



Environment Institute  
of Australia and  
New Zealand Inc.

# EIANZ Submission: Review of Australia's Climate Change Policies

## Summary

The Environment Institute of Australia and New Zealand (EIANZ) welcomes the opportunity to contribute to the review of Australia's Climate Change Policies on behalf of its members. The Institute's members form a significant body of expertise in climate change adaptation and mitigation, as well as many other disciplines.

It is clear that existing policies are not adequate to meet the Australian Government's targets for emissions reductions for 2020, 2030 and beyond. Therefore, this review of climate change policies is timely and important for the future of Australia.

The EIANZ recommendation that the Australian Government:

1. Make firm and strong commitments to greenhouse gas emission reductions to make a meaningful contribution to Paris Agreement targets, including a target of net zero emissions by 2050.
2. Assess the potential of a carbon pricing scheme to achieve the emissions reductions required to enable comparisons with other measures and to determine the most suitable strategies.
3. Consider policies relating to climate change adaptation.
4. Undertake a more comprehensive analysis of existing climate change programs, including an assessment of the abatement costs and any other costs and benefits.
5. Consider a range of mitigation and adaptation initiatives proposed by Australia's States and peak industry bodies and associations.
6. Recognise the positive impacts of climate change policies on the economy, including any avoided costs and indirect benefits.

This submission outlines how the Institute can engage its members in the review and outlines EIANZ's contribution to meeting the challenge of climate change. This submission builds on existing Institute work and publications, including messages to all political parties ahead of the 2016 federal election that governments must:

- Commit to substantial cuts in carbon emissions.
- Introduce strong economic measures to reduce carbon emissions, including the pricing of carbon and removing disincentives and subsidies that act against the achievement of carbon emission reduction targets.
- Support investment in climate change and renewable energy, including investments in science, research and development relating to improving our understanding of climate change challenges and energy efficiency responses.
- Support programs delivering policies and actions to adapt and build resilience to climate change, particularly within communities, and in relation to the infrastructure upon which they depend.

## Introduction

The EIANZ welcomes the review of Australia's Climate Change Policies by the Department of the Environment and Energy.

The review is timely, given a number of recent milestones including:

- Australia recorded its fourth hottest year on record in 2016<sup>i</sup>, a year that the Australian Bureau of Meteorology identified as a year of extreme events, and which was identified globally as the hottest year on record by the British Met Office, NASA and NOAA<sup>ii</sup>.
- The Paris Agreement came in to force and was ratified by the Australian Government in November 2016. To date, 143 of the 197 Parties to the UNFCCC have ratified the agreement<sup>iii</sup>.
- In September 2016, atmospheric CO<sub>2</sub> levels *permanently* exceeded 400 parts per million<sup>iv</sup> v <sup>vi</sup> and in April 2017, exceeded 410 ppm for the first time<sup>vii</sup>.
- In September 2016, 184 scientists wrote an extensively referenced letter to the Prime Minister urging action to do *what is required to protect future generations and nature*<sup>viii</sup>.
- In June 2016 a group of 24 prominent Australians, including former Australian of the Year and epidemiologist Professor Fiona Stanley, signed an open letter calling on Australia's political leaders to take "emergency-scale action" on climate change<sup>ix</sup>.
- The fifth Emissions Reduction Fund (ERF) auction on 21 April 2017 awarded new contracts, taking total contracted abatement to 185 million tonnes at a cost of \$2.2 billion with \$300 million remaining<sup>x</sup>.

This paper sets out the Institute's responses to the discussion paper. The EIANZ advocates:

1. Demonstrating leadership, by recognising Australia's role and championing strong targets and decisive action.
2. Developing ambitious and integrated mitigation strategies.
3. Developing a comprehensive approach to adapt to the impacts of climate change, including taking advantages of opportunities that may arise.
4. Ensuring the science is thorough, understood and that there is sufficient research to enable effective decision-making.

The Institute and its members welcome the opportunity to work with the Commonwealth as it conducts its review. EIANZ offers awareness, skills, training and a certification scheme to assure the Commonwealth that the advice it seeks on managing climate change is credible and competent.

