

Roles and models for the Climate Change Authority

Australian Projections provides actuarial advice on issues of national policy, such as aged care, education, energy and climate. We are trying to help Australians and their politicians contribute to climate policies. This submission to the Climate Change Authority is in response to their issues paper of May 18. Please contact Dr Richard Cumpston on 0433 170 276 or richard.cumpston@gmail.com with any questions.

Summary

Recent legislation has added to the complex responsibilities of the Climate Change Authority. This submission looks at the roles of the Authority, and the computer models needed by the Authority and other Commonwealth agencies.

The Authority has to suggest any changes to Safeguard rules needed to ensure that the Safeguard objectives continue to be met. A model of the operation of each present and potential facility is needed by the Authority.

Changes to Safeguard objectives may result from political forces. Changes to rules may be needed to give results more closely matching objectives. Market prices for commodities can be unstable. Some emission measurement methods are suspect. Emission abatement methods are at differing stages of development. All this makes any long-term predictions about individual facilities very uncertain.

A model of Safeguard facilities can still however be of immediate value. It should be based on detailed past data on each facility, on each commodity and on abatement methods for each industry. Making these data publicly available would help inform public discussion on policy alternatives, and help reassure sceptics that government policies are soundly based.

The Climate Change Minister has to publish an annual climate change statement, including the impacts of the Commonwealth's climate change policies on rural and regional Australia. The Authority's model of Safeguard facilities should help do this, and should provide relevant input for the climate and industry modelling being developed by Treasury. Authority and Treasury modelling should help inform residents of rural and regional Australia, some of whom may be severely affected by Safeguard or climate changes.

The Authority is required to advise the Minister on Australia's nationally determined contribution under the Paris Agreement. This must include advice on employment, social and economic benefits of emission policies, and on the physical impacts of climate change. The Authority will need to work with other Commonwealth departments and agencies.

Some of the Authority's statutory roles reflect public concern about the importance of climate change, and the past ineffectiveness of some government policies. Any failures by the Authority to fulfill these roles are likely to increase the growth of climate-conscious parties and independents.

1. Introduction

1.1 Current projects of the Climate Change Authority

The Authority's issues paper of 18 May 2023 listed four current tasks

- Advice on emission reduction targets for Australia's next nationally determined contribution under the Paris Agreement
- Advice for the Minister for Climate Change and Energy on the Annual Climate Change Statement for 2023
- Review of the Carbon Credits (Carbon Farming Initiative) Act 2011
- Review of the National Greenhouse and Energy Reporting Act 2007.

1.2 Relevance of this submission to the Authority's current projects

This submission largely relates to annual advice by the Authority to the Minister about the Safeguard mechanism and the annual climate change statement. It also relates to advice to the Minister about Australia's next nationally determined contribution.

A previous submission by Australian Projections, titled "Underestimation of coal mine emissions" was made on 23 June 2023, and updated on 28 June 2023.

1.3 Statutory roles of the Authority

Role	Legislation	Timing	Initiator	Public consultation	Next due
Review operation of CCI Act 2011	S306 of Carbon Credits Act 2011	Within 3 years of previous review	Minister	Yes	Dec-23
Review operation of NGER Act 2007	S76A of NGER Act 2007	Within 3 years of previous review	CCA	Yes	Dec-23?
Review operation of NGER Act 2007	S76B of NGER Act 2007		Minister	Yes	
Advice on Climate Change Statement	S14(1) of Climate Change Act 2022	Annual	Minister/ CCA	Yes	Sep-23?
Advice on Climate Change Statement	S14(1A) of Climate Change Act 2022	Annual	CCA	Yes	Sep-23?
Special reviews	S59 of Climate Change Authority Act 2011	As requested	Minister/ Parliament	Yes	
Advice on nationally determined contribution	S15 of Climate Change Act 2022	At least once every 5 years	Minister	Yes	2024?

The above list is unlikely to be complete. For example, in October 2020 the Authority published its third review of the Emissions Reduction Fund. We have asked the Authority about the statutory basis for these reviews.

