



CLIMATE
CHANGE
AUTHORITY

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Setting, tracking and achieving Australia's emissions reduction targets

Issues Paper – May 2023

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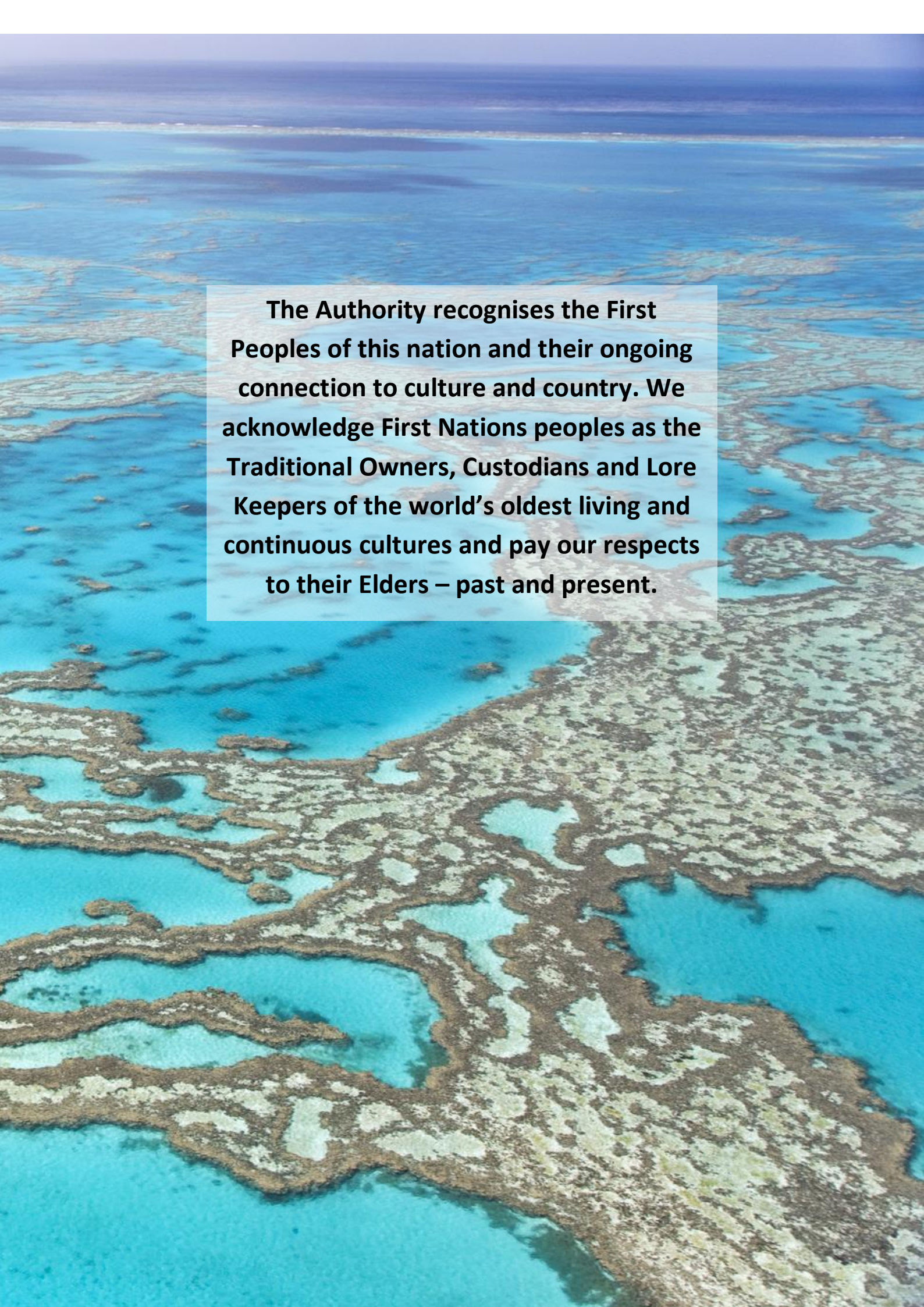
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The Authority recognises the First Peoples of this nation and their ongoing connection to culture and country. We acknowledge First Nations peoples as the Traditional Owners, Custodians and Lore Keepers of the world's oldest living and continuous cultures and pay our respects to their Elders – past and present.

Contents

1. Introduction	5
1.1 The Climate Change Authority in 2023-24	5
1.2 The purpose and structure of this paper	6
1.3 How to make a submission.....	6
1.4 Why make a submission?.....	6
1.5 Next steps.....	7
Questions for consideration.....	8
2. Frameworks	10
2.1 Strategic Framework	10
2.2 Progress Framework.....	11
Wellbeing: Progress towards a just transition and resilient nation	12
Emissions: Progress towards national greenhouse emissions reduction targets	14
Policies: Progress in implementing policies	15
Context: Developments in the broader operating environment.....	16
2.3 Target-setting Framework	17
International considerations	19
Wellbeing.....	19
Sectoral Pathways	19
Economic analysis	20
3. Cross-cutting issues	21
3.1 Leading indicators	21
3.2 Sectoral pathways.....	22
3.3 Contributions beyond Australia's borders.....	22
3.4 Preparing for change.....	24
3.5 Targets	24
3.6 Are Kyoto-era schemes fit for the Paris Agreement era?.....	26
3.7 Carbon credit integrity	27
3.8 International units.....	29
3.9 Other matters.....	29
References	30

1. Introduction

1.1 The Climate Change Authority in 2023-24



Responding to climate change requires social, economic and environmental transformations, as well as resilience. Communities, companies and ecosystems are facing challenges and opportunities as a result of climate impacts and economic change. Governments have an important role in helping the nation navigate an orderly transition to a resilient, net zero economy.

The Climate Change Authority's purpose is to provide evidence-based advice on the response to climate change, in order to:

- accelerate emissions reductions and help Australia play its role in the global effort to limit temperature increases; and
- enhance Australia's prosperity and resilience as the climate changes and the world transitions to net zero emissions.

Our functions and guiding principles¹ are set out in the [Climate Change Act 2022](#) and the [Climate Change Authority Act 2011](#).

This is an important year for the Authority. We are undertaking four interrelated projects at the same time, two of which are broad-reaching advisory projects and two targeted reviews of legislated schemes:

	Advice on emissions reduction targets for Australia's next Nationally Determined Contribution (NDC) under the Paris Agreement	2024 (TBC)
	Advice for the Minister for Climate Change and Energy's Annual Climate Change Statement, i.e. the 2023 Annual Progress Report	Late 2023
	Review of the Carbon Credits (Carbon Farming Initiative) Act 2011 (CFI Review)	Dec 2023
	Review of the National Greenhouse and Energy Reporting Act 2007 (NGER Review).	Dec 2023

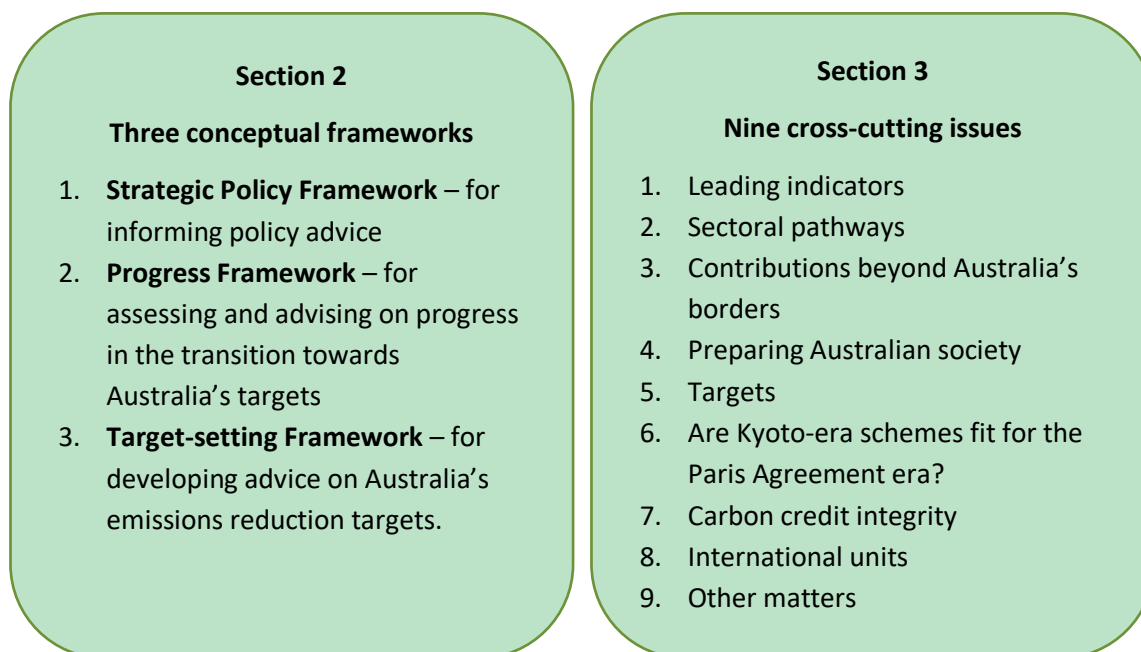
¹ In performing our functions, our legislation requires us to have regard to the principle that any measures to respond to climate change should:

- be economically efficient
- be environmentally effective
- be equitable
- be in the public interest
- take account of the impact on households, business, workers and communities
- support the development of an effective global response to climate change
- be consistent with Australia's foreign policy and trade objectives
- take account of the matters set out in Article 2 of the Paris Agreement
- boost economic, employment and social benefits, including for rural and regional Australia.

