

UNFCCC@30 and Beyond

The UN Climate Change Regime Thirty Years on: A Retrospective and Assessment⁺

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Abstract. This article provides a retrospective assessment of the United Nations climate change regime at age thirty. It begins by reviewing the four key stages in the development of the regime. It then discusses how, despite considerable changes in the world, the climate change regime has stayed much the same, and analyzes why the issue has been so intractable. It introduces three models of how international law might address the climate change problem—a prescriptive, contractual, and facilitative/catalytic model—and argues that the facilitative/catalytic approach reflected in the Paris Agreement is best suited to address the climate change problem. It concludes with a report card on how the regime is doing on its 30th anniversary.

Keywords: Climate change, UNFCCC, global warming, Paris agreement

The UN climate change regime celebrated its thirtieth anniversary earlier this year. During those three decades, there has been much sound and fury – the threatened breakdown of the Bali Conference in 2007 over a mislaid comma; the all-night negotiation of the Copenhagen Accord two years later by twenty-eight world leaders; the narrowly averted collapse of the conference the following day, as one delegate banged her hand so hard on the table in objection to the Accord's adoption that it became bloody; the last minute question about a single “shall” in the text of the Paris Agreement, which nearly scuttled the entire agreement. But does all this drama signify anything? Thus far, despite all of the agreed words on paper, there has been little if any change in the upward trajectory of global greenhouse gas emissions. Is the Paris Agreement likely to change this? After many false starts, is the regime finally on track to successfully address the climate change problem?

This article provides a retrospective assessment of the regime at age thirty. It consists of five parts. Part I reviews the key stages in the development of the UN climate change regime. Part II discusses how, despite considerable changes in the world, the climate change regime has stayed much the same. Part III analyzes why the climate change issue has been so intractable. Part IV introduces three models of how international law might address the climate change problem. Part V concludes with a report card on how the regime is doing on its 30th anniversary.

1. Development of the UN Climate Change Regime

The climate change problem is by now familiar.¹ It is caused by the fact that the Earth's atmosphere is transparent to incoming sunlight, which warms the Earth's surface, but it is not transparent to the heat that the

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1 For an introduction to the basic science of climate change, see John Houghton, *Global Warming: The Complete Briefing* (5th ed. 2015).

Earth re-radiates back into space. The gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs), the most important of which is carbon dioxide. The greenhouse effect is a natural phenomenon, without which the Earth would be uninhabitably cold. The problem is that humans have been increasing concentrations of GHGs in the atmosphere since the beginning of the Industrial Revolution, primarily by burning fossil fuels, producing an enhanced (or “anthropogenic”) greenhouse effect.² The global warming that results will have huge impacts—mostly negative—including sea level rise, extreme weather events, coral bleaching, loss of biological diversity, and harm to human health.³ We are beginning to see some of these impacts already, such as the migration of species northward as the planet warms, the shrinking of Arctic sea ice, and the retreat of glaciers worldwide.

Climate change first came onto the international agenda in the late 1980s. I like to describe the development of the climate change regime since then as a play in four acts:⁴

- (i) Act 1 involved the negotiation and adoption of the United Nations Framework Convention on Climate Change (UNFCCC),⁵ which established the basic system of governance to address the climate change issue.
- (ii) Act 2 focused on the Kyoto Protocol⁶ and ran from 1995, when the Kyoto negotiations began, up to 2005, when the first conference of parties to the Kyoto Protocol met and adopted the detailed rules for how the Protocol would operate.⁷
- (iii) Act 3 involved the effort to make the regime more global, leading to the adoption of the Copenhagen Accord in 2009 and the Cancun Agreements the following year.⁸
- (iv) Act 4, which we are currently in the midst of, centers around the negotiation and implementation of the Paris Agreement.⁹

Let me briefly describe these four acts in a bit more detail. Act 1, as I noted, involved establishing a general system of governance to address climate change and was, thus, constitutional in nature.¹⁰ Among other things, the UNFCCC established:

- (i) The objective and guiding principles of the UN climate change regime.¹¹
- (ii) The regime’s core institutions, including, most importantly, the annual Conference of the Parties (or COP).¹²
- (iii) A system of reporting and review.¹³

Notably, the UNFCCC did not establish binding limits on countries’ emissions of greenhouse gases. That was left for the next phase of the regime, the 1997 Kyoto Protocol. Instead, the UNFCCC simply established a non-binding aim for developed countries to return their emissions to 1990 levels by the end of the decade,

- 2 Scientists have been measuring atmospheric concentrations of CO₂ for more than 60 years; the so-called Keeling Curve shows the steady increase in concentrations during that time span. Joshua P. Howe, *This Is Nature; This Is Un-Nature: Reading the Keeling Curve*, 20 *Env’t Hist.* 286 (2015). Levels of carbon dioxide in the atmosphere can now be traced back hundreds of thousands of years by analyzing bubbles of air trapped in ice cores. Dieter Lüthi et al., High-Resolution Carbon Dioxide Record 650,000-800,000 Years Before Present, 453 *Nature* 379 (2008).
- 3 IPCC, *Climate Change 2022: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (2022).
- 4 On the history of the UN climate change regime, see generally Daniel Bodansky, Jutta Brunnée & Lavanya Rajamani, *International Climate Change Law*, ch. 2 (2017).
- 5 UN Framework Convention on Climate Change, May 9, 1992, 1771 U.N.T.S. 107 (entered into force Mar. 21, 1994) [hereinafter UNFCCC].
- 6 Kyoto Protocol, Dec 10, 1997, 2303 U.N.T.S. 162.
- 7 Marrakesh Accords, Decisions 2-33/CMP.1, UN Doc. FCCC/KP/CMP/2005/8/Add.1-4 (Mar. 30, 2006).
- 8 Copenhagen Accord, Decision 2/CP.15, *Report of the Conference of the Parties on Its Fifteenth Session*, UN Doc. FCCC/CP/2009/11/Add.1 (Mar. 30, 2010).
- 9 Paris Agreement, Dec. 12, 2015, U.N. Doc. FCCC/CP/2015/L.9/Rev.1.
- 10 See generally Daniel Bodansky, *The United Nations Framework Convention on Climate Change: A Commentary*, 18 *Yale J. Int’l L.* 451 (1993).
- 11 UNFCCC, *supra* note 5, arts. 2, 3.
- 12 *Id.*, art. 7.
- 13 *Id.*, art. 12.

namely, the year 2000,¹⁴ as well as an embryonic “pledge and review” mechanism involving descriptions by parties of their climate policies in national reports and, for developed countries, expert review of those reports.

