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State Obligations in Relation to Climate Change

Project Report – August 2025

Contents

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This project report is part of our **JusTN0W** initiative and provides important legal input for our upcoming second interdisciplinary international conference – please find more information on page 22 of this report.

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Summary

- The international climate change regime sets forth legal obligations for States to make adequate contributions to climate change mitigation.
- These obligations include substantive, procedural, and due diligence obligations.
- States have the obligation to regulate the activities of private actors.
- The standard for due diligence necessitates an assessment of what is required in a concrete situation. Because of the significant risks of harm resulting from climate change, the due diligence standard applicable to States' obligations in the context of climate change is stringent.
- The obligation to submit a nationally determined contribution (NDC) is procedural in nature *and* an obligation of result.
- States are obliged to prepare, communicate and maintain successive NDCs, to account for them and to register them, and a failure to do so would constitute a breach of these obligations.
- The NDC must make an adequate contribution to the temperature goal of the Paris Agreement, and the discretion of States to define the content of NDCs is therefore limited.
- The content of NDCs is important to determine compliance, and a mere formal submission would not discharge a State's duty under Article 4, paragraph 2 Paris Agreement.
- There are separate obligations arising under the Human Rights Treaties and the UN Convention on the Law of the Sea (UNCLOS).
- Specifically, health-related standards can be derived from Human Rights Treaties, such as the European Convention on Human Rights.
- Greenhouse gas (GHG) emissions constitute a form of marine pollution, and corresponding obligations and stringent due diligence standards under the UNCLOS follow from this.
- The obligation to take all necessary measures to prevent, reduce and control marine pollution from anthropogenic GHG emissions is a due diligence obligation under UNCLOS.
- The obligation to take all measures necessary to ensure that anthropogenic GHG emissions under a State's jurisdiction or control do not cause damage to other States and their environment, and that pollution from such emissions under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights, is also an obligation of due diligence.
- The Paris Agreement is not *lex specialis*; the different obligations that arise under international law in respect to climate change are mutually supportive.
- There are additional obligations under customary international law; these include the duty to prevent harm and the duty to cooperate.

- States' obligations pertaining to the protection of the climate system and other parts of the environment from anthropogenic GHG emissions, in particular the obligation to prevent significant transboundary harm under customary international law, are obligations erga omnes.
- The obligation not to cause irreversible harm to the climate system may be recognised as a rule of *jus cogens*.
- Courts play a decisive role in the development and clarification pertaining to both the legal nature and the substantive content of States' obligations.

Introduction

Climate change is one of the greatest and most complex threats facing humanity. The resulting increased climate variability, with the threat of more frequent and intense extreme events and slow-onset events, is not merely an environmental problem, but a multifaceted crisis with profound implications for ecosystems, economies, and societies. Climate change intersects with human rights, economic development, global health, and international peace and security. Its escalating impacts, from unprecedented heatwaves and supercharged storms to sea-level rise and ecosystem collapse, are occurring in every country and undermine efforts to implement the UN Sustainable Development Goals (SDGs), particularly Goals 1, 3, 6, 7 and 11-15.[1]

Addressing this challenge requires coordinated international efforts underpinned by legal obligations at the regional, national and international levels. As most recently confirmed in the Advisory Opinion of the International Court of Justice (ICJ) on the obligations of States in respect of climate change,[2] the various legal obligations within the Paris Agreement are mutually supportive, and they are also informed and strengthened by obligations beyond the international climate change regime. This report offers a concise summary of the State obligations in relation to climate change as they emerge under international law. The report is divided into five parts.

The Paris Agreement is not *lex specialis*; the different obligations that arise under international law in respect to climate change are mutually supportive.

The first part of the report offers an overview of the international climate change regime, mainly focusing on the United Nations Framework Convention on Climate Change (UNFCCC),[3] and the Paris Agreement.[4] This part looks particularly at the so-called 'shall' obligations under the Paris Agreement: the state obligations around mitigation,[5] adaptation,[6] and compensation[7] of climate change. Many of these obligations have been further developed in the 2018 Paris Rulebook.[8] The second part examines other sources of international law, including relevant international and regional human rights treaties.

The third part shifts the focus to customary international law. As a distinct source of international law, the general or customary rules and obligations have equal force for all members of the

[1] UNGA Res, Transforming our world: the 2030 Agenda for Sustainable Development (25 September 2015) UN Doc A/RES/70/1.
[2] *Obligations of States in Respect of Climate Change (Advisory Opinion)* 2025 < https://www.icj-cij.org/case/187 > accessed 28 July 2025; UNGA Res 77/276 (29 March 2023) UN Doc A/RES/77/276.
[3] United Nations Framework Convention on Climate Change (adopted 29 May 1992, entered into force 21 March 1994) (UNFCCC) 1771 UNTS 107. (hereinafter UNFCCC).
[4] Paris Agreement (adopted 12 December 2015, entered into force 4 November 2016) 3156 UNTS 79; Lavanya Rajamani, 'The 2015 Paris Agreement: Interplay Between Hard, Soft and Non-Obligations' (2016) 28 Journal of Environmental Law 337-358.
[5] Paris Agreement (n 4) art 4.
[6] Ibid, art 7.
[7] Ibid, arts 8 and 9.
[8] The Paris Rulebook (or the Katowice Climate Package), FCCC/PA/CMA/2018/3/Add.1.

international community, and they remain applicable in addition to the treaty law.[9] For example, the customary duty to prevent significant harm to the environment is included in the UNFCCC and 'is a source of inspiration for the climate change treaties and it constitutes their normative background.'[10] The fourth part addresses secondary obligations under the International Law Commission's Articles on the Responsibility of States for Internationally Wrongful Acts (ARSIWA).[11] Finally, the fifth part of this report offers an overview of the state obligations arising from domestic climate litigation, where obligations first and foremost apply with respect to the specific State's jurisdiction but may exert a transnational effect through an inter-jurisdictional discourse.[12]

Part I. State Obligations under the UNFCCC Regime

The international legal response to climate change has evolved significantly since the adoption of the UNFCCC in 1992, which marks the formal beginning of the climate change regime at the international level. As a framework convention, the UNFCCC established broad commitments for states to cooperate and take precautionary measures to limit climate change and its adverse impacts. The UNFCCC's ultimate objective is the stabilisation of greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.[13]

