

EUROPEAN COURT OF HUMAN RIGHTS

Application No 18859/21

Müllner

v

Austria

INTERVENERS' BRIEF FILED BY CLIMATE ACTION NETWORK-EUROPE (CAN-EUROPE) AND THE GLOBAL LEGAL ACTION NETWORK (GLAN)

(Filed pursuant to leave granted by the Fourth Section on 7 November 2024)

I. Introduction

1. In *Duarte Agostinho*¹ (§194), the Court recognised that “the problem of climate change is of a truly existential nature for humankind”. In *KlimaSeniorinnen*² (*KS*), it also underlined the “existential risks” posed (§421). The judgment in *KS* has clarified the content of States’ obligations under the European Convention on Human Rights (Convention) to address this existential threat, outlining key principles relevant to establishing the adequacy of a State’s climate change mitigation measures. This Intervention is structured as follows. First, it addresses the basis on which the adequacy or inadequacy of a State’s greenhouse gas (GHG) emissions targets ought to be assessed based on the principles set out in *KS*. Second, the European Union’s (EU) 2030 GHG target, and the assessments on which it is based, are subsequently analysed according to these principles, making clear that the target is manifestly inadequate. Finally, the Intervention outlines the importance of addressing States’ obligations, as recognised in *KS*, to reduce their contributions to extraterritorial emissions.

II. Establishing the in/adequacy of a State’s emissions targets based on *KS*

2. This section first outlines a number of key features of the obligation set out in *KS*. It then explains the significance of the Court’s emphasis on carbon neutrality in light of these principles. Thereafter, it outlines how these principles require States’ targets to be consistent with what is termed their ‘Effective 1.5°C Fair Share’. Finally, it addresses how the latter ought to be achieved through a combination of highest feasible domestic reductions and the funding of emissions reductions abroad.

A. Key features of the obligation set out in *KS*

3. The Interveners note at the outset the following aspects of the obligation to mitigate climate change set out in *KS*:
 - a. **The effectiveness principle.** According to the Court, “the State’s primary duty is to adopt, and to effectively apply in practice, regulations and measures capable of mitigating the existing and potentially irreversible, future effects of climate change” (§545). This duty is said to stem from the principle that ECHR obligations must be interpreted to “guarantee rights that are practical and effective, not theoretical and illusory” (§545).
 - b. **1.5°C as an upper limit.** The Court recognised that the effective protection of Article 8 rights from the impacts of climate change requires the adoption of measures consistent with limiting global warming to 1.5°C. In this regard, it noted the scientific and political consensus around the risks associated with global warming exceeding what it referred to as “the currently required 1.5°C limit” (§§432-436 and 558).
 - c. **Equity and CBDR.** The obligation is described as being “in line with” the obligations under the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement (§546), both of which, as the Court

¹ *Duarte Agostinho and Others v. Portugal and 32 Other Member States*, no. 39371/20, decision (Grand Chamber) of 9 April 2024.

² *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland*, no. 53600/20, judgment (Grand Chamber) of 9 April 2024.

observed, are founded on the principles of equity and common but differentiated responsibilities and respective capabilities (CBDR) (§442). Furthermore, in finding Switzerland in breach, the Court noted that the principle of CBDR “requires the States to act on the basis of equity and in accordance with their own respective capabilities” (§571).

- d. **Carbon neutrality.** The Court emphasised the need to achieve carbon neutrality “within, in principle, the next three decades” (§548, see also §§547 and 550(a)).
- e. **Urgent need for immediate emissions reductions.** The Court recognised “the urgency of combating the adverse effects of climate change” (§542) and also that “immediate action needs to be taken and adequate intermediate reduction goals must be set for the period leading to net neutrality” (§549). It further emphasised the need to act “in good time” (§550(e)).
- f. **Due diligence and best available science.** According to the Court, “GHG reduction targets [must be] updated with due diligence and based on best available science (§550(d)).

B. The significance of ‘carbon neutrality’ and the need for steep reductions this decade

4. The Interveners submit that the obligation set out in *KS* ought not to be interpreted as requiring States to achieve carbon neutrality merely *by* mid-century and to adopt intermediate targets towards that end. Rather, it must be viewed as simply denoting a duty to act consistently with limiting warming to 1.5°C, with the term “within, in principle, the next three decades” implying that the year by which a given State needs to reach net zero depends on considerations of equity. This is true for the following reasons:
 - a. The reference to the requirement to achieve carbon neutrality within three decades is derived from the global emissions pathways outlined in the 2018 Special Report “Global Warming of 1.5°C” (SR1.5) of the IPCC (§109).
 - b. In global emissions pathways, *carbon* (i.e. CO₂) neutrality is reached within three decades, prior to neutrality of *all GHGs* being achieved.³ In other words, GHG neutrality is more ambitious than carbon neutrality. However, Switzerland⁴, the EU⁵ and the UK⁶, for example, have net zero 2050 targets for *all GHGs*. The Court hardly intended to set an obligation that is less ambitious than the net zero targets applying in the majority of Contracting States.
 - c. The alternative would be at odds with the Court’s emphasis on equity and CBDR. To require all States to achieve net zero at the same time as required by the global average would involve an approach to effort-sharing known as ‘grandfathering’ which is inconsistent with these principles (see paras. 6 and 7 below).⁷ This would

³ 6th Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (‘IPCC’), Working Group (WG) 3 (WG3), Summary for Policymakers (SPM), p. 18 (Table SPM.2).

⁴ *KS*, §563.

⁵ *KS*, §211.

⁶ Section 1 of The Climate Change Act 2008, as amended.

⁷ William Hare et al., ‘Achieving the 1.5°C Limit of the Paris Agreement: an Assessment of the Adequacy of the Mitigation Measures and Targets of the Respondent States in Duarte Agostinho v Portugal and 32 other States’ (7 January 2022) (‘CA Report’), p. 34. Available at: <https://climateanalytics.org/publications/an-assessment-of-the-adequacy-of-the-mitigation-measures-and-targets-of-the-respondent-states-in-duarte-agostinho-v-portugal-and-32-other-states>.

entail a far more onerous obligation on less wealthy Contracting States with lower historical responsibility than on their wealthier counterparts with higher historical responsibility.

- d. The alternative would also be at odds with the Court’s reference to the fact that Switzerland’s emissions targets were inconsistent even with what an equal per capita quantification approach to global effort-sharing would entitle it to use (see further para. 14 below) as a basis for finding breach. It is clear from the Court’s related finding (§569) that, “[i]n a scenario with a 34% reduction in CO2 emissions by 2030 and 75% by 2040, Switzerland would have used the remaining budget by around 2034 (or 2030 for an 83% change [*sic.*])”, even this approach to effort-sharing would require Switzerland to achieve net zero well ahead of mid-century.
 - e. Without the “rapid and deep” emissions reductions to 2030 envisaged by 1.5°C-aligned emissions pathways, the 1.5°C long-term temperature goal (LTTG) will become unachievable,⁸ and reaching net zero by mid-century would not itself be sufficient to hold warming to 1.5°C.⁹
5. The focus therefore must be on whether States’ near-term (i.e. 2030) targets are aligned with the 1.5°C limit, consistent with the Court’s emphasis on the urgent need for immediate emissions reductions.

C. Achievement of an Effective 1.5°C Fair Share of the reductions required by 2030

Factual context

6. The IPCC has stated that “it is only in relation to [its] ‘fair share’ that the adequacy of a state’s contribution [to the required global emissions reductions] can be assessed”.¹⁰ There are multiple ways to measure a State’s individual contribution to the required global mitigation effort; this is a consequence of the failure by States to agree a single approach.¹¹ The different approaches include historical responsibility, capability, equality (i.e. equal per capita), cost-effectiveness (i.e. where it is cheapest to achieve emissions reductions) and “grandfathering” (which typically refers to the allocation of emissions reductions to individual States in direct proportion to globally required reductions).¹² Equality, cost-effectiveness and grandfathering are favourable approaches from the perspective of ‘developed’ States.¹³
7. It is well-established that cost-effectiveness and grandfathering are not consistent with the principles of equity and CBDR; the status of equality (i.e. equal per capita) in this regard is contested.¹⁴ Importantly, however, allocating shares of the global emissions reductions that are presently required purely on an equal per capita basis

⁸ AR6 WG3 SPM, p. 17, §C.1. As to the steepness of the reductions required, see UN Environment Programme’s (UNEP) Emissions Gap Report (EGR) 2022, p. 33 (Figure 4.2).

⁹ CA Report, p. 34.

¹⁰ AR6 WG3 Ch 14, p. 1468.

¹¹ CA Report, p. 22.

¹² Each approach is further explained in the 5th Assessment Report (AR5) of the IPCC, WG3, Ch 3, pp. 213-219 and Ch 4, pp. 317-321.

¹³ CA Report, pp. 22, 26 and 32.

¹⁴ Rajamani et al, ‘National ‘fair shares’ in reducing greenhouse gas emissions within the principled framework of international environmental law’, *Climate Policy*, 21:8, 983 (‘Rajamani et al.’), pp. 996-997.

excludes attachment of weight to the historical responsibility or capability of an individual State.¹⁵

8. The IPCC has outlined ranges of emissions reductions required of different States based on the various measures of their fair share (i.e. fair share ranges).¹⁶ In *Urgenda v The Netherlands*, the Dutch Supreme Court relied on a fair share range presented in AR4.¹⁷ If all States pursue emissions reductions consistent with the *less stringent* end of their fair share ranges, as the Dutch Supreme Court ordered the Netherlands to do, it is impossible to achieve the LTTG.¹⁸ This reflects the fact that “[e]ffective mitigation of climate change will not be achieved if each...country acts independently in its own interest”.¹⁹
9. The Climate Action Tracker (CAT)²⁰ fair share methodology identifies different levels of global warming (1.5°C, 2°C, <3°C, <4°C and >4°C) that will result by 2100 from a State achieving different “levels of ambition” on its fair share range, if all States achieve equivalent levels of ambition on their respective fair share ranges.²¹ It “avoids selecting a single ‘correct’ approach to effort sharing, relying instead on a ‘synthesis framework’ which draws on all of the various approaches to effort sharing identified in the available literature”, using the dataset of studies as used by the IPCC.²² Crucially, the more the level of ambition pursued by one State falls short of the 1.5°C-compatible level on its fair share range, the more another State must pursue a level of ambition which *exceeds* that level on its range to achieve the 1.5°C limit, which no State is doing.²³
10. It has been noted that certain approaches to fair share are not represented within the CAT methodology, such that it is dominated by inequitable approaches that cause a systemic bias in favour of wealthier, higher emitting countries.²⁴ A related study (“*Rajamani et al.*”) employs the same methodology as the CAT but excludes from its fair share ranges the effort-sharing approaches of cost-effectiveness and “grandfathering” as they are not compatible with principles of international environmental law, including equity.²⁵ This results in relatively more stringent reductions for wealthier countries, relative to when these approaches are included.²⁶

¹⁵ See, for example, Baer, P., et al. Greenhouse development rights: a framework for climate protection that is “more fair” than equal per capita emissions rights, in *Climate Ethics: Essential Readings* (eds. Gardiner, S. M., et al.) 215–30 (Oxford University Press, 2010).

¹⁶ 4th Assessment Report (AR4) of the IPCC, WG3 Ch 13, p. 776 (Box 13.7); AR5 WG3 Ch 6, p. 460 (Box 6.28).

¹⁷ *The State of the Netherlands v Urgenda Foundation*, ECLI:NL:HR:2019:2006 (Supreme Court of the Netherlands) (20 December 2019), para. 8.3.5.

¹⁸ CA Report, p. 33, citing Robiou du Pont, Y., Meinshausen, M. Warming assessment of the bottom-up Paris Agreement emissions pledges (2018) 9 *Nature Communication* 2. Also Rajamani et al 998 and 1000.