## Commitment and Targets

Australia needs to make a stronger commitment to significant emissions reduction post 2020. Australia should aim to achieve net zero emissions by 2050.

Australia's commitment to a 26-28% reduction in greenhouse emissions by 2030, relative to 2005 levels needs to be more ambitious in order to meet the 2°C limit and the Paris agreement's aspiration goal of 1.5°C

In recent years, a number of reviews and analyses have recommended higher targets to enable Australia to meet its Paris Agreement commitments.

In 2014, the Climate Change Authority (CCA) recommended the following *credible set of goals for Australia*<sup>xi</sup> based on making a *fair contribution* to a global 2 degree target:

- A 2020 target of 19% below 2000 levels; and
- A trajectory range to a level of between 40 and 60% below 2000 levels by 2030.

The CCA updated its recommendations in its *Final Report on Australia's Future Emissions Reduction Targets* in July 2015 to<sup>xii</sup>:

- a 2025 target of 30 per cent below 2000 levels.
- further reductions by 2030 of 40 to 60 per cent below 2000 levels.

The Preliminary Report of the *Independent Review into the Future Security of the National Electricity Market*<sup>xiii</sup> also concluded that current policy settings do not provide a clear pathway to the level of emissions reduction required to meet Australia's Paris commitments.

According to the non-government Climate Council (2015), worldwide greenhouse gas emissions would need to be at net zero by 2050 to have a chance of limiting warming to 1.5°C. To have a chance of limiting warming to below 2°C, the world would need to reach net zero between 2060 and 2070. The Council recommends that Australia should update its 2030 target to one that is consistent with limiting warming to less than 1.5 - 2°C. This would require emissions reductions of around 65 per cent below 2005 levels by 2030 and establish a long-term emissions reduction target of net zero emissions before 2050<sup>xiv</sup>.

Accordingly, the Review must consider appropriate targets beyond 2030 and that this target should be consistent with capping global temperature rises below 2°C or 1.5°C.

The latest quarterly update for Australia's greenhouse gas inventory (Department of the Environment 2016) indicates that emissions (excluding Land Use, Land Use Change and Forestry) rose by 0.8 per cent for the year until June 2016<sup>xv</sup>. The Australian Government can work collaboratively to:

- Assess the marginal abatement costs of various options available to the different sectors of Australia's economy and states.
- Work with the States and Territories to establish an integrated national target with proportionate state targets.
- Work with all sectors the community and governments to determine the most suitable trajectory based on a range of factors including cost-effectiveness and other relevant considerations.

### Questions Posed in the Discussion Paper

The discussion papers questions appear to imply that the economy must choose between effective climate change policies; and jobs and growth. The real economic impact is expected to occur if no action is taken on climate change. Further, there is increasing evidence that reducing emission through increasing

energy productivity, the change to renewable energy and uptake of low-emissions practices and technologies will lead to significant cost savings to households and businesses and increase productivity.

The International Energy Agency (IEA) in its 2016 Energy Outlook<sup>xvi</sup> acknowledges that energy efficiency can almost play as significant a role as renewables in achieving deep emissions cuts.

Consequently, the Australian Government needs to be open to all policy options for reducing emissions. This is a position supported by major business organisations such as the Business Council of Australia, the Australian Energy Council and energy companies such as AGL and Energy Australia.

Economic Analysis by a range of agencies across a range of sectors indicates that there may be many benefits to the Australian economy in reduced emissions.

In its 2015 report, the Climate Change Authority advised that *the major benefits to Australia of effective action to reduce global emissions as the avoidance of the adverse social, economic and environmental impacts of dangerous climate change. In addition, the transition to a low carbon world now underway carries with it the prospect of benefits of the more conventional kind – new technologies, skills, investments, industries and jobs – for Australia and other Countries with the foresight and wit to seize these opportunities.* <sup>xvii</sup>

Doctors for the Environment Australia report that reducing pollution has direct health benefits, whilst *it is very likely that there will be an increasing burden in of disease in Australia ... due to injury or psychological trauma from extreme weather events, infections such as gastroenteritis, and illness due to ozone and bushfire pollution*<sup>xviii</sup>.

