FORCING CLIMATE CHANGE COMPLIANCE

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Climate change caused by human activity is inflicting significant environmental damage. Further harms are inevitable as global temperatures rise, but most scientists believe that there is time (if just barely) to change course. The "Carbon Majors," a group of around 100 companies, are responsible for an outsized share of greenhouse gas emissions. Without their participation, no measures to address climate change will succeed. Yet, the Carbon Majors have consistently prioritized short-term profits and have resisted changes to their business model. Nor are laws or regulations likely to make a difference. Congress is polarized and largely incapable of passing environmental laws, and the Supreme Court has curtailed the power of federal agencies to promulgate new regulations.

This Article argues that the best way forward—perhaps the only way forward—requires that the Carbon Majors adopt a compliance-centered approach to climate change. Compliance involves more than literal-minded fidelity to existing laws and a true compliance culture integrates business, legal, and strategic risks within a broader ethical framework. Corporations with a strong compliance culture align purpose and profit; they consult laws and regulations for guidance, not to see how much they can get away with. For too many of the Carbon Majors, however, the compliance culture is nonexistent or broken. Our task in this Article is to show how that can be changed.

In recent years, more than two dozen cities, counties, and states have filed lawsuits seeking compensation from the Carbon Majors for climate change mitigation costs. Lawsuits have also been filed by nonprofits and concerned citizens. We contend that those lawsuits create an opportunity, not just to compensate for past harms, but to prevent further fossil fuel investments. To that end, we propose an equitable remedy: the judicial appointment of independent compliance monitors with plenary power to access corporate information and institute governance changes. Once embedded within corporations, monitors would prevent "greenwashing" ploys and help guide corporations through the difficult tradeoffs involved in rapid decarbonization. By implementing robust compliance controls within the corporations most responsible for climate change, monitors could play a vital role in advancing the transition to a green economy.

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Introduction

Internal documents show that Exxon, now ExxonMobil, knew of the threat of climate change in the 1970s, a decade before the general public began to focus on the issue.[1] Exxon's scientists alerted the management committee about the danger of increased carbon dioxide in the atmosphere, caused by the burning of fossil fuel, and cautioned that the window to act was short.[2] Instead of sounding the alarm and contributing to a collective solution, Exxon funded climate deniers,[3] lobbied successfully against the Kyoto Protocols and other measures that could have aligned nations around shared interests,[4] and

1. *See* Shannon Hall, *Exxon Knew About Climate Change Almost 40 Years Ago*, Sci. Am. (Oct. 26, 2015), https://perma.cc/UD2S-ZTQT. Exxon's knowledge was based on careful investigation. *Id.* ("In the 1970s and 1980s [Exxon] employed top scientists to look into the issue and launched its own ambitious research program that empirically sampled carbon dioxide and built rigorous climate models."); Neela Banerjee et al., *Exxon: The Road Not Taken*, Inside Climate News, https://perma.cc/XG2D-3JTM (reporting "how Exxon conducted cutting-edge climate research decades ago and then pivoted to work at the forefront of climate denial, manufacturing doubt about the scientific consensus that its own scientists had confirmed").
2. Hall, *supra* note 1 (noting presentations to Exxon's management committee in 1977 and 1978 that described the severity of the crisis and the need to respond quickly).
3. *Id.* ("By 1989 the company had helped create the Global Climate Coalition . . . to question the scientific basis for concern about climate change.").
4. *Id.* (reporting that Exxon "helped to prevent the U.S. from signing the international treaty on climate known as the Kyoto Protocol in 1998 to control greenhouse gases"). The "tactic not only worked on the U.S. but also stopped other countries, such as China and India, from signing the treaty." *Id.*

continued to pursue business as usual.[5] Exxon was joined by other fossil fuel companies in its communications and lobbying strategy of denial and delay.[6] The fossil fuel industry's choice to protect its profits by hiding the cost of its activities bears a strong resemblance to the tactics used by the tobacco industry.[7]

Now, as Exxon's internal studies predicted decades ago, climate change is causing sea level rise,[8] exacerbating weather extremes,[9] and contributing to mass extinction.[10] According to the U.S. Department of Defense, "[i]ncreasing temperatures; changing precipitation patterns; and more frequent, intense, and unpredictable extreme weather conditions caused by climate change are exacerbating existing risks and creating new security challenges for U.S. interests."[11]

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5. *See* John Schwartz, *Exxon Misled the Public on Climate Change, Study Says*, N.Y. Times, Aug. 23, 2017, https://perma.cc/W956-68WS ("Exxon Mobil has taken fire over its continued support for groups that oppose taking action on climate change . . . .").
6. Kathy Mulvey et al., Union of Concerned Scientists, The Climate Deception Dossiers: Internal Fossil Fuel Industry Memos Reveal Decades of Corporate Disinformation 2 (2015), https://perma.cc/A4P8-YU7U ("As the scientific evidence concerning climate change became clear, some of the world's largest carbon producers—including BP, Chevron, ConocoPhillips, ExxonMobil, Peabody Energy, and Shell—developed or participated in campaigns to deliberately sow confusion and block policies designed to reduce the heat-trapping emissions that cause global warming.").
7. *See* Hall, *supra* note 1 ("Both industries were conscious that their products wouldn't stay profitable once the world understood the risks, so much so that they used the same consultants to develop strategies on how to communicate with the public."); Mulvey et al., *supra* note 6, at 1 ("The fossil fuel industry—like the tobacco industry before it—is noteworthy for its use of active, intentional disinformation and deception to support its political aims and maintain its lucrative profits.").
8. *See* Danial Khojasteh et al., *The Evolving Landscape of Sea-level Rise Science from 1990 to 2021*, 4 Commc'ns Earth & Env't 1, 2 (2023) ("A growing body of literature indicates that sea-level rise . . . threatens low-lying coastal and estuarine zones worldwide, which may have nearly 1 billion inhabitants by 2036, through a range of hazards and impacts . . . ."); Sarah Kaplan & Brady Dennis, *The World is Running Out of Options to Hit Climate Goals, U.N. Report Shows*, Wash. Post (Apr. 4, 2022), https://perma.cc/MW58-EY2A ("Human carbon pollution has already pushed the planet into unprecedented territory, ravaging ecosystems, raising sea levels and exposing millions of people to new weather extremes.").
9. *See* Lydia DePillis, *Canada Offers Lesson in the Economic Toll of Climate Change*, N.Y. Times, (July 3, 2023), https://perma.cc/W7EF-YVGS ("What long seemed a faraway concern has snapped into sharp relief in recent years, as billowing smoke has suffused vast areas of North America, floods have washed away neighborhoods, and heat waves have strained power grids.").
10. *See* Laura Paddison, *Global Loss of Wildlife is "Significantly More Alarming" than Previously Thought, According to a New Study*, CNN (May 22, 2023), https://perma.cc/447G-GP8A (reporting "a new study that found almost half the planet's species are experiencing rapid population declines") (citing Catherine Finn et al., *More Losers than Winners: Investigating Anthropocene Defaunation through the Diversity of Population Trends*, 98 Biological Rev. 1732 (2023), https://perma.cc/2QE3-MRXU).
11. Dep't of Def., Off. of the Undersecretary for Pol'y (Strategy, Plans, and Capabilities), Department of Defense Climate Risk Analysis. Report Submitted to National Security Council (2021), https://perma.cc/B29V-GDTQ; *see also* Mark

The most significant causal factor for climate change is human activity, chiefly the extraction, refinement, and burning of fossil fuels.[12]

The Carbon Majors, a group of about 100 companies including ExxonMobil, are responsible for a disproportionate amount of human-caused greenhouse gas emissions.[13] According to Richard Heede's pathbreaking study, "nearly two-thirds of carbon dioxide emitted since the 1750s can be traced to the 90 largest fossil fuel and cement producers, most of which still operate today."[14] Without their cooperation, the goal of net-zero emissions cannot be met.[15] Although the Carbon Majors have belatedly acknowledged the problem of climate change,[16] they have lobbied against regulation and have not done enough to transition to clean energy.[17]

In an effort to create accountability, dozens of U.S. cities, counties, and states have brought lawsuits against the Carbon Majors asserting causes of action

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Patrick Nevitt, *On Environmental Law, Climate Change, & National Security Law*, 44 Harv. Envtl. L. Rev. 321, 323 (2020) (arguing that "climate change is not just an environmental issue—it is also a complex and multifaceted national security threat").

12. *See* Intergovernmental Panel on Climate Change ("IPCC"), *Summary for Policymakers*, *in* Climate Change 2021: The Physical Science Basis: Contribution of Working Group I in the Sixth Assessment Report of the Intergovernmental Panel on Climate Change 4–9 (V. Masson-Delmotte et al. eds., 2021) [hereinafter Climate Change Report 2021], https://perma.cc/6ZFR-2SHG; Frederica Perera, *Commentary: Pollution from Fossil-Fuel Combustion is the Leading Environmental Threat to Global Pediatric Health and Equity: Solutions Exist*, 16 Int'l J Env't Research & Public Health 1, 3 (2017), https://perma.cc/UPP4-BMK2 ("Fossil-fuel combustion is . . . the major human source of the greenhouse gases and short-lived climate pollutants that drive climate change.").
13. *See* Richard Heede, *Tracing Anthropogenic Carbon Dioxide and Methane Emissions to Fossil Fuel and Cement Producers, 1854–2010*, 122 Climate Change 229, 231 (2014) ("The question of wealth generated through the production and use of fossil fuel suggests an alternative to the nation-state approach: to analyze emissions in terms of the fossil fuels produced by incorporated entities . . . rather than states as consumers and emitters."). For identification of the Carbon Majors and various studies concerning their impact on global climate, *see Carbon Majors*, Climate Accountability Inst., https://perma.cc/NUU2-HFR3; Tess Riley, *Just 100 Companies Responsible for 71% of Global Emissions, Study Says*, The Guardian (July 10, 2017), https://perma.cc/E4CT-GF6L. Some environmental activists identify a broader set of responsible corporations. *See* Climate Action 100, https://perma.cc/MEE3-MQN8 (listing 171 corporations as targets for engagement).
14. *Carbon Majors*, Climate Accountability Inst., *supra* note 13.
15. Susan S. Kuo & Benjamin Means, *Climate Change Compliance*, 107 Iowa L. Rev. 2135, 2137 (2022) ("Unless corporations prioritize climate change mitigation, efforts to control global warming will fail.").
16. Steven Mufson, *Top Corporations Have Vowed to Fight Climate Change. Researchers Say Their Plans Fall Short*, Wash. Post (Feb. 6, 2022), https://perma.cc/7XTX-A2QX.
17. *Id.*; Jason Bordoff, *Behind All the Talk, This Is What Big Oil Is Actually Doing*, N.Y. Times (Aug. 7, 2023), https://perma.cc/AHP4-GE8X. ("If you've been listening to the world's major energy companies over the past few years, you probably think the clean energy transition is well on its way. But with fossil fuel use and emissions still rising, it is not moving nearly fast enough to address the climate crisis.").

including fraud, negligence, and public nuisance.[18] In increasing numbers, lawsuits have also been filed by nonprofits and concerned citizens.[19] At their core, these lawsuits allege that the Carbon Majors were well aware that their activities would increase the concentration of carbon dioxide in the atmosphere, causing global warming and endangering earth's life support systems. Yet, the Carbon Majors deliberately created doubt about whether global warming was real and lobbied against any regulatory oversight.[20] The plaintiffs generally seek recompense for harms already inflicted.[21]

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18. *See* Patrick Parenteau & John Dernbach, *More than Two Dozen Cities and States are Suing Big Oil over Climate Change – They Just Got a Boost from the US Supreme Court*, The Conversation (May 23, 2023), https://perma.cc/QPP3-YGWF. For a compendium of documents concerning U.S. and global climate change litigation, *see* Sabin Ctr. for Climate Change Law, Climate Change Litigation Databases, https://perma.cc/42J5-X8ZF [hereinafter Climate Change Litigation Database]. The database is jointly supported by the Columbia University Sabin Center for Climate Change Law and the Arnold & Porter law firm. *Id*.
19. *See* Climate Change Litigation Database, *supra* note 18. As reflected in a recent report by the U.N. Environment Programme (UNEP) and Columbia Law School's Sabin Center for Climate Change, "Climate Change is sparking a litigation boom across the globe—both to advance and delay action on climate change—with nearly 70 percent of cases playing out in U.S. courts." Katie Surma, *Climate Litigation Has Exploded, But is it Making a Difference?*, Inside Climate News (July 27, 2023), https://perma.cc/6BXX-NYLM. The litigation is "primarily aimed at holding governments accountable to their climate commitments . . . and establishing liability primarily of fossil fuel companies for harm caused by the effects of climate change, such as extreme weather events." *Id*.
20. *See, e.g.*, Hiroko Tabuchi, *In Video, Exxon Lobbyist Describes Efforts to Undercut Climate Action*, N.Y. Times (June 30, 2021), https://perma.cc/8FH2-GY5A. ("Keith McCoy, a senior director of federal relations for Exxon Mobil, described how the oil and gas giant targeted a number of influential United States senators in an effort to weaken climate action in President Biden's flagship infrastructure plan."). The lobbyist, who did not realize he was being recorded, stated that "the company has in the past aggressively fought climate science through 'shadow groups.'" *Id*. In subsequent Congressional testimony, the CEOs of Exxon Mobil, Shell, Chevron, and BP "touted their support for a transition to clean energy and said they had never engaged in campaigns to mislead the public on the role of fossil fuel emissions in global warming." Hiroko Tabuchi & Lisa Friedman, *Oil Executives Grilled Over Industry's Role in Climate Disinformation*, N.Y. Times (Oct. 28, 2021), https://perma.cc/X267-HF9K. However, the CEOs refused to "commit to no longer spending any money, either directly or indirectly, to oppose efforts to reduce emissions and address climate change." *Id*. Nor would they commit to instructing the American Petroleum Institute (API) to cease lobbying efforts on their behalf. *Id*. The API has, among other things, run "ads that targeted individual members of Congress for their support of climate policies." *Id*.
21. *See* Parenteau & Dernbach, *supra* note 18 ("At stake in all of these cases is who pays for the staggering cost of a changing climate."); Renee Cho, *Attribution Science: Linking Climate Change to Extreme Weather*, State of the Planet: News from the Columbia Climate School (Oct. 4, 2021), https://perma.cc/U6VQ-77LR ("Today a new type of research called *attribution science* can determine, not if climate change caused an event, but if climate change made some extreme events more severe and more likely to occur, and if so, by how much.").

To date, the results of litigation efforts have been mixed.[22] This Article argues that courts should consider another approach in climate change lawsuits: the appointment of independent monitors to redress corporate misconduct and establish effective compliance programs.[23] Once embedded within the target organizations, these monitors would engage with the multifaceted challenge of decarbonization, ensuring tangible progress.[24] For example, rather than permitting corporations to issue ambiguous public statements, monitors would drive the adoption of detailed decarbonization strategies with clear benchmarks for short-, medium-, and long-term results.[25] By instilling rigorous compliance controls within the corporations most accountable for climate change, monitors could play a vital role in advancing the shift toward a green economy.[26]

The argument unfolds as follows. Part II contends that climate change constitutes a global emergency and that the Carbon Majors are indispensable to any solution. Part III argues that neither legislation nor agency rulemaking is likely to yield effective regulation of the Carbon Majors, and that the Carbon Majors will not change course voluntarily. Part IV makes the case that judges in climate change lawsuits should use their equitable powers to appoint independent monitors when appropriate to reform a defendant corporation's compliance program. Part V responds to anticipated objections, specifically addressing potential concerns about the role of the board of directors and the boundaries of the concept of emergency.

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22. *See, e.g.*, May Aye Thiri, *How Social Movements Contribute to Staying within the Global Carbon Budget: Evidence from a Qualitative Meta-analysis of Case Studies*, 195 Ecological Econ. 1, 9 (2022) (reviewing data from 57 empirical cases of social movements and suggesting the importance of "tactical diversity" beyond litigation efforts for curbing greenhouse gas emissions), https://perma.cc/6WYY-9P3R.
23. Compliance refers to "a system of policies and controls that organizations adopt to deter violations of law and to assure external authorities that they are taking steps to deter violations of law." Miriam Hechler Baer, *Governing Corporate Compliance*, 50 B.C. L. Rev. 949, 958 (2009).
24. The task is more challenging than previous lawsuits targeting the tobacco industry, because "our entire economy does not run on tobacco." Mary Harris, *Can We Sue Our Way Out of the Climate Crisis?*, Slate (July 30, 2023), https://perma.cc/2CP9-YQ7X (interviewing Dharna Noor).
25. Corporations would also identify the steps they plan to take to achieve their reduction goals, including Scope 3 emissions, which are emissions along the supply chain. *See infra* Part IV.C.
26. In previous work, we distinguished compliance from the broader concept of risk management, arguing that "[o]nce presented as a compliance issue, climate change becomes an internal risk that a corporation may fail to properly address." Kuo & Means, *supra* note 15, at 2139. Otherwise, corporations might "decide that it is cheaper to insure against possible harms than seek to prevent them." *Id.*

I. Corporations and the Climate Emergency

The reality of climate change is no longer disputed nor are its causes.[27] This Part contends that climate change qualifies as an emergency caused in substantial part by greenhouse gas emissions directly traceable to corporations, particularly the Carbon Majors.[28]

A. Existential Stakes

As a result of human activity, the amount of carbon dioxide in the atmosphere is 50% higher than what was present before the Industrial Revolution.[29] In the 2015 Paris Accords, the international community agreed to a mix of mitigation and adaptation measures to transform the global economy and reduce its reliance on fossil fuels.[30] A critical component of the Paris Accords was a commitment to hold global warming below 1.5 degrees Celsius.[31] According to climate scientists, reaching this critical target entails achieving net-zero greenhouse gas emissions by the year 2050.[32] That goal cannot be met without

27. *See, e.g.*, Michael Burger et al., *The Law and Science of Climate Change Attribution*, 45 Colum. J. Env't L. 57, 60 (2020) ("There is overwhelming scientific agreement that human activities are changing the global climate system and these changes are already affecting human and natural systems."); Cinnamon P. Carlarne, *U.S. Climate Change Law: A Decade of Flux and an Uncertain Future*, 69 Am. U. L. Rev. 387, 389 (2019) (declaring that "[t]he reality of anthropogenic climate change is no longer subject to scientific debate").

