IN THE MATTER OF THE UN FRAMEWORK CONVENTION ON CLIMATE CHANGE AND IN THE MATTER OF THE PARIS AGREEMENT

Re: Inclusion of emissions from international aviation and shipping in Nationally Determined Contributions

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LEGAL ADVICE

Introduction

1. I am instructed by Hausfeld to provide this advice to Transport & Environment ("**T&E**"), Europe's leading clean transport group and a peak climate campaigning organisation based in Brussels. I am asked whether the Paris Agreement obliges state Parties to include emissions from international transport via aviation and shipping in their Nationally Determined Contributions ("**NDCs**").

2. For the reasons given below, my view is:
   (a) The Paris Agreement imposes legal obligations to include international aviation and shipping emissions in Parties' NDCs. These obligations arise from the language used to prescribe the long-term global temperature goal in Article 2, the description of NDCs in Article 3 and the peaking obligation in Article 4(1), combined with the Article 4(2)-(13) and Article 13 obligations concerning NDCs and the transparency framework.
   (b) The obligation to include international aviation and shipping emissions in NDCs is particularly clearly imposed on developed country Parties, who are exhorted in Article 4(4) to undertake economy-wide absolute emissions reductions targets. International aviation and shipping emissions are deeply integrated into countries' economies and certainly fall within the definition of emissions involving the whole of a country's economy.

(c) Furthermore, there is no language in the Paris Agreement prioritising addressing international aviation and shipping emissions through the International Civil Aviation Organisation ("**ICAO**") and the International Marine Organisation ("**IMO**") and Article 6, concerning voluntary cooperation in the implementation of NDCs, supports that analysis.

(d) The interpretation of the Paris Agreement in (a)-(c) above is bolstered when the rule of treaty interpretation in Article 31 of the Vienna Convention on the Law of Treaties is applied. In particular, no other relevant treaty obligations exclude international aviation and shipping emissions from the legal obligations imposed by the Paris Agreement.

(e) The "Paris Rulebook" in decision 18/CMA.1 paragraph 53 does not properly reflect the legal obligations imposed by the Paris Agreement. It brings into the Paris Agreement's apparatus an approach which is contrary to the language and intendment of the Agreement.

(f) Guidance by the International Panel on Climate Change ("**IPCC**") does not prevent Parties from including international aviation and shipping emissions in their NDCs, particularly as that guidance has not been updated to reflect the approach of the Paris Agreement.

REASONS

FACTUAL BACKGROUND

3. By way of brief factual background, emissions from international aviation and shipping have increased by nearly 130% and 32% respectively over the past two decades.[1] Total international non-domestic CO_2 emissions from aviation and shipping have grown by more than 90% since 1990 to 1.2 Gt CO_2 in 2018 .[2] This was the fastest growth in the whole transport sector – the only sector in which emissions have risen

[1] https://www.europarl.europa.eu/news/en/headlines/society/20191129STO67756/emissions-from-planes-and-ships-facts-and-figures-infographic (updated 16/9/20).

[2] PBL Netherlands Environmental Assessment Agency "Analysing international shipping and aviation emission projections" (07/2/20) pg 7 https://www.pbl.nl/sites/default/files/downloads/pbl-2020-analysing-international-shipping-and-aviation-emissions-projections_4076.pdf

since 1990. Despite improvements in fuel consumption, emissions from international aviation in 2050 are expected to be seven to ten times higher than 1990 levels, while emissions from international shipping are projected to increase by 50% to 250%.[3]

4. While greenhouse gas ("**GHG**") emissions from international aviation and maritime transport have risen steadily, multilateral responses have been stagnant. Despite having been asked to address this issue for over 20 years, the International Civil Aviation Organisation ("**ICAO**") and the International Marine Organisation ("**IMO**") failed to act until 2016. Then ICAO agreed on a proposed Carbon Offsetting and Reduction Scheme for International Aviation ("**Corsia**"), [4] while the IMO adopted a Global Data Collection Scheme ("**DCS**") for international shipping emissions.[5]

5. Corsia begins with a pilot phase in 2021 and a voluntary phase in 2024. The details of the scheme are yet to be determined: for example, it is not yet decided what will count as a valid offset and there is no resolution on how to avoid double counting. ICAO decisions are not binding on member states and the Organisation has no enforcement mechanism for its measures, so a state can decline to participate in Corsia in the first phases by not volunteering and in the post-2027 period through filing a reservation. The scheme is also designed to end in 2035 and will, even if it operates with the best anticipated efficiency, only cover 6%[6] of projected CO_2 emissions from all international aviation between 2015 and 2050.

6. Turning to international shipping, at its Marine Environment Protection Committee meeting in 2018 (MEPC72), the IMO adopted by resolution its "Initial IMO Strategy on Reduction of GHG Emissions from Ships", which affirmed that GHG emissions from international shipping should peak as soon as possible and fall by at least 50% by

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3 See (n1).

4 ICAO Resolution A39-3, "Consolidated statement of continuing ICAO policies and practices related to environmental protection—Global Market-based Measure (MBM) scheme" (adopted at the 39th Session of the ICAO Assembly, 27/9– 6/10/16).

5 Resolution MEPC.278(70), "Amendments to the Annex of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto—Data Collection System for Fuel Oil Consumption of Ships" (adopted 28/10/16).

6 https://www.icsa-aviation.org/wp-content/uploads/2018/06/ICSA-views-LTG-June-2018.pdf.

