



UNFCCC Global Stocktake Submission

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5 August 2022

Recipe for disaster: ‘We are only responsible for our domestic emissions’

Vote Climate One provides voting guides for Australian electorates as a means to elect pro-climate members of parliament and to defeat sitting members who are opponents of effective climate action.

This Submission provides input for the second **Technical Dialogue (TD 1.2)** of the first **Global Stocktake (GST)** of the **Paris Agreement**, which aims to assess the world’s collective progress towards achieving the purpose of the agreement and its long-term goals, doing so in a comprehensive and facilitative manner, considering mitigation, adaptation and the means of implementation and support, and in the light of equity and the best available science (Article 14).

1 Submission mandate

Decision **19/CMA.1, paragraph 19**: requested the Chairs of the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation to issue a **call for the inputs** referred to in paragraphs 36 and 37 of the same decision, taking into account that such inputs should be submitted at least three months before their consideration in the technical assessment — 6th August 2022 for TD1.2.

At SB52-55, Parties **agreed** that further sources and types of information pursuant to paragraphs 2 and 6(b) of decision **19/CMA.1** will also serve as a basis for the sources and types of information for the first GST with a view to informing the technical assessment component thereof.

2 Thematic areas and guiding questions

Thematic areas for this Submission are: **Mitigation**, and **Means of implementation**.

The following **guiding questions for TD 1.2** are addressed:

Mitigation guiding questions: 1, 4, 5a, and **5b**.

Cross-cutting guiding questions: 18, 20, 21, 22a, and **22c**.

Relevant question numbers are indicated at the right-hand end of the line of each Section heading.

3 Executive Summary

3.1 Best available science shows that supply-side action is required [Q5a]

The Paris Agreement has been relying on demand-side action (via emission reduction NDCs) to reduce the global GHG pollution rate. The world’s governments have been too slow to respond. Best available science shows that supply-side action to reduce fossil fuel (FF) production is now *also* urgently required: it is now *physically impossible* for reductions in GHG emission rates to alone suffice in preventing the climate chaos and catastrophic environmental losses that will ensue if warming is not limited to 1.5°C.

3.1.1 Planned over-production of fossil fuels [Q1, Q4]

The [Production Gap Report \[1\]](#) — first launched in 2019 — tracks the discrepancy between governments’ planned fossil fuel production and global production levels consistent with limiting warming to 1.5°C or 2°C. Key findings of the 2021 report (page 4) include,

- *“the world’s governments plan to produce more than twice the amount of fossil fuels in 2030 than would be consistent with limiting warming to 1.5°C”*
- *“Global fossil fuel production must start declining immediately and steeply to be consistent with limiting long-term warming to 1.5°C”*

The question of which countries need to take action on fossil fuel production is answered in the report (March 2022), [Phaseout pathways for fossil fuel production within Paris-compliant carbon budgets \[2\]](#).

From the Headline Finding on page 6: Based on a 50:50 chance of not exceeding 1.5°C,

- *“The report makes absolutely clear that there is no capacity in the carbon budget for opening up new production facilities of any kind, whether coal mines, oil wells or gas terminals.”*
- *“A transition based on principles of equity requires wealthy, high-emitting nations to phase out all oil and gas production by 2034 while the poorest nations have until 2050 to end production.”*

3.1.2 Loss and damage of the Great Barrier Reef

The report (Sept. 2019), [The human imperative of stabilizing global climate change at 1.5°C \[3\]](#), makes it clear that even 1.5°C warming would be devastating for the Great Barrier Reef (GBR). From page 5,

“there are multiple lines of evidence indicating that 70 to 90% of warm-water tropical corals present today are at risk of being eliminated even if warming is restrained to 1.5°C”

3.1.3 Saving the GBR requires that supply-side action be taken [Q17, Q20—see 4.2.1]

To save a significant fraction of the GBR requires that warming be kept below 1.5°C. The above reports on FF over-production find that limiting warming to 1.5°C requires that no new FF mines be opened and that FF production must decline from now. On the contrary, new FF mines are being opened now, and FF production is increasing now. Emission reductions can not change that fact, no matter how high NDC emission targets are. Supply-side action is urgently required.

