

The Senate

Environment and
Communications Legislation
Committee

Climate Change Bill 2022 [Provisions] and
the Climate Change (Consequential
Amendments) Bill 2022 [Provisions]

August 2022

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Abbreviations

The bill	Climate Change Bill 2022
Consequential Amendments bill	Climate Change (Consequential Amendments) Bill 2022
AAS	Australian Academy of Science
ACCU	Australian Carbon Credit Unit
ACF	Australian Conservation Foundation
ACOSS	Australian Council of Social Service
AIGN	Australian Industry Greenhouse Network
ARC	Australian Research Council
CCA	Climate Change Authority
CCS	carbon capture and storage
CEC	Clean Energy Council
CER	Clean Energy Regulator
CLEX	ARC Centre of Excellence for Climate Extremes
COP	Conference of the Parties
DCCEEW	Department of Climate Change, Energy, the Environment and Water
EFA	Export Finance Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ERF	Emissions Reduction Fund
IPCC	Intergovernmental Panel on Climate Change
IRD Act	<i>Industry Research and Development Act 1986</i>
NAB	National Australia Bank
NAIF	Northern Australia Infrastructure Facility
NCA	Nuclear for Climate Australia
NDC	Nationally Determined Contribution
NELA	National Environmental Law Association
NFF	National Farmers' Federation
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
OECD	Organisation for Economic Co-operation and Development
OPGGS Act	<i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i>
REE Act	<i>Renewable Energy (Electricity) Act 2000</i>
STA	Science and Technology Australia
UNFCCC	United Nations Framework Convention on Climate Change

List of Recommendations

Recommendation 1

3.84 The committee recommends that the Senate pass the Climate Change Bill 2022.

Recommendation 2

4.59 The committee recommends that the Senate pass the Climate Change (Consequential Amendments) Bill 2022.

Recommendation 3

4.63 The committee recommends that the government, subsequent to the passage of the bills, undertake further consultation on possible legislative amendments and appropriate policy responses, including reviewing the use of native forest wood waste for renewable energy and the transition arrangements for Australian workers impacted by decarbonisation.

Chapter 1

Introduction

- 1.1 On 28 July 2022, the Senate referred the provisions of the Climate Change Bill 2022¹ (the bill) and the Climate Change (Consequential Amendments) Bill 2022² (the Consequential Amendments bill) (collectively, the bills) to the Environment and Communications Legislation Committee for inquiry and report by 31 August 2022.³
- 1.2 The bills would formalise Australia's emissions reduction targets in legislation, to contribute to the global goals of limiting temperature rise in line with the objectives of the Paris Agreement.⁴

Conduct of the inquiry

- 1.3 In accordance with its usual practice, the committee advertised the inquiry on its website and wrote to relevant organisations inviting submissions by 10 August 2022.
- 1.4 The committee published 186 submissions, which are listed at Appendix 1 and are available on the committee's website at aph.gov.au/senate/ec. As noted below, the committee received more than 2800 additional member statements that were attached to GetUp's submission.⁵
- 1.5 The committee also held public hearings on 18 and 19 August 2022 in Canberra and via videoconference. A list of witnesses who gave evidence at the hearings is available at Appendix 2.

Acknowledgement

- 1.6 The committee would like to thank those individuals, institutions and organisations that contributed to the inquiry, particularly given the inquiry's short timeframe.

¹ Climate Change Bill 2022, aph.gov.au/Parliamentary_Business/Bills_Legislation/Bills_Search_Results/Result?bId=r6885 (accessed 23 August 2022).

² Climate Change (Consequential Amendments) Bill 2022, aph.gov.au/Parliamentary_Business/Bills_Legislation/Bills_Search_Results/Result?bId=r6886 (accessed 23 August 2022).

³ *Journals of the Senate*, No. 3, 28 July 2022, pp. 118–119.

⁴ Climate Change Bill 2022, *Explanatory Memorandum*, p. 2.

⁵ GetUp, *Submission 36*, Attachment 1.

Scope and structure of the report

1.7 This report comprises four chapters:

- Chapter 1 provides background information relating to the bills and outlines the bills' purposes and key provisions;
- Chapter 2 provides broader contextual information on the bills;
- Chapter 3 outlines support for the Climate Change bill and examines a range of key issues raised in submissions and public hearings, including emissions reduction targets, the annual climate change statement, the development of future targets and an independent review of the legislative framework. It also sets out the committee's view on these issues and provides a recommendation; and
- Chapter 4 provides evidence related to the Consequential Amendments bill and other issues related to the bills. It also sets out the committee's view on these issues and provides recommendations.

Note on references

1.8 In this report, references to the *Committee Hansard* are to the proof (uncorrected) transcripts. Page numbers may vary between the proof and the official transcripts.

Background to the bills

1.9 Climate change is causing significant impacts in Australia, in our region, and globally. The 2019–20 Black Summer bushfires⁶ and 2022 Eastern Australia floods⁷ are among the most severe domestic impacts, while similar phenomena have been seen across the world. Much of the western United States has been affected by drought and catastrophic summer wildfires since early 2020.⁸ In June and July 2022, floods in China damaged over 500 000 homes and washed

⁶ Dr Garry Cook, Andrew Dowdy, Dr Juergen Knauer, Mick Meyer, Dr Pep Canadell, and Peter Briggs, 'Australia's Black Summer of fire was not normal—and we can prove it', *The Conversation*, 26 November 2021. theconversation.com/australias-black-summer-of-fire-was-not-normal-and-we-can-prove-it-172506 (accessed 25 August 2022).

⁷ AdaptNSW, 'Climate change impacts on storms and floods', climatechange.environment.nsw.gov.au/storms-and-floods (accessed 25 August 2022).

⁸ United States National Oceanic and Atmospheric Administration, 'June 2022 Drought Report', ncei.noaa.gov/access/monitoring/monthly-report/drought/202206 (accessed 25 August 2022).

away roads.⁹ Summer 2022 heatwaves in Europe caused at least 1500 deaths, damage to infrastructure and wildfires across the continent.¹⁰

- 1.10 Climate change is likely to produce increasing intensity and frequency of extreme events, with wider distribution, extended duration, and increasing complexity of linked impacts.¹¹
- 1.11 The Minister for Climate Change and Energy, the Hon Chris Bowen MP, has described climate change as 'one of the most urgent and pressing issues of our time'.¹² Stronger action is therefore required to mitigate further catastrophic impacts of climate change and to keep the objectives of the Paris Agreement on climate change within reach.¹³
- 1.12 The Paris Agreement, to which Australia is a party, aims to strengthen the global response to the threat of climate change, by holding the increase in the global average temperature to well below 2 degrees above pre-industrial levels, and working to hold temperature increase to 1.5 degrees.¹⁴ It also aims to direct funding towards lowering greenhouse gas¹⁵ emissions and climate resilient development.¹⁶
- 1.13 During the 2022 Federal Election campaign, the then Opposition announced its *Powering Australia* policy. As part of this policy, it committed to reduce Australia's emissions by 43 per cent by 2030.¹⁷

⁹ Associated Press, 'China floods force tens of thousands to evacuate with more rainfall expected', *The Guardian*, 22 June 2022, [theguardian.com/world/2022/jun/22/china-floods-force-tens-of-thousands-to-evacuate-with-more-rainfall-expected](https://www.theguardian.com/world/2022/jun/22/china-floods-force-tens-of-thousands-to-evacuate-with-more-rainfall-expected) and Australian Broadcasting Corporation, 'China flash floods leave at least 12 people dead, thousands evacuated as torrential rains hit', *ABC News*, 17 July 2022, [abc.net.au/news/2022-07-17/china-floods-leave-at-least-12-people-dead-thousands-evacuated/101246192](https://www.abc.net.au/news/2022-07-17/china-floods-leave-at-least-12-people-dead-thousands-evacuated/101246192) (both accessed 25 August 2022).

¹⁰ Australian Broadcasting Corporation, 'European heatwave death toll soars above 1,500 as temperatures soar across continent', *ABC News*, 20 July 2022, [abc.net.au/news/2022-07-20/heatwave-in-uk-europe-kills-at-least-1500-authorities-say/101252988](https://www.abc.net.au/news/2022-07-20/heatwave-in-uk-europe-kills-at-least-1500-authorities-say/101252988) (accessed 25 August 2022).

¹¹ Department of Climate Change, Energy, the Environment and Water, State of the Environment 2021, 'Key findings', [soe.dcccew.gov.au/extreme-events/key-findings](https://www.soeccew.gov.au/extreme-events/key-findings) (accessed 25 August 2022).

¹² The Hon Chris Bowen MP, Minister for Climate Change and Energy, *House of Representatives Hansard*, 27 July 2022, p. 17.

¹³ Climate Change Bill 2022, *Explanatory Memorandum*, p. 2.

¹⁴ All references are to degrees Celsius.

¹⁵ Greenhouse gases are those that trap heat in the atmosphere, including carbon dioxide, methane and nitrous oxide.

¹⁶ United Nations, *Paris Agreement*, 2015, Article 2, unfccc.int/sites/default/files/english_paris_agreement.pdf (accessed 23 August 2022).

¹⁷ Australian Labor Party, *Powering Australia*, alp.org.au/policies/powering-australia (accessed 23 August 2022). Note, throughout this report, the phrases '43 per cent target' and '43 per cent by 2030' refer to a 43 per cent reduction in greenhouse gas emissions from 2005 levels by 2030.

- 1.14 On 24 May 2022, the Prime Minister, the Hon Mr Anthony Albanese MP in his opening remarks to the Quad Leaders' Meeting in Tokyo, pledged that the government would take ambitious action on climate change and increase support to our regional partners. Mr Albanese recognised climate change as the main economic and security challenge for the island nations of the Pacific.¹⁸
- 1.15 Subsequently, the Pacific Island Forum Foreign Ministers Meeting welcomed Australia's renewed commitment to the Forum's climate change priorities and Australia's interest in hosting a United Nations Framework Convention on Climate Change Conference of Parties in partnership with Pacific Island countries.¹⁹
- 1.16 In June 2022, the government formally communicated to the Secretariat of the United Nations Framework Convention on Climate Change that Australia would reduce its greenhouse gas emissions by 43 per cent below its 2005 levels by 2030 and reaffirmed its target to achieve net zero²⁰ emissions by 2050.²¹
- 1.17 On 27 July 2022, the government introduced the bills, which are designed to enshrine these targets in domestic law. On 4 August 2022, the bills were amended before being agreed to in the House of Representatives. The effects of the amendments have been incorporated into discussion of the purposes of the bills below. Where appropriate, 'the amended bill' is used to signify amendments passed by the House of Representatives.²²

Key provisions of the bills

- 1.18 This section provides an outline of the five key elements of the bill, including:
- setting emissions reduction targets in Commonwealth law;
 - the Minister to make an annual statement on climate change to Parliament;

¹⁸ Prime Minister Anthony Albanese MP, 'Opening remarks of the Quad Leaders' Meeting', *Transcript*, 24 May 2022, pm.gov.au/media/opening-remarks-quad-leaders-meeting (accessed 23 August 2022).

¹⁹ Pacific Islands Forum, '2022 Forum Foreign Ministers Meeting: Outcomes', 8 July 2022, p. 4, forumsec.org/wp-content/uploads/2022/07/2022-Forum-Foreign-Ministers-Meeting-Outcomes-Final.pdf (accessed 23 August 2022).

²⁰ 'Net zero' refers to the point at which total emissions are equal to total removals.

²¹ Department of Industry, Science, Energy and Resources, 'Australia's Nationally Determined Contribution Communication 2022' unfccc.int/sites/default/files/NDC/2022-06/Australias%20NDC%20June%202022%20Update%20%283%29.pdf (accessed 23 August 2022).

²² Versions of the Climate Change Bill 2022, as introduced and as passed in the House of Representatives, are available at, aph.gov.au/Parliamentary_Business/Bills_Legislation/Bills_Search_Results/Result?bId=r6885 (accessed 23 August 2022). Versions of the Climate Change (Consequential Amendments) Bill 2022, as introduced and as passed in the House of Representatives, are available at aph.gov.au/Parliamentary_Business/Bills_Legislation/Bills_Search_Results/Result?bId=r6886 (accessed 23 August 2022).

- the Climate Change Authority to advise the Minister on the annual climate change statement;
- the Climate Change Authority to advise the Minister on the development of future greenhouse gas emissions reduction targets; and
- regular independent reviews of the legislation.

1.19 This section also provides an overview of the Consequential Amendments bill.

Climate Change Bill

Emissions reduction targets

1.20 The purpose of the bill is to ensure that Australia's emissions reduction targets are recorded not only in international agreements, but also in Commonwealth legislation. Formalising the targets in legislation is intended to provide certainty to the Australian public and businesses about the commitments and highlights the critical importance of the targets for the nation's future.²³

1.21 A key object of the bill is to set out Australia's greenhouse gas emissions reduction targets, which will contribute to the global goals described in Article 2 of the Paris Agreement, namely:

- to hold the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels; and
- to pursue efforts to limit the temperature increase to 1.5 degrees Celsius above pre-industrial levels.²⁴

1.22 The bill would legislate a 43 per cent reduction target in greenhouse gas emissions by 2030 and net zero emissions by 2050.²⁵ The 43 per cent emissions reduction target would be implemented as both a point target and a staged 'emissions budget' from 2021 to 2030.²⁶

1.23 The government has emphasised that the targets in the bill do not limit Australia's emissions reduction ambitions.²⁷ A note in the amended bill clarifies that the 43 per cent target acts as a floor, rather than a ceiling:

...the achievement of a target involves reducing Australia's net greenhouse gas emissions to a level that is at or below the target. Accordingly, nothing

²³ Climate Change Bill 2022, *Explanatory Memorandum*, p. 2.

²⁴ Proposed subsection 3(a). The first object of the amended bill is 'to advance an effective and progressive response to the urgent threat of climate change drawing on the best available scientific knowledge'. See proposed subsection 3(aa) of the amended bill.

²⁵ Proposed subsection 10(1).

²⁶ Proposed paragraph 10(1)(a).

²⁷ The Hon Chris Bowen MP, Minister for Climate Change and Energy, *House of Representatives Hansard*, 27 July 2022, p. 18. See also Climate Change Bill 2022, *Explanatory Memorandum*, p. 2.

in [subsection 10(1)] limits Australia's ability to reduce its net greenhouse gas emissions beyond 43% below 2005 levels by 2030.²⁸

- 1.24 The bill would place obligations on the Commonwealth, but not the states or territories. The bill would not exclude or limit the operation of compatible state or territory legislation.²⁹
- 1.25 The government's power to set new or adjusted emissions reduction targets under the Paris Agreement would not be constrained by the bill.³⁰ However, any new or adjusted future target would be required to represent an increased ambition from the previous target.³¹

Annual climate change statement

- 1.26 The third object of the amended bill promotes accountability and ambition. This subsection requires the Minister to prepare and table in each House of Parliament an annual climate change statement.³²
- 1.27 The Minister would be required to prepare an annual climate change statement within six months after the end of each financial year. The statement would encompass:
- national progress towards achieving emissions reduction targets;
 - international developments relevant to addressing climate change;
 - current climate change policies;
 - the effectiveness of climate change policies towards achieving emissions reduction targets and reducing emissions in the sectors covered by those policies; and
 - the impact of climate change policies, including their social, employment and economic benefits, on rural and regional Australia.³³
- 1.28 The Minister would be required to table a copy of the annual climate change statement within five sitting days after its preparation was completed.³⁴ In practice, this would mean that each financial year's annual climate change statement would be likely to be tabled in February of the following year. In evidence given at a public hearing, the department indicated that the first

²⁸ Note to proposed subsection 10(1) of the amended bill.

²⁹ Proposed subsection 10(3).

³⁰ Proposed subsection 10(4).

³¹ Proposed subsections 10(5) and 10(6).

³² Proposed subsection 3(b).

³³ Proposed subsection 12(1) of the amended bill.

³⁴ Proposed subsection 12(3).

annual statement is expected to be completed by the end of 2022, for tabling in February 2023.³⁵

Advice from the Climate Change Authority

- 1.29 The Climate Change Authority (CCA) would be required to advise the Minister on the preparation of the annual climate change statement.³⁶ The CCA may undertake public consultation in the preparation of this advice but is not required to do so.³⁷ The bill is silent on how public consultation would be undertaken. Written advice to the Minister on the statement must be published on the CCA website, and tabled in Parliament within 15 days of it being provided to the Minister.³⁸
- 1.30 If the Minister were to not accept a material aspect of the CCA's advice on the annual climate change statement, the Minister would be required to table a written statement of reasons within five sitting days after preparation of the statement is complete.³⁹
- 1.31 The Minister would also be expected to address the Parliament on the statement. Members and Senators would have an opportunity to respond to the statement.⁴⁰

Development of future targets

- 1.32 The Paris Agreement proposes that countries should prepare, communicate, and maintain nationally determined contributions (NDCs) to emissions reduction every five years.⁴¹ Parties to the Paris Agreement are also called on to revise existing NDCs to set more ambitious targets, in accordance with guidance adopted by the Conference of the Parties (COP).⁴²
- 1.33 At COP26 in November 2021, parties agreed to the Glasgow Climate Pact. The pact calls on parties to 'revisit and strengthen the 2030 targets in their

³⁵ Ms Jo Evans, Acting Secretary, Department of Climate Change, Energy, the Environment and Water, *Committee Hansard*, 19 August 2022, p. 53.

³⁶ Proposed subsection 14(1).

³⁷ Proposed subsection 14(3).

³⁸ Proposed subsection 14(6) of the amended bill.

³⁹ Proposed subsection 14(7).

⁴⁰ Climate Change Bill 2022, Explanatory Memorandum, p. 11.

⁴¹ United Nations, *Paris Agreement*, 2015, Article 4, paragraph 9.

⁴² United Nations, *Paris Agreement*, 2015, Article 4, paragraph 11. The Conference of the Parties or COP is the main decision-making body of the Climate Change Convention, on which all states that are parties to the Convention are represented.

nationally determined contributions as necessary to align with the Paris Agreement temperature goal by the end of 2022'.⁴³

- 1.34 The bill requires the CCA to advise the Minister, if requested, on emissions reduction targets for new or adjusted NDCs under the Paris Agreement.⁴⁴ The Minister must seek advice on targets for new nationally determined contributions at least once every five years, but is not required to seek advice on targets for adjusted NDCs.⁴⁵
- 1.35 The Commonwealth must only communicate a new NDC in accordance with the Paris Agreement that includes a 2035, 2040 or 2045 target if the CCA has given advice.⁴⁶
- 1.36 In preparing advice on the development of future targets, the CCA would be required to undertake public consultation.⁴⁷ The bill is silent on how public consultation would be undertaken.
- 1.37 The advice given to the Minister must include an explanation of how the emissions reduction targets have taken into account global average temperature thresholds set out in Article 2 of the Paris Agreement.⁴⁸

Reviews of the legislation

- 1.38 To ensure accountability, the bill proposes regular independent reviews of the legislation. The first review would take place after five years, with subsequent reviews every ten years.⁴⁹ Each review would be informed by public consultation.⁵⁰ Reviewers would be required to provide a written report to the Minister, who would be required to table that report within 15 sitting days of receiving it.⁵¹

⁴³ United Nations, *Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on its third session, held in Glasgow from 31 October to 13 November 2021*, 8 March 2022, unfccc.int/sites/default/files/resource/cma2021_10_add1_adv.pdf (accessed 23 August 2022).

⁴⁴ Proposed subsection 15(1).

⁴⁵ Proposed subsection 15(2).

⁴⁶ Proposed subsection 15(2A) of the amended bill.

⁴⁷ Proposed subsection 15(3).

⁴⁸ Proposed subsection 15(3A) of the amended bill.

⁴⁹ Proposed subsections 17(5) and 17(6).

⁵⁰ Proposed subsection 17(2).

⁵¹ Proposed subsections 17(3) and 17(4).

Climate Change (Consequential Amendments) Bill

- 1.39 The Consequential Amendments bill would insert the consideration of emissions reduction targets into 14 pieces of existing federal legislation.⁵² This legislation covers Commonwealth departments, entities and schemes that are, or could be, contributing to national emissions reduction. Embedding emissions reduction targets in legislation would ensure that relevant Commonwealth departments, entities and schemes can contribute to the delivery of those targets and provide a springboard for achieving new or adjusted targets in future.⁵³
- 1.40 The Consequential Amendments bill would update references to international climate agreements within the amended legislation, to reflect the adoption of the Paris Agreement. This would include the commitments in Article 2 of the Paris Agreement, including the global temperature thresholds, as a key consideration for the CCA when performing its functions.⁵⁴
- 1.41 The emissions reduction targets captured in the Consequential Amendments bill encompass both the legislated targets in the bill and also any new or adjusted targets set under the Paris Agreement. This would ensure that the legislation to be amended will continue to implement Australia's obligations under the Paris Agreement as those obligations progress.⁵⁵
- 1.42 The Consequential Amendments bill would not 'limit or constrain the exercise of powers or performance of the existing functions of the relevant entities and schemes'.⁵⁶

Human rights

- 1.43 The Explanatory Memoranda to the bills note that the government 'recognises that climate change can impact upon the enjoyment of human rights'⁵⁷ and that the bill is consistent with all treaties to which Australia is a party. The Explanatory Memoranda also state that the bills are compatible with human rights because they promote the protection of human rights.

⁵² For a list of legislation that would be amended by the Climate Change (Consequential Amendments) Bill 2022, see chapter 4, and Climate Change (Consequential Amendments) Bill 2022, *Explanatory Memorandum*, p. 5.

⁵³ Climate Change (Consequential Amendments) Bill 2022, *Explanatory Memorandum*, p. 2.

⁵⁴ Proposed amendments to sections 3, 4, 11, 12, 57, and 82 of the *Climate Change Authority Act 2011*.

⁵⁵ Climate Change (Consequential Amendments) Bill 2022, *Explanatory Memorandum*, p. 2.

⁵⁶ Climate Change (Consequential Amendments) Bill 2022, *Explanatory Memorandum*, p. 2.

⁵⁷ Climate Change Bill 2022, *Explanatory Memorandum*, p. 5 and Climate Change (Consequential Amendments) Bill 2022, *Explanatory Memorandum*, p. 5.

Comment of the Scrutiny of Bills Committee

1.44 The Senate Standing Committee for the Scrutiny of Bills has not yet considered the bills. Consideration of the bills is anticipated for early September 2022.

Financial impact of the Bills

1.45 The Explanatory Memoranda note that there is no financial impact associated with the bills.⁵⁸ The Explanatory Memorandum to the bill also notes that the government's *Powering Australia* plan includes a separate commitment to ensure the Climate Change Authority is adequately resourced for all of its functions, which will be addressed through the budget process.⁵⁹

⁵⁸ Climate Change Bill 2022, *Explanatory Memorandum*, p. 4 and Climate Change (Consequential Amendments) Bill 2022, *Explanatory Memorandum*, p. 3.

⁵⁹ Climate Change Bill 2022, *Explanatory Memorandum*, p. 4.

Chapter 2

The changing climate

2.1 This chapter provides an overview of the broader context of the Climate Change Bill 2022 and the Climate Change (Consequential Amendments) Bill 2022, including Australia's experience and history of climate change, international efforts to tackle climate change, and future opportunities for Australia.

The reality of climate change

2.2 There is widespread scientific consensus that human activity, in particular the production of greenhouse gases, has caused atmospheric changes that in turn have led to significant, ongoing disruption to the world's climate.

2.3 The Intergovernmental Panel on Climate Change (IPCC) is the world's foremost authority on climate change. IPCC research confirms that the average global temperature has risen by approximately 1.1 degrees¹ since the pre-industrial era. This rise has been accompanied by unprecedented changes in the atmosphere, oceans, cryosphere, and biosphere.²

2.4 The global temperature will almost certainly continue to increase, but the rate and magnitude of the increase will be determined by our ability to limit future greenhouse gas emissions. The IPCC considers it is still technically feasible to limit the total increase to 1.5 degrees above pre-industrial levels. However, without a large and rapid reduction in emissions, the increase is likely to exceed 2 degrees before the end of the 21st century (and may be as high as 4 degrees). IPCC projections suggest these trajectories have vastly different outcomes: while a global rise of 1.5 degrees would result in substantial social and environmental challenges, a rise of 2 degrees or more may be unliveable in some parts of the world.³

2.5 The scientific community's confidence in the integrity, rigour and accuracy of the IPCC's work was apparent in the evidence the committee received from experts including Professor Penny Sackett, Professor Frank Jotzo, Professor Nerilie Abram, Professor David Karoly, Professor Matthew England, the

¹ All references are to degrees Celsius.

² Gulev et al, '2021: Changing State of the Climate System' in *Climate Change 2021: The Physical Science Basis*, Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.

³ Lee et al '2021: Future Global Climate: Scenario-Based Projections and Near-Term Information' in *Climate Change 2021: The Physical Science Basis*, Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.

Australian Centre for Excellence in Antarctic Science, the ARC Centre of Excellence for Climate Extremes, and the Australian Academy of Science.

Committee view

2.6 The committee acknowledges that the general scientific position on climate change is unequivocal and unanimous. While our understanding of its impacts will undoubtedly continue to progress, there is no credible debate as to the existence of climate change, the causative role of greenhouse gas emissions, or the urgent need to limit global temperature increases. The science is settled.

The impact of climate change on Australia

2.7 The consequences of climate change are complex and interrelated, and our understanding of their full scope and magnitude continues to evolve. Professor Penny Sackett told the committee:

...as our understanding grows, although the scientific relationship between greenhouse gases and temperature rise is well understood, it has come to scientists as a surprise as they learn more and more about how the impacts are more severe at a given level of warming than previously thought. The two-degree world we might imagine now is a very different world to the two-degree world scientists were thinking we might see 10 years ago or even when the Paris Agreement was signed [in 2015].⁴

2.8 Australia's average temperature is now approximately 1.4 degrees above pre-industrial levels,⁵ a substantially greater rise than the global average.⁶ The rise in temperature has been accompanied by more frequent hot weather, fewer cold days, shifting rainfall patterns, and rising sea levels.⁷

2.9 The IPCC's sixth assessment report paints a stark picture of Australia's vulnerability to severe and irreparable harm if climate change is not immediately addressed. Some of the key risks identified include a decline in agricultural production due to hotter and drier conditions, an increase in heat-related illness and death, the loss and degradation of coral reefs due to ocean warming, and the destruction of low-lying coastal areas due to sea level rise.⁸

⁴ *Committee Hansard*, 18 August 2022, p. 2.

⁵ Gutiérrez et al '2021: Atlas' in *Climate Change 2021: The Physical Science Basis*, Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.

⁶ Professor David Karoly, *Committee Hansard*, 19 August 2022, p. 4.

⁷ See for example, CSIRO, 'Climate change in Australia', csiro.au/en/research/environmental-impacts/climate-change/climate-change-information (accessed 25 August 2022); and CSIRO and the Bureau of Meteorology, *State of the Climate 2020*, 2020.

⁸ Lawrence et al, 'Australasia' in *Climate Change 2022: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.

- 2.10 The potentially devastating impacts of climate change were of significant concern to many individual submitters, such as GetUp member Mary H who said '[t]he scientific evidence on the depth and urgency of the climate emergency is terrifying'.⁹
- 2.11 Several submitters expressed particular concern for their children and other young Australians. GetUp member Peter E, a father of two children, said 'I am unashamed to admit that I am pretty scared of what the future holds for them',¹⁰ while GetUp member Cheryl H observed that 'kids are scared and they have a right to be'.¹¹ Teenage climate campaigner Ms Anjali Sharma told the committee '[t]here is a general attitude of fear and trepidation among young people regarding the projected state of the climate'.¹²

Extreme weather events

- 2.12 There is a well-established causal connection between climate change and extreme weather events.¹³ The CSIRO and the Bureau of Meteorology link ongoing, long-term climate change to significant disturbances in Australian weather patterns including extreme heat, heavy rainfall and coastal inundation, fire weather, and drought.¹⁴ The ARC Centre of Excellence for Climate Extremes warned in its submission that 'every additional fraction of a degree of warming increases the risk of extreme [weather] events'.¹⁵
- 2.13 Many submitters shared their own experiences of extreme weather events and natural disasters with the committee.¹⁶ The Australian Trucking Association highlighted the direct impact of road closures and dangerous conditions on the trucking industry,¹⁷ while the Construction, Forestry, Maritime, Mining and Energy Union pointed out that its members have been at the forefront in responding to natural disasters and extreme weather events.¹⁸

⁹ GetUp, *Submission 36*, Attachment 1, p. 263. The attachment contains over 2800 statements from GetUp members, who are identified by their first name and the first letter of their surname.

¹⁰ GetUp, *Submission 36*, Attachment 1, p. 53.

¹¹ GetUp, *Submission 36*, Attachment 1, p. 487.

¹² Ms Anjali Sharma, *Submission 115*, p. 1.

¹³ Seneviratne et al, '2021: Weather and Climate Extreme Events in a Changing Climate' in *Climate Change 2021: The Physical Science Basis*, Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.

¹⁴ CSIRO and the Bureau of Meteorology, *State of the Climate 2020*, p. 2.

¹⁵ Australian Research Council Centre of Excellence for Climate, *Submission 9*, p. 1.

¹⁶ See, for example: GetUp, *Submission 36*, Attachment 1; Peoples Climate Action Coalition, *Submission 46*; South East Forest Rescue, *Submission 92*; and Mr Jimmy Malecki, *Submission 130*.

¹⁷ Australian Trucking Association, *Submission 25*, p. 3.

¹⁸ Construction, Forestry, Maritime, Mining and Energy Union, *Submission 64*, p. 4.

Economic impacts

- 2.14 The direct effects of climate change on infrastructure, agriculture, biodiversity, and human health will have considerable flow-on effects across the economy. Modelling conducted by the Swiss Re Institute suggests climate change could reduce global GDP by as much as 18 per cent by 2050 if not adequately addressed.¹⁹
- 2.15 Analysis published by the Reserve Bank of Australia recognises that '[c]limate change creates risks for the Australian financial system that will rise over time to become substantial if they are not properly managed'.²⁰ In its submission, the Financial Services Council confirmed that 'investment funds see climate risk as a real material financial risk to their investments'.²¹

Insurance industry

- 2.16 The committee heard that the increasing frequency and severity of extreme weather events has had a substantial impact on the insurance industry, reducing the availability and affordability of insurance premiums in Australia.²² The Insurance Council of Australia expects worsening climate change to drive further increases in the cost of premiums and threaten the long-term viability of the industry.²³

Agriculture, regional and rural Australia

- 2.17 The effects of climate change are particularly evident across rural and regional Australia, where populations are already grappling with drought, floods, bushfires, and water shortages. Rural and regional communities are uniquely exposed to certain consequences of climate change, including:

...changes to the distribution of pests and diseases, interruptions to supply chains and transportation networks, altered seasonality and work schedules, and pressures on the agricultural workforce.²⁴

¹⁹ Swiss Re Institute, *The economics of climate change: No action not an option*, April 2021, swissre.com/dam/jcr:e73ee7c3-7f83-4c17-a2b8-8ef23a8d3312/swiss-re-institute-expertise-publication-economics-of-climate-change.pdf (accessed 26 August 2022). This is the estimated impact of the 'severe case' scenario relative to a baseline with no climate change.

²⁰ Bellrose, Norman, and Royters, Climate Change Risks to Australian Banks, *Bulletin*, Reserve Bank of Australia, September 2021, p. 20, rba.gov.au/publications/bulletin/2021/sep/pdf/climate-change-risks-to-australian-banks.pdf (accessed 24 August 2022).

²¹ Financial Services Council, *Submission 119*, p. 2.

²² Insurance Council of Australia, *Submission 101*, p. 1.

²³ Ms Kylie Macfarlane, Chief Operating Officer, Insurance Council of Australia, *Committee Hansard*, 18 August 2022, pp. 55–57; and Insurance Council of Australia, *Submission 101*, p. 2.

²⁴ Hughes et al, *On the Frontline: Climate Change and Rural Communities*, Climate Council of Australia, 2016, p. 21, climatecouncil.org.au/uploads/564abfd96ebac5cbc6cf45de2f17e12d.pdf (accessed 26 August 2022).