2050 relative to 2008 levels with continuing efforts to phase them out entirely.[7] However, on 17 November 2020, at MEPC75, the IMO adopted a policy which many countries at the meeting acknowledged breaks the initial strategy and which will allow the shipping sector's 1 billion tonnes of annual GHG emissions to keep rising for the rest of this decade.[8]

LEGAL BACKGROUND

7. In order to answer the question I am asked, it is first necessary to consider the obligations imposed by the Paris Agreement, and any other relevant treaty obligations, in order to assess the nature of Parties' duties to produce NDCs and what those documents are required to include.

United Nations Framework Convention on Climate Change ("UNFCCC") and the Kyoto Protocol

8. The overarching international treaty addressing climate change is the UNFCCC. Article 2 articulates that the "ultimate objective" of the Framework Convention "and any related legal instruments that the Conference of Parties may adopt" (which includes the Paris Agreement) is to achieve "stabilization of greenhouse gas concentrations in the atmosphere" at a level that would prevent "dangerous" human interference with the climate system.

9. In achieving this objective, Article 3(1) of the UNFCCC obliges developed countries to "take the lead" in combating climate change and its adverse effects, and enshrines the principle of Parties acting "in accordance with their common but differentiated responsibilities and respective capabilities."

10. Article 3(3) requires the Parties to act according to the precautionary principle, providing:

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7 MEPC.304(72), Annex 11 to MEPC 72/17/Add.1 (18/5/18).

8 Annex 1 of ISWG-GHG7-WP.1- Rev.1, (previously called the J/5.rev1 proposal). See also https://oceanconservancy.org/news/un-shipping-agency-greenlights-decade-rising-greenhouse-gas-emissions/

"The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors." (emphasis added)

11. One of the key enforcement mechanisms of the UNFCCC is the imposition of a range of reporting obligations, in particular that Parties publish a national inventory of anthropogenic emissions "by sources" and "[f]ormulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources … of all greenhouse gases" (Article 4(1)(b), emphasis added).

12. It is notable that:

    (a) The extent of emissions from international aviation and shipping is plainly relevant to whether Parties will achieve "stabilization of greenhouse gas concentrations in the atmosphere" at a level that would prevent "dangerous" anthropogenic interference with the climate system.

    (b) Nothing in the UNFCCC excludes emissions from international aviation and shipping from Parties' reporting obligations. Indeed, the wording of Article 4(1)(b) and the emphasis on measures addressing anthropogenic emissions by sources of all GHG suggests they should be included; and

    (c) The wording of Article 3(3) strongly supports inclusion of emissions from international aviation and shipping in Parties' reporting obligations, because it requires policies and measures to be "comprehensive", cover "all relevant sources" of" GHG and "comprise all economic sectors" (emphasis added). This requirement is framed in light of the precautionary

principle, meaning that lack of full scientific certainty, for example about how to account for these emissions and prevent double-counting, does not justify their exclusion from reporting obligations.

13. The UNFCCC was adopted on 9 May 1992 and entered into force on 21 March 1994. It has near-universal membership and is ratified by 197 countries.

14. The Kyoto Protocol to the UNFCCC, adopted on 11 December 1997 and which entered into force on 16 February 2005 (FCCC/CP/1997/7/Add.1), has 192 Parties. It "operationalises" the UNFCCC by committing 37 industrialised countries and economies in transition, and the European Union (ie Parties included in Annex I to the UNFCCC), to limit and reduce GHG emissions in accordance with agreed targets. These applied from the start of 2008 until 2012.

15. Article 2(1) of the Kyoto Protocol details obligations to implement and/or further elaborate policies and measures to achieve countries' "quantified emission limitation and reduction commitments". It also imposes periodic reporting requirements. Article 3(3) requires reporting of GHG emissions "in a transparent and verifiable manner", in accordance with Articles 7 and 8. These require Annex I Parties to report on a range of matters, in accordance with guidance from the Conference of Parties ("**COP**").

16. Article 2(2) of the Kyoto Protocol addresses emissions from aviation and shipping explicitly and provides:

> "The Parties included in Annex I [to the UNFCCC] shall pursue limitation or reduction of emissions of greenhouse gases not controlled by the Montreal Protocol [on substances that deplete the ozone layer] from aviation and marine bunker fuels, working through the International Civil Aviation Organization and the International Maritime Organization, respectively."

17. It is generally accepted that article 2(2) Kyoto Protocol does not endow the IMO with exclusive competence to regulate maritime emissions,[9] nor does it endow ICAO with exclusive competence to regulate international aviation emissions.[10]

18. Targets for a further commitment period running until the end of 2020 were adopted in the Doha Amendment, which entered into force on 31 December 2021. EU states pledged to meet these targets.

The Paris Agreement

19. The Paris Agreement, in its recitals, acknowledges that climate change is a "common concern of humankind". Article 2 strengthens the global response in implementing the UNFCCC, in particular by committing Parties to three key goals, the first of which is known as the "long-term temperature goal": to hold "the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change".

20. The wording "Holding the increase in the global average temperature to well below 2°C above pre-industrial levels …" formulates a clear upper limit that must be regarded as binding hard law and an obligation of result, not only of conduct.[11] The threshold of "well below 2°C" (emphasis added) is not an entitlement for Parties to exploit the 'space' up to 2°C. It is a maximum limit that shall not be reached. The Paris

[9] See eg T Bäuerle "Integrating Shipping into the EU Emissions Trading Scheme?' in H Koch, D König and J Sanden (eds), *Climate change and environmental hazards related to shipping: an international legal framework; proceedings of the Hamburg International Environmental Law Conference 2011* (Martinus Nijhoff 2013); H Ringbom "Global Problem--Regional Solution? International Law Reflections on an EU CO2 Emissions Trading Scheme for Ships' (2011) 26 *International Journal of Marine and Coastal Law* 613.