3.2 Equity considerations show that supply-side action is required [Q5a]

Paris Agreement Parties are required to report their domestic GHG emissions (Article 4.13) but not their FF exports (i.e., their exported FF GHG emissions). Whether implied or not, this global GHG accounting method has resulted in the widespread belief that “We are only responsible for our domestic emissions”. This is a recipe for disaster and is directly contributing to the FF over-production crisis, as exemplified by Australia’s climate policy. It is also manifestly inequitable.

3.2.1 Australia’s perverse climate policy

[Q20—see 4.1.3]

The recent election (May 2022) of Anthony Albanese’s Labor Government is a welcome change from the previous climate-action antagonistic Liberal Government. Australia now has an improved (still inadequate) emission reduction target, and better plans for transitioning to renewable energy. But the Federal Government is still planning to rapidly expand Australia’s FF production and FF exports:

- There are [114 fossil fuel major projects](#) in the Australian Government’s approvals pipeline [4]
- The report (May 2022), “[Carbon Bombs](#)” - Mapping key fossil fuel projects [5], finds that Australia is planning 23 of the world’s 425 carbon bomb projects (each exceeding 1Gt CO₂).

When Prime Minister Albanese was recently asked why Labor would not consider the Greens policy of “no new FF mines”, the final point he made to terminate the discussion was that the UN,

“measure emissions based upon where they occur, not where the product comes from” [6].

Similarly, when Australia’s new Environment Minister, Tanya Plibersek, was asked if the fastest way to reduce emissions wasn’t simply to say “right, no more coal mines”, she was obliged to reiterate Labor’s position [7]:

“We are responsible for the carbon pollution that we emit here in Australia.”

3.2.2 Awareness that Australia’s FF production plans are inequitable

[Q18, Q21]

The Australian Government’s FF production plans are widely regarded as being self-evidently unreasonable, unethical, and inequitable:

- Pacific Island countries have called for Australia to end new gas and coal developments to help reduce global carbon emissions and to improve their national security [8], [9].
- “No new coal and gas” was front-and-center throughout the Australian Greens election campaign.
- Many climate activist groups within Australia, e.g., [XR Australia](#), [Blockade Australia](#), [Stop Adani](#), are rightly more concerned about Government’s expansion of FF production, than about its inadequate emission reduction targets.

3.3 Parallel supply-side and demand-side action

[Q5b, Q22a, Q22c]

It is argued that supply-side action, in the form of parallel supply-side and demand-side climate policy [10], would be the natural outcome of changing to a more equitable system for assuming responsibility for GHG pollution.

3.3.1 Apportioning responsibility for the global GHG pollution rate

[Q5b, Q22c]

- A simple physical model (Section 4) shows that there are many different ways in which the global GHG pollution rate can be consistently apportioned between countries.
- Arguably, the *worst possible* apportionment of the global GHG pollution rate is realised by the currently used GHG accounting convention which conveys the impression that each country is responsible only for its domestic emissions, with no regard for its exported FF GHG pollution.
- Requiring that countries *report* their total FF production would help to dispel the notion that responsibility ends at borders.
- A more equitable and more effective means to reduce the global GHG pollution rate would be obtained if each country took responsibility for a GHG pollution flux that includes a contribution proportional to that country’s FF production.
- Sharing responsibility for exported FF pollution in this way would deter countries from designing perverse climate policy that allows unconstrained expansion of their FF exports.

3.3.2 Taking shared responsibility for exported FF pollution could enable wider public support for rapid response measures

[Q22a]

The importance of public education is recognised in Article 12 of the Paris Agreement.¹

- Governments that are committed to expanding FF exports will likely misinform their public, and suppress the fact that the 1.5°C carbon budget does not allow further expansion of FF production.²
- The first step in accepting shared responsibility for exported FF pollution would be to stop expanding FF production.
- Governments that are not expanding FF production would have no reason to lie about the climate crisis. They would be free to educate their public, thereby gaining widespread support for rapid implementation of response measures, while at the same time gaining support for re-election.

4 Responsibility for Global GHG pollution

[Q5b, Q22c]

The Executive Summary (Section 3) is self contained, except for the assertions made in Section 3.3.1 concerning equitable and effective sharing of responsibility for the global GHG pollution rate. This section backs up those assertions with reference to the simple physical model shown in Figure 1, satisfying the assumptions given the figure caption.

