

Submission

Climate Change (National Framework for Adaptation and Mitigation) Bill 2020

December 2020

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Level 1, Endeavour House, 1 Franklin St
Canberra, ACT 2601
Tel: (02) 61300530
Email: mail@tai.org.au
Website: www.tai.org.au
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Introduction

The Australia Institute welcomes the opportunity to make a submission on the *Climate Change (National Framework for Adaptation and Mitigation) Bill 2020* (The Climate Act).

The Climate Act is modelled on the United Kingdoms' Climate Change Act (2008). Similar legislation has been passed in New Zealand and Ireland, with Germany and Fiji currently considering similar legislation.

The Climate Act establishes a net-zero emissions 2050 target with associated plans and reporting mechanisms, proposes the establishment of an independent Climate Change Commission, adopts the government's Technology Investment Roadmap and establishes mechanisms for the risk assessments and adaptation plans.

The Australia Institute recognises the improvements that the Climate Act will make to Australia's existing suite of climate change policy frameworks and targets. Additionally, elements of the Climate Act 2020 could be improved to ensure the alignment of future climate policies with the best available climate change science, improved processes and mechanisms for emissions accounting, recommendations on the role of the Independent Advisory Committee and the Chief Scientist, and the value of zero emissions technology in achieving emissions reductions.

Climate Policy in Australia

Australia's climate change mitigation policies are insufficient to meet Australia's international obligations for reducing greenhouse gas emissions in line with the Paris Agreement. Moreover, the current Australian Government has failed to provide adequate funding to carry forward many of these insufficient policies.

Australia's Nationally Determined Contribution (NDC) is incompatible with both Paris Agreement goals of limiting warming to 1.5°C and no more than 2.0°C, and would lead to warming of at least 3°C if other countries were to follow similar policies.¹ To be compatible with the Paris Agreement, Australia would need to reduce emissions by 40-60% by 2030 on 2000 levels.²

Australia's climate change mitigation policies are insufficient to meet Australia's international obligations (NDC) for reducing greenhouse gas emissions by 26-28% on 2005 levels by 2030.

Australia will only meet its 2030 emissions reduction target using legally baseless Kyoto credits due to the inadequacy of existing emissions reduction policies.

The Australian Government is currently pursuing a 'gas-fired recovery' and investing through the Technology Investment Roadmap in polluting and expensive technologies, while neglecting technologies such as renewable energy and electric vehicles (EVs).

The Government's central climate and energy policy, the Technology Investment Roadmap, includes funding for carbon capture and storage (CCS), an expensive technology that has failed to commercialise despite \$1.3 billion in government support, as well as funding for hydrogen made from fossil fuels with CCS. The Government has not detailed any emissions reductions from the Technology Investment Roadmap between now and 2030, only claiming it will have some impact on domestic and exported emissions by 2040.

This is concerning for two reasons. The first is that the government does not have an emissions reduction target for any date beyond 2030. This would be corrected with the adoption of the Bill, which includes a process to establish five yearly carbon budgets. The second concern is that 'exported' emissions include the emissions from Australian resources consumed overseas, that are not the responsibility (under UN Framework Convention on Climate Change accounting rules) of the exporting nations. If this was the case, Australia's

¹ Climate Action Tracker (n.d.) *Australia | Climate Action Tracker*, <https://climateactiontracker.org/countries/australia/>

² Climate Change Authority (2015) *Final Report on Australia's Future Emissions Reduction Targets*, <https://www.climatechangeauthority.gov.au/news/final-report-australias-future-emissions-reduction-targets>

carbon footprint would be at least three times larger.³ After all, Australia is the biggest coal exporter in the world and has no plan to transition out of coal mining or coal fired power stations.