[10] A O'Leary *Legal implications of EU Action on GHG Emissions from the International Maratime Sector* (ClientEarth November 2011) pg 37.

[11] I am aware that this view is contested, and that some of the literature contends that the Paris Agreement creates only an obligation of conduct, not also of result: see, eg L Rajamani "Ambition and Differentiation in the 2015 Paris Agreement: Interpretative Possibilities and Underlying Politics" (2016) 65(2) *International & Comparative Law Quarterly* 493–514 at 497. Some contend that, insofar as there is an obligation of result, it is achieved by the way national legal systems incorporate the Paris Agreement: Anna-Julia Saiger "Domestic Courts and the Paris Agreement's Climate Goals: The Need for a Comparative Approach" (2020) 9:1 *Transnational Environmental Law* 37–54 at 38. I do not agree with these analyses. My view is that the language and apparatus of the Paris Agreement itself impose an obligation of result.

Agreement's temperature goal thus contains strong language of legal effect, leaving no discretion for Parties to follow divergent temperature goals.

21. In order to achieve the long-term temperature goal, Article 4(1) requires Parties to "aim to reach global peaking of greenhouse gas emissions as soon as possible". This aim includes Parties undertaking "rapid reductions" after global peaking, "in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty". In other words, the Paris Agreement embodies not just a consideration concerning 2050 and beyond ("second half of this century"), but a significant focus on emissions reductions in the years up to that point.

22. Article 3 concerns NDCs and provides:

> "As nationally determined contributions to the global response to climate change, all Parties are to undertake and communicate ambitious efforts as defined in Articles 4, 7, 9, 10, 11 and 13 with the view to achieving the purpose of this Agreement as set out in Article 2. The efforts of all Parties will represent a progression over time, while recognizing the need to support developing country Parties for the effective implementation of this Agreement." (emphasis added)

Article 3 thus imposes legal obligations: Parties "are to undertake and communicate" NDCs which represent "ambitious efforts", as defined by other articles of the Paris Agreement; and the NDCs "will represent progression over time".

23. The obligations concerning NDCs are further elaborated in Article 4, meaning that the NDC requirements are situated very firmly in the context of both achieving the global temperature goal and of the urgent need to reach global peaking of GHG. Article 4(2) requires each Party to "prepare, communicate and maintain successive nationally determined contributions that it intends to achieve". The verbs used are important – Article 4(2) places a legal obligation on Parties to prepare, communicate and maintain successive NDCs. Parties are also then required to "pursue domestic mitigation

measures, with the aim of achieving the objectives of such contributions." The language here is more flexible: the key legal obligation is the reporting requirement, with the normative expectation that Parties will take steps to comply with their NDCs.

24. Article 4(3) creates further obligation: each Party's successive NDC must represent a progression and "reflect its highest possible ambition, reflecting its common but differentiated responsibilities and respective capacities, in light of different national circumstances." These terms are not defined, giving some flexibility to Parties in applying them to their NDCs, while still imposing the overarching legal obligation of achieving progression.

25. Article 4(4) focuses on developed country Parties, which "should continue taking the lead by undertaking economy-wide absolute emission reduction targets." (emphasis added). "Economy-wide" is not defined, and is not intended to be a term of art, so bears its normal meaning. Article 4(4) reflects the principle of common but differentiated responsibility, which is one of the few elements of persistent consensus since the entry into force of the UNFCCC, through the Kyoto Protocol and into the Paris Agreement. Accordingly, the normative expectation placed on Parties by Article 4(4) is strong.

26. In communicating their NDCs, all Parties are required to provide "the information necessary for clarity, transparency and understanding" in accordance with the decision adopting the Paris Agreement and "any relevant decisions" of the COP.

27. This is reflected in Article 4(13), which provides important further detail in relation to NDCs:

> "Parties shall account for their nationally determined contributions. In accounting for anthropogenic emissions and removals corresponding to their nationally determined contributions, Parties shall promote environmental integrity, transparency, accuracy, completeness, comparability and consistency, and ensure the avoidance of double counting, in accordance with

guidance adopted by the Conference of the Parties serving as the meeting of the Parties to this Agreement." (emphasis added)

28. Article 6(1) recognises that Parties may choose to pursue "voluntary cooperation in the implementation of their [NDCs]" (emphasis added), but refers to this allowing "for higher ambition in [Parties'] mitigation and adaptation actions and to promote sustainable development and environmental integrity" (emphasis added). Articles 6(2), 6(4) and 6(8) go on to provide three mechanisms through which this voluntary cooperation can be achieved: two market mechanisms and one non-market mechanism. Articles 6(2) and 6(5) require that Parties engaging in market mechanisms avoid double-counting.

29. The language of Article 6(1) is important, as the "chapeau" for the mechanisms set out in the remainder of Article 6 (ie it introduces and provides the interpretative context for those mechanisms). The wording of Article 6(1) positions the voluntary mechanisms as operating in the context of "implementation" of the Parties' NDCs, meaning that those mechanisms concern sectors within the scope of the NDCs. Crucially, this is then explicitly linked to achieving "even higher ambition", meaning that the Article 6 mechanisms are not applicable to Parties' achievement of the minimum procedural and conduct obligations imposed by the NDC mechanism for national emissions reductions. Instead, voluntary cooperation allows for additional "mitigation and adaptation actions".

