



COVER SHEET FOR SUBMISSIONS

2017 review of climate change policies Discussion Paper

Overview	
<p>The Discussion Paper provides an overview of the Government's current climate change policies and invites input from business and the community on how Australia can build on the success of current policies to achieve our 2030 target.</p> <p>To guide input, questions are posed at the end of each section. Stakeholders are encouraged to include a one-page executive summary.</p>	
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Optional: to assist with reviewing feedback please indicate if your submission addresses the following					
Electricity sector policies (including the Renewable Energy Target)	Yes	Emissions Reduction Fund	Yes	Safeguard Mechanism	No
Managing policy impacts	Yes	Energy efficiency and productivity	No	Research development and innovation	No
Voluntary action	No	International units	No	Long-term goals	Yes
Sectors discussed (Please list)	International commitments Electricity Co-benefits of climate action Relationship between state and national policies		If other (Please describe)	Social cost of carbon	



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Submission instructions

Submissions are due by 5:00pm AEST, Friday, 5 May 2017. Any submissions received after this date will be considered at the Government's discretion.

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All submissions must include a cover sheet.

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Climate Change Policies Review – Discussion Paper submissions

2017 Review Branch

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Submission to the Department of the Environment and Energy

on

2017 Review of Climate Change Policies

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Submission Summary

- To meet their commitments under the Paris Agreement, Australia must set a target date for net zero emissions and increase their 2030 emissions reduction goal
- The Renewable Energy Target (RET) scheme has been an effective mechanism that will contribute to a long-term emissions goal post-2030
- In addition to the RET, a direct carbon pricing mechanism is essential to signalling a commitment to a low-emission pathway at the lowest economic cost to Australia
- The Australian Government should consider the benefits and opportunities afforded to Australia by using additional modelling and methodologies, such as the social cost of carbon, in the policy development process
- The Australian Government should support deep emissions reduction target-setting from state and local governments. Those states able to achieve deeper cuts earlier should be encouraged to do so and, especially in the absence of an economy-wide carbon price, the Australian Government should embrace ambitious state renewable energy targets.

Recommendations

To protect Australia's national interests, it is recommended that the Australian Government:

1. establish an achievable, equitable and economically responsible **2030** greenhouse gas emissions target of **60 percent below 2000 levels** alongside a long-term goal of **net-zero emissions by 2046**;
2. foster the RET scheme to successfully reach its first target in 2020, and extend the scheme with broader competition, competitive capacity allocation, and effective financing;
3. reinstate an economy-wide carbon pricing mechanism;
4. create climate policies that use additional methodologies, such as the social cost of carbon; and
5. support state and local government initiatives that reduce emissions and increase renewable energy generation.

Introduction

As a country vulnerable to changes in climate, it is in Australia's national interest to commit to long-term emissions reduction. The *State of the Climate 2016* report¹ paints a sobering picture of climate change in Australia over the past century: increasing surface air and sea surface temperatures, increasing frequency and intensity of extreme weather events, a decline in seasonal rainfall in the southeast, and rising sea levels. These changes will harm Australia's economy, environment and people.

While the Australian Government accepts that a shift away from the resources sector is essential² to maintain a resilient and growing economy, it is understandable that such a change is an alarming prospect given Australia's historical reliance on extractive industries. Nevertheless, transitioning to a low-emissions economy is vital to secure Australia's future in a world where extractive industries in the fossil fuel sector will inevitably no longer be a major source of economic growth. However, other mining sectors might well lead to another boom in a scenario where Australia becomes a renewable energy superpower.

The Government still provides substantial public fossil fuel subsidies - approximately AUD\$5 billion annually - to the resources sector³. If the Government is to capitalise on Australia's opportunity to become a leader in low-emissions technology with continued energy-intensive processing and exports, diverting public funds from fossil fuel subsidies toward research and innovation in the renewables and industrial process sectors is both pragmatic and sensible.

The world has committed to transition to a zero emissions economy. With this transition in mind, our submission provides recommendations on the following key considerations in the review of Australian climate change policies:

- 1) the long-term emissions reduction goal and what constitutes Australia's fair share;
- 2) implementing a framework to reduce emissions in the electricity sector; and
- 3) focusing on benefits and opportunities of climate action to optimise Australian climate policies and help harmonise federal-state climate policies.