If Act 1 of the climate change regime was constitutional in character, Act 2 was regulatory. It involved the elaboration in the Kyoto Protocol of quantitative targets to limit national greenhouse gas emissions.¹⁵ Three features of the Kyoto Protocol are worth highlighting:

- (i) First, its emissions targets were legally binding.¹⁶
- (ii) Second, they applied only to the countries specifically listed in an annex (often equated with “developed countries”), not to developing countries such as China, India, Brazil, and South Africa.
- (iii) Third, parties could achieve their emissions targets using various market mechanisms such as international emissions trading.¹⁷

Because the negotiating mandate for the Kyoto Protocol provided for the elaboration of emissions targets only for developed countries—and expressly excluded any new commitments for developing countries¹⁸—the primary axis of the negotiation was within the developed world, between the United States and the European Union. I was involved at the tail end of these negotiations, as the US State Department’s Climate Change Coordinator from 1999–2001. In explaining the Kyoto Protocol, we characterized the outcome as “EU targets–US architecture.” The emissions targets in the Protocol reflected the European Union position and were stronger than the United States wanted.¹⁹ But the architecture of the agreement was along the lines the United States favored, namely, a flexible approach that allowed countries to meet their emissions targets through market-based approaches such as emissions trading and the Clean Development Mechanism.

The problem with the Kyoto Protocol was that it covered only about a fifth of global emissions,²⁰ both because the United States refused to join and because it did not address the emissions of developing countries, which by the mid-2000s accounted for a majority of global GHG emissions. So Act 3 of the UN climate regime focused on making the regime more global. It ran from about 2005 to 2010 and culminated in the adoption of the 2009 Copenhagen Accord and its formal incorporation into the regime the following year in Cancun.²¹ The primary axis of the negotiations during this phase was between developed and developing countries. In contrast to the Kyoto Protocol, which set emissions targets from the top-down, through international negotiations, the Copenhagen Accord took a bottom-up approach, allowing each country to decide for itself what it wanted to do. The Copenhagen pledges also differed from the Kyoto targets in that they were political rather than legal commitments.²²

Many were disappointed with the Copenhagen Accord because they hoped and expected the Copenhagen outcome to be a treaty. But although only a political agreement, the Copenhagen Accord was nevertheless extremely important for laying the foundations of the 2015 Paris Agreement, which has been the focus of Act 4 of the climate regime.

The Paris Agreement was negotiated between 2011 and 2015 and entered into force less than a year later—an extremely short time span by international law standards. In essence, Paris represented an effort to find a middle ground—what some people called a “goldilocks solution”—between two alternative approaches. On the one hand, the Kyoto Protocol sharply differentiated between developed and developing countries and established internationally-negotiated, legally-binding emissions limitation targets for the former. On the other hand, the Copenhagen Accord established a bottom-up pledging process that was not legally binding and applied to all

14 *Id.*, art. 4.2.

15 *See generally* Sebastian Oberthür & Herman E. Ott, *The Kyoto Protocol: International Climate Policy for the 21st Century* (1999).

16 Kyoto Protocol, *supra* note 6, art. 3.1.

17 *Id.* arts. 6, 12, 17.

18 Berlin Mandate, Decision 1/CP.1, *Report on the Conference of the Parties on Its First Session*, UN Doc. FCCC/CP/1995/7/Add.1 (June 6, 1995).

19 In Kyoto, the United States sought an emissions stabilization target for itself but ended up with a -7% target.

20 European Commission, *Kyoto 1st Commitment Period (2008-2012)*, https://ec.europa.eu/clima/eu-action/climate-strategies-targets/progress-made-cutting-emissions/kyoto-1st-commitment-period-2008-12_en.

21 Cancun Agreements, Decision 1/CP.16, *Report of the Conference of the Parties on Its Sixteenth Session*, UN Doc. FCCC/CP/2010/7/Add.1, at 2 (Mar. 15, 2011).

22 *See generally* Daniel Bodansky, *The Copenhagen Climate Change Conference: A Postmortem*, 104 *Am. J. Int'l L.* 230 (2010).

parties. The Kyoto approach was strong on rigor but weak on participation. It was legally binding, with detailed reporting, review, and compliance provisions, but few major emitters bought into the approach.²³ The Copenhagen Accord, in contrast, was weak on rigor but strong on participation. It was non-binding and did not impose any discipline on countries' pledges; as a result, it was unclear in some cases what countries were saying they would do. But it enjoyed far more participation than the Kyoto Protocol. So the goal in negotiating the Paris Agreement was to develop a hybrid approach that would have more rigor than the Copenhagen Accord but would still attract broad participation.

What I call the "Paris Paradigm" has five elements:²⁴

First, it elaborates a variety of goals, including:

- (i) A temperature goal to hold temperature increase above pre-industrial levels to "well below" 2°C and to aspire towards limiting temperature increase to 1.5°C.²⁵
- (ii) An emissions goal to peak global GHG emissions as soon as possible and to achieve a balance between emissions and removals (that is, zero net emissions) in the second half of the century.²⁶
- (iii) An adaptation goal to foster climate resilience.²⁷
- (iv) A finance goal to make financial flows consistent with low greenhouse gas emissions and climate-resilient development.²⁸

Second, the Paris Agreement establishes a bottom-up pledging process in which, every five years, each party formulates and communicates a "nationally determined contribution" (NDC) to help achieve the agreement's mitigation goals. Although the agreement establishes a normative expectation that developed countries should continue to adopt economy-wide, absolute emissions targets (while encouraging developing countries to move in that direction over time),²⁹ parties are legally permitted to decide for themselves the type, scope, and stringency of their contributions, as the phrase "nationally determined" indicates. Moreover, NDCs are not legally binding—they are "contributions" rather than "commitments."

Third, instead of legal bindingness, the Paris Paradigm relies on transparency to promote accountability, following Justice Brandeis' admonition that sunlight is the best disinfectant.³⁰ Although parties have no legal obligation to achieve their NDCs, they are obligated to provide information both *ex ante* and *ex post*, so that it is clear what they are pledging to do and whether they are making progress in achieving their pledges. *Ex ante*, each party must provide sufficient information to ensure that its NDC is clear, transparent, and understandable.³¹ *Ex post*, it must account for its NDC and report biennially on its progress in implementing and achieving its NDC.³² To further promote accountability, the Paris Agreement establishes several review mechanisms, including a technical expert review of national reports, peer reviews by parties of one another's reports, and an implementation and compliance mechanism administered by an expert committee.³³ These transparency and review mechanisms help enable the global community to react to parties' pledges and performance and to apply soft pressure on countries to do more.

Fourth, to promote stronger ambition over time, the Paris Agreement establishes a so-called "ratchet mechanism" or "ambition cycle." When they adopted the Paris Agreement, parties acknowledged that their initial NDCs did not put the world on a pathway to achieving the agreement's "well below 2°C" temperature

23 As noted earlier, the Kyoto Protocol's emissions targets covered only about a fifth of global emissions. See *supra* note 20 and accompanying text.