2.18 Climate change is of particular concern to the agricultural sector.²⁵ Crops and livestock are dependent on the natural environment and directly susceptible to changes in conditions. Between 2001 and 2021, changes in seasonal conditions reduced average annual farm profits by an estimated 23 per cent.²⁶ As Farmers for Climate Action put it, 'Australian farmers are on the front lines of climate change'.²⁷

Impact on vulnerable communities

2.19 Vulnerable and marginalised communities bear a disproportionate share of the burdens imposed by climate change. Those already experiencing financial or social disadvantage have fewer resources to cope with, adapt to and recover from the effects of climate change.²⁸ The IPCC describes climate change as a 'poverty multiplier'.²⁹

2.20 Doctors for the Environment Australia and the Climate and Health Alliance highlighted the immediate and long-term health risks of environmental damage.³⁰ The Australian Council of Social Service drew the committee's attention to the particular harm to First Nations communities,³¹ which was reiterated by other submitters, including the Environmental Defenders Office and the Australian Religious Response to Climate Change.³²

Australia's historical emissions reduction targets

2.21 Australia is a longstanding participant in global efforts to address climate change and was one of the first signatories to the United Nations Framework Convention on Climate Change (UNFCCC) at the Rio Earth Summit in 1992.

2.22 The Kyoto Protocol was an international agreement under the UNFCCC intended to reduce the atmospheric concentration of greenhouse gases. The

²⁵ National Farmers' Federation, *Submission 31*.

²⁶ Hughes, Lu et al, *Simulating the effects of climate change on the profitability of Australian farms*, ABARES working paper, June 2021, agriculture.gov.au/sites/default/files/documents/abares-climate-change-working-paper.pdf (accessed 26 August 2022).

²⁷ Farmers for Climate Action, *Submission 30*, p. 2.

²⁸ Australian Council on Social Service, *Submission 59*, p. 2.

²⁹ Hoegh-Guldberg et al, '2018: Impacts of 1.5°C Global Warming on Natural and Human Systems' in: *Global Warming of 1.5°C*, IPCC special report.

³⁰ Doctors for the Environment Australia, *Submission 73*; and Climate and Health Alliance, *Submission 168*.

³¹ Australian Council on Social Service, *Submission 59*, p. 2.

³² Environmental Defenders Office, *Submission 3*; and Australian Religious Response to Climate Change, *Submission 21*.

Protocol included binding emission reduction targets for certain industrialised countries and economies in transition.³³

First Kyoto Protocol commitment (2008–2012)

2.23 Australia's initial commitment under the Protocol was to limit greenhouse gas emissions to 108 per cent of 1990 emission levels by 2012.³⁴ Australia exceeded this target.³⁵

Second Kyoto Protocol commitment (2013–2020)

2.24 In the second commitment period, Australia committed to limit emissions to 99.5 per cent of 1990 emissions levels by 2020 (which was equivalent to a 5 per cent reduction on 2000 levels by 2020).³⁶ Australia also exceeded this target.³⁷

The Paris Agreement

2.25 The Paris Agreement succeeded the Kyoto Protocol as the binding international agreement under the UNFCCC. Consistent with IPCC reporting, the overarching goal of the Agreement is to limit global temperature increase to well below 2 degrees and pursue efforts to limit it to 1.5 degrees.³⁸

2.26 The Agreement facilitates five-year cycles of increasingly ambitious action carried out by signatory countries, which must develop and maintain nationally determined contributions (NDCs). NDCs are the central mechanism by which countries outline their short and long-term emissions reduction targets, how they intend to achieve those targets, and the means by which they will monitor and verify their progress.

2.27 The former government submitted Australia's first NDC in 2015, committing to reduce greenhouse gas emissions by 26–28 per cent below 2005 levels by 2030.³⁹ In June 2022, the Albanese government submitted an updated NDC

³³ *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, [2008] ATS 2, Annex B.

³⁴ *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, [2008] ATS 2, Annex B.

³⁵ Department of Climate Change, Energy, the Environment and Water, 'Australia's "True Up Period" Report for the Kyoto Protocol First Commitment Period', December 2015, dceew.gov.au/climate-change/publications/australias-true-up-period-report-for-the-kyoto-protocol-first-commitment-period (accessed 26 August 2022).

³⁶ *Amendment to the Kyoto Protocol pursuant to its Article 3, paragraph 9*, [2020 ATS 18].

³⁷ The Hon Angus Taylor MP, Minister for Energy and Emissions Reduction, 'Australia beats 2020 emissions reduction target', *Media release*, 7 July 2020, minister.industry.gov.au/ministers/taylor/media-releases/australia-beats-2020-emissions-reduction-target (accessed 26 August 2022).

³⁸ *Paris Agreement*, [2016] ATS 24, Article 2.

³⁹ Commonwealth of Australia, 'Australia's Intended Nationally Determined Contribution to a new Climate Change Agreement', August 2015.

committing to reduce emissions by 43 per cent below 2005 levels by 2030 and achieve net zero emissions by 2050.⁴⁰

Emissions reduction targets

International emissions reduction targets

2.28 Parties to the Paris Agreement have set out their 2030 emissions reduction targets in NDCs. More than half also have a long-term goal of net zero emissions,⁴¹ including Australia's key allies and trading partners (see Table 2.1).

Table 2.1 International emissions reduction targets

Country or region	2030 target [^]	2050 target
United States of America	50–52% below 2005 level	Net zero
United Kingdom	68% below 1990 level**	Net zero*
Canada	40–45% below 2005 level*	Net zero*
Japan	46% below 2013 level	Net zero*
China	65% reduction in 'carbon intensity' below 2005 level	Net zero by 2060
India	45% reduction in 'emissions intensity' below 2005 level	Net zero by 2070
Republic of Korea	40% below 2018 level	Net zero*
New Zealand	50% below 2005 level	Net zero*

[^] *Nationally Determined Contributions.*

* *This target is legislated.*

** *The UK also has a legislated target of a 57 per cent reduction by 2030.*

Source: United Nations and national government sources.

2.29 The diplomatic benefits of stronger domestic climate action are discussed at paragraphs 3.26–3.28.

Revision of emissions reduction targets

2.30 Parties to the Paris Agreement are expected to submit revised NDCs every five years, with the next round due in 2025. However, in recognition that existing commitments are not collectively sufficient to achieve the global temperature

⁴⁰ Commonwealth of Australia, 'Australia's Nationally Determined Contribution Communication 2022', June 2022.

⁴¹ Department of Foreign Affairs and Trade, *Submission 98*, p. 2.

goals of the Agreement the parties have agreed to revisit and strengthen their NDC targets by the end of 2022.⁴²

State and territory emissions reduction targets

2.31 All Australian states and territories have emissions reduction targets in place, as do many local governments (see Table 2.2).

Table 2.2 State and Territory emissions reduction targets

Jurisdiction	2030 target	2050 target
New South Wales	50% below 2005 level	Net zero
Queensland	30% below 2005 level	Net zero
South Australia	50% below 2005 level	Net zero
Tasmania [†]	-	Net zero
Victoria	45–50% below 2005 level*	Net zero*
Western Australia	-	Net zero
Australian Capital Territory	65–75% below 1990 level*	Net zero by 2045*
Northern Territory	-	Net zero

* *This target is legislated.*

[†] *Net zero emissions achieved.*

Source: state and territory government sources.

Corporate and sectoral targets

2.32 Many Australian companies have established their own emissions reduction targets, including Coles Group, Woolworths Group, Woodside Petroleum, Fortescue Metal Group, Lendlease and Transurban Holdings.⁴³ The committee heard that approximately 70 per cent of the ASX 200 has adopted net zero commitments, which have become 'the norm for Australian businesses'.⁴⁴ Twenty-three of Australia's largest companies, representing 23 per cent of Australia's direct greenhouse gas emissions, are participating in a voluntary pilot initiative to report their climate commitments and progress to the Clean Energy Regulator.⁴⁵

⁴² United Nations, *Addendum to the Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on its third session*, 8 March 2022, Decision 1/CMA.3, item 29.

⁴³ Clean Energy Regulator, 'Corporate Emissions Reduction Transparency Report 2022', 7 July 2022, cleanenergyregulator.gov.au/Infohub/Markets/cert-report/cert-report-2022 (accessed 26 August 2022).

⁴⁴ Mr Tim Reed, President, Business Council of Australia, *Committee Hansard*, 18 August 2022, p. 27.

⁴⁵ Clean Energy Regulator, 'Corporate Emissions Reduction Transparency Report 2022'.

2.33 In addition, a range of sector-specific targets have been endorsed by various industry groups and peak bodies across Australia. These cover sectors as diverse as the red meat industry,⁴⁶ the healthcare system,⁴⁷ and the fashion industry.⁴⁸

Transition presents opportunities

2.34 The challenges posed by climate change are accompanied by significant opportunities as Australia—and the world—adapts to climate change, mitigates its effects, and transitions to a lower emissions future. As the Minister for Climate Change and Energy has observed, 'with the right ambition, action and cooperation, Australia can seize the once-in-a-generation opportunity ahead of us and thrive in a net zero world'.⁴⁹

The economic upside

2.35 The domestic and global response to climate change has significant economic potential for Australia. The Department of Climate Change, Energy, the Environment and Water told the committee there is potential for \$131 billion in new technology and jobs by 2030.⁵⁰ A report by the Business Council of Australia suggests that addressing climate change could add as much as \$890 billion to Australia's GDP by 2070.⁵¹ Professor Matthew England put it succinctly: 'there is a lot of money to be made from emissions reductions'.⁵²

⁴⁶ Meat and Livestock Australia, 'Carbon neutral 2030', mla.com.au/research-and-development/Environment-sustainability/carbon-neutral-2030-rd/ (accessed 24 August 2022).

⁴⁷ Australian Medical Association, Doctors for the Environment Australia, and Australian medical colleges, 'Australian doctors call for more leadership from governments and the healthcare sector for urgent action on climate change to protect health', *Joint statement*, 9 August 2022, ama.com.au/sites/default/files/2022-08/dea-ama-communique-2022-climate-change-and-sustainability.pdf (accessed 24 August 2022).

⁴⁸ Australian Fashion Council, *AFC signs UNFCCC Fashion Industry Charter*, 27 November 2019, ausfashioncouncil.com/afc-sign-unfccc-fashion-industry-charter-for-climate-action/ (accessed 24 August 2022).

⁴⁹ The Hon Anthony Albanese MP, Prime Minister, The Hon Chris Bowen MP, Minister for Climate Change and Energy, and Senator the Hon Jenny McAllister, Assistant Minister for Climate Change and Energy, 'Stronger action on climate change', *Media release*, 16 June 2022, minister.industry.gov.au/ministers/bowen/media-releases/stronger-action-climate-change (accessed 26 August 2022).

⁵⁰ Department of Climate Change, Energy, the Environment and Water, *Submission 78*, p. 2. The figure is based on analysis by the Investor Group on Climate Change.

⁵¹ Business Council of Australia, *Achieving a net zero economy*, October 2021, bca.com.au/achieving_a_net_zero_economy (accessed 26 August 2022). The figure is based on Deloitte Access Economics modelling.

⁵² *Committee Hansard*, 19 August 2022, p. 2.

2.36 The Blueprint Institute was similarly optimistic, especially in relation to the benefits to regional areas:

Abundant opportunities exist for regional Australians, businesses, manufacturers, and industries to create new jobs, and profit from new technologies, demand for new materials, and new export markets... Much of the infrastructure that must be built to secure future economic prosperity and emissions reductions will be contingent on the support and cooperation of regional landowners and communities.⁵³

Revitalising regional Australia

2.37 The committee received extensive evidence that the parts of Australia most vulnerable to the effects of climate change are also well placed to take advantage of the opportunities to address it.⁵⁴ More than 80 per cent of jobs generated by the *Powering Australia* plan will be in rural and regional Australia.⁵⁵ Farmers for Climate Action noted that 'there are huge economic opportunities for farmers and regional Australians'.⁵⁶ Regional advocacy group The Next Economy agreed that 'regional areas are well placed to take advantage of the many economic opportunities related to the work we need to do'.⁵⁷

Emerging markets and industries

2.38 Pursuing emissions reduction opportunities across the Australian economy has considerable potential to facilitate growth in new and emerging markets and industries.

Renewable energy

2.39 The most immediate opportunities will be driven by the transition to renewable energy sources. Under the *Powering Australia* plan, the government will invest \$20 billion to update the electricity grid to support more renewable power, with the aim of increasing the share of renewables in the National Electricity Market to 82 per cent by 2030.⁵⁸ The Australian Energy Market

⁵³ Blueprint Institute, *Submission 103*, p. 9.

⁵⁴ See, for example: The Next Economy, *Submission 23*; Farmers for Climate Action, *Submission 30*; Department of Climate Change, Energy, the Environment and Water, *Submission 78*; Blueprint Institute, *Submission 103*; and Mr Wayne Smith, Government Relations Manager, Smart Energy Council, *Committee Hansard Committee Hansard*, 18 August 2022, p. 62.

⁵⁵ Department of Climate Change, Energy, the Environment and Water, *Submission 78*, p. 4. The figure is based on Reputex modelling.

⁵⁶ Farmers for Climate Action, *Submission 30*, p. 2.

⁵⁷ The Next Economy, *Submission 23*, Attachment 1, p. 7.

⁵⁸ Department of Climate Change, Energy, the Environment and Water, 'Powering Australia', energy.gov.au/government-priorities/australias-energy-strategies-and-frameworks/powering-australia (accessed 25 August 2022).

Operator anticipates an excess of low-cost renewable energy, which could be either exported or used to accelerate domestic industrial production and energy-intensive digital industries.⁵⁹

2.40 The Blueprint Institute argued that while changes to the grid are not without costs, they must also be seen as 'investments', which 'will reap significant rewards given Australia's inherent advantages in a renewable energy economy'.⁶⁰

2.41 Professor Frank Jotzo noted that, unlike other countries facing this transition, there are 'no practical physical limitations' to generating renewable energy in Australia.⁶¹ Moreover, the Business Council of Australia gave evidence that:

... in a world where extraction is cheap, and at the marginal cost almost zero, but storage and transportation is expensive, you're far more likely to see industry move to the places where energy is sourced... What that means is that you would naturally expect a lot of energy intensive industries to become far more attractive investment propositions in Australia.⁶²

Electric vehicles

2.42 The Australian Manufacturing Workers' Union noted that the shift towards electric vehicles 'represents a significant opportunity for Australia to rebuild and expand its manufacturing industry'.⁶³

2.43 The *Powering Australia* plan includes a series of measures aimed at expanding Australia's electric vehicle market including consumer subsidies, development of a National Electric Vehicle strategy, and a commitment to increase the number of electric vehicles in the Commonwealth fleet.⁶⁴

Other low-emission technologies

2.44 Australia's highly skilled workforce, strong scientific and industrial research capacity, unique geography, and abundant natural resources will make it well placed to lead the development of a variety of other products and

⁵⁹ Australian Energy Market Operator, *2022 Integrated System Plan*, June 2022, p. 7.

⁶⁰ Blueprint Institute, answers to written questions on notice from Senator McKenzie (received 22 August 2022).

⁶¹ Professor Frank Jotzo, Head of Energy, Institute for Climate, Energy and Disaster Solutions, Australian National University, *Committee Hansard*, 18 August 2022, p. 5.

⁶² Mr Tim Reed, Business Council of Australia, *Committee Hansard*, 18 August 2022, p. 33.

⁶³ Australian Manufacturing Workers' Union, *Submission 57*, Attachment 1, p. 21.

⁶⁴ Department of Climate Change, Energy, the Environment and Water, 'Powering Australia'.

technologies. These include battery storage and transmission, low-emissions livestock feed, marine methane reduction, and sustainable aviation fuel.⁶⁵

Critical minerals

- 2.45 Australia is naturally endowed with many of the critical minerals, including lithium, nickel, cobalt, manganese, vanadium, zinc, and copper, which will support a rapid transition to a clean energy economy. In terms of economic inventories, for many of these critical minerals, Australia ranks in the top ten worldwide.⁶⁶
- 2.46 The Chief Executive Officer of the Minerals Council of Australia, Ms Tania Constable, told the committee, 'the opportunity to supply the minerals and metals for the low-emissions global future is immense'.⁶⁷ Ms Constable acknowledged that this would require significant additional investment in the Australian and global mining sectors in order to meet increasing demand.⁶⁸ Professor England noted that Australia has 'an abundance of lithium and silicate and copper, all the things that are needed to drive a low-carbon economy'.⁶⁹
- 2.47 This view was echoed by Science and Technology Australia, which identified a dual opportunity for Australia in both:
- [p]roducing the critical minerals needed for renewable technologies, and also converting the raw materials into products – adding value to our exports with vast benefits to the nation's economy.⁷⁰

Demand-side responses

- 2.48 There are also opportunities to pursue a range of demand-side responses to climate change, including the rollout of energy efficient consumer technologies. Reducing the overall energy consumption of existing technologies, for example by using heat pumps and electric vehicles, delivers an immediate reduction in greenhouse gas emissions while the underlying energy sources undergo decarbonisation.⁷¹

⁶⁵ See: National Farmers' Federation, *Submission 31*; Department of Industry, Science and Resources, *Submission 105*; Qantas, *Submission 178*; and Beyond Zero Emissions, answer to question taken on notice from Senator McKenzie, 18 August 2022 (received 22 August 2022).

⁶⁶ Geoscience Australia, 'Critical minerals', ga.gov.au/scientific-topics/minerals/critical-minerals (accessed 25 August 2022).

⁶⁷ *Committee Hansard*, 19 August 2022, p. 33.

⁶⁸ *Committee Hansard*, 19 August 2022, p. 37.

⁶⁹ *Committee Hansard*, 19 August 2022, p. 2.

⁷⁰ Science & Technology Australia, *Submission 49*, p. 4.

⁷¹ Mr Ben Skinner, General Manager, Policy and Research, Australian Energy Council, *Committee Hansard*, 19 August 2022, p. 71.

- 2.49 Demand-side responses have the additional benefit of reducing direct costs to consumers. Dr Simon Bradshaw of the Climate Council remarked: '[a]ction on climate change is very much action on cost of living as well'.⁷²

Transforming the workforce

- 2.50 The emergence of new technologies and industries will be accompanied by new opportunities for the workforce. Initiatives under the *Powering Australia* plan are expected to create more than 600 000 additional Australian jobs.⁷³ The Minister for Climate Change and Energy has said:

Australia is on the path to becoming a renewable energy superpower and with that comes the potential for high-skill, high-paying sustainable jobs in industries such as renewable manufacturing, green hydrogen, offshore wind and energy efficiency.⁷⁴

- 2.51 Energy sector representatives emphatically agreed:

What the doubling of deployment [in the energy sector] means is jobs. It just means jobs, jobs, jobs and jobs in Australia. So there are just huge opportunities.⁷⁵

- 2.52 In addition to direct employment within the energy sector, there will be extensive flow on effects:

... these are huge infrastructure projects which are going to need mines and minerals, which they're going to need someone to manufacture and process and refine. And then we're going to need people to construct and build.⁷⁶

- 2.53 The committee heard that new employment opportunities are not limited to energy, manufacturing, and industry:

Solving the climate crisis is an opportunity to rebuild our public sector, revitalise our cities and towns and create good jobs in industries ranging from construction to the arts.⁷⁷

⁷² *Committee Hansard*, 18 August 2022, p. 50.

⁷³ Department of Climate Change, Energy, the Environment and Water, *Submission 78*, p. 4. The figure is based on Reputex modelling.

⁷⁴ The Hon Chris Bowen MP, Minister for Climate Change and Energy, 'Climate and Energy Jobs Summit to boost the clean, green and secure jobs of today and tomorrow', *Media release*, 23 August 2022, [minister.dccceew.gov.au/bowen/media-releases/climate-and-energy-jobs-summit-boost-clean-green-and-secure-jobs-today-and-tomorrow](https://www.minister.dccceew.gov.au/bowen/media-releases/climate-and-energy-jobs-summit-boost-clean-green-and-secure-jobs-today-and-tomorrow) (accessed 26 August 2022).

⁷⁵ Mr Wayne Smith, Smart Energy Council, *Committee Hansard*, 18 August 2022, p. 62.

⁷⁶ Mr Trevor Gauld, National Policy Officer, Electrical Trades Union of Australia, *Committee Hansard*, 18 August 2022, p. 36.

⁷⁷ Tomorrow Movement, *Submission 42*, p. 2.

2.54 In addition, there is an opportunity to develop Australia's domestic scientific and research capacity, capitalising on Australia's role as a leader in southern hemisphere climate science.⁷⁸

Keeping up with global markets

2.55 Transition also presents an opportunity to strengthen trade-exposed industries and maintain Australia's position as a competitive and attractive investment option. As the Financial Services Council explained:

Globally, there is already a shift in the allocation of capital toward sustainability friendly destinations, driven by investor demand and long-term risk appetite, and it is important that Australia can take advantage of this shift.⁷⁹

Committee view

2.56 The committee acknowledges that Australia is facing significant risks due to the growing impacts of climate change. At the same time there are enormous opportunities to develop new businesses, industries, and employment, right across the economy. The committee encourages governments, industry, and the wider community to work together to capitalise on the opportunities presented by the domestic and global response to climate change.

⁷⁸ Science and Technology Australia, *Submission 49*, p. 4.

⁷⁹ Financial Services Council, *Submission 119*, p. 2.

Chapter 3

Key issues – Climate Change bill

3.1 This chapter outlines the evidence received on the Climate Change Bill 2022 (the bill), including support for the bill and the following issues raised by witnesses and submitters:

- setting emissions reduction targets in Commonwealth law;
- the requirement that the Minister for Climate Change and Energy (the Minister) make an annual statement on climate change to Parliament;
- the requirement that the Climate Change Authority (CCA) advise the Minister on the annual climate change statement;
- the requirement that the CCA advise the Minister on the development of future greenhouse gas emissions reduction targets; and
- regular independent reviews of the legislation.

Support for the bills

3.2 Overwhelmingly, submitters and witnesses expressed support for the objectives and provisions of the bills.¹ As set out below, there was widespread agreement that the Australian Government should set clear emissions reduction targets, consistent with the Paris Agreement.²

3.3 Nevertheless, there was a very small minority of submitters who opposed the bills. For instance, the Institute for Public Affairs stated that the bills would ‘risk imposing significant economic, social and humanitarian costs on Australians’.³

3.4 Another objection to the bills came from Tamboran Resources which argued for the removal, from the bill’s objects clause, of references to the Paris 1.5 degree temperature goal:

Whilst the world still has the ability to avoid a 2°C temperature increase, it seems like a growing reality the world will exceed 1.5°C in the next few years regardless of what actions are taken, particularly from Australia’s perspective.⁴

¹ See, for example: Australian Climate Roundtable, *Submission 110*, p. 2.

² See, for example: Australian Climate Roundtable, *Submission 110*, p. 2.

³ Institute for Public Affairs, *Submission 56*, p. 2. Senator Malcolm Roberts also opposed the bills, submitting that ‘there has never been and there remains no, factual scientific basis presented in parliament for legislation cutting, or limiting the production of carbon dioxide from human activity’: Senator Malcolm Roberts, *Submission 179*, p. 1.

⁴ Tamboran Resources, *Submission 2*, p. 4.

3.5 Despite these opposing voices, there was widespread and near-unanimous support for the bills, along with recommendations for refinement, greater levels of ambition, and policy development in areas complementary to but beyond the scope of the bills.⁵ Organisations and specialists that support the bills include:

Business and industry

- Australian Industry Group
- Australian Industry Greenhouse Network
- Business Council of Australia
- Financial Services Council
- Google
- Insurance Council of Australia
- Investor Group on Climate Change
- National Australia Bank
- Qantas

Worker representatives

- Australian Council of Trade Unions
- Australian Manufacturing Workers Union
- Australian Services Union
- Australian Workers' Union
- Construction, Forestry, Maritime, Mining and Energy Union
- Electrical Trades Union

Energy and resources sector

- Australian Energy Council
- Australian Nuclear Association
- Clean Energy Council
- Clean Energy Investor Group
- Energy Networks Australia
- Minerals Council of Australia
- Smart Energy Council
- bp Australia
- EnergyAustralia
- Santos

Agriculture and forestry sector

- National Farmers' Federation
- Australian Forest Products Association
- Farmers for Climate Action

⁵ For matters beyond the scope of the bill, see paragraphs 4.21–4.55.

Conservation groups

- Australian Conservation Foundation
- Climate Council
- Environmental Defenders Office
- Friends of the Earth Australia
- Greenpeace Australia Pacific
- Lock the Gate Alliance
- 350 Australia
- Wilderness Society
- WWF Australia

Community organisations

- Australian Council of Social Service
- Australian Local Government Association
- GetUp
- The Next Economy

Legal sector

- Law Council of Australia
- National Environmental Law Association

Researchers and academics

- ARC Centre of Excellence for Climate Extremes
- Australian Centre for Excellence in Antarctic Science
- Australian Academy of Science
- Beyond Zero Emissions
- Blueprint Institute
- Climate Analytics
- Climateworks Centre
- Grattan Institute
- Melbourne Climate Futures
- The Australia Institute

3.6 A more complete list is presented at Appendix 3.

3.7 The broad support for the bills was effectively captured by the Australian Climate Roundtable, comprising national bodies representing business, environment, farmers, investors, the social welfare sector and workers.⁶

⁶ Australian Climate Roundtable members are: Australian Aluminium Council, Australian Conservation Foundation, Australian Council of Social Service, Australian Council of Trade Unions, Australian Energy Council, Australian Industry Group, Business Council of Australia, Investor Group on Climate Change, National Farmers' Federation, and WWF Australia.

The Australian Climate Roundtable submitted that the bills represented a substantial and positive step towards achieving several of the organisation's key principles for climate policy.⁷ The submission noted the following:

[The bills] set up clear national goals, a predictable process for evolving those goals over time, a useful transparency framework to assess progress, and a valuable avenue for independent advice and community consultation.⁸

3.8 Further, the Australian Climate Roundtable submitted that the bills 'would establish clear targets and a durable basis for future reporting, advice and decision-making'.⁹

3.9 The committee acknowledges the support of business and industry for the bills, including the Australian Chamber of Commerce and Industry,¹⁰ Australian Industry Group,¹¹ the Business Council of Australia,¹² and the Minerals Council of Australia.¹³

Emissions reduction targets

3.10 In addition to the broad support for the bills overall, there was also strong endorsement of the 43 per cent by 2030 and net zero reduction by 2050 targets.¹⁴ Support for the targets focused on three key themes:

- providing certainty to investors, business and industry;
- creating opportunities in the renewable energy and manufacturing industries, including new export opportunities; and

⁷ For the Australian Climate Roundtable's joint principles for climate policy, see australianclimateroundtable.org.au/wpcontent/uploads/2020/11/Climate_roundtable_joint_principles-Updated_November_2020.pdf (accessed 23 August 2022).

⁸ Australian Climate Roundtable, *Submission 110*, p. 1.

⁹ Australian Climate Roundtable, *Submission 110*, p. 2.

¹⁰ Australian Chamber of Commerce and Industry, 'Emissions legislation must pass to guarantee energy certainty', *Media release*, 27 July 2022, australianchamber.com.au/news/emissions-legislation-must-pass-to-guarantee-energy-certainty/ (accessed 23 August 2022).

¹¹ Australian Industry Group, 'Emissions target bills are a significant improvement', *Media release*, 27 July 2022, aigroup.com.au/news/media-centre/2022/emissions-target-bills-are-a-significant-improvement/ (accessed 23 August 2022).

¹² Business Council of Australia, 'Certainty will let businesses drive the transition', *Media release*, 27 July 2022, bca.com.au/certainty_will_let_businesses_drive_the_transition (accessed 23 August 2022).

¹³ Minerals Council of Australia, 'Climate bill provides certainty but targets only achieved by working together', *Media release*, minerals.org.au/news/climate-bill-provides-certainty-targets-only-achieved-working-together (accessed 23 August 2022).

¹⁴ Throughout this report, the phrases '43 per cent target' and '43 per cent by 2030' refer to a 43 per cent reduction in greenhouse gas emissions from 2005 levels by 2030.

- fulfilling Australia's international commitments and sending a positive signal to international partners.

3.11 These three themes are each discussed, below.

Investor, business and industry certainty

3.12 Investors welcomed the certainty that legislated emissions reduction targets would provide. For example, the Financial Services Council (FSC) noted that, prior to the introduction of the bills, 'the lack of policy certainty has inhibited investment opportunity in Australia and the ability of funds to effectively manage climate risk'.¹⁵ The FSC proposed that 'government and the private sector both have important contributions to make toward the goal of emissions reduction to mitigate the risk of climate change'.¹⁶ In summary, the FSC stated that:

This Bill sets us in the right direction, assuring the Australian community that the Australian Government is committed to meeting Australia's Paris Agreement commitments. It helps provide confidence to the investment community that Australia is moving in the direction of a low carbon economy. We encourage all sides of politics to boost private sector confidence by supporting the Bill.¹⁷

3.13 The National Australia Bank (NAB) also welcomed the certainty and positive signal that the bills represent for business investment:

Certainty on targets is crucial. The sooner we get to consensus about what 2030 looks like, the more efficient and effective investments will be. NAB supports clarity on measurement and reporting, which can help underpin transparency on progress. This is important for businesses in understanding and reporting their emissions. The legislation would provide additional rigour and transparency around government, sectoral and economy-wide progress, through the enhanced role of the Climate Change Authority and reporting obligations for Government.¹⁸

3.14 Business stakeholders welcomed the bills and the level of consultation undertaken by government. The Business Council of Australia looked forward to the passage of the bills through the Senate and commended:

...the Government for working with business to deliver a workable plan to reduce emissions and strengthen Australia's economic future. This legislation brings Australia a step closer to ending the climate wars that have put a handbrake on progress and become a serious economic barrier. This legislation creates [the] policy framework for greater climate ambition, greater transparency around progress towards meeting that ambition, greater investment certainty and greater collaboration across the

¹⁵ Financial Services Council, *Submission 119*, p. 1.

¹⁶ Financial Services Council, *Submission 119*, p. 2.

¹⁷ Financial Services Council, *Submission 119*, p. 7.

¹⁸ National Australia Bank, *Submission 54*, p. 1.

economy, all of which are critical to achieving a net zero economy by 2050.¹⁹

3.15 The national industry association, Ai Group, welcomed the certainty that the bills provide for businesses:

Climate change policy needs to get more predictable, disciplined and transparent to underpin the business investment needed to meet our challenging climate goals, and the Federal Government's legislation tabled in Parliament today is a positive start. Transforming our energy systems and upgrading our industries for low- and zero-carbon production will take big long-lived investments starting now. Industry weighing up big decisions about where, when and how to invest need the clearest steer they can get about national goals and public policy.²⁰

3.16 Ai Group announced its support for the bills, stating:

...in their current form [the bills] represent a very big improvement on the status quo – and the broader the support they receive, the stronger the basis for investment will be and that will underpin our ability to meet other economic and social objectives including high employment growth and improving living standards.²¹

3.17 The Australian Industry Greenhouse Network (AIGN), which represents a broad range of large emitters,²² also supported the bill. It noted 'the Government's need to balance the certainty provided with legislated targets against the need for an operating environment that makes space for private sector innovation in delivering abatement'.²³ The AIGN also welcomed the certainty that the legislation would provide for investors:

Institutional stability through an enduring policy framework including a transparent and consistent approach to setting emissions reduction goals is important and can improve investor certainty.²⁴

¹⁹ Business Council of Australia, *Submission 93*, p. 1.

²⁰ Australian Industry Group, 'Emissions target bills are a significant improvement', *Media release*, 27 July 2022. aigroup.com.au/news/media-centre/2022/emissions-target-bills-are-a-significant-improvement/ (accessed 24 August 2022).

²¹ Australian Industry Group, 'Emissions target bills are a significant improvement', *Media release*, 27 July 2022.

²² The Australian Industry Greenhouse Network comprises large emitter industry associations (Australian Aluminium Council, Ai Group, Australian Institute of Petroleum, APPEA, Cement Industry Federation, Low Emission Technology Australia and Minerals Council of Australia) and individual businesses (Alcoa, BHP, Bluescope, bp, Beach Energy, Ampol, CSR, Chevron, Glencore, Incitec Pivot, Inpex, Newcrest Mining, Origin Energy, RioTinto, Santos, Shell, Wilmar, Woodside and Viva Energy Australia).

²³ Australian Industry Greenhouse Network, *Submission 43*, p. 4.

²⁴ Australian Industry Greenhouse Network, *Submission 43*, p. 4.