Consultation is at the core of the Authority’s work, ensuring our analysis and recommendations are well-informed, consider all perspectives and are in the best interests of the nation.

1.2 The purpose and structure of this paper

The purpose of this paper is to initiate an efficient, inclusive and effective consultation process. In it, we seek general feedback on three conceptual frameworks that guide our thinking and more detailed input on nine issues that cut across multiple projects. The focus on *frameworks* and *cross-cutting issues* is our way to provide you with an efficient consultation process for this complex body of work.



1.3 How to make a submission

Submissions can be made via our [Consultation Hub](#) until 5pm, 30 June 2023. Submissions are published on our Consultation hub unless made in confidence. Please indicate in your submission whether your submission is made in confidence.

Those interested in making a submission should not feel constrained by the issues or questions in this paper. Answer as many or as few questions as you are interested in, and feel free to provide broader commentary, information and evidence than specifically requested in this paper. This can include your previous submissions to other consultation papers, research and data we may not be aware of, or your personal perspective and experiences with climate change.

1.4 Why make a submission?

Consultation works best with a view on how consultation leads to change (see the Authority’s Theory of Change in Figure 1, below).

The Authority’s plan for policy evolution, like the Paris Agreement itself, is to review, ratchet and repeat. Providing input to our work is one way for individuals, organisations and communities to influence government action.

We use the input we receive in submissions, along with information from other sources, when formulating our advice. We also share real world stories by including case studies and quotes in our reports, and we publish submissions on our website unless we are asked not to.

Consultation not only ensures our advice is based on best available information from diverse sources, but it also builds understanding of our advice and how we arrive at providing the recommendations we do. Consultation and understanding are the important ingredients in the recipe for social licence for change.

Theory of Change

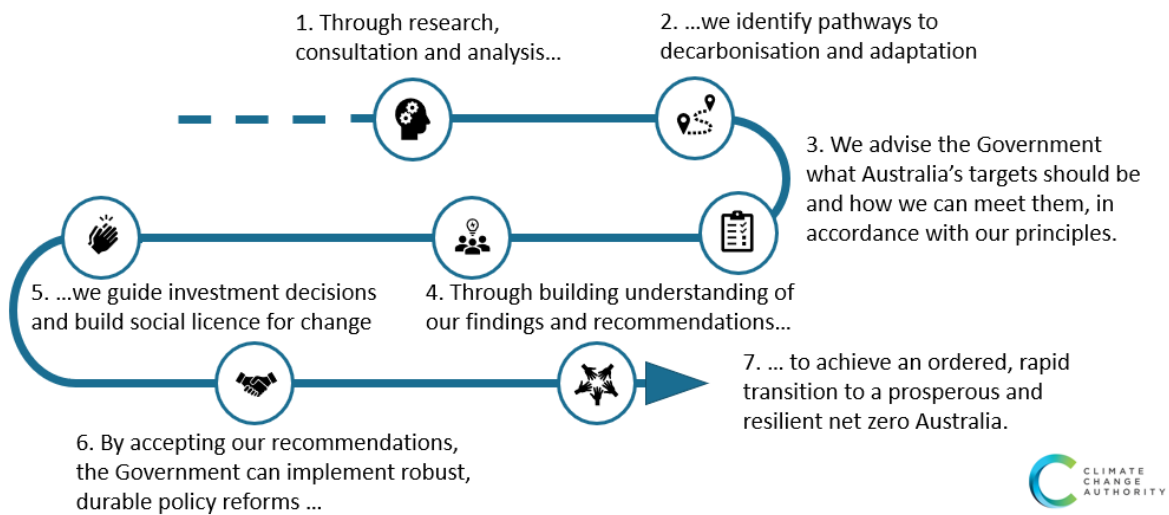


Figure 1: The Authority's Theory of Change

1.5 Next steps

In addition to seeking feedback through this paper, we intend to consult directly with experts, host roundtable discussions, publish interim reports for feedback, host webinars and more.

We will publish an online survey exploring individual experiences and perspectives, helping to ensure our advice reflects experiences of the Australian public.

We will also publish the results of consultation for the visibility of participants and the public, unless you ask us not to.

Please register your interest on [the Authority's consultation hub](#) if you would like to be involved.

Questions for consideration

Individuals, organisations and communities are invited to answer as many or as few questions as they wish and to share their personal perspectives and experiences with climate change. We welcome broader commentary, information, research, data, evidence, submissions to other consultation processes.

2. Frameworks

2.1. Strategic Framework

1. What actions and enablers beyond those identified in the Strategic Framework could help Australia progress towards a prosperous and resilient net zero future? What are your highest priorities?

2.2. Progress Framework

2. How are you and the people around you impacted by or preparing for the net zero transition and Australia's climate future? How can governments better support you to prepare for or respond to the impacts?
3. What should the Authority measure or assess to determine progress towards a just transition and improved wellbeing?
4. What more could the Government do to help you reduce your carbon footprint?
5. What are the other challenges and opportunities the global context presents Australia with in responding to climate change?
6. What role is there for corporate action to 2030 and beyond?
7. When is it appropriate for the Government to regulate something?

2.3. Target-setting Framework

8. How could the Authority best strike a balance between ambition, domestic considerations and the international context in its 2023 NDC advice?
9. What do you think Australia's 2035 target should be and why?

3. Cross-cutting Issues

3.1. Leading Indicators

10. What are some leading indicators of progress towards net zero emissions?
11. What are some leading indicators of progress towards preparing for and adapting to climate change?

3.2. Sectoral pathways

12. What factors should the Authority consider when developing sectoral decarbonisation pathways?
 - a. What are the risks and opportunities for households, business, workers and communities affected by the transition?
 - b. Are there supply chain pressure points?
13. What is the role for Government in reducing these risks and assisting households, business, workers and communities to realise the opportunities?

3.3. Contributing beyond Australia's borders

14. What are the most important things to consider when assessing the adequacy of a country's NDC?
15. How could Australia partner with other nations to accelerate global progress towards meeting the Paris Agreement goals?
16. What do you see as the challenges and opportunities from a phase out of fossil fuel production? What should the Government consider when determining a plan for the phase out of fossil fuels?
17. Should the Authority consider international maritime and aviation emissions in its advice?

3.4. Preparing for change

18. What risks and opportunities do you (including your household, business, workers and communities) face as the world decarbonises and as Australia responds to the impacts of climate change?
19. What could governments do to help?

3.5. Targets

20. What types of targets do you see as important and/or problematic, and why?

3.6. Are Kyoto-era schemes fit for the Paris Agreement era?

21. What do you see as the strengths and weaknesses of the NGER scheme? How could it be improved?
22. What aspects of methane measurement, reporting and verification should the Authority focus on as part of the NGER review?
23. Following the Government's acceptance of recommendations of the Chubb Review, what do you see as the strengths and weaknesses of the CFI and ERF?
24. How could the CFI, ERF and NGERs be improved in the context of the Paris Agreement era?

3.7. Carbon credit integrity

25. Following adoption of the Chubb Review recommendations, what concerns about ACCU integrity remain?
26. What are the risks to integrity that should be buffered against?
27. How should a buffer be applied (e.g. government purchase, supply-side reserve, demand-side correction, other)?
28. What role should governments and users of offsets have in ensuring demand-side integrity?
29. What protections are needed to ensure the integrity of carbon trading markets and exchange platforms?