2. Advice to the Minister about Safeguard emissions

2.1 Legislative requirements

Section 14(1A) of the Climate Change Act 2022 requires the Authority to advise the Minister on whether safeguard emissions and net safeguard emissions are declining consistently with the outcomes in 3.2(b), (c) and (d) in the NGER Act 2007. These outcomes are

(b) total net safeguard emissions for all of the financial years between 1 July 2020 and 30 June 2030 do not exceed a total of 1,233 million tonnes of carbon dioxide equivalence;

(c) net safeguard emissions decline to:

(i) no more than 100 million tonnes of carbon dioxide equivalence for the financial year beginning on 1 July 2029; and

(ii) zero for any financial year to begin after 30 June 2049;

(d) the 5-year rolling average safeguard emissions for each financial year that begins after 30 June 2024 are lower than the past 5-year rolling average safeguard emissions for that financial year;

Definitions of most of these terms are in section 7 of the NGER Act. Net safeguard emissions are defined as the total of net covered emissions for all designated large facilities. Covered emissions are defined in section 22XI as scope 1 emissions of greenhouse gases, other than emissions of a kind specified in the Safeguard rules. We have not been able to find a definition of net covered emissions, but we suspect that this refers to covered emissions less offsets. Section 10 gives the Minister power to determine measurement methods for emissions, reduction, removal, offsets, production and consumption. Eligible offsets may currently be Australian Carbon Credit Units (ACCUs) and the new Safeguard Mechanism Credits.

Object (d) refers to “past 5-year rolling average safeguard emissions”. This is defined as the one-fifth of the total safeguard emissions in the 5 years ending 2 years before the start of the current financial year (3 years if the current financial year ends before 1 July 2027). Object (d) is clearly about emissions before offsets.

2.2 Advice about emissions declining consistently with Safeguard outcomes

Section 14(1A)(a) of the Climate Change Act 2022 requires the Authority to give advice on whether Safeguard emissions or net emissions are declining consistently with the Safeguard outcomes, taking into account the impact of any expanded facilities, or of any expected new facilities, in future financial years. This reference to future years suggests the word “declining” should be “likely to decline”.

If emissions are not declining as required, section 14(1A)(b) requires the Authority to give advice on any amendments to the Safeguard rules that are needed to achieve each of the safeguard outcomes. The Authority should also be able to recommend changes to any other legislative instruments that affect Safeguard outcomes.

2.3 The Authority’s need for a model of present and future Safeguard facilities

To meet the requirements of section 14(1A), the Authority needs a model of all present Safeguard facilities, and of proposed future facilities. Projections from such a model could also be helpful in part (e) of the annual climate change statement’s content (see 3.1).

2.4 Problems in modelling present and future Safeguard facilities

The present difficulties in modelling Safeguard facilities include

- Changes to Safeguard facilities resulting from political forces (for example, a limit on the proportion of emissions met by offsets)
- Changes to rules to give results more closely matching objectives
- Unstable market prices for commodities
- Slow production responses to commodity price changes
- Changes to prescribed emission measurement methods
- Delays in the development of emission abatement methods
- Uncertain availability of offsets
- Uncertain procedures to reduce non-Safeguard emissions.

