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IN DEFENSE OF 2.0°C: THE VALUE OF ASPIRATIONAL ENVIRONMENTAL GOALS

by: Albert C. Lin*

ABSTRACT

Aspirational goals, such as the Paris Agreement's goals of avoiding a global temperature increase of 1.5°C or 2.0°C, can be found throughout environmental law. Such goals, though sometimes unrealistic, perform important functions. They may serve as asymptotic directives that guide implementing entities; yardsticks to measure and evaluate progress; expressions of social values; and expanders of policy space. As asymptotic directives, aspirational goals may push actors to achieve more than they otherwise might accomplish. Incorporated into treaties or statutes, they can serve as guideposts for implementing concrete substantive and procedural requirements. With the passage of time, aspirational goals function as yardsticks for measuring progress and identifying needed adjustments and course corrections. Aspirational goals also express messages about society's priorities while seeking to shape its values. While aspirational standards can deflect alternative approaches, weaken support for policy objectives, or mislead the public, they ultimately can expand the range of possible outcomes and motivate actions that achieve significant progress towards lofty aspirations.

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I. INTRODUCTION

The Paris Climate Agreement's ("Paris Agreement" or "Agreement") goals of avoiding a global average temperature increase of 1.5°C or 2.0°C appear increasingly unattainable as global carbon emissions continue to rise. Similarly, some national and state climate goals, which tend to focus on carbon emissions generated within their respective jurisdictions, may be out of reach. The likely failure to achieve climate goals raises serious questions about the goals' functions and effects.

As a general matter, aspirational legal goals can offer inspiration, underscore the importance of an issue, and mobilize support and resources. Such goals can be found not only in prefatory language or statements of purpose, but also in operative provisions of the law. Examples of aspirational provisions in domestic environmental law include the Clean Water Act's declaration of a national goal to eliminate the discharge of pollutants into U.S. waters¹ and the Endangered Species Act's prohibition on federal actions that are "likely to jeopardize the continued existence of" protected species.²

In the context of the Paris Agreement, aspirational goals—though perhaps unrealistic—serve as an asymptotic directive to nations, establish a yardstick for measuring progress, express international concern regarding the climate crisis, and expand the range of possible futures. The asymptotic directive function may be especially important in addressing climate change through the Paris Agreement, which relies on individual states' nationally determined contributions (NDCs) to shrink global carbon emissions.³ Because the ambition of each NDC depends in large part on other nations' commitments and their implementation, aspirational targets may be critical in galvanizing global peer pressure on nations to do more. The yardstick function of the temperature goals is also vital to the Paris Agreement, which mandates periodic assessments of progress towards those goals along with necessary adjustments.⁴

Aspirational climate goals could have cross-cutting expressive effects, however. Ambitious climate goals underscore the urgency of climate change and can prompt rapid and effective responses by individuals, organizations, and societies. Yet such goals also can engender climate anxiety and allow states to prematurely declare victory in the battle against climate change. If goals are not met, the resulting loss of

1. Clean Water Act (CWA) of 1972, 33 U.S.C. § 1251(a).

2. Endangered Species Act (ESA) of 1973, 16 U.S.C. § 1536(2).

3. Paris Agreement to the United Nations Framework Convention on Climate Change arts. 3, 4, Dec. 12, 2015, T.I.A.S. No. 16-1104 [hereinafter Paris Agreement].

4. *Id.* art. 7 ¶ 10.

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credibility for climate advocacy can undermine political support and efforts to address the underlying problem.

This Article explores the value and drawbacks of ambitious yet unrealistic climate goals, focusing on the Paris Agreement's temperature goals. Overall, the Paris Agreement's goals have served as a foundation for establishing standards for climate action by states, corporations, and other entities. Concrete progress in curbing global emissions nonetheless remains elusive, and unrealistic goals might encourage climate fatalism while undermining efforts to adapt or otherwise respond to climate change.

Part II traces the origins of the Paris Agreement's temperature goals and explains why their achievement is unlikely. Part III discusses examples of aspirational standards in domestic and international environmental law, with an eye towards accounting for the functions such standards might serve. Part IV explores these functions in greater detail with respect to the Paris Agreement's temperature goals while acknowledging the potential dangers of aspirational standards.

II. ASPIRATIONAL CLIMATE GOALS

A. *The Temperature Goals of the Paris Agreement*

The Paris Agreement sets out goals of “[h]olding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.”⁵ As required by the Agreement, parties have made national pledges to reduce greenhouse gas (“GHG”) emissions, as reflected in their NDCs.⁶ Every five years, a “global stocktake” **is to** collectively assess progress—or a lack thereof—in achieving the Paris Agreement's temperature goals.⁷ Parties then must “updat[e] and enhanc[e]” their NDCs.⁸ The Agreement envisions that this pledge-and-review system will drive parties to ratchet up their commitments—and reduce their GHG emissions—so as to limit “warming to ‘well below’ 2[°C].”⁹

Where did the Paris Agreement's temperature goals come from? During the 1960s, scientists estimated that a doubling of atmospheric GHG concentrations would yield a 2°C temperature increase.¹⁰ The 2°C

5. *Id.* art. 2.

6. *Id.* arts. 3, 4.

7. *Id.* art. 14.

8. *Id.* art. 14, ¶ 3.

9. Noah M. Sachs, *The Paris Agreement in the 2020s: Breakdown or Breakup?*, 46 *ECOLOGY L.Q.* 865, 873–74 (2019) (quoting Paris Agreement, *supra* note 3, art. 2), <https://doi.org/10.15779/Z38H708140>.

10. Samuel Randalls, *History of the 2°C Climate Target*, 1 *WILEY INTERDISC. REV.S.: CLIMATE CHANGE* 598, 599 (2010), <https://doi.org/10.1002/wcc.62>.

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figure gradually found its way into economic analyses of climate change but was not incorporated into international law until much later.¹¹ In 1992, the U.N. Framework Convention on Climate Change (FCCC) set out a qualitative goal of avoiding “dangerous anthropogenic interference with the climate system.”¹² The Convention did not specify a quantitative temperature goal, however. While scientific assessments of risks, impacts, and feasibility of responses would inform subsequent climate negotiations, providing greater specificity to the FCCC goal required the international community to make political, values-based judgments.¹³ Growing understanding of climate impacts associated with rising GHG concentrations ultimately led the international community to focus on avoiding a temperature increase of 2°C.¹⁴ As discussions converged on a 2°C limit, a coalition of climate vulnerable nations pushed for a more ambitious 1.5°C target.¹⁵ The Paris Agreement reflects a compromise: it incorporates a 2°C goal as well as an ambition to limit the global average temperature increase to 1.5°C.¹⁶

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B. *Achieving the Paris Agreement's Temperature Goals Is Unlikely*

Unfortunately, neither temperature goal appears attainable. Even at the time of the Paris Agreement's adoption, many analysts deemed the 1.5°C target unrealistic because of existing fossil fuel infrastructure as well as the quantities of GHG already emitted.¹⁷ Subsequent developments have only exacerbated the situation. Global average temperatures have now increased more than 1°C above pre-industrial

11. *Id.* Most prominently, economist William Nordhaus noted that a 2°C temperature increase would reflect the greatest change in global mean temperature experienced over the last 100,000 years. William D. Nordhaus, *Economic Growth and Climate: The Carbon Dioxide Problem*, 67 AM. ECON. REV. 341, 342 fig.1 (1977).

12. U.N. Framework Convention on Climate Change art. 2, May 9, 1992, 1771 U.N.T.S. 164.

13. Carl-Friedrick Schleussner et al., *Science and Policy Characteristics of the Paris Agreement Temperature Goal*, 6 NATURE CLIMATE CHANGE 827, 827 (2016), <https://doi.org/10.1038/NCLIMATE3096>; see also Randalls, *supra* note 10, at 600–02 (discussing development of 2°C target).

14. Béatrice Cointe & Hélène Guillemot, *A History of the 1.5°C Target*, WILEY INTERDISC. REVS.: CLIMATE CHANGE, Jan. 2023, at 2–3, <https://doi.org/10.1002/wcc.824>.