Modelling conducted for the Deep Decarbonisation Project shows that GDP will continue to grow at 2.5% until 2050 whilst reducing emissions by 80% on 2012 levels<sup>xix</sup>. The ClimateWorks Low Carbon Growth Plan for Australia (2010) demonstrated with a Marginal Abatement Cost Curve (MACC), 54 least-cost opportunities to achieve a 25% reduction in Australia's emissions below 2000 levels by 2020<sup>xx</sup>.

In their report for the Australian Sustainable Build Environment Council (ASBEC), ClimateWorks Australia concluded that existing technology can reduce building sector emissions by 50% with financial savings of \$20 billion by 2030<sup>xxi</sup>. It notes also that just five years delay in implementing the findings could lead to \$24 billion in wasted electricity costs and over 170 million tonnes of lost emissions reductions opportunities.

The Alliance to Save Energy is developing a series of sector roadmaps to double Australia's energy productivity by 2030 which will lead to investment of over \$100 billion over 15 years, a 2.8% increase in real GDP and a 25% reduction in greenhouse gas emissions with an estimated economy-wide energy saving of \$30 billion in 2030.

There are also significant opportunities in being at the forefront of developing and manufacturing new technologies. For example, as an early adopter of wind energy, Denmark has developed a thriving wind industry. Denmark's wind industry exported DKK53 billion worth of goods and services in 2014 (an increase of 16.7% on the previous year) and employed 29,000 people<sup>xxii</sup>.

The Australian Government needs to be more active in encouraging holistic pricing into the economic base, such as ecosystem services payment and the embedding of externality pricing (including carbon emissions) into long-term business decision making. This would encourage thinking beyond the short-term costs of climate change actions to acknowledge the long-term costs of **not** proceeding with these actions. For example, shadow pricing could be incorporated into every-day business decision-making to enable a 'lifetime' perspective by businesses (see Stuchtey et al 2016: 156-157) as is occurring in Europe and could be taken up by bodies such as ASIC and APRA.

## Climate Change Adaptation

As a country with a surface temperature of 8°C higher than the global average, the implications of climate change across all sectors of Australian society and business are substantial. Policies relating to climate change adaptation should therefore form part of the review.

There are three key aspects to adaptation domestically and as a member of the international community:

1. Science and research to predict and understand the impacts, refine risk assessment methodology and develop evidence-based planning and action.
2. Proactive strategies to ensure any new activity is developed based on the best possible information to ensure resilience.
3. Defensive adaptation, to put in place strategies to protect existing investments from the impacts of climate change.

Adaptation strategies will be important in adjusting to human-induced climate change in circumstances where mitigation is ineffective or inappropriate. There is also a need to identify and take advantage of any new opportunities arising from climate change. Adaptation strategies include:

- Including climate change risk assessment in strategic decision making and long-term planning, particularly for infrastructure and land use.
- Developing transition and support mechanisms for industries and communities at high risk from climate change.
- Implementing programs that may reduce vulnerability of ecosystems to changing climatic conditions such as by reducing other pressures on biodiversity and managing biodiversity for natural climate variability.
- Assisting industries, sectors and regions to identify and take advantage of new opportunities that may arise out of climate change.

The EIANZ acknowledges a significant amount of adaptation planning being undertaken by state and local governments, NGOs and business bodies. The 2015 National Climate Resilience and Adaptation Strategy identifies a set of principles to guide effective adaptation practice and resilience building, and outlines the Government's vision for the future<sup>xxiii</sup>. It is a useful first-step that now requires progress. Including adaptation into the Review of Climate Change Policies would be a sign that the Australian Government gives equal weight to climate change adaptation as to mitigation.

Climate change adaptation will be increasingly cost effective as any future development is built to accommodate variable climate conditions, reducing the risk of damage and costly repairs and keeping downward pressure on the capital budgets of infrastructure owners and insurers. The Insurance Council of Australia adopted a policy on climate change in 2016<sup>xxiv</sup> which advocates for land use planning to incorporate evaluation of climate change risks, changes to the Building Code to make built assets more climate resilient and defensive infrastructure to reduce the damage from climate change related weather events<sup>xxv</sup>.