28. For comprehensive coverage of climate science, we refer readers to the work of the Intergovernmental Panel on Climate Change ("IPCC"), an entity established in 1988 by the United Nations. *See generally* IPCC, https://perma.cc/C6NS-DWUE. According to its mission, "The IPCC prepares comprehensive Assessment Reports about the state of scientific, technical and socio-economic knowledge on climate change, its impacts and future risks, and options for reducing the rate at which climate change is taking place." *Id*. It is "one of the most valuable and successful government-coordinated science initiatives in human history." Adam D. Orford, *Clean Air Act Section 115: Is the IPCC a "Duly Constituted International Agency"?*, 34 Geo. Env't L. Rev. 215, 218 (2022).

29. *See* Bill McKibben, *No Human Has Ever Seen It Hotter*, Substack: The Crucial Years (July 5, 2023), https://perma.cc/P9WL-8LHK. ("Human beings have burned enormous amounts of fossil fuel, producing great quantities of carbon dioxide; it has accumulated in the atmosphere . . . . Since we know that the molecular structure of [CO_2] traps heat that would otherwise radiate back out to space, the heat we're seeing is the simple result of physics at work.").

30. Paris Agreement to the United Nations Framework Convention on Climate Change, art. 2, Dec. 12, 2015, T.I.A.S. No. 16-1104 (documenting agreement to keep "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").

31. *Id*.

32. *See* Shelley Welton, *Grasping for Energy Democracy*, 116 Mich. L. Rev. 581, 583 (2018) ("To effectively respond to climate change, the U.S. energy system requires a radical transformation—often called 'decarbonization'—from predominantly fossil-fuel-fired energy

substantially curbing the combustion of fossil fuels.[33] Yet, even though the effects of climate change are already being felt,[34] the global economy is still headed in the wrong direction.[35]

In a report issued in March 2023, the Intergovernmental Panel on Climate Change ("IPCC") warned that "[h]uman-caused climate change is already affecting many weather and climate extremes in every region across the globe. This has led to widespread adverse impacts and related losses and damages to nature and people."[36] The IPCC concluded with a high degree of confidence that extreme heat is causing death, disease, and displacement.[37] The economic consequences are particularly severe in industries such as agriculture, forestry, and tourism.[38] In urban areas, climate change threatens basic infrastructure, including access to water, sanitation, and energy supply.[39] Even if more aggressive measures were taken to curb emissions, the IPCC now estimates that it is more likely than not that the global climate will exceed 1.5 degrees Celsius this century.[40] However, all efforts to reduce emissions must continue to be made

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to almost exclusively carbon-free energy sources."); John Kerry & Gina McCarthy, *The Long-Term Strategy of the United States: Pathways to Net-Zero Greenhouse Gas Emissions by 2050*, U.S. Dep't of State 1, 3 (Nov. 2021) ("The most recent report from the Intergovernmental Panel on Climate Change (IPCC) vividly illustrates, with robust scientific confidence, the need to limit warming to 1.5°C, or as close as possible to that crucial benchmark, to avoid these severe climate impacts. Achieving this target will require cutting global greenhouse gas (GHG) emissions by at least 40% below 1990 levels by 2030, reaching global net-zero GHG emissions by 2050 or soon after, and moving to net negative emissions thereafter.").

33. *See* Wyatt G. Sassman, *Prioritizing Proximity in Phasing Out Oil and Gas Extraction*, 55 Conn. L. Rev. 749, 751 (2023) ("Since roughly the Industrial Revolution, combustion of fossil fuels has been the primary source of human greenhouse gas emissions, responsible for about sixty-four percent of total human-caused greenhouse gas emissions since 1750 and about eighty-six percent over the last ten years.") (citing Climate Change Report 2021, *supra* note 12, at 14).
34. *See, e.g.*, DePillis, *supra* note 9 ("Canada's wildfires have burned 20 million acres, blanketed Canadian and U.S. cities with smoke and raised health concerns on both sides of the border, with no end in sight."). On July 4, 2023, the planet set a new record for high temperature. Leo Sands, *This July 4 Was Hot. Earth's Hottest Day on Record, in Fact*, Wash. Post (July 5, 2023), https://perma.cc/V4C6-EQKY ("[S]ome scientists believe July 4 may have been one of the hottest days on Earth in about 125,000 years, due to a dangerous combination of climate change causing global temperatures to soar, the return of the El Niño pattern and the start of summer in the Northern Hemisphere.").
35. *See* Sassman, *supra* note 33, at 751–52 (reporting that "global fossil fuel use has exploded recently, growing eight-fold since 1950 and doubling since 1980") (citing Hannah Ritchie et al., *Fossil Fuels*, Our World in Data, https://perma.cc/H62N-FUGE).
36. Intergovernmental Panel on Climate Change, Climate Change 2023: Synthesis Report 5 (2023) [hereinafter Climate Change Report 2023], https://perma.cc/2VAY-DQUZ.
37. *Id*. at 6.
38. *Id*.
39. *Id.*
40. *Id.* at 12.

because "[e]very increment of global warming will intensify multiple and concurrent hazards."[41] Among other things, responsibly addressing climate change would entail leaving most remaining oil and gas reserves in the ground rather than extracting and burning them.[42]

By July 2023, less than six months after the issuance of the IPCC report's warning about increased temperatures, global heat records were being shattered on an almost daily basis.[43] In Phoenix, Arizona, a city that is used to the heat, temperatures soared above 110 degrees Fahrenheit and stayed at that level for weeks.[44] Sidewalks reached an unbearable 160 degrees.[45] The year 2023 was part of a disturbing upward trend; heat-related deaths in Maricopa County, which includes Phoenix, have increased substantially, reaching 425 in 2022.[46] Toddlers have been admitted to the hospital with second-degree burns because they stepped barefoot onto their balconies, people have been scalded by water from their garden hoses, and anyone who falls onto the pavement after it has baked in the sun risks horrific, sometimes fatal injuries.[47]

Meanwhile, extreme rainfall caused widespread flooding in Vermont and New York, and toxic haze from Canadian wildfires drifted across the Eastern seaboard further demonstrating that no place is immune to the effects of climate change.[48] Even in Antarctica, climate change has had an impact. According to NASA, Antarctica is shedding ice "at an average rate of about 150 billion tons per year, and Greenland is losing about 270 billion tons per year, adding to sea

41. *Id.*
42. *See* Dan Welsby et al., *Unextractable Fossil Fuels in a 1.5°C World*, 597 Nature 230, 231 (2021); Sassman, *supra* note 33, at 752 ("[M]odeling suggests that oil and gas extraction across the world must generally peak in the next few years and decline 'rapidly' by 2050.").
43. In Europe, "heat was responsible for more than 61,000 deaths [in 2022]—an eye-popping figure all the more remarkable for approaching the 70,000 dead in the 2003 European heat wave, long described as a worst-case benchmark." David Wallace-Wells, *Floods, Heat, Smoke: The Weather Will Never Be Normal Again*, N.Y. Times (July 16, 2023), https://perma.cc/NT3E-VW4C.
44. *See* Gabrielle Canon, *"Hell on Earth": Phoenix's Extreme Heatwave Tests the Limits of Survival*, The Guardian (July 14, 2023), https://perma.cc/Q2JF-F2YQ.
45. *Id.*
46. Joshua Partlow, *Burning Pavement, Scalding Water Hoses: Perils of a Phoenix Heat Wave*, Wash. Post (July 13, 2023), https://perma.cc/QG7W-DC3S.
47. *Id.* ("One current patient was celebrating his day off with a cocktail, fell and burned 20 percent of his body, requiring surgery and skin grafting . . . ."). This was not an isolated incident. *See id.* ("In 2015, the hospital admitted 43 people during the summer months with burns. Last summer, that number rose to 85, and seven of the people died.").
48. *See* Wallace-Wells, *supra* note 43 ("A month ago, when orange skies blanketed New York, it was a sign to many that this particular climate horror could no longer be conceptually quarantined as a local phenomenon of the American West, where tens of millions had already acclimated to living in the path of fire and every year breathing in some amount of its toxic smoke."). In Vermont, "[p]eople were kayaking through Montpelier, and the Winooski River rose to levels not seen since catastrophic flooding in 1927." *Id.*

level rise."[49] Many of these changes are irreversible.[50] The solution is clear, if hard to achieve: find alternatives to our fossil-fuel driven economy.[51]

Despite the damage already caused by climate change and the more severe harms still to come, it might be objected that climate change does not qualify as an emergency because its onset is slow, leaving time for the usual give-and-take of law and politics.[52] Declarations of emergency can allow advocates to pursue their own agenda regardless of the legal rights of others or public sentiment to the contrary.[53] That does not mean, however, that all invocations of emergency are counterfeit. As for objections concerning the pace of climate change, ecological "tipping points" are expected to cause rapid, rather than gradual, shifts in the

49. *Ice Sheets*, NASA Global Climate Change, (Jan. 30, 2024) https://perma.cc/2T7T-8XJC.

50. Climate Change Report 2023, *supra* note 36, at 5. As temperatures rise, the risk of positive feedback loops also increases. *Id.* at 18 ("The likelihood and impacts of abrupt and/or irreversible changes in the climate system, including changes triggered when tipping points are reached, increase with further global warming.").

51. *Id.* at 19 ("From a physical science perspective, limiting human-caused global warming to a specific level requires limiting cumulative CO_2 emissions, reaching at least net zero CO_2 emissions, along with strong reductions in other greenhouse gas emissions."). If we can manage to do this, "[d]eep, rapid and sustained mitigation and accelerated implementation of adaptation actions in this decade would reduce projected losses and damages for humans and ecosystems." *Id.* It is not possible to say exactly what consequences will follow if we do not curb emissions, but scientists have concluded to a high degree of confidence "that [greenhouse gas emissions] will have serious effects." Daniel A. Farber, *Uncertainty*, 99 Geo. L.J. 901, 938 (2011) (contending that worst-case scenarios should be given more weight given the difficulty of identifying trigger points for catastrophe *ex ante*).

52. *See* Robin Kundis Craig, *Adapting Water Law to Public Necessity: Reframing Climate Change Adaptation as Emergency Response and Preparedness*, 11 Vt. J. Env't L. 709, 744 (2010) ("[C]limate change appears to distort the normal understanding of emergency: how can a phenomenon that is likely to last for at least a couple of centuries qualify as an 'imminent' and 'impending' disaster?"); Rachel Riegelhaupt, Note, *Manufactured Emergencies: The Crisis at the Core of the National Emergencies Act*, 23 N.Y.U. J. Legis. & Pub. Pol'y 277, 317–18 (2021) ("A central tenet of the U.S. constitutional framework is the notion that Congress makes laws and the Executive enforces them; Congress' appalling failure to act in the face of an impending climate catastrophe is no basis to invoke a national emergency.").

53. In the case of climate change, some object that the policy goals of environmentalists are out of step with the priorities of a majority of U.S. citizens. *See, e.g.*, Henry Olsen, Opinion, *No, Biden Shouldn't Declare a National Emergency on Climate*, Wash. Post (July 20, 2022), https://perma.cc/PD7X-PHU7:

> We have been aware of the warming climate for decades, yet we haven't done what climate activists have wanted to address it because the policy tradeoffs required haven't garnered majority support among Americans. Environmentalists might be happy to raise gas prices, ramp down fossil fuel production and even reduce meat consumption as means to cut greenhouse gas emissions. Most Americans remain unconvinced.

According to this perspective, there are no shortcuts in a democracy: "Convincing voters will take time, but it's the only way to secure a national commitment to a long-term, multifaceted climate policy." *Id.*

climate system.[54] Already, the world is altered and creating severe hardships,[55] especially for those who are most vulnerable.[56] And the decisions we make today will linger, impacting our children and their children.[57] According to climate scientists, we have one chance to get it right, and we are falling short.[58]

B. The Role of the Carbon Majors

The term "Carbon Majors" refers to the 90 most carbon-intensive companies globally.[59] These corporations are responsible for a significant share of the world's greenhouse gas emissions. Thus, if the goal is to identify the actors most responsible for climate change and best able to bear the cost of mitigation and adaptation, "[s]hifting the perspective from nation-states to corporate entities—both investor-owned and state-owned companies—opens new opportunities for those entities to become part of the solution rather than passive (and profitable) bystanders to continued climate disruption."[60] Corporations may be induced to do what nations have not.

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54. *See* Natalie M. Roy, *Climate Change's Free Rider Problem: Why We Must Relinquish Freedom to Become Free*, 45 Wm. & Mary Env't L. & Pol'y Rev. 821, 823–24 (2021) (contending that "a long-term failure to address the crisis may have existential consequences for our species as scientists fear that enough heat will trigger feedback loops in our ecosystems, such as the melting of the world's permafrost—estimated to store approximately 1,500 billion tons of carbon (almost double the amount currently in the atmosphere)—thus kickstarting irreversible, runaway climate cycles outside of human control"); Kundis Craig, *supra* note 52, at 745 (stating that "many commentators have also noted that climate change impacts might not in fact be slow"). For a lucid, if speculative account of worst-case scenarios, *see generally* David Wallace-Wells, The Uninhabitable Earth: Life After Warming (2019).
55. In Iran, with reported temperatures reaching 123 degrees Fahrenheit, the government was forced to halt all non-essential economic activity. *Iran Shuts Down for Two Days Because of 'Unprecedented Heat*,*'* Reuters (Aug. 3, 2023), https://perma.cc/5F24-A557; *see also* Fatima Bhutto, *What Is Owed to Pakistan, Now One-Third Underwater?* N.Y. Times (Sept. 3, 2022), https://perma.cc/VHA4-L8PG (stating that "[t]oday, one-third of my country, Pakistan, is underwater" and cautioning that "horrors that Pakistan is struggling with today could soon come for everyone").
56. *See* Kundis Craig, *supra* note 52, at 745–46 (contending that "a more satisfactory answer to climate change's emergency status is that climate change impacts are already occurring—i.e., that the emergency, slow-moving or not, is already upon us, and things are only going to get worse").
57. *Id*. at 745 ("[L]ack of action now is extremely likely to have real consequences, even if those consequences are displaced in time.") (citing James Hansen, Storms of My Grandchildren: The Truth About the Coming Climate Catastrophe and Our Last Chance to Save Humanity 250–70 (2009)).
58. *See generally* James Howard Kunstler, The Long Emergency: Surviving the End of Oil, Climate Change, and Other Converging Catastrophes of the Twenty-First Century (2006); Fred Pearce, With Speed and Violence: Why Scientists Fear Tipping Points in Climate Change (2007).
59. Heede, *supra* note 13, at 238.
60. *Id*.

The Carbon Majors were first identified through research undertaken by Richard Heede of the Climate Accountability Institute.[61] Heede's pathbreaking study, published in 2014, traced the cumulative greenhouse gas emissions produced since the Industrial Revolution to the largest corporate and state-owned producers of fossil fuels and cement.[62] The study identified these companies based on their historic production of coal, oil, natural gas, and cement, four key sources of industrial greenhouse gases.[63] Heede's research relied on publicly available production data from each company and standard emissions factors to estimate the greenhouse gas emissions resulting from the combustion or use of these products.[64] The study's tally included the carbon contained in the products the companies brought to market, not just their own direct emissions from operations.[65]

The "Carbon Majors" list remains the most well-known and frequently cited list of companies disproportionately responsible for climate change. However, there have been several other analyses and rankings that focus on different aspects of corporate contributions to climate change. For example, the Carbon Disclosure Project (CDP) Carbon Majors Report relies upon more recent data.[66] Also, the Greenhouse 100 Polluters Index, produced by the Political Economy Research Institute at the University of Massachusetts Amherst, ranks the top 100 individual power plants in the United States based on their greenhouse gas emissions.[67] Some commentators focus on the so-called "supermajors," a set of publicly traded fossil fuel companies.[68] We will use the term "Carbon Majors" broadly to refer to all large corporations that substantially contribute to greenhouse gas emissions.

Our focus is on the Carbon Majors, not only because of the size of their total greenhouse gas emissions, but also because they have treated climate change as a public relations issue to be managed and have not done enough to reduce their emissions.[69] For example, rather than leaving oil in the ground as a

61. *See id*.; *see also CIEL Reaction to Carbon Majors Report*, Center for International Environmental Law (Nov. 22, 2013), https://perma.cc/YN2Q-FAG9.
62. *Id*. at 230.
63. *Id*.
64. *Id*. at 231–32.
65. *Id*. at 231.
66. *New Report Shows Just 100 Companies Are Source of Over 70% of Emissions*, Carbon Disclosure Project (July 10, 2017), https://perma.cc/CU5S-89KJ.
67. *Greenhouse 100 Polluters Index (2023 Report, Based on 2021 Data)*, Pol. Econ. Rsch. Inst., https://perma.cc/C6UL-CND9.
68. *See* Bordoff, *supra* note 17 ("The seven major publicly traded oil and gas companies, like Shell and BP, known as the supermajors, produce only 15 percent of the world's oil and gas, but as the I.E.A. has noted, they have 'an outsize influence on industry practices and direction.' They also have the technological and engineering prowess to advance clean energy.").
69. *See* Lauren Kent, *Big Oil Companies are Spending Millions to Appear "Green." Their Investments Tell a Different Story, Report Shows*, CNN (Sept. 8, 2022), https://perma.cc/72SN-ZY86 ("Big oil companies are spending millions to portray themselves as taking action on climate

stranded asset, fossil fuel companies have found a way to capitalize inconvenient holdings by allowing privately held companies to purchase them.[70] This ploy allows the fossil fuel company to profit from the future extraction, processing, and burning of oil while also claiming to have adhered to a pledge of carbon neutrality. Shell recently used this two-step maneuver and stated that it had reduced its oil output by "selling oil assets such as its U.S. shale business."[71] But, presumably, the purchasers have continued production apace, canceling out any reduction in Shell's activities.[72]

Other Carbon Majors are following the same approach:

> Around the world, many of the largest energy companies are expected to sell off more than $100 billion of oil fields and other polluting assets in an effort to cut their emissions and make progress toward their corporate climate goals. However, they frequently sell to buyers that disclose little about their operations, have made few or no pledges to combat climate change, and are committed to ramping up fossil fuel production.[73]

From a risk-management standpoint, this maneuver makes perfect sense. By selling their dirtiest assets, Carbon Majors like Shell manage their own exposure to climate change without sacrificing profits.[74] Yet, such sales are

change, but their investments and lobbying activities don't live up to their planet-friendly claims, according to a new report.") (citing InfluenceMap, Big Oil's Real Agenda on Climate Change 2022 (Sept. 2022), https://perma.cc/X49W-X5ST).