15. *Id.*

16. Paris Agreement, *supra* note 3, art. 2.

17. See, e.g., James Dyke et al., *Climate Scientists: Concept of Net Zero Is a Dangerous Trap*, CONVERSATION (Apr. 22, 2021, 12:25 AM), <https://theconversation.com/climate-scientists-concept-of-net-zero-is-a-dangerous-trap-157368> [<https://perma.cc/T6T8-YN26>] (summarizing a common view among climate scientists at the time the Paris Agreement was reached that the 1.5°C goal was not feasible); Daniel Bodansky, *The Paris Climate Change Agreement: A New Hope?*, 110 AM. J. INT'L L. 288, 302–03 (2016), <https://doi.org/10.5305/amerjintlaw.110.2.0288>; Joeri Rogelj et al., *Paris Agreement Climate Proposals Need a Boost to Keep Warming Well Below 2°C*, 534 NATURE 631, 631 (2016), <https://doi.org/10.1038/nature18307> (“The window for limiting warming to below 1.5 °C with high probability and without temporarily exceeding that level already seems to have closed.”).

levels.¹⁸ GHG emissions dropped by approximately 7% in 2020 as a result of pandemic lockdowns, but emissions would have to fall by that amount *each year for the next decade* to be on track to avoid a 1.5°C temperature rise.¹⁹ Instead, global emissions have risen each year since the Paris Agreement was reached—aside from 2020—and may not peak before 2030.²⁰ At the current pace, the global average temperature increase would exceed 2°C by 2067.²¹ Carbon budget analyses, which estimate the amount of CO₂ that can be added to the atmosphere without exceeding a specified temperature rise, suggest that humanity already may have exceeded its budget for avoiding a 1.5°C increase or, at best, will do so by 2033.²² Indeed, projected lifetime emissions from existing fossil fuel infrastructure alone will exceed the carbon budget for avoiding a 1.5°C increase.²³

To make matters worse, most countries are not on track to achieve their initial NDCs.²⁴ Those NDCs, even if fully implemented, would likely increase temperatures by 2.7°C to 3.5°C above pre-industrial levels.²⁵ As the IPCC Sixth Assessment Report (2021) warns, “Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in CO₂ and other greenhouse gas emissions occur in the coming decades.”²⁶ Such reductions will require wholesale transformations in electricity production, energy use, and other entrenched social systems.²⁷ These transformations will benefit from declining costs

18. Rebecca Lindsey & Luann Dahlman, *Climate Change: Global Temperature*, NOAA CLIMATE (Jan. 18, 2023), <https://www.climate.gov/news-features/understanding-climate/climate-change-global-temperature> [perma.cc/5NN3-G43E] (reporting that average global temperature in 2021 was 1.06°C warmer than during the 1880–1900 period); INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2021: THE PHYSICAL SCIENCE BASIS: SUMMARY FOR POLICYMAKERS 5 (2021) [hereinafter IPCC 2021], <https://doi.org/10.1017/9781009157896> (estimating that “[t]he likely range of total human-caused global surface temperature increase from 1850–1900 to 2010–2019 is 0.8°C to 1.3°C, with a best estimate of 1.07°C”).

19. J.B. Ruhl & Robin Kundis Craig, 4°C, 106 MINN. L. REV. 191, 207 (2021).

20. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2022: MITIGATION OF CLIMATE CHANGE: SUMMARY FOR POLICYMAKERS 10–11 (2022) [hereinafter IPCC 2022], <https://doi.org/10.1017/9781009157926.001>; U.N. Conference of the Parties Serving as the Meeting of the Parties to the Paris Agreement, *Nationally Determined Contributions Under the Paris Agreement: Revised Synthesis Report by the Secretariat*, U.N. Doc. FCCC/PA/CMA/2021/8/Rev.1 (Oct. 25, 2021).

21. Ruhl & Craig, *supra* note 19, at 204.

22. *Id.* at 211–13.

23. IPCC 2022, *supra* note 20, at 16.

24. Sachs, *supra* note 9, at 892.

25. *Id.* at 873.

26. IPCC 2021, *supra* note 18, at 14; *see also* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2023: SYNTHESIS REPORT: SUMMARY FOR POLICYMAKERS 10 (2023) [hereinafter IPCC 2023], <https://doi.org/10.59327/IPCC/AR6-9789291691647.001> (concluding that global GHG emissions implied by NDCs announced as of October 2021 “make it likely that warming will exceed 1.5°C during the 21st century”).

27. *See* Ruhl & Craig, *supra* note 19, at 208–09 (describing the “rapid and massive national initiatives” required to meet climate goals).

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of renewable energy, batteries, and other low-emission technologies²⁸ but must overcome policy inertia, industry resistance, and locked-in emissions from existing infrastructure. The pace of necessary transformations is both daunting and historically unprecedented.²⁹

Furthermore, while the Paris Agreement's ratchet mechanism anticipates increasingly ambitious mitigation commitments and actions, parties' NDCs are unenforceable.³⁰ The Agreement requires parties to make NDC pledges but imposes no formal sanction for failing to implement or achieve a pledge.³¹ The Agreement relies instead on international peer pressure to motivate parties to carry out pledges and increase pledge ambition.³² However, such pressure will likely be too weak to bring about the required emissions reductions.³³ Indeed, Russia's invasion of Ukraine casts further doubt on the ability of international pressure to drive global cooperation on climate.³⁴

In considering the prospects of achieving the Paris Agreement's temperature goals, it should also be noted that modeled pathways for achieving 1.5°C or 2°C generally assume significant levels of carbon dioxide removal (CDR).³⁵ CDR techniques, in contrast to efforts to reduce GHG emissions, seek to remove carbon dioxide that is already present in the atmosphere. These techniques vary in terms of maturity, potentials, costs, risks, and tradeoffs. Furthermore, some techniques may not be able to deliver significant reductions in atmospheric GHG concentrations.³⁶ Some types of CDR, such as afforestation, are being implemented but are relatively limited in their ability to remove carbon dioxide permanently and at sufficient scale.³⁷ Other types of CDR, such as direct air capture and sequestration, have the potential to remove and store greater volumes of carbon dioxide but face high costs of deployment.³⁸ The uncertainty and limitations associated with CDR

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28. IPCC 2022, *supra* note 20, at 15–16.

29. Robinson Meyer, *The 1.5-Degree Goal Is All but Dead*, ATLANTIC (Apr. 6, 2022), <https://www.theatlantic.com/science/archive/2022/04/un-ipcc-1-5-degree-report-global-warming/629486/> [https://perma.cc/A96Y-9MHH].

30. Sachs, *supra* note 9, at 872, 874.

31. *Id.* at 872.

32. *Id.* at 875.

33. *See id.* at 874–83 (discussing problems associated with the “peer pressure proposition”).

34. Susanne Rust, *How Badly Will Russia's War Torpedo Hopes for Global Climate Cooperation?*, L.A. TIMES (Mar. 7, 2022, 3:00 AM), <https://www.latimes.com/world-nation/story/2022-03-07/russia-war-ukraine-global-action-climate-change-arctic> [perma.cc/VP28-QBSS].

35. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Summary for Policymakers*, in GLOBAL WARMING OF 1.5°C, at 17 (2018), <https://doi.org/10.1017/9781009157940.001>.

36. Shelley Welton, *Neutralizing the Atmosphere*, 132 YALE L.J. 171, 187 (2022); Albert C. Lin, *Making Net Zero Matter*, 79 WASH. & LEE L. REV. 679, 746–51 (2022).

37. María Erans et al., *Direct Air Capture: Process Technology, Techno-Economic and Socio-Political Challenges*, 15 ENERGY & ENV'T SCI. 1360, 1364 (2022), <https://doi.org/10.1039/D1EE03523A>.

38. INT'L ENERGY AGENCY, *DIRECT AIR CAPTURE: A KEY TECHNOLOGY FOR NET ZERO* 27–33 (2022), <https://iea.blob.core.windows.net/assets/78633715-15c0-44e1-81df->

raise further doubts regarding whether the Paris Agreement's temperature goals are achievable.

C. Other Aspirational Climate Goals

Aspirational climate goals can be found outside the Paris Agreement as well. President Biden has announced policy goals for the United States to reduce GHG emissions 50%–52% below 2005 levels by 2030 and to decarbonize the power sector completely by 2035.³⁹ These goals may be technically feasible but are politically unlikely, given the scope, costs, and logistical difficulties of shifting away from existing fossil fuel-dependent systems.⁴⁰ California's latest climate scoping plan, which sets a goal of cutting GHG emissions 48% below 1990 levels by 2030, has been described by a climate economist as “a pretty aspirational document . . . filled with bureaucratic doublespeak.”⁴¹ Boston's goal of halving GHG emissions by 2030 is already out of reach, thanks to years of delay in taking action.⁴²

Outside the U.S., the United Kingdom has pledged to cut emissions 68% from 1990 levels by 2030, a goal that has been deemed achievable only with further measures and under “a very generous reading.”⁴³ Over

41123c556d57/DirectAirCapture_Akeytechnologyfornetzero.pdf [https://perma.cc/FQG5-RBUT]; Mihrimah Ozkan et al., *Current Status and Pillars of Direct Air Capture Technologies*, iSCIENCE, Apr. 15, 2022, at 9–13, <https://doi.org/10.1016/j.isci.2022.103990>; Erans et al., *supra* note 37, at 1390–96.

39. Press Release, The White House, FACT SHEET: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies (Apr. 22, 2021), <https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies/> [https://perma.cc/933C-5DLB].

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40. See Brian Dabbs et al., *SOTU: Biden Races to Meet 2035 Climate Goal*, ENERGYWIRE (Feb. 8, 2023, 7:02 AM), <https://www.eenews.net/articles/sotu-biden-races-to-meet-2035-climate-goal> [https://perma.cc/7926-7QGF]. (quoting global energy experts expressing skepticism that goals will be met because “a massive shift and a costly shift” would be required and completely eliminating fossil fuels from power sector is uncertain); BEN KING ET AL., RHODIUM GRP., PATHWAYS TO PARIS: POST-IRA POLICY ACTION TO DRIVE US DECARBONIZATION 1 (2023), <https://rhg.com/wp-content/uploads/2023/03/Pathways-to-Paris-Post-IRA-Policy-Action-to-Drive-US-Decarbonization.pdf> [https://perma.cc/WB8U-3ZS8] (concluding that Inflation Reduction Act plus “aggressive policy action across Congress, federal agencies and the executive branch, and states and subnational actors, could put the [2030] target within reach”).