¹Bureau of Meteorology and CSIRO. *State of the Climate 2016*. 2016. <http://www.bom.gov.au/state-of-the-climate/index.shtml> (visited on 15/04/2017).

²Commonwealth of Australia, Department of Industry, Innovation and Science. *Australia Industry Report 2015*. 2015. <https://industry.gov.au/Office-of-the-Chief-Economist/Publications/Documents/AIR2015.pdf> (visited on 15/04/2017).

³E. Bast et al. *Empty Promises: G20 subsidies to oil, gas and coal production*. Overseas Development Institute and Oil Change International, 2015. <https://www.odi.org/publications/10058-empty-promises-g20-subsidies-oil-gas-and-coal-production> (visited on 17/04/2017).

The long-term emissions reduction goal and Australia's fair share

In December 2015, the Australian Government committed to limiting the increase of average global temperature to well below 2 degrees Celsius (°C) and to pursue efforts to limiting the warming to 1.5°C⁴. In ratifying the Paris Agreement in November 2016, the Australian Government reaffirmed its commitment to demonstrate leadership as a developed country, to mobilize climate finance, and to mitigate emissions to achieve the goal of global net zero greenhouse gas emissions in the second half of this century.

The Paris Agreement does not include guidance on fair and effective effort-sharing consistent with the agreed global mitigation goals. However, it restates the principle of Common But Differentiated Responsibilities and Respective Capabilities that was enshrined in the UN Framework Convention on Climate Change in 1992.

With one of the highest per-capita emissions of developed countries (23 tCO₂-e per person in 2014⁵), the seventh highest gross domestic product (GDP) per capita⁶, and high historical emissions that have only recently plateaued⁷, Australia has both the means and the responsibility to commit to rapid emissions cuts.

The Australian Government pledged a 26 to 28 percent economy-wide emissions reduction compared to 2005 levels in December 2015. While Australia's pledge represents important per capita emissions reductions, it is demonstrably unambitious by cross-equity analyses^{8,9}.

The absolute 2030 emissions levels resulting from that pledge would remain higher than fair allocations based on equal per capita emissions, on financial capability, or on historical responsibility (see Figure 1 below).

⁴UNFCCC. *Paris Agreement*. 2015.

http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf (visited on 17/04/2017).

⁵J. Gütschow et al. 'The PRIMAP-hist national historical emissions time series'. In: *Earth System Science Data* 8.2 (2016), pp. 571–603. doi: 10.5194/essd-8-571-2016.

⁶The World Bank. *GDP per capita (current US\$)*. *World Bank national accounts data and OECD National Accounts data*. 2017. <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD> (visited on 21/04/2017).

⁷Y. Robiou du Pont and A. Talberg. 'Election FactCheck: is Australia among the only major advanced economies where pollution levels are going up?' In: *The Conversation* (25th May 2016). <https://theconversation.com/election-factcheck-is-australia-among-the-only-major-advanced-economies-where-pollution-levels-are-going-up-59731> (visited on 19/04/2017).

⁸Climate Action Tracker. *Australia. Rating*. 2016. <http://climateactiontracker.org/countries/australia.html> (visited on 20/04/2017).

⁹Y. Robiou du Pont et al. 'Equitable mitigation to achieve the Paris Agreement goals'. In: *Nature Climate Change* 7.1 (2017), pp. 38–43. doi: 10.1038/nclimate3186.