However, there is a strong case to be made that Australia should consider reducing its exports of fossil fuels given the excessive production of fossil fuels relative to the carbon budget allowed under the Paris Agreement.⁴

The National Electric Vehicle Strategy has been delayed multiple times since its announcement and is still not published, despite transport emissions making up around 19% of national emissions. EVs make up just 0.6% of total car sales in Australia,⁵ compared to 3% of new car sales globally.⁶

The Australian Government recently introduced a bill to amend the governing legislation of its public green bank, the Clean Energy Finance Corporation (CEFC), to allow investment in loss-making fossil fuel projects like new gas power plants. The Government intends to also amend the governing legislation of the Australian Renewable Energy Agency (ARENA) to dilute its efforts and become 'technology-neutral'.

The Emissions Reduction Fund (ERF) is the Government's central climate policy and the only component of the Government's climate change strategy designed to directly reduce emissions. The ERF is a 2.55 billion AUD scheme and has contracted 193 million tonnes of carbon abatement but has only delivered 52.7 million tonnes of this abatement to date.⁷ The majority of ERF projects are in the land-use sector. The scheme does not provide incentives to reduce emissions in the electricity and stationary energy sectors, which makes up 52.1% of Australia's total domestic greenhouse gas emissions.⁸ Additional funding in 2019 under the Government's Climate Solutions Package was less than the initial amount (only 2 billion AUD) and is stretched out over a longer period (15 years).⁹

³ Swann (2019) High Carbon From a Land Down Under <https://www.tai.org.au/content/high-carbon-land-down-under-quantifying-co2-australia-s-fossil-fuel-mining-and-exports>

⁴ UNEP & oths (2020) Production Gap Report <http://productiongap.org/>

⁵ Parkinson (2020) *Tesla takes 70 per cent of market, as Australia electric car sales reach 5,000 in 2019*, <https://thedriven.io/2020/01/20/tesla-takes-70-per-cent-of-market-as-australia-electric-car-sales-reach-5000-in-2019/>

⁶ Doyle (2020) *Norway sets electric car record as battery autos least dented by Covid-19 crisis*, <https://www.climatechangenews.com/2020/07/02/norway-sets-electric-car-record-battery-autos-least-dented-covid-19-crisis/>

⁷ Clean Energy Regulator (2020) *Auction March 2020*, <http://www.cleanenergyregulator.gov.au/ERF/Auctions-results/march-2020>

⁸ Commonwealth of Australia (2020) *Quarterly Update of Australia's National Greenhouse Gas Inventory: December 2019*, <https://www.industry.gov.au/sites/default/files/2020-05/nggi-quarterly-update-dec-2019.pdf>

⁹ Karp (2019) *Budget 2019: Coalition cuts climate solutions fund by \$70m a year*, <https://www.theguardian.com/environment/2019/apr/02/coalition-climate-solutions-fund-must-last-further-five-years#:~:text=But%20in%20the%20budget%20papers,%24189m%20over%20four%20years.>

The Safeguard Mechanism component of the ERF requires Australia's largest emitters to measure, report and manage their emissions in line with an established baseline. Baselines are often calculated at generously high levels and can be adjusted.¹⁰ As a result, the Safeguard Mechanism has had little to no impact on reducing Australia's emissions.

¹⁰ MacKenzie (2019) *Australia's Emissions Reduction Fund is almost empty. It shouldn't be refilled*, <http://theconversation.com/australias-emissions-reduction-fund-is-almost-empty-it-shouldnt-be-refilled-92283>

Wood (2015) *Why the ERF safeguard mechanism fails to balance environment and economic priorities*, https://grattan.edu.au/wp-content/uploads/2015/06/239_wood_submission__DoESafeguardMechanism.pdf

Swann (2018) *Gorgon-tuan Problem*, <https://www.tai.org.au/sites/default/files/P635%20Gorgon-tuan%20Problem%20%5BWeb%5D.pdf>

The Climate Act

RISK ASSESSMENTS AND ADAPTATION PLANS

The Australia Institute welcomes the risk assessment and adaptation plan in the Climate Change Bill as essential steps for Australia’s response to climate related disasters.

