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# SPINNING OFF CARBON: CORPORATE RESTRUCTURING IN A CLIMATE BANKRUPT WORLD

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## ABSTRACT

*As corporations with carbon-intensive operations face accelerating liability claims and operational dangers due to climate change, their transitions to a low-carbon future will inevitably seek to minimize or sidestep many of those risks. These risk-reduction strategies will have enormous policy implications. For example, corporate climate adaptation and transition strategies have already come under intense regulatory and financial scrutiny from governmental agencies, securities markets, corporate governance advocates, and systemic risk managers. Emerging corporate tactics to handle these front-end climate risks have multiplied, including the growing use of environmental, social, and governance performance metrics, enhanced climate disclosures and self-reporting, and adoption of alternative corporate forms that allow business managers to consider non-financial benefits and risks when making decisions. The recent passage of the Inflation Reduction Act and the Infrastructure Investment and Jobs Act in the United States has only turbocharged the transition.*

*By contrast, the back-end of corporate climate risk management has received far less attention. Rational corporate strategies to handle environmental risks may sometimes harmonize with broader public interests, but they also can easily conflict with larger societal goals. Understanding how carbon-intensive corporations will limit or shed their existing climate vulnerabilities is vital to effective climate policy and environmental protection. This Article begins to untangle this often overlooked, but important, aspect of the legal response to climate change.*

*Carbon-intensive businesses have already begun to turn to familiar*

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*strategies that can control or discharge their carbon risks from climate change. This bottom-up approach to allocating climate liability could risk conflicting and inconsistent outcomes, denuding of assets otherwise potentially available to answer climate liability claims, and a murky lack of transparency. It also threatens to worsen environmental injustices to vulnerable populations and could create a new class of “carbon zombie” corporations that function as vestigial vessels to contain carbon risks without a strong business model or future operational prospects. Solutions to this tangled challenge will likely require action on multiple levels, including shifts in corporate accounting norms towards greater transparency about risks during carbon spinoffs and climate bankruptcy proceedings, expanded statutory public policy exceptions to limited corporate liability (such as doctrines for fraudulent transfers), and explicitly accounting for climate liability in corporate spinoffs and bankruptcies in ways that address environmental justice concerns and inequities.*

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## INTRODUCTION

Climate risk has become a driving force in the corporate business world. Because of mounting concerns over the dangers posed by untrammled climate change,<sup>1</sup> the global economy has started a

<sup>1</sup> See U.N. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2022: IMPACTS, ADAPTATION AND VULNERABILITY 3–37 (2022), [https://report.ipcc.ch/ar6/wg2/IPCC\\_AR6\\_WGII\\_FullReport.pdf](https://report.ipcc.ch/ar6/wg2/IPCC_AR6_WGII_FullReport.pdf); U.N.

vast and halting transition away from carbon as the mainstay of energy production and as the feedstock for numerous other commercial production systems. While its pace may seem fitful,<sup>2</sup> the global commitment to carbon reduction reflected in the Paris Agreement—especially in its ambitious 1.5° Centigrade (C) target—reflects a broad international commitment that will likely prove irreversible.<sup>3</sup> The business community has taken note, and numerous large corporations have publicly embarked on long-term strategies to explore converting their business models to the post-carbon future.<sup>4</sup> For example, Exxon Mobil Corporation has announced that it will invest

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INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SPECIAL REPORT: GLOBAL WARMING OF 1.5° C 4-17 (2022), [https://www.ipcc.ch/site/assets/uploads/sites/2/2022/06/SR15\\_Full\\_Report\\_LR.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2022/06/SR15_Full_Report_LR.pdf); H. Damon Matthews & Seth Wynes, *Current Global Efforts are Insufficient to Limit Warming to 1.5°C*, 376 SCIENCE 1404 (2022), <https://www.science.org/doi/10.1126/science.abo3378>; Steven Mufson, *U.S. Emissions Linked to Over \$1.8 Trillion of Global Economic Losses, Study Says*, WASH. POST (July 12, 2022), <https://www.washingtonpost.com/climate-environment/2022/07/12/united-states-china-global-economic-damages-emissions-study/>.