## Existing Government Policies and Programs

It is not clear from the policies and programs listed in the document what contribution they are each making to the emissions reductions, and accordingly their cost-effectiveness. The review may consider undertaking that analysis.

The Climate Change Authority's (CCA) *Special Review of Australia's Climate Goals and Policies* in 2016<sup>xxvi</sup> found that as well as needing policies to meet its 2030 target, *Australia will need policies that are capable of being scaled up to meet more ambitious goals in the decades ahead and to play its part in action to decarbonise the global economy.*

The Climate Change Authority's *Special Review on Australia's Climate Goals and Policies – Towards a Climate Policy Toolkit* (August 2016)<sup>xxvii</sup> concluded that additional actions will be required to meet our Paris Agreement commitments. The recommendations in the Climate Policy Toolkit build on and strengthen existing Government policies and programs and should be considered during this review.

A fundamental principle of the toolkit is to achieve policy stability, a sentiment reflected consistently in responses to the Climate Change Authority's *Special Review Second Draft Report: Australia's Policy Options*<sup>xxviii</sup> and the *Independent Review into the Future Security of the National Electricity Market*.

## Emissions and Projected Emission Reductions

Based on the most recent annual report on Australia's emissions (Department of the Environment 2016), national emissions in 2030 are projected to be 592 million tonnes. Although this projection is a decrease on previous projections, they remain well above the current Australian target for 2030 target which would see emissions less than 450 million tonnes. All parts of the economy are expected to have higher emissions in 2030 than in 2020 due to rise in demand for electricity, more use of fossil-fuel based transport and larger agricultural herds to meet overseas demand.

A significant downturn in the trajectory is therefore required to meet this 2030 target, meaning additional emission abatement activities are required.

Emissions pricing is an effective market-led process to reduce emissions and should be central to government consideration on future climate policy (see above). The *Independent Review into the Future Security of the National Electricity Market* also noted that an emissions intensity scheme (when compared to extending the RET or regulated closure of fossil-fuelled power stations) would best integrate with the electricity market's pricing and risk management framework, had the lowest economic cost and least impact on system security.



## Sectors

The EIANZ will contribute specific comments throughout the review, and provides the initial general sectoral comments. It would be helpful for the review to consider sectoral progress and opportunities under the headings identified in Figure 1 (p10) which are different to the headings on the subsequent pages with the addition of the built environment including households. The headings used in pages 11 – 30 will be used.

## Electricity Generation

Figure 10 highlights the significant contribution that Electricity Generation makes to national emissions.

The energy sector is undergoing major disruption with rapid development of generation, efficiency and storage technologies in addition to new hardware and software technologies for monitoring, managing and trading power. The National Electricity Market will be vastly different in the next few years, and the challenge for regulators will be facilitate this transformation with nimble governance processes.

A majority of recent reviews including *The Independent Review into the Future Security of the National Electricity Market* has emphasised the importance that energy and emissions reduction policies are integrated.

The energy system needs to be able to adapt to changes in technology and in supply and demand that are stimulated by emissions reduction policies. Emissions reduction policies that are aligned with the operation of the electricity system will better support efficient investment decisions by consumers and in generation and network assets. Finkel also cites evidence that investment in the electricity sector has stalled and investors have become less responsive to investment signals. This is due to policy instability and uncertainty driven by numerous reviews into the RET and a lack of clarity about the policies to reduce emissions after 2020.

In the 2016 Review of the Integration of Energy and Emissions Reduction Policy, AEMO and AEMC<sup>xxix</sup> found that an Emissions Intensity Scheme would be the most effective emissions reduction mechanism due to the lowest impact on electricity prices and energy security.

The Climate Change Authority in 2016<sup>xxx</sup> recommended that Australia consider a market mechanism in the electricity sector, as they are more flexible and scalable than other options and provide cheaper abatement.

The electricity system, including the electricity network operating rules need to be able to adapt quickly to new technological and business model innovation that will allow consumers and networks to benefit from a more distributed energy system, such as virtual net metering, peer-to-peer trading.