In line with the *convention-cum-protocol* approach to multilateral environmental agreements, these concrete legal obligations were reserved for further negotiations, which resulted in the Kyoto Protocol (1997).[14] The Kyoto Protocol established legally binding emissions reductions targets for developed countries (Annex I Parties).[15] However, its effectiveness was limited due to the lack of participation by some major emitters and the absence of binding commitments for countries whose emissions rose significantly in the last three decades. The Kyoto Protocol's first commitment period (2008-2012) and the second commitment period (2013-2021) have ended, albeit with the retention of the Clean Development Mechanism (CDM) and the option to transition carbon credits, if they

[9] *North Sea Continental Shelf (Federal Republic of Germany/Denmark; Federal Republic of Germany/Netherlands)* (Judgment) [1969] ICJ Rep 3 [63]; ILC, 'Draft Conclusions on Identification and Legal Consequences of Peremptory Norms of General International Law (jus cogens); Commentaries' (2022) UN Doc A/77/10, reproduced in [2022/II – Part Two] YBILC 11 (hereinafter ILC, 'Draft Conclusions on Jus Cogens').
[10] ICJ Advisory Opinion 2025 (n 2); See also the Declaration of Judge Georg Nolte on the ICJ Advisory Opinion, available at < https://www.icj-cij.org/case/187/advisory-opinions > accessed 28 July 2025.
[11] International Law Commission (ILC), Articles on the Responsibility of States for Internationally Wrongful Acts (hereinafter ARSIWA).
[12] Petra Minnerop and Ida Røstgaard, 'In Search of a Fair Share: Article 112 Norwegian Constitution, International Law, and an Emerging Inter-Jurisdictional Judicial Discourse in Climate Litigation', 44 Fordham Int'l L.J. 847 (2021).
[13] UNFCCC (n 3), art 2; UNGA Res (n 1).
[14] Kyoto Protocol to the UNFCCC (adopted 11 December 1997, entered into force 16 February 2005) 2303 UNTS 162.
[15] Ibid, Annex I.

meet certain conditions,[16] into the Paris Agreement's newly established global compliance carbon market.[17] During the second commitment period, it became clear that States would not agree to another top-down instrument. Today, the Kyoto Protocol's legally binding obligations for developed countries remain effective, next to those arising under the Paris Agreement, as confirmed in the ICJ's recent advisory opinion.[18] While the Paris Agreement has largely superseded the Kyoto Protocol as the primary instrument for the coordination of the international community's response to climate change, the failure to deliver mitigation obligations under the Kyoto Protocol could also be used to invoke State responsibility.

The international climate change regime sets forth legal obligations for States to make adequate contributions to climate change mitigation.

Together, the instruments — the UNFCCC, the Kyoto Protocol, and the Paris Agreement — form the backbone of the regime within which international climate law evolves. The regime creates a complex architecture with layers of procedural and substantive obligations, many of which have been further elaborated through sub-treaty rulemaking.[19]

1. The Long-Term Temperature Target: Reference Point for Legal Obligations

At the 21st UNFCCC Conference of the Parties (COP21), held in Paris in 2015, 196 Parties signed the Paris Agreement that set out the long-term goal of limiting the global temperature rise to 'well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels".[20] The ICJ in its recent AO confirmed that 1.5°C 'has become the scientifically based consensus target under the Paris Agreement", endorsed by Parties' interpretation of the Paris Agreement through subsequent COPs and CMA[21] decisions that emphasise the lower threshold.[22] More recent scientific studies suggest that even the threshold of limiting the increase in global temperature to 1.5 °C is too dangerous.[23] While it allows countries to

[16] Decision 3/CMA.3, FCCC/PA/CMA/2021/10/Add.1, Annex; see further the mechanism set up for the transition (including information on applicable standards) available at < https://unfccc.int/process-and-meetings/the-paris-agreement/paris-agreement-crediting-mechanism/CDM_transition > accessed 6 August 2025.
17 Paris Agreement (n 4) art 6.
[18] ICJ Advisory Opinion 2025 (n 2).
[19] Petra Minnerop, 'The Legal Effect of the 'Paris Rulebook' under the Doctrine of Treaty Interpretation', in Peter Cameron, Xiaoyi Mu and Volker Roeben (eds.), Global Energy in Transition. Towards rules-based multilateral governance of generation, markets and investment (Hart Publishing, 2020).
[20] Paris Agreement (n 4) art 2. The language used in Article 2, however, does not support the interpretation that the States aimed to establish a binding legal duty to meet the specified temperature targets. Rather, it offers a broad expression of the overall objective and intent of the Agreement, but it does not set out a legally enforceable rule or a legal norm as such. See Lavanya Rajamani and Jacob Werksman, 'The Legal Character and Operational Relevance of the Paris Agreement's Temperature Goal' (13 May 2018) 376 Phil Trans R Soc A 20160458.
[21] Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
[22] ICJ Advisory Opinion 2025 (n 2), [223].
[23] Chris Stokes, Jonathan Bamber, Andrea Dutton, & Robert DeConto, 'Warming of +1.5 °C is too high for polar ice sheets' (2025) 6 Communications Earth & Environment, Article 351.

submit their nationally determined contributions (NDCs), the discretion to qualitatively determine the substance of these NDCs is reduced in accordance with the Paris Agreement and its Rulebook.[24]

In 2018, Parties agreed on the Paris Agreement Rulebook after three more years of negotiations, in Katowice at the first Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement (CMA1).[25] Under the Vienna Convention on the Law of Treaties, the Rulebook operationalises the Paris Agreement. It sets forth implementing rules that can constitute 'subsequent agreement between the Parties regarding the interpretation of the Paris Agreement or the application of its provisions.'[26]

While the Paris Rulebook largely operationalised the Paris Agreement, some provisions still required additional attention and rule-making. In particular, Article 6 proved difficult to negotiate, and the Rules for the new carbon market were agreed during COP26/CMA3 in Glasgow, 2021. The carbon market comprises two key instruments, the cooperative approaches under Article 6 para. 2 and the Crediting Mechanism of Article 6 para. 4. A framework for non-market-based approaches is provided in Article 6 para. 8. In 2024, during COP29/CMA6 in Baku, Parties adopted a set of important standards that allow them to begin the Crediting mechanism activity cycle under Article 6 para. 4, governed by the Supervisory Body that reports to the CMA. Under the cooperative approaches of Article 6 para. 2, more than 100 bilateral agreements have been concluded that set forth specific rules and obligations for collaborative projects between the Parties involved.

