<sup>4</sup> [http://www.apec.org/Meeting-Papers/Leaders-Declarations/2011/2011\\_aelm.aspx](http://www.apec.org/Meeting-Papers/Leaders-Declarations/2011/2011_aelm.aspx)

<sup>5</sup> For 1990 emissions from afforestation / reforestation activities were zero, so total ARD emissions for this year are equal to pure deforestation emissions

One of the key issues is evaluating how the Clean Energy Future package places Australia in relation to its international emission reduction pledges. Due to the accounting rules of the Kyoto Protocol, this requires putting together the actions on greenhouse gases covered by the Kyoto Protocol's energy and industrial GHG emissions (all sectors but excluding LULUCF) along with the projections for Kyoto Protocol afforestation, reforestation and deforestation (ARD) activities (i.e. only part of the full LULUCF sector) for 2020.

First, we evaluate Australia's 5% reduction from 2000 levels by 2020 pledge using a 2000 base year that includes energy and industrial GHG emissions and emissions from afforestation, reforestation and deforestation (ARD). This is the way Australia has defined its pledge.

Figure C shows the projected effects of the Clean Energy Future policies, including Australian Government projections of ARD, on energy and industrial GHG plus ARD greenhouse gas emissions to 2020 compared to the range of Australia's international pledges. This indicates that the effect of the Clean Energy Future policies is not yet sufficient to meet Australia's unilateral pledge of a 5% reduction from 2000 levels by 2020 domestically.

Figure C compares energy and industrial GHG emissions plus afforestation, reforestation and deforestation (ARD) BAU trends to both the effects of policies - and the range of international pledges Australia has made (5%, 15%, 25%). It shows, for comparison, the historical data for energy and industrial GHG emissions only.

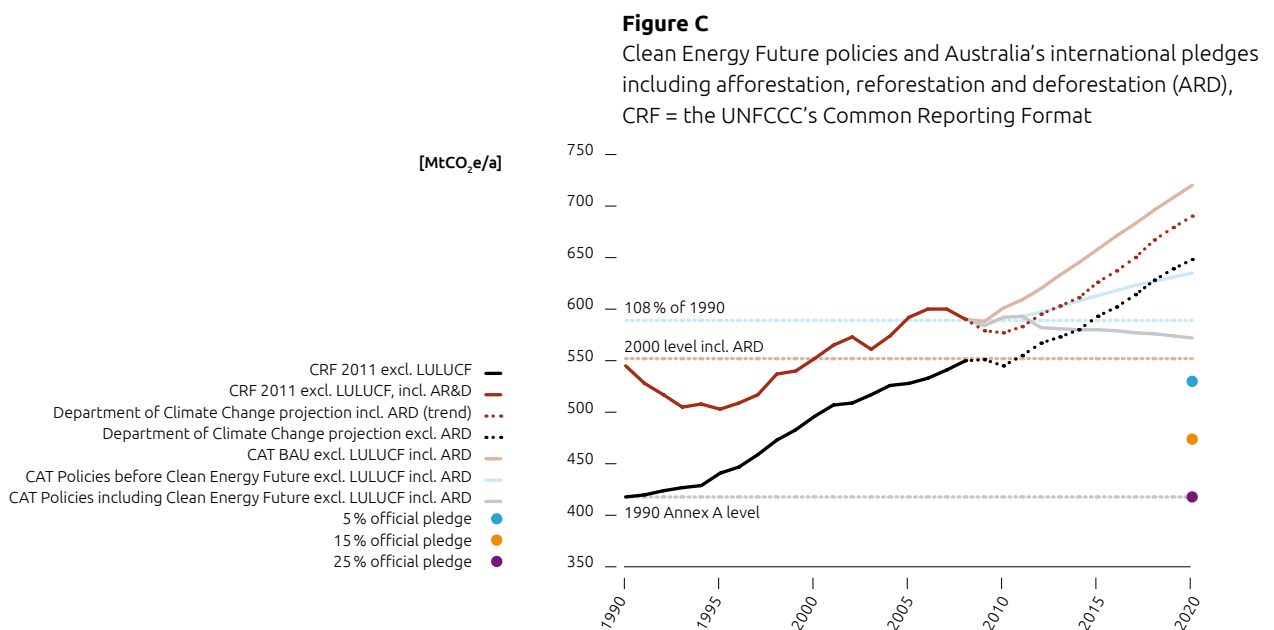


Figure D shows the estimated emissions of energy and industrial GHG emissions resulting from the Clean Energy Future package in 2020, taking into account two different estimates of ARD emissions in 2020.