- 3.18 The Clean Energy Investor Group welcomed the introduction of statutory emissions reduction targets, to focus government activities and funding on achieving the legislated targets:

The Climate Change Bills send a strong signal to private investors on the federal government's commitment to accelerate development of climate change related resilience, abatement and mitigation projects and programs, and will highlight the opportunity for private equity and debt to further contribute to these efforts with confidence.²⁵

- 3.19 The National Farmers' Federation (NFF) submitted that climate change is a significant concern for the agricultural sector. In a varied and challenging climate with bushfires, floods, and droughts, the continued success of the agricultural sector will depend on the ability to innovate and adapt to manage future climate risks:

The NFF recognises this is framework legislation that embeds a national 2030 and 2050 target in legislation and makes consequential amendments to related Acts. This provides a level of business certainty that is otherwise absent.²⁶

- 3.20 Google submitted that the bills would help to reduce emissions, decarbonise the economy, and improve sustainability:

As one of the world's largest corporate purchasers of renewable energy, we believe this legislation takes important steps to help Australia and the world decarbonise and ensure a sustainable future for all... We note the Government's strong commitment to sovereign capability, and look forward to continuing to support local industry and research organisations to deliver this.²⁷

- 3.21 The Department of Climate Change, Energy, the Environment and Water (DCCEEW) submitted that the bills would provide a clear framework for action and certainty for investors:

Increased policy certainty is in the interests of stakeholders across all sectors of the economy and moving towards a net zero economy by 2050 will generate substantial opportunities and employment. For example, the Investor Group on Climate Change (IGCC) has estimated there is potential for \$131 billion in new technology and jobs in Australia by 2030.²⁸

²⁵ Clean Energy Investor Group, *Submission 40*, p. 2.

²⁶ National Farmers' Federation, *Submission 31*, p. 1.

²⁷ Google, *Submission 1*, p. 1.

²⁸ Department of Climate Change, Energy, the Environment and Water, *Submission 78*, p. 2. See also Investor Group on Climate Change, 'New government has opportunity to unlock more than \$10 billion in climate investment', *Media Release*, May 2022, igcc.org.au/new-government-opportunity-2022/ (accessed 23 August 2022).

3.22 The Department of Foreign Affairs and Trade (DFAT) submitted that legislated emissions reduction targets would make Australia a more attractive destination for foreign investment:

Legislation would give greater certainty to global investors and attract higher quality foreign investment, support trade opportunities and shape emerging trade and investment frameworks. Foreign investment support is a key driver of Australia's critical minerals, renewable and clean energy industries. This could support Australia's own transition, but also that of partners, particularly in the Indo-Pacific, by reinforcing Australia's reputation as a reliable, strategic partner and contributing to the scaling of key global supply chains on critical minerals, clean energy export industries and services expertise.²⁹

Energy and resources opportunities

3.23 Climate Analytics identified abundant opportunities for Australia's technological, industrial and manufacturing development:

Increased climate action in Australia will achieve a wide range of benefits and build on existing technologies and current market developments to achieve cost reductions, particularly for wind, solar and storage technologies by taking advantage of the country's extraordinary renewable energy resources...

By building on its extraordinary renewable energy resource and high skills base, Australia can become a regional and international frontrunner in successfully transitioning its energy system to zero carbon. The result will be more sustainable employment, reduced levels of air pollution, water demand and new manufacturing value chains and export opportunities based on zero emissions energy carriers including renewable electricity offshore, green hydrogen and energy intensive products such as green steel.³⁰

3.24 The Department of Industry, Science and Resources highlighted opportunities for export opportunities for Australia in renewable energy manufacturing and critical minerals:

Emissions reduction can help improve the international competitiveness and attractiveness of Australia's exports. And as the world pursues more ambitious targets, this will create new market opportunities for industries like hydrogen and critical minerals. For example, critical minerals are crucial to a range of clean energy technologies, including lithium ion batteries, solar panels, hydrogen fuel-cells, wind turbines and electric vehicles. Demand for critical minerals is expected to continue to grow rapidly and Australia's large reserves of natural commodities, established resources sector expertise, high environmental, social and governance

²⁹ Department of Foreign Affairs and Trade, *Submission 98*, p. 3.

³⁰ Climate Analytics, *Submission 99*, p. 10. See also Climate Analytics, *Scaling up climate action in Australia*, climateanalytics.org/media/cat_2020-11-10_scalingup_australia_fullreport.pdf (accessed 24 August 2022).

standards and stable investment environment present an opportunity for Australia to contribute to the global transition to clean energy.³¹

- 3.25 The Clean Energy Council (CEC) strongly supported the rapid passage of the bills through the Parliament. In its submission, the CEC said that legislated economy-wide emissions reduction targets would provide greater certainty to the renewable energy sector of Australia's decarbonisation pathway, and assist the sector to make investment decisions and deploy capital and infrastructure in a timely manner:

Australia's energy sector has been on a rollercoaster over the course of the past decade (and longer), and that turbulence has resulted in uncertainty about when and where to invest, higher levels of project risk, higher costs to electricity consumers, higher emissions, and a missed opportunity to build a long-term, skilled workforce and manufacturing sector to support a vibrant clean energy sector.

This Bill provides a framework that will underpin long-term investment confidence about our destination through the 43 per cent reduction by 2030 and net zero emissions target by 2050, and encourage a robust and transparent process for establishing the emissions trajectory along the way.³²

Climate diplomacy

- 3.26 Many submitters supported linking Australia's emissions reduction targets to our international obligations under the Paris Agreement. For example, AIGN:

... acknowledges the importance of the climate bill as a framing legislation for delivering Australia's commitments under the Paris Agreement. The bill relies on the Paris Agreement process of five-yearly Nationally Determined Contributions, marked by increasing ambition, as a path to meeting the legislated targets. Linking Australia's domestic emissions reduction trajectory with its international commitments is a rational approach. AIGN encourages the Government to continue to provide further clarity over the minutiae of this process, including timelines for when and how new interim targets will be announced. This will enable stakeholders to provide informed input and feedback in a timely manner.³³

- 3.27 DFAT submitted that the bills would strong signal to the global community that the government is committed to action and leadership on climate change:

The Government's climate change policy approach, including its intention to legislate, has been positively received by our key partners including in the Pacific, Europe, the Indo-Pacific and the United States.

Legislation would also strengthen our climate leadership internationally, particularly in the Pacific, with which Australia is exploring a possible bid to co-host a Conference of the Parties (COP). If passed before COP27, the

³¹ Department of Industry, Science and Resources, *Submission 105*, p. 3.

³² Clean Energy Council, *Submission 17*, p. 1.

³³ Australian Industry Greenhouse Network, *Submission 43*, p. 5.

legislation could provide a positive example to others of our commitment to climate action and would support our efforts to drive stronger international action on climate.³⁴

3.28 The National Environmental Law Association welcomed the government's decision to legislate a national emissions reduction target, and further noted that:

These Bills make an important statement about Australia's new focus on climate action, including to the international community and particularly to our neighbours in the Pacific region, who have been vocal in their criticism of Australia's limited efforts to date. These Bills also make a statement to Australian communities, industries and other economic actors, foreshadowing the new Government's commitment to acting on climate change.³⁵

Annual climate change statement

3.29 The bill would require the Minister to table an annual climate statement in Parliament, taking into account:

- national progress towards achieving emissions reduction targets;
- international developments relevant to addressing climate change;
- current climate change policies;
- the effectiveness of climate change policies towards achieving emissions reduction targets and reducing emissions in the sectors covered by those policies; and
- the impact of climate change policies, including their social, employment, and economic benefits on rural and regional Australia.³⁶

3.30 There was widespread support for the requirement to produce an annual statement as an accountability mechanism. For example, the Clean Energy Investor Group submitted that:

...an annual climate change statement on the effectiveness of the Commonwealth's climate change policies...is an important accountability mechanism which will ensure that the government is acting in an evidence-based manner to the development of climate change programs and policy and that the parliament can hold the executive government to account accordingly.³⁷

3.31 DCCEEW outlined how the bill would increase accountability by requiring the Minister to make an annual statement to Parliament:

³⁴ Department of Foreign Affairs and Trade, *Submission 98*, pp. 2–3.

³⁵ National Environmental Law Association, *Submission 102*, pp. 1–2.

³⁶ Proposed subsection 12(1) of the amended bill.

³⁷ Clean Energy Investor Group, *Submission 40*, p. 2.

This statement will report on Australia's progress toward achieving its targets, relevant international developments, climate change policy, and the effectiveness of Commonwealth climate change policies.³⁸

3.32 Science and Technology Australia (STA) supported the bills, including the requirement for an annual climate change statement. STA recommended that the statement include specific updates for industry sectors and an acknowledgement of key climate science developments since the previous statement.³⁹

3.33 Some submissions called for an assessment of Federal Budget measures on achieving emissions reduction targets. For example, the Australian Council of Social Service (ACOSS) noted that the Organisation for Economic Co-operation and Development had encouraged member nations to do 'green budgeting' and use assessment tools to measure and prioritise budget options against climate and environmental goals.⁴⁰ Such impact statements could be conducted on proposed policies before implementation, or after implementation to inform decisions about whether to continue or adjust policies. ACOSS suggested several approaches for Australia:

The Climate Change (Consequential Amendments) Bill 2022 could be [amended] to require all government agencies to do an emission impact assessment on major budget lines. Or, be amended to require Treasury to provide an Emissions Reduction budget impact statement. Alternatively, the Climate Change Bill 2022 could be amended to require the Climate Change Authority to do a budgetary impact assessment on achieving emissions reductions target.⁴¹

3.34 Climate Action Network Australia concurred with this approach, calling for carbon impact assessments that would require transparency around the impact Budget measures would have on greenhouse gas emission.⁴²

Advice on annual climate change statement

3.35 If the bill passes, the CCA would advise the Minister on the preparation of the annual climate change statement.⁴³ The CCA could undertake public consultation in the preparation of this advice.⁴⁴ The CCA would then publish

³⁸ Department of Climate Change, Energy, the Environment and Water, *Submission 78*, p. 3.

³⁹ Science and Technology Australia, *Submission 49*, p. 1.

⁴⁰ Organisation for Economic Co-operation and Development, 'Green budgeting and tax policy tools to support a green recovery', 9 October 2020, www.oecd.org/coronavirus/policy-responses/green-budgeting-and-tax-policy-tools-to-support-green-recovery-bd02ea23/ (accessed 24 August 2022).

⁴¹ Australian Council of Social Service, *Submission 59*, p. 8.

⁴² Climate Action Network Australia, *Submission 38*, p. 1.

⁴³ Proposed subsection 14(1).

⁴⁴ Proposed subsection 14(3).

the advice to the Minister on its website, followed by tabling in Parliament within 15 days of it being provided to the Minister.⁴⁵

- 3.36 DCCEEW also outlined the role the CCA would have in providing advice to the Minister:

The independent Climate Change Authority will provide advice to inform the Minister's statement, and the Minister must have regard to that advice. Where the Minister does not take the Climate Change Authority's advice, they must provide reasons for this and make this publicly available.⁴⁶

Proposals to expand the role for the Climate Change Authority

- 3.37 Several submitters argued for a broader role for the CCA. For instance, Professor Penny Sackett, Honorary Professor, Institute for Climate, Energy and Disaster Solutions, Australian National University, expressed strong support for the proposal:

... a strengthened, independent, statutory Climate Change Authority with funding and access to Government data, modelling and officials commensurate with increased duties and responsibilities. In addition, for increased effectiveness, provisions should allow the Authority regular access to Parliamentary committees related to climate change.⁴⁷

- 3.38 Professor Frank Jotzo, Head of Energy, Institute for Climate, Energy and Disaster Solutions, Australian National University, welcomed the strengthening of the CCA's advisory role:

... the strengthening of the role for the Climate Change Authority that is proposed in these bills is, from the point of view of best practice in climate policy and institutions, a desirable thing in terms of the strengthening more generally of independent institutions that can advise parliaments and governments.⁴⁸

- 3.39 AIGN supported an expanded role for the CCA, and recommended that it be allocated appropriate funding and resources to fulfil its increased responsibilities:

AIGN supports the climate bill provisions for yearly reports on progress to Parliament, as well as expanding the functions and resources of the Climate Change Authority to advisory and review capacities in relation to Australia's targets and our progress towards them. The Authority is a respected body that has established a good rapport with stakeholders, particularly through its wide-ranging and considered approach to

⁴⁵ Proposed subsection 14(6) of the amended bill.

⁴⁶ Department of Climate Change, Energy, the Environment and Water, *Submission 78*, p. 3.

⁴⁷ Professor Penny Sackett, *Submission 67*, p. 5.

⁴⁸ *Committee Hansard*, 18 August 2022, p. 3.

consultation. AIGN looks forward to continued engagement with the Authority on matters relating to the bill in the coming years.⁴⁹

- 3.40 bp Australia supported the enhanced advisory role of the CCA as well as greater funding certainty:

The independent and [evidence-based] advice from the Climate Change Authority can support consecutive governments to chart Australia's path to net-zero by 2050. It will be important the Climate Change Authority is appropriately resourced to fulfil the functions as set out in the legislation.⁵⁰

- 3.41 The bill's Explanatory Memorandum notes that the government's *Powering Australia* plan includes a separate commitment to ensure the CCA is adequately resourced for all of its functions, which will be addressed through the government's budget process.⁵¹

Science-based advice

- 3.42 A number of submissions emphasised the importance of science-based advice. For example, The ARC Centre of Excellence for Climate Extremes (CLEX) stated that the 'Climate Change Authority is an important focal point of climate science and must be underpinned by a strong evidentiary base in its deliberations'.⁵² CLEX submitted:

The production of an annual climate statement requires clear scientific understanding which should draw on the wealth of Australian and international climate science knowledge available. CLEX recommends that the Climate Change Authority maintains strong links to the whole of the scientific community and conduct a transparent and thorough process of evidence gathering and advice. CLEX is supportive of the strengthened role of the Climate Change Authority and stands ready to assist the Climate Change Authority in any capacity including the provision of expert and independent Australian climate science advice, use of their advice networks, scientists and researchers as well as policy advice.⁵³

- 3.43 The Australian Conservation Foundation emphasised that the CCA's advice must be science-based, informed by the latest available scientific evidence and data, and prepared by individuals with relevant scientific expertise.⁵⁴

Assessment of risk

- 3.44 Some evidence recommended that the CCA's advice should include an assessment of environmental, health, infrastructure, investment, and security

⁴⁹ Australian Industry Greenhouse Network, *Submission 43*, p. 7.

⁵⁰ bp Australia, *Submission 45*, p. 1.

⁵¹ Climate Change Bill 2022, *Explanatory Memorandum*, p. 7.

⁵² ARC Centre of Excellence for Climate Extremes, *Submission 9*, p. 2.

⁵³ ARC Centre of Excellence for Climate Extremes, *Submission 9*, p. 2.

⁵⁴ Australian Conservation Foundation, *Submission 12*, p. 5.

risks from the impacts of climate change. For example, Professor David Karoly recommended that the annual climate statement assess and analyse the risks of climate change impacts to:

- the health and wellbeing of vulnerable communities;
- essential energy, transport and communication infrastructure;
- key industry sectors and employment outcomes; and
- Australia's security interests.⁵⁵

3.45 Regarding environmental impacts, the Wilderness Society recommended that:

The most simple way to incorporate climate physical risks to natural values would be to ensure that the Environment Minister is required to commission and present an assessment of how various climate scenarios would likely impact on the suite of Matters of National Environment Significance such as World Heritage and [Ramsar Convention on Wetlands] Sites, and Endangered Species and their habitats.⁵⁶

3.46 The FSC submitted that it was taking a similar approach to risk assessment in its advice to fund managers. The FSC's Guidance Note on climate risk disclosure supports members who choose to adopt a 2050 net zero target for their investment portfolios in line with the Paris Agreement.⁵⁷ The FSC's baseline expectation for the funds management industry is to report climate risks and opportunities to business operations:

Many funds are undertaking scenario analysis. This helps to assess their net zero alignment and whether their investments are aligned with the goal of keeping temperature at well under 2 degrees above pre-industrial levels. It also helps to identify climate related risks and opportunities for investments under different climate scenarios.⁵⁸

The development of future targets

A floor, not a ceiling

3.47 The 43 per cent target is intended to set a floor for Australia's emission reduction, and is expected to be replaced by more ambitious targets in the future. In his speech introducing the bill, Minister for Climate Change and Energy, the Hon Chris Bowen MP said:

⁵⁵ Professor David Karoly, *Submission 167*, p. 4. See also, Australian Security Leaders Climate Group, *Australian Climate Security Risk Assessment Implementation Proposal*, August 2022, aslcg.org/wp-content/uploads/2022/08/ASLCG_RiskAssessment_Implementation-Proposal.pdf (accessed 24 August 2022).

⁵⁶ Wilderness Society, *Submission 65*, p. 2.

⁵⁷ Financial Services Council, 'FSC Guidance Note No. 44: Climate risk disclosure in investment management', 3 August 2022, fsc.org.au/resources/2503-gn44-climate-risk-disclosure-in-investment-management/file (accessed 25 August 2022).

⁵⁸ Financial Services Council, *Submission 119*, p. 6.

...43 per cent is not a limit on our emissions ambition. On the contrary, as we've said repeatedly, we see 43 per cent as a floor on what our country can achieve.⁵⁹

- 3.48 Many submitters supported the 43 per cent target as a floor for emissions reduction and the development of more ambitious targets in the future.⁶⁰ For example, the Australian Climate Roundtable welcomed the government's intention to set a floor for emissions reduction and subsequently revise targets based on the CCA's advice:

They prescribe a target of reducing emissions by at least 43% from 2005 levels by 2030; set a goal of net zero emissions by 2050; and outline processes for advice and decision on amended and further targets that draw on the goals and requirements of the Paris Agreement. The targets serve as a floor beneath ambition without constraining the ability of governments and Parliaments, acting on appropriate advice and public consultation, to further strengthen ambition and achievement.⁶¹

- 3.49 The Business Council of Australia gave evidence that its members welcomed the 43 per cent target, and the government's intention to implement more ambitious targets in the future:

Importantly, this legislation lays the policy foundation for greater climate ambition going forward and greater transparency around progress towards meeting that ambition, both of which are critical to achieving a net zero economy by 2050.

We note that the net zero commitments are now the norm for Australian businesses. Some 70 per cent of the ASX 200's collective market capitalisation have adopted net zero commitments. This represents 95 companies, which is almost double the number it was in March 2021. This momentum is entirely consistent with the 43 per cent by 2030 target being set as a floor rather than a ceiling in the legislation. The business community will continue to accelerate action on decarbonisation, and this legislation greatly facilitates their task by reducing policy risk and uncertainty.⁶²

- 3.50 The FSC submitted that it was important for the 43 per cent target to act as a minimum standard, with more ambitious targets to be set over time in accordance with the ratchet mechanism in the Paris Agreement.⁶³

⁵⁹ The Hon Chris Bowen MP, Minister for Climate Change and Energy, *House of Representatives Hansard*, 27 July 2022, p. 18.

⁶⁰ See, for example: Australian Trucking Association, *Submission 25*, p. 1; Science and Technology Australia, *Submission 49*, p. 2; Climateworks Centre, *Submission 75*, p. 2; Energy Efficiency Council, *Submission 90*, p. 3, and Tindo Solar, *Submission 69*, p. 1.

⁶¹ Australian Climate Roundtable, *Submission 110*, p. 2

⁶² Mr Tim Reed, Business Council of Australia, *Committee Hansard*, 18 August 2022, p. 27.

⁶³ Financial Services Council, *Submission 119*, p. 2.

3.51 The Australian Council of Trade Unions acknowledged the importance of the 43 per cent target as a floor on ambition, rather than a ceiling, and supported the option for improved emissions reduction targets in future.⁶⁴

3.52 The CEC agreed that the legislated target should be a floor rather than a ceiling for Australia's emissions reduction ambitions.⁶⁵

3.53 Engineers Australia also supported the principle inherent in the bills that the 43 per cent target sets a baseline for ambition:

Engineers Australia's members recognise that the 43 per cent target serves as a floor and not a ceiling when it comes to reducing emissions, and that the types of legal arrangements set out in these two bills can give strong effect to enhanced climate action. This includes more deeply embedding in, and accounting for, climate change in both private and public sector investment decisions as well as by all levels of governments (and agencies) having regard for their policy and programmatic relevance in all future advice, developments, administration, approvals and decisions.⁶⁶

3.54 Environment organisations such as Greenpeace⁶⁷ and the Environmental Defenders Office⁶⁸ supported a 2030 reduction target of 74 per cent relative to 2005 emissions, and net zero by 2035. This view was summarised by WWF-Australia, which urged the government to consider legislating an increased target as soon as possible:

WWF-Australia notes that the present target is worded as a floor, and not a ceiling on ambition. We urge the Government to consider legislating a more ambitious target, in line with the current science as soon as possible in order to protect Australia from the impacts of climate change. WWF-Australia recently commissioned a report that found that for Australia to meet its obligations to pursue efforts to limit warming to 1.5°C, a 2030 reduction of 74% relative to 2005 emissions, and net zero by 2035 is consistent with a 50% chance of staying below 1.5°C.⁶⁹

3.55 The Peoples Climate Assembly congratulated the government on increasing Australia's emissions reduction target, but encouraged improved targets over time:

... a dangerously low bar [26–28 per cent by 2030] was set by the previous government. We know that 43% is insufficient and now is the time that we need stretch targets not just 'better-than' targets. It must be made clear in

⁶⁴ Australian Council of Trade Unions, *Submission 37*, p. 2.

⁶⁵ Clean Energy Council, *Submission 17*, p. 1.

⁶⁶ Engineers Australia, *Submission 109*, p. 5.

⁶⁷ Greenpeace, *Submission 33*, p. 3.

⁶⁸ Environmental Defenders Office, *Submission 3*, pp. 2–3.

⁶⁹ WWF Australia, *Submission 27*, p. 2.

the legislation that this is a floor, an absolute minimum that all levels of government should be looking to exceed by some considerable margin.⁷⁰

Australia's fair share of global emissions reductions

- 3.56 Greenpeace Australia Pacific submitted that, given Australia's relative wealth, a 'fair share' in emissions reductions should entail 'emissions reductions greater than the global average'.⁷¹ Greenpeace proposed that Australia should increase emissions reductions to at least 75 per cent by 2030 if Australia was to ensure it was doing its 'fair share'.⁷²
- 3.57 Climate Analytics submitted that a 'fair share' contribution by Australia would include climate finance for poorer countries or further domestic emissions reductions beyond the Nationally Determined Contribution (NDC).⁷³ Climate Analytics proposed that reasonable national and state-level emissions reduction targets could be 'derived from global integrated assessment and energy model scenarios'.⁷⁴

Climate Change Authority advice on future targets

- 3.58 The bill would require the CCA to advise the Minister, if requested, on emissions reduction targets for new or adjusted NDCs under the Paris Agreement.⁷⁵ The Minister must seek advice on targets for new NDCs at least once every five years, but is not required to seek advice on targets for adjusted NDCs.⁷⁶
- 3.59 Many submissions welcomed the increased role for the CCA in providing advice on future targets. For example, Professor Penny Sackett submitted that:

I support the Authority's legislated ability to provide unsolicited, unconstrained advice to the Government. More specifically, I support the Authority being tasked with advising the Government on the adequacy of current GHG emission targets and progress toward...achieving those targets annually, through a public report. Additionally, the Authority should make evidence-based recommendations for future increased targets, and opportunities, mechanisms and barriers to meeting them. In light of changing circumstances and information, these recommendations should be reviewed periodically (every two years, say), and made public.⁷⁷

⁷⁰ Peoples Climate Assembly, *Submission 46*, p. 2.

⁷¹ Greenpeace Australia Pacific, *Submission 33*, p. 3.

⁷² Greenpeace Australia Pacific, *Submission 33*, p. 10.

⁷³ Climate Analytics, *Submission 99*, p. 7.

⁷⁴ Climate Analytics, *Submission 24*, Attachment 1, p. 5.

⁷⁵ Proposed subsection 15(1).

⁷⁶ Proposed subsection 15(2).

⁷⁷ Professor Penny Sackett, *Submission 67*, p. 5.

3.60 The Australia Institute submitted that the CCA would be well placed to provide advice on future targets:

The Bills are a valuable framework to ensure transparency and accountability of Australia's greenhouse gas emissions reduction targets, including by ensuring the provision of evidence-based advice from the Climate Change Authority to inform future targets and increased ambition.⁷⁸

3.61 Climateworks submitted that it supported the additional functions for the CCA to provide regular and transparent advice on progress and target setting. It also recommended strengthening the role of the CCA:

...parties to the Paris Agreement have already agreed that they should revisit their current NDCs over the next few years with a view to making them more ambitious.

These frequent target revisions would be bolstered with the Climate Change Authority's expert advice in each instance. This could be achieved by providing that the Climate Change Authority shall provide (rather than may be requested to provide) advice to the Minister in relation to Australia's targets.

It is currently implicit in the Climate Change Bill that each time a new NDC is set, the current NDC could be reviewed too. For example, in two years the Government will be asked to submit its NDC for 2035. At this point, it would be best practice for the current 2030 target to be assessed with consideration given as to whether it needs to be adjusted. Ideally, the framework climate legislation would expressly provide for this, and be clear that the Climate Change Authority, in providing advice to the Minister, shall provide advice on both the new NDC and the NDC that is currently on foot.⁷⁹

3.62 ACOSS called for Australia's legislated emissions reduction targets to reflect updated NDCs:

The greenhouse gas emissions reduction targets that will be enshrined in the legislated Climate Change Act 2022, will not automatically get updated when Australia increases its National Determined Contribution (NDC) directly under the Paris Agreement. Nor is there a mechanism by which the targets may be updated through a legislative instrument.

This is problematic as the remainder of the clauses including the progress reports delivered in annual climate change statements and the actions of the agencies covered under the Climate Change (Consequential Amendments) Bill 2022, will remain connected to the legislated target. Any new or updated targets via the NDC process will require an amendment to the existing legislation.⁸⁰

⁷⁸ The Australia Institute, *Submission 100*, p. 1.

⁷⁹ Climateworks, *Submission 75*, p. 3.

⁸⁰ Australian Council of Social Service, *Submission 59*, p. 7.

- 3.63 Mr Tim Reed, President of the Business Council of Australia, said an increased NDC not being reflected in the legislated targets would not necessarily be a concern for businesses or investors:

If we have a legislated target and then the government of the day chooses to increase our commitment without coming back to the parliament, I don't think that creates a problem if it's in the framework that [Jennifer Westacott] spoke about earlier, if it's in line with the Climate Change Authority doing their work, if it is part of a process that government is working through. For business, the sooner we get to longer-term targets, the more confidence there will be. We would be very encouraging of a 2035 target and of ongoing reviews that periodically look at those targets and, where possible, increase the ambition. I don't think that would cause a big problem. What will cause a large problem is when there is great divergence, particularly across the main political parties, as to what would happen in the instance of a change of government.⁸¹

- 3.64 The Law Council of Australia noted that, while the Minister is required to seek the CCA's advice on a new NDC at least once every five years, the Minister is not required to seek the CCA's advice on adjusted targets:

It is an object of the Bill to 'ensure' that the Authority's advice informs the targets to be included in an adjusted NDC and there may be a question as to whether that objective can be properly pursued when the Bill does not require the Minister to seek that advice. Assuming the absence of an obligation is by design, perhaps on the basis that it would be reasonable not to seek the advice in certain circumstances, it is notable that the Bill does not regulate when the Minister may decide not to seek that advice.⁸²

- 3.65 The Law Council of Australia also noted that under the proposed bill, the advice of the CCA would be limited to only Article 2 of the Paris Agreement, which includes the 1.5 degrees and 2 degrees global temperature thresholds, to the exclusion of other relevant articles.⁸³

- 3.66 The Australian Academy of Science called for Australia's emissions reduction targets to be increased to be consistent with the goals of the Paris Agreement. The Academy emphasised that evidence-based policy mechanisms are essential for ensuring meaningful pathways of emissions reduction:

Australia's [NDCs] need to be accompanied by scientifically feasible plans of action to reduce Australia's emissions in a fair but meaningful way. The mechanisms informing Australia's emissions reduction pathways need to be robust and evidence-based to achieve the tangible outcomes intended by the targets. The Climate Change Authority (CCA), in its role as adviser to the government, will need to call on experts so it can synthesise the available evidence and make evidence-informed recommendations to

⁸¹ *Committee Hansard*, 18 August 2022, pp. 30–31.

⁸² Law Council of Australia, *Submission 58*, p. 11.

⁸³ Law Council of Australia, *Submission 58*, pp. 12–13.

government. The Academy will be pleased to work with the CCA and to support it in its essential purpose.⁸⁴

Public consultation on future targets

3.67 Submitters and witnesses widely expressed strong support for public consultation on the development of new and adjusted emissions reduction targets, consistent with Australia's international obligations under the Paris Agreement.

3.68 The Australian Climate Roundtable welcomed the public consultation provisions of the bill, submitting that the bills:

... set up clear national goals, a predictable process for evolving those goals over time, a useful transparency framework to assess progress, and a valuable avenue for independent advice and community consultation.⁸⁵

3.69 Engineers Australia supported public consultations as a valuable complement to existing accountability mechanisms:

Through affording a greater level of public scrutiny via mandated public consultations and reporting requirements that complement the existing mandatory reporting arrangements under [the National Greenhouse and Energy Reporting Scheme] and the like, these bills will help broaden the community voice on the impact and sufficiency (or otherwise) of individual measures as well as in aggregate to achieve Australia's emissions reduction targets in a manner consistent with the specified guiding principles (which Engineers Australia supports) as well as broader climate objectives (i.e., adaptation and resilience).⁸⁶

3.70 Professor Frank Jotzo called for the CCA's public consultation on the emissions reduction target to facilitate a well-informed national conversation by actively involving a wide range of stakeholder groups and engaging in sustained public outreach:

The emissions target is a decision that affects many aspects of Australia's economy and society, and has in the past been the subject of intense political contestation. The more inclusive the process of crafting the advice, the better the chances for broad agreement, which in turn may be necessary politically to underpin policy measures necessary to attain those targets.⁸⁷

Independent reviews of the legislative framework

3.71 The bill would require periodic reviews of the operation of the legislation. The first review would need to be completed within five years of the legislation commencing. Further reviews would be completed every ten years thereafter.

⁸⁴ Australian Academy of Science, *Submission 16*, p. 1.

⁸⁵ Australian Climate Roundtable, *Submission 110*, p. 1.

⁸⁶ Engineers Australia, *Submission 109*, p. 5.

⁸⁷ Professor Frank Jotzo, *Submission 176*, p. 1.

Each review would provide for public consultation. A report from each review would be tabled in Parliament.

3.72 The committee notes that this review process is designed to examine the technical operation of the legislation itself, and is not framed as a review of the adequacy of the emissions reduction targets, nor the progress towards achieving the targets.⁸⁸

3.73 In evidence received at a public hearing, the Australian Industry Group affirmed its support for the review process:

We consider the bills to be consistent with some key principles of climate policy that Ai Group has adopted together with other participants in the Australian climate roundtable, including consistency with the pursuit of the global goal of holding emissions and climate change to well below two degrees and making efforts toward 1½ degrees, securing some stability in policy and ambition over time, having a more disciplined administration of policy and establishing regular review points.⁸⁹

3.74 The National Environmental Law Association (NELA) was supportive of regular reviews of the legislation and called them to be made more frequent than provided for in the bills:

...these Bills, when in force, ought to be reviewed more regularly than every five years. NELA submits that every two years would be a more appropriate timeframe for mandatory reviews.⁹⁰

Committee view

3.75 The committee notes the strong and widespread support for the Climate Change bills, from organisations and interest groups representing all facets of the Australian economy and society. The committee is grateful to the large number of organisations and individuals who made submissions and gave evidence at hearings.

3.76 The government has introduced the bills to ensure that Australia's emissions reduction targets are not only recorded in international settings, but are clearly expressed in Commonwealth law. If passed, the targets will entrench in domestic legislation Australia's contribution to the global goals of the Paris Agreement. This will provide much needed investment certainty for international capital markets and create new market opportunities for manufacturing and industry in Australia. The bill will also enhance transparency and accountability through an annual climate change statement to Parliament given by the Minister. The CCA will provide advice to the

⁸⁸ Climate Change Bill 2022, *Explanatory Memorandum*, p. 14.

⁸⁹ Mr Tennant Reed, Director, Climate Change and Energy, Australian Industry Group, *Committee Hansard*, 18 August 2022, p. 27.

⁹⁰ National Environmental Law Association, *Submission 102*, p. 2.

Minister on the annual climate change statement and the development of new and adjusted NDCs under the Paris Agreement.