Like the UNFCCC, the Paris Agreement recognises the principle of common but differentiated responsibilities and respective capabilities (CBDR), in light of national circumstances.[27] This principle implies that a change in national circumstances may affect the significance of the contribution a country can make in addressing climate change. The CBDR underlies the expectation that developed countries will lead in ambition and progression with respect to their climate measures.

2. Mitigation: Nationally Determined Contributions

Under Article 4 para. 2 sentence 1 of the Paris Agreement, Parties are obliged to prepare, submit and maintain their NDCs. This obligation is procedural in nature and an obligation of result.[28] For second and subsequent NDCs, Parties are under a legal obligation to provide specific information as set out in the

The obligation to submit a nationally determined contribution (NDC) is procedural in nature and an obligation of result.

[24] ICJ Advisory Opinion 2025 (n 2), [237]–[249].
[25] The Paris Rulebook (n 8).
[26] Vienna Convention on the Law of Treaties (adopted 23 May 1969, entered into force 27 January 1980), art 31,32; see also Petra Minnerop (n 18).
[27] Paris Agreement (n 4) art 2.
[28] ICJ Advisory Opinion 2025 (n 2), [235].

Paris Rulebook's guidance on Information to enhance Clarity, Transparency and Understanding (ICTU).[29] Under Article 4 para. 2 sentence 2, States have the obligation to pursue mitigation activities with the objective of achieving their NDCs. The ICJ clarified that stringent due diligence obligations apply to Article 4 para. 2.

The Paris Agreement provides additional layers of mandatory and recommendatory rules designed to shape the content and the comparability of NDCs, paying due regard to the need for differentiation according to the principle of common but differentiated responsibilities. An example is the normative expectation expressed in Article 4 para. 3 that '[E]ach Party's successive nationally determined contribution will represent a progression beyond the Party's then current nationally determined contribution and reflect the highest possible ambition.' [30] Once an NDC is submitted, the instrument becomes legally binding upon the respective state. This has been acknowledged by leading case law, as the UK Supreme Court stated in *Heathrow* that it was the legal obligation of each State to submit New NDCs, the so-called NDCs 3.0, which must be submitted to the UNFCCC Secretariat at the very latest by COP30 in Brazil in 2025, the original deadline passed in February 2025.[31]

The content of NDCs is important to determine compliance, and a mere formal submission would not discharge a State's duty under Article 4 para. 2 Paris Agreement.

A decade after COP21 and three decades since the first COP, global greenhouse gas (GHG) emissions have reached a record high and continue to rise.[32] Current NDCs (NDCs 2.0) are projected to lead to global warming that exceeds 2.5°C to 2.9°C by 2100.[33] The new NDCs 3.0 should therefore include more ambitious greenhouse gas emissions reduction targets for 2035, and they must be prepared based on the findings of the Global Stocktake that concluded at COP28, after two years of reviews and assessments of the collective efforts.[34]

According to Article 4, paragraph 19 of the Paris Agreement, countries are encouraged to submit long-term low-emissions development strategies (LT-LEDS).[35] Submitting an LT-LEDS is therefore not a legal obligation but a strong recommendation to ensure a timely and well-managed transition

[29] Decision 4/CMA.1, FCCC/PA/CMA/2018/3/Add.1, Annex I; see also, The Paris Rulebook, FCCC/PA/CMA/2018/3/Add.1, 3/CMA.1.
[30] Petra Minnerop, 'Nationally Determined Contributions post-Global Stocktake: The Making of Prescribed Qualified Unilateral Acts in International Law' (2024) 58(1) Vanderbilt Journal of Transnational Law 45-117.
[31] UN Climate Change, Nationally Determined Contributions - NDC 3.0 < https://unfccc.int/ndc-3.0 >.
[32] European Commission, GHG Emissions of All World Countries, available at <https://edgar.jrc.ec.europa.eu/report_2023#main_findings> accessed 4 August 2025; UNEP, Broken Record - Emissions Gap Report (2023); UNEP, 'No More Hot Air … Please' – Emission Gap Report (2024); Energy Transition Commission, 'Credible Contributions: Bolder Plans for Higher Climate Ambition in the Next Round of NDCs' (2024) (Insights Briefing June 2024).
[33] Energy Transition Commission (n 31)
[34] First Global Stocktake, FCCC/PA/CMA/2023/L.17.
[35] Paris Agreement (n 4) art 4 para 19.

of economies away from fossil fuels.[36] As of now, 78 Parties to the Paris Agreement have submitted an LT-LEDS.[37]

The self-determined nature of NDCs is often perceived as a limitation of the Paris Agreement, with the argument that the content of NDCs, i.e., the specific emission reduction (mitigation or adaptation) targets, is not itself legally binding. Under international law, however, NDCs can be qualified as prescribed qualified unilateral acts, i.e. legal instruments that set forth specific state obligations for which the Paris Agreement and the Paris Rulebook provide mechanisms, such as the global stocktake, and stringent standards of due diligence with the objective to limit States' leeway in setting themselves targets.[38] The ICJ clarified that States' NDCs must make an adequate contribution to the temperature limitation and that the discretion of States is limited.[39] Parties must also account for their NDCs, and they must provide certain information with the submission of their NDCs. This accounting guidance is legally binding for second and subsequent NDCs.

The NDC must make an adequate contribution to the temperature goal of the Paris Agreement, and the discretion of States to define the content of NDCs is limited.