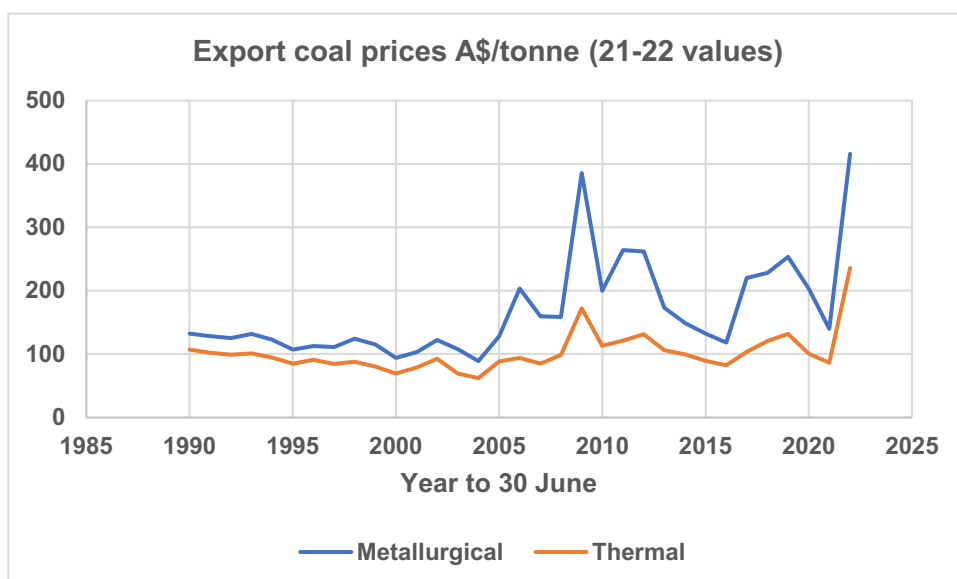
2.5 Changes to rules to give results more closely matching objectives

When trying to meet targets in a system subject to random variations, frequent control variations based on recent data are likely to give smaller variations from targets than large infrequent changes. The Safeguard rules assume a baseline decline rate of 4.9% each year to 2030, with decline rates for 2030-31 to 2034-35 being set by 1 July 2027 (DCCEEW May 2023 p1). These infrequent changes and long notice periods are likely to give swings well above and below Safeguard objectives.

From 2023-24 on, all Safeguard facilities will be on production-adjusted baselines (DCCEEW May 2023 p2). To allow closer control over emissions and net emissions, it may be desirable to revert back to controlling emissions rather than emission intensities.

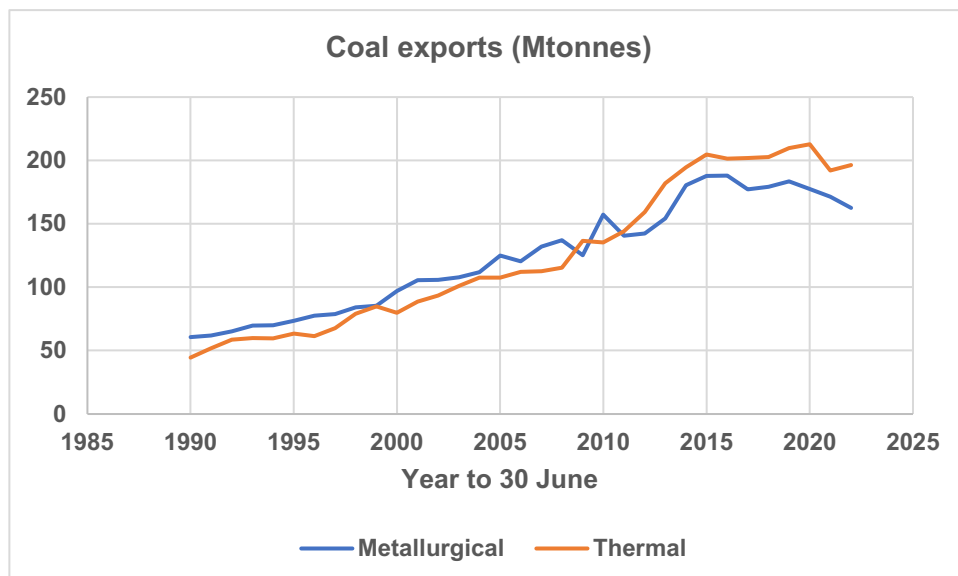
2.6 Unstable market prices for commodities

The following chart shows how unstable export prices for metallurgical and thermal coal have been (DISR 2023 and similar earlier publications).



2.7 Slow production responses to commodity price changes

Coal exports increased gradually up to 14-15, apart from a minor peak in metallurgical coal exports in 09-10. After 14-15 exports have been stable or falling, even though prices are still historically high. Coal exporters seem to have little ability to respond quickly to price changes.