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41. Nadia Lopez, *Slashing Greenhouse Gases: California Revises Climate Change Strategy*, S.F. CHRON. (Nov. 22, 2022, 5:48 PM), <https://www.sfchronicle.com/climate/article/Slashing-greenhouse-gases-California-revises-17590556.php> [https://perma.cc/XFK4-SFSH].

42. Sabrina Shankman, *Boston's 2030 Climate Goal Is Out of Reach, a New Report Finds*, BOS. GLOBE (Nov. 3, 2022), <https://www.bostonglobe.com/2022/11/03/science/bostons-2030-climate-goal-is-out-reach-new-report-finds/> [https://perma.cc/56SZ-QPK5].

43. Fiona Harvey & Jillian Ambrose, *Net Zero Strategy Shows UK Will Miss 2030 Emissions Cut Target*, GUARDIAN (Mar. 30, 2023, 12:55 PM), <https://www.theguardian.com/>

100 cities in Europe have promised to achieve climate neutrality by 2030—a goal that even the greenest cities will struggle to reach.⁴⁴ And many companies have set net zero targets without developing strategies or including medium-term emission reduction targets that may enable the achievement of their ultimate goals.⁴⁵

III. OTHER ASPIRATIONAL STANDARDS IN ENVIRONMENTAL LAW

Aspirational standards are commonplace in the law. In a sense, all statutes “are aspirational in that they propose to achieve specific goals.”⁴⁶ However, many statutes contain statements of purpose that are explicitly aspirational. These enacted purpose provisions may be labeled as “statements of purpose,” “policy,” or “findings.”⁴⁷ Such provisions “make statements regarding the aims, goals, or ends of the statute they accompany”⁴⁸ and communicate the substance of a bill to members of Congress, their staffs, and the general public.⁴⁹ Though often omitted from official codifications of enacted legislation, purpose provisions are enacted by Congress.⁵⁰ Thus, they offer direction to agencies and courts, informing statutory interpretation by ruling out those interpretations that are inconsistent with enacted purposes.⁵¹

Some statutes contain aspirational regulatory standards in addition to aspirational statements of purpose.⁵² Insofar as these statutes incorporate ambitious language within their operative text,⁵³ they are akin to the Paris Agreement’s temperature goals and raise similar questions regarding the purpose and effect of aspirational standards. The Paris Agreement’s temperature goals, in other words, should be distinguished

environment/2023/mar/30/net-zero-strategy-shows-uk-will-miss-2030-emissions-cuts-target [https://perma.cc/FQ5W-Q8EE].

44. Federico Di Sario, *Cities’ Zero Emissions (Over) Ambition Faces Reality Check*, POLITICO (Nov. 10, 2022, 12:00 PM), <https://www.politico.eu/article/eu-commission-targets-cities-zero-emissions-2030-ambition-reality-check/> [https://perma.cc/8S5T-6J5A].

45. CLIMATE ACTION 100+, NET ZERO COMPANY BENCHMARK SUMMARY OF COMPANY ASSESSMENTS, MARCH 2022, at 6 (2022), https://www.climateaction100.org/wp-content/uploads/2022/04/March-2022_Benchmark-assessments_public-summary_Final_.pdf [https://perma.cc/Y22R-63TT].

46. Robert W. Adler, *The Decline and (Possible) Renewal of Aspiration in the Clean Water Act*, 88 WASH. L. REV. 759, 763 (2013).

47. Kevin M. Stack, *The Enacted Purposes Canon*, 105 IOWA L. REV. 283, 289 (2019).

48. *Id.* at 290; cf. Jarrod Shobe, *Enacted Legislative Findings and Purposes*, 86 U. CHI. L. REV. 669, 683 (2019) (stating that purpose provisions “often explain what Congress intends the act to do and how that will be accomplished”).

49. Shobe, *supra* note 48, at 686.

50. *See id.* at 683.

51. *Id.* at 686–88; Stack, *supra* note 37, at 285–86.

52. Stack, *supra* note 47, at 290–91 (estimating that federal legislation includes at least 1000 purpose provisions but noting that a precise count is difficult to obtain); Shobe, *supra* note 48, at 679 (concluding that almost two-thirds of Congressionally enacted legislation of at least twenty pages contain findings or purposes).

53. Adler, *supra* note 46, at 763.

from the vague prefatory language commonly found in the “whereas” clauses of international agreements.⁵⁴ These quantitative targets are found in operative text and are directed at galvanizing global efforts to mitigate GHG emissions. Similarly, domestic laws sometimes incorporate seemingly unrealistic standards into their operative provisions. Federal health and environmental laws that contain these sorts of aspirational provisions include the Clean Water Act, Endangered Species Act, Clean Air Act, Safe Drinking Water Act, and Delaney Clause. A brief examination of these statutes as well as international agreements containing aspirational provisions sheds light on their possible functions.

A. U.S. Environmental Law

The Clean Water Act (CWA) is a leading example of an aspirational statute. Section 101 of the CWA declares that “[t]he objective of this chapter is to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”⁵⁵ To that end, the statute proclaims a “national goal that the discharge of pollutants into the navigable waters be eliminated by 1985”⁵⁶—i.e., a command that pollution discharges by municipal and industrial sources be halted within 13 years of the statute’s enactment.⁵⁷ The statute also sets out a further goal that U.S. water bodies be fishable and swimmable by 1983, “wherever attainable.”⁵⁸ Neither of these lofty goals has been met, even decades after the deadlines specified by Congress.⁵⁹ The CWA’s aspirational goals, though not directly enforceable, are backed by operative provisions that are somewhat less demanding yet themselves aspirational. For example, CWA § 303(c) requires states to establish water quality standards that “protect the public health or welfare, enhance the quality of water and serve the purposes of [the statute].”⁶⁰ Individual discharge permits must include pollution limits necessary to achieve these water quality standards.⁶¹ For many years, states neglected the requirement to establish and implement water quality standards.⁶² Although lawsuits have gradually

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54. Examples of such language can be found in the preambular text of the Paris Agreement (“Recognizing the need for an effective and progressive response to the urgent threat of climate change on the basis of the best available scientific knowledge . . .”), Paris Agreement, *supra* note 3, pmbl., and the FCCC (“Acknowledging that the global nature of climate change calls for the widest possible cooperation by all countries . . .”), U.N. Framework Convention on Climate Change, *supra* note 12, pmbl.

55. 33 U.S.C. § 1251(a); Adler, *supra* note 46, at 763 (explaining that “integrity” “means something approximating natural aquatic ecosystem structure and function”).

56. *Id.* § 1251(a)(1).

57. Adler, *supra* note 46, at 765–66.

58. § 1251(a)(2); Adler, *supra* note 46, at 766.

59. Adler, *supra* note 46, at 763–67.

60. § 1313(c)(2)(A); Adler, *supra* note 46, at 771–72.

61. § 1311(b)(1)(C); Adler, *supra* note 46, at 772.

62. Lawrence S. Bazel, *The Clean Water Act at Thirty: A Failure After All These Years?*, 18 NAT. RES. & ENV’T 46, 47 (2003).

prompted the establishment of such standards,⁶³ approximately half of U.S. waters fail to meet these standards today.⁶⁴

The Safe Drinking Water Act (SDWA) likewise contains expressly aspirational provisions. Once the Environmental Protection Agency (EPA) decides to regulate a drinking water contaminant under the SDWA, the Agency must establish both a maximum contaminant level goal (MCLG) and a maximum contaminant level (MCL).⁶⁵ MCLGs represent the maximum level of a contaminant in drinking water “at which no known or anticipated adverse effects on the health of persons occur,” allowing “an adequate margin of safety.”⁶⁶ As the EPA acknowledges, “MCLGs are non-enforceable public health goals.”⁶⁷ However, each MCLG serves as the foundation for an MCL, which is an enforceable standard that the EPA sets as close to the MCLG as economically and technologically feasible.⁶⁸ In other words, MCLGs are aspirational goals, and MCLs are regulatory standards designed to move drinking water supplies toward those goals. Unfortunately, significant numbers of water systems violate MCLs each year, despite the fact that MCLs have a less aspirational nature than MCLGs, and the EPA has been slow to apply the SDWA to emerging contaminants.⁶⁹

The Endangered Species Act also articulates extremely ambitious goals and standards. The statute’s declared purposes include “provid[ing] a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved” and “provid[ing] a program for the conservation of such endangered species and threatened species.”⁷⁰ To accomplish these purposes, the statute prohibits federal agencies from taking actions that are “likely to jeopardize the continued existence” of a protected species or adversely modify its critical habitat.⁷¹ The statute also generally prohibits the “take” of endangered species, including significant habitat modification that kills or injures

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63. See *id.* (describing environmental groups’ successes in getting courts to require the EPA to establish total maximum daily loads).

64. KEENE KELDERMAN ET AL., ENV’T INTEGRITY PROJECT, *THE CLEAN WATER ACT AT 50: PROMISES HALF KEPT AT THE HALF-CENTURY MARK 4* (2022), <https://environmentalintegrity.org/wp-content/uploads/2022/03/CWA-report-UPDATED-8.9.23.pdf> [<https://perma.cc/7DBT-ZRN9>] (estimating that “51 percent of assessed river and stream miles across the U.S.—more than 700,000 miles of waterways—remain impaired with pollution, as well as 55 percent of lake acres and 25 percent of estuary miles”).