3. Enhanced Transparency Framework

State obligations for all Parties also arise under the 'enhanced transparency framework' (ETF), established under Article 13. The ETF is designed to promote mutual trust and confidence among nations by requiring regular updates on GHG emissions, progress toward targets, and adaptation measures.[40] The ETF mandates biennial transparency reports (BTRs), requiring Parties to submit standardised information on GHG emissions, their progress on NDCs, and climate finance.[41] First BTRs were due 31 December 2024, in accordance with the modalities, procedures and guidelines.[42] In addition, Parties must also submit a GHG Inventory Report, either with the BTR or as a standalone report. The ETF under the Paris Agreement builds on the current, solid measurement, reporting and verification (MRV) system under the UNFCCC.[43]

[36] Decision 1/CMA.5, FCCC/PA/CMA/2018/3/Add.1, 'Outcome of the First Global Stocktake', para 42, 'urges' the Parties to submit their LT-LEDS.
[37] UN Climate Change, Long-term strategies portal < https://unfccc.int/process/the-paris-agreement/long-term-strategies > accessed 5 April 2025.
[38] Petra Minnerop, 'Nationally Determined Contributions post-Global Stocktake' (n 30).
[39] ICJ Advisory Opinion 2025 (n 2), [237] – [249].
[40] Paris Agreement (n 4) art 13.
[41] Decision 18/CMA.1, FCCC/PA/CMA/2018/3/Add.2, Annex, Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement.
[42] Ibid.
[43] Decision 21/CP.19, FCCC/CP/2013/10/Add.2/Rev.1, 'General guidelines for domestic measurement, reporting and verification of domestically supported nationally appropriate mitigation actions by developing country Parties.'

Part II. State Obligations under other International Treaties

1. Law of the Sea

The 1982 UN Convention on the Law of the Sea (UNCLOS) sets forth distinct obligations of States to reduce GHG emissions. The Commission of Small Islands States (COSIS) brought a request to the International Tribunal for the Law of the Sea (ITLOS) to determine in an Advisory Opinion whether the detrimental effects on the oceans caused by, or likely to be caused by, climate change stemming from human-induced GHG emissions into the atmosphere qualify as 'marine pollution' under the UNCLOS; and second, to elucidate the precise legal responsibilities of State Parties under UNCLOS in addressing the consequences of climate change for the marine environment.[44]

GHG emissions constitute a form of marine pollution, and corresponding obligations and stringent standards of due diligence under the Law of the Sea follow from this.

In its Advisory Opinion in 2024, the ITLOS has officially classified GHG emissions as a form of marine pollution. This determination imposes strict 'due diligence" obligations on all States under the UNCLOS,[45] which are separate from and additional to their commitments under the Paris Agreement.[46] States are under the obligation to take all necessary measures to prevent, reduce, and control this pollution from any source, whether land-based, in the marine environment, or in the air. These duties also extend to the conservation of marine ecosystems, recognising their vital role in building resilience and absorbing carbon.[47]

The Tribunal clarified that States must establish and enforce robust legal and administrative systems to control climate change pollution, using their full capabilities and resources.

ITLOS found that '[t]he obligation of due diligence requires a State to put in place a national system, including legislation, administrative procedures and an enforcement mechanism necessary to regulate the activities in question, and to exercise adequate vigilance to make such a system function efficiently."[48]

This requires constant vigilance, including monitoring, inspection, and prosecuting any breaches of environmental law, with an even higher standard for preventing harm that crosses national borders. The AO also addressed marine geoengineering, stating that it is incompatible with the UNCLOS if it simply converts one type of pollution into another or harms marine biodiversity.[49]

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[44] Request for an Advisory Opinion Submitted by The Commission of Small Island States on Climate Change and International Law [2024] ITLOS Case No. 31.
[45] United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 1 November 1994) 1833 UNTS 397 [hereinafter UNCLOS].
[46] Ibid, [234] – [242].
[47] ITLOS Advisory Opinion (n 43), [414].
[48] Ibid, [235].
[49] Ibid, [209].

Moreover, ITLOS recognised a human dimension of climate change, by noting that "climate change represents an existential threat and raises human rights concerns."[50]

2. Human Rights

The European Court of Human Rights (ECtHR) and the Inter-American Court of Human Rights IACtHR) both seized the opportunity to develop the law on States' obligations in the climate change context. In *KlimaSeniorinnen and others v Switzerland* [51] the European Court of Human Rights confirmed that the government's failure to act on climate change constitutes a violation of the European Convention on Human Rights (ECHR) and that there was a causal relationship between state actions and/or omissions relating to climate change and the harm, or risk of harm, affecting individuals.[52] The ECtHR also stressed that, irrespective of their shares of global emissions, contracting States have positive obligations under Article 8 (the right to private life) to protect individuals from adverse climate impacts. The Court also found that the principle of inter-generational burden sharing is applicable in the context of state obligations against climate change, which means that States cannot impose excessive mitigation burden on future generations and, hence, have an obligation to adopt immediate GHG reduction cuts leading to net neutrality within, in principle, the next three decades.

Specific health-related standards can be derived from Human Rights Treaties, such as the European Convention on Human Rights.

The ECtHR held that while States must enjoy a certain margin of appreciation, comprising two facets, 'on the one hand, the State's commitment to the necessity of combating climate change and its adverse effects, and the setting of the requisite aims and objectives in this respect, and, on the other hand, the choice of means designed to achieve those objectives.'. The Court proceeded to state that 'the nature and gravity of the threat and the general consensus as to the stakes involved in ensuring the overarching goal of effective climate protection through overall GHG reduction targets' called for a reduced margin of appreciation for the States.[53] Contracting States are obliged under Article 8 of the Convention to 'undertake measures for the substantial and progressive reduction of their respective GHG emission levels, with a view to reaching net neutrality within, in principle, the next three decades.'[54]

The Court will assess whether a State has remained within its margin of appreciation in discharging its positive obligations under Article 8 by using the following benchmarks:

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[50] Ibid, [66].
[51] *Verein KlimaSeniorinnen Schweiz and Others v Switzerland*, App no 53600/20 (ECtHR, 29 March 2023). See further on the setting of the common ground and the impact of the case, Katalin Sulyok, 'Verein Klimaseniorinnen Schweiz and Others v. Switz. (Eur. Ct. H.R.)' (2025) 64(1) International Legal Materials 1-3.
[52] Ibid, [519].
[53] Ibid, [543]. See for a discussion of the Court's jurisprudence on role of the Consensus Doctrine for the limitation of the margin of discretion, Petra Minnerop, 'European Consensus as Integrative Doctrine of Treaty Interpretation: Joining Climate Science and International Law under the European Convention on Human Rights' (2023) 40(2) *Berkeley Journal of International Law*, 207-262.
[54] *KlimaSeniorinnen* (n 51) [548].