2.8 Changes to prescribed emission measurement methods

Our submission to the Authority of 28 June 2023, titled “Underestimation of coal mine emissions”, noted that open cut coal mines are reporting fugitive emission intensities only about one-tenth of those reported by underground mines. While modest increases to state emission factors for open cut mines were made on 1 July 2020 and 2023, much larger changes may be needed. A review of all the prescribed emission measurement methods might show that changes are needed across a range of industries.

2.9 Uncertain availability of offsets

CSIRO’s November 2022 report for the Authority recommended that a study be made of Australia’s realisable sequestration potential. They estimated that such a study might require investment of the order of \$3-5m over 18-24 months. From enquiries to CSIRO and the Authority, we have not been able to find if any such study has been started.

A further problem is that Australian Carbon Credit Units (ACCUs) are not suitable for use in offsetting methane emissions. In his foreword to the December 2022 report of the Independent Review of Australian Carbon Credit Units, Professor Ian Chubb said:

“Methane and nitrous oxide are both many times more potent than CO₂ as a heat-trapping gas, although much lower in atmospheric concentration compared with CO₂. Their removal from the atmosphere would likely have a significant impact on slowing temperature rise, in both cases, however, drawdown is not yet feasible. Until suitable technology is available, avoiding emissions of methane and nitrous oxide is the only way to limit their impact.”

2.10 Uncertain procedures to reduce non-Safeguard emissions

Safeguard emissions only make up about 28% of Australia's greenhouse gas emissions. Grid-connected electricity generators have substantial emissions, and are proving unexpectedly difficult to displace with renewables. It is not yet clear how agricultural methane or transport emissions can be reduced. Difficulties in these areas might require faster reductions in Safeguard emissions.

2.11 Immediate value of a model of Safeguard facilities

In spite of these uncertainties, a model of Safeguard facilities can still be of immediate value. It should be based on detailed past data on each facility, on each commodity and on abatement methods for each industry. Making these data publicly available would help inform public discussion on policy alternatives, and help reassure sceptics that government policies are soundly based.

3. Annual climate change statement

3.1 Required contents of the annual climate change statement

Under section 12 of the Climate Change Act 2022, the Minister must prepare an annual statement that relates to

- (a) the progress made during the year towards achieving Australia's greenhouse gas emissions reduction targets; and*
- (b) international developments during the year that are relevant to addressing climate change; and*
- (c) climate change policy; and*
- (d) the effectiveness of the Commonwealth's policies in contributing to the achievement of Australia's greenhouse gas emissions reduction targets and reducing emissions in the sectors covered by those policies and in particular whether safeguard emissions and net safeguard emissions are declining consistently with the safeguard outcomes; and*
- (e) the impact of the Commonwealth's climate change policies to achieve Australia's greenhouse gas emissions reduction targets on rural and regional Australia, including the social, employment and economic benefits being delivered by those policies in rural and regional Australia; and*
- (f) risks to Australia from climate change impacts, such as those relating to Australia's environment, biodiversity, health, infrastructure, agriculture, investment, economy or national security.*

3.2 Advice by the Authority about the annual climate change statement

Section 14(1) of the Climate Change Act 2022 says that the Authority must give the Minister advice that relates to the preparation of the statement. Section 14(1A) says that this advice

must include advice on various Safeguard issues, that seem to fall within (d) of section 14(1).

This suggests that the Authority must give the Minister advice about Safeguard issues, but can choose whether to give advice about the other content of the annual climate change statement. The six topics to be covered in the statement are wide-ranging, and the Authority may not have the specialist expertise to advise in detail.

It seems likely that the Authority's other work, and its extensive public consultation, will allow the Authority to offer the Minister useful advice on all the topics in the annual climate change statement

3.3 Treasury Climate and Industry Modelling Branch

At a hearing of the Senate Environment and Communications Legislation Committee on 28 February 2023, the Deputy Secretary of DCCEEW said:

"...jointly with Treasury, over time, we will be ... rebuilding the capacity to do the kind of modelling that will take into account all the policies that will serve to reduce Australia's emissions to meet the 43 per cent and then on to the net zero target by 2050."