70. *See* Hiroko Tabuchi, *Oil Giants Sell Dirty Wells to Buyers with Looser Climate Goals, Study Finds*, N.Y. Times (May 10, 2022), https://perma.cc/GT5W-N7E3.

71. *See* Ron Bousso, *Shell Pivots Back to Oil to Win Over Investors*, Reuters (June 9, 2023), https://perma.cc/2EXU-P3Y3.

72. *See, e.g.*, Bill McKibben, *The Mercury is off the Charts*, Substack: The Crucial Years (June 15, 2023), https://perma.cc/WYN6-QHWR (describing the transaction as a "physically irrelevant accounting trick").

73. Hiroko Tabuchi, *supra* note 70.

74. *See* John C. Coffee, Jr., *Climate Risk Disclosures and "Dirty-Energy" Transfers: "Progress" through Evasion*, Colum. L. Sch. Blue Sky Blog (Jan. 25, 2022), https://perma.cc/7ZE7-VXCM ("As ESG disclosure becomes more costly (and it will), we may see the ratio between public and private firms owning 'dirty energy' assets shift significantly towards a higher percentage of private companies. In such a world, 'dirty energy' does not decrease; it just shifts towards private owners."). Professor Coffee suggests that one potential solution is to enlist large institutional investors to oversee the Carbon Majors. *Id.* That solution assumes, however, that institutional investors will insist on alternatives that might reduce their profits. There is reason to question whether financial firms will take this position. In 2020, Larry Fink, the CEO of BlackRock, one of the largest asset management firms in the world, declared that "[c]limate change has become a defining factor in companies' long-term prospects." Larry Fink, *A Fundamental Reshaping of Finance*, BlackRock (2020), https://perma.cc/S9WE-3DHP. Yet, "just two years later, Fink struck a radically different tone, rejecting 'woke' capitalism and elevating the principle that investors should center only on profits. In the spring, the firm announced it would support fewer shareholder resolutions on climate change, 'as we do not consider them to be consistent with our clients' long-term financial

counterproductive as a mechanism for reducing greenhouse gas emissions, creating a race to the bottom in which buyers are incentivized to extract fossil fuels faster and with fewer controls.[75] Put plainly, these transactions are little more than an accounting gimmick.

In the last two years, as they recorded record profits, the Carbon Majors retracted previous pledges to reduce their emissions.[76] Citing a pressing need for energy caused by the war in Ukraine, the Carbon Majors have even made new investments in fossil fuel development.[77] Exxon, for example, earned about $56 billion in 2022 and, rather than using those profits to support the investments needed to shift away from fossil fuels, "the company doubled down on oil and gas, significantly increasing drilling in the Permian Basin, and expanding offshore drilling in Guyana."[78] Shell's new president, Wael Sawan, stated that in light of the oil shortage it would be "dangerous and irresponsible" for Shell to reduce its oil production.[79] In sum, the Carbon Majors continue to be one of the most significant drivers of greenhouse gas emissions and, therefore, of climate change.

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interests.'" David Wallace-Wells, *What's Worse: Climate Denial or Climate Hypocrisy?*, N.Y. Times (June 22, 2022), https://perma.cc/67H2-LEK2 (noting that, contemporaneously, "BlackRock closed a $15.5 billion investment in Saudi pipelines").

75. Press Release, Env't Def. Fund, Report: As Oil Majors Take on Climate Goals, Data Shows Billions Worth of Their Polluting Assets are Being Sold Off to Less Stringent Operators (May 10, 2022), https://perma.cc/2HPF-K629.

76. *See* Bordoff, *supra* note 17 ("Overall, oil and gas companies are projected to spend more than $500 billion this year on identifying, extracting and producing new oil and gas supplies.").

77. *See* Kate Yoder, *Why Are BP, Shell, and Exxon Suddenly Backing Off Their Climate Promises?*, Grist (Feb. 16, 2023), https://perma.cc/XTX7-UM4T ("Heartened by last year's flow of oil cash and dissuaded by the rising costs of installing wind and solar, executives are turning away from the longer-term payoffs promised by renewable investments."); Jenny Strasburg, *Inside BP's Decision to Dial Back Its Green Transition*, Wall St. J. (Feb. 10, 2023), https://perma.cc/FL5J-E5VZ ("On the back of record full-year profits for the biggest Western oil companies buoyed by soaring energy prices, BP's 52-year-old CEO said the company will boost spending to produce more oil and gas for the rest of the decade than previously planned, even as he promised to increase investments in green energy.").

78. Andrew Ross Sorkin et al., *Dealbook Newsletter: Reassessing the Board Fight That Was Meant to Transform Exxon*, N.Y. Times (May 31, 2023), https://perma.cc/JVF8-SCTN. Exxon states that it is investing in renewable energy sources, too, but those investments are a small allocation of its assets. *Id.*; Kent, *supra* note 69.

79. *See* Bill McKibben, *Big Heat and Big Oil*, New Yorker (July 16, 2023), https://perma.cc/9PDJ-P76G (stating that, as a matter of exquisitely bad timing, the Shell CEO's statement was broadcast on July 6, 2023, "the day that many scientists believe was the hottest so far in human history").

II. Gaps in Law, Regulation, and Markets

The Carbon Majors' heel dragging would be less troubling if our elected officials perceived the threat and responded with comprehensive legislation.[80] A mix of mandatory controls and pricing changes could bring down the supply of fossil fuel and support a green-energy transition.[81] The Environmental Protection Agency ("EPA") might also impose more stringent regulations to limit greenhouse gas emissions.[82] In some areas, other federal agencies and states could also make a difference.[83] Even without additional laws or regulations, corporations respond to market pressures. If the public demanded clean energy, consistently rewarded those who provide it, and punished corporations that delayed transitioning away from fossil fuels, the Carbon Majors would have reason to change course voluntarily to maximize their profits.

In the long run, these avenues for change may produce results. Notably, the energy market is changing; the cost of renewable energy has steadily declined, and it is now often cheaper than other, dirtier alternatives.[84] Also, from a purely self-interested perspective, corporations have reason to care about climate risks to their own business model.[85] The prospects for political action remain uncertain, but it is possible that some future tragedy will galvanize a consensus around

80. According to a traditional view of the relationship of public governance and private corporate decision making, corporations "maximize their value within markets that are designed to promote efficient competition, while the government, through public environmental law, should address any negative externalities associated with market production." Sarah E. Light, *The Law of the Corporation as Environmental Law*, 71 Stan. L. Rev. 137, 140 (2019).

81. For specific recommendations, *see* Legal Pathways to Deep Decarbonization in the United States: Summary & Key Recommendations (Michael B. Gerrard & John C. Dernbach eds., 2018).

82. *See id*.

83. *See id*. For example, the Department of Energy could "modify its Superior Energy Performance initiative to include carbon emissions target setting, material efficiency standards, and reuse and material substitution optimization requirements." Gregg Macey, *Industrial Sector*, *in* Legal Pathways to Deep Decarbonization in the United States, *supra* note 81, at 34. At the state level, regulators "should evaluate new power projects based on their systemwide project costs and benefits . . . ." Jim Rossi, *Electricity Charges, Mandates, and Subsidies*, *in* Legal Pathways to Deep Decarbonization in the United States, *supra* note 81, at 57.

84. In Texas, the lower cost of solar power relative to fossil fueled-power has kept the electric grid going in the midst of a heat wave that caused a spike in demand. *See* Emily Foxhall, *Solar Power Proves Its Worth as Heat Wave Grips the State*, Tex. Trib. (June 28, 2023), https://perma.cc/Y788-924T ("The significant increase in solar power generation in recent years has helped meet the growing demand for electricity in Texas, which operates its grid largely independently of the rest of the country.").

85. *See* Cynthia A. Williams, *Fiduciary Duties and Corporate Climate Responsibility*, 74 Vand. L. Rev. 1875, 1885 (2021) ("Exposure to climate risks extends to companies across almost every sector of the U.S. economy . . . .").

climate change.[86] For now, though, Congressional gridlock, a Supreme Court bent on reining in federal agencies, and mixed market signals have left us on a path toward unrelenting heat and extreme weather.[87]

A. Legislative Impasse

Congress should respond to the climate emergency decisively by setting stricter standards for factory and power plant emissions, by taxing corporations to force them to internalize the environmental cost of carbon, and by increasing fuel-efficiency requirements for vehicles.[88] Last year, Congress sought to reduce the demand for fossil fuel by creating economic incentives for electrification.[89] This was an important but narrow victory, however, and there are several reasons to doubt that elected officials will be willing to address the supply side of the equation by regulating the extraction and sale of fossil fuels directly.[90]

First, the Carbon Majors and other affiliated industry groups are capable of spending vast sums of money to oppose regulations that would limit their profits.[91] They are among the largest corporations on earth and can use their war chests to outspend advocates on the other side of environmental issues both in public advertising and behind-the-scenes arm-twisting.[92] Dollars are not

86. For one possible scenario, *see* Kim Stanley Robinson, The Ministry for the Future (2020) (envisioning a complex web of consequences caused by a fatal heat wave in India).

87. *See* J.B. Ruhl & James Salzman, *Climate Change, Dead Zones, and Massive Problems in the Administrative State: A Guide for Whittling Away*, 98 Calif. L. Rev. 59, 64 (2010) ("Climate Change is as big and unwieldy a problem as they come . . . .").

88. *See* Linda A. Malone, Environmental Regulation of Land Use 4 (2017) (noting that environmental regulation has been seen as a primarily federal issue). With respect to climate change, no single emergency measure can substitute for broad-based legislation. *See* Daniel A. Farber, *Exceptional Circumstances: Immigration, Imports, the Coronavirus, and Climate Change as Emergencies*, 71 Hastings L.J. 1143, 1176 (2020) (evaluating potential presidential authority to address climate change unilaterally and concluding that "while emergency powers are sweeping, they are far from covering the universe of actions that would be required by a serious climate policy").

89. Inflation Reduction Act, Pub. L. No. 117-169, 136 Stat. 1818 (2022); *see* Sassman, *supra* note 33, at 756 (noting "a contrast between 'supply-side' and 'demand-side' climate policies, where policies seeking to reduce the overall supply of fossil fuels (such as restrictions on extraction) are compared against policies aimed at reducing demand for fossil fuels (such as promoting electrification)").

90. *See* Kuo & Means, *supra* note 15, at 2137 ("In our era of political polarization, a comprehensive 'Green New Deal' to transition the U.S. economy away from fossil fuels is a nonstarter.") (citing Timothy Gardner, *Republicans Defeat Green New Deal in U.S. Senate Vote Democrats Call a Stunt*, Reuters (Mar. 26, 2019), https://perma.cc/559P-2LTE).

91. *See* Susan S. Kuo & Benjamin Means, Essay, *The Political Economy of Corporate Exit*, 71 Vand. L. Rev. 1293, 1294 (2018) (stating that "there is general agreement that corporate political activity includes financial contributions, lobbying efforts, participation in trade groups, and political advertising, all of which gives corporations a 'voice' in public decisionmaking").

92. *See* Leo E. Strine, Jr., *Corporate Power Ratchet: The Courts' Role in Eroding "We the People's" Ability to Constrain Our Corporate Creations*, 51 Harv. C.R.-C.L. L. Rev. 423, 433 (2016)

votes, but few would dispute that lobbying efforts can produce results.[93] In states whose economies depend on the fossil fuel industry, the political influence of the Carbon Majors is even greater.[94]

Second, to the extent lawmakers take direction from the preferences of their constituents, public opinion on climate change initiatives is mixed, especially as to their relative priority. It seems unlikely that elected officials will act in ways that might impose economic costs on voters, regardless of the long-term benefits.[95] Neither party wants to be associated with higher prices at the pump or to be held responsible for causing an economic recession.[96] For many voters, climate issues are not as salient as access to affordable food, housing, and medical care. In short, even if it were possible to remove the influence of lobbyists from the equation, it is not clear that there exists a broad democratic consensus for aggressive action to combat climate change.[97]

Third, in our two-party system, it is worth noting that climate change has become a politically polarized issue. In the 1960s and 1970s, Congress passed several major environmental laws on a bipartisan basis.[98] Today, according to

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(contending that the Supreme Court "gave corporations the ability to influence the political process more directly, which has therefore in turn made elected officials more responsive to moneyed interests . . .").

93. *See* Lee Drutman, The Business of America Is Lobbying: How Corporations Became Politicized and Politics Became More Corporate 3–4 (2015).

94. *See, e.g.*, Adam Powell, *El Paso Voters Reject Climate Charter Proposal by Wide Margin*, El Paso Times (May 6, 2023), https://perma.cc/UF7U-AX6L. New industries supported by the Inflation Reduction Act may change that dynamic over time. *See* Daniel A. Farber, *Recent Developments in U.S. Climate Law: Judicial Retrenchment and Congressional Action*, 35 J. Env't L. 265, 273 (2023) ("The IRA's large-scale spending will foster the growth of constituencies supportive of climate policy in the renewables industry, electric vehicle production and battery technology, and so forth, with jobs and investment flowing at least in part to regions that have traditionally been opposed to emissions constraining policies."); David Gelles et al., *The Clean Energy Future Is Arriving Faster Than You Think*, N.Y. Times (Aug. 12, 2023), https://perma.cc/ETH9-NTDN ("About two-thirds of the new investment in clean energy is in Republican-controlled states, where policymakers have historically resisted renewables. But with each passing month, the politics seem to matter less than the economics.").

95. Kaplan & Dennis, *supra* note 8 ("Elected officials have largely been unwilling to choose policies they fear could cost them the next election when the benefits might not be felt for several more decades.").

96. *See* Bordoff, *supra* note 17 (observing that "even governments strongly committed to slowing climate change, including the Biden administration, have nonetheless encouraged energy companies to produce more oil to keep gasoline prices in check").

97. Of course, public opinion may also be shaped by misleading advertising sponsored by the Carbon Majors.

98. Linda A. Malone, *The Emperor's New Clothes: The Variety of Stakeholders in Climate Change Regulation Assuming the Mantle of Federal and International Authority*, 79 Ohio St. L.J. 705, 726 ("In the late 1960s, the rise of environmentalism in public awareness led to a flurry of federal environmental regulation, from the National Environmental Policy Act (NEPA) to the Clean Air and Clean Water Acts."); National Environmental Policy Act § 102, 83 Stat.

the Pew Research Center, "[c]limate change remains a low-priority issue for Americans who identify as Republican or lean toward the Republican Party."[99] At the state level, Republican control has led in some cases to coercive measures designed to prevent corporations from calculating the cost of fossil fuel.[100] No longer common ground, environmental protection is now part of what some conservative politicians have derided as a "woke" agenda.[101] Thus, any assessment of the likelihood of government intervention must include the possibility that elected officials will not only fail to act but may choose to subvert climate measures and further subsidize the extraction of fossil fuels.[102]

B. Nondelegation and "Major Questions"

As a second-best solution, if comprehensive legislation addressing the transition away from fossil fuel is unrealistic, it might be tempting to look to the federal administrative agencies, especially EPA and the Federal Energy Regulatory Commission ("FERC"). Under broad authority of legislation such as the Clean Air Act, which requires EPA to set emissions standards reducing "hazardous air pollutants," EPA could use administrative rulemaking to address greenhouse

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at 852; Clean Air Act, Pub. L. No. 88-206, 77 Stat. 392 (1963); Clean Air Act Amendments of 1966, Pub. L. No. 89-675, 80 Stat. 954 (1966); Clean Air Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1676 (1970); Federal Water Pollution Control Act Amendments of 1961, Pub. L. No. 87-88, 75 Stat. 204 (1961); Clean Water Restoration Act of 1966, Pub. L. No. 89-753, 80 Stat. 1246 (1966).

99. Alec Tyson, *On Climate Change, Republicans are Open to Some Policy Approaches, Even as They Assign the Issue Low Priority*, Pew Rsch. Ctr. (July 23, 2021), https://perma.cc/C7TJ-CJ7R.

100. *See* Michael Copley, *Republican Attacks on ESG Aren't Stopping Companies in Red States from Going Green*, NPR (June 27, 2023), https://perma.cc/7NLR-HJ6D (reporting that, "[i]n South Carolina, lawmakers are considering a bill that would bar managers of state retirement funds from considering environmental issues when they're making investment decisions" and that "attacks on ESG in South Carolina are part of a national campaign that's being waged by conservative politicians and activists, who accuse companies of using their investments to push a liberal agenda").

101. Saijel Kishan & Danielle Moran, *Republicans Prepare to Ramp Up Their Anti-ESG Campaign in 2023*, Bloomberg (Dec. 9, 2022), https://perma.cc/3JU6-RUP4 ("More than a dozen Republican state attorneys general have blasted ESG financial practices, while Republicans in Congress plan to increase their scrutiny of what they call "woke capitalism." One of their main complaints is that [ESG] investing is part of a broader Democratic effort to prioritize climate change and other societal issues to the detriment of the fossil-fuel industry.").

102. *See* David Gelles, *How Environmentally Conscious Investing Became a Target of Conservatives*, N.Y. Times (Feb. 28, 2023), https://perma.cc/4EQC-VU8Y ("Republicans have launched an assault on a philosophy that says that companies should be concerned with not just profits but also how their businesses affect the environment and society."); Gelles et al., *supra* note 94 ("Dozens of conservative groups organized by the Heritage Foundation have created a policy playbook, should a Republican win the 2024 presidential election, that would reverse course on lowering emissions. It would shred regulations designed to curb greenhouse gases, dismantle nearly every federal clean energy program and boost the production of fossil fuels.").

gas emissions.[103] Likewise, FERC could require utilities to increase the amount of green energy in their portfolios and set emissions caps for power plants.[104] Other agencies might also play a role. For example, the Securities and Exchange Commission ("SEC") has proposed new climate-related disclosure rules for public companies.[105] Increased transparency would protect investors in the first instance and could prompt corporate executives to devote greater attention to climate change issues.