65. 42 U.S.C. § 300g-1(b)(1)(E).

66. *Id.* § 300g-1(b)(4)(A).

67. *How EPA Regulates Drinking Water Contaminants*, ENV’T PROT. AGENCY, <https://www.epa.gov/sdwa/how-epa-regulates-drinking-water-contaminants#standards> [<https://perma.cc/W2MY-BSZP>] (Nov. 2, 2023).

68. § 300g-1(b)(4)(B).

69. James Salzman, *The Past, Present and Future of the Safe Drinking Water Act (2022 Revision)* 8–9 (UCLA Sch. of L. Pub. L. Rsch. Paper, Paper No. 22-21, 2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3463976 [<https://perma.cc/6WSH-5C9U>].

70. 16 U.S.C. § 1531(b).

71. *Id.* § 1536(a)(2).

wildlife.⁷² Although the absolute standards in the statute “do not translate literally into absolute results,” they express a societal prioritization of biodiversity.⁷³ And as a practical matter, they shift power from concentrated corporate interests to diffuse citizen interests by offering a “credible threat of an injunction forcing agency adherence to a cost-blind standard.”⁷⁴

Another aspirational standard can be found in the Delaney Clause, which prohibits food additives found to induce cancer when ingested by people or animals.⁷⁵ This zero-risk standard may have appeared feasible when promulgated but was later deemed unachievable as increasingly sophisticated scientific capabilities revealed numerous substances to be potential carcinogens.⁷⁶ In an effort to avoid applying this standard to pesticide residues in food, the EPA promulgated a policy statement that allowed de minimis risk instead of no risk at all.⁷⁷ The EPA’s approach was invalidated, and Congress subsequently addressed the EPA’s difficulties through a statutory amendment that allowed “safe” levels of pesticide residues in food.⁷⁸

Prior to its amendment in 1990, § 112 of the Clean Air Act also contained aspirational standards and deadlines.⁷⁹ Specifically, the statute required the EPA to set emission limits for hazardous air pollutants based purely on public health concerns and within extremely short timeframes.⁸⁰ These timeframes proved unrealistic because the EPA lacked reliable data on hazardous emissions, human exposures, and health risks from those exposures.⁸¹ The EPA responded to the statute’s unrealistic demands by missing deadlines, misinterpreting the statute, and simply failing to identify hazardous air pollutants.⁸² Recognizing that the EPA was “unwilling or unable” to implement § 112, Congress amended the statute by explicitly identifying the hazardous pollutants the EPA would regulate and replacing the health-based standard with a more manageable technology-based standard.⁸³

72. *Id.* § 1538(a)(1)(B); § 1532(19) (defining “take” to include “harm”); 50 C.F.R. § 17.3 (2023) (defining “harm”).

73. Amy Sinden, *In Defense of Absolutes: Combating the Politics of Power in Environmental Law*, 90 IOWA L. REV. 1405, 1509 (2005).

74. *Id.*

75. 21 U.S.C. § 348(c)(3)(A).

76. Frank B. Cross, *The Consequences of Consensus: Dangerous Compromises of the Food Quality Protection Act*, 75 WASH. U.L.Q. 1155, 1159 (1997).

77. Regulation of Pesticides in Food: Addressing the Delaney Paradox Policy Statement, 53 Fed. Reg. 41104, 41110 (Oct. 19, 1988).

78. *Les v. Reilly*, 968 F.2d 985, 990 (9th Cir. 1992); Food Quality Protection Act of 1996, Pub. L. No. 104-170, 110 Stat. 1489, 1514–16 (1996) (codified at 21 U.S.C. § 346a(b) (2)(A)).

79. John P. Dwyer, *The Pathology of Symbolic Legislation*, 17 ECOLOGY L.Q. 233, 237–42 (1990).

80. *Id.* at 237–38.

81. *Id.* at 238.

82. *Id.* at 235.

83. Henry A. Waxman, *An Overview of the Clean Air Act Amendments of 1990*, 21 ENV’T L. 1721, 1774–76 (1991).

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B. *International Environmental Law*

At the international level, the 2030 Agenda for Sustainable Development offers a leading example of aspirational goals.⁸⁴ Adopted by the U.N. General Assembly in 2015, the Agenda sets out 17 Sustainable Development Goals (SDGs), a set of policy objectives for the international community.⁸⁵ In contrast to the legally binding Paris Agreement, the Agenda constitutes soft, nonbinding law.⁸⁶ The SDGs nonetheless offer a useful comparison because the Paris Agreement's temperature goals themselves have no binding effect either. Admittedly, several SDGs appear unachievable—for example, “end[ing] poverty in all its forms everywhere,” “end[ing] hunger,” and “ensur[ing] healthy lives and promot[ing] well-being for all at all ages.”⁸⁷ The SDGs nevertheless suggest the potential for aspirational goals to influence behaviors “even when they lack legal force.”⁸⁸ The goals may guide domestic policies, mobilize funding, and serve as a tool for holding governments accountable.⁸⁹

Binding international agreements also may contain aspirational provisions. The U.N. Convention on the Law of the Sea, a “constitution” for oceans governance that establishes a legal framework for marine activities, contains several examples.⁹⁰ Under the Convention, states “shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment.”⁹¹ They also “shall take . . . all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source, using . . . the best practicable means at their disposal and in accordance with their capabilities.”⁹² These duties have been interpreted as “obligations of conduct” requiring a particular procedure aimed at a particular goal, rather than as “obligations of result” demanding a specific outcome.⁹³

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84. G.A. Res. 70/1, Transforming Our World: The 2030 Agenda for Sustainable Development, ¶ 1 (Sept. 25, 2015).

85. *Id.* ¶ 16.

86. Maryna Rabinovych, *Legal Status and Effects of the Agenda 2030 Within the EU Legal Order*, 16 J. CONTEMP. EUR. RSCH. 182, 184 (2020), <https://doi.org/10.30950/jcer.v16i2.1071> (concluding that the Agenda will be considered soft, non-binding law).

87. G.A. Res. 70/1, *supra* note 84, ¶ 4.

88. Frank Biermann et al., *The Sustainable Development Goals as a Transformative Force?*, in THE POLITICAL IMPACT OF THE SUSTAINABLE DEVELOPMENT GOALS 204, 204 (Frank Biermann et al., eds. 2022), <https://doi.org/10.1017/9781009082945>.

89. *Id.* at 218.

90. TULLIO TREVES, U.N. AUDIOVISUAL LIBR. OF INT'L L., UNITED NATIONS CONVENTION ON THE LAW OF THE SEA 1, 4 (2008), https://legal.un.org/avl/pdf/ha/uncls/uncls_e.pdfhtml [<https://perma.cc/S62G-DBLK>].

91. U.N. Convention on the Law of the Sea art. 194, ¶ 2, Dec. 10, 1982, 1833 U.N.T.S. 397.

92. *Id.* art. 194, ¶ 1.

93. Youngmin Seo, *The Marine Environmental Turn in the Law of the Sea and Fukushima Wastewater*, 45 FORDHAM INT'L L.J. 51, 72–73 (2021) (internal citation

This distinction between obligations of conduct and obligations of result can also be applied to the Paris Agreement. Parties to the Paris Agreement have agreed to identify and adopt NDCs incorporating domestically determined mitigation measures.⁹⁴ These obligations of conduct require countries to make good faith efforts in contributing to collective temperature goals.⁹⁵ The temperature goals, while focused on results, are not obligations of result, as they are not enforceable against any individual nation or the international community as a whole.⁹⁶ Emphasis on obligations of conduct has facilitated international agreement on climate change and other environmental problems but yielded relatively weak measures subject to compliance and enforcement.

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IV. FUNCTIONS OF ASPIRATIONAL GOALS

The numerous examples of aspirational provisions in domestic and international law suggest that their inclusion is hardly accidental. Whether in treaty or statute, aspirational provisions may serve important functions but may act as placebos that deflect more effective responses. Aspirational goals may function as asymptotic directives to guide implementing entities; yardsticks to measure and evaluate progress; expressions of social values aimed at industry, stakeholders, and the general public; and expanders of policy space. Indeed, the Paris Agreement's temperature goals reflect each of these functions.

A. *Aspiration as Asymptotic Directive*

Aspirational goals can serve as asymptotic directives to those charged with implementing a statutory scheme, pushing agencies toward goals that are admittedly unachievable.⁹⁷ For aspirational statutory goals that are asymptotic directives, falling short is an element of design, not a sign of failure.⁹⁸ The Clean Water Act's ambitious goals—eliminating all discharges of pollutants and making all water bodies fishable and swimmable—can be understood in just this way.⁹⁹ As Bob Adler has suggested, “Congress’s strategy was to set such an extremely high goal in the hope that the goal itself will induce the implementing agencies

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omitted); see also Benoit Mayer, *Obligations of Conduct in the International Law on Climate Change: A Defence*, 27 REV. EUR., COMPAR. & INT'L ENV'T L. 130, 130 (2018), <http://doi.org/10.1111/reel.12237>.