In response to our enquiry about this project, on 14 June Treasury told us:

"As part of its Powering Australia plan, the Government committed to restoring Treasury's role in modelling climate risks and opportunities for the Australian economy. To support this work, Treasury received \$29.8 million over four years in the 2022-23 October Budget. We have subsequently established a new Climate and Industry Modelling Branch ... CLIMB is developing a range of analytical and modelling tools that will position Treasury to be able to provide economic advice on a breadth of policy decisions within the climate space – this includes in support of the net zero transition."

3.4 Proposed modelling by Climate Change Authority

The Authority's issues paper of 18 May 2023 said:

"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..."

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."

3.5 Ways to make Treasury and Authority models more useful to regional residents

Persons in regional and regional Australia need the best possible information on likely changes in their area, so that they can make decisions about their own futures. Should they move or retrain? Businesses also need the best possible information about likely future local conditions.

We suggest that

- Models should be updated annually, so that overall results can be included in the annual climate change statement, and personal decisions can be based on up-to-date projections
- Projections for different scenarios should be available for a large number of separate areas (for example the 107 ABS level 4 statistical areas, the 151 House of Representative electorates, or the 566 local government areas)
- Users should be able to select the scenarios and areas of interest to them, and receive the results electronically
- No charge should be made for results, or for descriptions of scenarios, assumptions and methodology
- Scenarios should include current government policies, and policy variations that may be needed to help meet national targets
- Descriptions of data, scenarios, assumptions, methodology and results should be clear enough to allow the results to be independently reproduced and peer reviewed
- Ownership and operation of models should rest with the Commonwealth, not an external consultancy.

Some projection results, for example those about individual Safeguard facilities, will be commercially sensitive. Use of external consultants to create or operate models would increase risks of pre-publication disclosure.

3.6 Overlap between Treasury and Authority models

Some overlap between models is inevitable and desirable. This should help ensure that outputs for specific purposes are available as needed, for example to meet the Authority's deadlines in different roles. It should also help ensure that models from different sources are using compatible assumptions, and are giving reliable results.

4. Advice to the Minister of Australia's nationally determined contribution

4.1 Legislative requirements

Section 15 of the Climate Change Act 2022 requires the minister to ask the Authority, at least once every 5 years, for advice on Australia's nationally determined contribution under the Paris Agreement. This advice has to take into account

- (a) the social, employment and economic benefits of any new or adjusted greenhouse gas emissions reduction targets and associated policies, including for rural and regional Australia; and*
- (b) the physical impacts of climate change on Australia, including on rural and regional Australia.*

4.2 Australia's nationally determined contribution

In December 2020 Australia made its first nationally determined contribution under the Paris Agreement, committing to a target to reduce greenhouse gas emissions by 26 to 28 per cent below 2005 levels by 2030. A subsequent adjustment committed Australia to net zero by 2050.

In 2022 the new Australian government updated this, committing to reduce greenhouse gases 43% below 2005 levels by 2030, with a multi-year emissions budget from 2021-2030. It reaffirmed Australia's commitment to meet net zero emissions by 2050.

4.3 The Authority's advice on a new nationally determined contribution

Lowy Institute polls (2022, p27) show that 60% of Australians consider global warming to be a serious and pressing problem. The level of our next nationally determined contribution will be of strong interest to voters. The Authority is required to advise the Minister on the nationally determined contribution, but should be one of many departments and agencies providing advice. To avoid poorly based or conflicting advice, information should flow between all the departments and agencies involved.

5. Public consultation

5.1 Meeting the Authority's requirements to consult

The table in 1.3 lists seven roles, in all of which the Authority is required to publicly consult. This strongly suggests consultation with the general public, as well as with affected businesses. We have been advised by the Department of Prime Minister and Cabinet that there are no general instructions on how consultations should be carried out. We make the following suggestions based on our experience responding to consultations by a range of Commonwealth departments and agencies.