¹⁹ AR5 WG3 Ch 3, p. 214.

²⁰ Available at <https://climateactiontracker.org/methodology/cat-rating-methodology/fair-share/>.

²¹ CA Report, pp. 34-39.

²² *Ibid.*, p. 35

²³ *Ibid.* p. 40.

²⁴ Dooley et al, *Ethical choices behind quantifications of fair contributions under the Paris Agreement* (2021) 300 *Nature*, 303. CAT only includes studies which “operationalise” (i.e. quantify) approaches to fair share and includes studies based on “grandfathering”. See CA Report, 34-35. Not all fair share approaches have been quantified in the literature. See Dooley et al, 303 and AR6 WG3 Ch 4, 472.

²⁵ Rajamani et al., 996-998. See also AR6 WG3 Ch 4, 423.

²⁶ *Ibid.*, p. 999.

11. As to the distinction between cost-effectiveness and equity in determining where globally GHG reductions ought to be achieved, the IPCC has recognised this can be addressed by separating “where mitigation occurs” from “who pays”.²⁷ Similarly, where the level of reductions which a State’s fair share requires exceeds the level that is feasible for it to achieve domestically (see section D below), it can address the shortfall by funding GHG reductions in other States.²⁸ Article 6 of the Paris Agreement contemplates the achievement of GHG reductions by one state in another.

Submissions

12. Against this background, the Interveners submit that the ambiguity as to what constitutes a given State’s fair share ought to be resolved in favour of effective rights protection, so as to prevent States from being permitted to ‘cherry-pick’ self-serving measures of their fair share and thereby rendering the 1.5°C limit unachievable. States’ emissions targets must instead align with relatively more stringent measures on the range of measures of their fair share of the reductions required globally to limit warming to 1.5°C i.e. with an **Effective 1.5°C Fair Share**.
13. This view is supported by the principle of due diligence emphasised by the Court which, along with other principles of environmental law, “creates a strong pull towards more stringent targets within the range of fair shares”.²⁹
14. It is further supported by the Court’s finding that “under its current climate strategy, Switzerland allowed for more GHG emissions than *even* an ‘equal per capita emissions’ quantification approach would entitle it to use” (§569, emphasis added). The use of the word “even” demonstrates the Court recognised that it is not enough for a State to achieve reductions consistent with a relatively less stringent measure of its fair share (as ‘equal per capita’ is for Switzerland).
15. The Interveners submit that the approach of the CAT to identifying a level of ambition on States’ respective fair share ranges consistent with 1.5°C, if all States pursue an equivalent level of ambition, provides a reasonable *indicative* measure of ‘developed’ States’ minimum Effective 1.5°C Fair Shares. There is no prospect of any State exceeding a 1.5°C-compatible level on its fair share range, as would be required if any other State falls short of that level on its own range.
16. The CAT approach provides a reasonable indication of ‘developed’ States’ *minimum* Effective 1.5°C Fair Shares as the approaches to burden-sharing contained within its fair share ranges are biased in favour of wealthier, higher emitting countries. The Interveners further submit that the similar approach of the *Rajamani et al.* methodology is more faithful to the principles of equity and CBDR, given its exclusion of inequitable measures from States’ fair share ranges.
17. According to the CAT methodology, to achieve a 1.5°C-compatible level of ambition on its fair share range, Austria would be required to achieve emissions reductions of 102% below 1990 levels by 2030; that figure rises to 126% according to *Rajamani et*

²⁷ AR5 WG3 Ch 3, p. 225, Box 3.2.

²⁸ UNEP Emissions Gap Report 2024: *No more hot air ... please*, p. 39. See also European Environment Agency, *Scientific advice for the determination of an EU-wide 2040 climate target and a greenhouse gas budget for 2030–2050*, Publications Office of the European Union, 2023, pp. 48 – 49 (‘ESABCC 2040 Report’).

²⁹ *Rajamani et al.*, pp. 993-994.

*al.*³⁰ These reductions can be achieved through a combination of domestic emissions reductions (see section D below) and the funding of reductions in other countries.

D. Achieving the Effective 1.5°C Fair Share: highest feasible domestic reductions and climate finance

18. The Interveners submit that the requirement outlined by the Court to update emissions targets with due diligence means, at least in respect of ‘developed’ States such as Austria, that they must achieve the maximum feasible emissions reductions domestically towards their Effective 1.5°C Fair Shares.
19. The view that the principle of due diligence requires States to reduce domestic emission to the maximum extent feasible is supported, *inter alia*, by the International Law Commission’s interpretation of this principle³¹, as well as the recent *Advisory Opinion on Climate Change and International Law* of the International Tribunal for the Law of the Sea.³² It is also consistent with the obligation to “pursue domestic mitigation measures” and the principle of “highest possible ambition” contained in Article 4(2) and 4(3) of the Paris Agreement respectively.
20. As noted above (see paras. 11 and 17), the difference between the maximum reductions which are domestically feasible for a State to achieve and its Effective 1.5°C Fair Share can be achieved by funding emissions reductions in other countries. Importantly, this means that reductions achieved in this manner must only be supplemental to the highest feasible domestic reductions and must not therefore compensate for any failure to achieve this level of domestic reductions. It is also important to emphasise in this context that ‘developed’ States have a free-standing obligation under Article 9 of the Paris Agreement to provide climate finance to ‘developing’ States with respect to both mitigation and adaptation.

III. Inadequacy of the EU’s 2030 target

21. The EU’s 2030 target to reduce emissions by at least 55% below 1990 levels (2030 Target), and the process by which it was adopted, falls short when analysed against the principles of effectiveness, due diligence, best available science, equity and CBDR, which, as outlined above, form the basis of the obligation set out by the Court in *KS*. This section sets out the principal procedural and substantive shortcomings associated with that target.
22. **A politically pre-determined target.** The 2030 Target was first proposed in July 2019 by Ursula von der Leyen in her Political Guidelines³³ and then reiterated in a Commission communication entitled the European Green Deal.³⁴ The only scientific

³⁰ CA Report, p. 59.

³¹ International Law Commission, Draft articles on Prevention of Transboundary Harm from Hazardous Activities, UN Doc A/56/10 (2001), pp. 144, 154.

³² International Tribunal for the Law of the Sea, *Advisory Opinion on Climate Change and International Law* (21 May 2024) Case No. 31, para. 241.

³³ “A Union that strives for more: My agenda for Europe. Political Guidelines for the Next European Commission 2019-2024” (‘Political Guidelines’).

³⁴ Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions (COM(2019) 640 final).

assessment conducted in relation to the target is set out in an impact assessment (IA)³⁵ which states as follows:

“[T]he options assessed regarding the ambition level to increase the 2030 GHG emissions reduction target for the EU...follow the mandate that the Commission has established in its Political Guidelines and the European Green Deal Communication: i.e. an increase of GHG emissions reductions in 2030 (from “at least” 40% currently agreed) to “at least” 50% to 55% (compared to 1990 levels).”³⁶

It is therefore clear that the “options assessed” were constrained by a prior political decision.

23. This is in contrast to the approach taken in relation to the EU’s 2040 target. With respect to the latter, the European Scientific Advisory Board on Climate Change (ESABCC), which did not exist at the time when the 2030 Target was set, was mandated to conduct an assessment of the emissions reductions that are appropriate for the EU to achieve by 2040, without that assessment having been constrained by any prior politically proposed target.³⁷
24. **Failure to conduct an adequate assessment of the EU’s fair share of the global emissions reductions required by 2030.** The IA’s Annex claims that “[t]he EU objective of climate neutrality by 2050, defined as achieving net zero GHG emissions by 2050, combined with the 50-55% milestone in 2030, gives a strong signal that the EU is assuming its leading role on climate action in line with these scientific projections”³⁸. However, the IA made this claim exclusively based on a comparison of these targets with the reductions envisaged for the EU by “cost-efficient global scenarios”.³⁹ As the ESABCC has stated, “cost-effectiveness should not be considered a ‘standard of equity’”.⁴⁰
25. Furthermore, the IA only briefly addressed fairness considerations in a single paragraph (out of a total of 368 pages of analysis between the IA and Annex), with a vague claim that equity studies lacked connection to feasible domestic emissions pathways.⁴¹ This statement ignores the fact that a State can contribute towards its fair share beyond the limits of the emissions reductions that are domestically feasible for it to achieve by funding emissions reductions in other countries. The IA did not quantify the level of emissions reductions that would be required by *any* measure of the EU’s fair share, let alone the reductions required by its Effective 1.5°C Fair Share. Regarding the latter, the IA did acknowledge the CAT methodology, but did not address the actual outcome of the CAT’s assessment for the EU⁴² (see Annex).

³⁵ Commission Staff Working Document, Impact Assessment, Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Stepping up Europe’s 2030 climate ambition, Investing in a climate-neutral future for the benefit of our people (COM/2020/562 final). Part 1/2.

³⁶ IA, p. 24.

³⁷ See also European Climate Law, Article 4(5)(a).

³⁸ IA’s Annex, p. 196. Part 2/2.

³⁹ Ibid.

⁴⁰ ESABCC 2040 Report, p. 27.

⁴¹ IA’s Annex, p. 197.

⁴² Ibid., pp. 197-198.

26. In contrast, the ESABCC 2040 Report assesses the EU's fair share of the remaining global carbon budget according to a range of different measures.⁴³ It is important to note in this context that the 2040 target range of 90-95% below 1990 levels recommended by the ESABCC is based exclusively on considerations of what is domestically feasible for the EU to achieve and not on any measure of equity.⁴⁴
27. **2030 Target manifestly incompatible with an Effective 1.5°C Fair Share.** The ESABCC's 2040 Report found that even scenarios envisaging emissions reductions of 75% below 1990 levels by 2030 (i.e. 20% higher than the EU's actual target) would not be sufficient to meet the *least ambitious* of the equity approaches which the ESABCC considered.⁴⁵ According to CAT, if every State pursued a level of ambition on their respective fair share ranges equivalent to that which the 2030 Target is consistent, global warming would reach up to a catastrophic 3°C of warming by 2100⁴⁶(see Annex 1). The CAT methodology indicates the EU needs to achieve emissions reductions of 93% below 1990 levels by 2030 to achieve a 1.5°C-compatible level of ambition on its fair share range;⁴⁷ this figure increases to 110% according to *Rajamani et al.*⁴⁸
28. **Failure to conduct an adequate assessment of the domestic emissions reductions that are feasible for the EU to achieve by 2030.** The IA explicitly declined to evaluate the feasibility of achieving greater emissions reductions beyond the proposed 55% target, stating “[s]ome stakeholders have asked for a higher target – up to 65% or more GHG reductions by 2030 but scenarios with an EU GHG reduction target of over 55% were not assessed in this [IA]”⁴⁹. This amounts to a manifest failure on the part of the EU to act with due diligence in setting its 2030 Target.
29. **Greater domestic reductions by 2030 than those envisaged by the 2030 Target remain feasible.** Of the various emissions scenarios considered by the ESABCC, five were deemed feasible by it according to environmental risk and technological bounds (green category); these would achieve “2040 emission reductions of 88%-92% [below 1990 levels]”.⁵⁰ Two others, relying on the rapid scaling up of solar photovoltaics, (yellow category), and achieving “emission reductions of 94-95% by 2040 [below 1990 levels]”, were considered slightly less feasible⁵¹. The ESABCC ultimately recommended a 90-95% emissions reduction as the 2040 target,⁵² and suggested that the EU aim for the “more demanding end of the recommended range”⁵³ to achieve the fairest possible contribution to the required global climate change mitigation effort. In other words, the ESABCC recommended pursuing a level of emissions reductions by 2040 reflecting scenarios in the yellow category. In relation to the 2030 emissions reductions, the ESABCC noted the scenarios which fall within “either [...] (or both) [green and yellow categories] have 2030 emission

⁴³ ESABCC 2040 Report, p. 28.