(a) adopt general measures specifying a target timeline for achieving carbon neutrality and the overall remaining carbon budget for the same time frame, or another equivalent method of quantification of future GHG emissions, in line with the overarching goal for national and/or global climate-change mitigation commitments;

(b) set out intermediate GHG emissions reduction targets and pathways (by sector or other relevant methodologies) that are deemed capable, in principle, of meeting the overall national GHG reduction goals within the relevant time frames undertaken in national policies;

(c) provide evidence showing whether they have duly complied, or are in the process of complying, with the relevant GHG reduction targets;

(d) keep the relevant GHG reduction targets updated with due diligence, and based on the best available evidence; and

(e) act in good time and in an appropriate and consistent manner when devising and implementing the relevant legislation and measures.[55]

In a historic Advisory Opinion, the IACtHR has additionally established that the obligation to prevent irreversible damage to the climate and environment is a peremptory norm. [56]

These landmark cases are situated within significant developments at the intersection of human rights and environmental and climate protection. One of these developments culminated in the recognition of a human right to a healthy environment by the UN General Assembly in 2022.[57] In its resolution, States set out their 'obligations and commitments under multilateral environmental instruments and agreements, including on climate change, and the outcome of the United Nations Conference on Sustainable Development, held in Rio de Janeiro, Brazil, in June 2012, and its outcome document entitled "*The future we want"*,[58] which reaffirmed the principles of the Rio Declaration on Environment and Development.'[59] These obligations form the bedrock for the protection of a human right to a clean, healthy and sustainable environment.

Accordingly, human rights treaty bodies, which are committees of independent experts that monitor the implementation of the human rights treaties, carry out three primary functions. First, they assess States' compliance through a reporting process that includes reviewing submitted reports, convening a working group and conducting a constructive dialogue, with the aim of issuing

[55] *KlimaSeniorinnen* (n 51) [550].
[56] Inter-American Court of Human Rights, Requested by the Republic of Chile and the Republic of Colombia Climate Emergency and Human Rights, [2025] Advisory Opinion OC-32/25 OF 29.
[57] UNGA Res, 'The Human Right to a Clean, Healthy and Sustainable Environment', UN Doc. A/RES/76/300 (1 August 2022).
[58] UNGA Res, 'The Future We Want', UN Doc. A/RES/66/288 (11 September 2012).
[59] UNGA Res 76/300 (n 57), preamble.

concluding observations. Second, they draft General Comments or statements that offer interpretative guidance on the treaty provisions. Third, they consider individual complaints of treaty violations and issue decisions provided an individual complaints mechanism exists. For instance, the 2022 *Torres Strait Island Case*,[60] decided by the UN Human Rights Committee under the International Convention on the Protection of Civil and Political Rights, illustrates that the failure of a nation-state to adequately protect indigenous populations from the impacts of climate change can violate their human rights.

Importantly, several UN Special Rapporteurs have continued to examine the responsibilities of States in relation to climate change through various means, including individual communications, thematic reports, and joint amicus briefs submitted in international climate cases. For example, the UN Special Rapporteur on human rights and the environment released a report analysing the human rights implications of investor-State dispute settlement (ISDS) mechanisms on climate and environmental action.[61] Similarly, the Special Rapporteur on toxics and human rights produced a report addressing the harmful effects of certain proposed climate solutions.[62] The Special Rapporteur on human rights and climate change published a report focused on climate change legislation and litigation, intergenerational justice,[63] and the human rights of those displaced across borders due to climate change.[64] These reports referenced key decisions by human rights treaty bodies, such as *Billy v Australia*,[65] *Sacchi et al v Argentina et al* ,[66] and *Teitiota v New Zealand*.[67] This growing body contributes to the clarification of State obligations under climate change.

The Committee on the Rights of the Child adopted General Comment No. 26,[68] which addresses children's rights in relation to the environment, with particular emphasis on climate change. It underlines the urgent need to tackle the negative impacts of environmental harm—especially climate change—on the realisation of children's rights, including their right to a clean, healthy, and sustainable environment, and outlines the responsibilities of States in this regard. It builds on the UN General Assembly's 2022 recognition of this right.[69] The Committee affirms that 'Children's rights, like all human rights, are indivisible, interdependent and interrelated. Some rights are particularly threatened by environmental degradation. Other rights play an instrumental role in

[60] *Daniel Billy and others v Australia* [2022] CCPR/C/135/D/3624/2022.
[61] UNHRC, 'Paying polluters: the catastrophic consequences of investor-State dispute settlement for climate and environment action and human Rights', UN Doc. A/78/168 (13 July 2023).
[62] UNHRC, 'The toxic impacts of some proposed climate change solutions', UN Doc. A/HRC/54/25 (13 July 2023).
[63] UNHRC, 'Promotion and protection of human rights in the context of climate change', UN Doc. A/78/255 (28 July 2023).
[64] UNHRC, 'Providing legal options to protect the human rights of persons displaced across international borders due to climate change', UN Doc. A/HRC/53/34 (18 April 2023).
[65] *Daniel Billy and others v Australia* [2022] CCPR/C/135/D/3624/2022.
[66] *Chiara Sacchi et al v Argentina et al* [2021] CRC/C/88/D/104.
[67] *Teitiota v New Zealand* [2016] CCPR/C/127/D/2728/2016.
[68] UNCRC, General comment No. 26 On Children's Rights and the Environment with a Special Focus on Climate Change' UN Doc. CRC/C/GC/26 (22 August 2023).
[69] UNGA Res 76/300 (n 57).

safeguarding children's rights in relation to the environment.'[70] As such, the right to a healthy environment underlies the rights of the Convention on the Rights of the Child in its entirety.[71]

It is important to note relevant developments in other international forums, as these can enhance the understanding of how States' human rights obligations relate to climate change. For example, in August 2023, the Human Rights Council (HRC) Advisory Committee adopted a report on emerging technologies, focusing specifically on geoengineering.[72] These technologies involve large-scale interventions in Earth's natural systems with the aim of mitigating climate change impacts, but most interventions remain scientifically unproven and are likely to have serious adverse and unintended consequences.