Climate change is increasing the frequency and intensity of many natural disasters in Australia including fires, floods, heatwaves, drought and other extreme weather events. As the 2020 Royal Commission into National Natural Disaster Arrangements put it, “what was unprecedented is now our future”.¹¹

The economic cost of natural disasters to Australia has been estimated at around \$18 billion per year on average, rising to \$40 billion per year by 2050, even without including the impact of future climate change. Previously the most costly climate related disasters were the 2011 Queensland floods (\$14 billion) and Victoria’s Black Saturday bushfires in 2009 (\$7 billion).¹²

However, the 2019/20 Black Summer bushfires represent a step change in disaster costs, with estimates of a \$100 billion or more for this single event.¹³

There have been a number of other serious, even unprecedented, climate related disasters over recent years. Prior to the Black Summer fires, the spring of 2019 “saw the highest fire weather danger as measured by the Forest Fire Danger Index (FFDI)¹, with record high values observed in areas of all States and Territories.”¹⁴ That spring witnessed unprecedented fires in Queensland.¹⁵ The December before there was an unprecedented

¹¹ Royal Commission into National Natural Disaster Arrangements (October 2020) *Report*, P.6, <https://naturaldisaster.royalcommission.gov.au/system/files/2020-11/Royal%20Commission%20into%20National%20Natural%20Disaster%20Arrangements%20-%20Report%20-%205Baccessible%5D.pdf>

¹² Deloitte Access Economics (2017) Building resilience to natural disasters in our states and territories, http://australianbusinessroundtable.com.au/assets/documents/ABR_building-resilience-in-our-states-and-territories.pdf

Note, this estimate assumes the same distribution of natural disasters as the previous 20 years. This includes the impact of climate change up to 2017, but the future projections do not include the further impact of climate change.

¹³ Read & Denniss (2020) *With costs approaching \$100 billion, the fires are Australia’s costliest natural disaster*, <https://theconversation.com/with-costs-approaching-100-billion-the-fires-are-australias-costliest-natural-disaster-129433>

¹⁴ BoM (December 2019) Special Climate Statement 72—dangerous bushfire weather in spring 2019, <http://www.bom.gov.au/climate/current/statements/scs72.pdf>

¹⁵ Queensland Government (August 2020) 2019 Queensland Bushfires State Recovery Plan 2019-2022

heatwave in tropical Queensland.¹⁶ The 2019 Queensland floods were considered a “one in 1000 year event”¹⁷ despite coming just nine years after the even more devastating 2011 Queensland floods.

These largely unprecedented disasters have occurred with 1.4°C average warming in Australia,¹⁸ but as noted previously, the world is on track for 2°C warming before 2050 and 3-5°C warming by 2100.¹⁹

The latest CSIRO-Australian Bureau of Meteorology State of the Climate 2020 report projects Australia will have increasingly worse fires, more drought, increasing levels of extreme heat, increasing sea level rise, more intense cyclones, as well as ocean heatwaves and acidification.²⁰

The Royal Commission into National Natural Disaster Coordination highlighted that climate change is driving changes in average and extreme weather, and increasing climate impacts on our water resources, ecosystems, health, infrastructure and economy, both now and continuing into the future. It also found that climate change is increasing marine and terrestrial heatwaves, extreme fire conditions, reducing rainfall in some regions while increasing heavy rainfall events, and increasing the frequency of storm surge inundation.²¹

The Royal Commission further highlighted that Australia is facing concurrent and compounding natural disasters. Multiple disasters occurring simultaneously or one closely after the other can have cascading effects threatening the operation and recovery of critical infrastructure, essential services and the economy as a whole.²²

It is of additional concern that the increase in the frequency and severity natural disasters will not occur in a linear fashion.