However, the U.S. Constitution provides that the legislative power resides exclusively in the legislative branch.[106] Federal agencies such as EPA, FERC and the SEC are in the executive branch and cannot exercise independent legislative powers.[107] Until recently, the Supreme Court had not struck down agency action as a violation of the nondelegation doctrine since the *Lochner* era, holding that delegation of regulatory authority to agencies was appropriate as long as the agency's work was governed by an "intelligible principle."[108] Further, the Court had adhered to an overarching principle of deference to agency decision-making.[109] Under the Court's longstanding approach, there would have been little doubt that federal agencies could use their delegated authority to address

103. 42 U.S.C. § 7411(a)(1); see also Daniel Brian, *Regulating Carbon Dioxide Under the Clean Air Act as a Hazardous Air Pollutant*, 33 Colum. J. Env't L.J. 368, 370 (2008) (arguing that "[i]n the absence of new legislation specifically tailored to address climate change, the Clean Air Act . . . may provide a useful vehicle to regulate greenhouse gases").

104. *See, e.g.*, Federal Energy Regulatory Commission, Interim Greenhouse Gas (GHG) Emissions Policy Statement (PL21-3-000) (Feb. 17, 2022) ("To determine if a project is in the public interest . . . the Commission will consider proposals by the project sponsor to mitigate all or a portion of the project's climate change impacts, and the Commission may condition its authorization on the project sponsor further mitigating those impacts.").

105. The Enhancement and Standardization of Climate-Related Disclosures for Investors, 87 Fed. Reg. 21, 334 (Apr. 11, 2022). According to the SEC's summary, "The proposed rules would require information about a registrant's climate-related risks that are reasonably likely to have a material impact on its business, results of operations, or financial condition. The required information about climate-related risks would also include disclosure of a registrant's greenhouse gas emissions, which have become a commonly used metric to assess a registrant's exposure to such risks." *Id.*

106. U.S. Const. art. I, § 1.

107. A.L.A. Schechter Poultry Corp. v. United States, 295 U.S. 495, 529 (1935) ("Congress is not permitted to abdicate or to transfer to others the essential legislative functions with which it is thus vested.").

108. The concept has traditionally been interpreted broadly. *See* Whitman v. Am. Trucking Ass'ns, 531 U.S. 457, 474 (2001) ("In the history of the Court we have found the requisite 'intelligible principle' lacking in only two statutes, one of which provided literally no guidance for the exercise of discretion, and the other of which conferred authority to regulate the entire economy on the basis of no more precise a standard than stimulating the economy by assuring 'fair competition.'"). As an academic, Justice Barrett criticized the laxity of the standard. *See* Amy Coney Barrett, *Suspension and Delegation*, 99 Cornell L. Rev. 251, 318 (2014).

109. *See* Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, 467 U.S. 837, 843–47 (1984) (deferring to agency interpretations of statutory terms that contain ambiguities).

greenhouse gas emissions, even though Congress may not have had climate change in mind specifically when it broadly authorized EPA to protect the nation from airborne pollutants.[110]

In its past several terms, however, the Supreme Court has substantially cut back on the power of federal agencies to promulgate regulations, jeopardizing the ability of EPA, FERC, or the SEC to adapt their regulatory approach to respond to climate change.[111] Most notably, in *West Virginia v. Environmental Protection Agency*,[112] the Supreme Court held that EPA lacked the delegated authority under the Clean Air Act to implement a Clean Power Plan.[113] As initially conceived, the Clean Power Plan would have used emissions caps to limit greenhouse gas emissions from power plants and to force "a sector-wide shift in electricity production from coal to natural gas and renewables."[114] It was undisputed that EPA was authorized "to regulate power plants by setting a 'standard of performance' for their emission of certain pollutants into the air."[115] However, in interpreting the Clean Air Act with respect to the generation-shifting plan EPA had formulated, the Court stated that it would provide closer scrutiny than usual given "the 'economic and political significance' [which] provide[s] a 'reason

110. Even if the Court were inclined to be deferential to agency action, the application of older statutory language to modern challenges involves non-trivial interpretive complexities. *See, e.g.*, Orford, *supra* note 28, at 217 (observing of Section 115 of the Clean Air Act: "[A]lthough it was enacted in 1965, it has never served as the foundation for a regulatory program. The powers it grants are breathtakingly broad, and yet it contains so many conditions that it is difficult to imagine how it was intended to be used."); Benjamin Means, Note, *Prohibiting Conduct, Not Consequences: The Limited Reach of the Migratory Bird Treaty Act*, 97 Mich. L. Rev. 823, 823 (1998) (critiquing efforts to use broad language in older environmental laws to serve modern regulatory purposes) (citing Migratory Bird Treaty Act, 16 U.S.C. §§ 703–712 (1994) (original version at ch. 128, 40 Stat. 755 (1918))).

111. *See* Mark P. Nevitt, *The Remaking of the Supreme Court: Implications for Climate Change Litigation & Regulation*, 42 Cardozo L. Rev. 2911, 2912 (2021) (writing after Amy Coney Barrett's nomination to the Supreme Court and before her confirmation, Professor Nevitt predicted that "[a] transformed, 6-3 Court that replaces Justice Ginsburg with Justice Barrett has significant implications for the ability of Congress and the President to tackle climate change and other pressing environmental challenges—and for the ability of plaintiffs to address those challenges in court").

112. 597 U.S. 697 (2022).

113. EPA relied upon Section 111(d) of the Clean Air Act, which, among other things, authorizes regulation of existing sources of air pollution. 42 U. S. C. § 7411(d).

114. *West Virginia*, 597 U.S. 697 at 698. Regarding the anticipated cost of the rule, the Court noted that "EPA's own modeling concluded that the rule would entail billions of dollars in compliance costs (to be paid in the form of higher energy prices), require the retirement of dozens of coal-fired plants, and eliminate tens of thousands of jobs across various sectors." *Id*. at 714.

115. *Id*. at 706 (citing 42 U.S.C. § 7411(a)(1)). EPA had previously determined "that carbon dioxide is an 'air pollutant' that 'may reasonably be anticipated to endanger public health or welfare' by causing climate change." *Id.* at 707 (citing 80 Fed. Reg. 64530).

to hesitate before concluding that Congress' meant to confer such authority."[116] The Court rejected EPA's Clean Power Plan and announced a new "major questions doctrine" designed to block "agencies asserting highly consequential power beyond what Congress could reasonably be understood to have granted."[117]

This past term, in *Biden v. Nebraska*,[118] the Court invoked the same doctrine to strike down a student loan forgiveness program that fell within the plain language of the Higher Education Relief Opportunities for Students Act of 2003.[119] In the Court's estimation, the loan forgiveness program nevertheless exceeded the Secretary of Education's delegated authority.[120] The Court emphasized that the loan forgiveness plan addressed a politically controversial matter that was also before Congress.[121] Pursuant to the Court's reasoning, if Congress chose not to pass a law forgiving student loans, it would be inappropriate for a federal agency to make a different choice.[122] Arguably, the same dynamic applies to climate change regulation to the extent federal agencies might rely upon previously delegated authority to take up matters that could be addressed more directly via legislation.[123]

In sum, agency power can no longer be determined solely by reading the relevant statutes and ascertaining their plain meaning. A supervening question, answerable only by the Supreme Court, is whether the original statutory delegation was specific enough in light of the economic significance of proposed agency regulations. It is unclear whether climate change regulations can satisfy this standard. The key environmental laws were written decades ago and provide

116. *Id*. at 721. The Court's approach was unusual also because it found that the legality of EPA's plan was justiciable even though the plan had since been withdrawn by the agency and was not in effect. *Id*. at 720 ("Here the Government 'nowhere suggests that if this litigation is resolved in its favor it will not' reimpose emissions limits predicated on generation shifting; indeed, it 'vigorously defends' the legality of such an approach.") (citations omitted).

117. *Id*. at 724. The Court further stated, "We also find it 'highly unlikely that Congress would leave' to 'agency discretion' the decision of how much coal-based generation there should be over the coming decades." *Id*. at 729 (citation omitted).

118. 143 S. Ct. 2355 (2023).

119. The statute authorizes the Secretary of Education to "waive or modify any statutory or regulatory provision applicable to the student financial assistance programs under Title IV of the [Higher Education Act of 1965] as the Secretary deems necessary in connection with a war or other military operation or national emergency." 20 U.S.C. § 1098bb(a)(1). The Secretary identified COVID-19 as the requisite emergency. *Nebraska*, 143 S. Ct. at 2364.

120. As the Court explained, "The question here is not whether something should be done; it is who has the authority to do it." *Id*. at 2372.

121. *Id*. at 2373 ("Congress is not unaware of the challenges facing student borrowers.").

122. *See id*. at 2372–76.

123. For recent assessments of the major questions and nondelegation doctrines, *see generally* David B. Spence, *Naïve Administrative Law: Complexity, Delegation and Climate Policy*, 39 Yale J. Reg. 964 (2022); Alison Gocke, Chevron*'s Next Chapter: A Fig Leaf for the Nondelegation Doctrine*, 55 U.C. Davis L. Rev. 955 (2021); Cass R. Sunstein, *There Are Two "Major Questions" Doctrines*, 73 Admin. L. Rev. 475 (2021); Louis J. Capozzi III, *The Past and Future of the Major Questions Doctrine*, 84 Ohio St. L.J. 191 (2023).

only general guidance.[124] Also, any new agency rules that limit greenhouse gas emissions would have a large impact on the economy as a whole. Almost by definition, therefore, any agency rulemaking concerning climate change that can survive Supreme Court scrutiny will be too small to make a meaningful difference.[125]

C. The Profit Imperative

According to the standard account of corporate governance, sometimes known as "shareholder primacy," the fundamental purpose of the corporation is to produce profits for the benefit of shareholders.[126] Taken to its logical conclusion, shareholder wealth maximization doctrine holds that "[i]f shareholders can benefit from socially harmful but legal action, the doctrine requires that the corporation take those actions."[127] Yet, courts typically defer to directors' decisions pursuant to the business judgment rule, which gives directors significant flexibility to make decisions regardless of whether they will maximize their profits at the expense of other considerations.[128]

In gauging director discretion, however, the business judgment rule is not the end of the analysis. Professors Dorothy Lund and Elizabeth Pollman have argued persuasively that shareholder primacy arises not just from law but from a broader set of institutional arrangements, including "proxy advisors, stock exchanges, ratings agencies, institutional investors, and associations."[129]

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124. *See* Spence, *supra* note 123, at 969 (contending that agencies address climate change "only when Democrats control the executive branch, and under aging enabling statutes that seem to authorize effective climate solutions only vaguely, or in indirect ways").

125. For example, while many of EPA's existing regulations remain in force, they are not enough to force a transition away from fossil fuels. *See* Farber, *supra* note 94, at 271 ("Together these unaffected EPA regulations will have a substantial impact on US greenhouse gas emissions, but none of them will be transformative. Indeed, that may be the very reason why they escape legal peril from the major questions doctrine. Yet, if we are to deal effectively with climate change, it is clear that the US energy system needs transformation.").

126. *See* Henry Hansmann & Reinier Kraakman, *The End of History for Corporate Law*, 89 Geo. L.J. 439, 439 (2001) (arguing that "[t]here is no longer any serious competitor to the view that corporate law should principally strive to increase long-term shareholder value."); Edward B. Rock, *Adapting to the New Shareholder-Centric Reality*, 161 U. Pa. L. Rev. 1907, 1923 (2013); Robert B. Thompson, *Anti-Primacy: Sharing Power in American Corporations*, 71 Bus. Law. 381, 387–88 (2016); Stavros Gadinis & Amelia Miazad, *Corporate Law and Social Risk*, 73 Vand. L. Rev. 1401, 1405 (2020) ("For the last half century, interpreting shareholder primacy as a requirement to maximize profits has remained the reigning credo of the corporate world.").

127. Lynn M. LoPucki, *The End of Shareholder Wealth Maximization*, 56 U.C. Davis L. Rev. 2017, 2019 (2023).

128. *Id.*; *see also* Lynn Stout, The Shareholder Value Myth 8 (2012) (arguing that "shareholder value ideology is based on wishful thinking, not reality").

129. Dorothy S. Lund & Elizabeth Pollman, Essay, *The Corporate Governance Machine*, 121 Colum. L. Rev. 2563, 2565–66 (2021) (arguing that these broader factors "enshrine shareholder primacy in public markets").

Consequently, even though the business judgment rule is capacious, directors do not enjoy unfettered freedom to set corporate policy to serve social objectives. Professors Lund and Pollman conclude that the success of "various ESG initiatives" depends on whether they "can be reconciled with pursuing long-term shareholder value."[130] In their view, there is some evidence that this alignment is possible.[131]

At present, though, it appears that what Lund and Pollman label the "corporate governance machine" is generating a shorter-term focus on profits and too little attention to curbing greenhouse gas emissions.[132] The ostensible long-term benefits of carbon neutrality are not sufficient to align corporate behavior with environmental objectives.[133] Some of the Carbon Majors have pledged to support a transition away from fossil fuels,[134] but most have been unwilling to take concrete steps in that direction while their traditional business model remains profitable.[135] Shell, for example, is replacing a plan to cut oil production by 20% by 2030 with a revised plan that calls for no reduction and possibly a slight increase in production.[136] In its media statements, Shell does not directly acknowledge a change in strategy and couches its activities in the language of climate responsibility, pledging to "create more value with less emissions."[137] Yet, Shell's aspirational language does not appear to match its actual business

130. *Id*. at 2568.

131. *See id*. at 2615 (citing "topics such as disclosing climate change risk and increasing board diversity").

132. One commentator observes "that shareholders seem to prefer that oil profits be distributed as dividends rather than reinvested more in low-carbon energy solutions" and speculates that those shareholders are "skeptical about the industry's ability to be as profitable in clean energy." Bordoff, *supra* note 17. Instead, they may prefer to take profits and reinvest them elsewhere. *Id*.

133. Andrew W. Winden, Caremark*'s Climate Failure*, 74 Hastings L.J. 1167, 1171 (2023) (reporting survey evidence that "directors of American corporations do not view climate change as an important focus for their boards").

134. *See* Mufson, *supra* note 16.

135. *See, e.g.*, Bousso, *supra* note 71 ("Shell . . . will keep oil output steady or slightly higher into 2030 as part of CEO Wael Sawan's efforts to regain investor confidence as the energy giant wrestles with poor returns from renewables while oil and gas profits are booming, company sources said.").

136. *Id*. Notably, since making its initial pledge, Shell "reported record profits of $40 billion last year on the back of strong oil and gas prices." *Id*. Shell's leadership has also had to contend with U.S. companies like Exxon Mobil and Chevron that have made no production cuts and have announced plans for expansion. *Id*. ("A key concern . . . has been the significantly weaker performance of Shell's shares since late 2021 compared with its U.S. rivals Exxon Mobil . . . and Chevron . . ., which both plan to grow fossil fuel output.").

137. *See* Press Release, Caroline J.M. Omloo, Shell Company Secretary, Shell to Deliver More Value with Less Emissions (June 14, 2023), https://perma.cc/W33Q-L48X (stating that Shell "will today update investors on its strategy to create more value with less emissions, and deliver increased shareholder returns through a balanced energy transition"). Quoting CEO Wael Sawan, the Media Release admits that Shell plans to continue investing in fossil fuels: "We are investing to provide the secure energy customers need today and for a long time to

strategy.[138] The point can be generalized: the Carbon Majors are not climate deniers but have shown that they will do what is necessary to maintain steady profits for their shareholders.[139]

Again, nothing in corporate law requires this myopic approach. So long as they do not abandon the goal of earning profits, corporate managers can consider the best interests of society, the environment, and other stakeholders.[140] Specifically, they are free to pursue a strategic plan that prioritizes long-term sustainability over factors that would have a more immediate impact on the value of the corporation's stock.[141] Indeed, responsible business stewardship of a fossil fuel company for the long-term benefit of shareholders would call for a diversification of sources of revenue to establish a pathway to a sustainable future.[142] Corporations that fail to address environmental sustainability risk suffering reputational harms.[143] Nevertheless, until the markets for fossil fuel

come, while transforming Shell to win in a low-carbon future." *Id.* (internal quotation marks omitted).

138. John Armour, et al., *Green Pills: Making Corporate Climate Commitments Credible*, 65 Ariz. L. Rev. 285, 287 (2023) ("A quick look into the fine print suggests that Shell's net-zero emissions target qualifies at best as an aspiration that may not even be consistent with Shell's current plans, strategies, budgets and pricing assumptions.").

139. *See* Armour, et al., *supra* note 138, at 288 ("This practice is far from unique to Shell."); Brett McDonnell et al., *Green Boardrooms?*, 55 Conn. L. Rev. 335, 399 (2021) (concluding that "[f] or-profit corporations are not designed to solve a long-term, planet-wide, collective action problem like climate change"); Bordoff, *supra* note 17 ("Contrary to their rhetoric, the behavior of these companies suggests that they believe a low-carbon transition will not occur or they won't be as profitable if it does.").

140. *See* Benjamin Means, *The Value of Insider Control*, 60 Wm. & Mary L. Rev. 891, 934 (2019) ("To identify profits as the sole legitimate objective of the corporate form is to endorse an impoverished view of what corporations can accomplish.").

141. Such strategic flexibility should be at its zenith when corporate managers are acting to ameliorate a disaster such as climate change. *See* Susan S. Kuo & Benjamin Means, *Corporate Social Responsibility After Disaster*, 89 Wash. U. L. Rev. 973, 1005 (2012) ("In the context of disaster, the arguments against a progressive vision of corporate social responsibility lose much of their force."); Robert J. Rhee, *Fiduciary Exemption for Public Necessity: Shareholder Profit, Public Good, and the Hobson's Choice During a National Crisis*, 17 Geo. Mason L. Rev. 661 (2010).

142. *See* Oliver Hart & Luigi Zingales, *Companies Should Maximize Shareholder Welfare Not Market Value*, 2 J.L. Fin. & Acct. 247, 259 (2017); Elizabeth Pollman, *Corporate Oversight and Disobedience*, 72 Vand. L. Rev. 2013, 2028–29 (2019) ("Corporations produce a continual flow of externalities; embedding a duty of obedience to laws and regulations that constrain these externalities for the good of society helps to legitimize corporate law.").