24 Daniel Bodansky, *The Paris Climate Change Agreement: A New Hope*, 110 *Am. J. Int'l L.* 288 (2016).

25 Paris Agreement, *supra* note 9, art. 2.1(a).

26 *Id.* art. 4.1.

27 *Id.* art. 2.1(b).

28 *Id.* art. 2.1(c).

29 *Id.* art. 4.4.

30 Louis Brandeis, *What Publicity Can Do*, *Harper's Weekly* (Dec. 20, 1913).

31 Paris Agreement, *supra* note 9, art. 4.8.

32 *Id.* art. 13.7.

33 *Id.* arts. 13.11-13.12, 15.

goal and that they would need to ratchet up their level of ambition over time.³⁴ Accordingly, the Paris Agreement establishes an iterative process aimed at focusing attention on the gap between what countries say they are going to do and what they need to do to achieve the agreement's goals. Every five years, beginning in 2023, parties will undertake a "global stocktake" to evaluate how well the world is doing in meeting the Paris Agreement's goals.³⁵ Then, informed by that stocktake, parties are to go back and submit their next round of NDCs.³⁶

Fifth, the Paris Agreement differentiates the obligations of developed and developing countries—an issue that has plagued the climate negotiations from the beginning—in a more nuanced manner. Kyoto essentially established two categories of countries—countries that had emission targets (Annex I parties) and those that did not (non-Annex I parties). Since amendments to the annexes required a three-quarters majority vote as well as the country's written consent, changing the category into which a country fell was politically impracticable, even if its circumstances changed.³⁷ In contrast, the Paris Agreement takes a much less stark approach to differentiation, addressing the issue in different ways in its provisions on mitigation, finance, and transparency. With respect to mitigation, the Paris Agreement establishes essentially the same obligations for all countries but allows countries to self-differentiate their mitigation actions through their nationally determined contributions.³⁸ With respect to transparency, the Paris Agreement establishes a common framework but provides some flexibility for developing countries that need it because of a lack of capacity.³⁹ Finance is the one area where the Paris Agreement continues to recognize that developed and developing countries should have different obligations: it requires developed countries to provide financial support but only encourages other countries to do so.⁴⁰

2. The More Things Change....

In considering the development of the UN climate change regime over the last 30 years, it is worth noting how much the world has changed during this period:

- (i) Our scientific understanding of climate change is much better. In 1990, when the Intergovernmental Panel on Climate Change (IPCC) issued its First Assessment Report,⁴¹ it emphasized the uncertainties in climate science, including uncertainties about the timing, magnitude, and regional patterns of climate change. It said that the warming to date was "broadly consistent with predictions of climate models" but was also consistent with natural variability.⁴² It found "no firm evidence" that climate had become more variable or that sea-level rise had accelerated.⁴³ And it found that unequivocal detection of human-induced climate change was not likely in the near-term future.⁴⁴ Contrast those conclusions with the IPCC's most recent report, which concludes that human influences are unequivocally warming the climate at a rate unprecedented for at least 2000 years, that this human-induced climate change is already affecting many

34 Adoption of the Paris Agreement, Decision 1/CP.21, para. 17, *Report of the Conference of the Parties on Its Twenty-First Session*, UN Doc. FCCC/CP/2015/10/Add.1 (Jan. 29, 2016).

35 Paris Agreement, *supra* note 9, art. 14.

36 *Id.* arts. 4.9, 14.3.

37 Kyoto Protocol, *supra* note 6, art. 21.4, 21.7. As a result, Singapore is still considered a "developing" country, even though it has become one of the richest countries in the world on a per capita income basis, while much poorer countries in Eastern Europe are still considered "developed" countries and are subject to stronger requirements.

38 In addition, the Paris Agreement establishes different normative expectations for developed and developing countries. In particular, Article 4.4 provides that developed countries "should" take the lead by undertaking economy-wide absolute emission reduction targets, while developing countries are merely "encouraged" to "move over time" towards such targets. Paris Agreement, *supra* note 9, art. 4.4.

39 *Id.* art. 13.2.

40 Compare *id.* art. 9.1, with *id.* art. 9.2.

41 IPCC, *Climate Change: The IPCC Scientific Assessment* (J.T. Houghton, G.J. Jenkins & J.J. Ephraim eds., 1990).

42 *Id.* at xii.

43 *Id.* at xii, 261, 278.

44 *Id.* at xii, xxvii.

weather and climate extremes in every part of the world, and that many of these changes are going to be irreversible for centuries or millennia.⁴⁵

- (ii) Technology has also changed significantly—in particular, the cost of renewables. Growth in the generation of electricity from wind and solar has far exceeded projections, due to the dramatic decline in the price of solar panels and wind turbines.⁴⁶
- (iii) Global politics have been transformed. In 1992, many people described the world as unipolar, with the United States the clearly dominant power.⁴⁷ Since then, China’s economy has grown considerably, increasing its political weight.⁴⁸ As a result, today we are living in a much more multipolar world.⁴⁹
- (iv) Finally, domestic politics have changed, particularly in the United States. Back in 1992, a Republican president, George H.W. Bush, said he would combat the greenhouse effect with the “White House effect”, he signed the UNFCCC at the Rio Conference, the Senate approved the agreement without objection, and the US became one of the very first countries to ratify the Convention. Contrast that with today, when it is unlikely the Senate would even approve the UNFCCC, much less do so without objection. Between 1997 and 2016, the partisan gap in the United States on the climate change issue increased from 4% to 34% on the question of whether the effects of global warming have begun, and from 11% to 33% on whether climate change is a serious threat.⁵⁰ By 2016, climate change politics had become so polarized that President Trump thought it was in his political interest—it would be a political winner—to pull the United States out of the Paris Agreement, which he did in November 2021, shortly before leaving office.⁵¹

Despite all of these changes—changes in climate science, technology, and both international and domestic politics—the climate change negotiations have remained similar in their fundamental dynamics. The issues, positions, and approaches all remain much the same. Indeed, I have often thought that if one were plopped down in the middle of the negotiations and listened to the debate, one might be unable to determine whether it was 1992 or 2022.

To begin with, there has been significant continuity in the basic issues in the negotiations:

- (i) To what extent should the regime be legally binding?
- (ii) To what extent should it prescribe what countries must do?
- (iii) How should the climate change regime address the issues of equity and burden sharing, including through differentiation of the commitments of developed and developing countries?

These were central questions back in 1991–1992 when the UNFCCC was first negotiated. They continued to be central to the Paris Agreement negotiations from 2011–2015. And they still occupy center stage today.⁵²

The positions of different countries and negotiating groups also remain largely unchanged:

- (i) The European Union still favors legally-binding, internationally- negotiated emission targets.
- (ii) The United States still favors a flexible, market-oriented approach that allows countries a choice of domestic measures, minimizes economic costs, and avoids sharp differentiation between developed and developing countries.