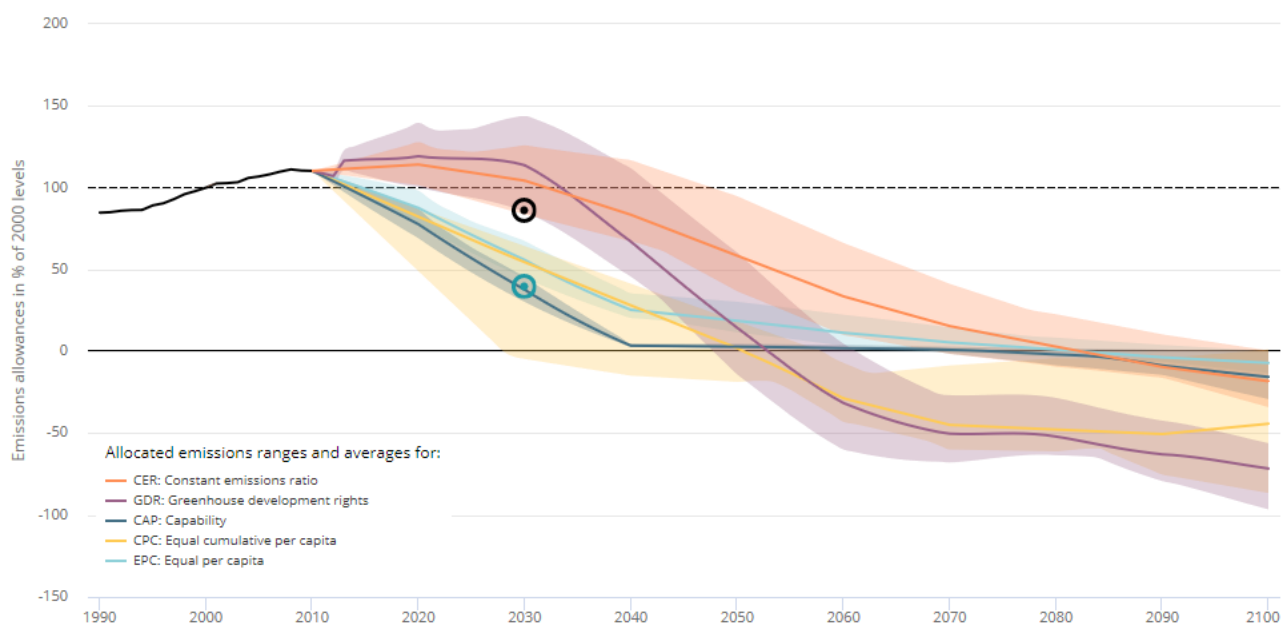


Figure 1: Comparison of Australia's equitable emissions pathways under the 2°C scenarios with its climate pledge (Australia's NDC is the black disk)¹⁰. Australia's emissions, in percent of 2000 levels, excluding land-use emissions, under five allocation methods representative of the five IPCC equity categories. The Climate Change Authority recommendation of 60 percent emissions reductions in 2030 compared to 2000 levels is shown in green. Coloured patches and lines show allocation ranges and averages, respectively, over global 2°C scenarios. Retrieved from <<http://paris-equity-check.org>>.

The Climate Change Authority (CCA), created by the government to provide independent expertise on climate change, recommends a national mitigation target of 40 percent to 60 percent below 2000 levels in 2030¹¹. Such targets are already receiving support from major Australian energy companies AGL, Origin and EnergyAustralia.¹²

According to recent literature¹³, a 60 percent reduction below 2000 levels would represent a mitigation target consistent with the five equity categories presented in the latest Intergovernmental Panel on Climate Change (IPCC) report to limit warming to below 2°C (see Figure 1 above). Additionally, a 60 percent reduction below 2000 levels would be consistent with four of these five effort-sharing approaches under a 1.5°C global goal (see Figure 2 below). The CCA's long-term recommendation of net-zero greenhouse gas emissions by 2046 is also in line with the various effort-sharing approaches for both the below 2°C and 1.5°C goals.

¹⁰Robiou du Pont et al., 'Equitable mitigation to achieve the Paris Agreement goals'.

¹¹Commonwealth of Australia, Climate Change Authority. *Reducing Australia's greenhouse gas emissions—Targets and Progress review: Final report*. 2014 <http://climatechangeauthority.gov.au/files/files/Target-Progress-Review/Targets%20and%20Progress%20Review%20Final%20Report.pdf> (visited on 18/04/2017).

¹²B. Potter. 'Energy giants target 'zero net emissions' by 2050'. In: *Australian Financial Review* (4th May 2017). <http://www.afr.com/news/energy-giants-target-zero-net-emissions-by-2050-20170504-gvyhev> (visited on 05/05/2017).

¹³Robiou du Pont et al., 'Equitable mitigation to achieve the Paris Agreement goals'.