Part III. State Obligations Arising from Customary International Law

Customary international law provides legal obligations relevant to the environment and in the context of climate change.[73] Generally, customary law is formed through state practice, i.e. the widespread and consistent conduct of states over time, and *opinio juris*, i.e. carried out in the belief that this behaviour is legally required.[74] Peremptory norms are core principles of international law that are universally acknowledged and binding, with no exceptions or deviations allowed.[75]

1. No Harm Rule

Key principles in relation to climate change include the no harm rule, which means that states must prevent activities within their jurisdiction from causing environmental harm to other states. This principle, affirmed in cases such as the *Trail Smelter Arbitration*, applies to climate change and transboundary harm caused by GHG emissions. [76] States are required to take all appropriate measures to prevent environmental harm. In climate terms, this includes adopting mitigation policies and enforcing regulations and the rules around Environmental Impact Assessment (EIA). As recognised by the ICJ in the *Pulp Mills* case (2010),[77] conducting EIAs for projects with transboundary environmental impacts may constitute an international legal obligation.[78]

[70] UNCRC, GC 26 (n 68) para 13.
[71] The United Nation Convention on the Rights of the Child (adopted 20 November 1989, entry into force 2 September 1990).
[72] UNHRC, 'Impact of New Technologies Intended for Climate Protection on the Enjoyment of Human Rights', UN Doc. A/HRC/54/47 (10 August 2023).
[73] Tobias Kleinlein, 'Jus Cogens as the 'Highest Law'? Peremptory Norms and Legal Hierarchies' (2015) 46 NYIL 173, 192.
[74] *Questions relating to the Obligation to Prosecute or Extradite (Belgium v Senegal)* (Judgment) [2012] ICJ Rep 422 [68], [69], [99].
[75] Anthea Roberts and S. Sivakumaran, 'The Theory and Reality of the Sources of International Law', Ch. 4 in M. Evans (ed.), *International Law* (5th edn, OUP, Oxford, 2018),
[76] *US v Canada (Trail Smelter)* (1941) 3 RIAA.
[77] *Pulp Mills on the River Uruguay (Argentina v. Uruguay)* [2006] ICJ General List 135, 156.
[78] ICJ Advisory Opinion 2025 (n 2), [297].

2. Due Diligence

A due diligence obligation is one of 'conduct on the part of a subject of law'.[79] In international law, due diligence obligations have deep historical roots,[80] are often ancillary to primary duties, and are frequently invoked in the context of the responsibility of states for the activities of private actors. These obligations are not constitutive of a duty of result but rather of a certain standard for states' conduct. The concrete content of due diligence duties varies over time, and it depends on the area of law in which they occur, i.e., in human rights law, humanitarian law, investment law, or – as is the case here – in international environmental law. The most fundamental due diligence obligation in customary international environmental law is the duty not to cause damage to the environment of other states or areas beyond the limits of national jurisdiction.[81]

3. Erga Omnes

As the Court has observed in the past, obligations *erga omnes* are by 'their very nature . . . the concern of all States'.[82] The Court has also previously found that treaties protecting common interests imply, with respect to some provisions, the existence of obligations erga omnes partes.[83] The ICJ observes that certain rules of international law relating to global common goods, such as the climate system, may produce erga omnes obligations.[84] The Court considered that 'all States have a common interest in the protection of global environmental commons like the atmosphere and the high seas.'[85] Therefore, States' obligations pertaining to the protection of the climate system and other parts of the environment from anthropogenic GHG emissions, in particular the obligation to prevent significant transboundary harm under customary international law, are obligations erga omnes.

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4. Peremptory Norms

It is important to note that the norms of general international law, as established under the climate change regime under the Paris Agreement, have the potential to attain the status of peremptory

[79] Timo Koivurova and Krittika Singh, 'Due Diligence', in Wolfrum Rüdiger and; Anne Peters (eds.) Max Planck Encyclopedias of Public International Law (Oxford University Press, 2022); Nigel D White 'Due Diligence Obligations of Conduct: Developing a Responsibility Regime for PMSCs' (2012) 31 Criminal Justice Ethics 233–61.
[80] Giulio Bartolini, 'The Historical Roots of the Due Diligence Standard', in Heike Krieger, Anne Peters, and Leonhard Kreuzer, Due Diligence in the International Legal Order (Oxford: Oxford University Press, 2020), 23–41.
[81] Inter-American Court of Human Rights, Advisory Opinion (n 55); ITLOS Advisory Opinion (n 46), [234] – [243].
[82] *Barcelona Traction, Light & Power Company, Ltd (Belgium v. Spain)* (New Application: 1962) (Judgment) [1970] ICJ Rep 3, [33].
[83] *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina v. Serbia and Montenegro),* [2007] ICJ Rep 921, [43].
[84] ICJ Advisory Opinion 2025 (n 2) 440–441.
[85] Ibid.

norms. The definition adopted by the International Law Commission in 2022, in its Draft Conclusions on Jus Cogens, suggests that a peremptory norm related to the climate could emerge.[86] The Intern-American Court of Human Rights Advisory Opinion points to the possibility to establish the obligation to prevent irreversible damage to the climate and environment as a peremptory norm.[87] A peremptory norm of general international law is a 'norm accepted and recognized by the international community of States as a whole as a norm from which no derogation is permitted and which can be modified only by a subsequent norm of general international law having the same character', according to Article 53 of the Vienna Convention on the Law of Treaties (VCLT). Furthermore, if a new peremptory norm of general international law emerges, i.e., a new *jus cogens*, any existing treaty which is in conflict with that norm becomes void and terminates, Article 64 VCLT.

The Court also formally recognised that nature itself is a subject of rights. This follows a trend in various national courts and builds on the Court's earlier findings that components of the environment are legal interests in themselves.[88] As a direct consequence, states are now under a positive obligation to protect, restore, and regenerate ecosystems. While this ruling raises further questions about legal standing for nature and the specific rights it holds, it is seen as a move that will empower indigenous groups and environmental advocates.[89]

Furthermore, the IACtHR reinforced its progressive stance by clarifying that the right to a healthy environment includes the right to a stable climate, requiring states to set binding, science-based emissions reduction goals. The Court reaffirmed its jurisdiction over transboundary environmental harm, a crucial precedent that allows victims to seek reparations for damage caused by another state. The opinion also emphasised the need for full restitution to restore nature to its original state and called for greater protection for vulnerable groups, including children and environmental activists whose protests, the Court argued, should be decriminalised.[90]

The obligation not to cause irreversible harm to the climate system may be recognised as a rule of *jus cogens*.