143. *See* Roy Shapira, *Mission Critical ESG and the Scope of Director Oversight Duties*, 2022 Colum. Bus. L. Rev. 732, 734 ("Companies that fail to meet societal demands on issues such as user privacy, racial and gender diversity, and environmental sustainability may face significant blowback.").

products shift dramatically, there is little reason to expect corporate management to take a different approach.[144]

III. Climate Emergency Monitors

This Part argues that courts can address the Carbon Majors' contributions to climate change by appointing independent monitors to build a compliance culture. The argument rests on three premises: (1) that corporate compliance, properly understood, has an ethical dimension that would motivate action on climate change; (2) that the recent spate of climate change litigation against the Carbon Majors affords opportunities for courts to appoint monitors in appropriate cases; and (3) that independent monitors, given clear guidance and granted broad governance authority, have the capacity to reform the Carbon Majors, enlisting them in the fight against climate change.

A. Why Compliance Matters

Corporate compliance was once seen as a narrow, box-checking exercise, and compliance officers lacked any real authority in corporate governance.[145] The status of compliance within corporations has improved dramatically in recent years.[146] Notably, "the heads of legal and compliance departments find themselves in an increasingly elevated position within the corporate hierarchy, having gained a seat among top managers and a direct reporting avenue to the board."[147] Indeed, some commentators have groused that corporate compliance officers have too much power in the corporate governance structure.[148]

Several factors explain the rise of compliance, beginning with the record keeping and internal controls required by the Foreign Corrupt Practices Act

144. *See* Virginia Harper Ho, *Risk-Related Activism: The Business Case for Monitoring Nonfinancial Risk*, 41 J. Corp. L. 647, 652 (2016) ("Looking to shareholders as a source of corporate accountability may also be misguided because shareholders are perhaps as much to blame as corporate boards for . . . excessive risk-taking.") (citing William W. Bratton & Michael L. Wachter, *The Case Against Shareholder Empowerment*, 158 U. Pa. L. Rev. 653, 659 (2010)).

145. *See* Geoffrey Parsons Miller, *Compliance: Past, Present and Future*, 48 U. Tol. L. Rev. 437, 437 (2017) (describing earlier compliance function as a "glorified bookkeeping task, making sure that forms were filled out and boxes checked").

146. *See id*. ("Compliance . . . is coming of age as a field of legal practice, as a subject taught in law schools, and as a field of research and analysis by academics and thoughtful practitioners."); Diana E. Murphy, *The Federal Sentencing Guidelines for Organizations: A Decade of Promoting Compliance and Ethics*, 87 Iowa L. Rev. 697, 710 (2002) (identifying governance changes including "an entirely new job description: the Ethics and Compliance Officer").

147. Stavros Gadinis & Amelia Miazad, *The Hidden Power of Compliance*, 103 Minn. L. Rev. 2135, 2138 (2019).

148. *See* Sean J. Griffith, *Corporate Governance in an Era of Compliance*, 57 Wm. & Mary L. Rev. 2075, 2077 (2016) (arguing that "the oversight and control of corporate affairs . . . has been overtaken by compliance").

("FCPA") in the 1970s.[149] Perhaps most significant, revisions to the U.S. Sentencing Guidelines in 1991 included corporate compliance as a significant factor.[150] The Guidelines spurred the creation of new compliance programs backed by industry associations and education initiatives.[151] Since then, the importance of corporate compliance has been further bolstered by Delaware caselaw creating a fiduciary obligation at the board level,[152] and by the DOJ's revised charging guidelines for federal prosecutors, which measure the overall adequacy of a corporation's internal compliance measures.[153]

To pass muster, a compliance program must cover the "prevention, detection, investigation, and remediation" of wrongdoing.[154] Further, a corporation's compliance program must instill the value of integrity, an ethical concept that means more than staying within the boundaries of what the law permits.[155]

149. Cristie Ford & David Hess, *Can Corporate Monitorships Improve Corporate Compliance?*, 34 J. Corp. L. 679, 689 (2009) (citing Harvey L. Pitt & Karl A. Groskaufmanis, *Minimizing Corporate Civil and Criminal Liability: A Second Look at Corporate Codes of Conduct*, 78 Geo. L.J. 1559, 1582 (1990)). For additional explanation of the FCPA's innovative harnessing of a corporation's internal controls, see Stanley Sporkin, *The Worldwide Banning of Schmiergeld: A Look at the Foreign Corrupt Practices Act on Its Twentieth Birthday*, 18 Nw. J. Int'l L. & Bus. 269, 280 (1997) ("To meet the law's standards, U.S. corporations have put in place procedures that assure, as much as possible, the honesty and integrity of the corporate community.").

150. *See* Ford & Hess, *supra* note 149, at 690 ("The Organizational Sentencing Guidelines established seven basic requirements for an effective program, including the adoption of standards and procedures to prevent criminal conduct, appropriate oversight of the program by high-level personnel, communication of the requirements to all employees, and monitoring and updating the program as needed."); Murphy, *supra* note 146, at 702–03.

151. Ford & Hess, *supra* note 149, at 690.

152. *See* In re Caremark Int'l Inc. Derivative Litig., 698 A.2d 959, 961 (Del. Ch. 1996); Stone *ex rel.* AmSouth Bancorporation v. Ritter, 911 A.2d 362 (Del. 2006); Hillary A. Sale, *Monitoring* Caremark*'s Good Faith*, 32 Del. J. Corp. L. 719, 730–33, 733 (2007) ("*Stone* makes clear that when a board fails to implement compliance and monitoring systems or fails to respond to red flags, it fails to act as a faithful and loyal monitor."); Claire A. Hill, Essay, Caremark *as Soft Law*, 90 Temp. L. Rev. 681, 682 (2018) (stating that the expectation is that "compliance programs go far beyond what is needed to avoid lawbreaking"). According to one scholar, however, "it is unclear whether the *Caremark* oversight duty . . . applies to climate risks or other enterprise risks where there is no regulatory requirement to avoid or mitigate the risks." Winden, *supra* note 133, at 1172.

153. Ford & Hess, *supra* note 149, at 692. Federal prosecutors "may credit the quality and effectiveness of a risk-based compliance program that devotes appropriate attention and resources to high-risk transactions, even if it fails to prevent an infraction." U.S. Dep't of Just., Crim. Div., Evaluation of Corporate Compliance Programs 3 (updated June 2020), https://perma.cc/CX5H-5YWT.

154. Veronica Root, *The Compliance Process*, 94 Ind. L.J. 203, 219–20 (2019).

155. *See* David Hess, *A Business Ethics Perspective on Sarbanes-Oxley and the Organizational Sentencing Guidelines*, 105 Mich. L. Rev. 1781, 1791–94 (2007) (distinguishing traditional and modern compliance regimes and stating that "whereas a [traditional] compliance-based program focuses on teaching employees the laws and rules they must comply with, an integrity-based program focuses on integrating ethics into employees' decision making and inspiring them to live up to the company's ethical ideals"); Ford & Hess, *supra* note

Internal compliance can "deter wrongdoing by generating social norms that champion law-abiding behavior."[156] To achieve this level of compliance requires a change in culture: "Culture of compliance refers to the shared beliefs—'sense-making'—inside any given organization about the importance or legitimacy of legal compliance vis-à-vis other pressures and goals."[157] Corporations with a strong compliance culture can be expected to abide by the spirit as well as the letter of the law.[158]

Thus, compliance bridges the governance gap between well-meaning Environmental, Social, Governance ("ESG") initiatives and more consequential but morally neutral risk-management analysis.[159] Unlike risk management, which often reduces to a bottom-line profitability consideration,[160] compliance makes ethics central to corporate governance.[161] Compliance obligations transcend profit-driven concerns.[162] If the Carbon Majors recognized climate change as a compliance obligation,[163] they would "have the technological and engineering prowess" to help achieve a transition to green energy.[164]

149, at 692 ("The importance of managing an organization's culture to ensure the effectiveness of a compliance program gained significant traction when the Sentencing Commission formalized it as part of the Organizational Sentencing Guidelines in 2004. The amended Guidelines refer to a corporation's 'compliance and ethics program' and describe an effective program as one designed to 'prevent and detect criminal conduct' and to 'promote an organizational culture that encourages ethical conduct and a commitment to compliance with the law.'") (quoting U.S. Sentencing Guidelines Manual § 8B2.1(a) (U.S. Sentencing Comm'n 2004)).

156. Baer, *supra* note 23, at 960.

157. Donald C. Langevoort, *Cultures of Compliance*, 54 Am. Crim. L. Rev. 933, 945 (2017).

158. Maurice E. Stucke, *In Search of Effective Ethics & Compliance Programs*, 39 J. Corp. L. 769, 826 (2014) (stating that compliance programs are meant to create "an ethical culture that asks: 'What is the right and ethical thing to do?'").

159. Kuo & Means, *supra* note 15, at 2138–39.

160. *See* Ho, *supra* note 144, at 663 ("Risk management is the process of identifying, monitoring, reporting and responding to the range of financial, operational and strategic risks that firms face.").

161. *See* Geoffrey P. Miller, *The Compliance Function: An Overview* 18 (N.Y.U. L. & Econ. Rsch. Paper No. 14-36, 2014), https://perma.cc/LA87-VHAB ("Organizations often include the term 'ethics' in their compliance programs, promulgate codes of 'ethics' that include a compliance component, and create positions such as 'chief ethics officer' that include responsibility for compliance.").

162. Kuo & Means, *supra* note 15, at 2138; Einer Elhauge, *Sacrificing Corporate Profits in the Public Interest*, 80 N.Y.U. L. Rev. 733, 733–61 (2005) (identifying a "fiduciary duty to comply with the law even when compliance requires sacrificing profits").

163. *Id.* at 2149 (arguing that "a compliance-based approach can supplement weaknesses in existing risk management and CSR strategies and spur corporations to commit to climate change mitigation efforts").

164. Bordoff, *supra* note 17.

B. Climate Change Litigation

At present, the Carbon Majors lack a compliance culture sufficient to take on the problem of climate change.[165] In previous scholarship, we argued that "[f]or climate change to become a compliance obligation, there must be a mechanism to trigger the obligation and to define its substantive content."[166] This Article contends that climate change litigation targeting the Carbon Majors offers one such mechanism, because courts have the equitable authority to appoint compliance monitors and to empower them to oversee needed reforms.[167] Before describing the monitor's role in more detail, we begin with two threshold issues. First, to justify appointment of a monitor as an equitable remedy, there must be a predicate finding of liability.[168] Second, for the proposal to be worthwhile, monitors must offer advantages not available through the financial penalties and injunctive relief that plaintiffs already seek in climate change litigation.

1. The Carbon Majors' Potential Liability

As climate science has advanced, the Carbon Majors have been subjected to a barrage of litigation concerning their contributions to climate change.[169] Domestic plaintiffs include states, municipalities, and private individuals and

165. *See Nine Climate "Solutions" that Don't Help*, Climate & Capital Media (Aug. 9, 2023), https://perma.cc/QJH8-XKAT ("An entire suite of bad ideas is being pushed by a fossil fuel industry determined to slow global efforts to decarbonize.").

166. Kuo & Means, *supra* note 15, at 2159. We noted that if corporations do not take on the obligation voluntarily "there are avenues that lawmakers, regulators, investors, and environmental activists can pursue to create compliance obligations when corporate boards fail to do so." *Id*. In that regard, we flagged the possibility of tort liability in climate change litigation, *id*. at 2177, but we did not consider the potential role of compliance monitors.

167. *See infra* Part IV.B.2. Compliance programs must be designed and supported so that they can effectively regulate corporate activity. *See* Cynthia J. Giles, Next Generation Compliance: Environmental Regulation for the Modern Era 1 (2022) ("The data reveal that for most rules the rate of serious noncompliance—violations that pose the biggest risks to public health and the environment—is 25 percent or more."). Professor Giles argues that rules should also be designed with compliance in mind. *Id*. at 3.

168. The viability of our proposal depends, then, on the extent to which climate change litigation poses a meaningful risk to the Carbon Majors. Monitors could also be agreed to as a settlement in a civil action or as part of a deferred prosecution agreement in a regulatory enforcement proceeding, but the Carbon Majors are unlikely to enter such agreements unless they face monetary consequences otherwise.

169. *See generally* Geetanjali Ganguly et al., *If at First You Don't Succeed: Suing Corporations for Climate Change*, 38 Oxford J. L. Studs. 841 (2018). An earlier set of lawsuits was not successful. *See* Joana Setzer, *The Impacts of High-Profile Litigation Against Major Fossil Fuel Companies*, *in* Litigating the Climate Emergency: How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action 209 (César Rodríguez-Garavito ed., 2022) ("Following a first wave of unsuccessful lawsuits against oil, gas, and electric companies in the early 2000s in North American courts, a new wave of climate change lawsuits have been filed over the past five years against major fossil fuel companies."). The recent lawsuits are supported by new climate science. *Id*.

groups.[170] Climate change litigation can focus attention on the worst offenders, including the Carbon Majors.[171] Lawsuits assert that the defendant corporations understood the consequences of burning fossil fuels, took steps to conceal those consequences from the public, and reaped the benefits at the expense of others, especially those most vulnerable to harm in a changing climate.[172] The plaintiffs cite scientific evidence of the causal connection between the Carbon Majors' activities and climate change.[173] (A court recently relied upon this evidence in issuing a first-of-its-kind ruling against a state that had refused to consider climate change when approving fossil fuel projects.[174])

The New Jersey Attorney General's lawsuit against the Climate Majors provides a representative example of the argument for civil liability:

> Defendants' individual and collective conduct—including, but not limited to, their introduction of fossil fuel products into the stream of commerce while knowing but failing to warn of the threats posed to the world's climate; their wrongful promotion of fossil fuel products, including the misrepresentation and concealment of known hazards associated with the intended use of those products; and their public

170. Shi-Ling Hsu, *A Realistic Evaluation of Climate Change Litigation Through the Lens of a Hypothetical Lawsuit*, 79 U. Colo. L. Rev. 701, 710 (2008) ("Any important legal transition, particularly in the area of climate change, is apt to involve all three branches of government, of which the executive and legislative branches in the United States have been so slow to act. In such a vacuum, it is natural that some would turn to the judiciary for some attention.").

171. *See* Setzer, *supra* note 169, at 206 (noting "the idea that high-profile climate litigation in private law has the potential to effectively target a relatively small group of corporations who are responsible for a large percentage of emissions"); Hsu, *supra* note 170, at 717:

> By targeting deep-pocketed private entities that actually emit greenhouse gases (or, in the case of automakers, produce the means of emitting greenhouse gases), a civil litigation strategy, if successful, skips over the potentially cumbersome, time-consuming, and politically perilous route of pursuing legislation and regulation. The civil litigation strategy is potentially a means of regulation itself, as a finding of liability could have an enormous ripple effect and send greenhouse gas emitters scrambling to avoid the unwelcome spotlight.

172. *See* Vic Sher, *Forum Versus Substance: Should Climate Damage Cases Be Heard in State or Federal Court?*, 72 Stan. L. Rev. Online 134, 134 (2020) ("Plaintiffs allege that defendants have long known that profligate use of their products would cause catastrophic injuries to communities, including the plaintiffs. Yet they embarked on a decades-long campaign to hide the connection between fossil fuels and the climate crisis, attack science (and scientists), and influence the public and decisionmakers to avoid limits on their products' sales.").

173. *See* Burger et al., *supra* note 27, at 62 ("Attribution science is central to the recent climate litigation, as it informs discussions of responsibility for climate change.").

174. *See* David Gelles & Mike Baker, *Judge Rules in Favor of Montana Youths in a Landmark Climate Case*, N.Y. Times (Aug. 14, 2023). According to Michael Burger, executive director of the Sabin Center for Climate Change Litigation at Columbia University, "This was climate science on trial, and what the court has found as a matter of fact is that the science is right." *Id*. (internal quotation marks omitted).

> deception campaigns designed to obscure the connection between fossil fuel products and global warming—was a substantial factor in bringing about the State's injuries.[175]

The New Jersey complaint identifies numerous harms caused by the defendants and alleges causes of action including public and private nuisance and violations of the New Jersey Consumer Fraud Act.[176] The complaint seeks "civil monetary penalties and damages to the State of New Jersey . . . and to its residents, infrastructure, lands, assets, and natural resources caused by Defendants' decades-long campaign of misleading marketing and deceptive promotion of oil, coal, and natural gas."[177] The Carbon Majors now face similar lawsuits across jurisdictions in the U.S. and worldwide.[178]

Although they face numerous procedural and substantive obstacles,[179] these lawsuits have created significant financial risk for the Carbon Majors.[180] The defendants assert that they have violated no laws, but there is strong evidence that, by the late 1970s, the Carbon Majors knew about climate change and the urgent need to plan for a transition away from fossil fuels. For example, a member of Exxon's Products Research Division presented to the management committee and wrote a letter to the Vice President of Research and Engineering in 1978, stating that "current scientific opinion overwhelmingly favors attributing atmospheric carbon dioxide increase to fossil fuel consumption."[181] He further noted the destabilizing consequences of climate change and estimated that there

175. *See* Complaint at 12, para. 17, Platkin v. Exxon Mobil Corp., No. MER-L-001797-22 (N.J. Super. Ct. Law Div., Oct. 18, 2022), https://perma.cc/LK6G-XYHN. Different plaintiffs may offer other theories of liability, but a full typology of climate change litigation is not necessary for our purposes.

176. *Id*. at 12, ¶ 18.

177. *Id*. at 2, ¶ 2.

178. *See generally* Climate Change Litigation Database, *supra* note 18.

179. *See, e.g.*, Daniel A. Farber, *Climate Change Litigation in the United States*, *in* Climate Change Litigation: A Handbook 237, 238 (Wolfgang Kahl & Marc-Philippe Weller eds., 2021) ("To obtain a ruling on the merits, the plaintiffs in climate litigation must first surmount several jurisdictional hurdles by proving that they have standing and that the court has subject matter and personal jurisdiction over the case.").