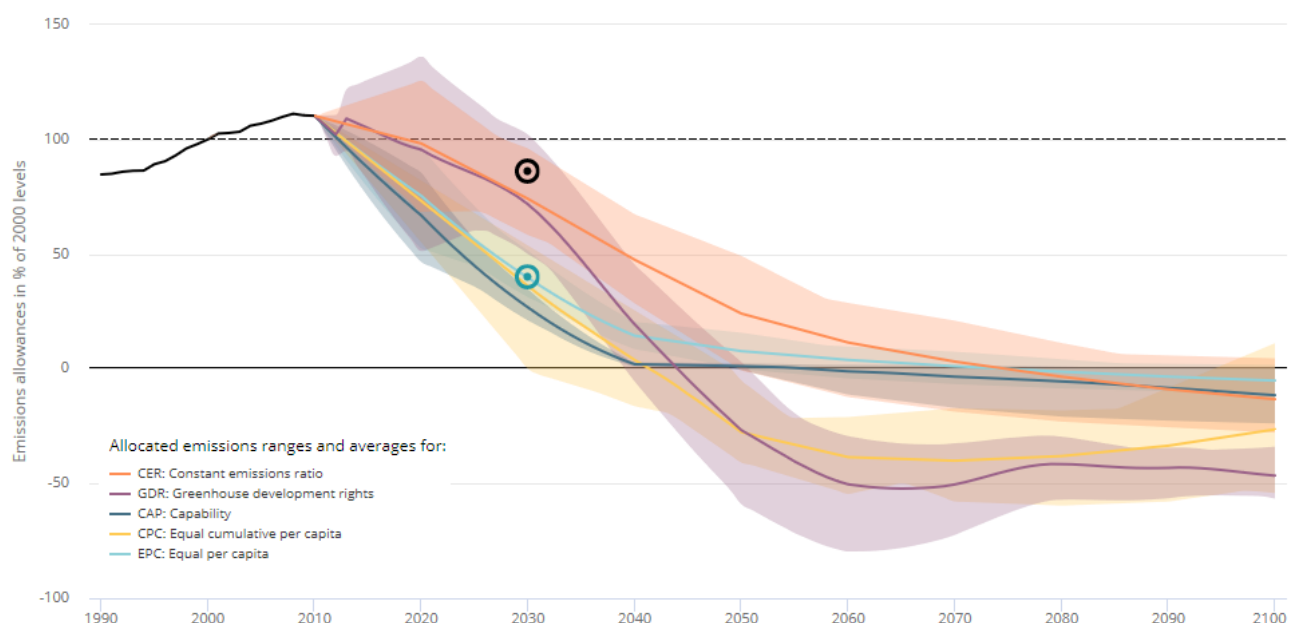


Figure 2: Comparison of Australia's equitable emissions pathways under the 1.5°C scenarios with its climate pledge (Australia's NDC is the black disk)¹⁴ Australia's emissions, in percent of 2000 levels excluding land-use emissions, under five allocations representative of the five IPCC equity categories. The Climate Change Authority recommendation of 60 percent emissions reductions in 2030 compared to 2000 levels is shown in green. Coloured patches and lines show allocation ranges and averages, respectively, over global 1.5°C scenarios. Retrieved from <<http://paris-equity-check.org>>.

Under the Paris Agreement, Australia has committed to ratchet-up the ambition of its 2030 mitigation target every five years. In line with that commitment, we support the CCA's recommendations of a **60 percent** relative to **2000 levels** by **2030** and net-zero emissions by 2046¹⁵. By committing to these targets and doing its fair share, the Australian Government would be recognised internationally as a leader in climate change mitigation.

¹⁴Robiou du Pont et al., 'Equitable mitigation to achieve the Paris Agreement goals'.

¹⁵Commonwealth of Australia, Climate Change Authority. *Reducing Australia's greenhouse gas emissions—Targets and Progress review: Final report*.

Implementing a policy framework to reduce emissions in the electricity sector

The preliminary Finkel Review introduced 'reduced emissions' as the third leg of the so-called energy trilemma - reliability, affordability, and reduced emissions. Of the three principles, 'reliability' is enshrined as the principal driver of investment through regulation; 'affordability' assumes competitive markets and proper supervision of regulated network businesses. However, the principle of 'reduced emissions' still lacks a policy framework of equivalent stature to reliability and affordability.