- 3.77 Throughout the inquiry, there was overwhelming support for these objectives. Businesses, investors, environmental organisations, unions, researchers, academics, communities and most individuals have welcomed the certainty that the bills would provide.
- 3.78 The committee acknowledges that the bills honour an election commitment of the Albanese government which received a mandate at the 2022 Federal election.
- 3.79 The committee notes that the bills establish a framework for achieving Australia's emissions reduction goals. The committee expects more sector-specific detail to be introduced in subsequent legislation, funding announcements, and policy developments.
- 3.80 The committee supports the Minister's commitment that the targets in the bill represent a floor not a ceiling for Australia's climate ambition. These bills would allow Australia to meet or exceed the targets and set new, more ambitious targets in accordance with the Australia's international obligations under the Paris Agreement.
- 3.81 The committee notes a range of other government initiatives, which are already in train, to underpin the framework provided by the bills, including:
- consulting on options to reform the safeguard mechanism to help industry reduce emissions in line with Australia's climate targets and strengthen our economic competitiveness in a decarbonising global economy;⁹¹
 - developing a National Electric Vehicle Strategy in collaboration with state and territory governments, and the removal of fringe benefits tax and the five per cent import tariff for eligible electric vehicles;⁹²
 - working with state and territory governments to increase the share of renewables in the National Electricity Market by 2030 under the *Powering Australia* plan;⁹³
 - investing \$20 billion for urgent upgrades of the electricity grid so it can handle more renewable power under the Rewiring the Nation plan;⁹⁴

⁹¹ Department of Industry, Science and Resources, *Safeguard Mechanism Reforms: Consultation paper*, August 2022, consult.industry.gov.au/safeguard-mechanism-reform-consultation-paper (accessed 24 August 2022).

⁹² The Hon Dr Jim Chalmers MP, Treasurer, 'Electric Car Discount Bill introduced to Parliament', *Media release*, 27 July 2022, ministers.treasury.gov.au/ministers/jim-chalmers-2022/media-releases/electric-car-discount-bill-introduced-parliament (accessed 24 August 2022).

⁹³ Department of Climate Change, Energy, the Environment and Water, 'Powering Australia', energy.gov.au/government-priorities/australias-energy-strategies-and-frameworks/powering-australia (accessed 24 August 2022).

- appointing an independent panel to review the integrity of Australian Carbon Credit Units, led by former Chief Scientist Professor Ian Chubb;⁹⁵
 - responding to Professor Graeme Samuel's review of the *Environment Protection and Biodiversity Conservation Act 1999* by the end of 2022 with a view to bringing legislation into Parliament in 2023 and consulting on the development of national environmental standards;⁹⁶ and
 - the impending release of a proposal for an independent Federal Environment Protection Authority.⁹⁷
- 3.82 Finally, the committee supports the genuinely collaborative manner in which Minister Bowen has approached the passage of the bills through the House of Representatives. The committee encourages the same respectful process in the Senate debate.
- 3.83 On this basis and for the reasons outlined above, the committee supports the passage of the Climate Change bill.

Recommendation 1

- 3.84 The committee recommends that the Senate pass the Climate Change Bill 2022.**

⁹⁴ The Hon Anthony Albanese MP, Prime Minister, The Hon Chris Bowen MP, Minister for Climate Change and Energy, and Senator the Hon Jenny McAllister, Assistant Minister for Climate Change and Energy, 'Stronger action on climate change', *Media release*, 16 June 2022, minister.industry.gov.au/ministers/mcallister/media-releases/stronger-action-climate-change (accessed 24 August 2022).

⁹⁵ The Hon Chris Bowen MP, Minister for Climate Change and Energy, 'Independent Review of ACCUs', *Media release*, 1 July 2022, minister.dcceew.gov.au/bowen/media-releases/independent-review-accus (accessed 24 August 2022).

⁹⁶ The Hon Tanya Plibersek MP, Minister for the Environment and Water, 'National Press Club address, Minister for the Environment and Water: Tanya Plibersek', *Speech*, 19 July 2022, minister.dcceew.gov.au/plibersek/speeches-and-transcripts/national-press-club-address-minister-environment-and-water-tanya-plibersek (accessed 24 August 2022).

⁹⁷ The Hon Tanya Plibersek MP, Minister for the Environment and Water, 'National Press Club address, Minister for the Environment and Water: Tanya Plibersek', *Speech*, 19 July 2022.

Chapter 4

Key issues—Consequential Amendments bill and other matters

4.1 This chapter outlines the evidence received on the Climate Change (Consequential Amendments) Bill 2022 (Consequential Amendments bill). It then discusses a range of other issues frequently raised by witnesses and submitters.

The Consequential Amendments bill

4.2 As noted in chapter 1, the Consequential Amendments bill would amend a range of existing Commonwealth legislation to support the implementation of the Climate Change bill by '[embedding] Australia's greenhouse gas emissions reduction targets into the objects and functions of a range of Commonwealth entities and schemes'.¹ It would require Commonwealth entities and schemes to consider Australia's emissions reduction targets and Australia's obligations under the Paris Agreement when exercising powers or performing functions.²

4.3 The Consequential Amendments bill would also provide that any updated targets set under the Paris Agreement would be similarly reflected in the relevant Australian frameworks.³

4.4 The Consequential Amendments bill would amend the relevant sections of the following Acts:

- *Australian Renewable Energy Agency Act 2011;*
- *Building Energy Efficiency Disclosure Act 2010;*
- *Carbon Credits (Carbon Farming Initiative) Act 2011;*
- *Clean Energy Finance Corporation Act 2012;*
- *Clean Energy Regulator Act 2011;*
- *Climate Change Authority Act 2011;*
- *Export Finance and Insurance Corporation Act 1991;*
- *Greenhouse and Energy Minimum Standards Act 2012;*
- *Infrastructure Australia Act 2008;*
- *National Greenhouse and Energy Reporting Act 2007;*
- *Northern Australia Infrastructure Facility Act 2016;*
- *Offshore Electricity Infrastructure Act 2021;*
- *Renewable Energy (Electricity) Act 2000;* and

¹ Consequential Amendments Bill, *Explanatory Memorandum*, p. 2.

² Consequential Amendments Bill, *Explanatory Memorandum*, pp. 2–3.

³ Consequential Amendments Bill, *Explanatory Memorandum*, p. 2.

- *Science and Industry Research Act 1949*.⁴
- 4.5 This section discusses the significant implications identified by submitters and witnesses, which relate to certain Commonwealth entities, as well as for some legislative frameworks and schemes, namely:
- funding of projects by Export Finance Australia (EFA), the Northern Australia Infrastructure Facility (NAIF) and Infrastructure Australia;
 - other legislation that could be covered by scope of the Consequential Amendments bill; and
 - the potential to embed emissions reduction targets across government.

Implications for Commonwealth funding of projects

- 4.6 The Australia Institute highlighted that some Commonwealth agencies and laws have historically provided support for the fossil fuel industries, and argued that the Consequential Amendments bill, as drafted, does not prevent them from doing so in the future. It concluded that this could jeopardise Australia's commitment to reduce emissions. The submission highlighted that the obligation that the EFA and the NAIF 'have regard to' the emissions reduction target and the Paris Agreement would be far stronger if it required the alignment of investment and financing decisions with these commitments.⁵
- 4.7 During the hearings, questions were raised regarding the bills' impact on approved infrastructure projects as well as those in the pipeline for consideration.
- 4.8 Mr Craig Doyle, the Chief Executive Officer of the NAIF, explained that where contracts had been finalised, approved projects would not be re-assessed and would proceed on the basis of the binding contracts. If the bills pass the parliament, projects that are in the development pipeline and yet to be finalised would be subject to the new legislative arrangements.⁶
- 4.9 Similarly, the Acting CEO of Infrastructure Australia, Mr Adam Copp, clarified that the legislation, if passed, would only impact future large-scale infrastructure projects, and would not affect current and existing projects that have already been assessed. He specifically noted that there would be no impact on the Western Sydney Airport development nor the construction of Inland Rail.⁷

⁴ Consequential Amendments Bill, Explanatory Memorandum, p. 5.

⁵ The Australia Institute, *Submission 100*, pp. 8–9.

⁶ Mr Craig Doyle, Chief Executive Officer, Northern Australia Infrastructure Facility, *Committee Hansard*, 19 August 2022, p. 42.

⁷ Mr Adam Copp, Acting Chief Executive Officer, Infrastructure Australia, *Committee Hansard*, 19 August 2022, pp. 47–48.

Possible additions to the Consequential Amendments bill

4.10 The Australia Institute recommended that the *Industry Research and Development Act 1986* (IRD Act) be included in the scope of the Consequential Amendments bill. It argued that the IRD Act has been used to support fossil fuel industries in the past, and so should be amended to align with any legislated emissions reduction targets and the Paris Agreement. The Australia Institute listed a number of legislative instruments that were registered in 2021 under the IRD Act, including the:

- Refinery Upgrades Program;
- Underwriting New Generation Investments Program;
- Port Kembla Gas Generator Investment Development Grant Program;
- Beetaloo Cooperative Drilling Program;
- Boosting Australia's Diesel Storage Program;
- CCS Development Program; and
- CCUS Hubs and Technologies Program.⁸

4.11 Several submissions also recommended that the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) be added to the scope of the Consequential Amendments bill. For example, Greenpeace supported the addition of the EPBC Act to the Consequential Amendments bill framework:

... the EPBC Act should be amended (by inclusion in the Consequential Amendments Bill), to insert meeting the goals of the Paris Agreement (in particular as provided in Article 2) into the objects of the Act. We recognise that there is a broader process of EPBC Act Reform that will soon commence, and we welcome opportunities to feed into that process to ensure that our environmental protection laws are fit for purpose in light of ever-increasing climate change and climate impacts.⁹

4.12 The Australian Conservation Foundation (ACF) also observed that the EPBC Act is undergoing reform and is not currently noted as a consequential amendment. The ACF recommended that:

...the EPBC Act be included in Climate Bill 2022 consequential amendments once the existing process to update the EPBC Act ensures clear integration of climate commitments and climate impacts in all assessment and approval processes, including through implementation of a 'climate trigger'.¹⁰

4.13 The ACF also recommended that the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGs Act) be included in the scope of the Consequential Amendments bill. The OPGGS Act and associated regulations provide the legal framework for the exploration and recovery of petroleum and greenhouse gas activities in Commonwealth waters (those areas that are more

⁸ The Australia Institute, *Submission 100*, p. 9 (footnotes omitted).

⁹ Greenpeace, *Submission 33*, p. 4.

¹⁰ Australian Conservation Foundation, *Submission 12*, p. 8.

than three nautical miles from the territorial sea baseline). The OPGGS Act also establishes the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). The ACF argued that the Consequential Amendments bill should amend the OPGGS Act to require NOPSEMA to consider Australia's greenhouse gas emissions reduction targets as part of its decision-making process.¹¹

4.14 The Department of Industry, Science and Resources noted that NOPSEMA's:

...environmental assessment process has been assessed and endorsed under the *Environmental Protection and Biodiversity Conservation Act 1999* and it considers emissions when assessing environmental approvals.

The industries that NOPSEMA regulates are also contributing to action on climate change – almost every offshore oil and gas operator has a net zero ambition, as well as a credible pathway to reach it...¹²

4.15 The Explanatory Memorandum for the Consequential Amendments bill states that there will be a review of the range of the government organisations that would be affected by that bill.¹³ The Minister for Climate Change and Energy, the Hon Chris Bowen MP, committed to this review being undertaken, and its findings presented to parliament by August 2023.¹⁴

4.16 In the Second Reading debate on the bills, Minister Bowen also committed to including the IRD Act in the review of the coverage of the Consequential Amendments bill, as well as the legislation governing the NOPSEMA.¹⁵

Cross-government targets

4.17 Several submitters noted that a key effect of the proposed legislation would be to require those institutions covered by the Acts identified in the Consequential Amendments bill to 'consider' Australia's emissions reduction targets when exercising their administrative powers.

4.18 However, the National Environmental Law Association submitted that the Consequential Amendments bill should be revised to require that decisions taken by these institutions are 'consistent' with Australia's national targets.¹⁶

4.19 Professor Penny Sackett similarly recommended the Consequential Amendments bill be amended such that every institution covered by the

¹¹ Australian Conservation Foundation, *Submission 12*, p. 15.

¹² Department of Industry, Science and Resources, *Submission 105*, p. 6.

¹³ Consequential Arrangements Bill, *Explanatory Memorandum*, p. 3.

¹⁴ The Hon Chris Bowen MP, Minister for Climate Change and Energy, *House of Representatives Hansard*, 4 August 2022, p. 13.

¹⁵ The Hon Chris Bowen MP, Minister for Climate Change and Energy, *House of Representatives Hansard*, 4 August 2022, p. 13.

¹⁶ National Environmental Law Association, *Submission 102*, p. 2.

specified Acts be directed to undertake their activities in a manner 'consistent' with:

...advancing an effective and progressive response to the urgent threat of climate change drawing on the best available scientific knowledge.¹⁷

4.20 Climateworks submitted that it supports the proposed legislation, but recommended the government 'go further in embedding an emissions reduction objective more fully across government operations'.¹⁸

Other matters

4.21 This section discusses a number of other issues raised in evidence, which go to broader issues outside the scope and intent of the bills, namely:

- potential 'lawfare' stemming from the bills;
- the use of native wood waste as a source of renewable energy;
- proposals for nuclear to be considered as a source of clean energy;
- the value of carbon capture and storage;
- a 'just transition' for workers and communities affected by decarbonisation; and
- the integrity of Australia's climate credit units.

Potential 'lawfare' stemming from the bills

4.22 Some submitters raised concerns about the consequences of a potential increase in climate litigation, often termed by these groups as 'lawfare', resulting from passage of the bills. Lawfare was described by Tamboran Resources as:

...a tactic used by environmental activists who aim to defeat major projects through causing them unbearable cost, delays and additional risk that arises from constantly being taken to court... The practice is incompatible with true progress towards climate objectives, as it attempts to prevent incremental climate-improving projects from proceeding and leaving the Australian and global economy with a legacy of higher emissions overall.¹⁹

4.23 The Institute of Public Affairs made a prediction of an increase in litigation by environmental activists as a potential negative consequence of the bills, which they argued should be scrapped. The legislation of emissions reduction targets would, it argued, 'invite a torrent of legal activism by fringe environmental groups' that could block or impede projects subject to ministerial approval under the EPBC Act.²⁰

¹⁷ Professor Penny D Sackett, *Submission 67*, p. 2.

¹⁸ Climateworks Centre, *Submission 75*, p. 3.

¹⁹ Tamboran Resources, *Submission 2*, p. 2.

²⁰ Institute of Public Affairs, *Submission 56*, p. 4.

4.24 DCCEEW officials expressed confidence that the bills would not create any risk of increased litigation in the EPBC Act approvals process:

The advice we have is that, because this bill doesn't limit or direct the way that any particular [environmental approval] decision needs to be made, it doesn't add to the context in which that kind of litigation can already be brought forward. So, from that perspective, we would say that there's no change between before and after the bill about the prospects that somebody might bring some kind of court action...

...much of the concern with respect to litigation risk relates to approval of projects. I note that there has been a lot of discussion with respect to approval of projects under statutory regimes, like state and territory environmental approvals and planning laws, as well as the [EPBC Act]. The [bill] under discussion today does not bind states and territories [proposed section 6], so it has no particular implications for state and territory decision-making, and the consequential amendments bill does not make any changes to the [EPBC Act]. So the bills, as presented, do not touch specifically on those big project decision-making processes.²¹

4.25 After the hearings, bp Australia, having noted the department's evidence, stated that the certainty the bills provide may actually decrease the risk of legal action:

Without attempting to speculate on possible future litigation, our hope is that by legislating the target and providing a transparent and accountable framework for its delivery, the legislation might even reduce the uncertainty that can sometimes be a driver for litigation.²²

Native wood waste as a source of renewable energy

4.26 Biomass is a term used to describe any fuel derived from plants, including wood and wood processing waste.²³ The Australian Forest Products Association suggested that the burning of biomass could be considered as an effective renewable source of energy in the transition to net zero:

Using biomass for energy generation can provide carbon-neutral renewable baseline power with no net increase in carbon if the cycle of growth and harvest is sustained. By contrast burning fossil fuels releases CO₂ that has been locked up for millions of years. Bioenergy is unique

²¹ Ms Jo Evans, Acting Secretary, and Ms Kath Rowley, Head of Division, Emissions Reduction Division, both of the Department of Climate Change, Energy, the Environment and Water, *Committee Hansard*, 19 August 2022, pp. 51–52.

²² Ms Lucy Nation, Vice President, Regions, Cities and Solutions, bp Australia, answer to written question on notice, 19 August 2022 (received 24 August 2022).

²³ Biomass can also include agricultural produce and associated waste, biogenic waste from municipal waste, and animal manure and human sewage used to produce biogas/renewable natural gas. See, US Energy Information Administration, 'Biomass explained' at [eia.gov/energyexplained/biomass/](https://www.eia.gov/energyexplained/biomass/) (accessed 22 August 2022).

among renewable energy technologies as it can be used across all three energy sectors (transport, electricity and heat).²⁴

4.27 However, some environmental organisations raised concerns relating to native forest wood waste being burned as a source of 'sustainable' or 'renewable' energy. These concerns noted that wood waste derived from native forest biomass is recognised as an eligible renewable energy source under the provisions of the *Renewable Energy (Electricity) Act 2000* (REE Act).²⁵

4.28 In the view of these organisations, the burning of native wood waste as a fuel source is not ecologically sustainable, and actually increases emissions. For example, the ACF noted that:

- the best way to draw down and sequester carbon was by protecting natural forests, which are already under threat from deforestation;
- renewables could adequately meet our future energy needs without burning biomass, which would release a huge amount of damaging emissions; and
- biomass is not only an inefficient fuel for electricity generation, but also a fuel that releases a large amount of damaging carbon emissions.²⁶

4.29 Wilderness Australia submitted that native wood waste had been excluded as a source of renewable energy under the REE Act, until amendments made under the Abbott government:

The result [of these changes] has been an increasing number of proposals to use native forest biomass as a replacement for coal or use it to co-fire with coal in the name of clean and renewable energy—a claim that fails even the most basic common sense test given that any forest older than 30 years cannot recover from logging before 2050, and that generating energy from native forest biomass results in more [greenhouse gas] emissions per unit of energy than coal.²⁷

4.30 Several stakeholders argued that the REE Act should be amended to exclude native wood waste biomass being considered as a source of renewable energy, as it had been previously.²⁸

4.31 In the Second Reading debate on the bills in the House of Representatives, Minister Bowen noted that concerns over the REE Act's inclusion of native wood waste as a 'renewable' fuel had been raised by Mr Adam Bandt MP.

²⁴ Australian Forest Products Association, *Submission 60*, p. 3.

²⁵ See, for example, Australian Conservation Foundation, *Submission 12*, pp. 10–11; Wilderness Australia, *Submission 44*, p. 2; Australian Forests and Climate Alliance, *Submission 72*, pp. 1–3.

²⁶ Australian Conservation Foundation, *Submission 12*, pp. 10–11.

²⁷ See Wilderness Australia, *Submission 44*, p. 2. See also, Ms Virginia Young, Wilderness Australia, *Committee Hansard*, 18 August 2022, p. 12.

²⁸ Ms Virginia Young, Wilderness Australia, *Committee Hansard*, 18 August 2022, p. 12; and Australian Conservation Foundation, *Submission 12*, p. 11.

Minister Bowen stated that he was willing to have further discussions with Mr Bandt to better understand the matter, and further noted that:

...the regulations already include a number of protections to ensure the sustainability of any such energy sources. It has never been a significant source of certificates under the legislation; however, I am more than happy to hear any concerns [Mr Bandt] has.²⁹

4.32 Mr David Parker, Chair of the Clean Energy Regulator (CER), gave evidence that burning native forest wood waste to generate electricity was rare and generally not economically viable:

There is only one project that has been registered for LGC [large-scale renewable energy generation certificates] collation for native-wood waste and that is a project connected with the regeneration of a native forest over a mine site, the idea being to use trimmings from that project as the forest grows up. You need to trim these to allow the bigger trees to grow. To date, no LGCs have been created under that project. So, so far as native-wood waste is concerned, we have not seen wide-scale registration of projects and use of native-wood waste since that particular pathway was reinstated in 2015. The reason is that it's very difficult to make these things economic, essentially.³⁰

Nuclear energy

4.33 The committee received evidence relating to nuclear generation as a potential future source of energy for Australia. Some witnesses and submitters saw a role for nuclear in a future Australian clean energy sector. However, others argued nuclear energy would be an expensive and politically fraught proposition for Australia, with many substantial barriers to its adoption.

4.34 The committee took evidence from several advocates for the development of an Australian nuclear sector. For example, Dr Mark Ho, the Vice President of the Australian Nuclear Association, told the committee that Australia's legislative prohibitions on nuclear power plants would impede any effort to achieve significant emissions reduction:

Australia must be able to use all low-carbon technologies, including nuclear power, to create a future energy mix that satisfies the energy trilemma of affordability, reliability and low-carbon sustainability. Australia's almost unique amongst developed economies in having historic legislative prohibitions on nuclear power plants. Reducing carbon emissions by 2050 is too important to have legislation that arbitrarily excludes any consideration of nuclear power plants, which are a proven economic and scalable low-carbon energy technology.

Nuclear power is a very well-established technology producing dispatchable electricity with very low carbon emissions, and nuclear

²⁹ The Hon Chris Bowen MP, Minister for Climate Change and Energy, *House of Representatives Hansard*, 4 August 2022, p. 13.

³⁰ Mr David Parker, Chair, Clean Energy Regulator, *Committee Hansard*, 19 August 2022, p. 50.

power plants are widely used in over 30 countries. The lifetime carbon emissions from nuclear power plants are similar to emissions from solar and onshore wind facilities, and nuclear power plants themselves emit no carbon dioxide. We cannot afford to ignore the potential of nuclear power to reduce carbon emissions. The legislative prohibitions must be removed so that nuclear power can be considered on its merits.³¹

4.35 Dr Geoff Bongers, a representative of Gamma Technology Australia, told the committee that wholesale reform of the energy sector to reduce emissions should consider a suite of technologies, including nuclear generation alongside other renewable forms of generation.³²

4.36 Nuclear for Climate Australia (NCA) submitted that the emissions from nuclear were lower than any other form of energy generation. Summarising United Nations, European Union Joint Research, and Électricité de France research, NCA noted that 'nuclear energy has lower emissions than any other generating source including wind and solar'.³³

4.37 Regarding the negative perceptions that many everyday Australians have to nuclear power, Dr Ho of the Australian Nuclear Association told the committee that:

I've been seeing the transition and the momentum swing towards nuclear power. Say about five years ago, if you looked at the general numbers in the polls, you might have had 35 per cent to 40 per cent of people in support of nuclear power. Now the numbers are more balanced to about 50-50, in the same order of what you will find in the UK, which already has established nuclear power plants. I think a lot of that is brought about by people's understanding of the need to act on climate change and the manner in which nuclear power can supply baseload low-carbon electricity.³⁴

4.38 However, a number of stakeholders disagreed. Mr Tennant Reed of the Australian Industry Group outlined a significant barriers for the adoption of nuclear power generation in Australia, including the lack of: skills, supply chains, a regulatory framework, physical infrastructure, and waste handling facilities, as well as the difficulty of overcoming widespread negative perceptions of nuclear power.³⁵ He further suggested that nuclear should not

³¹ Dr Mark Ho, Vice President, Australian Nuclear Association, *Committee Hansard*, 19 August 2022, p. 16.

³² Dr Geoff Bongers, Engineer, Gamma Technology Australia, *Committee Hansard*, 19 August 2022, pp. 16 and 23.

³³ Nuclear for Climate Australia, *Submission 11*, p. 2.

³⁴ Dr Mark Ho, Vice President, Australian Nuclear Association, *Committee Hansard*, 19 August 2022, p. 20.

³⁵ Mr Tennant Reed, Director, Climate Change and Energy, Australian Industry Group, *Committee Hansard*, 18 August 2022, pp. 32 and 33.

be ruled out as a potential source, even if renewables would appeared to be a cheaper option:

It doesn't make a great deal of sense for it to be simply illegal to develop nuclear energy. It does appear that nuclear energy will not be cost competitive in Australia, at least based on technologies that have a track record in the marketplace. But we should be open to technological surprise. There are high hopes for the next generation of small modular reactors. We will see how they perform in the markets where they are being commissioned. But at this stage it looks like, for bulk energy, renewables will be the cheapest source of that.³⁶

4.39 Alongside the high unit cost of nuclear generation, Ms Anna Freeman, the Policy Director of the Clean Energy Council, noted that it would take a very long time for Australians to change their well-ingrained negative perceptions:

Nuclear is many times more expensive than solar and wind, and just cannot compete on economic grounds... It would need incredible amounts of support, but on top of that the social licence challenges associated with nuclear would, I think, be such that you would not get anything off the ground for decades.³⁷

4.40 Professor Frank Jotzo, the Head of Energy at the Institute for Climate, Energy and Disaster Solutions at the Australian National University, suggested nuclear could be an option for low-emissions generation in some overseas countries, particularly those with high populations, large energy demands including from heavy industry, and adverse conditions for renewable energy. However, in Australia, he stated it would be an expensive long-term proposition in comparison to wind and solar generation:

The thing with nuclear is that in the Western world and for Western expectations of safety standards new nuclear projects are very, very expensive in comparison to just about any other energy source. The same would, of course, hold true for Australia. Any technology other than wind and solar in Australia, at this point in time and likely in the foreseeable future, is at an enormous cost disadvantage relative to those renewables.³⁸

Carbon capture and storage

4.41 Some evidence proposed that carbon capture and storage (CCS) would be an essential part of a net zero future. Ms Tracey Winters, Strategic Adviser on External Affairs for Santos, gave evidence that:

When it comes to carbon capture and storage, it's very perplexing when people say there is no evidence for it, because there are in fact 27 CCS

³⁶ Mr Tennant Reed, Director, Climate Change and Energy, Australian Industry Group, *Committee Hansard*, 18 August 2022, p. 31.

³⁷ Ms Anna Freeman, Policy Director, Clean Energy Council, *Committee Hansard*, 18 August 2022, p. 67.

³⁸ Professor Frank Jotzo, Head of Energy, Institute for Climate, Energy and Disaster Solutions, Australian National University, *Committee Hansard*, 18 August 2022, p. 5.

projects operating around the world today, storing 40 million tonnes of carbon dioxide every single year. That is a fact. The other thing... is that the [International Energy Agency (IEA)] and the [Intergovernmental Panel on Climate Change (IPCC)] say that you cannot achieve net zero by 2050 without that technology. In fact, the IEA's net zero scenario says that you need to store about 7.6 billion tonnes a year by 2050. But 17 of the 18 IPCC scenarios say that you have to store more than that—between 8.1 and 18.6 billion tonnes every year. And not one of the IPCC scenarios has no CCS in it as a technology for emissions reduction.³⁹

4.42 Following the hearings, Santos updated the committee on the status of global CCS facilities and projects. Of the 27 operational projects worldwide, 21 are used for enhanced oil recovery and only 6 provide dedicated geological storage. Of these projects, one resides in Australia: the Gorgon CCS project located in offshore waters of the Western Australia coast. This project has stored six million tonnes of carbon dioxide since 2019.⁴⁰

4.43 Some evidence suggested that CCS was largely unproven technology that still needs research and development before it can be deployed effectively, in contrast to methods that were already fit-for-purpose. For example, Mr Wayne Smith, Government Relations Manager of the Smart Energy Council stated:

Carbon capture and storage is a white elephant, particularly when it comes to hydrogen—and we're seeing it already. What's happening in hydrogen—and we know this both in Australia and internationally—is people are investing in renewable hydrogen. That's the future. It just makes sense from an economic perspective to invest in renewable hydrogen.⁴¹

4.44 Ms Beth Mitchell of Beyond Zero Emissions took a similar view of CCS:

Australia has abundant, low-cost renewable energy. With carbon capture and storage, our position is that we need to start deploying the technology that is ready now, that can be easily deployed and that is proven in the space.⁴²

4.45 Professor Matthew England of the Australian Academy of Science was similarly sceptical of value of CCS:

³⁹ Ms Tracey Winters, Strategic Advisor External Affairs, Santos, *Committee Hansard*, 19 August 2022, p. 36.

⁴⁰ Ms Tracey Winters, Strategic Advisor External Affairs, Santos, answer to written question on notice, 19 August 2022 (received 25 August 2022). See also, Global CCS Institute, *Global Status of CCS 2021*, globalccsinstitute.com/resources/global-status-report/ (accessed 26 August 2022).

⁴¹ Mr Wayne Smith, Government Relations Manager, Smart Energy Council *Committee Hansard*, 18 August 2022, p. 66.

⁴² Ms Beth Mitchell, Government Affairs Specialist, Beyond Zero Emissions, *Committee Hansard*, 19 August 2022, p. 67.

I would put a caveat, a big warning, around carbon capture and storage. Former Prime Minister Malcolm Turnbull famously, at a [University of New South Wales] forum a couple of years ago, said quite clearly to the audience that he spent a lot of money exploring carbon capture for Australia and that it wasn't viable with the geological structures we have. I do understand there are new technologies coming along that are carbon neutral and that maybe have some merit.⁴³

I'm all for investment in these negative carbon emissions, but...at the moment we don't have scalable technologies that can do that. Of course let's keep exploring, but it is foolhardy to take our foot off the pedal of stopping the emissions and imagining we're going to have a silver bullet down the track that will solve this for us because all indications are that we will not. We will have the means to take out some carbon dioxide, but it's a tiny fraction of our emissions, and mitigation—the stopping of the emissions now—is the most cost-effective way to deal with this problem.⁴⁴

- 4.46 Professor David Karoly gave evidence that, despite substantial government investment, CCS was not yet viable, and that there were better alternatives:

... it's critically important to recognise that within Australia there has been federal government investment in research on carbon capture and storage, and that has led to no large-scale commercially viable carbon capture and storage solutions in Australia, despite financial investment, for more than 20 years. It is much easier, unfortunately, to pay for and use batteries or other—if you like—water resource related dams like the Snowy 2.0 plan that had been set up to do it. These are much more tested and reliable solutions.⁴⁵

Just transition

- 4.47 Many submissions called for the bills to include the workforce equity considerations in the preamble of the *Paris Agreement*:

Taking into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities.⁴⁶

- 4.48 Submissions from several trade unions supported the establishment of a national Energy Transition Authority to oversee and support a fair and orderly transition for workers and their communities through the decarbonisation transition of the energy sector.⁴⁷ The role envisaged would be to minimise the

⁴³ Professor Matthew England, Fellow, Australian Academy of Science, *Committee Hansard*, 19 August 2022, p. 3.

⁴⁴ Professor Matthew England, Fellow, Australian Academy of Science, *Committee Hansard*, 19 August 2022, p. 6.

⁴⁵ Professor David Karoly, *Private Capacity*, *Committee Hansard*, 19 August 2022, pp. 6–7.

⁴⁶ United Nations, *Paris Agreement*, 2015, p. 1.

⁴⁷ Australian Council of Trade Unions, *Submission 37*, p. 3.

socio-economic impact of power plant closures by managing this transition and delivering on plans for the future prosperity of affected regions.⁴⁸

- 4.49 The Australian Council of Social Service (ACOSS) submitted that poorly targeted and inequitable policies to reduce emissions were disproportionately benefiting people with wealth, choice, and control while people on low incomes were paying disproportionately more. ACOSS said the bills should require the government and agencies to consider social and economic inclusion in developing policies, procedures, and processes to achieve emissions reduction targets.⁴⁹

Integrity of Australian carbon credit units

- 4.50 An Australian Carbon Credit Unit (ACCU) represents the storage or avoided emission of the equivalent of one tonne of carbon dioxide. ACCUs are issued by the CER as part of the former government's Emissions Reduction Fund (ERF) and are logged electronically in the Australian National Registry of Emissions Units. The unit creator can sell their credits back to the CER or to the private sector, thus establishing a market for carbon credits.⁵⁰

- 4.51 The Australia Institute submitted that the ERF had been operating as the sole emissions reduction policy under the former government, arguing that the scheme has proven to be unfit for this purpose. The Australia Institute also pointed to evidence that up to 80 per cent of ACCUs 'do not represent real or additional abatement'.⁵¹ The Australia Institute further noted that concerns had been raised regarding the methods and regulation of ACCUs as well as the integrity of the components of the ERF, concluding:

Purchased by government, the outcome is that hundreds of millions of dollars of public money are wasted, and Australia is no closer to meeting its climate targets.⁵²

- 4.52 Consequently, the Australia Institute submitted that these failures in the design and implementation of the ACCUs had increased private sector production costs whilst doing nothing to curtail polluting activities.⁵³
- 4.53 Several submitters also questioned the effectiveness of certain offset projects covered by ACCUs and the viability of using offsets to reduce emissions.⁵⁴

⁴⁸ Australian Manufacturing Workers Union, *Submission 57*, p. 26.

⁴⁹ Australian Council of Social Service, *Submission 59*, pp. 3–4.

⁵⁰ Australian Government Clean Energy Regulator, *Australian carbon credit units*, 17 September 2020, cleanenergyregulator.gov.au/OSR/ANREU/types-of-emissions-units/australian-carbon-credit-units (accessed 24 August 2022).