180. *See* Setzer, *supra* note 169, at 215 ("The exponential increase in harmful climate impacts globally means that Carbon Major corporations may be liable for billions of dollars' worth of damages for existing as well as future climate impacts."). For other assessments of climate change litigation, see Jacqueline Peel & Hari M. Osofsky, *Sue to Adapt?*, 99 Minn. L. Rev. 2177 (2015); R. Henry Weaver & Douglas A. Kysar, *Courting Disaster: Climate Change and the Adjudication of Catastrophe*, 93 Notre Dame L. Rev. 295 (2017); Nathaniel Levy, Note, Juliana *and the Political Generativity of Climate Litigation*, 43 Harv. Envtl. L. Rev. 479 (2019); David Markell & J.B. Ruhl, *An Empirical Assessment of Climate Change in the Courts: A New Jurisprudence or Business as Usual?*, 64 Fla L. Rev. 15 (2012).

181. *See* Letter from James F. Black, Exxon Research and Engineering Co., to F.G. Turpin, Exxon Research and Engineering Co., The Greenhouse Effect, ClimateFiles (June 6, 1978), https://perma.cc/5YG9-QKHJ. The letter further concluded that doubling atmospheric carbon dioxide would translate to an additional 2 to 3 degrees Celsius in average global temperature. *Id*.

was a "time window of five to ten years to… obtain the necessary information" and make "hard decisions regarding changes in energy strategies . . . ."[182]

To similar effect, an internal, confidential Shell memorandum on the "Greenhouse Effect" identified the severity of the problem. The author noted the causal connection to fossil fuel and emphasized the danger of delay, especially since the real scope of climate change might take decades to reveal itself:

> It is estimated that any climatic change relatable to CO2 would not be detectable before the end of the century. With the very long time scales involved, it would be tempting for society to wait until then before doing anything. The potential implications for the world are, however, so large that policy options need to be considered much earlier. And the energy industry needs to consider how it should play its part.[183]

The lawsuits against the Carbon Majors draw upon many similar documents that, taken together, present a compelling factual case that the defendants understood that what they were doing was endangering public health.

2. Compliance Monitors as Equitable Remedy

A monitor acts as "(i) an independent, private outsider, (ii) employed after an institution is found to have engaged in wrongdoing, (iii) who effectuates remediation of the institution's misconduct, and (iv) provides information to outside actors about the status of the institution's remediation efforts."[184] As a mechanism for implementing the will of the court, "[t]he overarching goal of a monitorship is to ensure that the organization in question has been 'reformed,' so that it would exhibit better legal compliance in the future."[185] Corporate monitors have become more common in recent years as an ancillary remedy in criminal enforcement proceedings.[186]

To the extent climate change lawsuits demonstrate that the Carbon Majors have engaged in pervasive wrongdoing, courts have the equitable power to appoint monitors in civil lawsuits to oversee corrective action to ensure that

182. *Id*.

183. R.P.W.M. Jacobs et al., Shell Internationale Petroleum Maatschappij B.V., Report Series HSE 88-001, The Greenhouse Effect (May 1988), https://perma.cc/4PSW-VC77.

184. Veronica Root, *Modern-Day Monitorships*, 33 Yale J. Regul. 109, 111 (2016).

185. Ford & Hess, *supra* note 149, at 695.

186. Vikramaditya Khanna & Timothy L. Dickinson, *The Corporate Monitor: The New Corporate Czar?*, 105 Mich. L. Rev. 1713, 1714 (2007) ("Following the recent spate of corporate scandals, government enforcement authorities have increasingly relied upon corporate monitors to help ensure law compliance and reduce the number of future violations."). Typically, monitors are appointed as part of a Deferred Prosecution Agreement or a Non-prosecution Agreement with the federal government. *Id*.

the behavior is not repeated.[187] Courts have begun to use this power in a variety of contexts.[188] Monitors are not a one-size-fits-all solution, and they can be appointed for different purposes, ranging "from effectuating detailed mandates from a court or government regulator to creating a new compliance program."[189] Accordingly, this Article contends that climate change lawsuits create an opportunity not only to remedy existing harms, but also to use monitors to radically restructure the governance of Carbon Majors to ensure that they recognize climate change as a compliance obligation.

In deciding whether a monitor is an appropriate remedy, a court would consider whether the defendant is capable of reform without external assistance.[190] In that regard, it seems notable that the Carbon Majors have been aware of the risks of climate change for decades and have taken steps to hide or minimize those risks.[191] Consequently, even when the Carbon Majors now claim to take climate change seriously, their statements lack credibility and are hard to take at face value.[192] Greenwashing schemes engaged in by the Carbon Majors, such as

187. *See* Jennifer O'Hare, *The Use of the Corporate Monitor in SEC Enforcement Actions*, 1 Brook. J. Corp. Fin. & Com. L. 89, 92 (2006) (providing a helpful typology of injunctive relief: "(1) remedies intended to correct *past* violations of the federal securities laws, such as disgorgement; (2) remedies intended to preserve the existing condition of the defendant during the pendency of the action, such as an asset freeze or the appointment of a receiver; and (3) remedies intended to discourage *future* violations . . . by regulating certain aspects of the defendant's future behavior, such as the institution of corporate governance changes, the judicial appointment of board members, or the appointment of special investigative agents." (citing George W. Dent, Jr., *Ancillary Relief in Federal Securities Law: A Study in Federal Remedies*, 67 Minn. L. Rev. 865, 869–72 (1983)); SEC v. Manor Nursing Ctrs., Inc., 458 F.2d 1082, 1103 (2d Cir. 1972) ("Once the equity jurisdiction of the district court has been properly invoked by a showing of a securities law violation, the court possesses the necessary power to fashion an appropriate remedy.").

188. *See* Veronica Root Martinez, *Public Reporting of Monitorship Outcomes*, 136 Harv. L. Rev. 757, 759 (2023) ("If a determination is made . . . that oversight over the remediation effort would be helpful, a monitor is often tasked with responsibility for overseeing that process.").

189. *Id*. at 760.

190. *See* Khanna & Dickinson, *supra* note 186, at 1730 ("Another situation in which ongoing supervision may be considered is when the corporation is a recidivist."). The court might also consider whether existing fines are too low. *Id*.

191. As one commentator observes, "compliance is not an all-or-nothing proposition." Giles, *supra* note 167, at 3. Thus, Carbon Majors might recognize certain compliance obligations, but the test is not whether they "completely ignore" the rules. *See id*. ("[I]t is also very common to find companies that partially comply or take steps to comply that don't work. They take unreasonable risks . . .").

192. Unlike internal compliance gatekeepers, monitors are "retained after wrongdoing within the institution is discovered." Root Martinez, *supra* note 188, at 769 ("Gatekeepers are engaged 'prior to wrongdoing' as 'an assurance [to] investors and the public . . . that the corporation being assessed is acting within appropriate ethical, regulatory, and legal grounds.'") (quoting Veronica Root, *The Monitor-"Client" Relationship*, 100 Va. L. Rev. 523, 526 (2014)).

the ongoing practice of selling unwanted assets to privately held oil producers, are further evidence of the lack of a meaningful compliance culture.[193]

Monitors are well suited to the task of remedying profit-driven compliance breakdowns.[194] Typically, monitors "are employed when the organization's ability to instill trust that it can effectively maintain responsibility over its own compliance efforts has been diminished by the misconduct discovered."[195] In that situation, the independence of the compliance monitor is crucial to the rehabilitation of the institution.[196] In the context of climate change litigation against the Carbon Majors, the monitors' independence would allay concerns about "greenwashing"[197] and facilitate verification of the accuracy of the corporation's statements about climate change.[198]

Monitors can be especially effective when the required remedy extends beyond matters that can be resolved via a specific judicial order.[199] Other commentators have argued that, as a matter of relative expertise, courts are not

193. *See* Kimberly D. Krawiec, *Cosmetic Compliance and the Failure of Negotiated Governance*, 81 Wash. U. L.Q. 487, 487 (2003) (criticizing compliance programs that are expensive and fail to deter wrongdoing); William S. Laufer, *Corporate Liability, Risk Shifting, and the Paradox of Compliance*, 52 Vand. L. Rev. 1343, 1350 (1999) ("Firms have been extraordinarily successful in shifting both the locus of liability risk and the enforcement function down the corporate hierarchy—all under the banner of corporate self-regulation and 'good corporate citizenship.' Many corporations simply purchase only the amount of compliance necessary to effectively shift liability away from the firm."); William S. Laufer, *Corporate Prosecution, Cooperation, and the Trading of Favors*, 87 Iowa L. Rev. 643, 648–49, 657–63 (2002).

194. *See* Hillary A. Sale, *Monitoring Facebook*, 12 Harv. Bus. L. Rev. 439, 458 (2022) (evaluating potential role of an external monitor when "the revenue model is core to the strategy, at the root of the harm, and, therefore, core to the board's role").

195. Root Martinez, *supra* note 188, at 769.

196. *Id.*; John C. Coffee, Jr., *The Attorney as Gatekeeper: An Agenda for the SEC*, 103 Colum. L. Rev. 1293, 1296 (2003) (observing that attorneys may lack the necessary independence to prevent wrongdoing); Sung Hui Kim, *The Banality of Fraud: Re-Situating the Inside Counsel as Gatekeeper*, 74 Fordham L. Rev. 983, 988 (2005) (same).

197. A corporation engages in greenwashing when it makes "misleading claims . . . about its environmental credentials . . . designed to hoodwink consumers." Somini Sengupta, *How Greenwashing Fools Us*, N.Y. Times Climate Forward Newsl. (Aug. 23, 2022); *cf.* Oliver Milman, *Shell's Actual Spending on Renewables Is Fraction of What It Claims, Group Alleges*, The Guardian (Feb. 1, 2023) (reporting claims that Shell deliberately overstated its investment in sustainable energy by informing investors that "12% of its capital expenditure was funneled into a division called Renewables and Energy Solutions" when only a tiny fraction of that investment "has been used to develop genuine renewables, such as wind and solar, with much of the rest of the division's resources devoted to gas, which is a fossil fuel").

198. *See* Parenteau & Dernbach, *supra* note 18 (noting that, in one case, plaintiffs are arguing that "big oil companies have known for decades that their products cause climate change, yet their public statements continued to sow doubts about what was known, and they failed to warn their customers, investors and the public about the dangers posed by their products").

199. *See* Root Martinez, *supra* note 188, at 777 ("Instead of limiting the monitor's authority to specific performance with the court's order, the court gives the monitor semi-independent decisionmaking authority over changes that the monitored organization should implement.").

well situated to issue injunctive relief in climate change litigation.[200] Our proposal avoids the force of the objection by delegating judicial power to specially appointed monitors who would have the expertise needed to align corporate decisions with the reality of climate change. Admittedly, open-ended, court-ordered monitorships are relatively novel.[201] However, they draw upon precedent in negotiated settlements with the DOJ in which the target corporation "consents to the imposition of a monitorship that encompasses activities beyond ensuring specific performance with a predetermined set of requirements."[202] The monitor can "engage in a sort of root-cause analysis . . . [and] is then responsible for delivering a set of recommendations that the organization should implement to ensure long-term legal and regulatory compliance."[203] For a challenge as far-reaching and complex as climate change, the implementation of long-term solutions is crucial.

Another reason to consider appointing independent monitors in climate change litigation is that this approach does not seek financial damages based on past conduct and, therefore, would not depend on whether the plaintiffs can establish a defendant's financial liability.[204] To obtain damages, plaintiffs must not only prove specific claims such as negligence, public nuisance, and fraud, but also demonstrate a direct causal link between the defendants' actions and the environmental harm suffered. Pinning liability on the Carbon Majors, either individually or collectively, for specific disasters may prove challenging.[205] Furthermore, to justify a damages award, plaintiffs must show that the defendants'

200. Hsu, *supra* note 170, at 717 ("Importantly, to maximize the impact of this kind of litigation, the relief sought should be damages, and not injunctive relief. Injunctive relief in a successful lawsuit would have the positive effect of mandating some action to reduce emissions, but then as a substantive matter the suit would take on the character of just another form of regulation—and a considerably less informed and sophisticated one.").

201. Root Martinez, *supra* note 188, at 777.

202. *Id*. at 776.

203. *Id*. (citations and internal quotation marks omitted).

204. For a discussion of the various considerations that go into selection of a climate change litigation strategy, *see generally* Hsu, *supra* note 170, at 710; Kim Bouwer, *The Unsexy Future of Climate Change Litigation*, 30 J. Env't L. 483, 483 (2018).

205. A full assessment of the merits of litigation is beyond the scope of this Article. Current litigation benefits from advances in science that permit greater causal attribution, although "data gaps and uncertainty about model projections . . . make it difficult to identify a clear causal chain between a particular emitter or activity and specific impacts or harms associated with climate change." Burger et al., *supra* note 27, at 65. For a skeptical analysis, albeit written before recent advances in the science of climate attribution, see Hsu, *supra* note 170, at 702 (concluding that "climate change litigation is unlikely to play a significant role in arresting global climate change"). Other early assessments of climate change litigation in the law review literature include Jonathan H. Adler, Essay, *Warming Up to Climate Change Litigation*, 93 Va. L. Rev. In Brief 63 (2008), Hari M. Osofsky, *The Geography of Climate Change Litigation: Implications for Transnational Regulatory Governance*, 83 Wash. U. L.Q. 1789 (2005), and Eric Posner, *Climate Change and International Human Rights Litigation: A Critical Appraisal*, 155 U. Pa. L. Rev. 1925 (2007).

actions were wrongful at the time they occurred.[206] For instance, a negligence claim would require evaluating the reasonableness of conduct against industry standards, which may have evolved significantly since the 1970s or 1980s. Thus, pursuing equitable relief that emphasizes current investments in fossil fuel production would better address the problem of climate change and would avoid difficulties attendant to seeking damages based predominantly on past conduct.[207]

Apart from the merits, time is an essential factor.[208] Experience from other mass tort cases indicates that complex, high-stakes litigation—including discovery, trial, and appeals—can take years to resolve.[209] The Carbon Majors, with the resources to hire top-tier lawyers, can assert procedural and substantive defenses that may further impede the process of recovery.[210] Meanwhile, fossil fuels are likely to continue generating significant profits. In this scenario, the Carbon Majors may perceive potential financial penalties as merely a cost of doing business, rather than a deterrent.[211] If the primary goal of litigation is to address the urgent issue of climate change, finding a path to a swifter resolution is crucial.[212]

The legacy of asbestos and tobacco litigation may provide a useful point of comparison.[213] Broadly speaking, these prior examples offer precedent for using

206. *See* Hsu, *supra* note 170, at 731 ("Courts are only too aware that hindsight is twenty-twenty, and are likely to look at industry and historical practices as indicia of what is 'reasonable.'").

207. *See* David Hunter & James Salzman, *Negligence in the Air: The Duty of Care in Climate Change Litigation*, 155 U. Pa. L. Rev. 1741, 1794 (2007) (noting "an increased likelihood that a defendant's activities or products will be found to present an unreasonable risk of foreseeable injury" and that individual defendants that fall out of step with industry norms with respect to climate change "run the risk of being singled out in tort actions").

208. Setzer, *supra* note 169, at 214 ("Time frame is particularly important given that legal cases may take several years to progress through the courts . . . .").

209. *See id*. at 207 ("[T]he majority of high-profile cases filed against Carbon Majors are still ongoing, and it can take many years before nuisance and fraud cases are decided in court.").

210. *See id*. (noting that the lawsuits "are legally difficult, in that they face both procedural and substantive doctrinal hurdles"). Professor Setzer notes that the plaintiffs may, therefore, seek to bring public pressure against the defendants for swifter results. *Id*.

211. *See id*. ("If the costs to defendants associated with defending claims – including reputational costs – do not outweigh the benefits of continuing the impugned conduct or similar practices, the defendants' imperative to change their behaviour will be limited, and the strategy could be ineffectual.").

212. Another, possibly related option, is for plaintiffs to pursue more straightforward liability theories. *See id*. at 208 (mentioning "alternative legal interventions that have more immediate results and easier wins (e.g., bringing claims of deceptive 'green washing' marketing campaigns by Carbon Major companies to courts or non-judicial bodies).").

213. Hsu, *supra* note 170, at 718 ("Directly suing greenhouse gas emitters, especially deep-pocketed private emitters, has an analog, if not a precedent, in the American history of mass tort litigation. Mass tort litigation has served as a judicial gap-filler where conventional law-making and legislating has fallen short for some reason. Mass tort litigation for liability for tobacco products, asbestos, handguns, lead paint, and dangerous pharmaceutical products all took place in a vacuity of Congressional and administrative inaction.").

private litigation to seek justice from industries that have endangered public health.[214] However, they also suggest a need to follow a different strategy in climate change litigation to achieve the desired results. First, plaintiffs would have to establish that common law tort claims have not been displaced by climate legislation.[215] Second, unlike tobacco products or asbestos, fossil fuel offers significant societal benefits and cannot yet be replaced at scale without negative repercussions. The necessary shift to a green economy involves not just reducing the use of fossil fuels but also developing alternative energy sources and adapting to changes that are already occurring. Thus, while sanctioning individual companies for wrongdoing and forcing them to internalize the cost of pollution, public policy should also consider how to reallocate corporate resources toward the creation of cleaner forms of energy.

The regulatory frameworks for tobacco and fossil fuels are also different. Tobacco regulation has largely focused on public health measures like warning labels, advertising restrictions, and smoking bans, as well as litigation. Regulation of Carbon Majors will require a broader range of tools, including not just litigation and regulation but also economic and policy measures to facilitate the transition to a low-carbon economy.[216] Monitors are one such tool. By embedding climate monitors in individual corporations—the largest polluters—courts can use their equitable power to spur emissions reductions without sacrificing the nuances that might call for tradeoffs in particular situations.[217]

Finally, even if massive financial penalties were awarded in individual lawsuits, climate change is a global problem, causing harms almost everywhere. Yet, monetary penalties recovered by, say, New Jersey will benefit only the citizens of that state. Absent some coordination mechanism (as was eventually implemented

214. Both industries produce products that, when used as intended, have significant negative impacts on public health. Moreover, both industries have been accused of spreading misinformation and denying the negative effects of their products. In the case of the tobacco industry, companies downplayed the link between smoking and diseases like lung cancer. Similarly, some Carbon Majors have been accused of spreading doubt about the reality and severity of human-caused climate change.