If some tipping points are reached it can lead to abrupt, non-linear and self-perpetuating warming. There are several tipping points including the loss of summer arctic ice, the loss of the Greenland ice sheet and West Antarctic ice sheet that can be reached below 2°C of

¹⁶ BoM (December 2018) Special Climate Statement 67—an extreme heatwave on the tropical Queensland coast, <http://www.bom.gov.au/climate/current/statements/scs67.pdf>

¹⁷ City of Townsville (2019) 2019 weather event, <https://www.townsville.qld.gov.au/community-support/community-safety/disaster-management/2019-weather-event>

¹⁸ CSIRO/BoM (2020) *State of the Climate 2020*, <http://www.bom.gov.au/state-of-the-climate/documents/State-of-the-Climite-2020.pdf>

¹⁹ Spratt et al. (2020) *Climate Reality Check 2020*, https://469804a7-ae0f-4ba4-926a-0f4778d88216.filesusr.com/ugd/148cb0_b520000149684ce6ac18aaccbfc049d5.pdf

²⁰ CSIRO/BoM (2020) *State of the Climate 2020*, <http://www.bom.gov.au/state-of-the-climate/documents/State-of-the-Climite-2020.pdf>

²¹ Royal Commission (2020) Op.Cit, 2.18, 2.21,2.22. pp. 57,58

²² Royal Commission (2020) Ibid. 24 p.22

warming. These tipping points could also trigger an irreversible “Hothouse Earth” trajectory even before 2°C warming is reached.²³

The impacts of these changes are likely to be so profound that they would “exceed the limits of adaptation,”²⁴ which highlights the importance of applying the precautionary principle to prevent serious and irreversible loss. The Climate Act’s Section 12 (c) “apply the precautionary principle to prevent likely serious or irreversible loss” is a crucial to inform affective risk assessment and emissions reduction targets. Given the severity of the consequences, both should give sufficient weight to the less likely but higher risk warming and climate impact scenarios.

Australia does not have a national adaptation plan to effectively manage climate change impacts that are already occurring and to prepare for known and possible future climate change impacts. The National Climate Resilience and Adaptation Strategy 2015 does not address the fact that climate impacts are already occurring or the pace and extent of forecast climate change impacts. The National Climate Change Adaptation Research Facility (NCCARF) and the CSIRO’s Climate Adaptation Flagship have both been defunded and closed down.²⁵

The Australian Government has not completed a comprehensive climate risk analysis of physical impacts. The National Climate Resilience and Adaptation Strategy 2015 does not include analysis of known and potential climate risks. Climate risk assessments should investigate a broad range of warming scenarios, including giving particular consideration higher risk warming scenarios to understand regional and sectoral impacts, and investigate which impacts can and cannot be adapted to.

Australia’s lack of a national adaptation plan and adaptation risk assessment is despite the Australian Government promoting adaptation efforts internationally, particularly at the UN level and engaging in the Pacific region to assist with resilience-building development aid. *Australia’s Partnerships for Recovery: Australia’s COVID-19 Development Response* identifies resilience and climate change adaptation in Tier 1 of Australia’s development program,²⁶ and has provided assistance directly to Pacific Island Nations and to developing countries

²³ Steffen et al (2018) *Trajectories of the Earth System in the Anthropocene*, https://www.researchgate.net/publication/326876618_Trajectories_of_the_Earth_System_in_the_Anthropocene

²⁴ Steffen et al (2018) *Ibid* P. 5

²⁵ Rickards & Howden (2020) *Climate adaptation is not a far-off idea - it’s here and it affects us all*, <https://www.smh.com.au/environment/climate-change/climate-adaptation-is-not-a-far-off-idea-it-s-here-and-it-affects-us-all-20200109-p53q7r.html>

²⁶ Australian Government (2020) *Partnerships for Recovery: Australia’s COVID-19 Development Response*, <https://www.dfat.gov.au/sites/default/files/partnerships-for-recovery-australias-covid-19-development-response.pdf>

through the Green Climate Fund.²⁷ Australia should extend its interest in international adaptation efforts by being a leader in domestic adaptation planning and risk analysis.

NET-ZERO TARGET BY 2050

Climate Reality Check 2020

Climate Reality Check 2020 from the Breakthrough National Centre for Climate Restoration reports on recent climate change science, including the rate and extent of warming today, highlights major risks associated with Earth system feedbacks and tipping points, and the critical actions that can and should be taken to mitigate the worst climate change impacts.²⁸ The following lines of evidence are peer reviewed climate science included in the *Climate Reality Check 2020* report.