30. Article 13 of the Paris Agreement imposes an enhanced transparency framework, which has "built-in flexibility which takes into account Parties' different capacities and builds upon collective experience". Article 13(3) requires that the transparency framework "build on and enhance the transparency arrangements under the Convention" (emphasis added). Accordingly, while the transparency arrangements required by the Kyoto Protocol are the starting point for the transparency regime under the Paris Agreement, the clear intention of the Parties is that the Paris Agreement will "enhance" that framework.

31. Article 13(5) then provides:

> "The purpose of the framework for transparency of action is to provide a clear understanding of climate change action in the light of the objective of the Convention as set out in its Article 2, including clarity and tracking of progress towards achieving Parties' individual nationally determined contributions under Article 4, and Parties' adaptation actions under Article 7, including good practices, priorities, needs and gaps, to inform the global stocktake under Article 14." (emphasis added)

32. Accordingly, the enhancement of the transparency framework is intended to be linked to the ultimate objective of the UNFCCC, "stabilization of greenhouse gas concentrations in the atmosphere" at a level that would prevent "dangerous" human interference with the climate system. This must be understood against the background of the Paris Agreement itself, which in its Article 2 requires enhancement of the implementation of the UNFCCC by, inter alia, imposing the global temperature goal in Article 2(1)(a). It is important to recognise that this temperature goal was decided upon and adopted because of the dangerous impacts which will occur if the global temperature rises by more than 2˚C above pre-industrial levels.

33. The transparency framework within which NDCs fit should thus provide a clear understanding of climate action in light of the objective of preventing dangerous human interference with the climate system by a likely temperature increase over 2˚C above pre-industrial levels.

34. Decision 1/CP.21 adopts the Paris Agreement. It, too, acknowledges that climate change is a "common concern of humankind". The ninth recital is particularly important. It records that the Parties entering into the Paris Agreement:

> "emphasiz[e] with serious concern the urgent need to address the significant gap between the aggregate effect of Parties' mitigation pledges in terms of global annual emissions of greenhouse gases by 2020 and aggregate emission pathways consistent with holding the increase in the global average

temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels".

35. The "mitigation pledges" to which this refers are those under the Kyoto Protocol and the Doha Amendment. Tellingly, the Paris Agreement takes a very different approach from that in the Kyoto Protocol to achieving the obligations in the UNFCCC: the Paris Agreement imposes a temperature-based target (alongside increasing climate resilience and enhancing climate finance). This change in approach implies inclusion of all emissions that affect the climate, as all emissions contribute to the rise in global temperature.

36. Furthermore, unlike the Kyoto Protocol, neither the Paris Agreement nor decision 1/CP.21 explicitly address international aviation and shipping, nor do they provide a role for ICAO and the IMO. This was a deliberate drafting decision. The draft Paris Agreement contained a drafting option obliging or encouraging Parties to "pursue the limitation or reduction of greenhouse gas emissions from international aviation and marine bunker fuels, working through the International Civil Aviation Organization and the International Maritime Organization, respectively, with a view to agreeing concrete measures addressing these emissions, including developing procedures for incorporating emissions from international aviation and marine bunker fuels into low-emission development strategies" (FCCC/ADP/2015/L.6 pg 8). This language was removed, as the Parties did not agree to prioritise addressing international aviation and shipping emissions through ICAO and the IMO.

37. Decision 1/CP.21 addresses NDCs and paragraph 17 notes again "with concern" that estimated aggregate GHG emission levels in 2025 and 2030 resulting from the NDCs as they then stood "do not fall within least-cost 2˚C scenarios" and that "much greater emission reduction efforts will be required than those associated with the intended nationally determined contributions in order to hold the increase in the global average temperature" to below 2˚C or 1.5˚C above pre-industrial levels.

38. Paragraph 21 of decision 1/CP.21 invites the IPCC to provide a special report on the impacts of global warming of 1.5 °C above pre-industrial levels and related global GHG emission pathways. This Special Report (October 2018) evidences the catastrophic climate impacts likely beyond a temperature rise of 1.5°C. Furthermore in November 2018 the United Nations Environment Programme ("**UNEP**") Gap Report evidenced the inadequacy of current climate efforts and highlighted how far States are from adopting policies to achieve the global temperature goal. The UNEP pointed out that emissions from international aviation and marine transport, which then represented 2.5% of global GHG emissions, had grown strongly at an annual rate of over 2% since 2014.

The IPCC Guidance and the Paris Agreement Rulebook

39. Both decision 1/CP.21 and the Paris Agreement require that NDCs are compiled in line with guidance adopted by the COP. In drawing up this guidance, paragraph 31 of decision 1/CP.21 requires that the Parties "strive to include all categories of anthropogenic emissions…in their nationally determined contributions" (emphasis added), and that Parties account for emissions in accordance with common metrics assessed by the IPCC and adopted by the COP; and ensure methodological consistency between the communication and implementation of NDCs.

40. The IPCC has since 2006 provided its *Guidelines for National Greenhouse Gas Inventories* ("**2006 IPCC Guidelines**"). These include international aviation and international shipping emissions in the categories and subcategories of emissions and gases in standard reporting tables, including "Sectoral and Background". The Guidelines also include guidance as to how to report these emissions (Vol 1 chpt 8 pgs 8.12 & 8.14). However, the Introduction to Vol 1 and the Energy chapter in Vol 2 of the 2006 IPCC Guidelines make an exception from national reporting for emissions from fuel from international aviation and shipping, which are "to be reported separately" (Vol 1 chpt 1 pg 1.5; chpt 8.2 pg 8.4; Vol 2 chpt 3 pg 3.55 & 3.65).