215. In AEP v. Connecticut, 564 U.S. 410 (2011), for example, a unanimous Court held that "that the Clean Air Act and EPA actions it authorizes displace any federal common-law right to seek abatement of carbon-dioxide emissions from fossil-fuel fired powerplants." *Id*. at 424.

216. Without an adequate coordinating mechanism, individual efforts to achieve carbon neutrality may "result in irreconcilable plans that exacerbate other development challenges while underachieving on a global scale." Shelley Welton, *Neutralizing the Atmosphere*, 132 Yale L.J. 171, 176 (2022).

217. Although they are a second-best solution as compared with comprehensive environmental legislation, compliance monitors should seek to coordinate their efforts across companies to reduce the risk that their efforts might be at cross-purposes or create unintended collateral consequences. As Professor Welton observes, "When a jurisdiction sets the goal of neutralizing the emissions of an entire economy, the program administrator will have (at least) thousands of choices to make regarding how to achieve that ultimate balance, both temporally and substantively—choices with wide societal implications." *Id*. at 178.

in the tobacco litigation), the remedies achieved through individual lawsuits would not compensate all victims. Arguably, that lack of distributive justice is acceptable, if the financial rewards are needed to motivate litigation and if the cumulative impact of climate change litigation deters further fossil fuel investments and promotes a transition to a green economy. In any case, by appointing independent compliance monitors, courts overseeing individual lawsuits would create a more direct mechanism for achieving wider benefits.

C. Best Practices for Appointing Compliance Monitors

This Section addresses practical considerations associated with the appointment of monitors, highlighting two key areas. First, it discusses the need for a meticulous process to ensure that monitors are suitably qualified, that they are not susceptible to capture by the companies that they are assigned to monitor, and that they receive appropriate guidance and supervision. Second, it underscores the importance of granting monitors extensive powers, which would enable them to access corporate information and mandate changes. While our aim in this Section is to pinpoint essential issues rather than to offer definitive guidance, we have also included a model order in the Appendix that could serve as a template in climate change litigation.[218]

Undoubtedly, serving as a monitor for any of the Carbon Majors would be a tough assignment. At times, the role of the monitor might involve overturning the judgment of the board of directors and making choices that affect the prospects of a multi-billion-dollar corporation. For example, leaving oil in the ground rather than extracting it or selling it conflicts with the short-term goal of earning profits for shareholders.[219] In such situations, well-qualified, experienced monitors would have enhanced credibility and influence when dealing with corporate management and other stakeholders.[220]

The first step is to devise an appropriate process for selecting the monitor.[221] In that regard, courts should be wary of conflicts of interest to avoid any

218. For an effort to create general professional standards for monitors, see Am. Bar Ass'n, Crim. Just. Standards Comm., Monitors and Monitoring (2020).

219. *Cf.* Cynthia A. Williams, *Corporate Social Responsibility in an Era of Economic Globalization*, 35 U.C. Davis L. Rev. 705, 717 (2002) (observing that "the predominant position on corporate social responsibility suggests that a corporation's social responsibility is to maximize shareholder wealth within the confines of the law").

220. As the role of compliance has become more important, the credentials of compliance officers have grown stronger. *See* Miriam H. Baer, *Compliance Elites*, 88 Fordham L. Rev. 1599, 1601 (2020) ("Today's top compliance officers—many of whom are, or once were, practicing lawyers—command notably high salaries and possess the types of resumes and past experience one commonly associates with the highest echelons of the legal profession."). The monitor positions we have in mind should attract people with similar credentials.

221. *See* Root Martinez, *supra* note 188, at 771 (stating that "[o]ne of the more controversial areas within monitorships has been the issue of monitor selection").

perception of "cronyism."[222] One possibility is to ask the defendant corporation to propose a list of qualified monitors for the court to evaluate.[223] Or the court could solicit nominations more widely.[224] In any event, whatever method a court employs, it would be advisable for the court to consult with all parties to the litigation before finalizing a choice of monitor.[225]

With respect to education and experience, relevant factors for the court to consider would include an environmental science background, industry experience, and regulatory and legal expertise. A strong understanding of the science of climate change is crucial. This knowledge could be acquired through academic qualifications in climate science, environmental science, or related fields. Familiarity with the industry of the corporation being monitored is also important. A monitor should understand the specific challenges the company faces and identify feasible ways to reduce emissions. Finally, a working knowledge of environmental regulations and corporate law would be beneficial. This knowledge could be acquired through formal legal training or through extensive experience working with environmental regulations.[226]

Next, having selected a monitor, the court would need to invest the monitor with sufficient power to overcome obstruction by vested interests within the corporation. Consider, for example, how a monitor used plenary powers to implement sweeping changes in the wake of securities fraud at WorldCom:

> The WorldCom securities fraud led to numerous lawsuits, several criminal convictions, and the Sarbanes-Oxley Act of 2002 (SOX). It also led to a novel Securities and Exchange Commission (SEC) remedy, which significantly increases the enforcement power of the SEC. In the WorldCom enforcement action, the SEC sought, and obtained, the judicial appointment of a "Corporate Monitor." About two years later, when the Corporate Monitor's work was done, he had caused the company to overhaul its corporate governance completely and to adopt several unique governance provisions. He had also exercised oversight over all major business decisions, including the sale of the company to

222. *Id*. Monitors are typically paid for their time by the target corporation and can earn very high fees. *See* United States v. Apple Inc., 992 F. Supp. 2d 263, 272 (S.D.N.Y. 2014) ("Apple objected to the Monitor's fee of $1,100 per hour . . . ."), *aff'd*, 787 F.3d 131 (2d Cir. 2015).

223. Root Martinez, *supra* note 188, at 772 (noting that the DOJ follows this practice and that "[b]ecause the firm compiling the slate is aware that the DOJ is not required to accept an individual from the slate presented, it is incentivized to choose a list of individuals that will likely be acceptable to the DOJ.").

224. *Id*.

225. *Id*. ("For court-appointed monitorships, the court selects the monitor, although there is often consultation with the parties to the litigation . . . .").

226. No single person will have deep knowledge in all relevant areas, and a monitor would have ample discretion to retain advisors as appropriate. Subject to the monitor's own due diligence, the monitor could likewise rely upon data and reports delivered by corporate officers.

> Verizon. Put simply, his primary responsibility was to ensure that the company would not commit securities fraud ever again.[227]

Monitors appointed to oversee the Carbon Majors would benefit from powers of similar scope. To gather information, the monitor would need the ability to review a corporation's overall culture of compliance, accessing all information no matter its confidentiality.[228] The monitor might also have the substantive governance powers to make decisions *ab initio*, to veto business plans contrary to the goals of the monitorship, and, perhaps, to control eligibility to serve as an officer or director of the corporation.[229] Alternatively, to the extent the monitor does not wield governance powers directly, the monitor could issue a report to the court containing recommendations for reform.[230]

To be effective, monitors would also need clearly defined objectives. A monitor appointed as an ancillary remedy in climate change litigation would have the task of reforming the defendant's compliance culture with respect to climate change and related environmental matters and would not serve as a universal ombudsman for progressive causes. As a broad mission statement, we contend that the compliance goals for Carbon Majors should include at least the following elements, as set forth by the Climate Action advocacy group:

1. Implement a strong governance framework which clearly articulates the board's accountability and oversight of climate change risk;
2. Take action to reduce greenhouse gas emissions across the value chain, including engagement with stakeholders such as policymakers and other actors to address the sectoral barriers to transition. This should be consistent with the Paris Agreement's goal

227. O'Hare, *supra* note 187, at 89.

228. *Id.* at 97 ("According to the court, [the WorldCom monitor] was entitled to receive 'complete information about every aspect of the business he deems relevant to his assessments' in advance of any company action."). Further, the "[Corporate Monitor] had to be granted access to any employee of WorldCom 'to discuss any matter deemed relevant to the Corporate Monitor at any time' and had to be invited to any meetings or discussions between WorldCom and the persons involved in its bankruptcy proceeding." *Id.*

229. For example, the WorldCom monitor had the power to control what executives in the corporation would be paid. *Id*. at 104 (stating that "although it is the board's role to set executive compensation, the WorldCom judge placed that authority in the hands of the Corporate Monitor."). We agree with Professor O'Hare that this type of authority allows the monitor to "interfere" directly in corporate governance and should not be granted lightly. *Id.*

230. *See id.* at 98 ("As part of the consent decree, the Corporate Monitor was required to review WorldCom's corporate governance and to issue recommendations concerning WorldCom's future governance structure."). The company adopted these recommendations voluntarily. *Id*. at 99. As an initial step, the monitor might advise corporate management directly and seek judicial intervention only if the recommendations are rejected. *See* Khanna & Dickinson, *supra* note 186, at 1731 (stating that some "monitoring assignments position the monitor as being an advisor whom the firm cannot easily ignore").

> of limiting global average temperature increase to well below 2°C above pre-industrial levels, aiming for 1.5°C. Notably, this implies the need to move towards net-zero emissions by 2050 or sooner; and
>
> 3. Provide enhanced corporate disclosure and implement transition plans to deliver on robust targets. This should be in line with the final recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD) and other relevant sector and regional guidance, to enable investors to assess the robustness of companies' business plans and improve investment decision-making.[231]

Specific guidance concerning the compliance monitor's objectives along those lines would be helpful for all parties, but there is a tradeoff. On the one hand, courts should set benchmarks to guide the monitor and evaluate the monitor's success.[232] On the other hand, rigid goals could undermine the flexibility and nuance that monitors can bring to their work. Monitors, for example, can adjust to accommodate unusual events.[233] What compliance dictates may also vary depending on the corporation and the industry.[234] Thus, if given latitude, monitors could help corporations manage concerns with respect to employment, food security, and other potential costs of rapid decarbonization.[235] Acting in concert with internal compliance officers, monitors could realistically appraise the complexity of the global energy markets.[236]

Ultimately, though, monitors should generally prioritize decarbonization over competing concerns, overriding internal objections to the contrary.

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231. Climate Action 100, *supra* note 13. The group that proposed the list of goals quoted in text is "an investor[-led] initiative to ensure the world's largest corporate greenhouse gas emitters take necessary action on climate change." *Id*.

232. Ford & Hess, *supra* note 149, at 690.

233. An unexpected external shock like the war in Ukraine could, for example, support a temporary adjustment of strategy to avoid destabilizing energy markets. However, a monitor would ensure that such circumstances were not used as a convenient justification for unnecessary delay.

234. *See, e.g.*, Sarah E. Light & Christina P. Skinner, *Banks and Climate Governance*, 121 Colum. L. Rev. 1895, 1896 (2021) (explaining how banks can "assert an active role in the transition to a low-carbon economy and the reduction of climate risk").

235. Simply transitioning operations overnight from fossil fuels to green energy is not realistic given that "61 percent of the electricity sector and 92 percent of the transportation sector remain powered by fossil fuels." Alexandra B. Klass & Shantal Pai, *The Law of Energy Exports*, 109 Calif. L. Rev. 733, 742 (2021). An approach to curbing emissions that creates massive public unrest would be self-defeating. *See* Ishaan Tharoor, *As the World Boils, a Backlash to Climate Action Gains Strength*, Wash. Post (July 31, 2023) ("Right-wing parties across the West are exploiting public disquiet over green policies.").

236. *See* Bordoff, *supra* note 17 ("The world will still use oil for decades even if it accelerates climate action — and even a net-zero world would still use some oil and gas, with technology able to capture emissions.").

Drawing from the precedent set in the WorldCom monitorship, we argue that this level of authority is both feasible and essential. We envision a transformative rebalancing of corporate governance, where court-appointed monitors are granted the power to remake some of the corporations most responsible for climate change into reliable supporters of a green economy. Corporations would have the right to appeal the monitor's decisions to the court, but they would not otherwise be permitted to engage in conduct that the monitor disapproves. In the next Part, we address objections related to the legality of such emergency measures and weigh the potential environmental gains against the associated costs.

IV. Corporate Governance Objections

In ordinary cases involving a corporation's violation of law, courts do not appoint independent compliance monitors as ancillary relief, and we anticipate four types of objections to our proposal. First, critics may argue that courts would overstep their constitutional boundaries if they appointed compliance monitors to tackle policy issues better suited to lawmakers or administrative agencies. Second, critics might contend that corporate law gives directors, not courts or their delegated agents, the authority to make decisions on a corporation's behalf. Third, critics may assert that there is no principled way to distinguish an alleged climate emergency from other issues of comparable public importance. Fourth, rather than criticizing our proposal for overreaching, other critics may assert that we do not go far enough, and that environmental goals and corporate law cannot be reconciled.

A. Institutional Legitimacy

The Carbon Majors will argue that the authority to regulate carbon emissions falls within the purview of legislative bodies and administrative agencies, not courts.[237] Thus, the Carbon Majors will object that courts would violate the separation of powers if they appointed monitors to force the Carbon Majors to treat climate change as a compliance obligation. Already, with respect to existing climate change lawsuits, the Carbon Majors have contended that any determination concerning the social benefit versus the potential external costs of their activities should come via legislation.[238]

237. To be clear, we do not mean to suggest that only the Carbon Majors would object to any aspects of our proposal. Scholars share some of the concerns we address in this Section. For stylistic convenience, we have couched all the objections in text as if they were raised by the Carbon Majors, citing to supporting scholarship in the footnotes.

238. *See* David Gelles, *She's on a Mission from God: Suing Big Oil for Climate Damages*, N.Y. Times (July 19, 2023) ("In a statement, Shell said, 'We do not believe the courtroom is the right

To the extent the objection suggests that courts lack the legal authority to appoint monitors as ancillary relief, it should be rejected. Courts have always had inherent, equitable powers to address corporate governance failures.[239] Monitors can trace their lineage to special masters, which courts have used since at least "the early sixteenth century."[240] Moreover, the use of monitors to enforce judicial orders is by now very well established.[241] In the context of SEC enforcement actions, for example, Congress expressly approved judicial intervention in Sarbanes Oxley, which amended the Securities and Exchange Act of 1934 to provide that courts may award "any equitable relief that may be appropriate or necessary for the benefit of investors."[242] Courts may appoint monitors when they believe the defendant cannot otherwise be trusted to abide by court ordered relief.[243]

Although the Carbon Majors claim to prefer "smart policy from government" as an alternative to being held accountable via lawsuits,[244] that preference appears disingenuous. As the Carbon Majors are aware, political polarization has hampered Congress and limited its ability to respond to the unfolding climate emergency.[245] Administrative agencies have unmatched expertise, but their independent regulatory authority has recently been curtailed by the Supreme Court.[246] Thus, by raising separation of powers concerns, the Carbon Majors hope to obstruct the one branch of government that could force changes to their business model.

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venue to address climate change, but that smart policy from government and action from all sectors is the appropriate way to reach solutions and drive progress.'").

239. *See* Comm. on Fed. Reg. of Sec., *Report of the Task Force on SEC Settlements*, 47 Bus. Law. 1083, 1116 (1992). The authors further observe, in the context of SEC settlements, that specific statutory authorization for the imposition of remedies indicates that "the judiciary's creation of non-statutory equitable remedies should occur less frequently, and presumably only in circumstances where the equitable remedy is less harsh than the statutory remedies available." *Id*. at 1117.

240. Khanna & Dickinson, *supra* note 186, at 1715. Professors Khanna and Dickinson distinguish monitors from special masters in that the monitors are appointed with the consent of the target entity. *See id*. Our proposal, however, applies the monitor remedy outside the context of Deferred Prosecution Agreements and Non-Prosecution Agreements and does not depend on the consent of the defendant.

241. *See* Root Martinez, *supra* note 188, at 778 ("Monitors have been used on a consistent basis for over fifteen years.").

242. 15 U.S.C. § 78u(d)(5) (Supp. II 2002).

243. O'Hare, *supra* note 187, at 92 ("Implicit in the ancillary remedy is the assumption that an order enjoining the defendant from future violations of federal securities laws will not be effective, so that more direction is needed from the court to ensure that the defendant will comply with the federal securities laws.").

244. Gelles, *supra* note 238.

245. *See supra* Part III.A.

246. *See supra* Part III.B.

B. Compliance-Monitor Primacy?

The Carbon Majors may also object that compliance monitors appointed in response to the climate emergency would wield managerial powers that are entrusted by state corporate law exclusively to a corporation's board of directors.[247] Unlike board members, an independent monitor would not be accountable to the corporation's shareholders.[248] According to this view, active judicial oversight of corporate decision-making overturns the proper governance of the corporation, thereby disempowering the board of directors.[249] For example, "if a Corporate Monitor can veto board decisions, there is an obvious clash with state corporate statutes that vest the management of a corporation with the board of directors."[250] In effect, monitors would serve as "firm-specific quasi regulators."[251]

However, objections premised on the internal structure of corporate governance should be unavailing because monitors would derive their authority

247. *See* O'Hare, *supra* note 187, at 90 ("The appointment of a Corporate Monitor, accountable only to the court, raises interesting issues of corporate law."). Professor O'Hare argues that "courts should articulate clear judicial standards that must be met before granting this extraordinary remedy." *Id*. For an argument that federal prosecutors have overused the remedy in criminal enforcement proceedings, *see* Jennifer Arlen & Marcel Kahan, *Corporate Governance Regulation Through Nonprosecution*, 84 U. Chi. L. Rev. 323 (2017).

248. *See* O'Hare, *supra* note 187, at 93 (observing that "court appointment of SEC-approved directors can be a significant intrusion on shareholder suffrage"). To address climate change head on, however, some level of insulation from shareholder pressure may be necessary. *See* Strasburg, *supra* note 77 ("Public-company executives waffle over the pace of the energy transition under shareholder pressure.") (internal quotation marks omitted).

249. *See* James R. Farrand, *Ancillary Remedies in SEC Civil Enforcement Suits*, 89 Harv. L. Rev. 1779, 1805 (1976) (noting that equitable relief via SEC enforcement actions "provided a means for governmental control of corporate management and decision-making . . . ."). Under traditional principles of law, corporate decisions are entrusted to the board of directors and subject to a very deferential standard of review. *See* Stephen M. Bainbridge, *Director Primacy in Corporate Takeovers: Preliminary Reflections*, 55 Stan. L. Rev. 791, 792 (2002) ("Who decides? This question lies at the heart of corporate takeover jurisprudence.").