⁴⁴ *Ibid.*, p. 44.

⁴⁵ *Ibid.*, p. 47.

⁴⁶ CAT, ‘EU’, Available at <https://climateactiontracker.org/countries/eu/>.

⁴⁷ CA Report, pp. 54 and 168.

⁴⁸ CA Report, p. 55.

⁴⁹ IA, p. 41.

⁵⁰ ESABCC 2040 Report, p. 41.

⁵¹ *Ibid.*

⁵² *Ibid.*, p. 44.

⁵³ *Ibid.*, pp. 10 and 48.

reductions within the 56-60% [below 1990 levels] range⁵⁴. Therefore, according to the ESABCC it remains feasible for the EU to achieve 60% domestic reductions below 1990 levels by 2030. The ESABCC 2040 Report also highlights that recent failures to adopt steeper emissions reductions targets has hindered the feasibility of achieving reductions beyond 60% by 2030⁵⁵. Prior to setting the 2030 target, studies had indicated that a 65% reduction was feasible for the EU.⁵⁶

30. **Level of Climate Finance is insufficient.** The ESABCC 2040 Report stresses the need for the EU to “[c]ontribute to direct emission reductions outside the EU” which it describes as “necessary in the light of the shortfall identified between the feasible pathways and the fair share estimates”⁵⁷. In this regard, the CAT rates the EU’s climate finance as “insufficient”, considering its level to be so low that it is not sufficient to modify the assessment of the EU’s present fair share contribution using its domestic target⁵⁸ (see Annex 1).

IV. The obligation to reduce contributions to extra-territorial emissions

31. States do not only contribute to global GHG emissions through the release of emissions from within their borders. They also do so through acts and omissions which contribute to emissions in other States. This was recognised explicitly by the Court in *KS* in relation to emissions generated through the production of goods which are imported into a State (i.e. a State’s “consumption” or “embedded” emissions) where it held (§280) as follows:

“It would therefore be difficult, if not impossible, to discuss Switzerland’s responsibility for the effects of its GHG emissions on the applicants’ rights without taking into account the emissions generated through the import of goods and their consumption or, as the applicants labelled them, “embedded emissions”. [T]hese emissions “must be” taken into account in the overall assessment of Switzerland’s GHG emissions.”

32. It is therefore curious that the Court did not proceed to address the extent to which Switzerland had adopted adequate measures to address its “consumption” emissions. This Intervention respectfully submits that it is essential that the Court examines the adequacy of States’ measures to address their contributions to extra-territorial emissions in addition to their targets and other measures to address their territorial emissions. Specifically, States should adopt a legislative and/or administrative framework capable of limiting, in line with the LTTG of 1.5°C, (i) a State’s consumption emissions, (ii) the emissions resulting from the combustion of fossil

⁵⁴ Ibid., p. 42.

⁵⁵ Ibid., pp. 22, 33, 34

⁵⁶ Ram M. et al. (Lappeenranta University of Technology and Energy Watch Group, November 2019), “Global energy system based on 100% renewable energy - power, heat, transport and desalination sectors”, p. 57; and Climact (2020), “Increasing the EU’s 2030 emissions reduction target: how to cut EU GHG emissions by 55% or 65% by 2030”, p. 3; Climate Action Network-Europe and European Environmental Bureau (2020), “Building a Paris Agreement Compatible (PAC) energy scenario”, p. 4; Deutsches Institut für Wirtschaftsforschung (2020), “Make the European Green Deal real – combining climate neutrality and economic recovery”, p. I.

⁵⁷ ESABCC 2040 Report, p. 48.

⁵⁸ CAT, ‘EU’, Available at <https://climateactiontracker.org/countries/eu/>.

fuels exported by a State (where appropriate)⁵⁹, and (iii) the emissions attributable to the overseas activities of entities domiciled within that State. In this regard, the Interveners submit that it would be arbitrary to accept that there is an obligation to address a State’s consumption emissions (as the Court accepted in *KS*) but not to address the other two categories of emissions. Otherwise, this would mean, for example, that a State would have obligations in relation to the emissions released in the production of a car imported into that State but would not have obligations in relation to emissions attributable to fossil fuel extraction carried out overseas by a company domiciled within its jurisdiction. Owing to space constraints, the Interveners make two further discrete points relating to the regulation of contributions to extra-territorial emissions.

33. **Consumption Emissions and Equity.** Measures to regulate consumption emissions, such as ‘Carbon Border Adjustment Mechanisms’, are capable of causing financial detriment to ‘developing’ States which export goods.⁶⁰ It is therefore submitted that compliance with the principles of equity and CBDR emphasised in *KS* requires that any such measures be designed and implemented so that they avoid causing such harm.⁶¹
34. **Overseas emissions of domiciled entities.** GHG emissions attributable to corporate entities are categorised as Scope 1, 2 and 3 emissions.⁶² These categories are recognised by *inter alia* the EU which defines them as: “Direct GHG emissions from sources owned or controlled by the company (Scope 1)”; “Indirect GHG emissions from the generation of acquired and consumed electricity, steam, heat, or cooling...(Scope 2)”; and “All indirect GHG emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions (Scope 3)”.⁶³ Many of the “Carbon Majors”, 100 companies which one study deemed responsible for 71% of GHGs since 1988, are domiciled in the Contracting States.⁶⁴ It is submitted that the effective protection of individual’s rights from the adverse impacts of climate change requires that States’ obligations to limit their contributions to extra-territorial emissions ought to include an obligation to compel companies domiciled within their jurisdictions to reduce their Scope 1, 2 and 3 emissions attributable to their entire global operations.

⁵⁹ The Interveners note that emissions of this kind are the subject of the case of *Greenpeace Nordic and Others v. Norway* (34068/21) that is currently pending before the Court.

⁶⁰ See, for instance, Corvino, F. (2023). The Compound Injustice of the EU Carbon Border Adjustment Mechanism (CBAM). *Ethics, Policy & Environment*, 1–20.

⁶¹ Michael Mehling and Harro van Asselt (2022). Addressing the contribution of emissions from imported goods, para. 44. This was an expert report submitted by the applicants in *Duarte Agostinho* and is re-submitted as Annex 2.

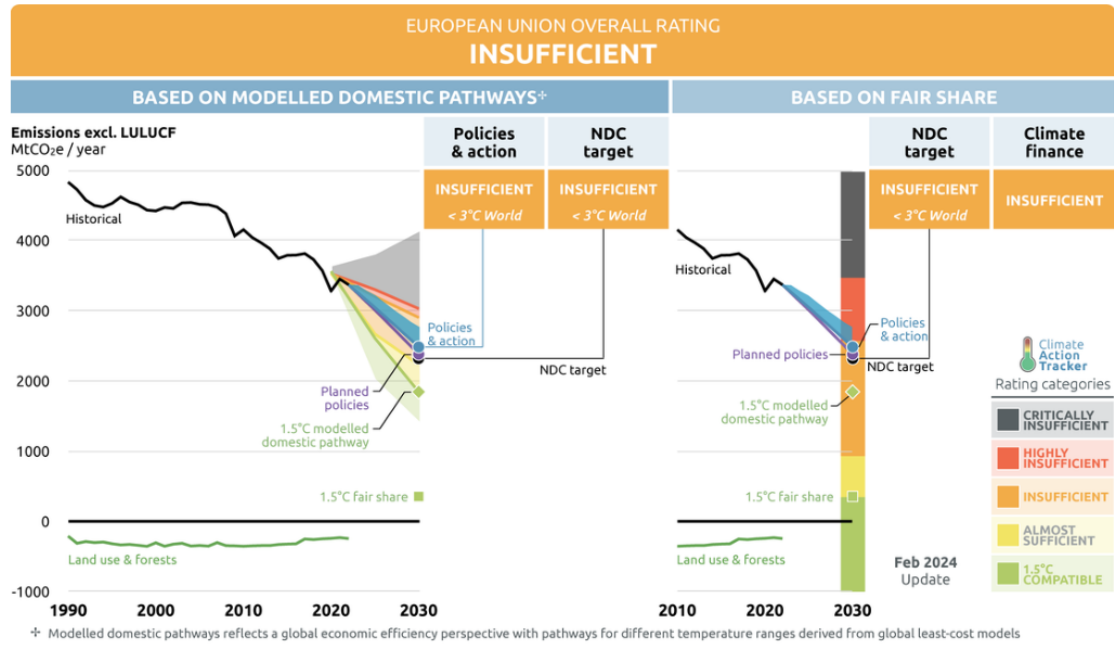
⁶² This classification originates in World Resources Institute and World Business Council for Sustainable Development, Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition (2015) 25.

⁶³ European Commission, Guidelines on non-financial reporting: Supplement on reporting climate-related information, (2019/C 209/01) (2019), Section 3.5.

⁶⁴ See, e.g., The Carbon Majors Database – CDP Carbon Majors Report 2017 at 10, referencing *inter alia* Lukoil (RUS), Rosneft (RUS), BP (GBR), Total (FRA), Glencore (CHE), Statoil (NOR) and Eni (ITA) as being among the top 50 fossil fuel companies in 2015.

Annex 1

Figure 1 | Assessment of EU's targets according to the CAT methodology



Annex 2

Michael Mebling, Harro van Asselt (2022). Addressing the contribution of emissions from imported goods.

Application No. 39371/2020

**IN THE EUROPEAN COURT OF HUMAN RIGHTS
BETWEEN**

Duarte Agostinho and Others

Applicants

v

Portugal and 32 Other States

Respondents

EXPERT REPORT

ADDRESSING THE CONTRIBUTION OF EMISSIONS FROM IMPORTED GOODS

Michael Mehling and Harro van Asselt

12 January 2022

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I. INSTRUCTIONS

This expert report has been prepared for the Court at the request of the Global Legal Action Network, the organisation instructing counsel on behalf of the Applicants in the above matter. We, Michael Mehling and Harro van Asselt, have been requested to provide our expert opinion on contributions to global greenhouse gas emissions attributable to the importation of goods and the mechanisms available to reduce these contributions.

II. QUALIFICATIONS

Michael Mehling

I, Michael Mehling, am Deputy Director of the MIT Center for Energy and Environmental Policy Research (CEEPR) and a Professor at the University of Strathclyde Law School. My work focuses on comparative and international climate policy design and implementation, including its intersections with energy, financial market, and trade policy. On these topics, I have coordinated research projects for international organisations, government agencies, private companies, and civil society organisations in North America, Europe, and the developing world. I have advised decision makers in over a dozen countries, testified before or briefed legislators in the United States, the United Kingdom, and the European Union, and served as an expert in several climate litigation and arbitration cases.

Over the past two decades, I have helped establish several pioneering entities and fora in the areas of climate law and policy. I am a founding board member of the Blockchain & Climate Institute (BCI) in London, the Ecologic Institute in Washington DC, and the European Roundtable on Climate Change and Sustainable Transition (ERCST) in Brussels, as well as the founding editor of *Carbon & Climate Review* (CCLR), the first academic quarterly journal focused on climate change law and regulation. I concurrently serve as a non-executive director with Ecologic Institute and manager of the Konrad-von-Moltke Fund in Berlin, a Member of the Advisory Boards of the International Policy Coalition for Sustainable Growth in Washington DC as well as the Institute for Climate Protection, Energy and Mobility (IKEM) in Berlin.

I am trained as a lawyer and admitted to the bar in the European Union. I am a German and American citizen, and have lived for extended periods in Europe, the United States, and Latin America.

A curriculum vitae has been appended to this report.