3.8. International units

30. What role should international carbon markets have in Australia?

3.9. Other matters

31. What else should the Authority be considering in its advice to Government?

2. Frameworks

The Authority's conceptual frameworks are a way to organise our thinking and information when undertaking our work, inform the overall strategic direction of the Authority's advice, and ensure we meet relevant statutory obligations. We will continue to refine them in response to changes in context and feedback.

2.1 Strategic Framework

Achieving net zero emissions is a collective challenge, not a challenge for governments alone. Societal and corporate actions matter, and governments have an important role enabling climate-positive actions by households, business, workers and communities.

The Authority has identified six actions that drive the bulk of abatement and adaptation changes needed for a prosperous and resilient net zero Australia, and they are deployable today. Governments have a critical role in six enablers of those actions, so that households, business, workers and communities can make abatement and adaptation a part of standard practice and so markets can mobilise the massive amounts of capital to make the investments required.

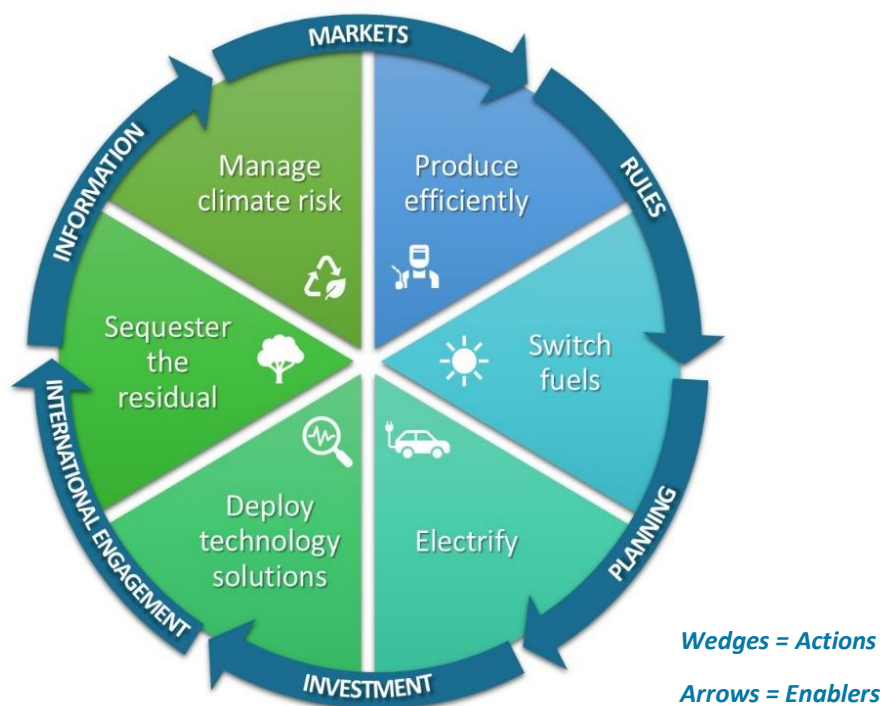


Figure 2: Strategic Framework - Six actions and six enablers of a prosperous, resilient net zero Australia.

Questions

1. What actions and enablers beyond those identified in the Strategic Framework could help Australia progress towards a prosperous and resilient net zero future? What are your highest priorities?

2.2 Progress Framework

With the passage of the new Climate Change Act last year, the Authority took on several new functions, one of which is the provision of advice that relates to the Minister for Climate Change and Energy’s Annual Climate Change Statement.

The Minister’s Climate Change Statement relates to:

- progress towards achieving Australia’s greenhouse gas emissions reduction targets
- international developments in addressing climate change
- climate change policy, including the effectiveness of Commonwealth’s policies and the social, employment and economic benefits and impacts for rural and regional Australia
- climate-related risks to Australia, including to the environment, biodiversity, health, infrastructure, agriculture, investment, economy, or national security.

For its first Annual Progress Report (released late last year) the Authority developed the Progress Framework (Figure 3) for assessing and advising on Australia’s progress towards a prosperous and resilient net zero nation. The Authority is seeking feedback on this framework and whether improvements can be made that support the tracking of progress, other issues relevant to assessing climate policy progress, and on measurable data which could provide early indications (leading indicators) of whether the economy is transitioning to net zero fast enough.

WELLBEING	s 12(1)i, s 12(1)f	Progress towards a just transition and resilient nation			
		Economic impacts and opportunities	Physical impacts and adaptation	First Nations	Regional and rural Australia
EMISSIONS	s 12(1)a	Progress towards national greenhouse emissions reduction targets			
		Leading indicators of change	Point target compliance	Emissions budget tracking	Emissions sectoral trends
POLICIES	s 12(1)c, s 12(1)d	Progress in implementing policies			
		Mitigation and adaptation policy stocktake	Policy gap analysis	Indicators of direct effectiveness	Indicators of indirect effectiveness
CONTEXT	s 12(1)b	Developments in the broader operating environment			
		Climate science and global impacts	Geopolitics	International ambition and policies	Voluntary corporate action

Figure 3: Progress Framework used for Annual Progress Reports, showing relevant sections of the Climate Change Act 2022

Wellbeing: Progress towards a just transition and resilient nation

Assessing wellbeing in a climate change context is about understanding how climate change is impacting the lives of all Australians.

This year's Annual Progress Report will be the first time the Authority will provide advice on wellbeing from the perspective of tracking Australia's response to climate change. The Authority considers this a fundamental part of evaluating and advising on the Government's climate policies.

The Authority will look at the positive and negative impacts of climate policies (mitigation and adaptation) and the physical impacts of climate change on the wellbeing of Australians to assess progress towards a just transition and resilient nation.

Economic impacts and opportunities: The Authority will investigate economic (and other) impacts and opportunities when assessing policy progress and providing policy advice. The information we receive through consultation and surveys will inform our advice.

Physical impacts and adaptation: The Authority will consult with relevant agencies (Bureau of Meteorology, CSIRO and others) through initiatives such as the Australian Climate Service and the NESP Climate Systems Hub, to assess the impacts of climate change. The Authority will consult the above agencies and with state, territory and local governments to assess adaptation. These consultations will assist us in determining the information we need to better anticipate, assess, communicate and reduce climate risk and impacts.

Priority Groups

Decarbonisation and responding to climate change affect the wellbeing of all Australians. However, climate change does not impact all Australians equally or in the same way.

Climatic and economic changes affect people very differently depending on their circumstances. Income, where you live, ethnicity, nationality, age, culture, disability and gender are some examples of the differences that matter. For example, women are more at risk of experiencing gender-based violence, especially after disasters (Australian Women's Health Network, 2014), whereas men dominate the industries most affected by the energy transition (Australian Bureau of Statistics, 2022; Sridhar, Lockyer, & Kanani, 2022).

These differences can also intersect, which can amplify or counteract the advantage or disadvantage a person experiences. For instance, a person living in a rural area might have limited access to education and training to reskill. This situation could be made more difficult for some people if they do not speak English as a first language, but manageable for others who can afford to enrol in a university and travel for study.

We intend to pay particular attention to priority groups who more commonly experience multiple kinds of vulnerability, such as financial strain, limited access to social services like education and healthcare, and social discrimination. This is to emphasise the importance of building broad society-wide resilience and improving access to the opportunities of the transition for Australia's most vulnerable people. This is fundamental to achieving a just transition.

First Nations peoples: First Nations peoples' knowledge and experience of Country and land management practices provide valuable insights into caring for the environment, sequestering carbon and adapting to climate change. However, First Nations peoples are also disproportionately at risk from climate change impacts, experiencing higher levels of exposure and vulnerability driven by structural disadvantage.

The net zero transition presents an opportunity to better include First Nations peoples in government decision making in a meaningful and impactful way. The transition is also an opportunity to grow and improve access to economic opportunities of the Indigenous Estate, particularly in the energy sector, resource sector, agricultural and land sectors, and to carbon markets. Australia's Indigenous Estate is made up of assets held by or for the benefit of First Nations peoples. It includes tangible assets such as lands and waters, as well as intangible assets that could play an important role in Australia's transition and resilience, such as cultural and intellectual property rights, and environmental and biosciences practices.