45 IPCC, *Climate Change 2021: The Physical Science Basis*. Contribution of Working Group I to the Sixth Assessment Report of the International Governmental Panel on Climate Change, SPM-7, SPM-10, SPM.28 (2021).

46 For example, the price of solar panels has declined by more than 99% since 1976. Max Roser, *Why Did Renewables Become So Cheap So Fast?*, *Our World in Data* (2020), <https://ourworldindata.org/cheap-renewables-growth>. See generally IPCC, *Summary for Policymakers*, in *Climate Change 2022: Mitigation of Climate Change*, Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, B4, 15-16 (2022).

47 Unipolar Politics: Realism and State Strategy after the Cold War (Ethan B. Kapstein & Michael Mastanduno eds., 1999).

48 China’s GDP has grown from \$492 billion in 1992 to more than \$17 trillion in 2021 in constant dollars. *Gross Domestic Product (GDP) at Current Prices in China from 1985 to 2021 with Forecasts Until 2027*, statista (2022), <https://www.statista.com/statistics/263770/gross-domestic-product-gdp-of-china/>.

49 Dilip Hiro, *After Empire: The Birth of a Multipolar World* (2012).

50 Riley E. Dunlap, Aaron M. McCright & Jerrod H. Yarosh, *The Political Divide on Climate Change: Partisan Polarization Widens in the U.S.*, 58 *Env’t: Sci. & Pol’y for Sustainable Dev.* 4, 8, 11 (2016).

51 Elaine Kamarck, *The Changing Politics of Climate Change*, Brookings Institution (Sep. 23, 2019), <https://www.brookings.edu/research/the-challenging-politics-of-climate-change/>.

52 Daniel Bodansky & Lavanya Rajamani, *The Issues that Never Die*, 12 *Carbon & Climate L. Rev.* 184 (2018).

- (iii) The Group of 77 and China (G77)—the developing country negotiating bloc—although fragmented on many issues, still focuses on the issues of equity and financial support and pushes for differentiation of countries’ commitments based on their historical responsibilities.

Finally, how the UN climate change regime answers these questions is also largely similar to thirty years ago, with the Kyoto Protocol representing a temporary detour, which I will come back to in a moment. Both the 1992 UNFCCC and the 2015 Paris Agreement:

- (i) Are treaties, with some non-legally-binding provisions.
- (ii) Reflect a largely bottom-up architecture that allows countries to define for themselves what they are going to do to address the climate change issue.
- (iii) Take a differentiated approach to the issue of differentiation, with different approaches for mitigation, finance, and transparency.

3. Climate change as a Super Wicked Problem

Why hasn’t there been more progress in the last 30 years on the climate change issue? Why is the current regime so similar to its forebearers? One answer is that climate change is a “super wicked” problem.⁵³ It is extremely difficult to address for several reasons:

- (i) It is what I call a “Full Monty” problem. It requires changes in virtually every sector of the economy, because virtually every sector contributes to or is affected by climate change.
- (ii) It is a procrastination problem. We need to reduce emissions now in order to prevent harms from occurring centuries in the future. Generally, people are present-biased: they have trouble incurring near-term costs to achieve long-term benefits.⁵⁴
- (iii) It is a complex and uncertain problem. Scientific uncertainties have been significantly reduced, but many still remain—particularly about the regional impacts of climate change.
- (iv) It is a distributional problem. In addressing climate change, many countries will gain, but others may lose—for example, countries in the Middle East that rely on oil exports for a significant part of their economy.
- (v) It is an equity problem. The countries most responsible for causing the problem are not the ones that will suffer the greatest damages. For many developing countries, it is not enough for the climate change regime to limit climate change going forward; it must also promote climate justice by providing compensation for the loss and damage they suffer as a result of climate change.⁵⁵
- (vi) It is an anarchy problem. There is no central authority that can issue rules.⁵⁶

Individually, each of these features of the climate change problem creates obstacles; in combination, they make the issue highly intractable. Thus, the lack of progress over the past 30 years perhaps should not be surprising.

4. Three Models of International Law

Given these difficulties, what role can international law play in addressing climate change? In considering this question, it is useful to contrast three models of international law: a prescriptive model, a contractual model, and a catalytic/facilitative model.

53 Richard J. Lazarus, *Super Wicked Problems and Climate Change*, 94 *Cornell L. Rev.* 1153 (2009).

54 Robert H. Strotz, *Myopia and Inconsistency in Dynamic Utility Maximization*, 23 *Rev. Econ. Stud.* 165 (1956); Alberto Bisin & Kyle Hyndman, *Present-Bias, Procrastination and Deadlines in a Field Experiment*, 199 *Games and Econ. Behavior* 339 (2020).

55 Antonin Potter et al., *A Survey of Global Climate Justice: From Negotiation Stances to Moral Stakes and Back*, 11 *Int’l Rev. Env’t & Res. Econ.* 1 (2017); Harriet Thew, Lucie Middlemiss & Jouni Paavola, “Youth Is Not a Political Position”: Exploring Justice Claims-Making in the UN Climate Change Negotiations, 61 *Glob. Env’t Change* 102036 (2020).

56 Jack Donnelly, *The Discourse of Anarchy in International Relations*, 7 *Int’l Theory* 393 (2015).

4.1. *Prescriptive Model*

The prescriptive model conceptualizes international law as a hammer, like domestic criminal law, which prescribes and enforces rules on states. It may produce winners and losers, making some countries better off and others worse off. But states are bound, regardless, because the rules do not require state consent. For example, suppose the duty to prevent significant transboundary harm implies that Western states must compensate poor developing countries for their loss and damage due to climate change. In that case, that's "the law," even though developed countries like the United States might not like it.

The UN Security Council's response to the terrorist attacks on 9/11 reflects the prescriptive model of international law. In the wake of 9/11, the Security Council adopted a series of decisions to combat terrorist financing, which are legally binding on UN member states pursuant to Article 25 of the UN Charter and are backed by the Security Council's enforcement powers under Chapter VII of the Charter. The regime has been comparatively effective because it is supported by the five permanent members of the Security Council (the United States, China, Russia, the United Kingdom, and France).⁵⁷

In my view, proposals to seek an advisory opinion on climate change from the International Court of Justice (ICJ)⁵⁸ or the International Tribunal for the Law of the Sea (ITLOS)⁵⁹ implicitly assume a prescriptive model of international law. They reflect frustration with the slow and inadequate pace of the international climate change negotiations. In essence, an ICJ or ITLOS advisory opinion would provide a means to bypass the negotiations by allowing the ICJ or ITLOS simply to declare what the law requires regarding climate change.