The Australian Government has made substantial progress through various policy instruments, including the RET and Emissions Reduction Fund (ERF). But the Paris Agreement has not yet been connected to a policy framework that can guide long-term investment in the electricity sector. Although AUD\$2.2 billion has been committed under the ERF¹⁶, emission projections for 2020 (559 Mt CO₂-e) are virtually unchanged¹⁷. While ARENA and the Clean Energy Finance Corporation operate in the technology space, the RET can be viewed as a higher-level mechanism that is agnostic to projects and technology except for those qualifying as renewable. The missing mechanism is a policy framework that provides a forward guidance towards the opportunities of a net zero emissions future.

Emissions abatement is often framed as a trade-off between the economy and the environment. But the broader challenge for the electricity sector is that much of the legacy generation is approaching the end of its economic life - especially, if the external costs would be factored in. The current median age of existing coal-fired power plants is 30 years - by 2030, the median age will be 44. Regardless of emission intensity, new coal can no longer be considered the 'cheapest' source of power generation. Indeed, the business case for new coal-fired generation has been transformed since the end of the era of state electricity commissions. The partisan discussions around coal miss the point - a transformation is already under way. The issue is how to institutionalise a low-emission pathway that facilitates investment in new power generation and thereby unlocks the opportunities for Australia in a zero emissions world.

We recommend that the Australian Government implement a direct pricing mechanism to institutionalise a low-emission pathway. The Australian Energy Market Commission (AEMC) and Australian Energy Market Operator (AEMO) modelling of an emission intensity scheme aligns with the broader literature that suggests that direct emission pricing has the lowest economic costs. Furthermore, an emission intensity scheme would integrate with the electricity market and risk management framework. The direction of the COAG Energy Council (CEC) to allow AEMC and AEMO to administer the direct emissions pricing would ensure that technical challenges and investor risks are managed by the people, organisations, and private investors best placed to manage those risks.

¹⁶Commonwealth of Australia, Clean Energy Regulator. *Combined results for all auctions. Emissions Reduction Fund*. 2017. <http://www.cleanenergyregulator.gov.au/DocumentAssets/Documents/Cumulative%20auction%20results%20April%202017.pdf> (visited on 23/04/2017).

¹⁷Commonwealth of Australia, Department of the Environment and Energy. *Australia's emissions projections 2016*. 2016. <http://www.environment.gov.au/system/files/resources/9437fe27-64f4-4d16-b3f1-4e03c2f7b0d7/files/aust-emissions-projections-2016.pdf> (visited on 23/04/2017).

Focusing on benefits and opportunities of climate action to optimise Australian climate policies and help harmonise federal-state climate policies

There will be benefits and opportunities for Australia if the Australian Government implements stronger national climate policies. These include economic benefits from early investment in exportable renewable technology, new employment and upskilling opportunities, as well as avoided damages to human health, infrastructure and the environment.

Regularly, climate action is narrowly framed in terms of domestic costs and burdens. To provide a more holistic perspective and to optimise Australian climate policies, climate action must account for the benefits and opportunities that result from transitioning to a low-emissions economy.

The economic modelling that informs policy development is often pivotal to the final policies and their justification. Accordingly, a suite of models and methodologies should be used to project the impacts - both costs and benefits - of policy options.

The development of Australia's Nationally Determined Contribution (NDC) modelling¹⁸ commissioned by the Department of Foreign Affairs and Trade (DFAT) appears influential in Australia's final determination of its NDC. The focus of the modelling is on economic adjustment in different countries between 2015 and 2030, as opposed to a more complete assessment of costs for Australia. The modelling report explicitly notes that there are factors not addressed in the modelling that can be considered, including the economic advantages of avoided climate damages, long-term targets and the post-2030 economic transition¹⁹. These factors should be considered as part of comprehensive, robust climate policy-making.

The social cost of carbon incorporated into cost-benefit analyses for climate policy development by countries such as Canada and the United States²⁰ provides an imperfect but useful assessment of climate change impacts caused by emissions, including for human health. Such assessments have helped to establish that the benefits to human health from emissions reduction are often shorter-term and localised. Further, when accounted for, they can partially, if not fully, offset abatement costs²¹.

To create optimal climate policies that benefit Australia's people, environment and economy, the Australian Government should use additional modelling and methodologies in climate policy development that provide a more complete picture of climate impacts and abatement in Australia.