We will work with experts, peak Indigenous organisations and across jurisdictions to evaluate relevant Australian policies, laws and regulatory systems in order to advise on how they can be improved to better benefit First Nations peoples while helping address climate change. In developing our advice, we will consult First Nations peoples and communities. We will look at cultural, social, environmental and economic factors and incorporate Indigenous experiences in our advice on the response to climate change.

Regional, remote and very remote communities: These communities are some of the most at-risk communities in Australia from both the physical and economic impacts of climate change (Climate Council, 2016). Each of these communities is experiencing climate change impacts and transition risks and opportunities in different ways. The Authority will apply a place- and issues-based approach to enable a diversity of experiences inform our advice.

Through case studies and consultation, we will seek to understand how economic threats and opportunities reverberate around and between communities, including the effects on social connections, health and the natural environment.

Low-income earners: Climate change affects low-income households more severely than others. For example, many low-income earners are renters and cannot install energy efficiency upgrades that could lower their bills, even if they could afford the investment (ACOSS, 2023). Low-income earners are also more likely to live in highly climate risk-exposed areas in poor quality housing that does not protect them from extreme temperatures and other hazards (Brotherhood of St Laurance, 2023). Their risk is compounded as they are less able to prepare, adapt and financially recover from disasters, for example by using insurance (Hallegate, Vogt-Schlib, Rozenberg, Bangalore, & Beaudet, 2020; Boon, 2013; Ulubasoglu, 2020). We will work with experts to consider how Australian governments can support low-income earners and households respond to climate change.

Questions

2. How are you and the people around you impacted by or preparing for the net zero transition and Australia's climate future? How can governments better support you to prepare for or respond to the impacts?

Wellbeing Assessment Framework

As a starting point, the Authority has built upon the OECD Framework for Measuring Wellbeing and Progress to assess the impacts from climate policy, the net zero transition and the physical impacts of climate change on wellbeing (OECD, 2023).

In Figure 4, the darker blue boxes are the elements of wellbeing taken from the OECD framework. The Authority will give specific analytical attention to differentiated impacts for the demographic groups highlighted in the grey boxes. Consultation and engagement underpin the entire framework

as this is key to ensuring accurate conceptualisation of impacts and to achieving a just transition and resilient Australia.

Like other organisations in Australia and around the world, we are currently exploring how we can measure wellbeing and track progress across a framework like this one. Developing metrics and accessing the data required are not simple tasks, and that is why we are seeking your input.

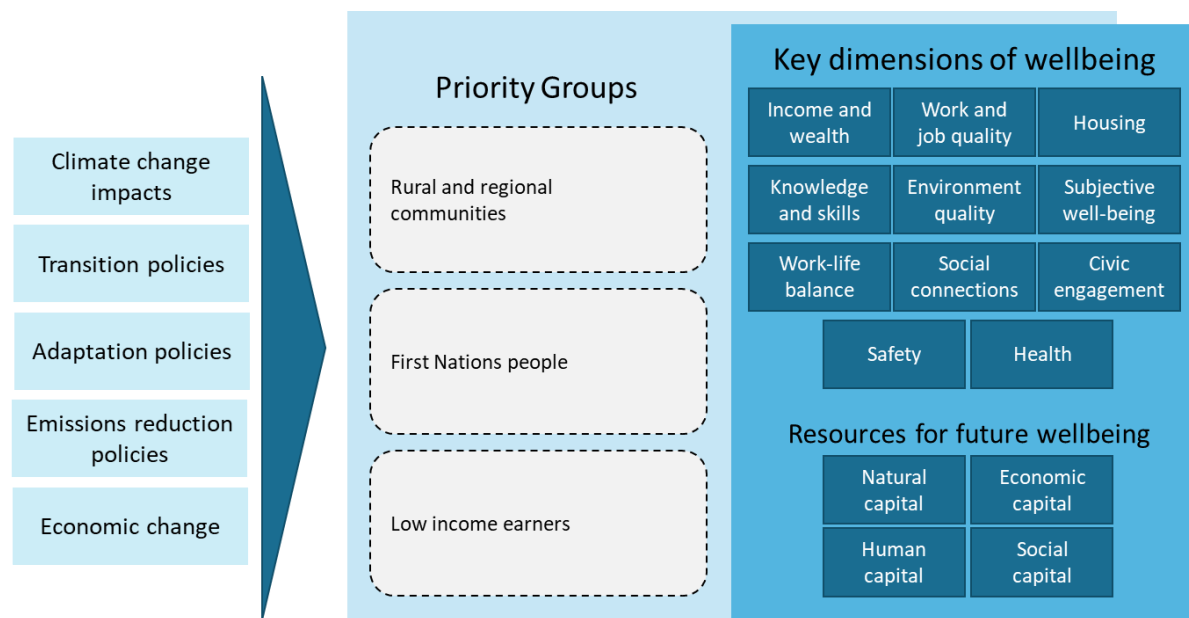


Figure 4: The Authority’s proposed wellbeing framework to achieve a just transition and resilient nation (adjusted from (OECD, 2023)).

Questions

3. What should the Authority measure or assess to determine progress towards a just transition and improved wellbeing?

Emissions: Progress towards national greenhouse emissions reduction targets

Point target compliance and emissions budget tracking: Our 2023 Annual Progress Report will assess Australia’s progress towards the 2030 point target and emissions budget and towards net zero. The current emissions budget is a trajectory drawn from the 2020 target to the 2030 target which results in the calculation of an emissions budget for the decade 2021–2030. This will include assessing:

- how emissions have changed in the previous twelve months using data provided in the *Greenhouse Gas Inventory Quarterly Updates* (Department of Climate Change, Energy, the Environment and Water); and
- how emissions are expected to change to 2030 and beyond, with reference to *Australia’s emissions projections 2022* (Department of Climate Change, Energy, the Environment and Water, 2022).

Sectoral emissions trends: Each Annual Progress Report will look at emissions across electricity, stationary energy, transport, fugitives, industrial processes and product use, waste, agriculture and

land-use, land-use change and forestry (LULUCF). We will analyse sectors, and emissions sources within sectors, to identify where Australia needs to accelerate action toward an ordered, timely and equitable transition to net zero, and how this can be achieved through addressing barriers and pursuing opportunities.

Leading indicators of change: The Authority committed to establish and track leading indicators of progress towards net zero in the 2022 Annual Progress Report—see section 3.1: Leading Indicators.

Questions relating to sectoral emissions and leading indicators can be found in Section 3.

Policies: Progress in implementing policies

The need to transition is urgent and significant. Governments need to understand the effectiveness of their policies in achieving national emissions reduction targets and how they can be improved. Assessing the effectiveness of climate policies and advising on opportunities for improvement are central to the core functions of the Climate Change Authority.

The Commonwealth and state and territory governments collaborate on a range of initiatives to address reform and priorities in the energy and climate change sectors. Progress towards net zero and a resilient Australia is the cumulation of policies and programs across the local, state and national scales. For example, most adaptation activities occur at the local level (Department of Agriculture, Fisheries and Forestry).

Policy stocktake: The Authority's first step is a stocktake of Commonwealth, state and territory emissions reduction and adaptation policies, and other policies directly relevant to this space.

Policy gap analysis: To understand and advise on gaps in Australia's climate policies, the Authority will consider whether decarbonisation is occurring at the required pace, including by understanding the status of progress on reducing emissions as well as on adaptation and broader transition and wellbeing issues. The Authority will conduct a policy effectiveness assessment using a traffic light system. This will provide information on whether key policies are achieving their intended objectives and how they are contributing to progress at a sectoral or issues level. The Authority will also consider any barriers such as supply chain disruption and labour skills shortages.

Drawing on this analysis, the Authority will advise on any improvements that need to be made to support outcomes at a sectoral or issues level. The Authority will also advise on how any gaps could be managed.

Indicators of direct effectiveness: *Direct effectiveness* refers to the impacts of policies on emissions reduction.

Indicators of indirect effectiveness: *Indirect effectiveness* refers to the broader economic, environmental and social impacts – positive and negative – of policies and whether these enable Australia's transition to a prosperous, resilient nation. These indicators will link to the wellbeing framework outlined above.

Questions

4. What more could the Government do to help you reduce your carbon footprint?

Context: Developments in the broader operating environment

Climate science and global impacts: New scientific analysis of climate change continues to improve the world's understanding of human and natural influences on weather and climate extremes. In reporting on climate science and developing its advice, the Authority will use the best available information from a variety of reputable, expert sources on topics including climatology, environmental science, social science, economics, business, and policy making.