Applied to climate change, the prescriptive model, in my view, raises two issues. First, it raises issues of legitimacy, given the central role of state consent in international law.⁶⁰ For the past 30 years, states have engaged in virtually continuous negotiations to develop rules of international law addressing climate change. Would it be appropriate for a court to step in now and say, actually, preexisting rules of international law already address the climate change issue? International tribunals such as the ICJ are supposed to find the law, not make it. But the rules that might provide the basis for an advisory opinion on climate change—such as the duty to use due diligence to prevent significant transboundary pollution—are extremely general and do not provide clear guidance about what states are obligated to do. So an advisory opinion would necessarily involve significant judicial discretion. Of course, legal realism teaches that the law is not something that can simply be found. All judicial decisionmaking involves an element of creativity. But there is a big difference between filling gaps interstitially—"confined from molar to molecular motions," as Oliver Wendell Holmes, Jr., memorably put it⁶¹—and acting as a "knight errant, roaming at will in pursuit of [the judge's] own ideal of beauty or of goodness."⁶² Why should the ICJ or ITLOS be able to determine what states are required to do on an issue as fundamental and politically contentious as climate change, particularly when the putative legal norms in question (the duty to prevent, the precautionary principle, inter-generational equity) are susceptible to many different interpretations?

Second, in addressing climate change, effectiveness poses perhaps an even bigger problem than legitimacy for the prescriptive model. Proponents of an ICJ advisory opinion seem to assume that an advisory opinion will help induce countries to reduce their emissions. But is it likely that an ICJ advisory opinion would actually change the behavior of big emitters such as the United States, China, India, Russia, or Brazil? International law generally lacks enforcement tools, in the absence of big power agreement. And the ability of the ICJ to shape normative expectations would be limited if the legitimacy of an advisory opinion were open to question, as suggested above.⁶³ So, in addressing climate change, an ICJ advisory opinion would be a very small hammer, with very

57 See generally Nicholas Ryder, *The Financial War on Terrorism* (2015).

58 Melanie Burton, *Vanuatu to Push International Court for Climate Change Opinion*, Reuters (Sept. 25, 2021), <https://www.reuters.com/world/asia-pacific/vanuatu-push-international-court-climate-change-opinion-2021-09-25/>.

59 Annalisa Savaresi, Kati Kulovesi & Harro van Asselt, *Beyond COP26: Time for an Advisory Opinion on Climate Change?* EJIL:Talk! (Dec. 17, 2021), <https://www.ejiltalk.org/beyond-cop26-time-for-an-advisory-opinion-on-climate-change/>.

60 See Daniel Bodansky, *The Role of the International Court of Justice in Addressing Climate Change: Some Preliminary Reflections*, 49 *Arizona State L.J.* 689, 701–05 (2017).

61 *Southern Pacific v. Jensen*, 244 U.S. 205, 221 (1917) (Holmes, J., dissenting).

62 Benjamin N. Cardozo, *The Nature of the Judicial Process* 141 (1921).

63 Some scholars argue that questions about the legitimacy of the Security Council's decisions to combat anti-terrorism may also ultimately undermine their effectiveness. Andrea Bianchi, *Assessing the Effectiveness of the UN Security Council's Anti-Terrorism Measures:*

little force, trying to drive an extremely large nail, namely, the political, economic, and social behavior of states. The record of compliance by big powers with legally-binding rulings by international tribunals has been poor.⁶⁴ So what reason is there to think that they would heed an advisory opinion on climate change? Strategies that involve using international law to compel states to change their climate change policies seem unlikely to prove successful.

4.2. Contractual Model

A second model of international law views it as contractual. Like contracts, treaties memorialize mutually beneficial, reciprocal exchanges of promises. States negotiate and enter into treaties because treaties leave them better off: the cost of complying with a treaty is outweighed by the benefit of compliance by other treaty parties. This is the basis of international agreements in many areas, including arms control and trade.⁶⁵

In the environmental realm, the Montreal Protocol⁶⁶ is a paradigmatic example of the contractual model of international law. Stratospheric ozone depletion is a collective action problem: individual states cannot solve it on their own; a solution requires all states to reduce their consumption and production of ozone-depleting substances. But each individual country has an incentive to free ride on the efforts of others. In this context, the function of international agreements like the Montreal Protocol is to establish credible commitments, so that participants have an assurance that their actions to protect the ozone layer will be reciprocated by others and that they will therefore be better off with an agreement than without it. International agreements can help make commitments more credible by requiring ratification to ensure domestic buy-in, establishing reporting and review mechanisms to promote transparency, and imposing consequences for non-compliance to deter defection.

The contractual model of international law has worked very well in addressing the stratospheric ozone depletion problem. The Montreal Protocol has led to a huge reduction in the production and consumption of ozone depleting substances and is often described as the most successful environmental agreement to date.⁶⁷ Not surprisingly, when climate change first emerged as a significant political issue in the late 1980s, many people looked to the ozone regime—which had been developed only a few years earlier—as a model.⁶⁸

The eventual result of this path dependency was the 1997 Kyoto Protocol, which dealt with climate change as a collective action problem and was loosely modeled on the Montreal Protocol. In essence, the Kyoto Protocol served as a contract between developed countries to mutually reduce their emissions. The problem was that, unlike the Montreal Protocol, the Kyoto Protocol didn't get much buy-in from states. The United States never joined, and the Protocol did not establish any emission targets for developing countries such as China and India. By the time negotiations began to develop a new set of emissions targets for the post-2012 period, few countries were willing to participate.

Why hasn't the contractual approach been more successful in addressing climate change? In my view, the reason is that the contractual model conceptualizes the climate change problem in the wrong way.⁶⁹ It forgets Tip O'Neill's famous adage, all politics is local. True, climate change is a collective action problem, like stratospheric ozone depletion. But it involves more immediate and salient issues of domestic politics due to the super wicked

The Quest for Legitimacy and Cohesion, 17 *Eur. J. Int'l L.* 881 (2006); Doron Goldbarsht & Hannah Harris, *Transnational Regulatory Networks: A Study of Compliance and Legitimacy in Counter-Terrorist Financing*, 27 *J. Fin. Crime* 855 (2020).

64 For example, the United States disregarded the ICJ ruling in the *Nicaragua* and *Avena* cases, China ignored a binding arbitral decision in the *South China Sea* case, and Russia failed to comply with an interim order in the *Arctic Sunrise* case. See Bodansky, *supra* note 60, at 705.

65 See generally Andrew Guzman, *How International Law Works*, ch. 4 (2010).

66 Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, 1522 U.N.T.S. 3.

67 Mario Molina & Durwood Zaelke, *The Montreal Protocol: Triumph by Treaty*, Our Planet, UN Environment Programme (Nov. 20, 2017), <https://www.unep.org/news-and-stories/story/montreal-protocol-triumph-treaty>; Hannah Ritchie & Max Roser, *Ozone Layer*, Our World in Data (June 2018), <https://ourworldindata.org/ozone-layer>.