5.2 An informative issues paper is vital

On 18 August 2022 DCCEEW issued a Safeguard consultation paper of 31 pages. This was largely fact-free, and respondents had to analyse external data to identify the highest-emitting industries, and those likely to be classed as emissions-intensive, trade-exposed. No mention was made of the very different emission intensities of facilities within the same industry, for example coal mining. Responses had to be made by 20 September 2022, too short a period for persons not familiar with the intricacies of the Safeguard mechanism. As a result of this inadequate issues paper, many of the submissions reflected the commercial interests or personal prejudices of the submitters.

5.3 Submissions should be made public as received

The Productivity Commission generally makes submissions public on its website, as they are received. This shares information between submitters, encourages co-operation and avoids delays between the closure date and when the submissions are made public.

5.4 Difficult issues should be mentioned, not hidden

The August 2022 consultation paper made no mention of emission measurement errors. Some submissions, with relevant expertise, suggested emissions were being underestimated by the fossil-fuel industries. This issue was again not mentioned in DCCEEW's January 2023 position paper. It is good to see from the Authority's issues paper that the

Authority expects to be asked to review methane measurement, as part of its review of the NGER scheme.

5.5 Other forms of consultation

The Authority's issues paper said

"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."

For those rural and regional areas likely to be strongly affected by Safeguard changes, townhall meetings or local surveys could be useful. It will be a continuing challenge for models developed in Canberra to properly reflect the realities of rural and regional Australia.

6. The importance of the Authority fulfilling its roles

6.1 Concerns by Senate members about lack of public disclosure

In the Senate Environment and Communication Legislation Committee's report on the Climate Change Bill 2022, Coalition senators did not support the bill. One reason for this was that the consultation process failed to properly account for rural and regional perspectives. National senators also did not support the bill, noting evidence that action on climate change would disproportionately affect certain groups, industries and regions.

In debate on the Safeguard Mechanism (Crediting) Amendment Bill 2023 on 29 March, Liberal Senator Duniam said

"...there are entities, individuals, businesses, households and communities who all have concerns about what this could mean."

6.2 Refusal to disclose Safeguard modelling

From evidence to a Senate committee hearing on 28 February 2023, Treasury and DCCEEW jointly analysed the likely use by Safeguard facilities of onsite abatement instead of domestic offsets, and the effects on the ACCU market. That analysis was not available to the Senate, as it fed into cabinet deliberations, and was covered by cabinet-in-confidence (Senate Hansard SECLC p44). In a subsequent letter to the chair of the Committee, seeking public interest immunity, the Minister for Climate Change and Energy said:

"Disclosure of the safeguard mechanism modelling would not be in the public interest because disclosure would reveal the deliberations of Cabinet. It is a long held and accepted principle that deliberations of Cabinet be appropriately protected in order to ensure that decisions can be discussed in an open manner preserving Cabinet unity."

"In addition, disclosure of the safeguard mechanism modelling would not be in the public interest due to market sensitivities relating to the Government's role as a purchaser of ACCUs."

"Cabinet-in-confidence" is a frequently used excuse, both in denying information to Parliament, and in refusing requests under the Freedom of Information Act 1982. But once

Cabinet has made a decision, it may be essential that the public be informed about the nature of the decision, and the reasons for it.

Many government decisions have market consequences. Market participants should be informed at the same time, so that no participant gains an unfair advantage.

We suspect that the government was unwilling to disclose its Safeguard modelling, because this modelling was preliminary, and did not meet many of the criteria suggested in 3.5.

6.3 Consequences of failure by the Authority to fulfil its roles

As DCCEEW's August 2022 consultation paper noted, the Safeguard Mechanism has not been effective in reducing emissions. Some of the Authority's statutory roles reflect public concern about the importance of climate change, and the past ineffectiveness of some government policies. Any failures by the Authority to fulfill these roles are likely to increase the growth of climate-conscious parties and independents.

Abbreviations

ACCU	Australian Carbon Credit Unit
CCA	Climate Change Authority
CER	Clean Energy Regulator
CO ₂	Carbon dioxide
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DISR	Department of Industry, Science and Resources
Mtonne	Million tonnes
NGER Act	National Greenhouse and Energy Reporting Act 2007
SECLC	Senate Environment and Communications Legislation Committee

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