Geopolitics: As a global problem, the adequacy of the response to climate change cannot be constrained to the Australian context alone. Key issues such as economic trends and developments, significant (and potentially destabilising) geopolitical events, supply chain issues and green trade competition are all potential barriers to or enablers of Australia's transition and must be considered when evaluating progress towards or the setting of national targets.

International ambition and policies: When advising on annual progress towards Australia's emissions reduction targets, it is important to consider the action other nations are taking and how Australia can take a leadership role in bridging the global emissions gap, noting that the Australian Government has stated its intention to establish Australia as a climate leader internationally (Department of Foreign Affairs and Trade, n.d.).

Australia's policy approaches interact with international approaches in important ways. Shifting international policies on the supply of and demand for high and low carbon products informs where Australia should direct its attention for an ordered transition. Australia's effort to develop low emissions goods such as green hydrogen can enable other countries to decarbonise faster. Overseas decarbonisation action, such as the United States Inflation Reduction Act, can also have a material impact on our competitive advantages.

A Carbon Border Adjustment Mechanism (CBAM) seeks to limit carbon leakage through trade, by imposing import tariffs and export rebates depending on the climate policy of trading partners. Carbon leakage occurs when, as a result of undertaking an emissions reduction activity, emissions increase elsewhere. This could be caused by shifting the activity internationally, or where emissions reductions at one point in a supply chain or market encourage an increase in emissions elsewhere. The European Union intends to have a fully operational CBAM by 2026. The Australian Government has committed to a review commencing in 2023 to explore policy options to address carbon leakage. The Authority has decided to defer further work on CBAMs until the Government's review concludes.

Voluntary corporate action: The private sector is moving to decarbonise with many companies setting short-, medium- and long-term emissions reductions targets. Corporate action is crucial to expand investment in net zero-aligned industries and improve corporate practices, including:

- how corporations understand, assess, manage and disclose their emissions and climate-related risks
- interaction with the carbon market for both compliance and voluntary purposes
- aligning domestic practices with international standards to build long-term, sustainable trading relationships.

Reinforcing the pace of corporate contributions means not all action will remain voluntary in nature. For example, some companies have voluntarily disclosed their climate-related financial risk in the past. The Government has committed to pursuing a coordinated sustainable finance strategy in 2023 and reforms that include a mandatory corporate climate-related disclosure scheme. Similarly, some

construction companies voluntarily exceed the standards mandated in the National Construction Code. The Code can be amended to make those voluntary levels mandatory.

Government decisions to shift from using voluntary to using compliance measures can have material impacts on people involved. For example, new regulations to prevent land clearing might render a landholder ineligible to earn carbon credits for protecting forests on that land.

While the degree of public acceptability can enable or inhibit the Government's use of regulatory measures, changes in market conditions can have similar impacts. For example, when a carbon market activity (such as capture of landfill gas) becomes economic in its own right, that activity would likely become ineligible for carbon credits because it would not be additional to business-as-usual activity.

Understanding how these elements are being addressed by corporations and by government policies will allow the Authority to advise on where Government's functions can best facilitate improved corporate action towards a more rapid, transparent and equitable transition to net zero.

Questions

5. What are the other challenges and opportunities the global context presents Australia with in responding to climate change?
6. What role is there for corporate action to 2030 and beyond?
7. When is it appropriate for the Government to regulate something?

2.3 Target-setting Framework

One of the innovations of the Paris Agreement was the introduction of bottom-up, Nationally Determined Contributions (NDCs), instead of the Kyoto Protocol's approach of top-down, negotiated national targets. The Paris Agreement requires countries to determine their own contribution to meeting the global temperature goals, guided by the principles of equity and 'common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.'

In 2014, the Authority recommended a target range for emissions reduction equivalent to 45 to 63 per cent below 2005 levels by 2030 based on an assessment of Australia's fair share of the global emissions budget (Climate Change Authority, 2014). Australia's fair share was determined using a modified contraction and convergence approach, where faster reductions in developed countries gave developing countries headroom to increase their emissions before all countries converge on equal per capita emissions.

Since then, the Paris Agreement has become the primary international agreement guiding national emissions reductions. Under the Paris Agreement, national targets set out in NDCs are designed to ratchet up over time and together with other countries cumulatively meet the global temperature goals. New targets must be submitted at least every five years and each target must be more ambitious than the one before it.

In 2025, Australia is due to submit its next NDC under the Paris Agreement. Under the *Climate Change Act 2022* the Government must receive the Authority's advice before submitting Australia's next emissions reduction target, so we have commenced work in anticipation that we may be asked to provide such advice in the next calendar year.

Australia's current NDC includes three emissions reduction targets:

- A commitment to reduce greenhouse gas emissions to 43 per cent below 2005 levels by 2030, implemented as a single-year point target
- A multi-year emissions budget for the period 2021 to 2030, with an indicative value of 4381 million tonnes CO₂-e, corresponding to the 43 per cent target
- Net zero by 2050

The Authority’s advice will take account of how sectors, communities, governments and individuals can work together to prosper in the face of the decarbonisation challenge. The advice will consider consultation outcomes across all elements of its development, including social, employment and economic impacts, and opportunities that arise from the recommended targets and associated policies for Australia, including for rural and regional areas.

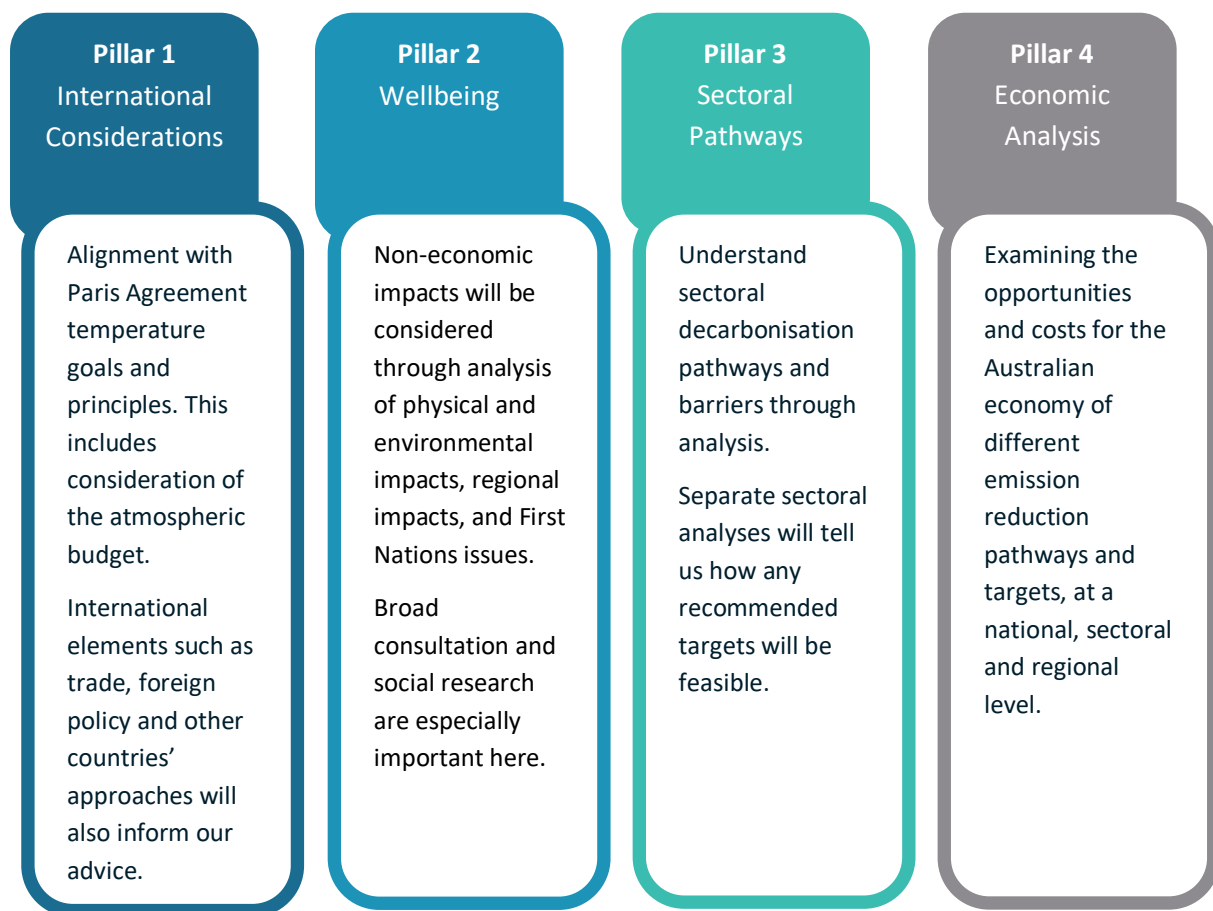


Figure 5: Target-setting Framework – The Authority’s approach to developing target advice

International considerations

The Australian Government passed legislation in 2022 setting national emissions reduction targets for 2030 and 2050, guided by the Paris Agreement, to which Australia is a Party.