68 Daniel Bodansky, A Tale of Two Architectures: The Once and Future U.N. Climate Change Regime, 43 *Ariz. St. L.J.* 697, 699-700 (2011). For example, see Peter M. Morrisette, The Montreal Protocol: Lessons for Formulating Policies for Global Warming, 19 *Policy Stud. J.* 152 (1991); Richard Elliot Benedick, The Diplomacy of Climate Change: Lessons from the Montreal Ozone Protocol, 19 *Energy Policy* 94 (1991).

69 See Michaël Akin & Matto Mildemberger, Prisoners of the Wrong Dilemma: Why Distributive Conflict, Not Collective Action, Characterizes the Politics of Climate Change, 20 *Glob. Env't Pol.* 4 (2020).

features that I discussed earlier: climate change implicates all human activities and therefore has huge implications for a country's economic sovereignty; it is complex and uncertain; and it produces domestic winners and losers. As a result, the climate change issue is driven much more by domestic politics than by international politics.⁷⁰ What a country is willing and able to do is a function of its internal political dynamic, not what other states reciprocally pledge to do, as was true of the ozone depletion problem.⁷¹

4.3. *Catalytic/Facilitative Model*

So where does that leave us? If international law cannot play a prescriptive or contractual role in addressing climate change, what role can it play? One possible answer is a catalytic/facilitative function.⁷² The assumption of the catalytic/facilitative model of international law is that states have at least some degree of willingness to address an issue but are limited by their domestic politics. The role of international law, in this context, is not to force change (as in the prescriptive model) or to memorialize a reciprocal exchange of commitments (as in the contractual model). Rather, the function of international governance is to (a) focus international attention on an issue, (b) encourage a learning process that helps develop new normative expectations and new perceptions of self-interest, (c) empower domestic constituencies that favor doing more; (d) focus soft pressure on laggard states, and (e) enhance the capacity of states to act. International law can serve these functions by articulating common norms, promoting transparency, creating political moments to focus attention and pressure, and providing assistance to countries that would like to do more but lack the wherewithal.

This catalytic model of international law is reflected in the Paris Agreement in several ways:

- (i) Its temperature and emission goals set new normative expectations and define a new “logic of appropriateness”⁷³ for the international community.
- (ii) Its ambition cycle creates political moments every five years that focus public attention on the climate change issue, empower domestic constituencies, and help catalyze more ambitious national action.
- (iii) Its requirement that parties formulate and submit nationally determined contributions helps lock-in domestic policies. The theory is that, once a country has pledged to do something to reduce emissions, it becomes more difficult to change course later on. In effect, NDCs makes national policies stickier.
- (iv) Its provisions on financial and technical assistance help make possible stronger action by developing countries.

This is the logic of the Paris Paradigm: define ambitious goals, catalyze stronger action, facilitate and lock-in domestic policies. This logic has its limitations. It depends on states being predisposed to act, and hence has difficulty addressing issues that call for self-sacrifice by states, such as providing compensation for the loss and damage suffered by vulnerable developing states. But it is perhaps the best that international law can do in addressing a problem so heavily intertwined with domestic politics as climate change.

5. Evaluating the Paris Agreement

5.1. *Relevant Developments*

Of course, the model of international law reflected in the Paris Paradigm is not brand new. As discussed earlier, the UNFCCC took a similar approach. In particular, its pledge-and-review process also tried to catalyze and lock-in domestic action.

70 Bodansky, *supra* note 68, at 710; Akin & Mildenerger, *supra* note 69.

71 For an early critique of the Kyoto Protocol along similar lines, see David G. Victor, *The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming* (2001).

72 See Thomas Hale, *Catalytic Cooperation*, 20 *Glob. Env't Pol.* 73 (2020).

73 A “logic of appropriateness” evaluates action based on normative beliefs about appropriate behavior, in contrast to a “logic of consequences,” which evaluates action based on instrumental calculations about the action's effects. James G. March & Johan P. Olsen, *Rediscovering Institutions: The Organizational Basis of Politics* (1989) (contrasting a “logic of appropriateness,” which focuses on what is considered appropriate behavior, with a “logic of consequences,” which focuses on an action's effects).

What reason is there to think that the Paris Agreement might be more successful than the UNFCCC in addressing climate change? Several developments over the last 30 years are at least modestly encouraging:

- (i) The climate change issue has become more politically salient.
- (ii) The Paris Agreement is more global than its predecessors.
- (iii) It has greater rigor than the UNFCCC, albeit less than the Kyoto Protocol.
- (iv) The economic costs of addressing climate change have fallen, due to the falling price of renewables.
- (v) Non-state actors are playing an increasingly active role.
- (vi) The US-Chinese relationship has become more constructive.

Let us consider these in turn. First, climate change has become more politically salient. Back in 1991-1992, when the Framework Convention was negotiated, the lead US negotiator was a Deputy Assistant Secretary of State, Robert Reinstein—a third-tier official in the State Department bureaucracy. Today, the US lead negotiator is John Kerry, a former senator and secretary of state who came very close to becoming president. Kerry is a global figure who commands a very different level of attention than Reinstein. The elevation of US representation in the negotiations reflects a more general trend. In recent years, states have not left the climate change negotiations only to government officials; national leaders have become directly involved. Most dramatically, in Copenhagen, twenty-eight heads of state or government personally engaged in round-the-clock negotiations over several days to draft the Copenhagen Accord—perhaps the first time since Versailles that national leaders had directly negotiated an agreement.

Second, the Paris Agreement is more global than its predecessors. Virtually every country in the world has become a party. The same was true of the UNFCCC, but it required very little of developing countries, so its global membership is less significant. The Paris Agreement, by contrast, requires all parties to submit NDCs, to submit reports on their emissions and on their progress in achieving their NDCs, and to have those reports reviewed both by technical experts and by each other. So it is a much more globally inclusive regime than, not only the Kyoto Protocol, but also the UNFCCC.

Third, the Paris Agreement includes several new elements, discussed above, to bolster the UNFCCC's catalytic logic:

- (i) Its temperature and emissions goals⁷⁴ and its expectation that successive NDCs will represent a progression and reflect the highest possible ambition⁷⁵ establish stronger normative expectations than the quite general language of the UNFCCC.
- (ii) Its five-year ambition cycle will regularly focus the world's attention on the adequacy (or inadequacy) of international efforts and on what more countries can and should be doing.
- (iii) Its information requirements and enhanced transparency framework will help ensure that countries are not able to escape scrutiny through vague pledges or inadequate data.

Whether these elements will suffice to make the Paris Agreement successful remains an open question. But they at least make the Paris Agreement a fair test of the catalytic model.

Fourth, as noted earlier, the declining cost of renewables makes it easier economically for countries to take aggressive action to combat climate change.