Harro van Asselt

I, Harro van Asselt, am a Professor of Climate Law and Policy with the University of Eastern Finland Law School, a Visiting Researcher with the Copernicus Institute of Sustainable Development at Utrecht University, and an Affiliated Researcher with the Stockholm Environment Institute. I am an internationally acknowledged expert in interlinkages between climate change law and policy and trade. Since 2005, I have worked on a variety of research projects on this topic. From 2016–2018, I led the project on ‘Making the Trading System Work for Climate Change’, funded by the KR Foundation, which examined various ways in which trade and climate law and policy interact, and assessed options for reform.

I have published peer-reviewed work in a wide range of legal journals, including the *American Journal of International Law*, *Virginia Journal of International Law*, the *Journal of Environmental Law*, as well as non-legal journals, including *Nature*, *Science*, *Nature Climate Change*, and *Climate Policy*. I am the author of *The Fragmentation of Global Climate Governance* (Edward Elgar 2014), as well as a co-editor of *Governing Climate Change* and *The Politics of Fossil Fuel Subsidies and Their Reform* (both Cambridge University Press 2018). I was invited to contribute the chapter on ‘Trade’ for the second edition of the *Oxford Handbook of International Environmental Law* (Oxford University Press 2021). I am also the Editor-in-Chief of the *Review of European, Comparative & International Environmental Law*.

I am a member of the International Law Association (ILA) Committee on Sustainable Development and the Green Economy in International Trade Law, and a member of the International Advisory Network of the Forum on Trade, Environment and the SDGs (TESS). I was also a member of the E15 Expert Group on Measures to Address Climate Change and the Trade System, hosted by the International Centre for Trade and Sustainable Development and the World Economic Forum.

A curriculum vitae has been appended to this report.

III. INTRODUCTION

1. Greenhouse gas (GHG) emissions associated with traded goods constitute a large and growing share of global emissions. An estimated 20-25% of global emissions are emissions caused by the production of goods destined for trade across national borders (see Section IV).¹ These are emissions released throughout the supply chain of the traded goods, from the extraction and transportation of resources to refining, processing, and assembly of the finished product. Such emissions are referred to as being ‘embedded’ or ‘embodied’ in traded goods, and their share of overall emissions is set to continue growing.²
2. Under the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, these emissions are counted towards the country within whose territory the emissions occurred, not the country where the products are consumed (see Section V). Countries that import goods can therefore claim progress towards decarbonisation even as global emissions continue to rise, driven, in part, to meet consumer demand in those importing countries.
3. A growing imbalance between territorial emissions and emissions related to consumption of imported goods – described as an emissions accounting ‘loophole’³ – is already in evidence across a number of countries, primarily those with advanced economies. Some countries, such as Luxembourg, Malta, and Switzerland, already import goods responsible for more emissions than they generate within their own territory; most European countries import emissions corresponding to between one and two thirds of their territorial emissions.⁴
4. As countries decarbonise at widely divergent speeds, this loophole risks becoming larger, threatening achievement of the temperature goal of the Paris Agreement. As long as they

¹ Steven J Davis and Ken Caldeira, ‘Consumption-Based Accounting of CO₂ Emissions’ (2010) 107 Proceedings of the National Academy of Sciences 5687.

² Michael Grubb and others, ‘Consumption-Oriented Policy Instruments for Fostering Greenhouse Gas Mitigation’ (2020) 20 Climate Policy S58, 559.

³ Daniel Moran, Ali Hasanbeigi and Cecilia Springer, ‘The Carbon Loophole in Climate Policy: Quantifying the Embodied Carbon in Traded Products’ (ClimateWorks Foundation 2018) <<https://www.climateworks.org/wp-content/uploads/2018/09/Carbon-Loophole-in-Climate-Policy-Final.pdf>> accessed 12 January 2022.

⁴ Global Carbon Project, ‘Supplemental Data of Global Carbon Budget 2020 (Version 1.0)’ (Global Change Data Lab 2020) <<https://doi.org/10.18160/gcp-2020>> accessed 12 January 2022.

continue to import goods without consideration for embedded carbon, countries that succeed in reducing their territorial emissions by phasing out GHG-intensive production methods risk only shifting emissions to countries where those production methods are still allowed, with no net decrease – or even an increase – in global emissions.⁵

5. Acting collectively or individually, however, countries can take steps to close this loophole and take responsibility for emissions related to consumption of imported goods, and indeed several are already doing so (see Section VI). Without requiring changes to emissions accounting methods used under the UNFCCC and Paris Agreement, for instance, countries can take steps to better understand the climate impact of consumption of imported goods. Existing and proposed policies can also help lower demand for GHG-intensive goods, regardless of origin (see Section VII).
6. Even if countries are not currently required to account for emissions related to the consumption of imported goods, they will nonetheless have to address such emissions if the long-term temperature goal of the Paris Agreement is to be met. Otherwise, a minority of countries – mostly in the developing world, where lacking capacities or competing development priorities may impede decarbonisation – could find themselves supplying the rest of the world with GHG-intensive goods, an outcome that might be formally aligned with the decentralised approach of the Paris Agreement, yet still prevent achievement of its overall objectives.
7. At the same time, consumer demand in importing countries incentivises the expansion of production capacities in exporting countries (whether developed or developing), which can compromise achievement of their NDCs and – because of the expected economic lifetimes of investments deploying current production technologies – risks locking them into several more decades of GHG-intensive production.⁶ Going forward, such lock-in effects may create a dynamic disincentive for these countries to strengthen their future NDCs as much as they might otherwise have, further undermining the long-term goals of the Paris Agreement.

IV. THE CONTRIBUTION OF INTERNATIONAL TRADE TO GREENHOUSE GAS EMISSIONS

8. International trade can have direct and indirect effects on global GHG emissions. An example of a direct effect are the emissions resulting from the international transport of goods, such as shipping and aviation. International freight transport accounts for about a third of global trade-related emissions.⁷ Moreover, due to a combination of projected growth in freight transport and the carbon intensity of international transport, these emissions have been estimated by the International Transport Forum to grow nearly four-fold between 2010 and 2050.⁸

⁵ Thus, while the European Union has been able to claim substantial emissions reductions since 1990 – the base year for its NDC and previous mitigation targets – its emissions have remained virtually unchanged once consumption-related emissions are taken into account, see Renilde Becqué and others, ‘Closing Europe’s Carbon Loophole in Climate Policy’ (Buy Clean 2018) <https://buyclean.org/media/2018/10/EU-Carbon-Loophole-Report-Final_v1.pdf> 12 January 2022.

⁶ See, e.g., Christoph Bertram and others, ‘Carbon Lock-in through Capital Stock Inertia Associated with Weak near-Term Climate Policies’ (2015) 90 Part A Technological Forecasting and Social Change 62; and more generally Karen C Seto and others, ‘Carbon Lock-In: Types, Causes, and Policy Implications’ (2016) 41 Annual Review of Environment and Resources 425.

⁷ Anca Cristea and others, ‘Trade and the Greenhouse Gas Emissions from International Freight Transport’ (2013) 65 Journal of Environmental Economics and Management 153.

⁸ International Transport Forum (ITF), ‘The Carbon Footprint of Global Trade: Tackling Emissions from International Freight Transport’ (OECD and ITF 2015).

9. The indirect effects of international trade on global GHG emissions are commonly divided into *scale*, *technique*, and *composition* effects.⁹
10. *Scale* effects refer to the *growing* global GHG emissions due to an overall increase in global economic activity driven by the efficiency gains from international trade.¹⁰ *Technique* effects refer to *reduced* GHG emissions in the production process of goods, which may take place through the transfer of clean technologies or the diffusion of GHG standards. *Composition* effects concern the GHG emissions resulting from the sectoral specialisation in the area in which an exporting country has a comparative advantage. If such an area includes GHG-intensive industries, this means that increased trade will result in an increase of global GHG emissions. Conversely, if a country has a comparative advantage in cleaner industries, then trade will lead to a decrease in GHG emissions. The composition effect may be related to differences in the stringency of climate policy. Trade liberalisation between one country with stringent regulation and another with lax standards may increase GHG-intensive activity in the latter.¹¹ One concrete example of a composition effect leading to an increase in GHG emissions is the opening up of trade in agricultural commodities such as soy and beef, which has been shown to lead to increased deforestation in countries such as Brazil.¹²
11. The impacts of international trade on GHG emissions depend primarily on whether the positive (indirect) composition and technique effects outweigh the negative direct effects and (indirect) scale and composition effects.
12. There is clear evidence that international trade is a major driver of GHG emissions. Trade can explain the difference between territorial emissions on the one hand, and consumption-based emissions on the other. In its Fourth Assessment Report, the IPCC found that '[t]wenty percent of the growth in CO₂ emissions in non-Annex B [developing] countries can, through trade, be attributed to the increased demand for products by Annex B [developed] countries'.¹³ In other words, while territorial emissions in OECD countries were going down, emissions embodied in imports were going up. At its peak in 2006, CO₂ emissions embodied in trade were at around 26% of total global CO₂ emissions, mainly driven by exports from China.¹⁴ While emissions embodied in imports into OECD countries have plateaued since 2006¹⁵ – in part due to a growth

⁹ Gene Grossman and Alan Krueger, 'Environmental Impacts of a North American Free Trade Agreement' in Peter Garber (ed), *The Mexico–U.S. Free Trade Agreement* (MIT Press 1993) 13; WTO and UNEP, 'Trade and Climate Change: WTO-UNEP Report' (WTO 2009) 49–52.

¹⁰ Jeffrey A Frankel and David H Romer, 'Does Trade Cause Growth?' (1999) 89(3) *American Economic Review* 379; Francisco Alcalá and Antonio Ciccone, 'Trade and Productivity' (2004) 119(2) *The Quarterly Journal of Economics* 613.

¹¹ Kevin Gallagher, 'Introduction: International Trade and the Environment' in Kevin Gallagher (ed), *Handbook of Trade and the Environment* (Edward Elgar 2008) 1, 4.

¹² Weslem Rodrigues Faria and Alexandre Nunes Almeida, 'Relationship between Openness to Trade and Deforestation: Empirical Evidence from the Brazilian Amazon' (2016) 121 *Ecological Economics* 85; Stefan Ambec and others, 'Dispositions et effets potentiels de la partie commerciale de l'Accord d'Association entre l'Union européenne et le Mercosur en matière de développement durable' (2020) <https://www.vie-publique.fr/sites/default/files/rapport/pdf/276279_0.pdf> accessed 12 January 2022.

¹³ Gabriel Blanco and others, 'Drivers, Trends and Mitigation' in Ottmar Edenhofer and others (eds), *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2014) 351, 385 (citing Glen P Peters and others, 'Growth in Emission Transfers via International Trade from 1990 to 2008' (2011) 108 *Proceedings of the National Academy of Sciences* 8093).

¹⁴ Peters and others (n 13); Richard Wood and others, 'Beyond Peak Emission Transfers: Historical Impacts of Globalization and Future Impacts of Climate Policies on International Emission Transfers' (2020) 20 *Climate Policy* S14, S21.

¹⁵ *ibid.*

in South-South trade¹⁶ and in part due to a decline in the emissions intensity of traded goods¹⁷ – ‘for developed countries, as domestic decarbonisation occurs, the share of emissions embodied in imports as a percentage of the total carbon footprint is likely to increase’.¹⁸

13. While the calculation of emissions embodied in international trade can tell us how many GHG emissions have been produced in one country for the consumption of a good or service in another country, it does not tell us to what extent such emissions are due to the introduction of climate measures.¹⁹ Known as ‘carbon leakage’, this phenomenon occurs when emission reductions due to the introduction of climate policies are partially or entirely offset by an emissions increase in producing countries.²⁰ The channels through which leakage occurs include relocation of GHG-intensive production, relocation of investment, and relocation of fossil fuel use.
14. Given that production tends to shift from countries with higher production costs and more advanced climate policies to countries with lower production costs and less stringent climate policies, the relocation may be accompanied by a net increase in global emissions, denoting a carbon leakage rate in excess of 100%. Because of the differential in production cost and the general efficiency gains due to international trade, such relocation also tends to lower the cost of goods including GHG-intensive goods, and may thus stimulate global demand for GHG-intensive products, further contributing to emissions growth.