<sup>2</sup> For example, the global use of coal to generate electricity resurged in 2022. This rise in consumption was in part sparked by geopolitical conflict in Ukraine and continuing global economic impacts from the COVID-19 pandemic. See Thomas Biesheuvel et al., *Coal Giants are Making Mega Profits as Climate Crisis Grips the World*, BLOOMBERG (Aug. 13, 2022), <https://www.bloomberg.com/news/articles/2022-08-13/feeding-the-world-s-coal-addiction-is-more-profitable-than-ever>.

<sup>3</sup> The International Energy Agency recently forecast that global demand for fossil fuels would peak or plateau under all scenarios in the near future. The accelerating transition away from fossil fuels was triggered in part by Russia's invasion of Ukraine, which sparked "profound and long-lasting changes that have the potential to hasten the transition to a more sustainable and secure energy system." *World Energy Outlook 2022 Shows the Global Energy Crisis Can Be a Historic Turning Point Towards a Cleaner and More Secure Future*, INT'L ENERGY AGENCY (Oct. 27, 2022), <https://www.iea.org/news/world-energy-outlook-2022-shows-the-global-energy-crisis-can-be-a-historic-turning-point-towards-a-cleaner-and-more-secure-future>. See generally INTERNATIONAL ENERGY AGENCY, WORLD ENERGY OUTLOOK 2022 (2022); *Carbon Sequestration*, BUREAU OF SAFETY AND ENV'T ENFT, <https://www.bsee.gov/carbon-sequestration> (last visited May 10, 2024).

<sup>4</sup> See Emilie Bundock & Ana Luci Grizzi, Presentation on What Net-Zero Commitments Mean for Mining Company Operations at the 68th Annual Natural Resources and Energy Law Institute Conference (July 22, 2022) (unpublished presentation) (on file with the N.Y.U. Environmental Law Journal).

\$17 billion in low carbon solutions through 2027,<sup>5</sup> and Shell stated in 2021 that it will reach net zero emissions of its greenhouse gases by 2050.<sup>6</sup> Both companies have portrayed themselves as the logical leaders of the larger energy transition.<sup>7</sup>

This transition will likely take place on multiple levels in unpredictable ways. While regulatory attention has centered on proactive environmental regulatory policies and explicit statutory commitments to guide the carbon transition towards paths that minimize economic disruption or environmental injustices,<sup>8</sup> it has not

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<sup>5</sup> *ExxonMobil Announces Corporate Plan — Company Expects to Double Earnings and Cash Flow Potential by 2027, Increases Investments in Lower-Emission Efforts*, EXXONMOBIL (Dec. 8, 2022) [https://corporate.exxonmobil.com/news/newsroom/news-releases/2022/1208\\_exxonmobil-announces-corporate-plan-to-double-earnings-and-cashflow-potential-by-2027](https://corporate.exxonmobil.com/news/newsroom/news-releases/2022/1208_exxonmobil-announces-corporate-plan-to-double-earnings-and-cashflow-potential-by-2027). In its statement, ExxonMobil claimed that it has allocated approximately \$17 billion on its own emission reductions and accretive third-party lower-emission initiatives through 2027, an increase of nearly 15%. Nearly 40% of these investments is directed toward building our lower-emissions business with customers to reduce their greenhouse gas emissions with a primary emphasis on large-scale carbon capture and storage, biofuels, and hydrogen. These lower-emissions technologies are recognized as necessary solutions to help address climate change and closely align with ExxonMobil's existing competitive advantages and core capabilities. The balance of the capital will be deployed in support of the company's 2030 emission-reduction plans and its 2050 Scope 1 and 2 net-zero ambition. In the Permian, the company is on track with its goal to reach net-zero Scope 1 and 2 emissions from its operated unconventional assets by 2030.

<sup>6</sup> See Hope King, *Shell CEO: You Need Us on Climate Change*, AXIOS GENERATE (May 9, 2021), <https://www.axios.com/2021/05/09/shell-ceo-climate-change-axios-hbo>.

<sup>7</sup> See Ben Gemen & Andrew Freedman, *1 Big Thing: Tension Between Big Oil & Clean Tech*, AXIOS GENERATE (Feb. 7, 2023), <https://www.axios.com/newsletters/axios-generate-f5816603-6cc5-40f8-840a-df623859565e.html>.