⁵¹ Australia Institute, *Submission 100*, pp. 5–6.

⁵² Australia Institute, *Submission 100*, p. 6.

⁵³ Australia Institute, *Submission 100*, p. 6.

4.54 On 1 July 2022, Minister Bowen announced a review of ACCUs, stating:

Concerns have been raised recently about several aspects of Australia's carbon crediting system, including the integrity of its key methods and the Australian carbon credit units issued under it.⁵⁵

4.55 Minister Bowen announced that the independent review panel would include four experts and would be led by former Chief Scientist, Professor Ian Chubb. The review is scheduled to report to government by the end of 2022, and will consider:

- governance arrangements and legislative requirements;
- the integrity of the scheme and its methods;
- the extent to which carbon projects support positive environmental, social, and economic outcomes for agriculture, biodiversity, and the participation of First Nations people;
- opportunities to maximise non-carbon benefits of projects; and
- requirements for the use of carbon credit units under Climate Active (a partnership between the government and businesses).⁵⁶

Committee view

4.56 Regarding the Consequential Amendments bill, the committee notes the evidence of agency heads that the legislation, if passed, would have no impact on major infrastructure projects that had completed their respective approvals process and reached contractual close.

4.57 The committee notes the various suggestions to include other Commonwealth agencies within the Consequential Amendments bill. In this regard the committee supports Minister Bowen's commitment to a review of other Commonwealth entities and schemes, to determine if the coverage of the Consequential Amendments bill should be expanded. The Minister has committed to respond to parliament by August 2023.

4.58 On this basis, the committee supports the passage of the Consequential Amendments bill.

Recommendation 2

4.59 The committee recommends that the Senate pass the Climate Change (Consequential Amendments) Bill 2022.

⁵⁴ See, for example, Institute of Landscape Architects, *Submission 107*, p. 4; and Bob Brown Foundation, *Submission 53*, p. 4.

⁵⁵ The Hon Chris Bowen MP, Minister for Climate Change and Energy, 'Independent Review of ACCUs', *Media release*, 1 July 2022, minister.dcceew.gov.au/bowen/media-releases/independent-review-accus (accessed 24 August 2022).

⁵⁶ The Hon Chris Bowen MP, Minister for Climate Change and Energy, 'Independent Review of ACCUs'.

- 4.60 The committee notes the various other matters outlined above, which were raised during the inquiry. As this inquiry is examining framework legislation to enshrine Australia's emissions reduction targets, the committee views the details of these matters, while important, to be beyond the scope of the bills currently under consideration. If amendments of the nature presented were to be added to the current bills, it would fundamentally change the scope of the bills and significantly delay their passage.
- 4.61 The committee notes the various broader reforms that are underway to underpin the framework legislation, which are detailed elsewhere in this report. In this context, there is an opportunity for further legislative and policy development outside of the current bills.
- 4.62 Some of the suggestions raised in this chapter, while not directly within the scope of the bills, are nonetheless matters the government may wish to consider further. In particular, the issues of burning native forest wood waste and securing an equitable transition for workers are relevant to other areas of government policy and may merit further examination.

Recommendation 3

- 4.63 **The committee recommends that the government, subsequent to the passage of the bills, undertake further consultation on possible legislative amendments and appropriate policy responses, including reviewing the use of native forest wood waste for renewable energy and the transition arrangements for Australian workers impacted by decarbonisation.**
- 4.64 Finally, the committee re-emphasises its support for the genuinely collaborative manner in which Minister Bowen has approached the passage of the bills through the House of Representatives. The committee encourages the same respectful process in the Senate debate.

Senator Karen Grogan
Chair

Coalition Senators' Dissenting Report

Summary

- 1.1 Coalition Senators do not support either the Climate Change Bill 2022 or the Climate Change Bill (Consequential Amendments) Bill 2022.
- 1.2 Coalition Senators believe the consultation process failed to properly account for rural and regional perspectives.
- 1.3 Coalition Senators believe that this legislation will invite green activists to abuse our legal system for political purposes, challenging what they class as high emissions projects.
- 1.4 Coalition Senators believe this legislation will inhibit our national security objectives in the Pacific by reducing Export Finance Australia's flexibility.
- 1.5 Coalition Senators believe that this legislation could restrict certain projects being supported by Government in the future, blocking job creation, hampering our national security objectives, undermining our competitive advantage, and inhibiting export opportunities.
- 1.6 Coalition Senators believe that this Bill will have an unacceptable social justice impact. Specific communities could be disproportionately affected. These Bills do nothing to ensure a fair transition and removes the Productivity Commission's 5-year review into the socio-economic impact of our Nationally Determined Contribution.
- 1.7 Coalition Senators do not believe the Government has an achievable plan to firm 82 per cent renewables by 2030.
- 1.8 Coalition Senators believe that this legislation is not equitable or fair. It does not include an assessment of the economic cost of higher power bills. It gives no bearing to lower socio-economic communities and how rising energy prices may affect them.
- 1.9 Coalition Senators believe the Labor Government's refusal to engage in conversation on the possibility of nuclear power in Australia is disingenuous and ideologically based.

Consultation

- 1.10 Stakeholders such as the Australian Forest Products Association have raised concerns with the legislation as it relates to consultation.¹
- 1.11 The Department of Agriculture, Fisheries and Forestry was not consulted formally on the Climate Change (Consequential Amendments) Bill 2022 prior to its introduction.²

¹ Australian Forest Products Association, *Submission 60*, p. 3.

- 1.12 Coalition Senators are concerned that the consultation has not properly accounted for rural and regional perspectives.
- 1.13 These concerns are bolstered by evidence from the Department of Climate Change, Energy, the Environment and Water and the Department of Agriculture, Fisheries and Forestry admitting that they have done no modelling on the impacts of the Climate Change Bill 2022 and the Climate Change (Consequential Amendments) Bill 2022 on rural and regional Australia.³
- 1.14 Hence these Bills could have serious unintended consequences for those in rural and regional Australia. Coalition Senators believe this to be a significant oversight of the Government.
- 1.15 The introduction of the Climate Change Bill 2022 and the Climate Change (Consequential Amendments) Bill 2022 has been rushed, failing to account for key stakeholders in the creation of these Bills.
- 1.16 Coalition Senators believe the undue rush on the part of the Government reflects an attempt to stifle public discussion with the aim of influencing political outcomes and obviating genuine criticism and differing perspectives.
- 1.17 Coalition Senators believe that the inquiry process has been constructed in a similarly rushed fashion, seeking to once again obviate genuine criticism and differing perspectives.
- 1.18 Coalition Senators believe rigorous consultation, modelling, and social impact assessments have been overlooked in the drafting and introduction of these Bills.

Lawfare

- 1.19 Coalition Senators believe these Bills will invite vexatious green activism in the courts.
- 1.20 Coalition Senators note experiences in other countries where emissions reductions targets have been codified into law there have been serious consequences of green legal activism.
- 1.21 In the UK, critical infrastructure projects have been delayed through legal challenges in the courts system, only to be overturned on appeal.
- 1.22 Activists in the UK have challenged crucial projects such as a new high-speed rail network.⁴

² Australian Forest Products Association, *Submission 60*, p. 3.

³ Ms Jo Evans, Acting Secretary, Department of Climate Change, Energy, the Environment and Water, *Committee Hansard*, 19 August 2022, p. 54; Ms Emma Campbell, Acting Deputy Secretary, Department of Agriculture, Fisheries and Forestry, *Committee Hansard*, 19 August 2022, p. 54.

⁴ Gwyn Topham, 'HS2 legal challenge launched by Chris Packham', *The Guardian*, 3 March 2020.

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- 1.23 Activists in the UK have challenged government decisions to invest in the maintenance and the construction of new roads because this could lead to increased traffic and thus greater emissions.⁵
 - 1.24 Activists in the UK delayed a third runway at Heathrow Airport for years by challenging it in the courts system.⁶
 - 1.25 In France, the government has been told it will be subject to pecuniary penalties if it does not take all necessary measures on climate change by the end of 2022.⁷
 - 1.26 In Germany, the courts ordered the government to increase its emissions reduction targets in an April 2021 decision.⁸
 - 1.27 Environmental groups which provided evidence to the Committee refused to rule out using this legislation to challenge agriculture, primary producing, infrastructure, energy, resources, or forestry projects.⁹
 - 1.28 Evidence was also provided to the Committee that this legislation would in fact encourage green activism in the Australian courts system.¹⁰
 - 1.29 Coalition Senators believe this is an unacceptable outcome and could impact on access to justice if the court system were to be bombarded with vexatious challenges to crucial projects.
 - 1.30 Coalition Senators believe that laws which these Bills enable will open up critical infrastructure projects to challenges—for example, Western Sydney Airport or major road upgrades—and this would be unacceptable. This has been the experience in the UK.

⁵ Gwyn Topham, 'Carbon emissions from England's roads plan '100 times greater than government claims', *The Guardian*, 6 April 2021.

⁶ Damian Carrington, 'Heathrow third runway ruled illegal over climate change', *The Guardian*, 28 February 2020.

⁷ Valerie Dekimpe, 'Court orders France to meet its own greenhouse gas reduction targets', *France24*, 14 October 2021.

⁸ Kate Connolly, 'Historic' German ruling says climate goals not tough enough', *The Guardian*, 30 April 2021.

⁹ Wilderness Australia, Answers to Written Questions on Notice, received 19 August 2022; WWF Australia, Answers to Written Questions on Notice, received 22 August 2022; Greenpeace Australia, Answers to Written Questions on Notice, received 22 August 2022.

¹⁰ Institute of Public Affairs, *Submission 56*, p. 2.

National Security Objectives

- 1.31 Coalition Senators believe this legislation will inhibit Australia's national security objectives in the Pacific.
- 1.32 Export Finance Australia (EFA) provides critical support to projects which advance our national interest in the Pacific.
- 1.33 Requiring EFA to have additional considerations as triggered by these Bills provides the potential for future projects to be prevented on that basis.
- 1.34 Limiting EFA's flexibility is a short-sighted action. If we do not support crucial projects in the Pacific, other countries will do so in our stead.
- 1.35 At a time when of heightened tensions in the region, including a more assertive People's Republic of China, the Coalition believes reducing EFA's flexibility is not in our national interest.

Job Creation, Export Opportunities and Australia's Competitive Advantage

- 1.36 These Bills could restrict the Northern Australia Infrastructure Facility from supporting an expansion of our traditional export industries, particularly energy and agriculture.
- 1.37 These Bills could restrict Infrastructure Australia from recommending projects which are emissions intensive to Government, potentially delaying, or stopping altogether, important pipeline projects.
- 1.38 Coalition Senators are concerned that the above agencies may have reduced capacity to support projects which embody significant aspects of our competitive advantage.
- 1.39 Coalition Senators believe that inhibiting our country from utilising our natural advantage in resources and energy is a mistake.
- 1.40 Coalition Senators believe that restricting the above agencies and their ability to support various projects may also impact on their ability to support critical minerals projects due to their emissions profile.
- 1.41 This would discourage our economy from producing materials which are crucial to the processing and production of renewable technology, costing jobs and ruining potential job creation opportunities.
- 1.42 Coalition Senators believe that the mining of critical minerals should be encouraged in order to bolster local manufacturing and begin to diversify the origin of renewable technology that enters our grid.
- 1.43 Coalition Senators are also gravely concerned that Infrastructure Australia could not explain the consequences of the Bills on their own decision making.

The agency could not explain how they would weigh the emissions of applicant projects versus the job creation opportunities.¹¹

- 1.44 When asked repeatedly how this legislation would alter Infrastructure Australia's decision making, officials stated: 'We're still determining that' and 'We are receiving advice on it at the moment'.¹²
- 1.45 Coalition Senators are deeply concerned that the Government would ask Parliament to vote on legislation when affected agencies have not yet determined how it will impact on their decision making.
- 1.46 Coalition Senators will not support these Bills because they may restrict government agencies from supporting critical projects based on their emissions profile.
- 1.47 Coalition Senators cannot and will not support Government Bills when affected agencies cannot explain how the legislation will impact their decision making.
- 1.48 Coalition Senators believe these Bills could undermine our national security objectives, our competitive advantages, job creation, infrastructure investment and exporting opportunities.

Regional Communities

- 1.49 These Bills will disproportionately impact regional communities which rely on energy intensive industries.
- 1.50 The Government has failed to ensure regional communities are not adversely impacted by these Bills.
- 1.51 Coalition Senators cannot support these Bills given they offer no safeguards for those most vulnerable to the impacts of their implementation
- 1.52 The Department of Climate Change, Energy, Environment and Water has admitted it has not undertaken any modelling on how these Bills will impact regional and rural Australia.¹³
- 1.53 The Department of Agriculture, Fisheries and Forestry also admitted that it has not undertaken any modelling of the impact of these Bills on rural and regional Australia.¹⁴

¹¹ Mr Adam Copp, Acting CEO, Infrastructure Australia, *Committee Hansard*, 19 August 2022, p. 47.

¹² Mr Adam Copp, Acting CEO, Infrastructure Australia, *Committee Hansard*, 19 August 2022, p. 47.

¹³ Ms Jo Evans, Acting Secretary, Department of Climate Change, Energy, the Environment and Water, *Committee Hansard*, 19 August 2022, p. 54.

¹⁴ Ms Emma Campbell, Acting Deputy Secretary, Department of Agriculture, Fisheries and Forestry, *Committee Hansard*, 19 August 2022, p. 54.

- 1.54 Coalition Senators note that these Bills will work in concert with the Government's plan to protect 30 per cent of land by 2030, having a disproportionate impact on regional communities.¹⁵
- 1.55 Coalition Senators are concerned that the agricultural industry will be subject to severe externalities from both these measures.
- 1.56 The Committee heard testimony that farmers are already troubled by the land already locked up by governments.¹⁶
- 1.57 The National Farmers Federation told the Committee that: 'Farmers are really concerned that there must be adequate resources to properly manage these areas that are going to be used for public land.'¹⁷
- 1.58 Coalition Senators are concerned that legislating an emissions reductions target in concert with the Government's '30 by 30' target will only make matters worse for regional areas.
- 1.59 Coalition Senators believe that the Government is taking various actions which will disproportionately affect rural and regional areas without any simultaneous action to remedy the impact.
- 1.60 Other nations around the world have sought to minimise the externalities caused by emissions reductions strategies and environmental policies.
- 1.61 The EU for example provides generous support to regional communities affected by such legislation through their Just Transition Fund.¹⁸
- 1.62 Stakeholders such as the Australian Council of Trade Unions also raised this issue at Committee hearings, arguing that the remit of the Bills was 'narrow' and stated there was 'an opportunity to embed a principle around just transition in this bill'.¹⁹
- 1.63 Coalition Senators believe that removing the Productivity Commissions 5-year review into the socio-economic impacts of our nationally determined contribution will also disproportionately affect rural and regional communities.

¹⁵ Minister for the Environment and Water, Address to the National Press Club, 19 July 2022.

¹⁶ Mr Angus Atkinson, Chair, National Farmers Federation, *Committee Hansard*, 18 August 2022, p. 20.

¹⁷ Mr Angus Atkinson, Chair, National Farmers Federation, *Committee Hansard*, 18 August 2022, p. 20.

¹⁸ European Union, Fact Sheet, Just Transition Fund: europarl.europa.eu/factsheets/en/sheet/214/just-transition-fund. (accessed 31 August 2022).

¹⁹ Mr Ben Moxham, Legal and Policy Director, Australian Council of Trade Unions, *Committee Hansard*, 18 August 2022, p. 39.

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- 1.64 The Government is seeking to silence concerns surrounding the social impacts of emissions reductions targets on communities.
- 1.65 Coalition Senators believe this is a deliberate attempt on the part of the Government to hide from criticism and remove the ability of many people living in rural and regional areas to have their voices heard on how these Bills may negatively impact their lives.
- 1.66 Coalition Senators, as representatives of many regional and rural areas, will not support legislation which could increase the disproportionate impact on those communities, with no safeguards or regular insight into the socio-economic impact.

Policy Basis of the 43 per cent Target

- 1.67 The Government's target of 43 per cent includes a plan to have 82 per cent renewables by 2030.
- 1.68 The Committee received evidence that this plan would lead to an increase in power bills.²⁰
- 1.69 Furthermore, the variability of renewables cannot be firmed by current battery storage technology. The Committee heard evidence that current battery technology could power a city the size of Sydney for 'seconds' if the grid failed.²¹
- 1.70 One of the policy foundations for the target is the Government's commitment of 82 per cent renewables by 2030.
- 1.71 Coalition Senators have read evidence which casts serious doubt on the Labor Government's ability to deliver on its commitment to 82 per cent renewables by 2030.
- 1.72 Nuclear for Climate Australia stated that from their reading of the Climate Change (Consequential Amendments) Bill 2022, 'it's intended that emissions reductions in electricity generation throughout all sectors of the economy be achieved using renewables with storage. In view of the embodied carbon emissions in wind, solar and storage devices it is physically impossible to achieve net zero using these devices. Their constant replacement, weather dependency and lack of reliability will render methods of negative emissions such as carbon sequestration or atmospheric removal entirely uneconomic.'²²
- 1.73 Coalition Senators are concerned that a key pillar of this legislation's end goal is not achievable under the Labor Government's current plan.

²⁰ The Hon Anthony Albanese MP, Address to the National Press Club, 18 May 2022

²¹ Mr Robert Parker, Founder, Nuclear for Climate Australia, *Committee Hansard*, 19 August 2022, p. 19.

²² Nuclear for Climate Australia, *Submission 11*, 19 August 2022, p. 2.

The Economic Cost of Higher Power Bills

- 1.74 When residential electricity prices increase, those most impacted are Australians in lower socio-economic groupings.
- 1.75 For Australians under constant cost-of-living pressures, any rise in power bills will have a detrimental impact on their lives.
- 1.76 This legislation fails to address the economic cost of rising power bills.
- 1.77 Coalition Senators believe a primary responsibility of energy policy is to ensure people can keep the lights on and, further, can afford to keep the lights on.
- 1.78 Coalition Senators will not support legislation which fails to give consideration to the economic impact of altering our national energy policy.

Nuclear Energy

- 1.79 The Government plans to deliver a 43 per cent reduction in emissions by 2030, by achieving 82 per cent renewables in the grid.
- 1.80 Given the Government's focus on reducing emissions, Coalition members believe its refusal to engage in a conversation on the prospects for nuclear power is ideological.
- 1.81 The Committee heard evidence that nuclear energy is cheaper at a system levelized cost than renewables.²³
- 1.82 The Committee received evidence that nuclear energy has lower life cycle emissions than renewables.²⁴
- 1.83 Coalition Senators urge the Government to have a mature conversation on the viability of nuclear power in Australia.

Recommendation

Recommendation 1

- 1.84 The Climate Change Bill 2022 and the Climate Change (Consequential Amendments) Bill 2022 should not be passed.**

²³ Mr Robert Parker, Founder, Nuclear for Climate Australia, *Committee Hansard*, 19 August 2022, p. 17.

²⁴ Nuclear for Climate Australia, *Submission 11*, 19 August 2022, p. 2.

Senator Hollie Hughes
Member

Senator Ross Cadell
Member

Senator the Hon Bridget McKenzie
Participating Member

The Nationals' Dissenting Report

- 1.1 The Nationals Senators disagree with the majority report and support the Coalition Senators' dissenting report.
- 1.2 The Nationals welcome evidence to the Inquiry that finally recognise that action on climate change will disproportionately impact certain groups, industries, and regions. It is also now widely recognised that the vast majority of existing and new industries as a result of this bill will occur in the regions.¹
- 1.3 The Nationals policy of Net Zero by 2050 was predicated on strong caveats. These include protecting our natural environment, but also ensuring that regional jobs, regional communities, and regional industries could both seize the opportunities and be supported to overcome the challenges that a path to Net Zero would bring.
- 1.4 The Nationals have sought to bring a pragmatic approach to the debate which focuses on impact not ideology.
- 1.5 To this end we were able to secure more than \$20 billion of investment in regional Australia as the first down payment on path to net zero.
- 1.6 The Nationals have also ensured that future governments would be required to independently assess the impact of climate change action on regional Australia and be able to pause ambition if required via Australia's Nationally Determined Contributions (NDC) as required by the Paris Agreement. The Nationals note that one of the first actions of the Albanese Government was to remove this safeguard.

Regional impacts and inequality

- 1.7 The Nationals believe in practical action to address the impacts of climate change and a 'no person and no place left behind' approach be maintained.
- 1.8 The Nationals believe that the legislation fails to address the cumulative impacts of transitioning too quickly and the risks that this could cause serious impairments to our food supply, cost of living, energy security and the viability of some of our regional economies.
- 1.9 The Nationals believe a sensible approach to net zero should be through investing in technology, infrastructure, manufacturing and world leading management practices which will help industries innovate, diversify and grow.

¹ Institute of Public Affairs, Answers to written questions on notice, 19 August 2022, (received 23 August 2022), pp. 1-2.

- 1.10 Regional communities must be encouraged and supported by government to continue to grow and build resilience as our economy could undergo the largest transformation since the United Kingdom joined the European Economic Community.
- 1.11 The Nationals believe that decarbonising the economy must be consistent with our national values of freedom, respect, fairness, and equality of opportunity.
- 1.12 We believe the Australian Government cannot guarantee, through a leap of faith alone, that the promise of carbon neutral jobs from new industries, energy projects and technology will be compensation enough for the inevitable job losses in key parts of Australia.
- 1.13 In a technical paper for the UN Framework Convention on Climate Change, which is convened on behalf of the Conference of the Parties (COP), the responsibilities of Governments embarking on decarbonising their economy was clear:

A global transition towards a low-carbon and sustainable economy has both positive and negative impacts on employment...Policymakers must smooth the edges of this transformation by developing just transition policies for affected workers and their communities.²

- 1.14 But this is not enough. Many of the more militant submitters were calling for a rapid closure of coal and gas projects, calling on the Government to refuse to approve any new projects. Our party sees a strong future for the mining industry. And the Nationals will not countenance any proposed transition support being merely welfare for coal and gas industry workers.
- 1.15 The committee received evidence from the Institute of Public Affairs (IPA) that this legislation will have significant economic and social consequences. Research by the IPA has identified that to reach the new legislated goals at a minimum:

All 89 coal, gas, and oil projects currently in the construction pipeline must be cancelled. This will come at the cost of at least \$274 billion across Australia, which is the equivalent to approximately 14 per cent of Australia's annual GDP. Resulting in the cancellation of approximately 480,000 jobs which would have otherwise been created by those 89 projects.³

- 1.16 The committee also was presented evidence from the IPA that:

...a typical worker in regional Australia is over three times more likely to have their jobs put at risk by the policy of net zero emissions by 2050 than a typical worker in the inner city. This is because workers in regional areas

² United Nations Framework Convention on Climate Change, *Just Transition of the Workforce, and the Creation of Decent Work and Quality Jobs – Technical Paper*, p. 16, unfccc.int/sites/default/files/resource/Just%20transition.pdf (accessed 31 August 2022).

³ Institute of Public Affairs, Answers to written questions on notice No. 27, p. 1.

are far more likely to work in industries, such as coal mining, heavy industry, and agriculture...⁴

- 1.17 In 2021, the European Union announced the 'European Green Deal' package of more than €500 billion to provide tangible investments to deliver sustainable social outcomes as member states transition their economies.⁵ Given the uniqueness of our economy and that our national economic well-being is currently heavily dependent on mining, a similar package for Australia should be commensurate.
- 1.18 Neither the Bills nor the Government, to date, have acknowledged the necessity for financial assistance as has been proposed by the EU or the UN. The committee was not furnished with any evidence, either submission or testimony, that the government has any intention of a similar package being developed or considered.
- 1.19 While Europe has led the way on global efforts to decarbonise its economy, its member countries have also been confronted with, and subsequently been forced to deal with, unexpected geopolitical, economic, and, indeed, climate realities that have resulted in member countries pausing their ambitions. Individual EU member countries have recognised that protecting their own citizens must come first to ensure adequate supplies of heating, and reliable, affordable baseload power to sustain their national industries.
- 1.20 The Nationals maintain a firm commitment to reliable and affordable power generation as the foundation of our national economic and social well-being.
- 1.21 The Nationals also maintain that protecting the livelihoods of Australians must come first and that a responsible national government must have the option of being able to pause its climate ambitions in response to geopolitical, economic and social impacts.
- 1.22 The Nationals recommend the establishment of a Regional Socio-economic Impact Assessment mechanism by legislation, to monitor and review the impacts on regional Australia, its communities and industries, of Australia's Nationally Determined Contributions under the Paris Agreement. It could include local socio-economic indicators such as gross regional product; regional economic output; regional employment, wages and salaries, regional electricity and energy pricing; regional population and other factors deemed relevant.
- 1.23 The assessment (undertaken by a body such as the Productivity Commission, reportable to a Minister and tabled in the Parliament within specified time frames) would occur every five years ahead of but in line with the review and

⁴ Institute of Public Affairs, Answers to written questions on notice No. 27, pp. 1-2.

⁵ European Commission, 'Statement by President von der Leyen on delivering the European Green Deal', *Speech*, 14 July 2021.

updating of Australia's Nationally Determined Contributions (NDC) as required by the Paris Agreement. It would mandate an Economic Cost Threshold which, if breached, would permit Australia to pause its climate action.

1.24 The Nationals consider that legislating a 43 per cent reduction in CO₂ emissions by 2030 without a complimentary package of financial support for affected communities and carbon intensive industries, particularly in rural and regional Australia, presents a clear and present danger to the welfare of our communities.

1.25 The Nationals believe a guaranteed investment package on similar lines should be developed leveraging opportunities generated from the global focus on technological advancements to decarbonise economies. To this end The Nationals successfully delivered a first tranche package for more than \$20 billion for regional Australia to develop new areas, new industries and to diversify impacted regions.

1.26 Several witnesses to the inquiry outlined that an independent regional authority was a priority. Ms Westacott from the Business Council of Australia said:

The second and really crucial point that came out of those presentations across the world was the importance of having the new system in place before you dismantle the existing system—that was one very key learning out of many countries who've done this transition—and the importance of regional focus and, to Tim's point, the importance of very clear early action across all fronts—skills et cetera—to make sure that regions transition effectively.⁶

1.27 The Business Council of Australia has recommended a dedicated transition authority that specifically looks at regions and looks at certain industries and does particular modelling of local impacts and opportunities.⁷

1.28 Mr Tony Wood from the Grattan Institute added:

The work that we've looked at in terms of the way some of this will play out in Australia is that a lot of the physical activity will occur in Australia's regions—and that applies both to the likely loss of jobs coming from the phasing out of fossil fuel over the next 20 or 30 years, but also to the opportunity that could come from the industries that could be established in those same regional areas, depending upon how we play our comparative advantage in this country. For us that suggests two things:

⁶ Ms Jennifer Westacott, Chief Executive, Business Council of Australia, *Committee Hansard*, 18 August 2022, p. 32.

⁷ Ms Jennifer Westacott, Chief Executive, Business Council of Australia, *Committee Hansard*, 18 August 2022, p. 32.

firstly, it still does require leadership from the Commonwealth and, secondly, there is a very strong role for regional transition authorities.⁸

1.29 Similarly, Mr David Cross, Chief Executive Officer of the Blueprint institute stated:

Something that Blueprint in particular would like to see is the establishment of coal adaptation authorities in the regions, staffed by people from those regions. In particular, the function of these adaptation authorities would be to develop the adaptation plans as we phase gracefully away from coal.⁹

1.30 The Nationals believe there is widespread community and industry support to establish a regional transition authority, or several, to address specific regional communities and economies.

Contribution to the world's emissions reduction

1.31 Mr Rundell from the Australian Workers Union told the committee that:

For example, there has been some discussion and debate around including the Environmental Protection and Biodiversity Conservation Act, which would run a risk of what is essentially a short-sighted rejection of fossil fuel projects at the federal government level, without recognising the way that Australia's gas can aid decarbonisation globally.¹⁰

Resource shortfall

1.32 There was significant evidence that although Australia hosts an abundance of minerals and metals essential for producing the equipment and technologies needed for the transition not enough is being done to harness them. The Australian Workers' Union gave evidence that:

By 2030, globally, we need to increase lithium production fourfold, double rare earth element output, deliver a 67 per cent increase in nickel and produce 32 per cent more copper.¹¹

1.33 The work and materials needed to construct a transmission network able to deal with the Government's stated aim of 82% renewables by 2030 is under real threat of failure because of this resource shortfall. If the government is not able to deliver this aspect of their plan, it means that they will have to achieve the legislated goal by cutting other emissions and industries.

⁸ Mr Tony Wood, Energy Program Director, Grattan Institute, *Committee Hansard*, 18 August 2022, p. 45.

⁹ Mr David Cross, Chief Executive Officer, Blueprint Institute, *Committee Hansard*, 18 August 2022, p. 45.

¹⁰ Mr Taylor Rundell, National Economist, Australian Workers' Union, *Committee Hansard*, 18 August 2022, p. 40.

¹¹ Ms Tania Constable, Chief Executive Officer, Minerals Council of Australia, *Committee Hansard*, 19 August 2022, p. 33.

1.34 Over the last two decades we have been told that we must listen to the experts and transition to Net Zero, listening to the experts over the two days of hearings we heard, for example, the evidence of the Australian Industry Group that:

To achieve the net zero transition, we are going to need to build a lot of big things and many distributed small things around the country: major new mines for lithium, for rare earths and for a range of other inputs.¹²

1.35 Which is not an issue given the evidence of Professor Matthew England that:

We've got an abundance of lithium and silicate and copper.¹³

1.36 Our new Net Zero economy relies upon increased rooftop / farmed solar projects and electric vehicles coming these elements require rare earth minerals sooner rather than later, however the problem was highlighted in evidence from the Minerals Council of Australia:

In terms of what is being suggested, we will need a lot more copper investment to occur, and nickel and cobalt to occur.¹⁴

I don't think we're on the right trajectory with things like copper; we're not exploring enough and not finding enough of the new mines of the future.¹⁵

1.37 So, if we are to transition to Net Zero we need to increase mining of rare minerals this will also assist in growing our economy and offsetting potential job losses. The Business Council of Australia gave evidence that:

We see mining as an incredibly important part of the Australian economy going forward—in fact, probably playing a bigger role than what it does today.¹⁶

Farming and land use

1.38 Significant concern was held for the use of offsets on productive land and the management of those lands.

1.39 Mr Ragg from the National Farmers Federation said that:

...where it does concern us is that the enhanced ambition may create a greater demand for offsets, and this will create a tension on the use of agricultural land for offsets-only projects. We prefer an integrated

¹² Mr Tennant Reed, Principal National Adviser, Public Policy, Australian Industry Group, *Committee Hansard*, 18 August 2022, p. 33.

¹³ Professor Matthew England, Scientia Professor of Ocean and Climate Dynamics, UNSW Climate Change Research Centre, *Committee Hansard*, 19 August 2022, p. 2.

¹⁴ Ms Tania Constable, Chief Executive Officer, Minerals Council of Australia, *Committee Hansard*, 19 August 2022, p. 37.

¹⁵ Mr Dan Zavattiero, General Manager, Minerals Council of Australia, *Committee Hansard*, 19 August 2022, p. 37.

¹⁶ Mr Tim Reed, President, Business Council of Australia, *Committee Hansard*, 18 August 2022, p. 33.

approach, to maintain productive capacity that also recognises multiple-use landscapes...¹⁷

1.40 Mr Atkinson from the National Farmers Federation gave evidence that:

...in the last month, I have poisoned and shot and trapped over 150 pigs on my farm and next door, which is a public estate. They have done zero. Farmers are really concerned that there must be adequate resources to properly manage these areas that are going to be used for public land. So it's a really big issue for myself and a lot of farmers...¹⁸

1.41 The Nationals also believe that increasing the productive timber estate is essential for decarbonisation and future use needs.

1.42 The Australian Forest Products Association submission recommends that:

Government, including through the Climate Change Authority, acknowledge the benefits of additional production forestry plantations and to prioritise implementation of the One Billion Trees plan as a way to enhance livelihoods in regional communities while also generating substantial benefits for the Australian environment and economy.¹⁹

1.43 Nationals Senators remain concerned that the government or any company purchasing or leasing land for offsets are not compelled to adequately maintain their land to allow best practice pest and weed control.

Recommendation 1

1.44 That the Senate does not pass the bills.

Recommendation 2

1.45 That an independent assessment (undertaken by a body such as the Productivity Commission) be tasked with performing a Regional Socio-Economic Impact Assessment every five years ahead of but in line with the review and updating of Australia's Nationally Determined Contribution (NDC) as required by the Paris Agreement.

1.46 Specifically, this independent assessment, reportable to Parliament, would mandate an Economic Cost threshold or similar, which would enable Australia to pause its climate ambition in the wake of unintended economic and other events.