The Authority will consider scientific evidence to understand and advise how the global temperature goals and broader principles of the Paris Agreement should guide Australia's domestic emissions reduction efforts.

It no longer makes sense to think about lowering carbon emissions as a cost. It is a source of competitive advantage.

(Climate Change Authority, 2021)

The Australian economy relies significantly on exports. As the global economy moves towards net zero, a large portion of the Australian economy risks being a less preferred trading partner unless it can compete on the emissions intensity of its exports. For example, products with high embedded emissions may be subject to carbon border tariffs. At the same time, the global transition presents opportunities for exports that contribute to decarbonisation, such as critical minerals, green steel and green hydrogen.

Beyond domestic emissions reductions targets, the Authority intends to consider Australia's potential contributions to emissions reductions overseas. As well as exporting low- and no-emissions products that enable transition, Australia has a history of exporting technologies and contributing to capacity building through knowledge-sharing and climate finance in the region to assist countries reduce their emissions and build resilience to climate change impacts (see section 3.3 below).

Wellbeing

The Authority recognises the importance of wellbeing in formulating its advice on the 2035 NDC. Due to similarities in metrics and scope, the Authority will use the same wellbeing framework developed to help track progress for the Annual Progress Report to determine how new and adjusted NDCs should be set. Please see the section on [Wellbeing](#) above for detailed information on the wellbeing framework and Section 3.3 for discussion of related wellbeing issues.

Sectoral Pathways

To ensure the Authority's advice and recommendations are achievable, the Authority is exploring sectoral decarbonisation pathways and the challenges and opportunities they present.

We intend to begin our analysis with a focus on sectors as they are set out in Australia's National Greenhouse Gas Inventory (electricity, stationary energy, transport, fugitive emissions, industrial processes and product use, agriculture, waste, and land use, land use change and forestry) and the key greenhouse gas emitting activities within these sectors.

In exploring potential pathways, the Authority will draw on the work already done by organisations such as Climateworks Centre, Beyond Zero Emissions and the Australian Energy Market Operator, as well as the findings of [the Net Zero Australia study](#) and the work of our counterparts within the International Climate Councils Network. We will take account of:

- how emissions and the intensity of those emissions are trending
- the geographical distribution of emissions and opportunities across urban, regional and rural settings
- current exports, projected demand and potential new exports
- lessons from international and sectoral best practice
- intersections and interdependencies between sectoral pathways

- barriers to progress along a pathway to decarbonisation
- policies that can enable and accelerate progress.

Economic analysis

In making its recommendations, the Authority will examine the economic impacts of different emission reduction pathways for Australia. This includes impacts on national headline figures (such as Gross Domestic Product, Gross National Income, Consumer Price Index, trade balance, national employment and wages) and analysis of socioeconomic impacts at a sectoral and regional level.

The Authority will use economic modelling to analyse the impact of varying levels of domestic and international climate ambition. This modelling will help us understand the opportunities and costs for the Australian economy associated with different emissions reduction scenarios.

Importantly, our advice will not engineer an emissions reduction target based solely on modelling results or analysis of national economic indicators. We will complement modelling with other data sources, consultation and qualitative research to establish a holistic understanding of the socioeconomic impacts associated with possible emissions pathways and incorporate this into our advice.

The Authority is in the process of planning the modelling exercise and has engaged the CSIRO and EY Port Jackson Partners to assist. Modelling scenarios and assumptions will be based on international best practice, expert advice, consultation and relevant data sources to ensure results are robust and fit for purpose.

Questions

8. How could the Authority best strike a balance between ambition, domestic considerations and the international context in its 2023 NDC advice?
9. What do you think Australia's 2035 target should be and why?

3. Cross-cutting issues

3.1 Leading indicators

At the time of publication (May 2023) there are only 80 months left to reach the 2030 target. This limited window makes it imperative that barriers to effective emissions reduction are identified early.

Leading indicators:

- can identify barriers to progress and enable them to be addressed early
- are forward-looking and measurable sets of data that can be used to anticipate how the economy and associated emissions are likely to change
- can provide early indications of whether the transition to net zero is happening fast enough
- can identify changes to climate impacts as well as early actions to reduce vulnerabilities and increase resilience and preparedness.

Examples: Leading indicators can be helpful for measuring progress in technology development, deployment and adoption. For example:

- For renewables to generate over 82 per cent of electricity in the National Electricity Market by 2030, large-scale renewable generation needs to be deployed at two to three times the rate of the previous decade, with accompanying storage (Climate Change Authority, 2022). Tracking the committed wind and solar capacity in the National Electricity Market can provide an early indication of whether renewables are being deployed fast enough to decarbonise the sector. However, as wind and utility-scale solar projects take several years to develop, other indicators are needed to predict rates of renewables deployment closer to 2030.
- The import and sale of electric compared to combustion engine vehicles would be leading indicators of emissions coming down in the transport sector.
- For climate adaptation, leading indicators of progress may include government and business adoption of climate risk strategies, and planning regulations that take future climate impacts into account.

Because leading indicators are forward-looking, they have a degree of uncertainty. For example, online searches on electric vehicles will not be a perfect predictor of future market share, compared to quarterly electric vehicle sales data. However, both sets of information can be valuable for identifying trends.

The Authority is seeking to identify data that could serve as valuable indicators of progress, and feedback from organisations and communities on whether they can track and share information which may help track and predict progress.

Questions

10. What are some leading indicators of progress towards net zero emissions?
11. What are some leading indicators of progress towards preparing for and adapting to climate change?

3.2 Sectoral pathways

Every sector must rapidly decarbonise, but the pace, sequence and methods of decarbonisation will vary between sectors. We will provide advice on sectoral pathways to achieve decarbonisation while ensuring Australia continues to be a prosperous and resilient nation and achieves wellbeing and adaptation outcomes.

Our advice will focus on addressing the barriers preventing sectors from decarbonising and transitioning towards net zero and net negative targets. We also aim to provide guidance on how households, business, workers and communities can better access the opportunities which come from our net zero transition.

Questions

12. What factors should the Authority consider when developing sectoral decarbonisation pathways?
 - a. What are the risks and opportunities for households, business, workers and communities affected by the transition?
 - b. Are there supply chain pressure points?
13. What is the role for Government in reducing these risks and assisting households, business, workers and communities to realise the opportunities?

3.3 Contributions beyond Australia's borders

There are many actions Australia can take to contribute to the global emissions reduction challenge beyond Australia's emissions reduction targets.

Some Australian industries, such as steel and aluminium, are emissions intensive and trade exposed (EITE). Measures to reduce emissions in those sectors could leave EITE businesses disadvantaged relative to international competitors, which could lead to domestic production shifting overseas to jurisdictions without measures in place to reduce emissions. This is referred to as 'carbon leakage' (see Section 3.2).

One way to avoid carbon leakage is to coordinate with trade partners (e.g. by implementing a CBAM) and another is to work with customers (e.g. by supplying lower emissions substitutes for our emissions intensive exports).

International partnerships

The Australian Government has a history of collaborating with other nations on the response to climate change. For example, Australia was a founding member of Mission Innovation – a global initiative to increase public investment in clean energy research and development and has entered bilateral partnerships to advance clean energy supply chains and deployment; deepen collaboration to tackle the global climate challenge; and support rapid regional and global decarbonisation, while building new clean energy trade opportunities for Australia.

Australia is also supporting its Indo-Pacific neighbours in a variety of partnerships, including more recently climate-focused partnerships (Department of Foreign Affairs and Trade, n.d.). Historical contributions through development grants for climate resilience are being revisited in 2023 to determine to what extent Australian aid can leverage private finance and boost overall climate finance available (Australian Government, 2022).

Fossil fuel exports

Australia's domestic emissions comprise less than 1.3 per cent of global emissions. However, the emissions from use of Australia's coal and gas exports by customers overseas amount to approximately three times as much as the emissions generated by Australia's entire economy – almost 4 per cent of global emissions (Climate Change Authority, 2021).