<sup>8</sup> For example, the U.S. Securities and Exchange Commission has proposed regulations to govern disclosures by publicly traded corporations about their strategies and commitments to respond to climate change risks. These proposed regulations would require such corporations to provide audited data on their implementation of greenhouse gas reduction commitments and to include emissions data from their upstream suppliers and ultimate consumers of their products (often referred to as "Scope 3" emissions). See *The Enhancement and Standardization of Climate-Related Disclosures for Investors*, 87 Fed. Reg. 21,334, 21,345–46 (April 11, 2022) (to be codified at 17 C.F.R. 210.14-01, 14-02). See also KRISTEN LANG ET AL., CERES ROADMAP 2030, at 26–27 (2022), <https://pcap2020.org/wp-content/uploads/2020/10/Ceres-Roadmap-Summary-2030.pdf> (reviewing corporate disclosure principles and goals for climate risks).

similarly focused on how corporations will use existing corporate law to actively reduce problematic carbon risks that they already face.<sup>9</sup> This dimension of the corporate carbon transition will take place through innumerable decisions in scattered boardrooms without coordination or overt policy constraints. If federal or state governments later impose national laws and regulations to govern the post-hoc liabilities from the carbon transition, they may find that the field has already been frozen in place by individual bottom-up risk management decisions that rely on extensive and sizable investment expectations and property interests.<sup>10</sup>

Notably, these early steps in the carbon transition have already begun to occur outside of any comprehensive federal or state laws or policies to identify favored pathways to decarbonize. Corporations have started to take long-term strategic steps to manage their risks during the carbon transition and satisfy their sustainability commitments pursuant to Environmental, Social, and Governance (ESG) metrics.<sup>11</sup> They will likely rely heavily on standard tools of corporate law such as liability transfers, indemnification agreements, and early asset allocations. These decisions have taken place largely outside the gaze of academic analyses of the carbon transition, which typically seek to identify centralized proactive steps and explicit regulatory policies that would effectively promote and accelerate the transition away from carbon.<sup>12</sup> By contrast, the more likely current pathway—a complex collection of decentralized individual decisions to select pathways to decarbonization and manage

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<sup>9</sup> See, e.g., Sarah E. Light, *The Law of the Corporation as Environmental Law*, 71 STAN. L. REV. 137, 191 (2019) (“While many scholars have discussed whether obligations under CERCLA (commonly known as the Superfund statute) or related state laws to clean up hazardous waste sites can be discharged as ‘claims’ in bankruptcy, the implications of bankruptcy law in the climate change context have not yet received such sustained attention.”) (citations omitted).

<sup>10</sup> Imbuing environmental attributes with elements of property ownership can simultaneously promote protection of those interests by market forces while making alterations of those attributes much more problematic. See, e.g., Katrina Wyman & Adalene Minelli, *Propertizing Environmental Attributes*, 39 YALE J. REG. 1391, 1402, 1404 (2022).

<sup>11</sup> ESG metrics and impacts are discussed in greater detail in Part II.B.

<sup>12</sup> See DAVID G. VICTOR ET AL., ACCELERATING THE LOW CARBON TRANSITION (2019), <https://www.brookings.edu/wp-content/uploads/2019/12/Coordinatedactionreport.pdf>. See also William Boyd, *Public Policy and the Low-Carbon Future*, 61 U.C.L.A. L. REV. 1614 (2014).

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risks from commercial climate disruption—will more quickly result in an emergent policy with long-lasting consequences. This default approach will likely result in conflicting corporate decarbonization strategies, little to no public transparency, and clashing priorities between the public health goals of federal and state governments and the economic incentives of corporate actors. This emergent policy outcome may also have unexpected impacts on environmental justice goals and hamper attempts to assure a just transition for communities reliant on existing energy economies.