94. Paris Agreement, *supra* note 3, art. 4, ¶ 2.

95. Mayer, *supra* note 93, at 135.

96. See *supra* notes 30–33 and accompanying text.

97. See Adler, *supra* note 46, at 798 (discussing Congress's asymptotic goals within the CWA).

98. Cf. Sinden, *supra* note 73, at 1487 (contending that “absolute standards do not actually produce absolute results” but “simply place a thumb on the scale in favor of environmental interests”).

99. See *supra* notes 55–64 and accompanying text.

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and others to achieve the highest standard possible, or at least a standard higher than otherwise would be attained.”¹⁰⁰

The structure of the Paris Agreement, with its heavy reliance on the goodwill of implementing states to collectively generate an upward spiral of climate ambition, reflects a similar approach. The ability of the Agreement to reduce GHG emissions hinges on self-determined—and essentially voluntary—efforts of multiple states. While the Agreement contains obligations of conduct rather than obligations of result, parties are bound to act with due diligence.¹⁰¹ Moreover, their efforts occur not in isolation, but in the context of collective action organized by the Agreement.¹⁰² Key assumptions undergird the Agreement: an upward spiral of increasingly ambitious climate pledges and climate action by governments in response to other governments’ deepening climate commitments, global peer pressure to ratchet up and implement climate pledges, and declining costs of climate mitigation.¹⁰³ These assumptions offer a reasonable basis for believing that the 1.5°C and 2°C goals “provide[] focus and urgency to collective mitigation commitments” and are spurring states to make good faith efforts.¹⁰⁴

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Aspirational statutes are more likely to have an impact if, besides setting out lofty goals, they also provide specific direction that can be translated into concrete and measurable actions.¹⁰⁵ The Paris Agreement contains both substantive and procedural provisions geared towards achieving its long-term temperature goals.¹⁰⁶ Admittedly, the Agreement’s substantive provisions contain general, vague, and unenforceable language, as is common in international environmental agreements.¹⁰⁷ For example, Article 4, paragraph 2 provides that “Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of [their NDCs].”¹⁰⁸ Similarly, Article 5, paragraph 1 states that “Parties should take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases.”¹⁰⁹ While such language

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100. Adler, *supra* note 46, at 798.

101. Mayer, *supra* note 93, at 131–32, 135.

102. See generally Sachs, *supra* note 9 at 875 (describing the interactive nature of parties to the agreement).

103. Sachs, *supra* note 9, at 869, 875–76; see Niklas Höhne et al., *The Paris Agreement: Resolving the Inconsistency Between Global Goals and National Contributions*, 17 CLIMATE POL’Y 16, 21–26 (2016), <http://dx.doi.org/10.1080/14693062.2016.1218320>.

104. Charles R. Corbett, *The Climate Emergency and Solar Geoengineering*, 46 HARV. ENV’T L. REV. 197, 211 (2022).

105. See David G. Victor & Charles F. Kennel, *Ditch the 2°C Warming Goal*, 514 NATURE 30, 30–31 (2014), <https://doi.org/10.1038/514030a> (arguing for a volatility index that measures the evolving risk from extreme events).

106. Paris Agreement, *supra* note 3, art. 4 (requiring parties to prepare and update NDCs).

107. See, e.g., *id.* art. 9 ¶ 1 (“Developed country parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation . . .”).

108. *Id.* art. 4, ¶ 2.

109. *Id.* art. 5, ¶ 1.

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does not inspire great confidence in the success of the Paris Agreement, the Agreement's procedural provisions do mandate that parties identify concrete actions in their NDCs and report their progress in implementing these actions.¹¹⁰ The Paris Agreement's temperature goals, in other words, are not freestanding and isolated ideals, but exist within a regulatory framework designed to foster transparency and accountability.

Ultimately, aspirational goals need to be credible in order to function effectively as asymptotic directives.¹¹¹ Otherwise, such goals are prone to be ignored. Entities may drag their feet or rewrite unrealistic goals.¹¹² The EPA took such an approach in implementing the original version of § 112 of the Clean Air Act.¹¹³ Over the course of nearly two decades, the agency repeatedly and deliberately missed statutory deadlines for issuing regulations and misinterpreted statutory text requiring it to establish stringent health-based standards.¹¹⁴ Similarly, the EPA misconstrued the Delaney Clause—which dictated an unachievable zero-risk approach to food additives—to allow a *de minimis* level of risk.¹¹⁵

The fact that the Paris Agreement's temperature goals were unrealistic from the start could have undermined their ability to function as asymptotic directives. However, climate models indicated that the goals were feasible in theory, enabling parties to the Agreement to publicly defend them.¹¹⁶ More importantly, the goals increasingly serve as critical markers for climate action, even as they have become less attainable over time. The 1.5°C and 2°C goals have come to possess a powerful normative force, as demonstrated by their widespread invocation in various contexts.¹¹⁷ States, courts, and companies have used the goals to structure climate mitigation obligations, even while acknowledging that individual fulfillment of such obligations cannot achieve the overarching goals.¹¹⁸

A growing number of court decisions outside the U.S. reflect this approach. The Netherlands' Supreme Court ordered the Dutch government in the *Urgenda* decision to adopt measures to reduce GHG

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110. *Id.* arts. 4, 13, ¶ 7.

111. *See* Adler, *supra* note 46, at 798 (explaining that “pronouncing a statutory aspiration as a tool used to prod us to do more will not work if Congress (or EPA) says publicly that they are ‘just kidding’”).

112. Dwyer, *supra* note 79, at 255.

113. *Id.*

114. *Id.* at 251–52, 258–59, 269 n.154, 272.

115. *See supra* text accompanying note 77.

116. *See* Dyke et al., *supra* note 17 (explaining that Bioenergy with Carbon Capture and Storage “was the only way climate-economic models could find scenarios that would be consistent with the Paris Agreement.”).

117. *See, e.g., More than 1,000 Companies Commit to Science-Based Emissions Reductions in Line with 1.5°C Climate Ambition*, SCI. BASED TARGETS (Nov. 10, 2021), <https://sciencebasedtargets.org/news/more-than-1000-companies-commit-to-science-based-emissions-reductions-in-line-with-1-5-c-climate-ambition> [<https://perma.cc/RTE9-GPFC>] (celebrating that more than 1,000 companies have committed to reducing emissions to help reach the 1.5°C target).

118. *See, e.g., id.*

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emissions 25% by 2020 based on an “international consensus” that developed countries would need to reduce emissions by at least that amount in order to achieve the 2°C temperature target.¹¹⁹ Similarly, in *Milieudefensie v. Royal Dutch Shell*, a lower Dutch court ordered Shell to reduce its emissions 45% by 2030, reasoning that such a reduction “sufficiently corresponds with the widely endorsed consensus that limiting global warming to 1.5°C requires a net reduction of 45% in global CO₂ emissions in 2030 relative to 2010.”¹²⁰ Germany’s Federal Constitutional Court ruled in *Neubauer v. Germany* that the German government has a duty to develop a long-term climate strategy consistent with the Paris Agreement, including the specification of emissions reductions beyond 2030.¹²¹

Incorporation of Paris-based standards into GHG emission pathways has occurred outside the judicial context as well. The United Kingdom’s latest NDC, for example, adopts a target of reducing emissions 68% by 2030, consistent with a global emission pathway that would limit warming to 1.5°C.¹²² Over 100 cities have pledged to achieve climate neutrality by 2030.¹²³ City officials acknowledge the improbability of fulfilling the pledges but note the pledges’ effect on the cities’ policies and projects.¹²⁴ For the private sector, the Science Based Targets Initiative has developed a voluntary standard, suited for companies that make net zero pledges, that defines corporate net zero in terms of emissions reductions “consistent with reaching global net-zero emissions or at a sector level in eligible 1.5°C-aligned pathways.”¹²⁵

B. *Aspiration as Yardstick*

Relatedly, aspirational goals can serve as yardsticks for measuring progress—or lack thereof—towards such goals. Under the Safe Drinking

119. HR 20 december 2019, ECLI:NL:HR:2019:2007 (Netherlands/Stichting Urgenda) (Neth.).

120. Rb. Den Haag 26 mei 2021, ECLI:NL:RBDHA:2021:5339 (*Milieudefensie/ Royal Dutch Shell*) (Neth.).

121. Press Release, Bundesverfassungsgericht, Constitutional Complaints against the Federal Climate Change Act Partially Successful (Mar. 24, 2021) [hereinafter *Bundesverfassungsgericht*], <https://www.bundesverfassungsgericht.de/SharedDocs/Pressemitteilungen/EN/2021/bvg21-031.html> [<https://perma.cc/9T5M-Y9R3>].

122. SEC’Y OF STATE FOR BUS., ENERGY, & INDUS. STRATEGY, UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND’S NATIONALLY DETERMINED CONTRIBUTION, CP 744, at 1, 41–43 (Sept. 2022) (UK) <https://unfccc.int/sites/default/files/NDC/2022-09/UK%20NDC%20ICTU%202022.pdf> [<https://perma.cc/X29S-35E3>]; see also *United Kingdom, CLIMATE ACTION TRACKER*, <https://climateactiontracker.org/countries/uk/> [<https://perma.cc/NE5N-MCGX>] (Sept. 22, 2023) (concluding that the UK’s 2030 emissions target “is not aligned with 1.5°C when compared to global least-cost modelled domestic pathways” and also does not represent an equitable emissions reduction pathway).