V. ACCOUNTING FOR EMISSIONS EMBODIED IN INTERNATIONAL TRADE

15. Parties to the UNFCCC must ‘[d]evelop, periodically update, publish and make available ... national inventories of anthropogenic emissions by sources and removals by sinks ... using comparable methodologies ... agreed upon by the Conference of the Parties.’²¹ Such methodologies were developed by the Intergovernmental Panel on Climate Change (IPCC) in the form of reporting guidelines that provide detailed directions to enable countries to calculate their emissions and compile their GHG inventories.²² Parties to the UNFCCC have subsequently declared these guidelines applicable through a decision of the Conference of the Parties (COP),²³ and parties to the Paris Agreement have likewise indicated them applicable by way of a decision of the Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement

¹⁶ Jing Meng and others, ‘The Rise of South–South Trade and Its Effect on Global CO₂ Emissions’ (2018) 9 *Nature Communications* 1871.

¹⁷ Wood and others (n 15) S19.

¹⁸ *ibid* S23.

¹⁹ Blanco and others (n 13) 386.

²⁰ Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: Mitigation of Climate Change. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2007) Ch. 11.7.2.

²¹ UNFCCC, arts 4(1)(a) and 12(1)(a); additionally, the UNFCCC called on the Conference of the Parties (COP) to ‘consider and agree on methodologies’ for calculating GHG emissions in art 4(2)(c).

²² See, for the most recent version, Intergovernmental Panel on Climate Change (IPCC), ‘2006 IPCC Guidelines for National Greenhouse Gas Inventories’ (Institute for Global Environmental Strategies 2006) Vol. 1: General Guidance and Reporting <https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/1_Volume1/V1_1_Ch1_Introduction.pdf> accessed 12 January 2022. These guidelines have been updated and expanded over time by the Task Force on National Greenhouse Gas Inventories (TFI) through subsequent supplements and refinements, although the general principles have remained unchanged, see, e.g., Intergovernmental Panel on Climate Change (IPCC), ‘2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories’ (Intergovernmental Panel on Climate Change 2019) <https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/0_Overview/19R_V0_00_Cover_Foreword_Preface_Dedication.pdf> accessed 12 January 2022.

²³ See, most recently, Decision 24/CP.19, ‘Revision of the UNFCCC Reporting Guidelines on Annual Inventories for Parties included in Annex I to the Convention’ (31 January 2014), UN Doc. FCCC/CP/2013/10/Add.3, <<http://unfccc.int/resource/docs/2013/cop19/eng/10a03.pdf>> accessed 12 January 2022, declaring the applicability of the 2006 IPCC Guidelines for National Greenhouse Gas Inventories *ibid*.

(CMA).²⁴ As such, the legal nature of these guidelines is ambiguous: while the IPCC guidelines themselves unquestionably lack binding force,²⁵ their endorsement by the COP affords them a degree of formality that, although subservient to treaty provisions, has commanded widespread adherence in state practice.²⁶

16. The IPCC guidelines focus on territorial emissions only, that is, on emissions generated from the combustion of fossil fuels and other sources within the territory of the reporting country.²⁷ When goods are produced in part or entirely outside the country in which they are consumed, the emissions released during the production process are not counted towards the emission inventory of that country. Importantly, these accounting rules are also used to track progress towards national decarbonisation targets, such as those contained in Nationally Determined Contributions (NDCs). Countries can therefore claim a reduction in their territorial – or production-related – emissions even as they see increased emissions associated with imports of goods from third countries for domestic consumption.
17. Given the decentralised nature of the Paris Agreement, in which NDCs vary substantially in scope and ambition, GHG-intensive production of internationally traded goods may become increasingly concentrated in countries with the least stringent climate policies (see Section IV). Already, some countries that have successfully reduced their territorial emissions have seen their consumption of imported goods steadily increase, with the associated emissions increase in third countries to produce such goods outpacing the domestic emission reductions.²⁸ Any assessment of whether states are effectively reducing their contribution to global emissions should therefore factor in emissions related to consumption.
18. Changing the emissions accounting and reporting guidelines used under the UNFCCC and Paris Agreement to require consumption- rather than production-based accounting could occur through amendments to the IPCC Guidelines²⁹ or through formal decisions of the COP and CMA, but would in both cases require state consensus.³⁰ Absent such multilateral agreement to account for emissions related to consumption under the UNFCCC or Paris Agreement, however, states can unilaterally decide to do so when measuring progress towards domestic mitigation objectives, while still reporting emissions to the UNFCCC based on current guidelines.

²⁴ Decision 18/CMA.1, ‘Modalities, Procedures and Guidelines for the Transparency Framework for Action and Support Referred to in Article 13 of the Paris Agreement’ (19 March 2019), UN Doc. FCCC/PA/CMA/2018/3/Add.2 <<https://unfccc.int/documents/193408>> accessed 12 January 2022, para 20: ‘Each Party shall use the 2006 IPCC Guidelines, and shall use any subsequent version or refinement of the IPCC guidelines.’

²⁵ For instance, the 2019 Refinement to the 2006 IPCC Guidelines expressly states that it has been ‘accepted by the Panel but not approved in detail’, see IPCC, ‘2019 Refinement’ (n 22) ii.

²⁶ For a discussion of the legal nature of COP decisions, see Jutta Brunnée, ‘COPing with Consent: Law-Making under Multilateral Environmental Agreements’ (2002) 15 *Leiden Journal of International Law* 1.

²⁷ IPCC (n 22).

²⁸ In 2018, for instance, Switzerland had approximately 37 Mt in territorial emissions and 120 Mt of emissions related to consumption; in 2010, by contrast, Switzerland had approximately 45 Mt in territorial emissions, and 109 Mt in emissions related to consumption. For every tonne of GHGs Switzerland abated within its own territory, 1.4 tonnes of GHG emissions occur elsewhere to produce the goods that Switzerland consumes. For the data, see Global Carbon Atlas (2019) <<http://www.globalcarbonatlas.org/en/CO2-emissions>> accessed 12 January 2022, updated from Glen P Peters, Steven J Davis and Robbie Andrew, ‘A Synthesis of Carbon in International Trade’ (2012) 9 *Biogeosciences* 3247; Peters and others (n 13).

²⁹ Mere supplements or refinements to the 2006 IPCC Guidelines (n 22) would arguably not suffice to change fundamental accounting principles such as the territorial

³⁰ The ‘Draft Rules of Procedure of the Conference of the Parties and its Subsidiary Bodies’ (22 May 1996), UN Doc. FCCC/CP/1996/2 <https://unfccc.int/sites/default/files/resource/02_0.pdf> accessed 12 January 2022, were never adopted due to disagreement on Rule 42, which would have set out the voting requirements needed for decision making; in the absence of an agreement on the level of majority required for decision making, parties decide by consensus.

19. In effect, nothing in the UNFCCC, the Paris Agreement, or decisions adopted under either treaty by its parties prevents countries from voluntarily accounting for emissions related to their domestic consumption, and some countries are indeed already doing so. In the United Kingdom, for instance, the Department for Environment, Food & Rural Affairs (Defra) publishes an annual inventory of GHG emissions relating to UK consumption.³¹ With this inventory, Defra measures the emissions associated with the consumption spending of UK residents on goods and services regardless of where in the world these emissions arise along the supply chain, as well as emissions directly generated by UK households through private motoring and burning fuel to heat homes.³² Data on emissions associated with domestic consumption is already widely available, for instance in the form of an Inter-Country Input-Output (ICIO) Database and other statistical data maintained by the Organisation for Economic Co-operation and Development (OECD)³³ as well as several databases maintained by academic institutions.³⁴
20. Measuring and accounting for emissions related to consumption need not interfere with or displace existing accounting practices under the UNFCCC and Paris Agreement. Different accounting systems can be operated separately and in parallel, as evidenced by the simultaneous operation of multiple accounting systems for emissions trading and crediting systems at the subnational, national, and international level. Because emissions data related to consumption would not be included in national emissions accounting and reporting under the UNFCCC and Paris Agreement, it would not result in inconsistencies such as double counting, nor give rise to difficulties in attributing emissions between different countries.
21. Importantly, because it would not replace or otherwise interfere with the national reporting practices under the UNFCCC and Paris Agreement, efforts by one country to quantify and address emissions related to its domestic consumption would not relieve other countries from reporting their territorial emissions, nor would it shift the burden of emissions accounting from countries that produce goods to countries that consume them. Rather than affecting international emissions accounting, the quantification of GHG emissions related to consumption would purely serve domestic purposes, including the elaboration of domestic policies to address emissions from consumption (see Section VI). Accordingly, it could also depart from international emissions accounting guidelines and instead rely on existing methodologies for the estimation of supply chain emissions developed and widely applied by the private sector.³⁵

VI. EXISTING POLICIES THAT REGULATE EMISSIONS FROM IMPORTED GOODS

22. To counter the risks of international trade leading to a shift of GHG emissions to third countries, countries can seek to regulate emissions from imported goods, for instance by introducing market access conditions. The possibility of a country (or a set of countries) to do so increases along with its market power. As a major consumer of traded goods and services, the EU is in a particularly strong position to put in place measures targeting imports, thereby also potentially

³¹ Department for Environment, Food & Rural Affairs (Defra), 'UK's Carbon Footprint' (1997-2018) <<https://www.gov.uk/government/statistics/uks-carbon-footprint>> accessed 12 January 2022.

³² *ibid* 1.

³³ See, e.g., the 2021 edition of Organisation for Economic Co-operation and Development (OECD), 'Inter-Country Input-Output (ICIO) Tables' <<http://oe.cd/icio>> accessed 12 January 2022; OECD, 'Scale, Composition and Technique Effects of Imported Carbon Emissions' <https://stats.oecd.org/Index.aspx?DataSetCode=TRADEENV_IND3> accessed 12 January 2022.

³⁴ See, e.g., the Global Carbon Project, 'Global Carbon Atlas 2021' <<http://www.globalcarbonatlas.org/en/CO2-emissions>> accessed 12 January 2022.

³⁵ See, for instance, the 'GHG Protocol' standard for Scope 3 emissions: World Resources Institute (WRI) and World Business Council on Sustainable Development (WBCSD), 'Corporate Value Chain (Scope 3) Accounting and Reporting Standard' (WRI and WBCSD 2011) <<https://ghgprotocol.org/standards/scope-3-standard>> accessed 12 January 2022.

influencing regulation in third countries.³⁶ Indeed, as the following paragraphs will show, the EU has already begun putting in place measures that – directly or indirectly – address GHG emissions from certain sources outside of its territory. These measures demonstrate that it is possible for countries to mitigate their contribution to global emissions related to consumption of imported goods.