4.1 Apportioning global FF GHG pollution involves choice

In a simple world such as that of Figure 1, the global FF CO₂ pollution rate is the sum of the FF CO₂ emission fluxes for all countries in the world (e.g., for countries $j = A, B, C$),

$$(\text{Global FF pollution rate}) = \sum_j (\text{FF emissions})_j. \quad (1)$$

Of course, it is relation (1) that suggests country j should be responsible for a FF CO₂ pollution flux,

$$(\text{FF emissions})_j.$$

But in this simple world all FF is burned as soon as it's produced. Therefore,

$$\sum_j (\text{FF emissions})_j = \sum_j (\text{FF production})_j, \quad (2)$$

or in terms of Figure 1, the 9 arrows into the 3 patches of blue sky are the same 9 arrows leaving the 3 black boxes (the FF mines). Thus, each country could instead be attributed responsibility for a FF CO₂ pollution flux,

$$(\text{FF production})_j,$$

since the sum of these pollution fluxes still equals the global pollution rate. More generally, each country j could be allocated responsibility for a FF CO₂ pollution flux given by,

$$R_j(k) = (1 - k) (\text{FF emissions})_j + k (\text{FF production})_j, \quad (3)$$

where k is some (internationally agreed upon) constant in the interval $[0, 1]$. The extreme cases $R_j(0)$ and $R_j(1)$ correspond, respectively, to the pure-emissions and pure-production fluxes given above.

For any choice of $k \in [0, 1]$, the fluxes $R_j(k)$ define a mathematically consistent allocation scheme for apportioning the global FF CO₂ rate between countries because, using (2),

$$(\text{Global FF pollution rate}) = \sum_j R_j(k). \quad (4)$$

¹Article 12: Parties shall cooperate in taking measures, as appropriate, to enhance climate change education, training, public awareness, public participation and public access to information, recognizing the importance of these steps with respect to enhancing actions under this Agreement.

²An Australian example of this is given in Appendix A.