123. Di Sario, *supra* note 44.

124. *Id.*

125. SCIENCE-BASED TARGETS, SBTi CORPORATE NET-ZERO STANDARD 18 (2023), <https://sciencebasedtargets.org/resources/files/Net-Zero-Standard.pdf> [<https://perma.cc/S2BW-JCCR>].

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Water Act, for example, the EPA periodically reviews the stringency of MCLs.¹²⁶ If the agency determines that standards that more closely reflect MCLGs would feasibly achieve greater health protection, the EPA revises the MCLs accordingly.¹²⁷

The 1.5°C and 2°C goals likewise serve as yardsticks for the international community with respect to climate action. This yardstick function is a vital component of the Paris Agreement, which mandates periodic assessments of progress towards the goals, along with necessary adjustments.¹²⁸ In the future, the Paris Agreement's temperature goals also might serve as a reference point for determining and allocating states' financial responsibility for damages caused by climate change.

A central mechanism of the Paris Agreement is the “global stocktake,” an evaluation every five years of “the collective progress towards achieving the purpose of [the] Agreement and its long-term goals.”¹²⁹ Based on the outcome of the global stocktake, parties to the Agreement are to “updat[e]” and “enhanc[e]” their actions, as reflected in their NDCs.¹³⁰ Success of the Agreement hinges largely on this mechanism's ability to promote an “upward spiral” of increasingly ambitious commitments that will slash GHG emissions.¹³¹ The prospects of an upward spiral—as opposed to a breakdown or complete collapse of the Agreement—remain uncertain.¹³² Nonetheless, the basic structure of the Agreement rests on the premise that the temperature goals will be used continuously to measure progress and prompt further action.¹³³

The Paris Agreement's temperature goals function as a yardstick not only for assessing collective action, but also for evaluating the efforts of individual states and entities.¹³⁴ The Climate Action Tracker, a respected NGO-sponsored scientific project, offers a more comprehensive approach that evaluates national governments' targets and actions to determine their conformity with the Paris Agreement's temperature goals.¹³⁵ A “1.5°C Paris Agreement compatible” rating, for example,

126. 42 U.S.C. § 300g-1(b)(9).

127. *Id.*; see also, e.g., CALIF. CONTROL BD., REVIEW OF MAXIMUM CONTAMINANT LEVELS 1 (2017), https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/reviewofmaximumcontaminantlevels-2017.pdf [<https://perma.cc/YRN9-MT58>] (reporting evaluation of MCLs in California against public health goals to determine whether MCLs should be revised to better protect public health).

128. See *supra* notes 7–8 and accompanying text.

129. Paris Agreement, *supra* note 3, art. 14, ¶ 1.

130. *Id.* art. 14, ¶ 3.

131. Sachs, *supra* note 9, at 873–74.

132. See *id.* at 869–70 (sketching out possible scenarios).

133. David G. Victor et al., *Determining the Credibility of Commitment in International Climate Policy*, 12 NATURE CLIMATE CHANGE 793, 798 (2022), <https://doi.org/10.1038/s41558-022-01454-x> (contending that flexibility inherent in NDC pledges, “coupled with periodic review, offered a way to keep pushing for more ambition and credibility in tandem”).

134. Cf. Biermann et al., *supra* note 88, at 218 (suggesting that the SDGs “enable civil society and nongovernmental organizations to hold governments accountable”).

135. *Rating System: Overview*, CLIMATE ACTION TRACKER, <https://climateactiontracker.org/countries/rating-system/> [<https://perma.cc/FE8Z-22E7>].

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“indicates that a country’s climate policies and commitments are consistent with the Paris Agreement’s 1.5°C temperature limit.”¹³⁶ Climate Action Tracker’s work and other transparency efforts aim to promote accountability and contribute to peer pressure—and public pressure—on countries to strengthen their climate mitigation efforts.¹³⁷ In addition, as discussed above, some courts have looked to the temperature goals and their implied carbon-emissions pathways to determine the climate mitigation obligations of states or corporations.¹³⁸

In the future, failure to achieve the temperature goals might one day serve as a basis for imposing liability. In December 2022, the parties to the Paris Agreement agreed to establish a loss and damage fund to pay for climate-related damages suffered by developing countries.¹³⁹ Although key details are yet to be determined, the fund’s creation reflects a recognition that the nations responsible for the majority of historical GHG emissions will have to make reparations. Obligations to pay into this or other climate funds—as well as the size of such funds—might well be guided by progress in achieving 1.5°C or 2°C. The Paris Agreement’s temperature goals, in other words, could serve as a measuring stick for determining “what humanity *should have* accomplished”—and for identifying those damages for which wealthier nations will be held responsible.¹⁴⁰

C. *Aspiration as Messaging*

Aspirational goals can not only put pressure on the entities charged with achieving those goals, but also send a message to a broader audience. Expressive law, aside from regulating, aims to influence the values and preferences of this broader audience.¹⁴¹ The seemingly unrealistic goals in the Clean Water Act and other foundational federal

136. *Id.*

137. *E.g., About Us*, CLIMATE TRANSPARENCY, <https://www.climate-transparency.org/about-us> [<https://perma.cc/RKQ3-JQ23>] (“Climate Transparency aims to increase awareness and peer pressure among policy-makers in G20 governments and influencers from civil society and the financial sector on a national and international level.”).

138. *See supra* text accompanying notes 119–21.

139. Conference of the Parties Serving as the Meeting of the Parties to the Paris Agreement, *Report of the Conference of the Parties Serving as the Meeting of the Parties to the Paris Agreement on Its Fourth Session, Held in Sharm el-Sheikh from 6 to 20 November 2022*, at 13–14, U.N. Doc. FCCC/PA/CMA/2022/10/Add.1 (Mar. 17, 2023), https://unfccc.int/sites/default/files/resource/cma2022_10a01_adv.pdf [<https://perma.cc/FY6V-TGKJ>].

140. Emma Marris, *1.5 Degrees Was Never the End of the World*, ATLANTIC (Feb. 1, 2023), <https://www.theatlantic.com/science/archive/2023/02/climate-change-paris-agreement-15-degrees-celsius-goal/672909/> [<https://perma.cc/K33D-ZAWF>].

141. Mark Tushnet & Larry Yackle, *Symbolic Statutes and Real Laws: The Pathologies of the Antiterrorism and Effective Death Penalty Act and the Prison Litigation Reform Act*, 47 DUKE L.J. 1, 75 (1997), <https://doi.org/10.2307/1372860>; *see also* Cass R. Sunstein, *On the Expressive Function of Law*, 144 U. PA. L. REV. 2021, 2024 (1996) (discussing examples of expressive environmental laws).

environmental laws reflect symbolic pronouncements designed to “reorient[] . . . public commitments toward environmental protection.”¹⁴²

The Paris Agreement’s temperature goals undoubtedly have an expressive element. At a minimum, the goals declare the seriousness of the climate crisis as well as an international commitment to addressing it. The goals also imply an extremely limited carbon budget as well as urgent deadlines for halting climate change.¹⁴³ Even more, they suggest the existence of thresholds, “beyond which the end of civilization awaits.”¹⁴⁴ These messages are targeted at nation-states, non-state actors, and individuals. Although the goals run the risk of oversimplification, they communicate climate change to policymakers and the public in a straightforward and powerful way.¹⁴⁵

The messaging effects of the Paris Agreement’s goals could cut in different directions, however. By underscoring the seriousness and urgency of climate change, ambitious climate goals may prompt rapid and effective responses by individuals, organizations, and societies.¹⁴⁶ Although the role of aspirational climate goals in defining climate attitudes is uncertain, climate activism has been on the rise, especially among younger generations.¹⁴⁷ On the other hand, appreciation of the severity of climate change may not directly influence consumer behavior.¹⁴⁸ Furthermore, aspirational climate goals may also engender climate anxiety, i.e., “anxiety associated with perceptions about climate change, even among people who have not personally experienced any

142. Jedediah Purdy, *The Politics of Nature: Climate Change, Environmental Law, and Democracy*, 119 YALE L.J. 1122, 1187 (2010).

143. See, e.g., CLIMATE CLOCK, <https://climateclock.world/science> [<https://perma.cc/45GV-XK7S>] (“[A]t current rates of greenhouse gas emissions, we have less than eight years left in our global ‘carbon budget’ that gives two-thirds chance of staying under the critical threshold of 1.5°C of global warming.”).

144. Lucy Holmes McHugh et al., *Risk? Crisis? Emergency? Implications of the New Climate Emergency Framing for Governance and Policy*, WILEY INTERDISC. REV.: CLIMATE CHANGE, Aug. 23, 2021, at 6, <https://doi.org/10.1002/wcc.736>.

145. Corbett, *supra* note 104, at 211; Roz Pidcock, *Scientists Weigh in on 2C Target for Curbing Global Warming*, CARBONBRIEF (Oct. 2, 2014, 1:15 PM), <https://www.carbonbrief.org/scientists-weigh-in-on-two-degrees-target-for-curbing-global-warming/> [<https://perma.cc/NU5M-9FCB>].