¹⁷ Mr Warwick Ragg, General Manager Natural Resource Management, National Farmers' Federation, *Committee Hansard*, 18 August 2022, p. 18.

¹⁸ Mr Angus Atkinson, Chair, Sustainable Development and Climate Change Committee, National Farmers' Federation, *Committee Hansard*, 18 August 2022, p. 20.

¹⁹ Australian Forest Products Association, *Submission 60*, p. 7.

Recommendation 3

1.47 That the Australian Government commit to ongoing funding, in line or in excess of the first tranche of more than \$20 billion provided for by the Coalition Government in its March 2022 Budget, for regional Australia to enable regions to seize the opportunities for growth and overcome the challenges that its legislated target will bring.

Recommendation 4

1.48 That Australia pursues improved and more transparent emissions accounting methodologies that better recognise the contribution Australian exports such as fuel and food make to global emission reduction.

**Senator Ross Cadell
Member
The Nationals Whip in the Senate**

**Senator the Hon Bridget McKenzie
Participating member
Leader of The Nationals in the Senate**

**Senator Perin Davey
Participating member
Deputy Leader of The Nationals Party**

Australian Greens' Additional comments

Recommendation 1

- 1.1 **To prevent a runaway climate breakdown, no new coal, oil and gas projects can proceed and a climate trigger should be legislated by the Parliament.**
- 1.2 In the short 27 days between the passage of the Climate Change Bill 2022 through the House of Representatives, and the reporting of this bill by the Senate:
 - (a) The Federal Minister for Resources, the Hon Madeleine King MP, released 10 new oil and gas leases covering 46 758 square kilometres of our oceans to be exploited.¹ She subsequently deflected global warming concerns by saying 'It's the bubbles in your soda water or out of your SodaStream, so you know, we've got to keep it in balance, how we think about carbon dioxide'.²
 - (b) The Federal Minister for the Environment, the Hon Tania Plibersek MP, refused to halt the development of a gas-powered fertiliser plant in the Burrup Peninsula, which itself is a sacred place. This project will cause chemical reactions to erode the adjacent rock art created by Murujuga ancestors 40 000 years ago.
 - (c) The Queensland Labor government gave environmental approval to the Acland thermal coal mine on prime agricultural land;³
 - (d) Australia's biggest resources company, BHP, which has claimed it is committed to net zero filed an application for a new coal mine expansion that will operate until the year 2113.⁴
- 1.3 The modelling by Reputex of the Labor party's policies that will lead to the 43 per cent reduction enshrined in this bill did not factor in any new coal or

¹ The Hon Madeleine King MP, Minister for Resources and Northern Australia, 'Speech to NT Resources Week Conference', *Speech*, 24 August 2022, minister.industry.gov.au/ministers/king/speeches/speech-nt-resources-week-conference (accessed 31 August 2022).

² Nick O'Malley, 'Australia risks mangling the brake and accelerator on climate', *The Sydney Morning Herald*, 28 August 2022, [smh.com.au/environment/climate-change/australia-risks-mangling-the-brake-and-accelerator-on-climate-20220826-p5bcy6.html](https://www.smh.com.au/environment/climate-change/australia-risks-mangling-the-brake-and-accelerator-on-climate-20220826-p5bcy6.html) (accessed 31 August 2022).

³ Joe Hinchliffe, 'Queensland resources minister approves expansion of New Acland coalmine', *The Guardian*, 26 August 2022, [theguardian.com/australia-news/2022/aug/26/queensland-resources-minister-approves-expansion-of-new-acland-coalmine](https://www.theguardian.com/australia-news/2022/aug/26/queensland-resources-minister-approves-expansion-of-new-acland-coalmine) (accessed 31 August 2022).

⁴ Peter Ker, 'BHP asks to mine Queensland coal for 90 years', *Financial Review*, 11 August 2022, [afr.com/companies/mining/bhp-asks-to-mine-queensland-coal-for-90-years-20220811-p5b93p](https://www.afr.com/companies/mining/bhp-asks-to-mine-queensland-coal-for-90-years-20220811-p5b93p) (accessed 31 August 2022).

gas developments.⁵ Furthermore as evidence provided to the committee by the Department of Climate Change, the Energy, Environment and Water, they have not attempted to remodel or verify RepuTex's modelling.

Senator HANSON-YOUNG: Of course, we know the 43 per cent target was arrived at through the consulting firm RepuTex when Labor were in opposition rather than in government. I'm interested in what work your department is doing. Has it been replicated? Has it been stress tested? Has it simply been taken from an opposition party and then implemented in government?

Ms Evans: For the purposes of this bill, the case of that modelling was completed by RepuTex while the government were in opposition. That's the modelling that has been used for the basis of this target.

Senator HANSON-YOUNG: Is there any plan for the department, under the guise of being the government department, to remodel or work out how we're going to get to 43 per cent?

Ms Evans: ...That capacity building effort is already underway, and we will certainly be very closely working with the Treasury to enable that modelling effort to be brought to bear in the future.⁶

1.4 In the absence of any existing Departmental modelling of the Labor party's election promises showing the impact of new coal and gas projects proceeding, the achievement of the 43 per cent target legislated by this Bill will be undone by any one of the 114 new coal or gas developments currently in the major projects pipeline managed by the Department of Resources.⁷

1.5 Expert evidence provided to the committee on notice Professor Nerilie Abram, Professor of Climate Science at the Australian National University, explained just how significant these unaccounted emissions would be to achieve any kind of emissions goals:

Extractions of gas from a new Beetaloo sub-basin shale gas field would result in annual emissions that equate to a 6.3% to 11.3% increase on Australia's 2020 greenhouse gas emissions of 499 million tonnes CO₂-equivalent.⁸

⁵ RepuTex Energy, *The economic impact of the ALP's Powering Australia Plan: Summary of modelling results*, December 2021, December 2021, p. 32, reputex.com/wp-content/uploads/2021/12/REPLETEX_The-economic-impact-of-the-ALPs-Powering-Australia-Plan_Summary-Report-1221-2.pdf (accessed 31 August 2022).

⁶ Ms Jo Evans, Acting Secretary, Department of Climate Change, Energy, the Environment and Water, *Committee Hansard*, 19 August 2022, pp. 52–53.

⁷ Department of Industry, Science and Resources, *Resources and Energy Major Projects: 2021*, December 2021, industry.gov.au/data-and-publications/resources-and-energy-major-projects-2021 (accessed 31 August 2022).

⁸ Professor Nerilie Abram, answer to question on notice, 18 August 2022 (received 19 August 2022), p. 22.

- 1.6 Allowing the Northern Territory's Beetaloo gas basin to be opened up would require an implausible number of emissions offsets and push further requirements onto other parts of the economy.
- 1.7 The International Energy Agency made it clear that to reach 1.5 degrees of warming, or even the government's own target of net zero by 2050, not one coal, oil or gas project can proceed.⁹
- 1.8 To ensure new emissions intensive projects do not blow Australia's remaining and rapidly diminishing carbon budget, a climate trigger should be placed on all projects in development so that the Environment Minister can assess such projects against the government's emissions targets and rapidly diminishing carbon budget that the current target will lead to.

Recommendation 2

- 1.9 **Before the next global climate summit, the Australian Government should lift national targets to 75 per cent by 2030 and net zero by 2035 to align with 1.5 degrees of warming.**

Recommendation 3

- 1.10 **The Australian Government should sign up to the Global Methane Pledge and join the Powering Past Coal Alliance before the next global climate summit.**
- 1.11 The government's targets are based on political science, not climate science. The 43 per cent reduction target has us on track for a world of more than 2 degrees of warming and these targets are not compliant with the Paris Agreement.¹⁰
- 1.12 The targets enshrined in the bill of 43 per cent reductions below 2005 levels by 2030 and net zero by 2050 are set well above either 1.5 degrees of warming, or even the more extreme and risky 2 degree limit.
- 1.13 Every increased fraction of a degree caused by extracting and burning coal, oil and gas will cause further and compounding damage to every aspect of human and biophysical survival. The horrifying bushfires of 2019-20 and the destructive flooding of 2021-22 happened with just 1.1 degrees of warming.

⁹ Fiona Harvey, 'No new oil, gas or coal development if world is to reach net zero by 2050, says world energy body', *The Guardian*, [theguardian.com/environment/2021/may/18/no-new-investment-in-fossil-fuels-demands-top-energy-economist](https://www.theguardian.com/environment/2021/may/18/no-new-investment-in-fossil-fuels-demands-top-energy-economist) (accessed 31 August 2022).

¹⁰ Jacob Shteyman, 'Greens senator says Labor's 43 per cent target fails to achieve Paris commitment', *Australian Associated Press*, [aap.com.au/factcheck/greens-senator-says-labors-43-pct-target-fails-to-achieve-paris-commitment/](https://www.aap.com.au/factcheck/greens-senator-says-labors-43-pct-target-fails-to-achieve-paris-commitment/) (accessed 31 August 2022).

1.14 As Australia's former Chief Scientist, Professor Penny Sackett, told the committee:

What may seem like a small degree of warming actually has huge consequences for the earth. This is because it takes a tremendous amount of energy to cause a small degree of warming. That energy then feeds back through the earth's systems, which are all connected.¹¹

1.15 Professor Nerilie Abram added:

I would agree with what Penny has said, particularly emphasising that every fraction of a degree of additional warming increases the impacts we will see from climate change.

There are some very good scientific reasons why we would want to limit warming to preferably 1.5 degrees but definitely well below two degrees.

One of the really key factors for those targets we have for limiting to 1.5 degrees is not only extreme events becoming more frequent and more intense but also that, with every fraction of a degree of warming, we increase the chances of passing irreversible tipping points in the climate system.

We may not know exactly where those tipping points lie but there are some of them that have consequences for Australia and our neighbours.

Beyond 1.5 degrees we are at risk of widespread loss of our coral reefs, with more than 90 per cent of those lost, and essentially all the reefs lost as we know them today by two degrees of warming. Between 1.5 and two degrees we also risk irreversible losses of the West Antarctic ice sheet. Beyond two degrees of warming we then start to trigger similar instabilities in East Antarctica as well, and those have consequences for how quickly and how much sea level will rise not only along our coasts but also for some of our Pacific neighbours who are on very low-lying land.¹²

1.16 In the absence of a functional Climate Change Authority for the last decade to update their 2014 Targets and Progress Review, replicating that methodology was left to an independent Climate Targets Panel of eminent scientists who summarised their conclusions in three main points:

1. To be consistent with the Paris Agreement goal of limiting global warming to well below 2°C, Australia's 2030 emissions reduction target must be 50% below 2005 levels. A 2035 target would need to be 67% below 2005 levels. Net-zero emissions would need to be reached by 2045.

2. To be consistent with the Paris Agreement goal of limiting global warming to 1.5°C, Australia's 2030 emissions reduction target must be 74% below 2005 levels, with net-zero emissions reached by 2035.

¹¹ Professor Penny Sackett, Private Capacity, *Committee Hansard*, 18 August 2022, p. 2.

¹² Professor Nerilie Abram, Professor of Climate Science, Australian National University *Committee Hansard*, 18 August 2022, p. 2.

3. A simple 'net-zero emissions by 2050' target for Australia is not sufficient for the Paris Agreement goal of limiting global warming to well below 2°C (nor 1.5°C).¹³

1.17 While we recognise the legislation and the Greens amendments to the bill would ensure that the Climate Change Authority will have reference to these temperature goals with a view to replicate the 2014 Targets and Progress Report, the current targets adopted in the bill do not only sideline science, but they also make the target harder to achieve and compress the time in which the hard work has to be done.

1.18 Again, as Professor Abram advised the committee:

We're currently having an emission reduction target of 43 per cent by 2030. What that does is that it brings those other years forward and increases the ambition [that has to be done later], so we'd have to be at net zero before 2045, and those other targets would move forward as well. So we've spent the carbon faster this decade, and it means that we have to transition faster after 2030.

Those are the numbers for limiting warming to two degrees. That's not 'well below two degrees', which is what's actually stated in the Paris Agreement, and it's not 1.5 degrees. So, if we wanted to be on that trajectory for limiting warming to 1.5 degrees, we'd have to be talking about emission reductions in Australia of around 74 per cent by 2030.¹⁴

1.19 The current 2030 target in the legislation scientifically requires the 2050 net zero target to be brought forward to before 2045, just to reach 2 degrees and all the risks of losing control of climatic chain reactions that involves. This pathway is of course nowhere near stabilising temperatures at 1.5 degrees that the climate science requires to eliminate risk of climatic breakdown.

1.20 To avoid a risky, delayed and disruptive transition, the Australian Greens will move amendments to align the bill with science by requiring a 75 per cent reduction by 2030 and net zero by 2035.

Recommendation 4

1.21 That the 47th Parliament should implement a statutory authority to support coal and gas communities during the transition.

1.22 As Australia slowly moves away from coal and gas, our trading partners-and customers for coal and gas-are doing so at a much greater pace. This direction

¹³ Climate Targets Panel, *Australia's Paris Agreement pathways: Updating the climate change Authority's 2014 emissions reduction targets*, January 2021, p. 6, climatecollege.unimelb.edu.au/files/site1/docs/%5Bmi7%3Aami7uid%5D/ClimateTargetsPanelReport.pdf (accessed 31 August 2022).

¹⁴ Professor Nerilie Abram, Professor of Climate Science, Australian National University, *Committee Hansard*, 18 August 2022, p. 7.

that the global economy is heading in demands that the Parliament and government are preparing and supporting local coal and gas communities to transition and thrive in a net zero world.

- 1.23 This was the main point that Mr Ben Moxham from the Australian Council of Trade Unions made to the committee, which is worth quoting at length:

The 'how' for us is so important—that it's a just transition for working people. Over the past decade, for example, we've had 12 coal-fired power stations close. In most cases those workers have been left with little notice and little support. Our largest coal-fired power station is due to close in three very, very short years, so we urgently need a planned energy transition that supports affected workers and their communities, in particular in regional Australia.

The bill could have played a stronger role in addressing this. Having the Climate Change Authority consider whether or not a just transition is taking place when performing its functions under the bill, along with the work of the other 15 statutory authorities that the bill refers to, would have been very, very helpful, and we do see this as a missed opportunity. But we also acknowledge that this is not a substitute for the national plan we need on a just transition—one that we need urgently.

We need an energy transition authority. I'm very pleased to jump in on the back of the BCA's remarks—they also supported this. This is something that has wide support across community. The authority would be tasked with making sure that workers and their communities affected by closures are given the support they need. Practically, that's redeployment schemes, skills and training and other supports so affected workers can get secure jobs and fair pay and conditions. It's planning and investment to help create new job opportunities in emerging renewable energy industries, especially in those very regions that are undergoing transition and that have powered this country for so long, as the BCA also commented.

But we also need to make sure that these new jobs are secure ones that are fairly paid—that they're genuinely replacing the ones that may be lost. This requires long planning horizons; it involves serious coordination and investment across all levels of government, industry and unions; and it must involve, critically, those local communities and workers, especially in regional Australia.¹⁵

- 1.24 The Greens also acknowledge that the bill could have played a more prominent role in dealing with this crucial issue, however it should not be characterised as a missed opportunity, because the negotiations over this bill enabled the opportunity for this important work to commence.
- 1.25 As part of concluding negotiations on this Bill, the government committed to consider Greens proposals to support coal and gas workers and their communities, including the establishment of a Transition Authority.

¹⁵ Mr Ben Moxham, Legal and Policy Director, Australian Council of Trade Unions, *Committee Hansard*, 18 August 2022, p. 35.

- 1.26 An energy transition authority has strong overlap between the Labor and Greens parties. The Greens took a costed policy to the election that would establish transition authorities and empower local communities.¹⁶ While the Labor party did not take a policy to the election, their policy platform states ‘Labor will establish a statutory authority charged with mitigating the adverse impacts of coal power station closures on regional workforces and communities as a priority’.¹⁷
- 1.27 On 29th August, the Greens announced their intention to introduce legislation to establish an authority to support coal and gas workers and ensure that future climate scare campaigns from the Coalition fall on deaf ears, because communities will know their future is being planned for and their children will have a secure future.¹⁸
- 1.28 This should be a priority area for the government to work with the Greens to legislate in this term of Parliament.

Recommendation 5

1.29 That the *Renewable Energy (Electricity) Act 2000* be amended to ensure that native forests cannot be burned as a ‘renewable’ energy source.

- 1.30 As set out by multiple submissions and witnesses to the Committee, the Climate Change (Consequential Amendments) Bill 2022 which amends the *Renewable Energy (Electricity) Act 2000* presents an opportunity to reverse an Abbott-era change that was opposed by both the Australian Greens and the Australian Labor Party. This change allowed for native forest biomass to be burned as a ‘renewable’ source of energy, and so eligible for power generators using biomass to claim renewable energy certificates for their use.
- 1.31 At the time of debate on reducing the Renewable Energy Target in 2015, the then-Shadow Minister for Infrastructure and Transport, the Hon Anthony Albanese MP, outlined concerns with the proposed classification of native forest biomass as renewable energy in his speech:

They [the Abbott Government] also proposed another last-minute change, which was to insert into the proposal the idea that native wood waste

¹⁶ Australian Greens, *Looking after coal workers: empowering communities to build their own future*, February 2022, greens.org.au/sites/default/files/2022-02/Greens-2022-Policy-Platform--Climate--Coal-Jobs.pdf (accessed 31 August 2022).

¹⁷ Australian Labor Party, *ALP National Platform: As adopted at the 2021 Special Platform Conference*, March 2021, pp. 39–40, alp.org.au/media/2594/2021-alp-national-platform-final-endorsed-platform.pdf (accessed 31 August 2022).

¹⁸ Sarah Martin, ‘Greens push for authority to help coal and gas workers through energy transition’, *The Guardian*, 29 August 2022, theguardian.com/environment/2022/aug/29/greens-push-for-authority-to-help-coal-and-gas-workers-through-energy-transition (accessed 31 August 2022).

should be included in the scheme. We do not support this last-minute thought bubble based upon ideology rather than common sense.

Native wood waste is neither clean nor renewable. The way the government have worded it makes it sound like it would just be the little offcuts which would be burnt, but the fact is that nothing is further from the truth. The definition of native wood waste under their proposal is the whole of any tree that is harvested and not ultimately saw-logged. So, if you cut down a whole lot of trees but decide not to saw-lop them or to saw-lop only some of them, you can still burn the whole tree. That is the proposition before us today, and we are simply not willing to see the renewable energy scheme used to provide an alternative to the hard work being done by all those who have negotiated the Tasmanian forestry agreement, which focuses on employment, value adding and making sure that that resource contributes the maximum benefit to the economy, rather than this opportunistic, last-minute inclusion that the government have attempted.

We believe the renewable energy target is too important, in terms of its practical survival, to not listen to the Clean Energy Council and others in the environmental movement who have urged us to have a pragmatic approach to ensure that the industry can continue, whilst committing to further change to improve the scheme, should we come into government.¹⁹

1.32 Unfortunately, the amendment was not successful and the current regulation remains in place. This regulation financially encourages the chopping and burning of native forests, further decimating at-risk habitats for many threatened and endangered species that are also fighting the pervasive threats caused by global heating.

1.33 As the Australian Conservation Foundation noted:

Forest burning burns the lungs of our land and there is no need for it because Australia has some of the best solar and wind resources in the world. Our renewable energy goals can be more than met by wind and solar, which are genuinely renewable energy sources. Classifying biomass as 'renewable energy' allows it to take assistance from the real renewable energy industry – including new, large-scale wind and solar PV plants, and green hydrogen made via electrolysis – while also harming ecosystems and emitting greenhouse gases as further outlined below.²⁰

1.34 Similarly, Wilderness Australia set out in their submission:

A key threat to the credibility of the government's target is an amendment made by the Abbott government to the Renewable Energy Act 2000 that removed the Gillard government's exclusion of native forest biomass as a source of renewable energy.

The result has been an increasing number of proposals to use native forest biomass as a replacement for coal or use it to co-fire with coal in the name of clean and renewable energy – a claim that fails even the most basic

¹⁹ The Hon Anthony Albanese MP, *House of Representatives Hansard*, 2 June 2015, p. 5431.

²⁰ Australian Conservation Foundation, *Submission 12*, p. 10.

common sense test given that any forest older than 30 years cannot recover from logging before 2050, and that generating energy from native forest biomass results in more GHG emissions per unit of energy than coal.²¹

1.35 Further, the North East Forest Alliance also outlined in their submission:

Creating a market for burning native forests for electricity will increase logging intensity and log removal, and the rapid release of carbon from coarse woody debris that would otherwise be left in the forest to slowly decompose over decades. The Commonwealth must not allow a biomass industry to compound the impacts of export woodchipping ...

We ask that the Commonwealth now amend the Renewable Energy (Electricity) Act 2000, and any other relevant instruments, to prohibit 'wood obtained from native forests' being eligible for Renewable Energy Certificates, particularly large-scale generation certificates (LGCs).²²

1.36 The Wilderness Society also outlined in their evidence to the Committee:

We also, furthermore, believe that a safeguard against native forest biomass being accounted for as renewable energy, that Labor once successfully embedded in law in 2011 and sought to get in 2015, should be brought back.²³

1.37 The Bob Brown Foundation also provided a clear recommendation to the committee:

Restore the ban on biomass energy, generated from burning native forest wood products, being regarded as eligible renewable energy in any Government legislation, including the Renewable Energy (Electricity) Act 2000, and any other regulation or programme as was the case in the Clean Energy Package 2011. Burning wood is more polluting than burning coal. It also drives logging of forests and destruction of biodiversity as well as increasing bushfire risk.²⁴

1.38 A significant number of other submissions raised the issue of biomass burning.²⁵ The Australian Greens thank all those who have provided evidence on this important issue, and have come to the conclusion that there are no technical barriers to preventing the identical amendments moved by the Labor

²¹ Wilderness Australia, *Submission 44*, pp. 1–2.

²² North East Forest Alliance, *Submission 8*, p. 3.

²³ Mr Timothy (Tim) Beshara, Manager, Policy and Strategy, Wilderness Society, *Committee Hansard*, 18 August 2022, p. 9.

²⁴ Bob Brown Foundation, *Submission 53*, pp. 5–6.

²⁵ See the submissions made by: North East Forest Alliance; Redbank Action Group; Australian Religious Response to Climate Change; Environment Council of Central Queensland; Caldera Environment Centre; Australian Rainforest Conservation Society; Friends of the Earth; Australian Forests and Climate Alliance; Doctors for the Environment Australia; Protect the Bush Alliance; Canberra Forest Network; Nature Conservation Council NSW; South East Regional Conservation Alliance; Mackay Conservation Group; Environment East Gippsland; South East Forest Rescue; and the North East Environment Council.

Opposition in 2015 to be adopted by the Senate. This would ensure the *Renewable Energy (Electricity) Act 2000* prevents any executive government again reinserting a regulation that would encourage the destruction of native forests for biomass energy.

Recommendation 6

1.39 Noting the significant changes to the legislation secured by the Greens and subject to the above recommendations, importantly the immediate lifting of Australia's climate targets, the Senate should pass the Climate Change Bills.

1.40 Notwithstanding the above comments, it is the view of the Australian Greens that this bill be supported and the targets lifted to align with science as a first step in repairing the destruction from the last decade of the Coalition government.

1.41 We acknowledge the good faith negotiations that occurred resulting in the Greens and crossbench successfully moving amendments on the floor of the House of Representatives. We also acknowledge the government rewriting their original legislation before its introduction to meet some of the original concerns of the Australian Greens.²⁶

1.42 Importantly, the modified bill ensured that 43 per cent was a legal floor and could go no further backwards. The updated bill also ensured the executive government could not reduce the target that is legislated, and any future executive government is prevented from reducing any target subsequently committed to the United Nations as a nationally determined contribution.

1.43 The important work of the Parliament now commences to write the laws that will stop new coal and gas projects and drive emissions reductions right across the economy so that our national policies are aligned with what the science demands.

1.44 A first, important symbol of increased ambition should be Australia's signing of the Global Methane Pledge which would commit Australia to reduce this potent heat trapping gas by 30 per cent by 2030. This would set the foundations for a higher nationally determined contribution to be set in this term of Parliament.

1.45 There is very little time to waste and so much at stake, which is why our additional comments conclude with the testimony of Professor Penny Sackett:

I note that the laws of physics are non-negotiable. Climate change is devastating and it will get worse, but this legislature can craft tools, including these bills, that will help limit just how much worse. Steep

²⁶ Mike Foley, 'Government to rewrite climate bill to win over Greens', *The Sydney Morning Herald*, 25 July 2022, [smh.com.au/politics/federal/government-to-rewrite-climate-bill-to-win-over-greens-20220725-p5b4fn.html](https://www.smh.com.au/politics/federal/government-to-rewrite-climate-bill-to-win-over-greens-20220725-p5b4fn.html) (accessed 31 August 2022).

greenhouse gas reductions in this decade are the single most important driver of whether global warming can be held to well below two degrees Celsius.²⁷

- 1.46 This legislature can, and must craft the tools we need to limit how much worse the climate crisis will get. The easy part of legislating a target will soon be complete and now the important work of passing the actual laws necessary to achieve far more this decade than the 43 per cent legislated target begins.

Senator Sarah Hanson-Young
Deputy Chair

²⁷ Professor Penny Sackett, *Committee Hansard*, 18 August 2022, p. 1.

Senator Andrew Bragg's Additional comments

Introduction

- 1.1 The economic and environmental imperatives of the need to reduce emissions are clear. Australia must have an active, detailed policy programme to achieve the goal of achieving net zero emissions by 2050, which was set by the Liberal government in 2021.
- 1.2 This particular bill is a genuinely empty piece of legislation that proposes to duplicate Australia's Nationally Determined Contribution (NDC) of 43 per cent by 2030 and net zero at 2050.¹ This bill has been described by the Minister responsible for this legislation as 'not necessary'.²
- 1.3 I have previously indicated that I would carefully examine this bill and the various policy issues associated with emissions reduction as part of this Senate Environment and Communications Legislation Committee inquiry.
- 1.4 The key issues to consider focus on the cost of the transition, how taxpayers can be protected from unnecessary cost, market signals and the role of particular sources of energy.
- 1.5 Ultimately, what matters is the outcome, not the embroidery. In the case of this threadbare bill, the primary issues do not reside in the bill itself. Rather, they are linked to the broader policy environment, with particular reference to the parties of government.
- 1.6 The following sets out the key issues which I expect will be addressed in the policy formulation processes of the parties of government in Australia.

1. How much is the cost of the transition?

- 1.7 The key question is: how much will it cost the nation to get to net zero emissions? We need to know the cost so we can seek the private sector capital required given there are clear public benefits from decarbonisation.
- 1.8 There would be a cost of replacing the existing energy generating assets, for example, but the real question is: what is the marginal investment required across the sectors?
- 1.9 The costs of decarbonisation of energy, transport, industry need to be considered clearly as they are quite separate tasks.
- 1.10 A range of interested parties have prepared estimates of the capital costs. The Business Council of Australia has provided information on notice regarding

¹ *Explanatory Memorandum, Climate Change Bill 2022*, p. 2

² The Hon Chris Bowen MP, Minister for Climate Change and Energy, 'Pass the climate bill to end the energy culture wars', *The Australian Financial Review*, 26 July 2022.

the costs of the major components. This has also been done in part by certain think-tanks.

- 1.11 It is possible that Australia has not thought carefully enough about the costs. This is the view of ANU's Professor Frank Jotzo who says he does not know the exact cost:

To my knowledge, no comprehensive and authoritative estimate for Australia is available. But it must be said that the IEA [International Energy Agency] does not place a particular emphasis on Australia as one country—or, should we say, continent. This actually goes to a broader point of the need to strengthen the capacity and capability in Australia to provide very detailed analysis on the technological and economic aspects of this transition.³

- 1.12 The BCA, in consideration of the capital costs, have referred to Dr Alan Finkel's 2017 estimation of \$890 billion that will be required to be spent 'on power generation, transmission and distribution by 2050 to meet our net zero target.'⁴
- 1.13 They expect that 'other sectors are likely to require similarly large investments.'⁵ Furthermore, they referred to the recent Sydney Energy Forum, which 'reported that globally, annual private investment in 2030 will need to be 8 times the amount invested in 2021 globally. This includes investments needed to scale across all clean energy supply chains, including low-emissions fuels, energy infrastructure, electricity generation and end-uses.'⁶
- 1.14 In response to questions on notice, the Department of Climate Change, Energy, the Environment and Water did not provide a clear answer on the capital cost for Australia's transition, and referred primarily to the Australian Energy Market Operator's (AEMO) figure of \$300 billion required to be spent in the National Electricity Market (NEM) to 2050.⁷
- 1.15 Equally, the Treasury did not provide the answer to the key question on capital cost in the time allocated.
- 1.16 When asked about the costs, the Investor Group on Climate Change (ICGG) noted that 'there has been significant analysis of the employment and economic opportunities associated with a transition to net zero emissions in

³ Professor Frank Jotzo, Head of Energy, Institute for Climate, Energy and Disaster Solutions, Australian National University, *Committee Hansard*, 18 August 2022, p. 6.

⁴ Mr Phillip Coorey, '[Finkel opens door to \\$900bn energy investment](#)'. *Financial Review*, 9 June 2017.

⁵ Business Council of Australia - answer to question taken on notice at public hearing from Senator Bragg, 18 August 2022 (received 30 August 2022).

⁶ Business Council of Australia - answer to question taken on notice at public hearing from Senator Bragg, 18 August 2022 (received 30 August 2022).

⁷ Department of Climate Change, Energy, the Environment and Water - Answers to questions taken on notice at public hearing from Senator Bragg, 19 August 2022 (received 25 August 2022).

Australia but there has been no quantification of the economywide investment opportunities.⁸

- 1.17 However, in 2020 the IGCC quantified 'the value of investment needed in each sector and asset class under an orderly transition to net zero emissions in Australia' over the medium term:

Mapping the multi-billion dollar investment opportunity in the medium term: Investment in renewable and clean electricity production through the period 2020 to 2050 is the sector that will emerge as the largest investment opportunity over all (\$385 billion). After 2030, commercial scale opportunities in green hydrogen production hit scale, leading to substantial investment in this emerging industry. By 2050, green hydrogen is the second largest investment opportunity at nearly \$350 billion. The next largest opportunities to 2050 are transport infrastructure (\$104 billion), carbon sequestration (\$102 billion), and electricity transmission and distribution (\$98 billion).⁹

- 1.18 Much of this capital will need to come from overseas as Australia has rarely had enough capital to fund our investment needs.
- 1.19 The point about all these numbers is that it is an eye watering cost. We need to reduce the cost to the taxpayer. That can be done by acknowledging and addressing the key issues set out in this report, particularly in section 3 below.

2. How do we keep the lights on and keep the costs down?

- 1.20 One of the key issues that concerns many Australians is keeping the lights on at a reasonable price as the nation undertakes this very complex and expensive transition.
- 1.21 We must ensure Australia can keep the lights on and maintain our historical cost advantage on energy supply. It is also important that we maintain fairness in the community to ensure that lower income Australians are able to afford electricity.
- 1.22 The Australian Parliament receives expert advice from AEMO which has published a thorough analysis of how the nation can keep the lights on during this transition.
- 1.23 How should this be done?
- 1.24 In AEMO's 2022 Integrated System Plan, a roadmap is set out for the NEM which details how guided 'investment in low-cost renewable energy, firming resources and essential transmission remains the best strategy to deliver

⁸ Investor Group on Climate Change - Answers to questions taken on notice at public hearing from Senator Bragg, 19 August 2022 (received 30 August 2022), p. 1.

⁹ Investor Group on Climate Change - Answers to questions taken on notice at public hearing from Senator Bragg, 19 August 2022 (received 30 August 2022), p. 1.

affordable and reliable energy, protected against international market shocks.¹⁰

- 1.25 To provide consumers with reliable, secure and affordable energy, the market will need to meet the increased demand through a 'nine-fold increase in utility-scale variable renewable energy (VRE), and a near five-fold increase in distributed solar photovoltaics (PV)', as we move away from coal.¹¹
- 1.26 Further to this, we will need to 'treble the firming capacity from alternative sources to coal', which would include 'utility scale batteries, hydro storage, gas-fired generation and smart behind-the-metre VPPs (virtual power plants)'.¹²
- 1.27 Ten thousand kilometres of new transmission will also be needed to connect this low-cost generation firming with consumers, in a way that is 'low cost and low regrets for consumers'.
- 1.28 As this transition occurs through to 2050, peaking gas-fired generation is needed to add supply durability in the face of potential shortfalls in VRE, storage, distributed energy resources or transmission.
- 1.29 On top of that, this economy-wide transition must occur while the NEM's electricity delivery doubles by 2050 to keep up with consumer and industry demand, and coal-fired generation is phased out at an increasingly faster-rate with 60 per cent of capacity withdrawn by 2030.¹³
- 1.30 To ensure the lights stay on, the enormous investment in these new technologies must be made as soon as possible and without ideological constraints. AMEO's analysis is supported by the work of former Chief Scientist Alan Finkel and the Grattan Institute.¹⁴
- 1.31 It is an incredibly expensive transition and it will rely heavily on the capacity of Australia to capture new domestic and foreign capital.