23. Under the Fuel Quality Directive, which aims to reduce GHG intensity of transport fuels by 6% by 2020 and thereafter, EU Member States are required to make suppliers responsible for ‘monitoring and reporting life cycle greenhouse gas emissions per unit of energy from fuel and energy supplied’.³⁷ These emissions include ‘all net emissions of CO₂, CH₄ and N₂O that can be assigned to the fuel ... or energy supplied. This includes all relevant stages from extraction or cultivation, including land-use changes, transport and distribution, processing and combustion, *irrespective of where those emissions occur*’.³⁸ In addition, the Directive specifies that ‘[i]rrespective of whether the raw materials were cultivated *inside or outside the territory of the Community*, energy from biofuels shall be taken into account ... only if they fulfil the sustainability criteria’ specified in the Directive.³⁹ In other words, the Directive establishes monitoring and reporting obligations regarding the GHG emissions footprint of products imported into the EU.
24. Biofuel sustainability criteria have also played a part in the EU’s Renewable Energy Directive. The 2009 Directive (RED I) set a 10% target for the use of renewable energy sources in transport. To the extent the production of biofuels did not meet the Directive’s sustainability criteria, they could not be counted towards the target.⁴⁰ Importantly, the sustainability criteria applied ‘[i]rrespective of whether the raw materials were cultivated inside or outside the territory of the Community’.⁴¹ Whereas the RED I initially only targeted GHG emissions resulting from direct land-use change,⁴² its successor – the 2018 recast (RED II) – also addresses the more contested issue of GHG emissions resulting from indirect land-use change (ILUC), effectively calling for a ‘freeze and phase-out’ of certain biofuels with high ILUC risks.⁴³ Also here, the RED II indicates that the ‘sustainability and the greenhouse gas emissions saving criteria ... shall apply irrespective of the geographical origin of the biomass’.⁴⁴
25. Another example through which the EU seeks to yield GHG benefits through targeting imports is the Timber Regulation.⁴⁵ The Regulation begins by emphasising the contribution of illegal

³⁶ See generally Anu Bradford, ‘The Brussels Effect’ (2012) 107 *Northwestern University Law Review* 1. See also Joanne Scott, ‘Extraterritoriality and Territorial Extension in EU Law’ (2014) 62 *American Journal of Comparative Law* 87; and Ioanna Hadjiyianni, *The EU as a Global Regulator for Environmental Protection: A Legitimacy Perspective* (Hart Publishing 2019).

³⁷ Directive 98/70/EC of 13 October 1998 relating to the quality of petrol and diesel fuels and amending Council Directive 93/12/EEC [1998] OJ L350/58, as amended, art 7a.

³⁸ *ibid* art 2(6) (emphasis added).

³⁹ *ibid* art 7b(1) (emphasis added).

⁴⁰ Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC [2009] OJ L140/16, art 5(1).

⁴¹ *ibid* art 17(1).

⁴² This changed with Directive (EU) 2015/1513 of the European Parliament and of the Council of 9 September 2015 amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources [2015] OJ L239/1.

⁴³ Stefan Mayr, Birgit Hollaus and Verena Madner, ‘Palm Oil, the RED II and WTO law: EU Sustainable Biofuel Policy Tangled up in Green?’ (2021) 30 *Review of European, Comparative & International Environmental Law* 233.

⁴⁴ Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources [2018] OJ L328/82, art 29(1).

⁴⁵ Regulation (EU) No 995/2010 of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market [2010] OJ L295/23.

logging to deforestation and forest degradation, and its subsequent contribution to CO₂ emissions.⁴⁶ The Regulation proceeds to put in place due diligence requirements for operators seeking to place timber or timber products on the EU market, again irrespective of the country of origin. For instance, they are required to collect information about the imported timber (e.g. country of harvest), evaluate the risk of the timber being harvested illegally, and take mitigation measures to reduce the risk of putting illegally logged timber on the market.⁴⁷

26. The EU has also put in place sectoral measures targeting GHGs emitted outside of the EU's territory. Specifically, the EU has sought to address emissions from international aviation and shipping through various instruments. International aviation emissions were initially covered by an extension of the EU's emissions trading system (ETS).⁴⁸ However, following backlash by third countries, as well as progress made under the International Civil Aviation Organization, the EU suspended enforcement of the inclusion of international aviation,⁴⁹ and later altogether excluded international aviation from the EU ETS.⁵⁰ For international shipping, the EU also developed initial measures, but rather than including shipping emissions in its ETS, the EU opted for developing standards for the monitoring, reporting and verification (MRV) of such emissions, also covering shipping between the EU and third countries.⁵¹ However, by improving the MRV of shipping emissions, the EU has taken a first step towards further regulatory measures.⁵² Importantly, the measures targeting international shipping – and to a lesser extent international aviation – are again examples of how the EU has addressed the emissions arising from the international trade in goods and services.⁵³
27. The EU is planning further legislation that, once adopted, would offer further instances through which emissions from imports are targeted. For example, the EU Methane Strategy announces the European Commission's intention to table legislation on the compulsory MRV for all energy-related methane emissions, suggesting that 'the Commission will examine options as regards possible methane emission reduction targets or standards or other incentives on fossil energy consumed and imported in the EU'.⁵⁴ The rationale for doing so is spelled out in the Commission's Inception Impact Assessment, which suggests that 'obligating non-EU entities supplying energy to the EU as well as EU actors would therefore considerably increase the benefits of such legislation, both in terms of improving information on methane emissions and

⁴⁶ *ibid* recital 3.

⁴⁷ *ibid* art 6.

⁴⁸ Parliament and Council (EC) Directive 2008/101 amending Directive 2003/87/EC so as to include aviation activities in the scheme for greenhouse gas emission allowance trading within the Community [2008] OJ L8/3.

⁴⁹ Commission (EU), 'Stopping the Clock of ETS and Aviation Emissions Following Last Week's International Civil Aviation Organisation (ICAO) Council' (12 November 2012) <https://ec.europa.eu/commission/presscorner/detail/en/MEMO_12_854> accessed 12 January 2022. The exclusion of international aviation was subsequently legislated through Parliament and Council Regulation (EU) 421/2014 amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in view of the implementation by 2020 of an international agreement applying a single global market-based measure to international aviation emissions [2014] OJ L 129/140.

⁵⁰ Parliament and Council (EU) Regulation 2017/2392 of 13 December 2017 amending Directive 2003/87/EC to continue current limitations of scope for aviation activities and to prepare to implement a global market-based measure from 2021 [2017] OJ L 350/7. See Natalie Dobson, 'Competing Climate Change Responses: Reflections on EU Unilateral Regulation of International Transport Emissions in Light of Multilateral Developments' (2020) 67 *Netherlands International Law Review* 183, 189–191.

⁵¹ Regulation 2015/757 of 29 April 2015 on the monitoring, reporting and verification of carbon dioxide emissions from maritime transport, and amending Directive 2009/16/EC [2015] OJ L123/55.

⁵² *ibid* recital 13.

⁵³ Natalie Dobson, 'The EU's Conditioning of the 'Extraterritorial' Carbon Footprint: A Call for an Integrated Approach in Trade Law Discourse' (2018) 27 *Review of European, Comparative & International Environmental Law* 75, 78.

⁵⁴ Commission (EU), 'Communication on an EU strategy to reduce methane emissions' COM(2020) 663 final, 14 October 2020, 10.

mitigating them'.⁵⁵ The second example, which will be discussed in further detail in Section VII, is the EU's planned 'Carbon Border Adjustment Mechanism' (CBAM), which explicitly targets the emissions generated in the production of several energy-intensive products.

VII. ADDITIONAL POLICY OPTIONS TO ADDRESS EMISSIONS FROM IMPORTED GOODS

A. Overview of Policy Options

28. In addition to estimating and accounting for emissions related to consumption and adopting the policies described in the previous section, countries can take recourse to a number of further options to better understand and manage the climate impact of domestic consumption, including expanded use of product bans, standards, and labelling, border carbon adjustments (BCAs), and consumption charges.⁵⁶ Together, these policy options offer countries a variety of means to address their contribution to global climate change.

B. Individual Policy Options

a. Informational Instruments

29. One set of measures that governments can adopt to address the emissions embodied in imports concerns the disclosure of information on embedded emissions. Two types of measures can be distinguished in this regard. First, governments can put in place mandatory product carbon footprint (PCF) labelling schemes or support voluntary PCF labels. Second, governments can adopt standards requiring the measurement, reporting and verification (MRV) of GHG emissions of a product, including embodied emissions.

30. PCF labels show information on the GHG emissions of products throughout their life cycle, often expressed in grams of CO₂-equivalent per unit,⁵⁷ on packaging, websites, etc. Such 'carbon passports'⁵⁸ enable consumers to make a more informed choice about products based on their impact on climate change, and they can help incentivise producers to lower their carbon intensity.⁵⁹ While such schemes may thus help shift demand and supply towards low-carbon alternatives, the implications of labelling for developing countries should be considered when developing labels, for instance by facilitating their participation in standard-setting processes.⁶⁰

31. Many PCF labels are developed and managed purely by private organisations, without government involvement.⁶¹ However, PCF labels can also be developed and implemented

⁵⁵ Commission (EU), 'Proposal for a legislative act to reduce methane emissions in the oil, gas and coal sectors' Ref. Ares(2020)7864968 (22 December 2020) 4.

⁵⁶ Grubb and others (n 2).

⁵⁷ The life cycle emissions of products can be calculated following international standards, such as PAS 2050 or ISO 14067:2018. Other ways of showing information are also possible, including for instance ratings. See Kateryna Holzer and Aik Hoe Lim, 'Trade and Carbon Standards: Why Greater Regulatory Cooperation is Needed' in Daniel C Esty and Susan Biniiaz (eds), *Cool Heads in a Warming World: How Trade Policy Can Help Fight Climate Change* (Yale Center for Environmental Law and Policy) <[https://envirocenter.yale.edu/sites/default/files/files/CoolHeads_Holzer\(1\).pdf](https://envirocenter.yale.edu/sites/default/files/files/CoolHeads_Holzer(1).pdf)> accessed 12 January 2022, 6.

⁵⁸ Ricardo Meléndez-Ortiz, 'Trade in a World Where Goods Carry Carbon Passports' in Esty and Biniiaz (n 57) <[https://envirocenter.yale.edu/sites/default/files/files/CoolHeads_MelendezOrtiz\(2\).pdf](https://envirocenter.yale.edu/sites/default/files/files/CoolHeads_MelendezOrtiz(2).pdf)> accessed 12 January 2022.

⁵⁹ Jane Kloeckner, 'The Power of Eco-Labels: Communicating Climate Change Using Carbon Footprint Labels Consistent with International Trade Regimes under the WTO' (2012) 3 *Climate Law* 209, 211–212.

⁶⁰ Arthur Appleton, 'Private Climate Change Standards and Labelling Schemes under the WTO Agreement on Technical Barriers to Trade' in Thomas Cottier, Olga Nartova and Sadeq Z Bigdeli (eds), *International Trade Regulation and the Mitigation of Climate Change* (Cambridge University Press 2009) 131, 134.

⁶¹ For instance, CarbonNeutral <<https://www.carbonneutral.com>> accessed 1 December 2021; ClimateNeutral <<https://www.climateneutral.org>> accessed 12 January 2022; and ClimaTop <<https://www.myclimate.org/get-active/corporate-clients/climatop-label>> accessed 12 January 2022.

through government regulation, meaning that the label is a legal requirement for market access.⁶² For instance, the Climate and Resilience bill currently under discussion in France includes a specific provision on PCF labelling.⁶³

32. Government-mandated PCF labelling schemes are likely to qualify as ‘technical regulations’ under the WTO’s Agreement on Technical Barriers to Trade (TBT).⁶⁴ Such measures should therefore be non-discriminatory and not have ‘the effect of creating unnecessary obstacles to international trade’.⁶⁵ The latter means that they must ‘not be more trade-restrictive than necessary to fulfil a legitimate objective’, with environmental protection being one such objective.⁶⁶ A question is therefore whether a PCF label can effectively contribute to climate protection; this depends on the extent to which consumers are prone to choose low-carbon products if presented with the right information.⁶⁷ In addition to these requirements, technical regulations should be based on international standards where these exist.⁶⁸
33. MRV standards, as discussed in Section VI, can offer a basis for the development of further regulatory measures, by requiring the collection and reporting of reliable GHG emissions data. Specifically, regulators often face an information deficit when it comes to emissions taking place outside of their jurisdiction, which could be overcome by requiring importers to provide data on GHG emissions. In addition to the examples provided in Section VI, another instance is included in the proposed CBAM Regulation in the EU, with the proposal requiring importers to report actual embedded emissions.⁶⁹
34. Like government-backed labelling schemes, MRV standards with which compliance is required would likely be considered ‘technical regulations’ under the TBT Agreement, and as such would need to meet the Agreement’s requirements of avoiding unnecessary obstacles to trade.