Fifth, non-state action has become a central element of the regime. In 2014, Peru and France established the climate action portal, which allows non-state actors to register their initiatives. As of June 2022, more than 25,000 non-state actors had done so. These include businesses, investors, regions, cities, and sub-national governmental units such as cities and states in the United States. The Paris Agreement decision further encouraged non-state initiatives by creating two "climate champions," tasked with encouraging and coordinating non-state action.⁷⁶

Finally, the US-Chinese relationship has become closer and more productive. This represents a big change in the negotiating process. Back in 2009, the United States and China were often antagonistic during the negotiation of the Copenhagen Accord. Indeed, some claimed that China played a largely obstructionist role at the Copenhagen

74 Compare Paris Agreement, *supra* note 9, arts. 2.1(a), 4.1 (setting goals of limiting temperature increase to 2/1.5°C and achieving net zero emissions in the second half of the century), with UNFCCC, *supra* note 5, art. 2 (setting a very general objective to stabilize atmospheric concentrations of GHGs at safe levels).

75 Paris Agreement, *supra* note 9, art. 4.3.

76 Adoption of the Paris Agreement, *supra* note 34, para. 121.

Conference.⁷⁷ In contrast, in the run-up to the Paris Conference, the United States and China worked closely together.⁷⁸ Many regard their relationship as critical to the adoption of the Paris Agreement. Since then, despite the downturn in US-Chinese relations on other issues—trade in particular—the US-Chinese relationship on climate change has remained strong. At the 2021 Glasgow COP, for example, the China-US Joint Declaration issued during the second week of the conference helped revitalize and insert new momentum into the proceedings.⁷⁹

5.2. *The Glasgow Conference: Testing the Paris Paradigm*

The 2021 Glasgow Conference was the first big test of the Paris Paradigm. As discussed earlier, the paradigm is built on the idea that states will ratchet up their level of ambition over time. Although the initial round of NDCs pledged in Paris were clearly insufficient to achieve the Paris Agreement’s goals, the five-year ambition cycle will lead to stronger NDCs in the future. That, at least, is the theory.⁸⁰

This process was supposed to begin in 2019, following completion of the Paris rulebook (that is, the detailed rules for how the Paris Agreement will operate). The Paris rulebook negotiations largely wrapped up in 2018, with the adoption of a series of decisions at COP 24 in Katowice⁸¹ (although the negotiation of the rules for the Paris market mechanisms dragged on for another three years). But the hope that 2019 would be the “year of ambition” was not realized, in part because political turmoil in Chile forced the 2019 COP to be moved from Lima to Madrid. Progress on ambition was further delayed by COVID-19, which forced the 2020 COP to be postponed until 2021. The Glasgow Conference was thus the first real test of whether the Paris Agreement will catalyze decisions by states to strengthen their NDCs to align with the agreement’s temperature and emissions goals.

In assessing Glasgow, two initial points about climate COPs need to be understood. First, like many recent climate COPs, the Glasgow Conference was not only a meeting of the parties to the three climate agreements, which took care of business under those agreements; it was also a mega-event, with tens of thousands of participants representing companies, environmental NGOs, civil society organizations, the media, and academic institutions. As mega-events, climate COPs have several different elements:

- (i) They are political forums, where high-level officials meet.
- (ii) They are trade fairs, where companies tout their products and initiatives.
- (iii) They are networking opportunities for stakeholders, including environmental, women’s, and indigenous groups.
- (iv) They are political rallies, where activists organize demonstrations.
- (v) They are academic conferences, where scholars present their research at side events.

At many recent COPs, these side activities have become the main event, to some degree overshadowing the inter-governmental negotiations. In assessing the extent to which the Glasgow Conference served a catalytic/facilitative function, it is therefore important to consider not only the official agenda of the meeting of the parties, but also the unofficial agenda, which in many respects was more consequential.

Second, the Glasgow Conference, broadly conceived, involved not simply the two-week meeting held in November 2021, but the year-long process leading up to that meeting, involving many other meetings and activities.

77 See, e.g., Mark Lynas, How Do I Know China Wrecked the Copenhagen Deal? I Was in the Room, *The Guardian* (Dec. 22, 2009).

78 Xiasheng Gao, China’s Evolving Image in International Climate Negotiation: From Copenhagen to Paris, 4 *China Q. Int’l Strategic Stud.* 213 (2018) (in Copenhagen, China perceived as “dead weight” or even a “wrecker,” while in Paris, China’s leadership seen as indispensable for conclusion of the Paris Agreement).

79 U.S. Dep’t of State, US-China Joint Glasgow Declaration on Enhancing Climate Action in the 2020s (Nov 10, 2021), <https://www.state.gov/u-s-china-joint-glasgow-declaration-on-enhancing-climate-action-in-the-2020s/>.

80 See *supra* notes 34-36 and accompanying text.

81 Decisions 3-20/CMA.1, UN Doc. FCCC/PA/CMA/2018/3/Add.1-2, *Report of the Conference of the Parties on Its Twenty-Fourth Session*, UN Doc. FCCC/CP/2018/10 (Mar. 19, 2019).

5.3. A Paris Report Card

Based on the outcomes of the Glasgow process, how is the UN climate change regime doing at age 30? Is the facilitative/catalytic model reflected in the Paris Agreement working? The following is a brief report card, grading the regime's success on five key elements of the catalytic/facilitative model:

- (i) Shaping normative expectations.
- (ii) Creating political moments.
- (iii) Increasing ambition.
- (iv) Providing financial support.
- (v) Reducing emissions, which of course is the bottom line.

The UN climate regime has been highly successful on the first item—setting normative expectations. In my view, it deserves an “A.” Paris set a temperature goal of “well below 2°C”, with 1.5°C merely aspirational, and called on countries to achieve net zero emissions in the second half of the century. But since Paris, the 1.5°C temperature goal and the goal of achieving net zero emissions by mid-century have achieved significant buy-in. In the Glasgow process, they moved from “reach” goals to the de facto global targets. Limiting climate change to 1.5°C and achieving net zero emissions by mid-century may no longer be achievable, but nevertheless, these goals now serve as the metrics against which the adequacy of pledges by countries, business, and financial institutions are evaluated. If someone had told me six years ago that they would become the generally accepted global goals by 2022, I would have been extremely surprised. But that seems now to be the case.

Second, the Paris Agreement has also been quite successful in creating political moments that focus public attention and help spur national action. A large number of world leaders attended the Glasgow Conference. It commanded a huge amount of attention in the press. On the nightly news in the United States, Glasgow was the lead story every night during the second week, which was the first time I think that has ever happened. Participation was at an all-time high in Glasgow, with almost 40,000 people registered, nearly double the two previous COPs and more even than Paris. In creating political moments, I give the Paris process an “A-”.