[86] International Law Commission, 'Draft conclusions on identification and legal consequences of peremptory norms of general international law (jus cogens)' (2022) Yearbook of the International Law Commission, vol. II, Part Two.
[87] Inter-American Court of Human Rights, Advisory Opinion (n 55).
[88] See for example: *MK Ranjitsinh v Union of India* (2022) INSC 280; *Declic and Bankwatch Romania V Răstoliţa Hydropower Project* [2024] Doasr NR. 6709/117/2024; *Sierra Club v California Department of Water Resources* (2024) Cal.Sup.Ct., 24WM000008; *Green Oceans v Department of the Interior* (2024) DCC 1:24-cv-00141.
[89] Inter-American Court of Human Rights, Advisory Opinion (n 55).
[90] Ibid, [556] – [559].

Part IV. State Obligations Under the Secondary Law of State Responsibility

State responsibility, as defined by the secondary obligations under the Articles on the Responsibility of States for Internationally Wrongful Acts (ARSIWA),[91] could potentially arise in relation to climate change. For State Responsibility to be established, ARSIWA must be deemed applicable, and its conditions for determining state responsibility must be met. The ICJ has already previously confirmed that the ARSIWA is enforceable in environmental cases.[92] The applicability of ARSIWA to climate change obligations in general was confirmed by the ICJ even though the Court did not find it necessary to entertain an *in concreto* assessment of State Responsibility.[93] It made clear though that in any event an internationally wrongful act and attribution of that act to a State would be necessary. Furthermore, the Court observed that while 'climate change is caused by cumulative GHG emissions, it is scientifically possible to determine each State's total contribution to global emissions, taking into account both historical and current emissions.'[94] Generally, the responsibility of a single State for damage may be invoked without invoking the responsibility of all States that may be responsible.[95]

Under the ARSIWA framework, obligations arise if a wrongful act by a State has caused harm. Attribution of an act to a State is to be based on criteria determined by International Law. [96] The ICJ considered that 'Failure of a State to take appropriate action to protect the climate system from GHG emissions — including through fossil fuel production, fossil fuel consumption, the granting of fossil fuel exploration licences or the provision of fossil fuel subsidies — may constitute an internationally wrongful act which is attributable to that State.'[97] The Court also emphasised that 'the internationally wrongful act in question is not the emission of GHGs per se, but the breach of conventional and customary obligations […] pertaining to the protection of the climate system from significant harm resulting from anthropogenic emissions of such gases.'[98]

The ICJ found that 'the existing legal standard for establishing causation, which has been developed in the jurisprudence of the Court, is capable of being applied to the establishment of causation between the internationally wrongful act of non-compliance with States' obligations to protect the climate system from harm caused by anthropogenic GHG emissions and the damage suffered by

[91] International Law Commission (ILC), Articles on the Responsibility of States for Internationally Wrongful Acts [2001], Yearbook of the International Law Commission, 2001, vol. II (Part Two).
[92] *Gabčíkovo-Nagymaros Project (Hungary v. Slovakia)* (Judgment) [1997] ICJ Rep 7, [50], [53], [58], [79], [83].
[93] ICJ Advisory Opinion 2025 (n 2), [97] and [423].
[94] Ibid, [429].
[95] Ibid, [430].
[96] *Armed Activities on the Territory of the Congo (Congo v. Uganda)* (Judgment) [2005] ICJ Rep 168, [213].
[97] ICJ Advisory Opinion 2025 (n 2), [427].
[98] Ibid.

States as a result of such a wrongful act.'[99] If in a concrete case an internationally wrongful act is attributable to a State, the State can be required to cease the act, offer assurances and guarantees of non-repetition, and to make full reparation. In relation to climate change, a State may be required to end fossil fuel subsidies, phase out fossil fuels, or scale up climate finance to developing nations.[100]

Part V. State Obligations Arising from Domestic Climate Litigation

As climate litigation has expanded over time, the range of case types has also broadened, offering more ways to classify and analyse them. Cases are brought by a range of different plaintiffs, often including NGOs and youth plaintiffs, and employ diverse legal bases. Domestic courts have used the concept of future generations to impose obligations of States to provide protection against climate risks and harms arising in the future.[101] Categorisation of cases helps to accurately illustrate their diversity, strategic direction and potential to shape obligations of states, including in respect of the regulations of private actors. It also supports identifying where scientific research can support the evidence base.[102] The Sabin Centre for Climate Change Law's Climate Litigation Databases currently hold around 2,967 climate litigation cases, and around 75% of these have been filed since the adoption of the Paris Agreement. Nonetheless, the data suggests that the overall rate of increase in new cases may be slowing down.[103]

> Courts play a decisive role in the development and clarification pertaining to both the legal nature and the substantive content of States' obligations.

One notable legal strategy, 'Integrating climate considerations' litigation, aims to embed climate concerns into decisions about specific projects or sector-wide policies.[104] A large number of these lawsuits deal with the approval or expansion of fossil fuel extraction and fossil fuel-powered electricity generation. A noteworthy development occurred in January 2024, when the Oslo District Court, in *Greenpeace Nordic and Nature and Youth v Energy Ministry*,[105] ruled that downstream (so

[99] Ibid, [436].
[100] Ibid, [436]; see also Margaretha Wewerinke-Singh, *State Responsibility, Climate Change and Human Rights Under International Law* (Oxford, Hart Publishing, 2018) 134–145.
[101] Katalin Sulyok, 'Transforming the Rule of Law in Environmental and Climate Litigation: Prohibiting the Arbitrary Treatment of Future Generations' (2024) 13(3) Transnational Environmental Law 475-501; Petra Minnerop, 'The Advance Interference-Like Effect of Climate Targets: Fundamental Rights, Intergenerational Equity and the German Federal Constitutional Court' (2022) 34(1) *Journal of Environmental Law* 135-162.
[102] Rupert Smith, Friederike Otto, Aisha Saad, Gaisa Lisi, Petra Minnerop, Kristian Cedervall, Kristian van Zwieten, & Thom Wetzer, 'Filling the evidentiary gap in climate litigation' (2021) 11 *Nature Climate Change.* 651-655.
[103] Joana Setzer and Catherine Higham, 'Global Trends in Climate Change Litigation: 2025 Snapshot' (2025) Columbia Law School, Sabin Center for Climate Change Law.
[104] For instance, *IBAMA v. Dirceu Kruger (Illegal deforestation in the Amazon and climate damage)* (2023) Public Civil Action (ACP) 1037196-19.2023.4.01.3200.
[105] *Greenpeace Nordic and Nature and Youth v Energy Ministry* (2023) Application no. 23-099330TVI-TOSL/05; HR-2025-677-A.