⁶² Mark A Cohen and Michael P Vandenberg, ‘The Potential Role of Carbon Labeling in a Green Economy’ (2012) 34 *Energy Economics* S53, S60.

⁶³ EuroNews, ‘France’s New Climate Law Has Just Been Approved. So Why Are Activists So Unimpressed?’ (20 July 2021) <<https://www.euronews.com/green/2021/07/20/france-s-new-climate-law-has-just-been-approved-so-why-are-activists-so-unimpressed>> accessed 12 January 2022. France had earlier proposed mandatory carbon labels; see Holzer and Hoe Lim (n 58).

⁶⁴ A ‘technical regulation’ is a ‘[d]ocument which lays down product characteristics *or their related processes and production methods*, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.’ Agreement on Technical Barriers to Trade (adopted 15 April 1994, entered into force 1 January 1995) 1868 UNTS 120 (TBT Agreement), Annex 1.1 (emphasis added). There has been discussion in the literature on whether the phrase ‘their related processes and production methods’ (PPMs) only refers to PPMs that leave a trace in the product (e.g. labels on the use of pesticide in apples) or also to characteristics that do not leave a trace, i.e. non-product-related PPMs (e.g. labels on GHG emissions from the production process of electronic appliances). See, e.g., Gracia Marín Durán, ‘NTBs and the WTO Agreement on Technical Barriers to Trade: The Case of PPM-Based Measures Following *US – Tuna II* and *EC – Seal Products*’ in Christoph Herrmann, Markus Krajewski and Jörg Philipp Terhechte (eds), *2015 European Yearbook of International Economic Law* (Springer 2015) 87, 104–110. However, this question seems settled with the WTO Appellate Body confirming that a labelling scheme targeting non-product-related PPMs could be considered a ‘technical regulation’. See WTO, *United States Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Products* (Appellate Body Report) WT/DS381/AB/R (16 May 2012) para 199, discussed in Ming Du, ‘Clearing the Fog: Forest Stewardship Council Labelling and the World Trade Organization’ (2021) 30 *Review of European, Comparative and International Environmental Law* 81, 85.

⁶⁵ TBT Agreement (n 64) arts 2.1–2.2.

⁶⁶ *ibid* art 2.2.

⁶⁷ Holzer and Lim (n 57) 9; Appleton (n 60) 142

⁶⁸ TBT Agreement (n 64) art 2.4.

⁶⁹ European Commission, ‘Proposal for a Regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism’ COM(2021) 564 final, 14 July 2021, art 35.

b. Product Requirements and Bans

35. In addition to requiring transparency about products consumed domestically, countries can also introduce restrictions linked to the GHG intensity of such products. Such restrictions condition market access for covered products on whether these meet specifications related to the GHG intensity of their production. Also labelled ‘product carbon requirements’ (PCRs),⁷⁰ these restrictions apply to both domestic and imported products, limiting the ability to sell either in the domestic market unless they comply with the PCR. Countries can choose to altogether ban products that fail to meet the PCR specifications, or merely impose quantitative restrictions in line with a declining pathway of consumption emissions. PCR specifications, in turn, can take the form of a technology requirement or a performance requirement; for instance, a PCR could mandate that only steel produced with hydrogen direct reduction be allowed for sale, or instead define a GHG-intensity limit expressed in tonnes of CO_{2e} per tonne of steel. Depending on how the ensuing restriction is implemented, products that fail to meet this specification either lose access to the domestic market altogether, amounting to a ban, or may only be sold subject to certain quantitative limitations. Additionally, PCRs can be implemented by way of a flexible emissions intensity standard that enables trading of credits between producers, lowering the overall cost of compliance.⁷¹
36. As described in the foregoing paragraph, PCRs are distinct from product requirements that relate to the performance of products or other characteristics of their use,⁷² such as tailpipe emission standards for vehicles or efficiency standards for appliances. While the latter requirements are effective in reducing territorial emissions from the use of such products, only PCRs that specify requirements for the emissions released during the production process, such as direct and electricity related emissions, can address the consumption emissions embodied in those products. Similarly, while a PCR can result in a ban of products whose production exceeds a defined carbon intensity threshold, such a ban would be distinct from product bans related to emissions generated during the use of a technology, such as phase-out mandates for sales of new internal combustion engine (ICE) vehicles being introduced in a growing number of jurisdictions by certain dates. Again, the distinction relates to whether emissions are generated during the production of the good or during its use, with only the former addressing emissions embodied in both imported and domestically produced goods intended for domestic consumption.
37. PCRs help reduce GHG emissions related to consumption by driving a reduction in demand for GHG-intensive goods and creating an incentive for input substitution and process changes. To operationalise a PCR for imports, importers have to provide documentation on the production process of shipped goods, which can take the form of a conformity statement coupled with certification by an independent third party. Relevant rules and procedures as well as methodological guidelines can be set out at the domestic or at the international level, and be mandatory or voluntary in character. As already shown in Section VI above, PCRs related to processes and production methods of goods – rather than the characteristics of their use, such as the emissions performance of their operation – have already been implemented in the EU through mandatory EU legislation on fuel quality, biofuels and timber. Voluntary standards adopted to date have mostly focused on transparency labelling, as described in the previous section, although some sustainability certification schemes, for instance the Forest Stewardship Council

⁷⁰ Timo Gerres and others, ‘To Ban or Not to Ban Carbon-Intensive Materials: A Legal and Administrative Assessment of Product Carbon Requirements’ (2021) 30 *Review of European, Comparative & International Environmental Law* 249.

⁷¹ Jeffrey Rissman and others, ‘Technologies and Policies to Decarbonize Global Industry: Review and Assessment of Mitigation Drivers through 2070’ (2020) 266 *Applied Energy* 114848, 21.

⁷² Such product requirements are already in wide use outside the context of climate policy to ensure the safety, quality, and sustainability of a broad variety of products.

(FSC) Principles and Criteria for Forest Stewardship,⁷³ also set out substantive requirements with relevance for the GHG emissions intensity of certified products.

38. In terms of their treatment under WTO law, PCRs share many similarities with the PCF labelling schemes described in the previous section. They could be tested against the free trade disciplines set out in both the TBT Agreement and the General Agreement on Tariffs and Trade (GATT).⁷⁴ There is debate about whether processes and production methods covered by a PCR would be sufficiently related to product characteristics for the PCR to be considered a technical regulation or standard under the TBT Agreement,⁷⁵ and it is similarly unclear whether it might be considered a quantitative restriction under GATT.⁷⁶ In any case, countries should ensure that measures they introduce to address emissions from consumption are applied in an origin-neutral manner that does not distinguish between domestic and imported products, or between foreign products originating from different trade partners. Where these are available, international standards should be adhered to. Both the TBT Agreement and the GATT recognize protection of the environment as a legitimate objective that can justify otherwise inconsistent measures,⁷⁷ but doing so requires that the measures in question meet a number of conditions identified in the relevant provisions themselves as well as in extensive WTO case law, such as avoidance of unnecessary trade restrictions, and ensuring implementation through a fair, inclusive and transparent process.

c. Border Carbon Adjustments

39. Border carbon adjustments (BCAs) are trade-related policy instruments that can alleviate the emissions leakage resulting from uneven climate efforts between trade partners. They do so by imposing a tax, charge, or other fiscal measure on imported goods, or by extending some other regulatory constraint – such as a requirement to purchase emission allowances – to imports, in each case based on the embedded carbon emissions of such goods. They can also be implemented by granting relief to exported goods, for instance through an exemption from, or credit for, domestic carbon constraints, following the ‘destination principle’ according to which the GHG emissions embodied in exported goods will be subject to carbon constraints in the importing country where the goods are ultimately consumed. Both approaches can also be combined through a BCA that covers both imported and exported goods.⁷⁸
40. BCAs have been periodically discussed in a number of countries as a way to address concerns about emissions leakage and the effects of increased climate policy ambition on the competitiveness of domestic industries, especially energy intensive and trade exposed (EITE) sectors producing basic materials such as iron and steel, aluminium, cement and clinker, and bulk chemicals. Early proposals to introduce BCAs originated in the European Union and the United States,⁷⁹ although only one jurisdiction, California, has actually deployed this policy

⁷³ Forest Stewardship Council (FSC), FSC Principles and Criteria for Forest Stewardship, Standard FSC-STD-01-001 <<https://fsc.org/en/document-centre/documents/resource/392>> accessed 12 January 2022.

⁷⁴ General Agreement on Tariffs and Trade (adopted 15 April 1994, entered into force 1 January 1995), 1867 UNTS 187 (GATT).

⁷⁵ Gerres and others (n 70) 256–258; Charles O Verrill, Jr., ‘Maximum Carbon Intensity Limitations and the Agreement on Technical Barriers to Trade’ (2008) 2 Carbon & Climate Law Review 43.

⁷⁶ GATT (n 74) art IX.

⁷⁷ TBT Agreement (n 64) art 2.2; GATT (n 74) art XX(b) and (g).

⁷⁸ For more detail, see Michael Mehling, Harro van Asselt, Susanne Droege, Kasturi Das and Cleo Verkuijl, ‘Designing Border Carbon Adjustments for Enhanced Climate Action’ (2019) 113(3) American Journal of International Law 433; see also Michael Mehling, Harro van Asselt, Kasturi Das and Susanne Droege, ‘Beat Protectionism and Emissions at a Stroke’ (2018) 559 Nature 321.

⁷⁹ Harro van Asselt and Thomas L Brewer, ‘Addressing Competitiveness and Leakage Concerns in Climate Policy: An Analysis of Border Adjustment Measures in the US and the EU’ (2010) 38 Energy Policy 42.

option by extending the scope of its emissions trading system to electricity imports from neighbouring states.⁸⁰

41. Still, increases in the ambition of climate policy pledges and commitments have seen a surge in political discussion of BCAs, with the European Commission recently releasing a fully elaborated legislative proposal for an EU ‘Carbon Border Adjustment Mechanism (CBAM)’ to be operationalised from 2023.⁸¹ Under this proposal, importers of four GHG-intensive basic materials – iron and steel, aluminium, cement, and fertilisers – as well as electricity will be required to report the direct GHG emissions embodied in these goods from 2023, and purchase and surrender a gradually rising number of emission certificates priced at the same level as allowances under the European Union Emissions Trading System (EU ETS) once free allocation to EU producers begins to decline from 2026. While the proposed regulation is likely to offer effective protection against emissions leakage, its long implementation timeline and limited product scope have invited criticism, as have the omission of use of emissions, the lack of provision for leakage related to European exports, and the failure to earmark CBAM revenue for mitigation of adaptation purposes, for instance by supporting relevant activities in developing countries.
42. In the United States, the Administration has announced its intention to consider BCAs,⁸² and Congressional Democrats have proposed the inclusion of a ‘Carbon Polluter Import Fee’ in the Budget Resolution for Fiscal Year 2022.⁸³ Other jurisdictions exploring deployment of BCAs include Canada, which has launched a formal consultation process,⁸⁴ and the United Kingdom, which has initiated a Parliamentary inquiry into the topic.⁸⁵ For the first time, even non-Annex I countries – traditionally critical of any use of trade-related environmental measures – have indicated interest in exploring the use of BCAs, with Mexico’s updated NDC to the Paris Agreement mentioning a BCA as a prospective instrument.⁸⁶
43. Existing literature offers guidance on how to design a BCA that balances legal and political risks, administrative complexity, and its effectiveness as a tool to limit emissions leakage.⁸⁷ Economic

⁸⁰ Stefan U Pauer, ‘Including Electricity Imports in California’s Cap-and-trade Program: A Case Study of a Border Carbon Adjustment in Practice’ (2018) 31 *The Electricity Journal* 39.