41. No explanation is given for this choice, other than that "national inventories should include greenhouse gas emissions and removals taking place within national territory

and offshore areas over which the country has jurisdiction." International aviation and international water-borne transport are not, however, fully excluded from reporting obligations. In the 2006 IPCC Guidelines they are separated out from other emissions for inclusion as "Memo items" (Vol 1 Annex 8A.2 eg pg T9, T11, T14).

42. Accordingly, there is a methodology for reporting these emissions, but not a requirement to factor them into the calculation of the national total of GHG emissions.

43. The 2006 IPCC Guidelines were refined in 2019 via the *2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories* ("**IPCC 2019 Refinement**"). The Overview explains:

> "The *2019 Refinement* does not revise the *2006 IPCC Guidelines*, but updates, supplements and/or elaborates the *2006 IPCC Guidelines* where gaps or out-of-date science have been identified. It does not replace the *2006 IPCC Guidelines*, but should be used in conjunction with the *2006 IPCC Guidelines* and, where indicated, with the *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* (*Wetlands Supplement*)." (emphasis added)

44. It is not surprising, therefore, that the IPCC 2019 Refinement reflects the 2006 position on international aviation and shipping, as the Refinement was not intended to revise the 2006 Guidelines. The Refinement provides:

> "Each sector comprises individual categories (eg, transport) and sub-categories (eg, cars). Ultimately, countries will construct an inventory from the sub-category level because this is how IPCC methodologies are set out, and total emissions calculated by summation. A national total is calculated by summing up emissions and removals for each gas. An exception is emissions from fuel use in ships and aircraft engaged in international transport which is not included in national totals, but is reported separately." (Vol 1 Chpt 1 pg 1.7, emphasis added)

45. This appears again in Chapter 8 of the IPCC 2019 Refinement Guidelines, dealing with Reporting Guidance and Tables, which provides:

> "National inventories should include greenhouse gas emissions and removals taking place within national territory and offshore areas over which the country has jurisdiction. There are, however, some specific issues to be taken into account:
>
> - Emissions from fuel for use on ships or aircraft engaged in international transport should not be included in national totals. To ensure global completeness, these emissions should be reported separately." (pg 8.4)

46. At COP24 in Katowice, Poland, in December 2018, the Parties produced a set of decisions to operationalise most elements of the Paris Agreement, known as the Paris Rulebook. Decision 4/CMA.1 addresses the obligation to prepare NDCs transparently: Paragraph 5 of decision 4/CMA.1 echoes Article 4(4) and recalls that developed country Parties "should continue taking the lead by undertaking economy-wide absolute emission reduction targets" (emphasis added) and that developing country Parties should move over time to an economy-wide emissions reduction target. Accordingly the guidance in decision 4/CMA.1 endorses the economy-wide obligation for developed country Parties, and that emission reduction targets should be "absolute".

47. The information required to be provided by Parties in their NDCs in order to meet the obligations of clarity and transparency is contained in annex I to decision 4/CMA.1. This includes the assumptions and methodological approaches for estimating and accounting for anthropogenic GHG emissions. Among other things, Parties are obliged to set out the IPCC methodologies and metrics used, including sector-, category- or activity-specific assumptions, methodologies and approaches "consistent with IPCC guidance, as appropriate" (emphasis added).

48. Parties are obliged by paragraph 13 and Annex II to decision 4/CMA to account for anthropogenic emissions "in accordance with methodologies and common metrics assessed by the IPCC and in accordance with decision 18/CMA.1". Annex II also

imposes a general obligation on Parties to account for anthropogenic emissions, in their NDCs "in accordance with" the IPCC's guidance on methodologies and common metrics assessed by the IPCC.

49. Decision 18/CMA.1 provides the "[m]odalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement. It addresses international aviation and shipping emissions directly and also indirectly via reference to the IPCC's guidance. Paragraph 53 of decision 18/CMA.1 provides:

> "Each Party should report international aviation and marine bunker fuel emissions as two separate entries and should not include such emissions in national totals but report them distinctly, if disaggregated data are available, making every effort to both apply and report according to the method contained in the IPCC guidelines referred to in paragraph 20 above for separating domestic and international emissions. "

50. Finally, decision 1/CMA.2 of COP24, known as the Chile Madrid Time for Action, re-emphasises the gap between the aggregate effect of emissions reductions and the pathways for holding global temperature rise to well below 2˚C above pre-industrial levels.

51. My view is that, overall, the Paris Rulebook has remained faithful to the approach of the Paris Agreement by prescribing detailed, legally binding procedural rules, leaving Parties with discretion regarding substance, and addressing differentiation through specified flexibilities in the transparency rules for developing countries with capacity constraints.[12] However, paragraph 53 of decision 18/CMA.1 is a misstep, which fails properly to reflect the legal obligations in the Paris Agreement. It cannot be used to dilute those obligations and, in my view, should be amended to be brought into line with the Paris Agreement. Such amendment would not set a precedent in relation to

[12] L Rajamani and D Bodansky "The Paris Rulebook: balancing international prescriptiveness with national discretion" (2019) 68(4) *International & Comparative Law Quarterly* 1023-1040 at 1028.

any other areas of the Paris Rulebook which properly reflect the legal obligations in the Paris Agreement.