146. McHugh et al., *supra* note 144, at 6; Bodansky, *supra* note 17, at 303 (“Whether or not the [climate] regime ever achieves the 1.5 degree goal, it provides a potent rallying cry for activists and a basis to push states and other actors to take stronger action.”).

147. Alec Tyson et al., *Gen Z, Millennials Stand Out for Climate Change Activism, Social Media Engagement with Issue*, PEW RSCH. CTR. (May 26, 2021), <https://www.pewresearch.org/science/2021/05/26/gen-z-millennials-stand-out-for-climate-change-activism-social-media-engagement-with-issue/> [<https://perma.cc/3WYT-NVDF>].

148. John Thøgersen, *Consumer Behavior and Climate Change: Consumers Need Considerable Assistance*,

42 CURRENT OP. BEHAV. SCIS. 9, 9 (2021), <https://doi.org/10.1016/j.cobeha.2021.02.008> (concluding that “[t]he relationship between consumer behavior and climate change is complex and most consumers are not capable of determining which behavior changes are worth doing”).

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direct impacts.”¹⁴⁹ Potentially manifesting as anxiety, anger, or depression, emotional responses to climate change may increase climate engagement in some and decrease engagement in others.¹⁵⁰ To persons who are relatively unconcerned by climate change, overly ambitious climate goals may sound “alarmist and polarizing, alienating them and restricting the possibility for crafting enduring bipartisan solutions.”¹⁵¹

Unrealistic goals can even be exploited to justify drastic measures under the guise of a climate emergency.¹⁵² Leaders might assert that the existence of a climate emergency warrants military actions, extraordinary measures to curb emissions, or deployment of solar geoengineering.¹⁵³ A climate emergency framing might be used to excuse the bypassing of ordinary democratic processes.¹⁵⁴ In addition to undermining constitutional norms, emergency governance can “squash critique and opposition in civil society,” entrench or expand power disparities,¹⁵⁵ and distract from a broader set of political, economic, and social concerns that warrant attention and resources.¹⁵⁶ An emergency framing can also “shut down legislative deliberation and expert assessment,”¹⁵⁷ although it need not automatically preclude legislative responses or judicial review.¹⁵⁸

To date, worries regarding potential abuse of climate emergency declarations have not been borne out. Implementation of over 2,000 declarations of climate emergencies by various levels of government around the world “thus far reveal[s] routine governance practices as well as institutional invigoration” rather than exceptional measures adopted outside of ordinary democratic processes.¹⁵⁹

149. Susan Clayton, *Climate Anxiety: Psychological Responses to Climate Change*, J. ANXIETY DISORDERS, June 2020, at 2, <https://doi.org/10.1016/j.janxdis.2020.102263>.

150. Marris, *supra* note 140; Samantha K. Stanley et al., *From Anger to Action: Differential Impacts of Eco-Anxiety, Eco-Depression, and Eco-Anger on Climate Action and Wellbeing*, J. CLIMATE CHANGE & HEALTH, Jan. 28, 2021, at 1, 4, <https://doi.org/10.1016/j.joclim.2021.100003>.

151. Shinchiro Asayama et al., *Why Setting a Climate Deadline Is Dangerous*, 9 NATURE CLIMATE CHANGE 570, 571 (2019), <http://dx.doi.org/10.1038/s41558-019-0543-4>.

152. *Id.*; McHugh et al., *supra* note 144, at 6.

153. McHugh et al., *supra* note 144, at 9; Corbett, *supra* note 104, at 243–46 (contending that framing solar geoengineering as an emergency response measure would prompt an appropriate degree of caution and “make explicit today’s dominant way of thinking about solar geoengineering”).

154. Asayama et al., *supra* note 151, at 571; Corbett, *supra* note 104, at 252.

155. Corbett, *supra* note 104, at 253.

156. Mike Hulme, *Climate Emergency Politics Is Dangerous*, 36 ISSUES SCI. & TECH. 23, 24–25 (2019), <https://doi.org/10.17863/CAM.46233>.

157. Corbett, *supra* note 104, at 253.

158. Mark P. Nevitt, *Is Climate Change a National Emergency?*, 55 U.C. DAVIS L. REV. 591, 647–49 (2022), <http://dx.doi.org/10.2139/ssrn.3803655>.

159. Jocelyn Stacey, *The Public Law Paradoxes of Climate Emergency Declarations*, 11 TRANSNAT’L ENV’T L. 291, 316 (2022), <https://doi.org/10.1017/S2047102522000231>; see also *id.* at 292, 311–12.

D. *Aspiration as Expander of Policy Space*

Setting ambitious goals can expand the realm of what's possible as a policy matter, as illustrated by the Endangered Species Act. The full import of the ESA's absolute language may not have been fully appreciated at the time of its passage, but the statute's plain language radically departed from that of other environmental statutes, which were dominated by utilitarian or public health concerns.¹⁶⁰ In some circumstances, literal application of the Act's absolute language could lead to seemingly absurd results. Nonetheless, in *TVA v. Hill*, the Supreme Court held Congress to its word, declaring that the statute gives endangered species "the highest of priorities," "whatever the cost" and without exception.¹⁶¹

The Paris Agreement's temperature goals have similarly expanded the space for policymaking. In adopting the 1.5°C target, the parties to the Paris Agreement also commissioned a report on the global impacts of a 1.5°C temperature increase.¹⁶² Adoption of the 1.5°C target legitimized scientific inquiry on the topic, which researchers had previously neglected on the assumption that it was unrealistic.¹⁶³ The resulting research not only illuminated differences between the impacts of 1.5°C and 2°C warming, but also highlighted the importance of achieving net zero emissions by 2050.¹⁶⁴ In recent years, many nations, corporations, and other entities have set net zero goals, and courts have even ordered governments to adopt emission reduction plans consistent with achieving net zero by 2050.¹⁶⁵

Consideration of a wider range of policy options can also lead to potentially problematic courses of action, however. In light of the Paris Agreement's ambitious temperature goals, scientific modelers have increasingly incorporated CDR technologies—in addition to GHG emissions reductions—to identify pathways for achieving those goals.¹⁶⁶ CDR techniques are an increasingly important component of climate change strategies, but they are not equivalent to emission reductions. Some techniques, such as afforestation and bioenergy with carbon capture and storage, require significant amounts of land and may adversely impact local livelihoods and biodiversity.¹⁶⁷ In addition, forests and soil

160. Holly Doremus, *The Story of TVA v. Hill: A Narrow Escape for a Broad New Law*, in ENVIRONMENTAL LAW STORIES 109, 113 (Richard J. Lazarus & Oliver A. Houck eds., 2005).

161. *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 173, 184 (1978).

162. Cointe & Guillemot, *supra* note 14, at 3.

163. *Id.* at 4.

164. *Id.*

165. Lin, *supra* note 36, at 694–702; see *supra* notes 119–21 and accompanying text.

166. See Cointe & Guillemot, *supra* note 14, at 5 (noting criticisms of targets that assume "massive amounts" of carbon removal); Dyke et al., *supra* note 17 (arguing that net zero goals have facilitated construction of "ever more elaborate fantasy worlds" involving planetary-scale carbon removal).

167. Lin, *supra* note 36, at 689–91.

generally offer temporary storage of carbon before yielding it back to the atmosphere.¹⁶⁸ Other CDR techniques, such as direct air capture and storage, are expensive, require significant amounts of energy, and face substantial barriers to widespread deployment.¹⁶⁹

Countries and companies nonetheless have incorporated CDR technologies into their plans for achieving net zero, and policymakers have begun to establish incentives to support CDR.¹⁷⁰ While some commentators worry that policymakers may fail to adequately explore CDR and other alternative responses to climate change on the assumption that GHG mitigation will succeed,¹⁷¹ the greater danger is that heavy reliance on CDR in climate modeling or policy could facilitate greenwashing.¹⁷² In other words, the Paris Agreement goals could undermine mitigation efforts by encouraging the scientific community and policymakers to indulge in unrealistic and troubling visions of achieving those goals.¹⁷³

Ambitious goals also may foreclose consideration of policy options that might be viewed as incompatible with those goals. Some commentators worry, for example, that a focus on 2°C might lead society to neglect promising decarbonization options that require substantial development, such as advanced nuclear reactors.¹⁷⁴ However, ongoing efforts to develop a wide range of decarbonization options suggest that such worries are misplaced.¹⁷⁵ Society can focus on 2°C while working on technologies that would be helpful in a world that exceeds 2°C.

E. Risks of Aspirational Goals

Notwithstanding their potentially valuable functions, aspirational standards do not come without drawbacks. Such standards can deflect potentially more effective alternative approaches, weaken support for policy objectives, and mislead the public. The overall effect of aspirational standards may depend on the availability and feasibility of

168. *Id.* at 689–90.

169. *Id.* at 691.

170. Welton, *supra* note 36, at 194; Susanna Twidale et al., *Facing Brutal Climate Math, US Bets Billions on Direct Air Capture*, REUTERS (Apr. 18, 2023, 2:48 PM), <https://www.reuters.com/world/us/facing-brutal-climate-math-us-bets-billions-direct-air-capture-2023-04-18/> [<https://perma.cc/5HPM-CKBY>].

171. Ted Nordhaus, *The Two-Degree Delusion*, FOREIGN AFFS. (Feb. 8, 2018), <https://www.foreignaffairs.com/world/two-degree-delusion> [<https://perma.cc/289X-RWU6>].