The emissions from mining and producing goods in Australia count towards Australia's greenhouse gas inventory, but the emissions from other countries' use of Australia's exports such as coal and gas do not. Under international frameworks, responsibility for reporting those emissions sits with the country using the fossil fuel. Phasing out fossil fuels will contribute to Australia's targets by reducing emissions from domestic mining and production processes, and make an even greater contribution by supporting emissions reductions in other countries.

Decarbonising the downstream emissions of Australia's export industries can support export destination countries to reduce their emissions more rapidly. Added to that, it reduces Australia's vulnerability to the policy decisions of key trading partners to phase out their use of fossil fuels. Downstream emissions of our exports can be mitigated in three main ways while ensuring energy supply to our customers: by developing low- or no-emissions alternatives such as green hydrogen; by capturing and sequestering the emissions at the point of combustion; or by offsetting emissions by removing carbon from the atmosphere. All three approaches are at relatively early stages of development and none are yet affordable and feasible at scale.

It is important to note that as Australia reduces its export of fossil fuels, other countries may 'fill the gap' by increasing their exports. Ultimately, customers of fossil fuel imports will decide when they phase them out. Different fossil fuels – such as bituminous and lignite coal and natural gas – are likely to be on different trajectories. For these and other reasons, the Authority considers that phasing out fossil fuels will need to be a planned and organised process, involving the development of new technologies, production processes, and engagement with industries, communities, customers and competitors.

International aviation and maritime emissions

Emissions from international aviation and shipping are not counted in national greenhouse gas inventories, so do not contribute to national targets. Those emissions fall under the auspices of the International Civil Aviation Organisation and International Maritime Organisation respectively, rather than the United Nations Framework Convention on Climate Change. Australia supports initiatives to reduce emissions under all three. Some countries are considering their contribution to reducing international transport emissions as part of their NDCs, in addition to their domestic targets.

Questions

14. What are the most important things to consider when assessing the adequacy of a country's NDC?
15. How could Australia partner with other nations to accelerate global progress towards meeting the Paris Agreement goals?
16. What do you see as the challenges and opportunities from a phase out of fossil fuel production? What should the Government consider when determining a plan for the phase out of fossil fuels?
17. Should the Authority consider international maritime and aviation emissions in its advice?

3.4 Preparing for change

Transitioning our economy to net zero and beyond will require legal, policy, social, behavioural, technological and market changes. These changes will affect households, business, workers and communities in a range of ways.

Australia is already feeling the effects of a changing climate. Even with strong domestic and global action to reduce emissions, climate-related impacts and risks are likely to worsen and persist for centuries to come. Adapting and preparing for these events is a nation-wide challenge.

The Authority is keen to hear your views on how Australia can transition to a low-emissions society and adapt to climate change while minimising social inequities. This is important for providing advice to Government on how to prepare and work with households, business, workers and communities.

Questions

18. What risks and opportunities do you (including your household, business, workers and communities) face as the world decarbonises and as Australia responds to the impacts of climate change?
19. What could governments do to help?

3.5 Targets

Under the Paris Agreement, Australia is required to submit an economy-wide greenhouse gas emissions reduction target in its NDC. Australia's next target must be more ambitious than the last.

Beyond these requirements, the Authority can provide advice on a range of different target types to inform the Government's decision about what to include in Australia's new NDC and as part of the broader policy suite. The list of different targets below includes different ways of framing national emissions reduction targets, as well as targets to guide progress towards a prosperous, resilient, net zero nation.

Point targets: Australia's current NDC includes a 2030 target of 43 per cent reduction below 2005 levels (reference indicator) by 2030, implemented as a single-year point target.

Emissions budgets: Australia's current NDC has a multi-year emissions budget covering cumulative emissions for the period 2021 to 2030 of 4381 million tonnes CO₂-e. The emissions budget is calculated by taking a linear decline beginning from the 2020 target of 5% below 2000 levels and finishing at 43 per cent below 2005 levels in 2030.

Net zero, mid-century and net negative targets: Countries are encouraged but not required to include net zero or mid-century targets, and many countries choose to do so. Australia currently has a net zero emissions by 2050 target. Australia's next NDC could leave that target unchanged, adopt a earlier net zero target date, and/or a net negative target for 2050 or beyond. For example, Sweden has targets of net zero by 2045 and net negative after 2045.

Target bands or ranges: In its 2014 advice, the Authority recommended Australia should aim to reduce emissions by 40 to 60 per cent by 2030, based on 1990 levels. If converted to a 2005 base, this would have been a 2030 range of 45 to 63 per cent.

Sectoral targets: The Authority could advise on further sectoral targets. These could be emissions based or use another metric. For example, the Commonwealth government has an 82 per cent renewable energy generation target for Australia's electricity sector.

Conditional targets: Some ambitious targets may be feasible only in certain circumstances, such as a particular level of international action or the implementation of certain policies.

Interim targets: Also known as stepping-stone or milestone targets, stepping stone targets set a pathway between near-term and longer-term targets.

Greenhouse gas targets: The Authority could advise on targets for different greenhouse gases, such as carbon dioxide, methane and nitrous oxide. Australia has signed the Global Methane Pledge to reduce global methane emissions by 30% by 2030. It is important to note that this is a pledge to contribute to a global goal and does not represent a domestic Australian target.

Reductions and removal targets: In its recent Sequestration Potential Insights Paper, the Authority observed that separate targets for emissions reduction and removal can establish a pathway for reducing emissions and scaling sequestration at the same time.

Technology targets: Targets for technologies that enable a broader transition could set out milestones and deliverables to have them deployed in time to support an orderly decarbonisation pathway.

Conservation/Bio-carbon targets: Ecological conservation and restoration activities can greatly improve local environmental function, with significant benefits for biodiversity, water quality, soil quality, local climate regulation, disaster resilience and more. Healthy natural environments can generally also capture and store more atmospheric carbon as biomass. Australia has both land and marine conservation targets: 30 per cent of the area of each protected by 2030. However, the climate mitigation and adaptation potential of this target has not been fully explored.

Targets on international scope 3 emissions: Non-domestic sources of emissions are not counted in Australia's emissions inventory and do not count towards our domestic targets. Nonetheless, NDCs or other government commitments could include targets to reduce Australia's contribution towards its scope 3 emissions, such as trade-related emissions, fossil fuel exports and aviation and maritime emissions (outlined in section 3.3).

Adaptation targets and goals: The Authority could advise on adaptation goals with well-defined, traceable policy and action deliverables covering all sectors and needs, as well as how to strengthen monitoring, reporting and evaluation.

Climate finance targets: The Authority could advise on Australia's climate finance target to support other nations accelerate their NDC implementation and/or adapt to the impacts of climate change.

Voluntary and mandatory targets: Targets can be voluntary or mandatory in nature (e.g. voluntary corporate net zero commitments and mandatory Safeguard Mechanism baselines). Voluntary targets can signal a commitment to certain goals. They can serve as a precursor to future mandatory measures to lock in achievement, level the playing field and address insufficient progress. Well-designed mandatory targets can drive faster, fairer and more predictable progress but can inhibit the choices of businesses and consumers and may lead to higher costs.

Questions

20. What types of targets do you see as important and/or problematic, and why?

3.6 Are Kyoto-era schemes fit for the Paris Agreement era?

The National Greenhouse and Energy Reporting (NGER) Act and the Carbon Credits (Carbon Farming Initiative) Act (CFI Act) were established in the context of the Kyoto Protocol. While schemes under the NGER Act and CFI Act (including the Emissions Reduction Fund - ERF) have evolved over time, the Paris Agreement is markedly different to the Kyoto Protocol in many ways.

Furthermore, while the Paris Agreement is the centrepiece of global cooperation on climate change, a new global climate architecture is emerging, reflecting actions that implement and complement the 2015 agreement. Actions are being taken not just by governments but also by buyers, sellers and investors in markets. We call this architecture 'Paris Plus.'

This year the Authority will conduct its first concurrent reviews of the NGER Act and the CFI Act. The time is right to review whether these schemes are fit for purpose in the Paris Plus context.

The Paris Plus context brings with it risks and opportunities. As decarbonisation efforts across all sectors accelerate, there is increasing overlap of compliance and voluntary carbon markets. The integrity of schemes to ensure real abatement is more important than ever. For example, there is increasing risk of double counting - when one tonne of abatement is used to compensate for more than one tonne of emissions.