The 5-year global average temperature for 2015-19 was 1.16°C above a late 19th century baseline. Global average temperatures are expected to reach 1.5°C warming around or before 2030 – less than ten years from now.

Any emissions reductions will not significantly negate the warming trend over the next two decades. This is partly attributable to the reduction in aerosols (air pollution) that comes with declining fossil fuel use, which has a short-term impact of masking warming. The result of aerosols from fossil fuels is that current warming is actually greater than it currently appears.

Current levels of greenhouse gases will result in 1.75-2.4°C of warming at Earth system equilibrium. The current emissions path is 2°C of warming, the upper boundary of the Paris Agreement and the target included in the Climate Change Bill, before 2050.

Climate models used to date have commonly underestimated the rate of warming and inputs such as the climate sensitivity value. When Earth system feedbacks and tipping points are factored into warming projections, future warming could be up to 15% higher by 2100 than modelled by the IPCC.

The best available science makes clear that 1.5°C of warming is not a safe warming limit. Many ecosystems are being devastated at the level of warming currently experienced and would not survive 1.5°C of warming. The Great Barrier Reef is likely to experience a serious

²⁷ Australian Government (n.d.) *International adaptation*, [https://www.environment.gov.au/climate-change/adaptation/international-climate-change-adaptation-initiative/paccsap#:~:text=The%20Australian%20Government%20is%20focused,in%20all%20our%20aid%20investments.&text=This%20includes%20%24300%20million%20over,Pacific\(link%20is%20external\)](https://www.environment.gov.au/climate-change/adaptation/international-climate-change-adaptation-initiative/paccsap#:~:text=The%20Australian%20Government%20is%20focused,in%20all%20our%20aid%20investments.&text=This%20includes%20%24300%20million%20over,Pacific(link%20is%20external)).

²⁸ Spratt et al. (2020) *Climate Reality Check 2020*, https://469804a7-ae0f-4ba4-926a-0f4778d88216.filesusr.com/ugd/148cb0_b520000149684ce6ac18aecbfc049d5.pdf

bleaching event once every three to four years at current warming levels, while recovery takes at least a decade. The West Antarctic Ice Sheet may have already passed a tipping point, parts of East Antarctica may be unstable and three-quarters of Arctic summer sea-ice is already lost.

If 1.5°C is unsafe, impacts at 2°C of warming are even more dangerous. Tipping points at 2°C could include the Greenland Ice Sheet and the Amazon rainforest. Warming at 2°C could become self-sustaining.

Current climate policy commitments place the world on track for 3-5°C of warming by 2100. At 3°C of warming, sea levels will eventually rise by tens of meters, it would become difficult to feed a global population and crop nutrient density will decline.

How does the Bill reflect the best available climate science?

The Australia Institute acknowledges the valuable contribution of the Climate Change Bill 2020 for increasing the ambition of climate change mitigation and adaptation efforts.

The proposed Climate Act 2020 objective states that “decisions under this Act should be consistent with limiting the increase in global warming to well below 2°C and pursuing efforts to limit it to 1.5°C above pre-industrial levels” and “sets a target of net-zero emissions by a target day (which is 31 December 2050)”.

Having summarised recent climate science from *Climate Reality Check 2020*, it should be considered what the proposed Climate Act 2020 does to mobilise short-term climate mitigation and the extent to which the objectives of the Act align with climate science.

A science-based approach to mitigating greenhouse gas emissions is fundamental to significantly change the warming trajectory we are current on. This is particularly pertinent given the dangerous tipping points and feedback loops that we are at risk of reaching.

If we will pass 1.5°C of warming around 2030 and 2°C of warming before 2050, and emissions reductions today will have little impact on warming for the next two decades, a 2050 net-zero emissions target will not prevent catastrophic climate change impacts. Increased ambition is necessary if we want to change the trajectory of 3-5°C warming by 2100.