DISCUSSION

The Paris Agreement and National Determination

52. The Paris Agreement was a step-change in the mechanisms agreed by the Parties in order to achieve the ultimate objective of the UNFCCC to stabilise GHG concentrations in the atmosphere at a level that would prevent dangerous human interference with the climate system. While the Kyoto Protocol and other agreements focused on specific emissions reductions, the Paris Agreement imposes a global long-term temperature goal, alongside adaptation and finance goals. As stated above, this change in approach is important, because a temperature goal perforce requires inclusion of all emissions that affect the climate, as all emissions contribute to the rise in global temperature. Furthermore, the Paris Agreement is fundamentally concerned with reducing emissions in the intervening years between the conclusion of the Agreement and the point at which net zero emissions will be reached.

53. The Paris Agreement is "driven by national determination",[13] at the centre of which sits the procedural legal obligation in Article 4(2) to prepare, communicate and maintain NDCs, coupled with a conduct obligation: to pursue domestic measures "with the aim of achieving the objectives" of those NDCs. Again, this is important – although the Paris Agreement imposes an international obligation to achieve the global long-term temperature goal, the legal mechanism for realising this is national action, through national determination.

54. While Parties have a degree of discretion to choose their contributions as well as their domestic measures based on national circumstances and constraints, that choice is circumscribed by the parameters imposed by the Paris Agreement itself, including the aims to be achieved through the NDCs and the transparency obligations with which NDCs must comply.

[13] See eg Rajamani and Bodansky (n12) at 1027.

55. Articles 3 and 4 of the Paris Agreement are important in this regard. Article 3 has been described as a "hinge-provision", tying the overall goals of the Paris Agreement, including the long-term temperature goal, to an obligation on the Parties stipulated in Article 4(2) to set up, communicate and uphold NDCs, which must be implemented by respective measures.[14] Although Article 3 extends the establishment of NDCs to the areas of adaptation, finance, technology, capacity building, and transparency, Article 4 contains specific obligations and standards that apply only to the area of mitigation. The obligations with regard to mitigation are therefore significantly more detailed and strict than those concerning NDCs in adaptation or finance.

56. I am aware of the contention in the literature that the 2˚C target and the sum of respective commitments by each Party under Article 4 are not legally linked and that the global temperature goal does not give rise to an obligation of result.[15] I do not agree, for the reasons set out above in relation to the language of the Paris Agreement, and in light of the correct approach to the interpretation of the Agreement elucidated below in relation to Article 31 of the Vienna Convention on the Law of Treaties.

57. As stated above, the Paris Agreement explicitly enhances the transparency framework in light of the obligations to achieve the global temperature goal in Article 2(1)(a) and against the background of recognising the dangerous impacts which will occur if the global temperature rises by more than 2˚C above pre-industrial levels and the very serious gap between emissions pledges at the time the Paris Agreement was entered into and holding global temperature rise to below 2˚C.

58. Failure to include international aviation and shipping emissions in the NDCs, even if they are still separately reported, means that those emissions are not subject to the limitation and reduction mechanisms put in place by the Paris Agreement. Although all Parties provide information on these emissions, no Party is responsible for the reduction of those emissions. In my view, that is contrary to both the overall approach

[14] L Wegener "Can the Paris Agreement Help Climate Change Litigation and Vice Versa?" (2020) 9:1 *Transnational Environmental Law* 17–36 at 27.

[15] See eg M Meguro "Litigating climate change through international law: obligations strategy and rights strategy" (2020) 33(4) *Leiden Journal of International Law* 933-951 at 943ff and the sources cited therein.

to the long-term temperature goal adopted by the Paris Agreement and the national determination mechanism adopted to achieve the temperature goal and global peaking of emissions as soon as possible.

59. Given the step-change brought about by the Paris Agreement, exclusion of international aviation and shipping emissions from the legal procedural and conduct obligations it imposes cannot, in my view, be achieved by implication. It would require unambiguous and clear text in the Paris Agreement. But there is none. As stated above, unlike the Kyoto Protocol, the Paris Agreement does not explicitly address international aviation and shipping, nor does it provide a role for ICAO and the IMO.

60. References in the text of the Paris Agreement and decision 1/CP.12 to the preparation of NDCs using methodologies in guidance by the IPCC do not justify a different conclusion as to the legal intendment of the Paris Agreement. Furthermore, in practice, the IPCC's guidance does not prevent Parties from including international aviation and shipping emissions in their NDCs. Although the Paris Agreement and Rulebook strongly prefer Parties to use IPCC methodologies and metrics in compiling their NDCs, the rules also permit a Party to use its own methodologies if its NDC requires it to do so. This provides a discretion to depart, in narrow and fully reasoned ways, from the 2006 IPCC Guidance (as refined in the 2019 Refinement). In my view, in light of the above, that discretion would be exercised in a legal manner if international aviation and shipping emissions were included in NDC accounting. Even if there is uncertainty in the way in which these emissions should be reported in order to avoid double counting, the precautionary principle dictates that this is not a reason to exclude them from NDCs.

Interpretation of the Legal Obligations Imposed by the Paris Agreement

61. Article 31 of the Vienna Convention on the Law of Treaties ("**VCLT**") sets out a general rule of interpretation of treaties,[16] which requires that treaties be interpreted "in

[16] For the meaning and extent of application of this rule, see D B Hollis (ed) *The Oxford Guide to Treaties* (OUP 2nd edn 2020) pgs 457-488.

good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose." The context for the purpose of the interpretation of a treaty shall comprise, in addition to the text, "any agreement relating to the treaty which was made between all the parties in connection with the conclusion of the treaty", as well as:

"(a) any subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions;

(b) any subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation;

(c) any relevant rules of international law applicable in the relations between the parties."