3. What are the key signals to send the market?

- 1.32 It is clear that the market is looking at two key signals if Australia is to attract the capital required. One, the market wants certainty that the parties of government are committed to emissions reduction.

¹⁰ Australian Energy Market Operator (AEMO), *2022 Integrated System Plan*, p. 3

¹¹ AEMO, *2022 Integrated System Plan*, p. 8.

¹² AEMO, *2022 Integrated System Plan*, p. 8.

¹³ AEMO, *2022 Integrated System Plan*, p. 9.

¹⁴ See AEMO, *Integrated System Plan Consultation*, December 2017, pp. 11–14; and AEMO, *ISP Consumer Panel Report on AEMO's Draft 2022 Integrated System Plan*, February 2022, p. 21 and p. 30.

- 1.33 The Leader of the Opposition, Mr Peter Dutton MP, has made significant statements on the Opposition's 2030 emissions reduction target.
- 1.34 Following statements that the Opposition would drop the 26-28 per cent target for 2030, the Leader of the Opposition said on 11 August 2022 that it is 'likely to come in well north of 35 per cent, maybe 40 per cent plus... We'll have a very credible policy, I can promise you, by the time of the next election...'¹⁵
- 1.35 Noting the Leader of the Opposition's statements, the Business Council of Australia stressed the benefits of bipartisan support to driving investment:
- I think business wants as much bipartisanship as we can achieve. We were very pleased when both political parties came to the net zero target. We were very supportive of that, because that is in fact the first big anchor for business certainty about where we are heading. We were very supportive of both major parties coming to the net zero position, so we would be strongly supportive of a more ambitious Coalition target.¹⁶
- 1.36 The clear statement from the Leader of the Opposition that Australia will maintain a strong commitment to emissions reduction in the next decade will help drive investment.
- 1.37 Two, the market wants policies to achieve emissions reduction. These are the policies which are designed to reduce emissions in energy, transport and industry, for example. Some options for these policies are set out in section 4.
- 1.38 The question of whether to have a target legislated is not one of these two key components. The Minister for Climate Change, the Hon Chris Bowen MP, has himself said that the bill is not required. If the bill is not required then surely it could never be essential to attracting investment.
- 1.39 Minister Bowen said on 26 2022 July that 'this legislation is not necessary for the Albanese government to embark on the policy actions...'.¹⁷
- 1.40 According to an analysis I commissioned through the Parliamentary Library, a minority of G20 nations have legislated targets. In the G20 analysis, just eight of the twenty countries have a legislated target. Twelve of the twenty nations have a policy to support their NDC, not a law.¹⁸
- 1.41 According to the Parliamentary Library, the G20 countries that do not currently have a legislated target are Argentina, Australia, Brazil, China, India, Indonesia, Italy, Mexico, Saudi Arabia, South Africa, Turkey and the United

¹⁵ The Hon Peter Dutton MP, Leader of the Opposition, *ABC 7.30*, 11 August 2022.

¹⁶ Ms Jennifer Westacott AO, CEO, Business Council of Australia, *Committee Hansard*, 18 August 2022, p. 30.

¹⁷ The Hon Chris Bowen MP, Minister for Climate Change and Energy, *The Australian Financial Review*, 26 July 2022.

¹⁸ Energy and Climate Intelligence Unit, *Net Zero Emissions Race 2022 Scorecard*, zerotracker.net/.

States. All but one have either detailed their NDC in policy documents, or via public declarations.

4. Outcomes not embroidery

1.42 Policies to get emissions down are the most important elements of this discussion. There is a strong view from business that this is lacking and more policy is required. New policies could include transmission initiatives and greater emphasis on externality reduction through tax policies.

1.43 One key policy Australia should adopt is a carbon reporting mechanism for companies across all three of the 'emissions scopes'. This would provide the detail investors require to make judgements about the risk profile of companies themselves.

1.44 The ICGG provided testimony on the need for Australia to put in reporting mechanisms for companies that deals with scope 1, 2 and 3 emissions,¹⁹ in-line with the International Sustainability Standards Board (ISSB) global standards:

I think we have the advantage that some of the work is actually being done for us internationally through the International Sustainability Standards Board, which is establishing global standards, which is actually really important for investors because the last thing we want is market fragmentation, with different standards in lots of different countries... The whole point is setting the parameters so business can prepare. At the moment, we're in a situation where there's uncertainty in the market about when it's going to happen.²⁰

1.45 The Financial Services Council called for a principle based mandatory climate disclosure regime to be developed:

We want a mandatory climate disclosure regime, and we've called for that and think that is a priority. But it should be a principle based regime; it shouldn't be overly prescriptive.²¹

1.46 The IGCC has said that as the ISSB global standards are likely to be finalised by the end of 2022 or early next year, Australia should then start a process to implement these standards domestically with a view of completion by 2024/25.²²

¹⁹ Scope 1 emissions are the emissions generated as a direct result of a particular activity. Scope 2 emissions are the indirect emissions of that activity (for example, due to energy consumption), while Scope 3 emissions are the emissions generated in the wider economy (for example, through the use or consumption of goods).

²⁰ Mr Erwin Jackson, Director, Policy, Investor Group on Climate Change, *Committee Hansard*, 19 August 2022, p. 30.

²¹ Mr Spiro Premetis, Executive Director, Policy and Advocacy, Financial Services Council, *Committee Hansard*, 19 August 2022, p. 30.

²² Mr Erwin Jackson, Director, Policy, Investor Group on Climate Change, *Committee Hansard*, 19 August 2022, p. 30.

- 1.47 I asked the Treasury about their view on a possible Australian disclosure regime but did not receive an answer to my question on notice. Australia should look to be a leader in this key area of corporate governance and law as we seek to attract marginal capital.
- 1.48 We should also look to ensure that we have integrity in the carbon credit system.
- 1.49 I note the announcement of an independent review last month into the Australian Carbon Credit Units (ACCUs) to be led by Professor Ian Chubb, which will be completed by the end of this year.²³ The outcome of this review should look at every opportunity to establish a world leading carbon credits governance regime.
- 1.50 This should include looking at cryptography and digital assets, a sector in which Australia has established a leadership position.
- 1.51 In response to a question I asked, the Department of Climate Change, Energy, the Environment and Water has confirmed that the use of digital assets and cryptography in carbon crediting may be considered by the Independent Review. Further, the Clean Energy Regulator is developing an Australian Carbon Exchange which 'will be designed to support emerging markets and technologies such as blockchain and non-fungible tokens.'²⁴
- 1.52 It is critical that the Review looks at all possible technology options when considering Australia's carbon credits accounting scheme.

5. Value of policy certainty

- 1.53 It is essential that the parties of government work to provide the market with the maximum level of policy certainty which promotes investment in Australia.
- 1.54 As a result of recent statements provided by the Leader of the Opposition, it is my view that Australia now has its strongest level of bipartisanship on emissions reduction policy.
- 1.55 The Liberal government delivered the net zero 2050 commitment. This has been matched by the Labor Party as the other party of government.
- 1.56 The only questions are therefore twofold: what targets will apply in the interceding year and which policies will apply to drive emissions down.
- 1.57 Bipartisanship will be crucial to this, and the Opposition Leader stated on 19 June 2022 that with regard to a 2030 target of 43 per cent emissions

²³ The Hon Chris Bowen MP, Minister for Climate and Energy, 'Independent Review of ACCUs', *Media Release*, 1 July 2022.

²⁴ Department of Climate Change, Energy, the Environment and Water, Answer to written question taken on notice from Senator Bragg, 19 August 2022 (received 25 August 2022).

reduction he is 'happy to see it go much higher', and again on 11 August 2022 stated that the Opposition's policy promises to be 'very credible' by the next election, with a view to the investment, research and development needed for the transition.²⁵

1.58 As stated by the Business Council of Australia (BCA) CEO, Ms Jennifer Westacott, bipartisanship 'creates greater certainty and, in addition to that, a stabilisation of the policy framework and the mechanisms by which we get to these targets, which also drives business investment decisions.'

1.59 Further to this, the BCA President, Mr Tim Reed, has welcomed 'the opposition taking a stronger stance on decarbonisation and lifting those targets' and 'to the extent that that can be aligned across the parliament, it will only do good in terms of not only us achieving the decarbonisation goals but us actually securing the economic future of our nation.'²⁶

6. Transition fuels (gas)

1.60 Scientists and global investors have been clear on the need for gas to be available as a transition fuel as coal is dialled down for domestic energy generation.

1.61 The market and the scientists agree on gas. Mr Larry Fink, Chairperson and CEO of investment management giant BlackRock, stated in his letter to the CEOs in January 2022 that 'to ensure continuity of affordable energy supplies during the transition, traditional fossil fuels like natural gas will play an important role both for power generation and heating in certain regions, as well as for the production of hydrogen.'²⁷ He also stated that BlackRock does not pursue divestment from oil and gas companies as a policy.

1.62 In his evidence before the inquiry Professor Frank Jotzo hinted at the transitional role of gas in the short-term. He stated that 'presently, we're using gas, hydro and, to a small extent, battery power to balance electricity supply and demand. In future both the low costs and low-emissions mix of balancing the grid will be predominantly hydro, more and more battery because battery is becoming very cheap—that's where the big cost changes are happening—and probably in my assessment, to a small extent, gas; namely, on very high-demand days'.²⁸

1.63 During the inquiry, the BCA restated their position on gas as an important transition fuel in our energy market going forward:

²⁵ The Hon Peter Dutton MP, Leader of the Opposition, *ABC Insiders*, 19 June 2022.

²⁶ Ms Jennifer Westacott AO & Mr Tim Reed, BCA, *Committee Hansard*, 18 August 2022.

²⁷ Mr Larry Fink, Chairperson & CEO, BlackRock, *2022 Letter to CEOs*, 17 January 2022.

²⁸ Professor Frank Jotzo, Head of Energy, Institute for Climate, Energy and Disaster Solutions, Australian National University, *Committee Hansard*, 18 August 2022, p. 7.

There is sufficient resource available in Australia to do that [to achieve 80% renewables in the NEM by 2030], but we do believe that supply and stability of the electricity system is particularly critical to maintaining community support through this period, and we do believe that gas will be a long-term component of the stability of supply to the domestic market.²⁹

- 1.64 In accounting for the role of gas, the Australian Industry Group noted that 'the advantage that gas has is that it can come in and out of the market as there is a need and a financial opportunity.'³⁰
- 1.65 Accordingly we must ensure that Australia's governments do everything possible to increase gas supply.

7. Nuclear

- 1.66 There is no reason to avoid the use of nuclear power in Australia other than for misguided ideological and political reasons. Australia has the largest deposit of uranium on earth.
- 1.67 If the market is prepared to fund nuclear power plants, most likely small modular reactors, there is no reason that they should not be considered. For example, they could potentially be placed where former coal-fired power stations existed.
- 1.68 The prohibition in law makes no sense as it restrains options the market may wish to adopt.
- 1.69 The *Australian Radiation Protection and Nuclear Safety Act 1998* and the *Environment Protection and Biodiversity Conservation Act 1999* together prohibit nuclear power in Australia.³¹ This legislation was passed in a context wherein fossil fuels were widely used and accepted without much opposition, and when energy was largely affordable.
- 1.70 Prohibition on nuclear power occurred as an ideological luxury, rather than out of serious policy deliberation. We are now in an era of large-scale energy transition, and we're on the clock. We have seen evidence from this inquiry that the transition will require enormous amounts of investment, and we will need to attract as much as possible.
- 1.71 In their testimony to the committee, Australian Industry Group questioned the wisdom of prohibiting nuclear power, and argued that the market should determine their viability:

The Australian Industry Group has no objection to nuclear playing a part in the menu of options for Australia's energy future. It doesn't make a

²⁹ Mr Tim Reed, President, Business Council of Australia, *Committee Hansard*, 18 August 2022, p. 28.

³⁰ Mr Tennant Reed, Director, Climate Change and Energy, Australian Industry Group, *Committee Hansard*, 18 August 2022, p. 32.

³¹ Mr Ian Cronshaw, *Australian electricity options: nuclear*, Parliamentary Library, 20 July 2020, p. 3.

great deal of sense for it to be simply illegal to develop nuclear energy. It does appear that nuclear energy will not be cost competitive in Australia, at least based on technologies that have a track record in the marketplace. But we should be open to technological surprise. There are high hopes for the next generation of small modular reactors. We will see how they perform in the markets where they are being commissioned.³²

- 1.72 As heard in this inquiry, what industry needs is a policy signal that is technology neutral. It seems nonsensical to conclude that nuclear power is financially non-viable if the policy signals, enshrined in legislation, are entirely negative.
- 1.73 Referring to other jurisdictions, the Australian Industry Group clarified that the 'economics are difficult for nuclear, and we have seen existing nuclear plants in the United States and in Europe find it hard to stay in the marketplace without a strong policy signal to keep them there, given the growth of renewables everywhere but in the United States, of cheap gas-fired generation as well in the last decade.'³³

Conclusion

- 1.74 As the Minister has said, this bill is not necessary. What really matters are the policies of the parties of government and the policies to achieve emissions reduction. There is no clear answer from the government on the cost of the transition but it is expected to easily eclipse \$1 trillion.
- 1.75 Given the Leader of the Opposition's commitment to stronger action on emissions reduction and the non-binding nature of this bill, there is no need for this empty bill.

Recommendations

Recommendation 1

- 1.76 The market should be further supported to invest in low and zero emissions energy and transmission infrastructure required to decarbonise.**

Recommendation 2

- 1.77 Australia should be a first mover in legislating an emissions disclosure regime in our corporate law.**

³² Mr Tennant Reed, Director, Climate Change and Energy, Australian Industry Group, *Committee Hansard*, 18 August 2022, p. 31.

³³ Mr Tennant Reed, Director, Climate Change and Energy, Australian Industry Group, *Committee Hansard*, 18 August 2022, p. 31.

Recommendation 3

1.78 Australian governments should support the supply of gas as a transition fuel.

Recommendation 4

1.80 The nuclear energy prohibition should be lifted immediately to enable the market to invest should it wish.

**Senator Andrew Bragg
Participating member**

Senator David Pocock's Additional comments

The need for emissions reduction targets with integrity

- 1.1 I thank the committee for the work it has done in relation to this inquiry. I also thank all those witnesses and submitters for their contributions.
- 1.2 Human influence on the climate system is now an established fact.¹ Australia has warmed by 1.4 degrees Celsius since 1910, more than the global average of 1.1 degrees Celsius.²
- 1.3 The impact of climate change is being felt across the country. The Black Summer bushfires caused \$2.3 billion damage³ and cost Australian agriculture between \$4 and \$5 billion.⁴ The recent flooding in northern NSW and Queensland caused more than \$4.3 billion in damage.⁵ Our health has suffered, with increased deaths caused by heat and smoke inhalation, and declining mental wellbeing associated with a changing climate.⁶ The natural environment is in a state of decline. The most recent *State of the Environment* report is clear that climate change is wrecking ecosystems and destroying Australian biodiversity.⁷
- 1.4 Australia is particularly vulnerable to the impacts of global warming. Temperatures are going to continue to rise, and the impacts of climate change are going to become more pronounced.⁸
- 1.5 The good news is that decisive action will reduce the level and impact of warming. The transition to a clean energy future presents unparalleled opportunities for Australia. Blessed with an abundance of solar, wind and rare

¹ Australian Academy of Science, 'President's statement on the IPCC Working Group III report', *Media release*, 7 April 2022, science.org.au/news-and-events/presidents-statement-ipcc-working-group-iii-report (accessed 30 August 2022).

² ARC Centre of Excellence for Climate Extremes, *Submission 9*, p. 1

³ National Recovery and Resilience Agency, 'Bushfires – Black Summer', knowledge.aidr.org.au/resources/black-summer-bushfires-nsw-2019-20 (accessed 30 August 2022).

⁴ Jamieson Murphy, 'Black Summer bushfire damage to agriculture tallied to \$5 billion', *The Canberra Times*, 5 January 2022.

⁵ Insurance Council of Australia, '2022 flood cost continues to rise', *Media release*, 1 June 2022 insurancecouncil.com.au/resource/2022-flood-cost-continues-to-rise/ (accessed 30 August 2022).

⁶ Beggs, Zhang et al, 'The 2019 report of the MJA-Lancet Countdown on health and climate change: a turbulent year with mixed progress', *Medical Journal of Australia*, vol. 211, no. 11, 2019, pp. 490–491.

⁷ CSIRO and the Bureau of Meteorology, *State of the Climate 2020*, 2020.

⁸ Australian Academy of Science, '[The risks to Australia of a 3°C warmer world](#)', March 2021, p. 7.

earth minerals, we are perfectly situated to become a renewable energy superpower.

- 1.6 The buds of this opportunity are already being seen. Australia leads the world in rooftop solar technology. The electricity supplied to households in my electorate, the Australian Capital Territory, is 100 per cent renewable. A green hydrogen precinct in northwest Australia is showing promise of significant green hydrogen production.
- 1.7 Bold action is needed if Australia is to take full advantage of these incredible opportunities.
- 1.8 Although I advocated for more ambitious emissions reduction targets, I welcome legislation that enshrines Australia's emissions reduction targets. This is best practice and will give much needed certainty to investors looking to provide the large-scale capital required for the clean energy transition.
- 1.9 A national climate law should provide a comprehensive, unifying basis for climate change policy.⁹ The bills should provide a framework for future action on climate.
- 1.10 Regrettably, the bills themselves do not provide an over-arching or comprehensive position on climate policy, other than to set a mid-term and long-term emissions reduction target. The bills fall short on measures of accountability, transparency, fairness, scientific backing, and a proactive frame around policy development.
- 1.11 I therefore provide comments and recommendations on improvements to the bills that would give the emissions reduction targets integrity.

Transparency on the impact of Federal Government Budget measures

- 1.12 The committee's report acknowledges the importance of providing greater transparency around progress towards meeting Australia's emissions reduction targets.¹⁰ Furthermore, the committee's report notes submissions that call for further transparency around the impact of Budget measures and government policies on achieving emissions reduction targets. For example, the Australian Council of Social Service (ACOSS) submitted that policies could be assessed before or after their implementation to measure their effects on achieving emissions reduction targets.¹¹ Similarly, Climate Action Network Australia submitted that carbon impact assessments of Budget measures should describe their impact on greenhouse gas emissions.¹²

⁹ Townshend, Fankhauser et al, '[Climate Legislation Study: A Review of Climate Change Legislation in 33 Countries](#)', 3rd edition, (Globe International, London, 2013).

¹⁰ See Chapter 3, paragraphs 3.7, 3.13, 3.14, 3.49, 3.60, 3.68 and 3.76.

¹¹ Australian Council of Social Service, *Submission 59*, p. 8.

¹² Climate Action Network Australia, *Submission 38*, p. 1.

- 1.13 I support the government's intention to provide greater transparency on progress toward emissions targets, and believe further transparency measures are required. An annual Budget statement detailing the impact of Budget measures on emissions reduction targets would provide further transparency and accountability.
- 1.14 The statement would be released alongside the budget papers and require that the government show how decisions in the budget impact on the emissions reduction targets. Every budget night, as the Treasurer delivers his or her speech, Australians will know whether taxpayer money is being spent in a way that reflects Australia's climate commitments.
- 1.15 The government has committed to reducing the Australian Public Service's greenhouse gas emissions to net zero by 2030,¹³ it would be sensible to start by measuring the impact that budget measures have on emissions.

Recommendation 1

- 1.16 The Climate Change (Consequential Amendments) Bill 2022 (the Consequential Amendments Bill) be amended to create mechanisms in the *Charter of Budget Honesty Act 1998* that provide transparency to the impact that Federal Government Budget measures have on greenhouse gas emissions.**

New or revised NDCs to be automatically reflected in legislation

- 1.17 The committee's report acknowledges evidence that emissions reduction targets proposed in the bills would not automatically be updated when Australia increases its National Determined Contribution (NDC) under the Paris Agreement.¹⁴ ACOSS submitted that this was problematic because the annual climate change statement and the actions of agencies affected by the Consequential Amendments Bill would remain connected to the legislated target.¹⁵ Under the bill as drafted, connecting the annual climate change statement and the actions of agencies to new targets under the Paris agreement would require further legislation.

¹³ Department of Climate Change, Energy, the Environment and Water, 'Powering Australia', energy.gov.au/government-priorities/australias-energy-strategies-and-frameworks/powering-australia (accessed 30 August 2022).

¹⁴ See Chapter 3, paragraph 3.62.

¹⁵ Australian Council of Social Service, *Submission 59*, p. 7.

- 1.18 Several environmental groups called for Australia's NDCs under the Paris Agreement to be reflected in the bills to ensure parliamentary scrutiny and accountability on how targets are being met.¹⁶
- 1.19 Several groups proposed amending the bill so that updating the legislated emissions target could be done by way of a legislative instrument.¹⁷
- 1.20 Providing a regulatory mechanism for updating the legislated target in accordance with new or adjusted NDCs under the Paris Agreement would avoid the potential for separate targets to coexist, facilitate enhanced parliamentary scrutiny, improve accountability, and promote compliance with Australia's international obligations under the Paris Agreement.

Recommendation 2

- 1.21 That the Climate Change Bill 2022 (the bill) be amended such that new or adjusted Nationally Determined Contributions are reflected as emissions reduction targets without the need for further legislative amendment.**

Regular reviews of progress

- 1.22 The committee's report acknowledges that the review process included in the bill would only examine the technical operation of the legislation, and would not investigate the emissions reduction targets, nor progress towards achieving them.
- 1.23 While noting that the annual climate change statement would be required to include some information in this regard,¹⁸ several submissions recommended that the legislation provide for a stronger, more comprehensive process of regular independent review. For example, the National Environmental Law Association submitted that reviews should include examination of Australia's progress against the emissions reduction targets and that reviews should be conducted every two years.¹⁹
- 1.24 These bills provide an important framework for climate policy. Their adequacy in addressing the significant challenge of climate change should be considered earlier and with greater frequency. The climate cannot wait five years to improve this legislation.

¹⁶ See, for example, Australian Religious Response to Climate Change, *Submission 21*, p. 1; Climate Action Network, *Submission 38*, p. 2; Australian Marine Conservation Society, *Submission 41*, p. 2; Peoples Climate Assembly, *Submission 46*, p. 3; Climate and Health Alliance, *Submission 168*, p. 3.

¹⁷ See, for example, Climate Action Network, *Submission 38*, p. 2; Australian Council of Social Service, *Submission 59*, p. 7; Climate and Health Alliance, *Submission 168*, p. 3.

¹⁸ Proposed subsection 12(1), Climate Change Bill 2022.

¹⁹ National Environmental Law Association, *Submission 102*, p. 2.

Recommendation 3

- 1.25 That the bill be reviewed within two years of the legislation coming into effect and at least once every five years subsequent to that review. The reviews should include a consideration of whether the emissions reduction targets set out in section 10 should be more ambitious considering the factors set out in section 15.

The Minister's annual statement

Content of the statement

- 1.26 The bill provides that the Minister must make an annual climate change statement addressing Australia's progress towards its emission reduction targets and other related matters. The Minister's statement is the key mechanism for parliamentary oversight and monitoring of Australia's progress. The committee received a wide range of suggestions to improve the completeness, reliability and utility of the statement.
- 1.27 Several submissions called for the annual climate statement to include an assessment of various risks presented by climate change. The committee's report draws on evidence from academic, environmental and financial submitters proposing that an assessment of key climate risks be incorporated in the statement (see paragraphs 3.44 to 3.46). In addition to this evidence, the Bob Brown Foundation called for the annual climate statement to include proposals for meeting the emissions reduction target and explain how those proposals would affect different sectors of the economy, in a similar way to the *Climate Act 2008 (UK)*.²⁰
- 1.28 Another element that would improve the annual statement is a thorough consideration of transitional issues. As the committee's report notes, one of the underlying principles of the Paris Agreement is a just transition for the workforce (see paragraphs 4.47 to 4.49). A wide range of submitters to the inquiry argued that this should be more fully integrated into the legislative framework, including union groups and the ACTU, the Environmental Defenders Office, ACOSS, the National Environmental Law Association and Ms Zali Steggall MP.²¹
- 1.29 The bill allows the Minister to consider sources of advice other than the Climate Change Authority (CCA) in preparing the annual climate statement. The Law Council of Australia submitted that the annual statement should

²⁰ Bob Brown Foundation, *Submission 53*, p. 2.

²¹ ETU, *Submission 63*; AMWU, *Submission 57*; ACTU, *Submission 37*; ASU *Submission 52*; CFMMEU, *Submission 64*; Environmental Defenders Office, Attachments 2 and 3 to *Submission 3*; Australian Council of Social Service, *Submission 59*; National Environmental Law Association, *Submission 102*; and Zali Steggall MP *Submission 170*.

outline what other sources of advice the Minister had regard to in preparation of the statement.²²

- 1.30 The annual statement on climate change is one of the significant accountability measures in the bill. To be effective, it must consider the impact of climate risk and provide a plan of what the government intends to do to address the risk.

Recommendation 4

- 1.31 Section 12 of the bill be amended so that the Minister's annual statement is required to include the following:**

- **An assessment of the physical, national security risks and transition issues such as job loss and economic inequality created by climate change and the climate trajectory.**
- **A breakdown of how much of the carbon budget has been spent on a sector-by-sector basis, including the electricity generation, industrial, transportation and agricultural sectors.**
- **A projection on how the carbon budget should be divided between sectors over the subsequent 12 months.**
- **Reference to any advice considered by the Minister other than that provided by the Climate Change Authority.**

Accounting for scope 3 emissions

- 1.32 The bill does not specify whether the annual statement should take into account Australia's scope 3 emissions,²³ but a number of submitters argued that doing so is necessary to ensure the statement is an accurate assessment of Australia's progress. Environmental organisations suggested that Australia should take responsibility for its total contribution to climate change, including though exports.²⁴ Those in the financial sector pointed out that improved reporting would increase the availability of quality data.²⁵

- 1.33 Including scope 3 emissions in the annual climate change statement would provide a strong signal that Australia is being transparent about its total contribution to global greenhouse gas emissions.

²² Law Council of Australia, *Submission 58*, p 10.

²³ Scope 3 emissions are those generated indirectly as a result of activity in the wider economy. At a national level, scope 3 emissions are those generated outside Australia.

²⁴ Peoples Climate Assembly, *Submission 46*, p. 3; WWF Australia, *Submission 27*, p. 4.

²⁵ Financial Services Council, *Submission 119*, p. 3.

Recommendation 5

1.34 Section 12 of the bill be amended so that the annual statement addresses scope 3 emissions. A definition of scope 3 emissions should also be included in the bill.

Timing of the annual statement

1.35 The committee's report notes that the Minister must table each financial year's annual climate change statement in February of the following year (see paragraphs 1.29–1.30). While it is important for the Minister to have adequate time to consider the CCA's advice and then prepare the climate change statement, the bill's timeframes could mean that the public release of the statement occurs up to eight months or later after the end of the relevant financial year. As the LCA submission noted in the context of the publication of the CCA advice (see below), transparency is diminished if publication is delayed. For this reason, I believe that the statement should be prepared and published in a more timely manner.

Recommendation 6

1.36 Section 12 of the Climate Change Bill 2022 be amended so that the annual statement must be made prior to 30 November each year.

Advice on the Minister's annual statement

Public consultation

1.37 The bill requires the CCA to provide advice to the Minister on the preparation of the annual statement. This advice is a valuable mechanism to ensure the statement presents a comprehensive and accurate picture based on independent advice.

1.38 The bill enables the CCA to undertake public consultation on its advice. The committee heard that extensive public consultation will not only expand the CCA's evidence base, ensuring it represents the full spectrum of the Australian public,²⁶ it also has the potential to facilitate a substantive and well-informed national dialogue about emissions reduction and climate change.²⁷

1.39 The bill should make clear that public consultation is mandatory.

Recommendation 7

1.40 Subsection 14(3) be amended so that the Climate Change Authority must undertake public consultation.

²⁶ Australian Council of Social Service, *Submission 59*; Wilderness Society, *Submission 65*.

²⁷ See, for example, Professor Frank Jotzo, *Submission 176*.

Timely publication

- 1.41 The bill provides that the CCA must publish its advice to the Minister on its website. The bill was amended in the House of Representatives so that it must also table the advice within 15 sitting days of providing it to the Minister.
- 1.42 As the Law Council of Australia noted, publication of advice is ‘ineffective as a transparency measure unless it is carried out in a timely fashion’.²⁸ The importance of timely publication was echoed by others, including the Australian Academy of Technological Sciences and Engineering, and Professor Penny Sackett, who noted publication should not be ‘constrained by parliamentary sitting dates’.²⁹ A period of 15 sitting days may span weeks or even many months.

Recommendation 8

- 1.43 Paragraph 14(6)(b) be amended to require the Climate Change Authority to table its advice within 15 sitting days of providing it to the Minister or prior to the statement being tabled, whichever is sooner.**

Additional considerations in preparing the advice

- 1.44 The bill enables the CCA to provide advice to the Minister on the development of a new or adjusted Nationally Determined Contribution (NDC). Again, this advice is a valuable mechanism to ensure future emission reduction targets are based on current scientific understanding and reflect relevant environmental, economic and social concerns. In preparing its advice, the CCA is expected to be guided by the principles set out in section 12 of the *Climate Change Authority Act 2011*.³⁰
- 1.45 As noted at paragraph 1.28 above, the concept of a just transition for workers must be fundamental to Australia’s emission reduction. While the bill requires the CCA’s advice to include the ‘social, employment and economic benefits’ of new or adjusted targets, this requirement should be expanded to explicitly address the impacts on a just transition.
- 1.46 Climate change is a global challenge with consequences that do not stop at national borders. A range of submitters highlighted the need for wealthy countries like Australia to take on their ‘fair share’ of emissions reduction.³¹

²⁸ Law Council of Australia, *Submission 58*, p. 10.

²⁹ Australian Academy of Technological Sciences and Engineering, *Submission 18*, p 4; Professor Penny Sackett, *Supplementary Submission 67.1*, p 5.

³⁰ *Explanatory memorandum*, pp 12–13.

³¹ See, for example, Greenpeace Australia Pacific, *Submission 33*; Climate Analytics, *Submission 99*; Professor Penny Sackett, *Submission 67*; Professor Nerilie Abram, answer to question taken on notice; Professor David Karoly, *Submission 167*. See also paragraphs 3.56 to 3.57 of the committee’s report.

Wealthy industrialised nations are responsible for more greenhouse gas emissions per capita and are also better placed to implement emissions reduction programs. Given the inequitable costs and consequences of climate change, it is appropriate for the CCA's advice to consider the broader global fairness of new or adjusted targets.

Recommendation 9

1.47 Subsection 15(1A) of the Climate Change Bill 2022 be amended to require that the Climate Change Authority's advice include the following:

- **The transitional risks and opportunities of any new or adjusted greenhouse gas emissions reduction targets and associated policies.**
- **The global fairness of any new or adjusted greenhouse gas emissions reduction targets and associated policies.**

Transparency regarding other advice considered by the Minister

1.48 The bill allows the Minister to take advice from sources other than the Climate Change Authority when developing a new or adjusted NDC. The Law Council of Australia submitted a recommendation that the bill be amended to require the Minister to provide a clear statement on what other advice has been received, and the extent to which that advice weighed on the Minister's decision.³²

1.49 A change to require the Minister to clearly outline the additional advice received and considered would provide accountability for the grounds for a decision to amend or update Australia's NDC.

Recommendation 10

1.50 Subsection 15(7) of the Climate Change Bill 2022 be amended to require that the statement provided under that section also outline any advice considered by the Minister other than that provided by the Climate Change Authority.

Consequential amendments to Commonwealth legislation and agencies

1.51 Regarding the Consequential Amendments Bill, witnesses and submitters drew the committee's attention to a number of concerns, as set out in the committee's report.

1.52 These concerns particularly related to potential inconsistencies between the emissions reductions targets that would be legislated by the bills, and existing Commonwealth legislation and the activities of agencies that may permit, facilitate or even promote increased greenhouse gas emissions.

³² Law Council of Australia, *Submission 58*, p. 9.