INDEPENDENT ADVISORY COMMISSION

Independent scientific advice and evidence-based policy making in Australia

Australia's National Science Statement states that the 'ultimate goal of science' is to change the way we live – informing public policy, and ensuring 'science contributes to solutions to challenges facing Australia, our region and the world'. Climate Change is one of the biggest challenge of our time. However, science-informed policy in the context of climate change has often been fettered by vested interests and inadequately structured advice to government. The history of Australian fossil fuel lobbyist and industry body efforts to undermine climate and energy policies has been well documented.²⁹ Further, the expert bodies created to provide independent climate science advice to government have faced significant challenges.

In 2013, the Climate Commission, an independent public advisory group established to report on climate science, was abolished. The Commission was relaunched as the Climate Council, an independent non-profit organisation, reliant on public donations rather than Government funding. The Climate Change Authority, a further independent public agency charged with advising the Government on emission reduction targets, has been largely ignored (and reduced to a fraction of its original staffing profile). According to the Authority, 'the reduction in emissions embodied in the government's [2030] target is substantially weaker than that recommended by the Authority'.

The role of the Chief Scientist, too, has faced significant controversy. In 2003, the prospect of conflicts of interest was raised by the dual role of the then-Chief Scientist Dr Robin Batterham as both Chief Scientist and the Chief Technologist for Rio Tinto. In 2004, a Senate Inquiry was launched into the role and functions of the Chief Scientist.³⁰ The majority of the recommendations of the enquiry were rejected by Government.

In 2011, halfway through a 5 year appointment, Professor Penny Sackett resigned as Chief Scientist amid reports that then-Minister Kim Carr found her "too outspoken and opinionated, and felt she did not give sufficient regard to Labor's agenda and the processes of government."³¹ Most recently, current Chief Scientist Alan Finkel's statements on the ongoing need for gas in the energy sector prompted a highly unusual rebuke from 25

²⁹ Marian Wilkinson (2020) *The Carbon Club*, Allen & Unwin Publishers.

³⁰ Employment, Workplace Relations and Education References Committee (EWRERC) (2004), *Office of the Chief Scientist*,

https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Education_Employment_and_Workplace_Relations/Completed_inquiries/2002-04/chiefscientist/index, page 2.

³¹ Phillips, Nicky and Harrison, Dan, (2011), *Tensions blamed as science chief quits*, Sydney Morning Herald, <https://www.smh.com.au/national/tensions-blamed-as-science-chief-quits-20110218-1azm2.html>.

leading scientists expressing concern that Dr Finkel's scientific impartiality had been compromised by political imperatives of the current government.³²

Additionally, the Australian Government has a poor record on climate change research. In 2014, funding for the CSIRO was reduced by 111.4 AUD million and in 2020, the CSIRO cut 40 jobs from the energy team, including scientists, engineers and researchers.³³ Further, CSIRO's partnership with unconventional gas companies under the Gas Industry Social and Environmental Alliance (GISERA) threatens their global reputation for independent and impartial science.³⁴

Clearly, there is a need for a well-structured avenue of scientific advice to Government in Australia to better inform climate policy.

The Independent Advisory Commission

The Climate Act introduces an Independent Advisory Commission (IAC) to assess risks and technologies, advise Government and monitor climate change actions and impacts.

The IAC is an independent body, consisting of a Chair, Australia's Chief Scientist, and between five and seven other members. All members of the IAC, other than the Chief Scientist, are appointed by the Minister and must be approved by the Parliamentary Joint Committee on Climate Adaptation and Mitigation (Climate Joint Committee) established by the Climate Act.³⁵

Importantly, the Climate Act safeguards the independence of the IAC. First, by stipulating that appointments by the Minister must be approved by the Climate Joint Committee. Second, by requiring members to disclose conflict of interest to the Minister, in accordance with the *Public Governance, Performance and Accountability Act 2013*.³⁶ Third, by prohibiting part-time members of the IAC from engaging in paid work that conflicts or could conflict with their duties as IAC members. Finally, by stipulating that the IAC is not subject to direction from the Commonwealth Government.³⁷

³² O'Malley (2020) *Australia's Chief Scientist is wrong on gas, say leading expert*, <https://www.smh.com.au/environment/climate-change/australia-s-chief-scientist-is-wrong-on-gas-say-leading-experts-20200824-p55oty.html>.