These elements are all "thrown into the crucible",[17] and their interaction gives the legally relevant meaning of the treaty.

62. **Ordinary meaning of the terms:** As set out above, in my view the ordinary meaning of the language of the Paris Agreement includes international aviation and shipping emissions. In particular, none of the language used to prescribe the long-term global temperature goal in Article 2, the description of NDCs in Article 3 and the peaking obligation in Article 4(1), combined with the Article 4(2)-(13) obligations concerning NDCs, supports exclusion of international aviation and shipping emissions from NDCs.

63. No language prioritising addressing international aviation and shipping emissions through ICAO and the IMO was included in the Paris Agreement.

64. Article 6 of the Paris Agreement addresses the situation where Parties "choose to pursue voluntary cooperation in the implementation of their nationally determined contributions". In my view, this is where the Paris Agreement addresses the type of voluntary agreements which ICAO and the IMO have been attempting to put in place. As I highlighted above, two things are notable about Article 6:

[17] ILC Commentary on the VCLT [1966] vol II *YBILC* 219 [8] cited in *The Oxford Guide to Treaties* (n16) pg 464.

(a) First, Article 6(1), which operates and the chapeau and sets the context for the whole article, refers to voluntary cooperation "in the implementation of [the Parties] nationally determined contributions" (emphasis added). This presupposes that the cooperation pertains to emissions accounting, reduction and removal which is subject to the Parties' NDCs. This, in my view, includes international aviation and shipping emissions. The inclusion of Corsia in discussions around Article 6 market-based mechanisms reinforces, rather than undermines, the requirement for international aviation emissions to be included within NDCs. At a minimum, the language of Article 6 certainly does not support the exclusion of international aviation and shipping emissions from NDCs. In my view, it does the opposite.

(b) Second, this voluntary cooperation in Article 6(1) is envisaged "to allow for higher ambition in [the Parties'] mitigation and adaptation actions and to promote sustainable development and environmental integrity" (emphasis added). The Articles 6 mechanisms are thus not about Parties achieving the minimum procedural and conduct obligations imposed by the NDC mechanism, but is explicitly about higher ambition.

65. Finally, on the ordinary meaning of the terms, I do not consider that it is cogent to suggest that the references in the text to the preparation of NDCs "using good practice methodologies accepted by the Intergovernmental Panel on Climate Change" mean that the ordinary language of the Agreement excludes international aviation and shipping emissions. Explicit wording, rather than general allusion, would in my view be needed to achieve that, given the ordinary meaning of the language used in the Articles 2-4 and 13 of the Paris Agreement.

66. **In light of the object and purpose:** Article 31(2)(a) VCLT defines context by looking to an instrument evidencing the agreement of all parties and hence of direct interpretative significance. For the Paris Agreement, this means primarily decision 1/CP.12, which, in my view, demonstrates that the object and purpose of the Paris Agreement support inclusion of international aviation and shipping emissions within the obligations imposed on the Parties. The recitals to decision 1/CP.12 strongly

support this, given they refer to the urgent need for all parties to participate in "an effective and appropriate international response" to climate change, with a view to "accelerating the reduction of global greenhouse gas emissions" (emphasis added).

67. The recitals and paragraph 17 of decision 1/CP.12 also emphasise "with serious concern" the urgent need to address "the significant gap" (emphasis added) between Parties' emissions pledges and "aggregate emission pathways consistent with holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels".

68. Paragraph 31(c) of decision 1/CP.12 also asked the Ad Hoc Working Group on the Paris Agreement to draw up guidance for NDCs which "ensures that…[p]arties strive to include all categories of anthropogenic emissions or removals in their nationally determined contributions". Had the Parties intended for international aviation and shipping emissions to be excluded from NDCs, this is where that intention would have been stated. It was not. Instead, the opposite intention is manifested.

69. It should be noted that the means of interpretation to be relied on for the establishment of the Parties' intention are "objective and rational".[18] The subjective intention of the Parties, captured, for example, in the cut and thrust of political negotiations around the text of the treaty, are not relevant. Treaty interpretation based on the intention of the Parties is:

> "…not meant to provide glimpses of the subjective will or inner minds of the treaty parties or the treaty-makers, but rather to be objective and rational externalizations that allow an interpreter to deduce intention. …[T]he intention of the parties is necessarily a presumed or objectivized intention of the parties."[19]

[18] *Rhine Chlorides (Netherlands/France)* (2004) 144 ILR 259 at 293 §62 .
[19] *The Oxford Guide to Treaties* (n16) pg 490.

70. Arguments in the literature that the long-term temperature goal is not intended to give rise to an obligation of result or that the commitments in Article 2 are not linked to those in Article 4 are heavily based on the negotiation history and the subjective intention of the Parties.[20] This is not the correct approach and is one of the reasons I do not agree with those interpretations of the Paris Agreement.

71. **Subsequent agreement regarding interpretation**: this element of context refers specifically to an agreement as to the interpretation of a provision of a treaty, reached after the conclusion of the treaty.[21] Accordingly, the Paris Rulebook, which operationalises the articles of the Paris Agreement, is not a subsequent agreement as to the interpretation of the terms of the Agreement. Decision 18/CMA.1 therefore does not fall within Article 31(3)(a) VCLT and paragraph 53 of decision 18/CMA.1 is no indication that the Parties subsequently agreed that the meaning of the Paris Agreement was to exclude international aviation and shipping emissions from NDCs. Rather, paragraph 53 is, in my view, a misstep in the operationalisation of the Paris Agreement, which fails properly to reflect the legal obligations imposed by the Agreement. It brings into the Paris Agreement's apparatus an approach which is contrary to the language and intendment of the Agreement.