⁸¹ European Commission (n 69).

⁸² United States Trade Representative (USTR), ‘Trade Policy Agenda and 2020 Annual Report of the President of the United States on the Trade Agreements Program’ (March 2021) <<https://ustr.gov/sites/default/files/files/reports/2021/2021%20Trade%20Agenda/Online%20PDF%202021%20Trade%20Policy%20Agenda%20and%202020%20Annual%20Report.pdf>> accessed 12 January 2022.

⁸³ U.S. Senate, ‘Memorandum to Democratic Senators: FY2022 Budget Resolution Agreement Framework’ (9 August 2021) <<https://www.democrats.senate.gov/imo/media/doc/MEMORANDUM%20for%20Democratic%20Senators%20-%20FY2022%20Budget%20Resolution.pdf>> accessed 12 January 2022; S.2378 – Fair, Affordable, Innovative, and Resilient Transition and Competition Act (19 July 2021) <<https://www.congress.gov/bill/117th-congress/senate-bill/2378>> accessed 12 January 2022.

⁸⁴ Government of Canada, ‘Consultation Paper: Exploring Border Carbon Adjustments for Canada’ (5 August 2021) <<https://www.canada.ca/en/department-finance/news/2021/08/government-launches-consultations-on-border-carbon-adjustments.html>> accessed 12 January 2022.

⁸⁵ UK Parliament, ‘EAC Launches New Inquiry Weighing Up Carbon Border Tax Measures’ (24 September 2021) <<https://committees.parliament.uk/committee/62/environmental-audit-committee/news/157728/eac-launches-new-inquiry-weighing-up-carbon-border-tax-measures>> accessed 12 January 2022.

⁸⁶ Government of Mexico, ‘Nationally Determined Contributions: 2020 Update’ (December 2020) <<https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Mexico%20First/NDC-Eng-Dec30.pdf>> accessed 12 January 2022, 37.

⁸⁷ Aaron Cosbey, Susanne Droege, Carolyn Fischer and Clayton Munnings, ‘Developing Guidance for Implementing Border Carbon Adjustments: Lessons, Cautions, and Research Needs from the Literature’ (2019) 13 *Review of Environmental Economics and Policy* 3; Mehling and others (n 78); Andrei Marcu, Michael Mehling and Aaron Cosbey, ‘Border Carbon Adjustments in the EU: Issues and Options’ (ERCST 2020) <<https://ercst.org/border-carbon-adjustments-in-the-eu-issues-and-options>> accessed 12 January 2022.

assessments suggest that BCAs can be moderately to very effective in reducing leakage from the relocation of production and related emissions, and their ability to exert political leverage may also promote convergence of policy ambition, helping reduce leakage of investment and fuel consumption.⁸⁸ Since the earliest BCA proposals were raised, moreover, availability of data to determine the carbon embedded in traded products as well as methodologies to measure climate policy ambition have significantly improved.

44. Fear of judicial challenges and retaliatory trade measures long stymied further exploration of BCAs, however. As measures imposed on trade in goods, BCAs risk being considered discriminatory if they violate the most-favoured-nation and national treatment requirements set out in Articles I and III of the GATT, respectively. Still, the predominant view in the literature holds that a properly designed and implemented BCA has strong prospects of being found compatible with WTO disciplines.⁸⁹ Remaining uncertainties, for instance about whether products may be treated differently based on the carbon intensity of their production, may be addressed by recourse to the general exceptions of Article XX of the GATT. A report co-authored by members of the WTO Secretariat has likewise concluded that the compatibility of BCAs with international trade law is a matter of how the BCAs are designed.⁹⁰ Additionally, BCAs can be implemented in such a way – for instance through strategic use of collected revenue – that any hardship on developing countries and especially Least Developed Countries (LDCs) is avoided.⁹¹

d. Consumption Charges

45. A consumption charge – also sometimes referred to as consumption levy or ‘climate contribution’⁹² – applies downstream pricing of embodied GHG emissions to ensure that the cost of carbon is internalised along the entire value chain of covered goods, reaching the final consumer in the form of a price signal that creates incentives for resource efficiency and substitution.⁹³ First proposed as a levy on selected carbon-intensive basic materials, such as cement, iron, and steel, the charge would be based on the amount of carbon emitted in producing each material.⁹⁴ Rather than attempting to determine the actual GHG intensity of individual products, that proposal would assign a default value for the GHG intensity of covered materials.
46. Liability for the charge would be incurred at the point of production or, for imports, at the point of import. That liability could be discharged at any point from initial production or import to the point of sale to final consumers. A system of records would track the liability along the supply chain for goods with a significant content of covered materials, whereas default values would be

⁸⁸ Frédéric Branger and Philippe Quirion, ‘Would Border Carbon Adjustments Prevent Carbon Leakage and Heavy Industry Competitiveness Losses? Insights from a Meta-Analysis of Recent Economic Studies’ (2014) 99 *Ecological Economics* 29; Christoph Böhringer, Edward J Balistreri and Thomas F Rutherford, ‘The Role of Border Carbon Adjustment in Unilateral Climate Policy: Overview of an Energy Modeling Forum Study (EMF 29)’ (2012) 34/S2 *Energy Economics* S97.

⁸⁹ Mehling and others, ‘Designing Border Carbon Adjustments’ (n 78).

⁹⁰ WTO and UNEP (n 9).

⁹¹ UNCTAD, ‘A European Union Carbon Border Adjustment Mechanism: Implications for Developing Countries’ (United Nations Conference on Trade and Development 2021) <https://unctad.org/system/files/official-document/osginf2021d2_en.pdf> accessed 12 January 2022.

⁹² Roland Ismer, Karsten Neuhoff and Alice Pirlot, ‘Border Carbon Adjustments and Alternative Measures for the EU ETS: An Evaluation’ (Deutsches Institut für Wirtschaftsforschung (DIW) 2020) 1855 <<https://www.econstor.eu/bitstream/10419/218976/1/1693291916.pdf>> accessed 12 January 2022.

⁹³ Clayton Munnings and others, ‘Pricing Carbon Consumption: Synthesizing an Emerging Trend’ (2019) 19 *Climate Policy* 92; Hector Pollitt, Karsten Neuhoff and Xinru Lin, ‘The Impact of Implementing a Consumption Charge on Carbon-Intensive Materials in Europe’ (2020) 20 *Climate Policy* S74.

⁹⁴ Karsten Neuhoff and others, ‘Inclusion of Consumption of Carbon Intensive Materials in Emissions Trading: An Option for Carbon Pricing Post-2020’ (Climate Strategies 2016) <<https://climatestrategies.org/wp-content/uploads/2016/10/CS-Inclusion-of-Consumption-Report.pdf>> accessed 12 January 2022.

established for imported finished or semi-finished goods. For goods exported from the implementing country, the liabilities would be waived at the point of export. Imports would have to declare the weight of covered materials contained, presumably supported by verified records, or be assessed using a roster of default values for material content in various goods.

47. Framed as an internal measure rather than one applied at the border, consumption charges would be obliged to respect the non-discrimination obligations of the GATT.⁹⁵ In principle, undifferentiated application of a consumption charge to domestic and foreign products should avoid concerns under the GATT; similar destination-based measures, such as excise duties, have been adopted in the past and not been found problematic.⁹⁶

VIII. CONCLUSIONS

48. International emissions accounting guidelines do not currently require countries to account for emissions related to consumption of imported goods when reporting their emissions under the UNFCCC and Paris Agreement. By limiting accounting to territorial emissions, however, this practice ignores a loophole that allows countries to outsource GHG-intensive production and claim emissions reductions in their territory as they proceed to import the relevant goods from other countries, where production is often more GHG-intensive. If current trade patterns and historical production trends persist, this dynamic will increasingly lead to outcomes in which affluent countries are able to claim progress towards their decarbonisation targets by outsourcing carbon-intensive activities to less affluent regions, often resulting in an increase in overall emissions and potentially locking those regions into more GHG-intensive production capacities for decades to come.
49. Still, through its overarching temperature goal, the Paris Agreement commits parties to reduce *all* emissions, irrespective of origin. It acknowledges the importance of emissions reductions beyond the territory of each party when it imposes obligations on developed country parties to provide climate finance, technology transfer, and capacity building in order to enable mitigation and adaptation efforts in developing countries. What is more, addressing emissions related to imported goods does not require regulating activities outside the territory and jurisdiction of countries, but rather activities within their territory and jurisdiction: the demand for and use of products with high GHG-intensity of production.
50. That such demand for goods can cause detrimental effects or practices in the territory of other countries is acknowledged in international legal regimes that impose restrictions on the demand for and use of tropical timber, products from endangered species, and other goods. To achieve the overall goals of the Paris Agreement, countries can and should therefore take steps to understand and address the climate impacts of domestic consumption. Like some countries already do, they can introduce accounting systems for emissions related to consumption that operate in parallel to, and do not interfere with, their emissions accounting under the UNFCCC and Paris Agreement. Additionally, they have a range of policy options at their disposal to mitigate the effects of their consumption-based contributions to global emissions, many of which are, again, already being applied to individual sectors or activities.

⁹⁵ Notably the obligation of national treatment, as set out in GATT (n 74) art III.4.

⁹⁶ Alice Pirlot, *Environmental Border Tax Adjustments and International Trade Law* (Edward Elgar 2017) 124–137.

IX. DECLARATIONS

Michael Mehling

I, Michael Mehling, declare,

1. I understand my duty in providing this expert report is to assist the Court, and I solemnly declare that I have discharged and will continue to comply with my duty as an expert honourably and conscientiously.
2. I have exercised reasonable care and skill in order to be accurate and complete in preparing this report.
3. I have endeavoured to include in my report those matters of which I have knowledge or of which I have been made aware, that might adversely affect the validity of my opinion. I have clearly stated any qualifications to my opinion.
4. I have indicated the sources of all information I have relied.
5. I have not, without forming an independent view, included or excluded anything which has been suggested to me by others, including my instructing legal representatives.
6. I will notify those instructing me immediately and confirm in writing if, for any reason my existing report requires any correction or qualification.
7. I confirm that I have not entered into any arrangement where the amount or payment of fees is in any way dependent on the outcome of the case.
8. I know of no conflict of interest of any kind which affects my suitability as an expert witness on any issues on which I have given evidence.

I confirm that I have made clear which facts and matters referred to in this report are within my own knowledge and which are not. Those that are within my own knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.

X

Michael Mehling



Harro van Asselt

I, Harro van Asselt, declare,

1. I understand my duty in providing this expert report is to assist the Court, and I solemnly declare that I have discharged and will continue to comply with my duty as an expert honourably and conscientiously.
2. I have exercised reasonable care and skill in order to be accurate and complete in preparing this report.
3. I have endeavoured to include in my report those matters of which I have knowledge or of which I have been made aware, that might adversely affect the validity of my opinion. I have clearly stated any qualifications to my opinion.
4. I have indicated the sources of all information I have relied.
5. I have not, without forming an independent view, included or excluded anything which has been suggested to me by others, including my instructing legal representatives.
6. I will notify those instructing me immediately and confirm in writing if, for any reason my existing report requires any correction or qualification.
7. I confirm that I have not entered into any arrangement where the amount or payment of fees is in any way dependent on the outcome of the case.
8. I know of no conflict of interest of any kind which affects my suitability as an expert witness on any issues on which I have given evidence.

I confirm that I have made clear which facts and matters referred to in this report are within my own knowledge and which are not. Those that are within my own knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.



Harro van Asselt