172. Alice Hancock, *EU's Proposed Carbon Removal Rules Open to Greenwashing, Say Experts*, FIN. TIMES (Nov. 28, 2022), <https://www.ft.com/content/c3ab4d6d-a7af-4462-8616-a8a47cf69e51> [<https://perma.cc/7LVT-C38L>].

173. Dyke et al., *supra* note 17.

174. Nordhaus, *supra* note 171.

175. See, e.g., U.S. DEPT. OF ENERGY, INDUSTRIAL DECARBONIZATION ROADMAP xvi–xxii (2022), <https://www.energy.gov/sites/default/files/2022-09/Industrial%20Decarbonization%20Roadmap.pdf> [<https://perma.cc/T55H-36BU>]; NAT'L ACADS. OF SCI., ENG'G, & MEDICINE, *ACCELERATING DECARBONIZATION OF THE U.S. ENERGY SYSTEM* 58–58, 66 (2021), <https://doi.org/10.17226/25932>.

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alternative standards, as well as subsequent policy choices adopted in the wake of missed aspirational goals.

The failure to meet unrealistic goals can undermine public confidence in policymakers and the processes and data used to support policymaking. In the context of climate change, the failure to avoid a 1.5°C or 2°C increase could damage trust in climate science and climate policy. A specific numerical temperature target is more a political choice than a scientific one.¹⁷⁶ The Paris Agreement's temperature goals represent signposts on a continuum, not bright lines that separate relatively manageable effects from catastrophic and irreversible impacts.¹⁷⁷ Unfortunately, such targets are prone to being misunderstood as scientifically determined divides between a livable world and an apocalyptic one.¹⁷⁸ The surpassing of a temperature target, if unaccompanied by a noticeable rise in impacts, could lead the public and politicians to devalue such targets and the climate science associated with them.¹⁷⁹ Even if targets are correctly understood as policy choices, the failure to achieve them might lead to disillusionment and apathy.¹⁸⁰

Furthermore, the adoption of aspirational standards—if not backed by additional provisions that can be monitored and enforced—can result in purely symbolic legislation or treaties. Aspirational targets can serve as a “placebo policy” that appears effective but fails to address underlying causes or actual problems.¹⁸¹ Domestically, symbolic legislation can allow politicians to appear to respond to a problem while ducking difficult policy choices.¹⁸² At the international level, aspirational climate goals might enable states to declare victory in the battle against climate change—or at least claim that they are taking significant steps—without putting in place effective policy measures.¹⁸³ Indeed, politicians

176. Cointe & Guillemot, *supra* note 14, at 2 (noting that whereas “the 2°C target has a[n] . . . entwined political-scientific history,” the “1.5°C target has a shorter and more overtly political history”); Marris, *supra* note 140.

177. Scott Waldman, ‘Doomerism’: Why Scientists Disagree with Biden on 1.5°C, CLIMATEWIRE (Apr. 3, 2023, 6:30 AM), <https://www.eenews.net/articles/doomerism-why-scientists-disagree-with-biden-on-1-5-c/> [<https://perma.cc/RB2D-J5DT>]; Nordhaus, *supra* note 171.

178. See Asayama et al., *supra* note 151, at 571.

179. *Id.*

180. McHugh, *supra* note 144, at 6 (noting concern that “the climate emergency frame [might] lose salience” if it fails to motivate political action that keeps warming below 2°C); Jesse Reynolds, *The Danger of Climate Change Deadlines*, LEGAL PLANET (June 30, 2020), <https://legal-planet.org/2020/06/30/danger-of-climate-change-deadlines/> [<https://perma.cc/2AEN-X966>] (warning that failure to meet climate targets can demoralize proponents of climate action while offering “effective political weapons” to opponents of climate action).

181. McHugh, *supra* note 144, at 10; Tushnet & Yackle, *supra* note 141, at 2–3 (explaining that legislators enact symbolic statutes “to make a point, or to be able to tell their constituents that they have done something about a problem”); Biermann et al., *supra* note 88, at 220 (warning that ambitious goals might “provid[e] a smokescreen of hectic political activity that blurs a reality of stagnation, dead ends and business-as-usual”).

182. See Dwyer, *supra* note 79, at 233–34; Adler, *supra* note 46, at 794–95.

183. Victor & Kennel, *supra* note 105, at 31.

and policymakers who supported the Paris Agreement's temperature goals in good faith might engage in carbon accounting maneuvers that make the goals appear achievable.¹⁸⁴ Such an outcome, in which unrealistic goals facilitate disregard of worsening circumstances on the ground and the need for radical, systemic change, could be disastrous.¹⁸⁵

However, it is doubtful that the Paris Agreement's temperature goals have displaced or avoided effective climate action. Prior to the Paris Agreement, efforts to mitigate GHG emissions had borne only modest fruit. Annual global GHG emissions continued to rise after adoption of the FCCC and even with the subsequent ratification of the Kyoto Protocol, under which developed countries agreed to limit their emissions between 2008 and 2012.¹⁸⁶ Indeed, emissions have continued to rise even after the Paris Agreement, with the exception of the first year of the COVID pandemic.¹⁸⁷ The latest IPCC report nonetheless observes that the Paris Agreement “has led to policy development and target-setting at national and sub-national levels, in particular in relation to mitigation” and that “[i]n many countries, policies have enhanced energy efficiency, reduced rates of deforestation and accelerated technology deployment, leading to avoided and in some cases reduced or removed emissions.”¹⁸⁸

Unwarranted confidence in aspirational goals could lead policymakers to fail to adopt and implement needed adaptation responses.¹⁸⁹ Current adaptation efforts, which are incremental in nature and tailored toward a temperature rise of 1.5°C–2°C, will be vastly inadequate to cope with human migrations, species migrations, crop and livestock relocation, and other large-scale disruptions that will accompany

184. Stefan C. Aykut et al., “*Incantatory*” Governance: Global Climate Politics’ Performative Turn and Its Wider Significance for Global Politics, 58 INT’L POL. 519, 533 (2021), <https://doi.org/10.1057/s41311-020-00250-8>; Asayama et al., *supra* note 151, at 571.

185. Aykut et al., *supra* note 184, at 533 (noting disconnect between “slow and procedural UN arena focused on negotiating carbon emission reductions” and trends of globalization, consumerism and unsustainable development).

186. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, 2303 U.N.T.S. 162; Nada Maamoun, *The Kyoto Protocol: Empirical Evidence of a Hidden Success*, 95 J. ENV’T ECON. & MGMT. 227, 235 (2019), <https://doi.org/10.1016/j.jeem.2019.04.001> (estimating emissions of the ratifying countries were approximately 7% below the emissions expected under a hypothetical business-as-usual scenario); Nicole Grunewald & Inmaculada Martinez-Zarzoso, *Did the Kyoto Protocol Fail? An Evaluation of the Effect of the Kyoto Protocol on CO₂ Emissions*, 21 ENV’T & DEV. ECON. 1, 10 (2015), <https://doi.org/10.1017/S1355770X15000091> (concluding that “a country with emission commitments [under Kyoto] emits on average 7 per cent less CO₂ than a country without reduction commitments”).

187. IPCC 2022, *supra* note 20, at 10–11 fig.SPM.2; Hannah Ritchie et al., *Greenhouse Gas Emissions*, OUR WORLD IN DATA, <https://ourworldindata.org/co2-and-greenhouse-gas-emissions> [https://perma.cc/4FNY-JPCW] (Aug. 2020).

188. IPCC 2023, *supra* note 26, at 10.

189. Ruhl & Craig, *supra* note 19, at 198–99; Nordhaus, *supra* note 171 (“[T]he continuing insistence that human societies might cut emissions rapidly enough to avoid dangerous climate change risks undermining the urgency to adapt.”).

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greater warming.¹⁹⁰ Recognizing the danger, J.B. Ruhl and Robin Craig advocate “a dual-minded approach to climate change” in which mitigation efforts aim to limit temperature rise to 2°C, but adaptation efforts assume a temperature rise of 4°C.¹⁹¹ Such an approach recognizes the value of aspirational climate goals while guarding against unwarranted confidence that such goals will be achieved.

V. CONCLUSION

Governments, courts, and corporations have treated the Paris Agreement’s temperature goals as powerful and meaningful guideposts, not as mere ideals. While the goals themselves are not enforceable, they have served as a foundation for identifying and establishing standards that are subject to public scrutiny, monitoring, and enforcement. Absent the Paris Agreement’s temperature goals, these standards, whether in the form of net zero pledges, emission reduction pathways, or deadlines for achieving carbon neutrality, would be weaker in substance or might not exist at all. Indeed, the temperature goals, even if unachievable, provided essential structure to reaching global agreement at the Paris negotiations. Binding GHGs emission caps for individual nations were a non-starter, and the chosen approach—using self-determined NDCs, combined with the ratchet mechanism—relies on the temperature goals as a lodestar.

Undoubtedly, aspirational goals have the potential to allow policy-makers to avoid effective policy responses. But when coupled with operative and enforceable requirements, such goals can inspire and motivate actions that achieve significant progress towards lofty aspirations.

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190. Ruhl & Craig, *supra* note 19, at 231–32, 240, 244–45.

191. *Id.* at 199.