called scope 3) emissions must be accounted for in environmental impact assessments (EIA) to uphold human rights protections. Similarly, the UK Supreme Court confirmed in *Finch v Surrey* that scope 3 emissions must be considered in the EIA.[106]

Another category of cases is that which particularly targets a government's climate governance framework, and the ambition or execution of a government's overall climate policy. Since 2015, around 134 such cases have been filed.[107] A major development, as mentioned earlier, occurred when the European Court of Human Rights ruled in *KlimaSeniorinnen and Others v Switzerland* that government inaction at the Climate change/science interface violates the right to family life under Article 8 of the European Convention on Human Rights.[108] In the United States, the case *Held v Montana* marked a significant victory for youth-led climate litigation.[109] Looking ahead, there is growing potential for legal challenges focused on the credibility and clarity of governments' net-zero commitments.

In addition to directly targeting government frameworks in relation to climate mitigation, some cases are aimed at governments' failure to adapt, where legal actions are filed against governments or companies for their failure to adequately address climate risks. A significant case involved Friends of the Earth supporting two public members in filing a lawsuit against the UK government over its Third National Adaptation Programme.[110] This type of litigation is increasingly focusing on the physical and mental health impacts of climate change, reflecting a growing concern about how climate risks are, or are not, being managed and addressed.

Conclusions

This report synthesises the mutually supportive obligations of States under the international climate regime, the UNCLOS, Human Rights law, customary international law, and selected domestic laws. It demonstrates the indispensable role of law in addressing climate change and the corresponding requirement to strengthen the ability and readiness of laws and legal frameworks to translate science effectively. Five key messages resonate from this report. First, the stringency and convergence of obligations that States must fulfil based on the best available scientific evidence continues to evolve. Second, obligations can be substantive or procedural in nature, but they must be fulfilled to make an adequate contribution to the long-term temperature target of the Paris Agreement; the failure to do so may constitute an internationally wrongful act. Third, the long-term temperature target of the

[106] *R (Finch on behalf of the Weald Action Group) v Surrey County Council and others* [2022] UKSC 2022/0064.
[107] Joana Setzer and Catherine Higham (n 103).
[108] *KlimaSeniorinnen* (n 51); see also Petra Minnerop and Andy Haines, 'KlimaSeniorinnen v Switzerland: the European Court of Human Rights leads the way on climate action; (2024) 387 BMJ 2156.
[109] *Held v Montana (State)* (2024), Mont. DA 23-0575; see also *Navahine F. V. Hawai'i Department of Transportation* (2022) 1CCV-22-0000631 Court/Admin Entity: Haw. Cir. Ct.
[110] *R (Friends of the Earth Ltd) v Secretary of State for Environment, Food & Rural Affairs (challenge to the Third National Adaptation Programme),* [2024] EWHC 2707.

Paris Agreement is itself tied to the emergence of the scientific evidence and the consensus of States. The current consensus target is 1.5 °C. Fourth, due to the immense risks involved in climate change, the legal standard of due diligence for States seeking to comply with their obligations is stringent. Fifth, courts play a decisive role in the development and clarification pertaining to both the legal nature and the substantive content of States' obligations.

JusTN0W – *Just Transitions to a Net Zero World*

Executive Summary

The world is failing to find the just transition pathways to avoid the worst impacts of climate change (IPCC AR6 SYR 2023, UN NDC SYR 2023). Even the Paris Agreement's more ambitious 1.5°C temperature limitation is insufficient to avoid catastrophic sea level rise and increasingly severe extreme weather events. At Durham, we have world-leading expertise in researching the causes and impacts of climate change. Through the JusTN0W initiative, we endeavour to be leading in just transition to net zero research, to determine if, when, and how we achieve lasting societal well-being for the present and for future generations. JusTN0W therefore identifies a work programme that uses interdisciplinary research to develop sustainable and just solutions to accelerate the decarbonisation of economies. Through investment in JusTN0W, Durham University unrolls a financially sustainable work programme that will last beyond the initial four years of University funding. However, the initial investment enables us to position Durham rapidly and securely at the forefront of a cutting-edge twinning of green and digital transitions. The work will make a distinct contribution to SDG-relevant research and Durham's global standing.

The 2nd Annual Conference of the JusTN0W Initiative

Synopsis

The arrival of the concept of just transitions at the level of the international climate change regime under the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement provides a new opportunity to fundamentally shape the Paris Agreement's preambular imperative of a just transition. Just transitions entail the transformation of societies towards sustainable ways of life. At the international level, the global stocktake decision of 2023 reaffirmed that "the global transition to low emissions and climate-resilient development provides opportunities and challenges for sustainable development and poverty eradication". Yet one year later, at the 29th Conference of the Parties in Baku in 2024, no consensus between countries could be forged for a substantial decision on the Just Transition Work Programme (JTWP), not even on the identification of elements for dialogue. Proposals so far include developing stand-alone principles, mechanisms, and measurements for just transitions, or embedding these into National Adaptation Plans (NAPs), Nationally Determined Contributions (NDCs), and Long-Term Strategies (LT-LEDS).
This conference seeks to advance the academic discourse but also the policy and international developments so that the agreed goal of "Transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner, accelerating action in this critical decade, to achieve net zero by 2050 in keeping with the science" (1/CMA.5 para. 28 d) can move closer to reality. Our interdisciplinary focus acknowledges the international and national contestations of pathways and elements that form just transitions, and the need to find implementable solutions that reflect the social, economic, technological, legal and ethical dimensions.

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