³³ (2020) *I just asked @ABCNews a question about #coronavirus #COVID-19 ... Do you have a question too?* <https://modules.wearehearken.com/abc-national/embed/5075/share>
Hart (2020) *CSIRO to pull plug on energy jobs*, <https://www.cpsu.org.au/content/csiro-pull-plug-energy-jobs>

³⁴ Ogge (2020) *CSIR...who?*, https://www.tai.org.au/sites/default/files/P907%20GISERA%20air%20water%20soil%20%5BWEB%5D_0.pdf

³⁵ *Climate Change (National Framework for Adaptation and mitigation) Bill 2020*, Part 6 Division 2.

³⁶ *Ibid*, Part 6 Division 3 (42).

³⁷ *Ibid*, Part 6 Division 1 (35).

These safeguards are essential. The IAC's primary function is to review policy and report publicly on progress. Assuring the independence, transparency and accountability of the IAC is necessary to ensure the government and the public are properly informed on climate change and to enhance public confidence in the scientific advisory system.

The specific functions of the IAC are to prepare and advise on emissions budgets, climate change risk assessments, low emissions technology statements, and reports on the implementation of national adaptation policies. The IAC is also tasked with conducting reviews under the *Carbon Credits (Carbon Farming Initiative) Act 2011*, the *National Greenhouse and Energy Reporting Act 2007*, and the Climate Act.

Despite the majority of these functions lying in the ambit of climate science, only 2 of the (maximum) 9 members are required under the Climate Act to have expertise in climate science. Further, the Climate Act requires these two members to hold expertise in both climate science *and* climate policy, preventing a career climate scientist with no experience in the policy arena from fulfilling this requirement. To better align the experience and knowledge of the IAC members with the IAC's functions, the Climate Act could stipulate a minimum of two members with expertise in climate science *and*, separately, a minimum of two members with expertise in climate policy. This would effectively require 4 of the (maximum) 9 members to have expertise in climate science or climate policy.

The Climate Act determines that the maximum period of appointment for members of the Commission should not exceed 10 years. A shorter time frame would be more appropriate to ensure diversity of opinion and experience of Commission members, to act as an additional insurance of independence from other Commission members and from the government and to ensure that the most contemporary science and policy ideas are represented within the Commission.

The IAC should be guaranteed access to all information necessary to fulfil its designated role. This should include unrestricted access to and utilisation of greenhouse gas data and inventories and resources from the BoM, CSIRO and ABS.

The ability of the IAC to effectively recommend mitigation and adaptation transition pathways would have increased value if union representation was a requirement within IAC members. A just transition for workers and communities affected by policy changes and shifting industries is not only a challenge associated with fast-paced mitigation and adaptation action, challenges will also be amplified for affected workers and communities if the transition is not rapid and well-planned.³⁸ This representation should be mandated by inclusion in the list of expertise of the Commission listed in Section 37 (2) of the Climate Act.

Emissions reporting

³⁸ ICTU (n.d) *Just Transition for Climate Action*, <https://www.ituc-csi.org/just-transition-the-pathway-to>

An independent body and methodology should be established to ensure reliability and accuracy in greenhouse gas emissions accounting. Australia's current emissions reporting mechanism through the National Greenhouse Gas Inventory (NGGI) Quarterly Updates are managed by the Department of Industry, Science, Energy and Resources and therefore under the management of the Minister. Governance processes for reporting deadlines and information release is at the behest of the Minister.

Independent emissions reporting should reflect processes like the release of ABS data, with NGGI Quarterly Updates well publicised and accessible by the public and with regular data release dates to ensure accountability. Concerns about the data release schedules and publicity of the NGGI Quarterly Updates have been raised previously.³⁹

³⁹ Tasmania Times (2020) *Parliament Covers Up Australia's True Carbon Footprint*, <https://www.tasmaniantimes.com/2020/08/parliament-covers-up-australias-true-carbon-footprint/>

Other considerations

SECTORAL APPROACH

Emissions reduction plans as detailed by the Climate Act 2020 must include multi-sector strategies and sector-specific policies for emissions reductions.