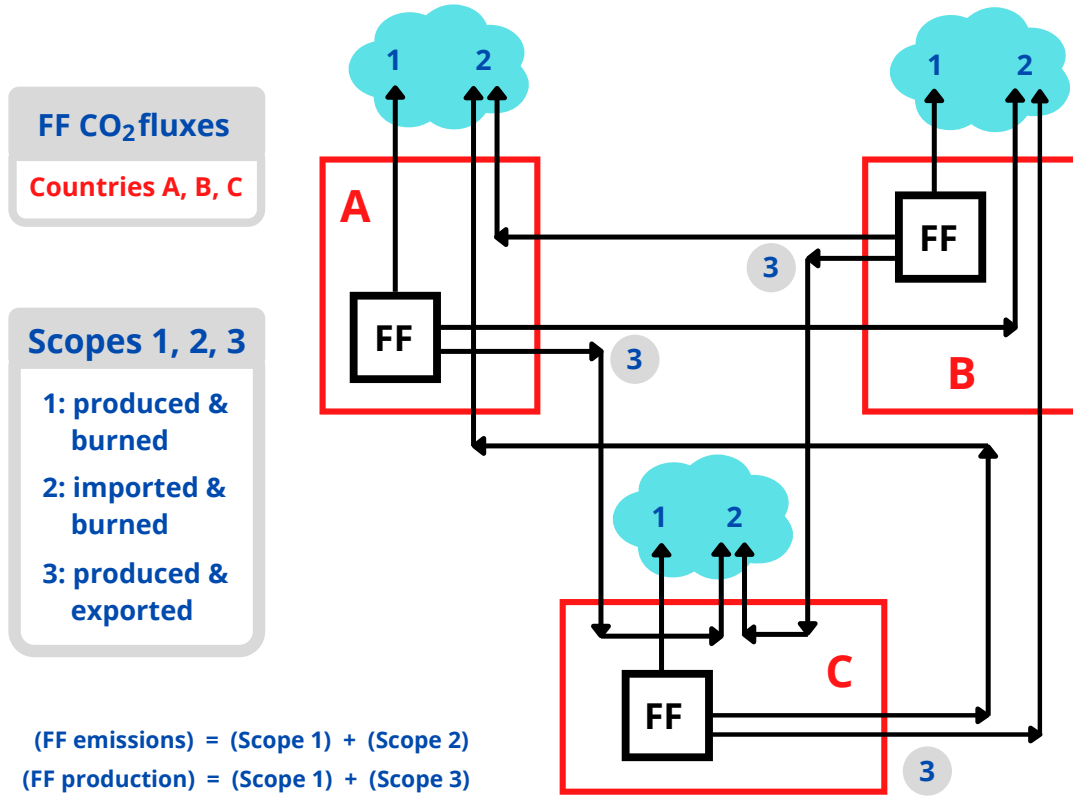


Figure 1: Apportioning the global GHG pollution rate between countries can be done in many ways (e.g., Equation (3)). The simplest physical model that illustrates this fact is a world in which the only GHG is FF CO₂, and all FF is burned as soon as it's produced. These simplifying assumptions can be easily relaxed so as to draw similar conclusions for the real world.

The apportionment that corresponds to UNFCCC GHG accounting conventions, i.e., apportioning by domestic emissions (Scope 1 + Scope 2), is arguably the *worst possible* way of attributing responsibility for GHG pollution. It is manifestly inequitable and results in perverse climate policy that does nothing to directly constrain expansion of the FF industry: countries can increase their FF exports (Scope 3) without increasing the GHG pollution flux that they are assuming responsibility for.

4.2 Good climate policy depends on sensibly apportioning the global FF GHG pollution rate

[Q5b, Q22c]

Country j will adopt climate policy that aims to reduce its pollution flux $R_j(k)$. As discussed elsewhere, the choice $k = 0$, which gives $R_j(0) = (\text{FF emissions})_j$, can, and does, lead to perverse climate policy that is also designed to allow FF production and FF exports to increase without limit.

The choice $k = 1$ would be no better. Policy aimed at reducing $R_j(1) = (\text{FF production})_j$ might care nothing of energy efficiency nor reducing emissions. The value for k that results in most rapid reduction in global GHG pollution is evidently somewhere between $k = 0$ and $k = 1$. The optimal k could perhaps be estimated via economic considerations (e.g., by minimising “leakage” [10]). More simply, an optimal k might be sought by adjusting k from year-to-year using $k = 1/2$ as a starting point,

$$R_j(1/2) = \frac{1}{2} (\text{FF emissions})_j + \frac{1}{2} (\text{FF production})_j. \quad (5)$$

Climate policy aimed at reducing $R_j(1/2)$ would likely reduce both FF emissions and FF production simultaneously, and result in a faster reduction of the Global GHG pollution rate than is possible if countries only take responsibility for domestic emissions.

4.3 Apportioning by equity

[Q5b, Q22c]

There exists an alternative derivation of (3) that is motivated by equity. Taking the view that apportionment by domestic emissions is inequitable, one might seek to correct this by attributing additional responsibility for some fraction of exported FF CO₂. Thus, country j could be attributed responsibility for a FF CO₂ pollution flux given by,

$$\tilde{R}_j(k) = (\text{FF emissions})_j + k(\text{FF exports})_j - k(\text{FF imports})_j, \quad (6)$$

where $k \in [0, 1]$ is a constant that determines the fraction of exported FF pollution that is being attributed to exporting countries. The 3rd term on the right side of (6) prevents double counting and ensures that,

$$(\text{Global FF pollution rate}) = \sum_j \tilde{R}_j(k). \quad (7)$$

This relation follows directly from (6) and the observation that all FF exports are also imported by some other country, so that,

$$\sum_j (\text{FF exports})_j - \sum_j (\text{FF imports})_j = 0. \quad (8)$$

Expression (6) can be simplified using the Scope relations that appear in Figure 1. One notes that,

$$\begin{aligned} (\text{FF exports})_j - (\text{FF imports})_j &= (\text{Scope 3})_j - (\text{Scope 2})_j \\ &= \left((\text{Scope 1})_j + (\text{Scope 3})_j \right) - \left((\text{Scope 1})_j + (\text{Scope 2})_j \right) \\ &= (\text{FF production})_j - (\text{FF emissions})_j. \end{aligned} \quad (9)$$

Substituting (9) into (6) then gives

$$\tilde{R}_j(k) = (1 - k)(\text{FF emissions})_j + k(\text{FF production})_j,$$

which is the same as (3) (i.e., $\tilde{R} \equiv R$). Note that $k = 1/2$ corresponds to the case that trading partners share equal responsibility for exported FF CO₂ pollution. One might wonder if the most ethical and equitable choice of k is not also the optimal choice of k for preserving life on Earth.