¹⁸McKibbin Software Group. *Report 2: 2015 Economic Modelling of Australian Action under a New Global Climate Change Agreement*. 2015. <http://dfat.gov.au/about-us/publications/Pages/economic-modelling-for-australias-2030-target.aspx> (visited on 20/04/2017).

¹⁹Ibid.

²⁰W. D. Nordhaus. 'Revisiting the Social Cost of Carbon'. In: *Proceedings of the national academy of sciences* 114.7 (2017), pp. 1518–1523. doi: 10.1073/pnas.1609244114.

²¹C. J. Williams et al. *International Experience with Quantifying the Co-Benefits of Energy Efficiency and Greenhouse Gas Mitigation Programs and Policies. - Report Number: LBNL- 5924E*. 2012. <https://pubarchive.lbl.gov/islandora/object/ir1%3A158591/datastream/PDF/view> (visited on 17/04/2017).

National and sub-national climate policies

Following least-cost pathways, and in line with the definition of a 'fair share' adopted by the CCA²², achieving a national goal of net-zero emissions by 2046 requires that Australian states and territories adopt similar targets. Research from the Deep Decarbonization Pathways Project has shown that this level of target can create economic opportunities²³. A number of states and territories have announced emissions reduction targets of net-zero by 2050, including Victoria, South Australia (SA), New South Wales (NSW), Tasmania and the Australian Capital Territory (ACT).

Together, Victoria, NSW and Queensland represent three quarters of Australia's greenhouse gas emissions. The NSW 2050 target is not legislated, it is merely aspirational, and the Queensland government is currently consulting on its climate change strategy. As such, this is an opportune moment to be discussing sub-national emissions targets. We recommend that the Australian Government support deep target-setting from state and local governments as this can drive further ambition and sends a strong international signal that Australia is transitioning to a low-carbon economy.

However, given Australia's size and the diversity of local economies, not all jurisdictions can transition at the same time and pace. A mismatch in ambition between the states and with the commonwealth target is in principle not problematic. Those states able to achieve deeper cuts earlier should be encouraged to do so. As the European Union demonstrates, targets unevenly applied to states allows deep and available cuts to occur early and cost-effectively. Some states have logistical, technological or other problems making emissions cuts now. However, states that are leading the way, such as SA and Victoria, can develop skills and technology that will assist other jurisdictions. As long as state-based schemes do not act at cross-purposes, keeping the development of necessary skills and technologies within Australia maximises their transferability between our jurisdictions.

An important part of states' emissions reduction targets comes from transitioning to renewably sourced electricity generation. Setting renewable energy targets drives investment into low-carbon electricity generation. The many changes to the Federal renewable energy target and legislation over the last decade have stymied investor confidence. Although the national renewable energy target was in 2014 reduced to 20 percent by 2020, many Australian states and territories have recently announced more ambitious targets. Victoria has a target of 25 percent renewably sourced electricity by 2020 and 40 percent by 2030; SA has a target of 50 percent by 2025; Queensland has a target of 50 percent by 2030; and the ACT has a target of 100 percent by 2020.

Together these four jurisdictions will provide 56 terawatt-hours per year above 1997 levels. Adding this to existing capacities in other states and already installed hydropower, there will likely be 77 terawatt-hours of renewably sourced electricity by 2030, equivalent to 30-35 percent of Australia's total projected consumption. In comparison, the national target aims to produce 33 terawatt-hours in 2020. In the absence of an economy-wide carbon price, we recommend that the Australian Government embrace ambitious state renewable energy targets and the investment into Australia that these will generate.

²²Commonwealth of Australia, Climate Change Authority. *Final Report on Australia's Future Emissions Reduction Targets*, 2 July 2015. 2015. <http://climatechangeauthority.gov.au/sites/prod.climatechangeauthority.gov.au/files/Final-report-Australias-future-emissions-reduction-targets.pdf> (visited on 20/04/2017).

²³A. Denis et al. *Pathways to Deep Decarbonisation in 2050 - How Australia Can Prosper in a Low Carbon World. The Australian report of the Deep Decarbonization Pathways Project of the Sustainable Development Solutions Network and the Institute for Sustainable Development and International Relations*. 2014. http://deepdecarbonization.org/wp-content/uploads/2015/09/AU_DDPP_Report_Final.pdf (visited on 20/04/2017).