The Australia Institute research shows that differentiated responsibility for emissions reduction between sector would allow for greater and most cost-effective emissions reduction. Applying the current emissions reduction target of 26 to 28 per cent below 2005 levels by 2030 for the electricity sector means that other sectors such as agriculture will have to adopt the same target.⁴⁰ Capacity and technology readiness mean this will come at a greater cost to some sectors, whereas it would be more cost effective to greatly reduce emissions within the energy sector to compensate for less reduction in agricultural emissions.⁴¹ The Australia Government and the Climate Act 2020 have the opportunity to use sector-specific policies to maximise emissions reduction potential within the boundaries of economic growth and a just transition.

Sectors such as transport make up a large portion of Australia's greenhouse gas emissions profile and technologies already exist that can readily reduce transport emissions. Modelling from the Australian Electric Vehicle Market Study, commissioned by the Australian Renewable Energy Agency (ARENA), forecasts that with no policy intervention, EVs and PHEVs will represent 100% of sales before 2050, driven entirely by overseas manufacturers shifting away from ICEs.⁴² This transition could be accelerated by up to ten years with moderate to ambitious policy interventions.⁴³ Sectors should be responsible for the maximum emissions reduction achievable.

TECHNOLOGY ASSESSMENT

The Climate Act establishes annual reporting mechanisms through a 'low emissions technology statement' on progress towards technology goals and developments in Section 70 (d). The Act considers low emissions technologies to be those included in the Technology Investment Roadmap. The Technology Investment Roadmap prioritises technologies that will contribute to emissions reduction efforts, but does not quantify the emissions

⁴⁰ Grudnoff (2018) *Harming farming*, <https://www.tai.org.au/sites/default/files/P572%20Harming%20Farming%20%5BWeb%5D.pdf>

⁴¹ Ibid.

⁴² Energeia (2018) *Australian Electric Vehicle Market Study*, <https://arena.gov.au/assets/2018/06/australian-ev-market-study-report.pdf>

⁴³ Ibid.

reductions that can or should be achieved through highlighted technologies or set emissions limits on technologies to determine which can be considered ‘low emissions’.

The Technology Investment Roadmap outlines the continued growth of fossil fuels in Australia’s future technology mix: carbon capture and storage (CCS), hydrogen produced with fossil fuels, and gas. It does not quantify or provide for any emissions reductions over the next decade to 2030. The roadmap defines clean hydrogen as including hydrogen made from fossil fuels and uses CCS to make it a low emissions technology, instead of aiming to build a hydrogen industry using renewable energy.⁴⁴

The Climate Act should mandate that that all technology investment and reporting on climate-related technological goals and progress should be limited to zero emissions technologies. This is necessary to concentrate investment on technologies that will be viable in a world with warming compatible that with the Paris Agreement. Statements on ‘low emissions technologies’ mandated by the Climate Act should not monitor and report on the progress of technologies that will contribute to further climate change.

Committing to investment only in zero emissions technologies can contribute to the establishment of Australia as a renewables superpower and stimulate strong job and economic growth. Investment in utility-scale renewable energy, community-scale energy grids and green hydrogen projects alone could generate 17,500 new jobs, with many more job creation opportunities available through new technology investment.⁴⁵

Investing in zero emissions technologies is also more economically viable as renewables, particularly solar PV, are now the cheapest source of energy and are consistently cheaper than coal or gas.⁴⁶

⁴⁴ Commonwealth of Australia (2020) *Technology Investment Roadmap 2020*, <https://www.industry.gov.au/sites/default/files/September%202020/document/first-low-emissions-technology-statement-2020.pdf>

⁴⁵ Climate Council (2020) *Clean Jobs Plan*, https://www.climatecouncil.org.au/wp-content/uploads/2020/07/Climate-Council_AlphaBeta-Clean-Jobs-Plan-200720.pdf

⁴⁶ IEA (2020) *World Energy Outlook 2020*, <https://www.iea.org/reports/world-energy-outlook-2020>