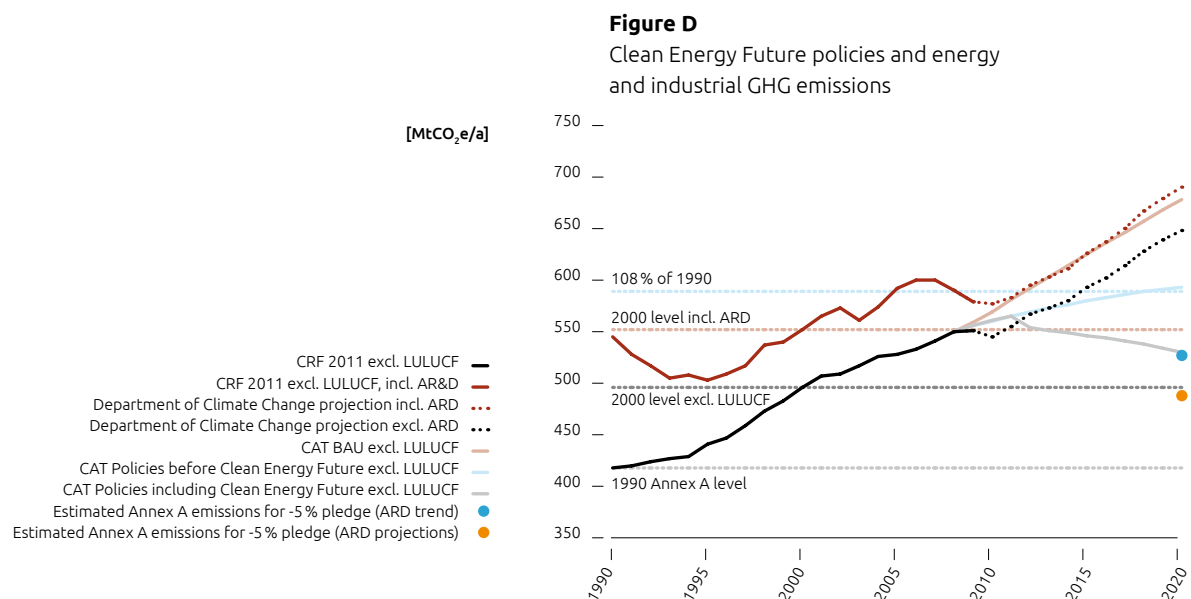
We calculated the “allowed” energy and industrial GHG emissions under the -5% by 2020 pledge.

In the first estimate, we used the ARD recent historical trend that continues to 2020 with decreasing deforestation emissions and increasing storage of carbon. The allowed energy and industrial GHG emissions would be 26% above 1990 levels. In this case, the Clean Energy Future package would be close to sufficient to meet this pledge.

In the second estimate, we used the Australian Government’s projections for ARD. The results here show that the “allowed” 2020 energy and industrial GHG emissions would be 17% above 1990, in which case the Clean Energy Future package would be insufficient to meet the -5% by 2020 pledge.

For the more ambitious international pledges of 15% and 25% below 2000 levels by 2020, the ARD government projections and extended trend cases translate into allowed energy and industrial GHG emissions in the range of 3-13% above 1990 and -1 to -10% below 1990 respectively. Only in the latter case would emissions of energy and industrial GHG gases drop below 1990 levels.

**In all cases these reductions are less ambitious than what Australia needs to do to be on a path towards keeping global warming below 2°C, the temperature limit that it signed up to in both Copenhagen and Cancun.**



This “Climate Action Tracker” is an independent science-based assessment, which tracks the emission commitments and actions of countries. The report provides an assessment of individual national pledges to reduce their greenhouse gas emissions.

The Ecofys logo features the word "ECOFYS" in a bold, blue, sans-serif font. Below the text is a stylized green and blue wave graphic.

Ecofys – Experts in Energy. Established in 1984 with the vision of achieving “sustainable energy for everyone”, Ecofys has become the leading expert in renewable energy, energy & carbon efficiency, energy systems & markets as well as energy & climate policies. The unique synergy between those areas of expertise is the key to its success. Ecofys creates smart, effective, practical and sustainable solutions for and with public and corporate clients all over the world. With offices in the Netherlands, Germany, the United Kingdom, China and the US, Ecofys employs over 250 experts dedicated to solving energy and climate challenges.

[www.ecofys.com](http://www.ecofys.com)

The Climate Analytics logo consists of the words "CLIMATE ANALYTICS" in a grey, sans-serif font. To the right of the text is a graphic of three colorful spheres (blue, green, and red) with white lines, resembling a globe or data points.

Climate Analytics is a non-profit organization based in Potsdam, Germany. Climate Analytics was established in 2008 to synthesize climate science that is relevant for the international climate negotiations. It provides scientific, policy and analytical support for Small Island States (SIDS) and the least developed country group (LDCs) negotiators, as well as non-governmental organizations and other stakeholders in the international climate negotiations. Furthermore, it aims to assist in building in-house capacity within SIDS and LDCs.

[www.climateanalytics.org](http://www.climateanalytics.org)

The PIK logo features a stylized graphic of three arches or domes above a series of horizontal lines, representing a landscape or a structure. Below the graphic, the letters "PIK" are written in a simple, sans-serif font.

Potsdam Institute for Climate Impact Research (PIK) conducts research into global climate change, climate impacts, and issues of sustainable development. Set up in 1992, the Institute is regarded as a pioneer in interdisciplinary research and as one of the world’s leading establishments in this field. Scientists, economists and social scientists work together, investigating how the earth is changing as a system, and providing interdisciplinary insights that offer society sound information for decision making.

[www.pik-potsdam.de](http://www.pik-potsdam.de)

---

#### Contact

Marion Vieweg-Mersmann  
Climate Analytics  
Telegrafenberg A26

14473 Potsdam, Germany  
phone +49 (0)30 700 140 356  
mobile +49 (0)176 3450 2715  
[marion.vieweg@climateanalytics.org](mailto:marion.vieweg@climateanalytics.org)