## Households, small to medium-sized enterprises and the built environment

In relation to the building sector, there is a need to strengthen the Building Code of Australia and reduce inconsistencies in building standards across jurisdictions. Although efforts by bodies such as the Green Building Council of Australia to lift the

commercial building sector to a higher standard of sustainability should be applauded, much new commercial building in Australia still compares poorly compared with other jurisdictions in the OECD. There is a role for the Australian Government to work more effectively with industry bodies and other jurisdictions in developing more 'climate friendly' (both mitigation and adaptation) building including incentives for the upgrading of existing stock.

Programs to improve energy productivity and emissions reductions for households, SMEs and the built environment should be enhanced. For example, the Energy Efficiency Council has developed an *Energy Efficiency Policy Handbook* to achieve the national energy productivity improvement of 40% by 2030. Its proposals should be adopted by all levels of government and complements the existing *National Energy Productivity Plan*.

### Resources, Manufacturing and Waste

There are substantial opportunities for cost effective emissions reductions within these sectors. The Alliance to Save Energy estimates in its Manufacturing Energy Productivity Roadmap that energy productivity in manufacturing has continued to be poor compared to other OECD countries and increasing at half the rate of our competitors, whilst energy costs have increased significantly.

There is a need for greater application of the principles of the circular economy. This would drastically reduce our need for 'virgin' natural resources and result in a far more efficient recovery, reuse and recycling of materials, leading to reduced emissions intensity. The World Economic Forum estimates the circular economy could be worth \$1 trillion worldwide and \$26 billion in Australia by 2025<sup>xxxi</sup>. Sustainability Victoria found through its smarter resources, smarter business program that the return on investment was significantly improved when businesses considered energy and materials project simultaneously.

### Transport

Like energy, transport is undergoing a period of major disruption with rapid technology development and new business models. It is difficult to predict what Australia's mobility system will look like in the medium term.

Indeed the review needs to broaden its focus to mobility rather than just transport and consider how individuals, goods and services can move in urban areas, regions and remote areas and how mobility emissions can be reduced.

This should address both active and non-active mobility options. Although much of this sits within the realm of State, Territory and Local Governments, there is much the Australian Government can do to shift towards low carbon mobility:

1. Fundamentally, integrating urban planning to reduce the need to rely on infrastructure for day-to-day activities such as school, work and recreation as much as possible.
2. Supporting the expansion of rail freight infrastructure to reduce the dependency on long-distance road transport.
3. Greater policy incentives and funding for public transport and active mobility infrastructure, in collaboration with State, Territory and Local Governments. There



is far too much reliance for mobility on private vehicles, particularly in our urban centres and governments at all levels need to reduce this dependency.

Government should also consider allowing public transport fares to be offset by personal tax deductions. Such incentives should also be developed in concert with health policies to address problems such as obesity.

4. Removal of subsidies which encourage dependence on fossil fuels for mobility and introduce incentives for the adoption electric vehicles \predicated on their integration with low or zero carbon electricity generation and networks.
5. Harmonise regulation for driverless electric vehicles so that there is consistent regulation across all jurisdictions.
6. Work to remove planning hurdles that frustrate the expansion of car-sharing (which research has shown reduces the volume of cars in urban areas).

## Land and agriculture

Ensuring suitable climate change policies the agriculture sector is a high priority.

Agriculture in Australia is exposed to the predicted changes in climate and the increase in extreme weather events so development of suitable adaptation strategies are important. At the same time, with a high proportion of energy consumed in the form of diesel, there are opportunities exist to decarbonise the agriculture sector whilst increasing productivity. There is also the potential to store carbon in soils and vegetation.

The OECD warns that *Without consistent policy signals, farmers may not be able to do enough to create a sustainable, productive and resilient agriculture sector.*<sup>xxxii</sup>

Agriculture and 'land sector' annual emissions of 66MtCO<sub>2</sub>e are significant and the claimed 144.5MtCO<sub>2</sub>e of emission reduction contracted under ERF seems ambitious and remains to be fully realised. It is clear that additional schemes to the ERF to achieve the necessary emissions reductions in Agriculture. We must re-establish research hubs like CSIRO's Climate Adaption Flagship to evaluate this and other agricultural options.