There are also opportunities for Australia now that carbon market rules have been agreed internationally – Article 6 of the Paris Agreement. This allows for Australia to consider exporting ACCUs or importing Internationally Transferred Mitigation Outcomes (ITMOs) to count towards Australia's target. This would require updates to our legislative framework and accounting practices to align with Paris Agreement rules on trading.

NGER Review

The NGER Act establishes the NGER scheme, which requires companies that meet certain thresholds to report their greenhouse gas emissions, energy production and energy use to the Clean Energy Regulator, using methods consistent with Paris Agreement requirements. The data from this scheme help meet international reporting obligations, policy development, and inform the Australian public.

The NGER Act also establishes the Safeguard Mechanism, which requires Australia's highest emitting industrial facilities to keep their net emissions below a set limit, called a baseline, to help achieve Australia's emissions reduction targets. The Parliament has recently passed reforms to the Safeguard Mechanism to reduce emissions baselines predictably and gradually towards achieving net zero by 2050. These reforms will come into effect from July 2023 and are scheduled to be reviewed in 2026/2027.

This year the Authority's review will cover all aspects of the NGER Act but will focus on the NGER scheme, recognising the Safeguard Mechanism has just gone through a significant consultation and reform process.

Paris Plus

The various agreements, targets and cross-border instruments with the purpose of contributing to the goals of the Paris Agreement, such as:

- voluntary carbon markets
- carbon border adjustment mechanisms (CBAMs) and clubs
- subnational and corporate targets
- climate-related financial disclosure
- taxonomies and certification schemes
- international agreements to reduce aviation and maritime emissions

(Climate Change Authority, 2021)

As part of the review of the NGER scheme, the Authority expects to be asked to review methane measurement, reporting and verification (MRV). Methane is one of the gases companies must report under the NGER scheme. The NGER Act and the instruments under the Act provide methods for companies to calculate their methane emissions. The Authority will consider these methods in the context of recent international developments in methane MRV, including the work of the Oil and Gas Methane Partnership 2.0 and the Metcoal Methane Partnership.

CFI Review

The Authority's review of the CFI Act will build on the recent Independent Review of ACCUs (the Chubb Review), including consideration of the merit of a mechanism to provide further assurance of additionality and conservativeness of the CFI (see below). The Authority also intends to consider issues raised in response to this paper. Supporting integrity and transparency remain key issues for the CFI.

As the Safeguard Mechanism ramps up, further driving the role of the private sector in the ACCU market, the Authority's review will consider the role of the Government in the carbon market.

As outlined in the Authority's 2022 Review of International Offsets, issues to consider in the Paris Agreement era also include:

- international efforts such as the Core Carbon Principles by the Integrity Council for the Voluntary Carbon Market
- increasing prioritisation of removals over emissions reduction projects as we move towards net zero and beyond
- the role of carbon offsets projects in also supporting non-carbon benefits such as biodiversity, adaptation and sustainable development
- international trading of carbon credits and the systems to support these mechanisms.

Questions

21. What do you see as the strengths and weaknesses of the NGER scheme? How could it be improved?
22. What aspects of methane measurement, reporting and verification should the Authority focus on as part of the NGER review?
23. Following the Government's acceptance of recommendations of the Chubb Review, what do you see as the strengths and weaknesses of the CFI and ERF?
24. How could the CFI, ERF and NGERs be improved in the context of the Paris Agreement era?

3.7 Carbon credit integrity

The Chubb Review recommended that the Authority "should provide advice to the Minister on the merits of a mechanism at the scheme level to provide further assurance of additionality and conservativeness in a transparent manner" (recommendation 7).

The Carbon Farming Initiative Act includes several measures designed to ensure abatement integrity, such as rules around methodology development and the risk-of-reversal buffer. An "integrity buffer" would mitigate the risk that despite these measures, ACCUs are issued where no abatement has occurred. This could be established in different ways, such as:

- the Government could purchase and cancel a percentage of units generated

- creation of a supply side reserve (e.g. some units are withheld when units are issued)
- discounting the issuance of ACCUs (e.g. some of the reported abatement is not credited with units at all)
- imposing a demand-side correction (e.g. a correction rate for the use of units for compliance with the Safeguard Mechanism, i.e. one tonne of emissions would need to be offset with more than one ACCU).

A buffer could be applied at different levels. For example, an integrity buffer could be applied scheme-wide (the approach the Chubb Review recommended be considered), to different project types (e.g. removals vs avoidance), or at different rates for particular methodologies with higher integrity risk.

Integrity could also be bolstered at the methodology level, for example with greater conservativeness around baselines and shorter crediting periods. Discounted issuance could also be applied at the methodology level, based on an assessment of the residual risks to integrity after other elements of the scheme are taken into account, as well as the cost of abatement.

The Authority's 2022 Review of International Offsets noted that demand-side integrity criteria are increasingly important in the Paris Agreement era and as global emissions shift towards net negative. Under the Safeguard Mechanism, facilities that surrender ACCUs equivalent to 30 per cent or more of their baseline will soon be required to submit statements on why more on-site abatement has not been undertaken. Aspects of this will be published to allow scrutiny. This reporting requirement comes in the context of the Government's commitment to ensuring large businesses provide Australians and investors with greater transparency and accountability when it comes to their climate-related plans, financial risks and opportunities, and the Senate's recent referral of an inquiry into greenwashing.

Carbon markets are growing and rapidly evolving. The Clean Energy Regulator is currently developing an Australian Carbon Exchange to foster the growth of Australia's carbon market by making the trading of ACCUs, and potentially other types of carbon units and certificates, more transparent, simpler and more accessible to a growing number of individuals and businesses.

The integrity of the trading markets themselves underpin the operation of the market, with implications for liquidity and confidence. For example, speculative trading could help drive depth and liquidity but could also have adverse implications for the functionality of the market. The rules and operating guidelines for trading – for the exchange itself - will need to strike a balance to mitigate risks without being unduly restrictive.

Questions

25. Following adoption of the Chubb Review recommendations, what concerns about ACCU integrity remain?
26. What are the risks to integrity that should be buffered against?
27. How should a buffer be applied (e.g. government purchase, supply-side reserve, demand-side correction, other)?
28. What role should governments and users of offsets have in ensuring demand-side integrity?
29. What protections are needed to ensure the integrity of carbon trading markets and exchange platforms?

3.8 International units

International carbon markets have been an important part of the analysis to inform Australia's previous emissions reduction targets, including the Authority's 2014 advice on Australia's 2030 target. Carbon markets have evolved since then and Australia's position on the use of international markets remains unclear.

To help countries meet their targets, Article 6 of the Paris Agreement operates as market-based mechanisms to facilitate the global trading of abatement. Voluntary cooperation by countries in achieving their NDCs through markets may occur in two main ways:

- Article 6.2: guidance on the use of international carbon markets
- Article 6.4: a United Nations (UN)-backed carbon market mechanism.

For abatement in one country to be counted towards another country's NDC, an authorised transfer of abatement must take place under Article 6, known as an 'Internationally Transferred Mitigation Outcome' (ITMO). Importantly, there can be no 'double counting' under the Paris Agreement. In other words, once a tonne of abatement – as represented by an ITMO - is traded, it can only be counted towards the buying country's target and cannot be counted towards the selling country's target.

Australia could be an importer and an exporter of offsets in the voluntary and compliance markets. For example, companies could export products with embedded emissions and/or emissions from the use of those products (scope 3 emissions) offset in Australia.

Australia has an active and growing national carbon market for both compliance and voluntary purposes, but Australia's carbon market is not yet ready to participate in the Paris Agreement trading framework. The Government has committed to consult on amending legislation that enables high integrity international units to be included in the Australian National Registry of Emissions Units and provide a mechanism for such units to be used for compliance at a future time, reflecting the Authority's recommendations in its 2022 Review of International Offsets.

Questions

30. What role should international carbon markets have in Australia?

3.9 Other matters

The Authority is listening. Climate change affects us all and we all have a role to play. Everyone's perspective matters. The topics and questions raised in this paper only scratch the surface of the challenges Australia must overcome on the path to a resilient, net zero future.

We welcome any further input on any of the issues raised in this paper, or any other topics or issues you believe we should be considering in our advice to Government on Australia's current and future climate policy.

Questions

31. What else should the Authority be considering in its advice to Government?

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