250. O'Hare, *supra* note 187, at 109 (citing Del. Code Ann. tit. 8 § 141(a) ("The business and affairs of every corporation . . . shall be managed by or under the direction of a board of directors . . . ."); *see* Robert T. Miller, *Oversight Liability for Risk-Management Failures at Financial Firms*, 84 S. Cal. L. Rev. 47, 57 (2010) (arguing that "any attempt to expand oversight liability beyond the limits of *Caremark* would effectively repeal the business judgment rule, which I assume is undesirable").

251. Arlen & Kahan, *supra* note 247, at 327 (raising concern, in the context of DOJ criminal proceedings, that "mandates transform prosecutors into firm-specific quasi regulators. Prosecutors can impose specific duties on a subset of firms with alleged wrongdoing, and they enforce compliance with these duties through sanctions for a mere failure to comply with the duties, even if no substantive crime occurs."). Although Professors Arlen and Kahan are right to highlight the extraordinary nature of the remedy, we argue that it is warranted when applied to corporations that have contributed to climate change while shirking their obligations to address the problem.

from courts whose external supervisory powers are not in doubt.[252] If necessary to conform to the requirements of state corporate law, the monitor's decisions could be couched as recommendations for judicial review and endorsement. Also, even if the compliance monitor's ongoing role within the corporation were broad enough to conflict with the board's statutory power or with the shareholder franchise, courts have been willing to abrogate corporate governance rules when necessary to address a significant policy concern.[253] We contend that a departure from the usual deferential attitude is warranted here: "Given the ongoing failure of governments to seriously respond to climate change, the urgency of addressing climate change, and the central role that corporations play in the economy, if corporations as currently constituted are not up to the task, we need to reconstitute them."[254]

In short, formalistic adherence to existing governance rules should not be taken as an end in itself.[255] Corporations are meant to serve societal purposes. When they act in ways that damage the public interest, they need to be reined in.[256] The Carbon Majors' ongoing contributions to climate change and resistance to regulatory limits illustrate how corporations' profit-seeking motive can lead to socially damaging behavior. As a temporary,[257] corrective measure,

252. For example, courts provide an equitable backstop for minority shareholders when the allocation of power within the corporation creates grossly unfair outcomes. *See* Robert B. Thompson, *The Shareholder's Cause of Action for Oppression*, 48 Bus. Law. 699 (1993); Benjamin Means, *A Voice-Based Framework for Evaluating Claims of Shareholder Oppression in the Close Corporation*, 97 Geo. L.J. 1207 (2009). To be clear, state courts cannot directly defy a statutory scheme, although federal courts may have greater flexibility in that regard. *See* O'Hare, *supra* note 187, at 109 (stating that "the Supremacy Clause would permit a federal district court to order an ancillary remedy that would cause a company to violate its law of incorporation" but cautioning that "such an order would raise significant federalism concerns").

253. *See* Benjamin Means & Douglas K. Moll, *Against Contractual Formalism in Shareholder Oppression Law*, 57 U.C. Davis L. Rev. 1867, 1930 (2024).

254. *See* McDonnell et al., *supra* note 139, at 399.

255. Formalism in law can be defined as "methodological approaches that place greater weight on the *ex ante* values of consistency and certainty and that, accordingly, call for an application of law to fact without concern for fairness *ex post*." Means & Moll, *supra* note 253. For a general critique of formalism, see Roberto Mangabeira Unger, *The Critical Legal Studies Movement*, 96 Harv. L. Rev. 561 (1983).

256. We appreciate that there is a tradeoff and that a monitor-led corporation would not necessarily serve the interests of its shareholders. *See* O'Hare, *supra* note 187, at 105 ("The idea that a court-appointed individual could be managing a public corporation for long periods of time without any accountability to the shareholders is troubling, to say the least.").

257. The timeframe for a monitor's appointment would need to be assessed in relation to the scope of the project but might typically be in the range of 24 months, with the possibility of renewal. *See infra* Appendix (proposing language for a model Order Appointing Independent Monitor).

compliance monitors could be used to reset the social compact between the Carbon Majors and society.[258]

C. Slippery Slopes

The Carbon Majors may also raise a slippery-slope objection: once you have established an exception to normal procedures for a cause that you care about, what is to stop someone else from employing the same maneuver to very different ends?[259] If courts can impose compliance monitors to address the problem of climate change, it could lead to the government interfering in the internal affairs of corporations in other areas, such as labor relations or product safety. And if climate change qualifies as an emergency, what about racial injustice or wealth inequality?[260] It is beyond the scope of this Article to identify what other situations might constitute an emergency, but we believe it should suffice to respond that the non-trivial threat of a collapse of earth's life support systems can be distinguished, qualitatively and substantively, from myriad other social ills.[261]

To elaborate further, the climate emergency presents distinct features that can be used to differentiate it from other pressing societal issues that could be viewed as emergencies. First, climate change poses an existential threat to human civilization and the planet's ecosystems. If not mitigated, it has the potential to render parts of the world uninhabitable, lead to mass extinction of species, and disrupt the basic social, economic, and environmental systems upon

258. *See* Roy, *supra* note 54, at 847–48 ("[O]ur continuing reliance on the hope that countries' self-disciplined altruism will, across the board, realize sufficient climate change mitigation is, itself, fanciful. In other words, it's not working. Time to try something new.").

259. For evaluation of slippery slope arguments, *see* Eugene Volokh, *The Mechanisms of the Slippery Slope*, 116 Harv. L. Rev. 1026 (2022); Ann Scales, *Feminist Legal Method: Not So Scary*, 2 UCLA Women's L.J. 1 (1992); Frederick Schauer, *Slippery Slopes*, 99 Harv. L. Rev. 361 (1985).

260. *See, e.g.*, *Racism Is a Public Health Crisis*, Am. Pub. Health Ass'n, https://perma.cc/3KG3-HCDE; Benjamin Means, *Wealth Inequality in Family Businesses*, 65 Emory L.J. 937 (2016) (arguing that wealth inequality "endangers democratic values and calls for a public response").

261. We do not mean to suggest, however, that the threat posed by climate change is disconnected from social challenges such as racism and wealth inequality. *See e.g.*, Naomi Klein, This Changes Everything: Capitalism v. the Climate (2014); Hop Hopkins, *Racism is Killing the Planet*, Sierra (June 8, 2020), https://perma.cc/DK6X-9VKK. Indeed, one might take the position that a broader rebalancing of capitalism with other social goals would be salutary.

which humanity depends.[262] While other issues are undeniably serious, few present such a comprehensive threat to life on Earth.[263]

Second, the scientific consensus on climate change is overwhelming, with 97% or more of actively publishing climate scientists agreeing that climate-warming trends over the past century are very likely due to human activities. This longstanding consensus, backed by a wealth of empirical evidence, provides a strong basis for recognizing climate change as a uniquely urgent issue.[264]

Third, the effects of climate change are largely irreversible on a human timescale. Once greenhouse gases are released into the atmosphere, they stay there for many years. The longer action is delayed, the worse the impacts will be, and the harder and more expensive they will be to mitigate.

Fourth, a relatively small number of corporations are responsible for a disproportionate amount of greenhouse gas emissions.[265] This suggests that targeted intervention at the corporate level could have a particularly significant impact on climate change.

Finally, greenhouse gas emissions, the primary driver of climate change, can be precisely measured, and thus the impact of regulatory interventions can be quantitatively assessed.[266] Other societal problems might not lend themselves to such clear measurement and tracking.

In sum, even if there is a risk that courts (or the monitors they appoint) will overreach, undermining the proper role of the legislative and executive branches, the climate crisis shows that "we cannot afford to eliminate emergency powers, which provide crucial authority in times of genuine crisis. The challenge will be maintaining the delicate balance between the potential for abuse and the legitimate exercise of emergency powers."[267] Compliance monitors, we submit, would preserve that balance while protecting the public interest by providing the necessary impetus for an overdue transition away from fossil fuels.

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262. *See, e.g.*, Naureen S. Malik, *Texas Power Prices to Surge 800% on Sunday Amid Searing Heat*, Bloomberg (Aug. 5, 2023) (reporting that "Texas power prices . . . surged more than 800% as searing heat pushes demand toward record levels and strains supplies on the state grid").

263. *See* Douglas A. Kysar, Regulating from Nowhere: Environmental Law and the Search for Objectivity 150–75 (2010) (articulating and defending precautionary principle that gives weight to the interests of future generations of human beings).

264. *See* Burger, *supra* note 27; Carlarne, *supra* note 27.

265. *See* Heede, *supra* note 13.

266. *Id.*

267. Daniel A. Farber, *Exceptional Circumstances: Immigration, Imports, the Coronavirus, and Climate Change as Emergencies*, 71 Hastings L.J. 1143, 1176 (2020) (arguing, in the context of the debate over presidential emergency powers, that "[t]he potential for further eroding checks on executive action is real. It, however, should not be exaggerated").

D. The Hazards of Incrementalism

Another likely objection—cutting in the opposite direction from concerns about separation of powers, corporate governance, and slippery slopes—is that our proposal is insufficient. Some climate scholars contend that the time for incremental improvements is past and that nothing short of revolutionary change is equal to the moment. In a response to our previous article, *Climate Change Compliance*,[268] Dean Cinnamon Carlarne and Professor Keith Hirokawa make the case for more radical reform:

> Coming from outside of the corporate governance realm and situated deep within the worlds of environmental and climate law, we increasingly view both legal evolution and climate strategies with a very different perspective on what is needed . . . [R]ecognizing that Kuo and Means make a valuable contribution to the climate change literature, this Response urges that proposals for incremental climate solutions be juxtaposed alongside more transformative solutions: solutions that avoid framing climate change as just another obstacle to deal with as a matter of corporate, social governance, or, even, as a matter of environmental law.[269]

Although Dean Carlarne and Professor Hirokawa agree with our recommendation that climate change should be considered a compliance obligation,[270] they question the value of taking another step or two in the right direction when the laws and policies that would control climate change are leaps and bounds beyond the status quo.[271] They are correct that the climate emergency requires rapid adjustments on a massive scale.[272] To that end, this Article has developed an aggressive proposal to implement our previous suggestion that the concept of compliance could be a fulcrum for changing corporate behavior. Specifically, this Article has argued that climate change lawsuits give courts the opportunity to appoint independent monitors to override internal opposition and force the Carbon Majors to treat climate change as a compliance obligation.

Yet, even though our proposal represents a departure from traditional corporate governance principles and gives courts a prominent role in setting the agenda for corporations, we do not view ourselves as revolutionaries. We do

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268. Kuo & Means, *supra* note 15.

269. Cinnamon P. Carlarne & Keith H. Hirokawa, *Climate Law Leaps*, 108 Iowa L. Rev. Online 102, 104 (2023) (calling for "the kinds of revolutionary paradigm shifts that make many scholars and policymakers like uncomfortable").

270. *Id.* at 103 ("Kuo and Means make a compelling argument that corporate compliance is a powerful and underappreciated tool . . . .").

271. *Id.* at 104 ("[T]his Response suggests that climate change demands more from the law. It demands that we imagine the kinds of revolutionary paradigm shifts that make many scholars and policymakers alike uncomfortable.").

272. *Id.*

not contend that the president should declare a state of emergency under the National Emergency Act and use that authority to, for example, unilaterally ban the extraction, import, or export of fossil fuels.[273] Nor do we seek to nationalize the oil industry[274] or to limit or abolish the concept of private property.[275] According to Dean Carlarne and Professor Hirokawa, "the rhetorical force of property, together with the antisocial incident of the right to exclude, elevates individualism at the expense of our collective needs and values."[276] They contend that, "in the context of climate change, this form of individualism could prove disastrous."[277] Although we share their sense of urgency, we have not abandoned hope that our existing institutions will prove to be capable of responding to climate change.[278]

273. *See* J. Benton Heath, *The New National Security Challenge to the Economic Order*, 129 Yale L.J. 1020, 1037 (2020) (noting that "advocates suggest that countries, including the United States, could use a climate-emergency declaration to suspend oil drilling, restrict trucking or other fossil-fuel-intensive activities, or impose sanctions on traffic in fossil fuels"). The question is often framed as one of presidential power. *See, e.g.*, Mark P. Nevitt, *The Commander in Chief's Authority to Combat Climate Change*, 37 Cardozo L. Rev. 437 (2015). For an argument against executive action, see Amy L. Stein, *Energy Emergencies*, 115 Nw. U. L. Rev. 799, 862–63 (2020) (stating that the "definitional ambiguity [of emergency] might be justified by the benefits of flexibility; however, these potential benefits also come with attendant costs, including uncertain deference provided to a statutory president. As just one example, the Trump Administration has also attempted to stretch the concept of an energy emergency to bail out a failing coal industry."); Geoffrey A. Manne & Seth Weinberger, *Trust the Process: How the National Emergency Act Threatens Marginalized Populations and the Constitution-and What to Do About It*, 44 Harbinger 95, 97 (2020) (citing Umair Irfan & David Roberts, *The Executive Actions Democratic Presidential Hopefuls Intend to Use to Fight Climate Change*, Vox (updated Feb. 19, 2020), https://perma.cc/2MFU-A3R2 (reporting answers from Democratic presidential candidates to the following query: "what executive actions are you prepared to take to reduce carbon emissions?").

274. For an argument that nationalization is needed, see Holly Jean Buck, Ending Fossil Fuels: Why Net Zero is Not Enough (2020).

275. *See* Carlarne & Hirokawa, *supra* note 269, at 114 (suggesting that the climate emergency may require "us to imagine the idea of a society untethered from the existing system of property rights").

276. *Id.* at 115.

277. *Id*.

278. According to preliminary estimates, for example, the incentives provided for in the Inflation Reduction Act will lead to more than just incremental improvement. *See* Farber, *supra* note 94, at 271 ("They show significant effects on reductions, with the statute expected to cut annual emissions in 2030 by roughly a billion metric tons, close two-thirds of the remaining emissions gap between current policy and the nation's 2030 climate target."); Gelles et al., *supra* note 94 (reporting that "change is happening at a pace that is surprising even the experts who track it closely").

Conclusion

This Article contends that the severity of the climate emergency justifies innovative legal measures such as the appointment of monitors in climate change lawsuits against the Carbon Majors. Pursuant to the business judgment rule, courts defer to the expertise of corporate directors, but that deference has become indefensible given the Carbon Majors' responsibility for climate change and demonstrated unwillingness to respond to the threat voluntarily.[279] Court-appointed monitors would have the independence and the capacity to force needed changes, rendering the Carbon Majors more reliable allies in the battle to transform the global economy.[280]

Unlike more sweeping calls for reform, which either presuppose a nonexistent democratic consensus or anticipate more revolutionary interventions that would strain the rule of law, this Article's proposal is pragmatic. First, courts already possess the equitable power to appoint monitors to address compliance failures. Second, a focus on judicial remedies sidesteps the Supreme Court's ongoing efforts to reduce the power of agencies to regulate in the public interest without clear Congressional approval. Finally, focusing on compliance rather than past financial damages avoids intricate questions of attribution in climate change litigation.

In desperate times, what measures are called for? What legal principles might eventually be considered unaffordable luxuries? It would be better not to have to find out. To forestall cascading environmental catastrophes that could make our existing social, political, economic, and legal arrangements unworkable, it is necessary to press forward using all means available within the system. In that spirit, this Article argues that courts adjudicating climate change lawsuits should consider appointing monitors to provide oversight of the corporations most responsible for climate change. The proposal is not a cure-all, but it is a start.[281] Those who would counsel inaction should consider that a system that cannot bend may break.

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279. *See* Winden, *supra* note 133, at 1179 ("Despite the threat of significant losses related to climate risks, U.S. corporations are not sufficiently accounting for and incorporating the short-, medium-, or long-term risks of climate change into their business models."). Professor Winden speculates that this failure may be because "tail risks" are hard to model financially. *Id*.

280. *See* Root Martinez, *supra* note 188, at 778 ("Monitors . . . are a key actor in overseeing complex remediation efforts at firms that have experienced significant compliance failures.").

281. Sassman, *supra* note 33, at 757 ("Given the urgency of the climate crisis, we should be leveraging all tools available to reduce emissions.").

Appendix

ORDER APPOINTING INDEPENDENT MONITOR

This matter comes before the Court on the issue of the Defendant's contributions to climate change and lack of effective internal compliance controls, as established by the evidence presented. The Court, having considered the parties' arguments and the evidence presented, and in light of the severity and urgency of climate change, hereby ORDERS the appointment of an independent monitor ("Monitor") as follows:

1. Appointment of Monitor: The Court hereby appoints [Insert Monitor's Name] as the Monitor to oversee the Defendant's compliance with environmental regulations and its commitments to reduce greenhouse gas emissions.
2. Authority of Monitor: The Monitor is authorized to review all of the Defendant's activities related to greenhouse gas emissions and environmental compliance. This includes, but is not limited to, the power to inspect any and all documents, to interview employees, and to inspect any facilities or operations of the Defendant.
3. Responsibilities of Monitor: The Monitor shall ensure that the Defendant takes the necessary steps to significantly reduce its greenhouse gas emissions and to comply with all relevant environmental regulations. The Monitor shall have the power to recommend any changes in the Defendant's operations or policies necessary to achieve these goals.
4. Economic and Social Considerations: While the primary focus of the Monitor shall be environmental compliance and climate change, the Monitor may also consider the potential economic and social impacts of recommended changes. This includes potential impacts on employment, regional economies, and energy prices. The Monitor may consult with experts in these areas as necessary.
5. Reporting: The Monitor shall regularly report to the Court on the Defendant's progress towards achieving its emission reduction goals. These reports shall include any recommendations for changes in the Defendant's operations or policies.
6. Cooperation with Monitor: The Defendant shall fully cooperate with the Monitor. This includes providing the Monitor with access to any documents or information the Monitor requests, making employees available for interviews, and implementing any changes the Monitor recommends.
7. Duration of Monitorship: It is expected that the Monitorship shall continue for a term of 24 months. However, the Monitorship may continue past that date on application of the Monitor and until

the Court determines that the Defendant has made sufficient progress towards reducing its greenhouse gas emissions and achieving compliance with environmental regulations.

This Order is effective immediately. Any violations of this Order may result in sanctions, up to and including contempt of court.

IT IS SO ORDERED.

Dated this ____ day of ___, 2024.