Further, farms tend to be located in remote areas of electricity networks and may be subject to increasing prices and declining reliability. Accordingly, innovative models of delivering energy to supply seasonal demand are required to ensure the productivity and competitiveness of the sector, and if a meaningful transition from diesel is to be achieved.

## Research, development innovation and technology

In relation to research, development, innovation and technology, the Australian Government needs to set targets and policy settings that will encourage investment in low or zero carbon systems and technologies. For too long potential investment has been discouraged by political partisanship and the absence of strong national climate change policy settings.

Existing financing and funding bodies such as ARENA and the CEFC are demonstrating that a small amount of government funding can leverage significant private funds to deliver successful abatement projects.

## EIANZ Initiatives

The Institute represents over 2,000 Environmental Professionals in Australia and New Zealand. In 2011, the Institute established a Climate Change Special Interest Section to lead its activities and advocacy in this important area.

As the peak professional association supporting Environmental Practitioners, the EIANZ and its members have a central role in informing and advising governments, businesses and society on climate change action.

The EIANZ will continue to educate, train and certify Environmental Practitioners to build capacity and capability to address the challenges of climate change.

The EIANZ Climate Change Special Interest Section (ECCSIS) has led the following:

1. Climate change training and capacity building
  - a. In 2008, ECCSIS and EIANZ SEQ Division partnered with the Queensland Government and University of the Sunshine Coast to trial a Climate Change Boot Camp. The subsequent Climate Change Skills Training program (ECCST) partly funded by the Federal government went on to train nearly 1000 practitioners in Australia and New Zealand over the following 3 years.
  - b. [Learning to Adapt](#) (L2A) evolved from that program. It is a 3-module climate change adaptation training program that has been conducted in Queensland, NSW, Victoria and ACT (for federal government officers). The Institute will continue to deliver L2A across Australia and New Zealand.
2. Climate Change Certification specialist
  - a. In 2014 a [CEnvP \(Climate Change\) specialist](#) was launched for the [CEnvP Scheme](#) after many years of research, discussion of options across Australia and New Zealand and testing against national and international practitioners. Rather than rely solely upon 'learning by doing' and 'experience', ANZ now has the means to assess and certify climate change practitioners to be Suitably Qualified Persons (SQP).

The Institute would be pleased to continue to assist the Australian Government in this important review.

Endnotes.

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<sup>i</sup> <http://www.bom.gov.au/climate/current/annual/aus/>

<sup>ii</sup> <http://www.abc.net.au/news/2017-01-19/2016-hottest-year-on-record-australia-needs-to-get-heat-smart/8194182>

<sup>iii</sup> [http://unfccc.int/paris\\_agreement/items/9485.php](http://unfccc.int/paris_agreement/items/9485.php)

<sup>iv</sup> <http://www.climatecentral.org/news/world-passes-400-ppm-threshold-permanently-20738>

<sup>v</sup> <http://e360.yale.edu/features/how-the-world-passed-a-carbon-threshold-400ppm-and-why-it-matters>

<sup>vi</sup> <http://time.com/4542889/carbon-dioxide-400-ppm-global-warming/>

<sup>vii</sup> <http://www.climatecentral.org/news/we-just-breached-the-410-parts-per-million-threshold-21372>

<sup>viii</sup> <http://theconversation.com/an-open-letter-to-the-prime-minister-on-the-climate-crisis-from-154-scientists-64357>

<sup>ix</sup> <http://www.abc.net.au/news/2016-06-23/business-leaders-join-open-letter-calling-for-climate-policy/7534620>

<sup>x</sup> <http://www.environment.gov.au/climate-change/publications/emissions-reduction-fund-update>

<sup>xi</sup> [http://climatechangeauthority.gov.au/files/files/Target-Progress-Review/Targets%20and%20Progress%20Review%20Final%20Report\\_Summary.pdf](http://climatechangeauthority.gov.au/files/files/Target-Progress-Review/Targets%20and%20Progress%20Review%20Final%20Report_Summary.pdf)

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