Appendix A

[Q22a]

This appendix relates to an issue concerning public education, as raised in Section 3.3.2.

Any discussion of supply-side climate science would be incomplete without citing the Production Gap Report [1]. It is therefore interesting to make advanced Google searches for “Production Gap Report” in documents and webpages of government organisations and departments. It can be expected that governments of countries such as Australia, that have large FF exports, will remain silent about supply-side climate science.

At the time of writing, the first 3 of the following searches return **no results**. The 4th search returns over 100 results. All but one of those results are public submissions (objecting to FF expansion), most of which are hosted on webpages of the (not-so-)Independent Planning Commission of NSW [11],

- Commonwealth Scientific and Industrial Research Organisation (CSIRO)
<https://www.google.com.au/search?q=%22Production+Gap+Report%22+site:.csiro.au&filter=0>
- Bureau of Meteorology
<https://www.google.com.au/search?q=%22Production+Gap+Report%22+site:.bom.gov.au&filter=0>
- Australian Academy of Science
<https://www.google.com.au/search?q=%22Production+Gap+Report%22+site:.science.org.au&filter=0>
- All websites ending in .gov.au
<https://www.google.com.au/search?q=%22Production+Gap+Report%22+site:.gov.au&filter=0>

References

- [1] *The Production Gap Report 2021*, SEI, IISD, ODI, E3G, and UNEP (2021)
<https://productiongap.org/2021report>
- [2] *Phaseout pathways for fossil fuel production within Paris-compliant carbon budgets* (March 2022)
International Institute for Sustainable Development (IISD), Tyndall Production Phaseout Report
https://www.research.manchester.ac.uk/portal/files/213256008/Tyndall_Production_Phaseout_Report_final_text_3_.pdf
- [3] *The human imperative of stabilizing global climate change at 1.5°C*
Ove Hoegh-Guldberg, et al., Science, September 2019
<https://doi.org/10.1126/science.aaw6974>
- [4] *Resources and Energy Major Projects: 2021*. (The project list is in the .xlsx file.)
<https://www.industry.gov.au/data-and-publications/resources-and-energy-major-projects-2021>
- [5] “Carbon Bombs” - Mapping key fossil fuel projects
K. Kühne and N. Bartsch and R. D. Tate, J. Higson and A. Habe
Energy Policy **166**, July 2022, 112950
<https://doi.org/10.1016/j.enpol.2022.112950>
- [6] *Transcript of Prime Minister’s television interview on ABC 7:30, 26 July 2022*
<https://www.pm.gov.au/media/television-interview-abc-730>
- [7] *Environment Minister Tanya Plibersek’s address to the National Press Club*
(19 July 2022) From time 1:00:36.
<https://www.youtube.com/watch?v=L0mgyDFgyg>
- [8] ‘Far from adequate’: former Pacific leaders group urges Australia to increase 43% emissions cut
The Guardian, 8 July 2022
<https://www.theguardian.com/world/2022/jul/08/far-from-adequate-former-pacific-leaders-group-urges-australia-to-increase-43-emissions-cut>
- [9] *Australia at odds with neighbouring nations on new coal and gas projects at Pacific Islands Forum*
The Guardian, 12 July 2022
<https://www.theguardian.com/world/2022/jul/12/australia-at-odds-with-neighbouring-nations-on-new-coal-and-gas-projects-at-pacific-island-forum>
- [10] *Partners, not rivals: The power of parallel supply-side and demand-side climate policy*
B. C. Prest, Resources for the Future, Report 22-06 (April 2022)
<https://www.rff.org/publications/reports/partners-not-rivals-the-power-of-parallel-supply-side-and-demand-side-climate-policy>
- [11] *NSW Independent Planning Commission accused of acting as ‘rubber stamp’ as coalmine approved*
The Guardian, 24 December 2020
<https://www.theguardian.com/australia-news/2020/dec/24/nsw-independent-planning-commission-accused-of-acting-as-rubber-stamp-as-coalmine-approved>