72. **Subsequent practice of the Parties**: Article 31(3)(b) VCLT refers to subsequent practice of the Parties in the application of the treaty "which establishes the agreement of the parties regarding its interpretation" (emphasis added). In relation to the Paris Agreement, there is no such subsequent practice, given that the Parties have taken different approaches in compiling their NDCs. While the majority have excluded international aviation and shipping emissions, the European Union has included international aviation emissions through the EU ETS (even though the entirety of the scope of this inclusion is not clear) and will also include international shipping emissions.

[20] See eg Meguro (n15) at 947 and the sources cited therein.
[21] *The Oxford Guide to Treaties* (n16) pg 468.

73. **Rules of international law:** Article 31(3)(c) of the VCLT requires account to be taken of any "relevant rules of international law applicable in the relations between the parties". The reference to "rules" means this is opaque as to whether it includes treaty relations between the parties, rather than rules of general international law.[22] On the understanding that treaty relations are included, my view is that this interpretative element also does not exclude international aviation and shipping emissions from the legal obligations imposed by the Paris Agreement, for the following reasons:

(a) The 1944 Convention on International Civil Aviation ("**the Chicago Convention**") does not contain any provision which prevents individual countries from accounting for and taking measures to reduce international aviation emissions, even if those measures pertain to when aircraft are flying over third country airspace. Such measures would not amount to an interference with the sovereignty of any State's airspace. As the Chicago Convention does not seek to regulate GHG emissions, it is open to States under Article 11 to enact their own regulatory standards without that being considered a deviation from the rules or regulations established under the Convention. Nor would inclusion of international aviation emissions in NDCs infringe Article 11 of the Chicago Convention, which requires that any "regulations" of the contracting State be applied, without discrimination, to all aircraft, regardless of the "nationality" of the aircraft. Nor would Articles 15 or 24 be infringed, as the inclusion within NDCs does not seek to regulate fuel on board aircraft, but rather the GHG emissions produced by the aircraft, and market-based mitigation measures do not amount to a charge or tax.[23]

(b) The international treaty obligations which pertain to shipping, in particular the UN Convention on the Law of the Sea ("**UNCLOS**"), acknowledge States' competence to regulate environmental matters, without providing a territorial limit. Article 211(3) UNCLOS recognises the competence of coastal States and port States to "establish particular requirements for the prevention, reduction and control of pollution of the marine environment". Maritime CO_2 emissions fall within this, given the harm to marine life and human health which they

[22] *The Oxford Guide to Treaties* (n16) pg 470.

[23] See further A O'Leary *Legal implications of EU action on GHG Emissions from the International Maritime* Sector (ClientEarth November 2011) pgs 32-34.

cause. By not geographically limiting the marine environment that States can protect via Article 211(3), UNCLOS accommodates measures taken by States to remedy environmental degradation,[24] such as inclusion of international marine shipping emissions in their NDCs. Article 211(2) UNCLOS supplements this by requiring States to "adopt laws and regulations for the prevention, reduction and control of pollution of the marine environment from vessels flying their flag". Any steps taken are subject to the reasonableness requirements of proportionality and non-discrimination in Article 227 UNCLOS and non-abuse of rights in Article 300, which are reflected in the obligations of fairness and equity in the Paris Agreement.

(c) Article 2 of the Geneva Convention of 29 April 1958 the High Seas and Article 87(1) of UNCLOS, which require the high seas to be open, are also not infringed by regulation of GHG emissions through inclusion in NDCs.

74. Finally, Article 2(1) of the Kyoto Protocol does not restrict Parties solely to working to reduce international aviation and shipping emissions through ICAO and the IMO. Parties are not precluded from taking national action. The inclusion of international aviation and shipping emissions in Parties' NDCs also does not exclude a role for ICAO and the IMO in formulating international mitigation strategies and promoting international action, in order to achieve the highest possible ambition.

Conclusion

75. Judged in light of the crucible of elements of treaty interpretation in Article 31 VCLT, and for all the reasons set out above, the Paris Agreement imposes legal obligations on Parties to include international aviation and shipping emissions in their NDCs. Those obligations are particularly clearly imposed on developed country Parties, who are exhorted in Article 4(4) to undertake economy-wide absolute emissions reductions targets. International aviation and shipping emissions are deeply integrated into countries' economies, and certainly fall within the definition of emissions involving the whole of a country's economy. Achieving a global

[24] N L Dobson and C Ryngaert "Provocative climate protection: EU 'extraterritorial' regulation of maritime emissions (2017) 66(2) *International & Comparative Law Quarterly* 295 at 314.

temperature goal perforce requires action concerning all emissions that affect the climate, including international aviation and shipping emissions, as all emissions contribute to the rise in global temperature.

76. This does not remove either the bottom-up approach of the Paris Agreement or its flexibility, which are two of its strengths. Parties retain a degree of discretion to choose their national contributions as well as their domestic measures based on national circumstances and constraints. However, that choice is deliberately circumscribed by the parameters imposed by the legal obligations and guidance in the Paris Agreement itself, including the global temperature goal and the aim of early emissions peaking required to be achieved through the NDCs and the transparency obligations with which NDCs must comply.

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