NOPSEMA decision-making

- 1.53 The committee's report notes that the CA bill would not require the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) to factor emissions reduction into its decision-making processes.³³
- 1.54 NOPSEMA is responsible for overseeing the exploration and recovery of petroleum and greenhouse gas storage activities in Commonwealth waters, including carbon capture and storage. Given these responsibilities, it would seem prudent to ensure that NOPSEMA assesses projects in line with Australia's legislated emissions targets, alongside the other frameworks it already uses including the *Environment Protection and Biodiversity Conservation Act 1999*.³⁴

The objectives of the Australian Prudential Regulation Authority

- 1.55 Some submissions noted that the risks of climate change were now a standard consideration in the management and governance of Australia's finance sectors, as well as the regulators overseeing these sectors.³⁵
- 1.56 Noting this trajectory, there is also an opportunity for the CA bill to further embed climate change targets in the oversight of the finance sector, including banking, insurance and superannuation. This could be done by amending the legislation establishing the Australian Prudential Regulation Authority (APRA), which oversees and regulates Australia's finance sector.
- 1.57 APRA is already actively 'raising awareness of climate-related risks' to its stakeholders, but its objectives could be more actively aligned with the emissions targets that would be legislated by the bill.³⁶ APRA is required to exercise its functions and powers by 'balancing the objectives of financial safety and efficiency, competition, contestability and competitive neutrality...to promote financial system stability in Australia'.³⁷
- 1.58 APRA's governing legislation should be amended to note that the objectives of 'financial safety' and 'financial system stability' include the need to promote

³³ See discussion in chapter 4.

³⁴ NOPSEMA, 'Greenhouse gas emissions and climate change', nopsema.gov.au/offshore-industry/environmental-management/greenhouse-gas-emissions-and-climate-change (accessed 30 August 2022).

³⁵ For example: Environmental Defenders Office, *Submission 3*, Attachment 2 (A Roadmap for Climate Reform), p. 32; Professor Philip Laird, *Submission 15*, pp. 2–3; and National Australia Bank, *Submission 54*, p. 2.

³⁶ Australian Prudential Regulation Authority, 'APRA releases guidance on managing the financial risks of climate change', apra.gov.au/news-and-publications/apra-releases-guidance-on-managing-financial-risks-of-climate-change (accessed 30 August 2022).

³⁷ *Australian Prudential Regulation Authority Act 1998*, Section 8(2).

and ensure coherence and alignment with Australia's international climate change law commitments and obligations'.

Removing native forest wood waste as a source of renewable energy

- 1.59 Some stakeholders argued that the burning of native forest wood waste for energy, which is currently recognised as a source of renewable energy under the *Renewable Energy (Electricity) Act 2000* (REE Act), is in direct opposition to the requirements of the bills to reduce emissions.³⁸ It was argued that the use of biomass for energy generation—particularly from native forests was not only highly inefficient, but was also not ecologically sustainable, a source of greenhouse gas emissions and would destroy valuable forest resources that draw down and sequester carbon.
- 1.60 As noted in the committee's report, biomass was not considered as a 'renewable' fuel by the REE Act prior to amendments made by the Abbott Government. Burning native forest biomass will increase emissions in direct contravention of the aims of the bills. It will also put native forests at risk of further logging, which would reduce carbon storage, and result in a further contravention of the aims of the bills. The REE Act should be amended once more to exclude it as a potential energy source.

Amending the Industry Research and Development Act

- 1.61 There is also merit in the proposal discussed in the committee's report, for an amendment to the *Industry Research and Development Act 1986* (IRD Act) to be included in the scope of the CA bills, as proposed in the Australia Institute's submission.³⁹ Programs delivered under the IRD Act framework may not be aligned with the bills, as they have given considerable support to fossil fuel industries, including for refineries, conventional gas, fracking, diesel storage, and carbon capture and storage initiatives.⁴⁰
- 1.62 To prevent ongoing considerable taxpayer support to fossil fuel industries, decisions under the IRD Act must be consistent with Australia's international climate change law commitments and obligations.

Embedding climate science expertise in the Climate Change Authority

- 1.63 Lastly, the CCA will play a key role in implementing the bills, in advising the Minister on the climate change statement, as well as on current and future emissions reduction targets.

³⁸ See, for example: Australian Conservation Foundation, *Submission 12*, pp. 10–11; Wilderness Australia, *Submission 44*, p. 2; and Australian Forests and Climate Alliance, *Submission 72*, pp. 1–3.

³⁹ See discussion in chapter 4.

⁴⁰ The Australia Institute, *Submission 100*, p. 9.

- 1.64 As noted in chapter 3 of the committee's report, a number of submissions highlighted the importance of having climate scientists represented on the Authority.⁴¹ Although Australia's Chief Scientist is an Ex Officio Member, there is currently no requirement for other members to be experts in climate science.
- 1.65 It is essential that the Authority responsible for providing expert advice to the Minister has members that are experts in the field to guide its advice. This will help ensure that any information provided to the Minister is scientifically rigorous, up-to-date and authoritative.
- 1.66 The Authority's founding legislation should be amended to require that at least two of its members have recognised expert experience and knowledge of climate change, and are recognised for this experience and knowledge by the wider community of climate scientists.

Recommendation 11

1.67 That the Climate Change (Consequential Legislation) Bill 2022 amends the following Acts as set out below:

- **the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* should be amended to require that decisions made under that Act are consistent with the emissions reductions targets set out in Section 10 of the Climate Change Bill 2022;**
- **section 8 of the *Australian Prudential Regulation Authority Act 1998* should be amended to note that the reference to financial safety and financial system stability includes a requirement for APRA to ensure coherence and alignment with Australia's international climate change law commitments and obligations;**
- **the *Renewable Energy (Electricity) Act 2000* should be amended to exclude burning biomass from native forests as a source of renewable energy;**
- **the *Industry Research and Development Act 1986* should be amended to require that decisions made under that Act are consistent with Australia's international climate change law commitments and obligations;**
- **the *Climate Change Authority Act 2011* should be amended to require that at least two Authority members have substantial experience or knowledge and significant standing in the field of climate science.**

Senator David Pocock
Participating member

⁴¹ See, for example: Australian Parents for Climate Action, *Submission 10*, pp. 3–4; Dr Nick Abel, *Submission 77*, p. 1; and Professor David Karoly, *Submission 167*, p. 1.

Appendix 1

Submissions and additional information

- 1 Google Australia
- 2 Tamboran Resources
- 3 Environmental Defenders Office
 - Attachment 1
 - Attachment 2
- 4 Dr John Hawkins
- 5 Blue Derby Wild Inc
- 6 Dr Sebastian Cordoba
- 7 Northern Australia Infrastructure Facility
- 8 North East Forest Alliance
- 9 ARC Centre of Excellence for Climate Extremes
- 10 Australian Parents for Climate Action
- 11 Nuclear For Climate Australia
- 12 Australian Conservation Foundation
- 13 ARC Australian Centre for Excellence in Antarctic Science
- 14 Hydro Tasmania
- 15 Dr Philip Laird
- 16 Australian Academy of Science
- 17 Clean Energy Council
- 18 Australian Academy of Technological Sciences and Engineering
- 19 Redbank Action Group
- 20 Dr Anita Foerster and Ms Alice Bleby
 - Attachment 1
- 21 Australian Religious Response to Climate Change (ARRCC)
- 22 Dr Peter Christoff
- 23 The Next Economy
 - Attachment 1
- 24 Wide Bay Burnett Environment Council
 - Attachment 1
 - Attachment 2
- 25 Australian Trucking Association
- 26 Environment Council of Central Queensland
- 27 World Wildlife Fund Australia (WWF)
- 28 Australian Air Quality Group
- 29 Lock the Gate Alliance
- 30 Farmers for Climate Action
- 31 National Farmers' Federation

- 32 Jubilee Australia Research Centre
- 33 Greenpeace Australia Pacific
- 34 Caldera Environment Centre
- 35 North Queensland Conservation Council
- 36 GetUp
 - Attachment 1
- 37 Australian Council of Trade Unions
- 38 Climate Action Network Australia
- 39 Australian Energy Council
- 40 Clean Energy Investor Group
- 41 Australian Marine Conservation Society
- 42 Tomorrow Movement
- 43 Australian Industry Greenhouse Network
- 44 Wilderness Australia
- 45 bp Australia
- 46 Peoples Climate Assembly
- 47 Clean Air Communities
- 48 Forests, Climate and Biomass Working Group of the Environmental Paper Network
- 49 Science & Technology Australia
- 50 Voluntary Carbon Market Association
- 51 EnergyAustralia
- 52 Australian Services Union
- 53 Bob Brown Foundation
- 54 National Australia Bank
 - Attachment 1
- 55 350 Australia
- 56 Institute of Public Affairs
 - Attachment 1
 - Attachment 2
 - Attachment 3
 - Attachment 4
 - Attachment 5
- 57 Australian Manufacturing Workers' Union
 - Attachment 1
- 58 Law Council of Australia
- 59 Australian Council of Social Service (ACOSS)
- 60 Australian Forest Products Association
- 61 Australian Local Government Association
- 62 Clean Energy Regulator
- 63 Electrical Trades Union of Australia
- 64 Construction, Forestry, Maritime, Mining and Energy Union

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- 65 Wilderness Society
 - 66 Australian Rainforest Conservation Society (ARCS)
 - 67 Professor Penny Sackett
 - 67.1 Supplementary to submission 67
 - 68 Copperstring 2.0
 - 69 Tindo Solar
 - 70 Smart Energy Council
 - 71 Friends of the Earth
 - 72 Australian Forests and Climate Alliance (AFCA)
 - 73 Doctors for the Environment Australia
 - 74 Protect the Bush Alliance
 - 75 Climateworks Centre
 - 76 Canberra Forest Network
 - 77 Dr Nick Abel
 - 78 Department of Climate Change, Energy, the Environment and Water
 - 79 SMR Nuclear Technology
 - 80 Nature Conservation Council of NSW
 - 81 Down Under Nuclear Energy
 - 82 South East Region Conservation Alliance (SERCA)
 - 83 Melbourne Climate Futures
 - 84 Ember
 - Attachment 1
 - Attachment 2
 - 85 Coffs Coast Climate Action Group
 - 86 Climate Action Monaro
 - 87 Climate Action Newcastle
 - 88 Mackay Conservation Group
 - 89 Lighter Footprints
 - 90 Energy Efficiency Council
 - 91 Environment East Gippsland
 - 92 South East Forest Rescue
 - 93 Business Council of Australia
 - 94 Australian Climate Dynamics
 - 95 Earth Learning Inc
 - 96 North Coast Environment Council
 - 97 Australian Land Conservation Alliance
 - 98 Department of Foreign Affairs and Trade
 - 99 Climate Analytics
 - 100 The Australia Institute
 - 101 Insurance Council of Australia
 - 102 National Environmental Law Association
 - 103 Blueprint Institute
 - 104 Infrastructure Sustainability Council

- 105 Department of Industry, Science and Resources
- 106 Australian Capital Territory Chief Minister
- 107 Australian Institute of Landscape Architects
- 108 Environmental Justice Australia
- 109 Engineers Australia
- 110 Australian Climate Roundtable
- 111 New South Wales Council for Civil Liberties
- 112 Mr Robert John Hood
- 113 Ms Keri James
- 114 Mr Benjamin Cronshaw
- 115 Miss Anjali Sharma
- 116 Dr Robin Collin
- 117 Ms Jane Brownrigg
- 118 Mr Nicholas Reeve
- 119 Financial Services Council
- 120 Ms Tanya Martin
- 121 Ms Sarah Neal
- 122 Mr John Hayes
- 123 Mr Allen Brown
- 124 Ms Kieran Finnane
- 125 Ms Alison Green
- 126 Mr Graeme Batterbury
- 127 Ms Kushla Gale
- 128 Mr Jason Thomas
- 129 Ms Claudia Koller
- 130 Mr Jimmy Malecki
- 131 Mr Andrew Fraser
- 132 Ms Veronique Murch
- 133 Mr Simon Validzic
- 134 Mr Rod Holesgrove
- 135 Ms Patricia Saunders
- 136 Dr John Davison-Mowle
- 137 Dr Charles Naylor
- 138 Mr Jim Morrison
- 139 Mr David Hamilton
 - Attachment 1
- 140 Ms Wendy Tubman
- 141 Dr John Shiel
- 142 Mr Derek Bolton
- 143 Ms Maggie Wheeler
- 144 Ms Malveena Martin
- 145 Ms Tracey Carpenter
- 146 Mr Adrian Barrett

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- 147 Dr Peter Sainsbury
148 Ms Kathryn Kelly
149 Ms Tamara Winikoff OAM
150 Ms Margaret Fisher
151 Ms Rina Cohen
152 Ms Yvette Nirvana
153 Ms Kelsey Cooke
154 Dr Anna Molan
155 Mr Martin Nicholls
156 Dr Ana Penteado
157 Ms Judith Sinnamon
158 Ms Anna Harvey
159 Mr Peter Reay
160 Mr Tim Kelly
161 Ms Gabriella Hont
162 Dr Sylvia Ramsay
163 Ms Sonya Mckay
164 Spielwelt German Parents Association
165 Mr Stephen Wilson
 • Attachment 1
- 166 Beyond Zero Emissions
167 Professor David Karoly
168 Climate and Health Alliance
169 We Ride
170 Zali Steggall OAM MP
171 Australian Mining Cities Alliance
172 Ms Barbara Bell
173 Ms Felicity Jodell
174 Mr Barrie Hill
175 Qantas
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- 176 Professor Frank Jotzo
177 Gamma Energy Technology
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179 Senator Malcolm Roberts
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 • Attachment 8

- Attachment 9

180 *Name Withheld*
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185 *Name Withheld*
186 *Name Withheld*

Additional Information

- 1 Professor Penny D Sackett - correction of evidence provided in writing and at a public hearing on 18 August 2022 (provided on 19/8/22)
- 2 National Farmers' Federation - briefing note from Cattle Council Australia on Achieving the Climate Goals of the Australian Beef Industry (provided 23/8/22)
- 3 Nuclear For Climate Australia - Nuclear Polling Appendix (provided on 28/8/22)
- 4 Ian Plimer - The Spectator - 'Australia is already at Net Zero' (provided on 24/8/22)

Answers to Questions on Notice

- 1 Energy Networks Australia - answer to question taken on notice from Senator McKenzie - 18 August 2022 (received 18 August 2022)
- 2 Professor Nerilie Abram - answer to question taken on notice from Senator Hanson-Young - 18 August 2022 (received 19 August 2022)
- 3 Wilderness Australia - answer to written questions on notice from Senator Hughes (received 19 August 2022)
- 4 Wilderness Australia - answer to question taken on notice from Senator McKenzie - 18 August 2022 (received 19 August 2022)
- 5 Wilderness Australia - answer to question taken on notice from Senator Hanson-Young - 18 August 2022 (received 19 August 2022)
- 6 Professor Nerilie Abram - answer to written question on notice from Senator Grogan (received 19 August 2022)
- 7 Professor Penny Sackett - answer to written question on notice from Senator Grogan (received 19 August 2022)
- 8 Blueprint Institute - answers to questions taken on notice from Senator McKenzie - 18 August 2022 (received 22 August 2022)
- 9 Australian Conservation Foundation - answers to written questions on notice from Senator Hughes (received 22 August 2022)
- 10 Beyond Zero Emissions - answer to question taken on notice from Senator McKenzie - 18 August 2022 (received 22 August 2022)
- 11 Grattan Institute - answer to question taken on notice from Senator McKenzie - 18 August 2022 (received 22 August 2022)
- 12 The Australia Institute - answers to questions taken on notice from Senator McKenzie - 18 August 2022 (received 22 August 2022)

- 13 Australian Forest Products Association - answers to questions taken on notice from Senator Hughes - 18 August 2022 (received 22 August 2022)
- 14 Professor Matthew England - answer to written question on notice from Senator Grogan (received 19 August 2022)
- 15 Northern Australia Infrastructure Facility - answer to question taken on notice from Senator Hughes - 19 August 2022 (received 23 August 2022)
- 16 National Farmers Federation - answers to question on notice from Senators Hughes and Hanson Young - 18 August 2022 (received 23 August 2022)
- 17 Academy of Science - answers to questions taken notice from Senators Hughes, McKenzie and Grogan - 19 August 2022 (received 23 August 2022)
- 18 Financial Services Council - answers to questions taken on notice from Senators McKenzie and Pocock - 19 August 2022 (received 23 August 2022)
- 19 WWF Australia - answers to written questions on notice from Senator Hughes (received 22 August 2022)
- 20 WWF Australia - answer to question on notice from Senator McKenzie - 18 August 2022 (received 22 August 2022)
- 21 Greenpeace Australia - answer to written question on notice from Senator Hughes (received 22 August 2022)
- 22 Australian Energy Council - answers to written questions on notice from Senator Hughes (received 23 August 2022)
- 23 Insurance Council of Australia - answers to questions on notice from Senators McKenzie, Hanson-Young and Bilyk - 18 August 2022 (received 22 August 2022)
- 24 Energy Networks Australia - answers to written questions on notice from Senator Hughes (received 23 August 2022)
- 25 Institute of Public Affairs - answer to question on notice from Senator McKenzie - 19 August 2022 (received 23 August 2022)
- 26 Nuclear For Climate Australia - answer to question on notice from Senator McKenzie - 19 August 2022 (received 23 August 2022)
- 27 Institute of Public Affairs - answers to written questions on notice from Senator Hughes (received 23 August 2022)
- 28 Clean Energy Council - answers to questions taken on notice from Senators Hughes and Cadell - 18 August 2022 (received 23 August 2022)
- 29 Australian Industry Greenhouse Network - answers to questions taken on notice - 19 August 2022 (received 23 August 2022)
- 30 Gamma Energy Technology - answer to question on notice from Senator McKenzie - 19 August 2022 (received 23 August 2022)
- 31 Export Finance Australia - answers to questions taken on notice from Senators Hughes, Hanson-Young and McKenzie - 19 August 2022 and in writing (received 23 August 2022)
- 32 Australian Nuclear Association - answer to question on notice from Senator McKenzie - 19 August 2022 (received 23 August 2022)

- 33 Professor David Karoly - answer to written question on notice from Senator Grogan (received 24 August 2022)
- 34 Nuclear For Climate Australia - answer to question on notice from Senator McKenzie - 19 August 2022 (received 23 August 2022)
- 35 bp Australia - answers to questions on notice from Senators McKenzie, Grogan and Hughes - 19 August 2022 and in writing (received 24 August 2022)
- 36 Department of Infrastructure, Transport, Regional Development and Communications - answers to written questions on notice from Senator Hughes (received 24 August 2022)
- 37 Climate Change Authority - answers to written questions on notice from Senator Hanson-Young (received 24 August 2022)
- 38 Commonwealth Scientific and Industrial Research Organisation - answers to written questions on notice from Senator Hughes (received 25 August 2022)
- 39 Minerals Council of Australia - answers to questions on notice from Senators Hanson-Young and Hughes - 19 August and in writing (received 24 August 2022)
- 40 Santos - answers to questions on notice from Senators McKenzie, Hughes and Grogan - 19 August 2022 and in writing (received 25 August 2022)
- 41 Clean Energy Investor Group - answers to written questions on notice from Senator Bilyk (received 25 August 2022)
- 42 Department of Climate Change, Energy, the Environment and Water - answers to questions on notice from Senators Hughes, McKenzie, Bragg and Hanson-Young - 19 August 2022 and in writing (received 25 August 2022)
- 43 Australian Council of Trade Unions - answer to a question on notice from Senator Bilyk - 18 August 2022 (received 26 August 2022)
- 44 Department of Infrastructure, Transport, Regional Development, Communications and the Arts (including Infrastructure Australia) - answers to questions on notice from Senators Hanson-Young, McKenzie and Hughes - 19 August 2022 and in writing (received 26 August 2022)
- 45 Department of Climate Change, Energy, the Environment and Water - answers to written questions on notice from Senator Hughes (received 30 August 2022)
- 46 Investor Group on Climate Change - answer to question on notice from Senator Bragg - 19 August 2022 (received 30 August 2022)
- 47 Business Council of Australia - answers to questions on notice from Senators Bragg and McKenzie - 18 August 2022 (received 30 August 2022)
- 48 Attorney-General's Department - answers to written questions on notice from Senator Hughes (received 30 August 2022)
- 49 Department of Foreign Affairs and Trade - answer to a written question on notice from Senator Hughes (received 30 August 2022)

Tabled Documents

- 1 Australian Energy Council - Opening Statement (public hearing Canberra, 18 August 2022)

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- 2 Environmental Defenders Office - Opening Statement (public hearing Canberra, 18 August 2022)
 - 3 Professor Frank Jotzo - Opening Statement (public hearing Canberra, 18 August 2022)
 - 4 Grattan Institute - Opening Statement (public hearing Canberra, 18 August 2022)
 - 5 Greenpeace - Opening Statement (public hearing Canberra, 18 August 2022)
 - 6 Insurance Council Australia - Opening Statement (public hearing Canberra, 18 August 2022)
 - 7 Professor Nerilie Abram - Opening Statement (public hearing Canberra, 18 August 2022)
 - 8 Professor Penny D Sackett - Opening Statement (public hearing Canberra, 18 August 2022)
 - 9 Wilderness Australia - Opening Statement (public hearing Canberra, 18 August 2022)
 - 10 WWF Australia - Opening Statement (public hearing Canberra, 18 August 2022)
 - 11 bp Australia - Opening Statement (public hearing Canberra, 19 August 2022)
 - 12 CSIRO - Opening Statement (public hearing Canberra, 19 August 2022)
 - 13 Minerals Council of Australia - Opening Statement (public hearing Canberra, 19 August 2022)
 - 14 Australian Forest Products Association - Estimating Implications of Net Zero Targets Report (public hearing, 19 August 2022)
 - 15 Australian Industry Greenhouse Network - Opening Statement (public hearing Canberra, 19 August 2022)

Appendix 2

Public hearings and witnesses

Thursday, 18 August 2022

Committee Room 2S3

Parliament House

Canberra

Professor Penny Sackett, Private capacity

Professor Frank Jotzo, Private capacity

Professor Nerilie Abram, Private capacity

Australian Conservation Foundation

- Ms Suzanne Harter, Climate Change Campaigner (via videoconference)

World Wildlife Fund Australia

- Dr Krista Singleton-Cabbage, Head of Climate and Food Security (via videoconference)
- Mr Oliver Toohey, International Climate Change Program Manager

Wilderness Society

- Mr Tim Beshara, Manager of Policy and Strategy (via videoconference)

Greenpeace

- Mr David Ritter, Chief Executive Officer (via videoconference)

Wilderness Australia

- Ms Virginia Young, Director (via videoconference)

EDOs Australia

- Ms Rachel Walmsley, Head of Policy and Law Reform (via videoconference)

National Farmers' Federation

- Mr Warwick Ragg, General Manager Natural Resource Management (via videoconference)
- Mr Angus Atkinson (via videoconference)

Australian Forest Products Association

- Mr Ross Hampton, Chief Executive Officer
- Mr Victor Violante, Deputy Chief Executive Officer

Business Council of Australia

- Ms Jennifer Westacott, Chief Executive (via videoconference)
- Mr Tim Reed, President (via videoconference)

Australian Industry Group

- Mr Tennant Reed, Principal National Adviser, Public Policy (via videoconference)

Australian Council of Trade Unions

- Mr Ben Moxham, Legal and Policy Director (via videoconference)

Electrical Trades Union of Australia

- Mr Trevor Gauld, National Policy Officer (via videoconference)

Maritime Union of Australia

- Dr Penny Howard, National Research Officer (via videoconference)
- Mr Adrian Evans (via videoconference)

Australian Workers' Union

- Mr Taylor Rundell, National Economist (via videoconference)

The Australia Institute

- Dr Richard Denniss, Executive Director
- Ms Sienna Parrot, Anne Kantor Fellow

Grattan Institute

- Mr Tony Wood, Energy Program Director

Blueprint Institute

- Mr David Cross, Chief Executive Officer (via videoconference)
- Mr Josh Steinert, Director of Research (via videoconference)
- Mr Mark Ouliaris, Senior Researcher (via videoconference)

Climate Council

- Dr Simon Bradshaw, Research Director, Projects (via videoconference)

Australian Council of Social Service

- Ms Jacqueline Phillips, Director of Policy and Deputy Chief Executive Officer (via videoconference)
- Ms Kellie Caught, Program Director, Climate and Energy (via videoconference)

Insurance Council of Australia

- Ms Kylie MacFarlane, Chief Operating Officer (via videoconference)

Clean Energy Council

- Ms Anna Freeman, Director Renewable Hydrogen and Electrification (via videoconference)

Smart Energy Council

- Mr Wayne Smith, Government Relations Manager
- Mr Connor Woulfe, Project and Research Assistant

Beyond Zero Emissions

- Ms Beth Mitchell, Government Affairs Specialist

Climateworks Centre

- Ms Laura Simes, Government and Stakeholder Engagement Manager (via videoconference)

Australian Energy Council

- Mr Ben Skinner, General Manager, Policy (via videoconference)
- Mr Rhys Thomas, Policy Advisor (via videoconference)

Energy Networks Australia

- Mr Andrew Dillon, Chief Executive Officer (via videoconference)
- Mr Dominic Adams (via videoconference)

Friday, 19 August 2022

Committee Room 2S3

Parliament House

Canberra

Australian Academy of Science

- Professor Matthew England, Scientia Professor of Ocean and Climate Dynamics, UNSW Climate Change Research Centre (via videoconference)
- Mr Chris Anderson, Director Science Policy

*Professor David Karoly, Private capacity**Institute of Public Affairs*

- Mr Morgan Begg, Director, Legal Rights Program
- Mr Daniel Wild, Deputy Executive Director

Australian Nuclear Association

- Dr Mark Ho, Vice President

Nuclear for Climate Australia

- Mr Rob Parker, Founder

Gamma Energy Technology

- Professor Geoff Bongers, Engineer (via videoconference)

Financial Services Council

- Mr Spiro Premetis, Executive Director, Policy and Advocacy
- Mr Chaneg Torres, Policy Manager, Investments and Global Markets

Investor Group on Climate Change

- Mr Erwin Jackson, Director, Policy

Australian Industry Greenhouse Network

- Ms Susan Smith, Chief Executive (via videoconference)

bp Australia

- Ms Lucy Nation, Vice President, Regions, Cities and Solutions (via videoconference)

Minerals Council of Australia

- Ms Tania Constable, Chief Executive Officer
- Mr Dan Zavattiero, General Manager

Santos

- Ms Tracey Winters, Strategic Adviser, External Affairs

Clean Energy Finance Corporation

- Mr Simon Every, Head of Government and Stakeholder Relations
- Mr Jay Tolson, General Counsel, Company Secretary

Commonwealth Scientific and Industrial Research Organisation

- Dr Peter Mayfield, Executive Director, Environment, Energy And Resources, Environment Energy and Resources (via videoconference)
- Dr Jack Steele, Director, Science Impact and Policy (via videoconference)

Northern Australia Infrastructure Facility

- Mr Craig Doyle, Chief Executive Officer (via videoconference)

Australian Renewable Energy Agency

- Mr Chris Faris, Chief Operating Officer

Infrastructure Australia

- Mr Robert Ephraums, Associate Director, Communications and Engagement
- Mr Adam Copp, Acting Chief Executive Officer

Export Finance Australia

- Mr John Hopkins, Managing Director and Chief Executive Officer (via videoconference)

- Mr John Pacey, Chief Credit Officer (via videoconference)

Clean Energy Regulator

- Mr David Parker, Chair (via videoconference)
- Mr Geoff Purvis-Smith, General Counsel
- Mr Mark Williamson, Executive General Manager

Department of Climate Change, Energy, the Environment and Water

- Ms Jo Evans, Deputy Secretary
- Ms Kath Rowley, First Assistant Secretary, Emissions Reduction Division (via videoconference)
- Ms Julia Gardiner, Director, International Climate Policy and Negotiations Section
- Mr Andrew Bray, Director, Climate Strategy and Risk Section
- Mr Steven Gardiner, Counsel, Australian Government Solicitor

Climate Change Authority

- Mr Brad Archer, Chief Executive Officer
- Ms Eliza Murray, General Manager
- Dr Matt Searson, Acting General Manager

Department of Foreign Affairs and Trade

- Ms Tegan Brink, Assistant Secretary, Strategic Investment Branch
- Mrs Kim Debenham, Assistant Secretary, Multilateral Trade Policy Branch
- Mr Andrew Sainsbury, Director Trade and Infrastructure Finance Section
- Mr Jamie Isbister, Ambassador for the Environment

Department of Agriculture, Fisheries and Forestry

- Ms Emma Campbell, Acting Deputy Secretary, Agriculture and Food Policy and Research Group
- Mr Nick Blong, First Assistant Secretary, Portfolio Strategy and Climate Policy Division
- Dr Jared Greenville, Executive Director, ABARES

Appendix 3

Organisations and specialists that support the bills

- **Business and industry**
- Australian Industry Group
- Australian Industry Greenhouse Network
- Australian Institute of Landscape Architects
- Australian Trucking Association
- Business Council of Australia
- Engineers Australia
- Financial Services Council
- Google
- Infrastructure Sustainability Council
- Insurance Council of Australia
- Investor Group on Climate Change
- National Australia Bank
- Qantas
- Voluntary Carbon Markets Association

- **Worker representatives**
- Australian Council of Trade Unions
- Australian Manufacturing Workers Union
- Australian Services Union
- Australian Workers' Union
- Construction, Forestry, Maritime, Mining and Energy Union
- Electrical Trades Union

- **Energy and resources sector**
- Australian Energy Council
- Australian Nuclear Association
- Clean Energy Council
- Clean Energy Investor Group
- Energy Efficiency Council
- Energy Networks Australia
- Minerals Council of Australia
- Nuclear for Climate Australia
- Smart Energy Council
- bp Australia
- CopperString

- Down Under Nuclear Energy
- Ember
- EnergyAustralia
- Gamma Energy Technology
- Hydro Tasmania
- Santos
- Tindo Solar

- **Agriculture and forestry sector**
- National Farmers' Federation
- Australian Forest Products Association
- Farmers for Climate Action

- **Conservation groups**
- Australian Air Quality Group
- Australian Conservation Foundation
- Australian Forests and Climate Alliance
- Australian Land Conservation Alliance
- Australian Marine Conservation Society
- Australian Parents Network for Climate Action
- Australian Rainforest Conservation Society
- Australian Religious Response to Climate Change
- Bob Brown Foundation
- Climate Action Network Australia
- Climate Council
- Environmental Defenders Office
- Environmental Justice Australia
- EnviroSustain
- Friends of the Earth Australia
- Greenpeace Australia Pacific
- Lock the Gate Alliance
- Peoples Climate Assembly
- Protect the Bush Alliance
- 350 Australia
- Wide Bay Environment Council
- Wilderness Australia
- Wilderness Society
- WWF Australia
- Caldera Environment Centre
- Canberra Forest Network
- Climate Action Monaro
- Climate Action Newcastle
- Coffs Coast Climate Action

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- Environment Council of Central Queensland
 - Environment East Gippsland, Lighter Footprints
 - Mackay Conservation Group
 - Nature Conservation Council of NSW
 - North Coast Environment Council
 - North East Forest Alliance
 - North Queensland Conservation Council
 - Redbank Action Group
 - South East Forest Rescue
 - South East Region Conservation Alliance

 - **Community organisations**
 - Australian Council of Social Service
 - Australian Local Government Association
 - Blue Derby Wild
 - Climate and Health Alliance
 - Doctors for the Environment Australia
 - GetUp
 - NSW Council for Civil Liberties
 - The Next Economy

 - **Legal sector**
 - Law Council of Australia
 - National Environmental Law Association

 - **Researchers and academics**
 - ARC Centre of Excellence for Climate Extremes
 - ARC Centre of Excellence in Antarctic Science
 - Australian Academy of Science
 - Australian Academy of Technological Sciences and Engineering
 - Australian Climate Dynamics
 - Beyond Zero Emissions
 - Blueprint Institute
 - Climate Analytics
 - Climateworks Centre
 - Grattan Institute
 - Jubilee Australia Research Centre
 - Melbourne Climate Futures
 - Science and Technology Australia
 - The Australia Institute
 - Professor Penny Sackett, ANU Climate Change Institute
 - Professor Frank Jotzo, ANU Climate Change Institute

- Professor Nerilie Abram, Australian National University
- Associate Professor Nick Abel, ANU Climate Change Institute
- Professor David Karoly, University of Melbourne
- Associate Professor Peter Christof, University of Melbourne
- Dr Sebastian Cordoba, RMIT University
- Dr Philip Laird, University of Wollongong
- Associate Professor Anita Foerster, Monash University
- Ms Alice Bleby, Monash University