Third, in terms of ratcheting-up what countries are pledging to do, the Paris Agreement has had mixed results:

- (i) Some countries put forward more ambitious NDCs either in the run-up to Glasgow or in Glasgow itself. These enhanced NDCs, if implemented, are significant but still insufficient. They narrow the emissions gap—according to Climate Action Tracker by 15-17%—but do not close it.
- (ii) In the course of the Glasgow process, countries representing 90% of global emissions made net zero pledges, most with a mid-century target date.⁸²
- (iii) Glasgow also resulted in a number of side deals addressing methane, finance, coal, cars, and forests, among other topics. The Global Methane Pledge is particularly significant, because methane is an extremely potent greenhouse gas, about 80 times more effective in trapping heat than carbon dioxide. In Glasgow, 105 countries, representing nearly half of global methane emissions, pledged to reduce their methane emissions by 30% from current levels by 2030.⁸³
- (vi) Finally, states agreed—in the so-called Glasgow Climate Pact—to revisit their nationally determined contributions in 2022.⁸⁴ Ordinarily, under the five-year Paris ambition cycle, the next time countries would have been due to consider raising their level of ambition in order to close the emissions gap would be 2024–2025. But given the urgency of the climate change problem, this seemed too long to wait. The Glasgow Climate Pact puts pressure on countries with NDCs that are not aligned with the Paris Agreement's temperature goals to revisit and strengthen their NDCs this year—although this now seems unlikely, in part due to the energy disruptions caused by the Ukraine conflict.

⁸² China set a target date of 2060 and India a target date of 2070.

⁸³ Harro van Asselt & Veera Pekkarinen, *The Global Methane Pledge: A Timely New Step in Global Climate Governance*, Ctr. for Climate Change, Energy, & Env't L. Blog (Oct. 6, 2021), <https://sites.uef.fi/cceel/the-global-methane-pledge-a-timely-new-step-in-global-climate-governance/>.

⁸⁴ Glasgow Climate Pact, Decision 1/CP.26, *Report of the Conference of the Parties on Its Twenty-Sixth Session*, UN Doc. FCCC/CP/2021/12/Add.1, at 2 (Mar. 8, 2022).

All of these developments help raise the regime's level of ambition, but not nearly enough to get the world on track to achieve the 1.5°C temperature target. Climate Action Tracker, for example, estimates that the new NDCs would result in warming of 2.4°C.⁸⁵ Factoring in the net zero pledges made by countries (including those that have been announced but not yet enacted into law) lowers the temperature increase to 2.1°C. And factoring in the various side agreements announced in Glasgow on methane, cars, and so forth, lowers the temperature increase still further, to 1.8°C.⁸⁶ This represents significant progress from the projections made at the time of Paris, which estimated a temperature increase of more than 3°C. When Paris was adopted, many would have thought it highly unrealistic to think that six years later, countries would be pledging action that would limit temperature increase to below 2°C. Nevertheless, the pledges made in the Glasgow process still fall short of the 1.5°C goal. Moreover, the projections by Climate Action Tracker assume full implementation of countries' pledges, which is very far from assured, to put it mildly.⁸⁷ So I would give the Paris Agreement a "B" in this regard.

Fourth, in terms of providing financial support, the Paris Agreement deserves lower marks. Developed countries pledged in Copenhagen and Paris to mobilize \$100 billion in climate finance annually by 2020; they fell short of that by roughly \$20 billion.⁸⁸ It will take some time to close that gap, particularly given the economic downturn in many developed countries. In any event, \$100 billion is not enough to deal with the climate change issue.⁸⁹ Nevertheless, an 80% score is not grounds for a failing grade, so I think a grade of "C" is appropriate for climate finance.

Finally, in terms of limiting emissions, I would give the Paris Agreement an "incomplete." Thus far, the UN climate change regime has not made much progress in actually bending the emissions curve. But countries' NDCs don't kick in until 2030 and their net zero pledges until 2050 at the earliest. Since we don't know yet whether countries will take the actions necessary to achieve their NDCs and fulfill their net zero pledges, a grade on emissions reductions seems premature.

6. Conclusion

So how is the UN climate change regime doing at age 30? If Glasgow was the first real test of the Paris Paradigm, was Glasgow half full or half empty?⁹⁰ The answer depends on one's perspective. The US Presidential Climate Envoy, John Kerry, said that Glasgow put us "closer than ever to avoiding climate chaos and securing cleaner air, safer water, and a healthier planet"⁹¹—a comparatively positive spin. Greta Thunberg, in contrast, described the Glasgow outcome as more "blah, blah, blah."⁹² As usual, the truth lies somewhere in between.

The UN climate regime has made some progress, but there is still a long way to go. According to most projections, we will need to decarbonize the global economy over the next thirty years to keep climate change within acceptable bounds. That's the rationale for the mid-century net-zero targets that the United States and other countries have announced. The past thirty years have seen almost continuous negotiations on the climate

85 *The CAT Thermometer Explained*, Climate Action Tracker <https://climateactiontracker.org/global/cat-thermometer/> (last visited Aug. 26, 2022).

86 *Id.*

87 To make the methane pledge and other side agreements more credible, they should be incorporated into the Paris Agreement's transparency framework.

88 Jocelyn Timperley, *The Broken \$100-Billion Promise of Climate Finance – and How to Fix It*, 598 *Nature* 400 (2021). It is also worth noting that the developed country finance pledge was undertaken "in the context of meaningful mitigation actions and transparency on implementation" by developing countries, which arguably do not deserve a high grade either.

89 For example, the IPCC estimates that rapid deployment of mitigation options would require a three- to six-fold increase in global mitigation investments. IPCC, *Technical Summary*, in *Climate Change 2022: Mitigation of Climate Change*, *supra* note 46, TS-123 (2022).

90 Nat Keohane, *A 'Glasgow Half-Full' View of COP26*, Ctr. for Climate & Energy Sols. (Nov. 18, 2021), <https://www.c2es.org/2021/11/a-glasgow-half-full-view-of-cop26/>.

91 Fiona Harvey, John Kerry: COP26 Puts Us Closer than Ever to Avoiding Climate Chaos, *Guardian* (Nov. 14, 2021), <https://www.theguardian.com/environment/2021/nov/14/john-kerry-cop26-puts-us-closer-than-ever-to-avoiding-climate-chaos>.

92 Emily Atkinson, Greta Thunberg Dismisses COP26 as More "Blah, Blah, Blah," *Independent* (Nov. 14, 2021), <https://www.independent.co.uk/climate-change/news/greta-thunberg-cop26-blah-b1957364.html>.

change issue, which have produced many, many words on paper. What is needed in the next thirty years is not more words, but actions by states to implement their words and reduce their greenhouse gas emissions. Whether Paris will succeed in achieving this, it is still too early to say.

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