This Article outlines the general tools and strategies that rational corporate actors will adopt to shift and minimize their risks arising from current and historical carbon-intensive operations during the global transition away from carbon-based energy systems. It focuses particularly on liability claims arising from climate tort actions or carbon product liability claims because of their uniquely outsized risks to corporations with large carbon assets, such as the state of California's large climate tort action that seeks both compensatory damages and injunctive relief from energy corporations, but this framework can apply to other climate liabilities associated with corporate assets or prior operations. It concludes that corporations will likely use a sophisticated blend of special purpose subsidiaries, strategic bankruptcies, and spinoffs of carbon assets to private equity and risk arbitrageurs to insulate themselves against risk from liability judgments and asset strandings. These tactics may result in the creation of entities whose primary purpose is to shelter problematic carbon assets with questionable financial resources to effectively manage them—in effect, corporate carbon zombies. It concludes by cataloging possible strategies to bring these corporate maneuvers into public view, assure adequate capitalization and financial resources to address carbon liabilities, and encourage responsible corporate transitions away from problematic carbon portfolios.

This Article proceeds in three parts. Part I outlines the scope of the global transition from carbon-based energy sources and industrial production, and it describes how that transition will result in operational and liability risks. Part II reviews the standard legal strategies available under corporate law to limit liability for corporate actors or, alternatively, to cabin and shed those risks. It also examines how those policies might apply to financial risks arising from past or ongoing carbon-emitting activities. Part III anticipates

the likely effect of corporations using these strategies in the climate risk context: a policy freeze created by corporations' individual decision-making, and the rise of corporate carbon zombies. Part IV surveys potential principles for regulating some of the risks created by unrestrained carbon restructuring, including suggestions for potential legislation or regulatory reforms.

### I. THE ENERGY TRANSITION AND CARBON RISKS

The global transition away from carbon energy systems is already underway through a welter of short-term individual corporate strategy decisions with little public scrutiny.<sup>13</sup> From a broad perspective, the general trends are clear and well known. For example, McKinsey & Company recently concluded a global energy analysis that found electricity, hydrogen and synfuels could account for fifty percent of global energy use, and that renewable energy generation will reach eighty to ninety percent of generation assets by 2050.<sup>14</sup> This shift in energy production will lead to a peak in oil demand between 2024 and 2027, while coal demand has already peaked in 2013.<sup>15</sup> This transition will demand enormous total investments skewed towards non-fossil sources and decarbonization technologies. The growing emphasis on corporate commitments to ESG measures have added to the pressure on corporations to reduce their climate impacts through reducing emissions and shedding carbon intensive operations.<sup>16</sup> Beyond these larger trends, however, analysts typically have not focused on individual actions and investment moves that symbolize the rapid shift away from large existing stocks of carbon assets.

These trends have only grown in importance as policy initiatives in the United States have invested enormous resources to

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<sup>13</sup> See 6 *Companies Helping to Create the Zero Carbon Emission Future*, WE MEAN BUS. COAL. (Sep. 19, 2019), <https://www.wemeanbusinesscoalition.org/blog/6-companies-helping-to-create-the-zero-carbon-economy-of-the-future-2/>.

<sup>14</sup> See MCKINSEY & CO., GLOBAL ENERGY PERSPECTIVE 2022 EXECUTIVE SUMMARY 6 (2022), <https://www.mckinsey.com/~/media/McKinsey/Industries/Oil%20and%20Gas/Our%20Insights/Global%20Energy%20Perspective%202022/Global-Energy-Perspective-2022-Executive-Summary.pdf>.

<sup>15</sup> See *id.*

<sup>16</sup> See discussion *infra* Part I.B.

accelerate the transition. The Inflation Reduction Act of 2022 (IRA) will direct nearly \$400 billion in federal funding to promote clean energy over the next decade.<sup>17</sup> The Infrastructure Investment and Jobs Act of 2021 (IIJA) has already committed \$550 billion in new spending over the next five years that includes major investments in clean energy, updated infrastructure with lower emissions, and expanded loan programs for renewable energy development.<sup>18</sup>

*A. Spurring Global Climate Trends Through Local Corporate Decarbonization Decisions*

Three activities illustrate these trends of decarbonization through individual corporate decisions. First, in the U.S. Gulf Coast region, a land rush is quietly taking place to obtain property rights in geologic formations that can readily store large volumes of sequestered carbon dioxide (CO<sub>2</sub>).<sup>19</sup> Major energy corporations have focused their acquisition efforts on surface owners of property that contains pore space formations but lack economically productive oil and gas reservoirs. As a result, land that remained undeveloped

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<sup>17</sup> See McKinsey & Co., *The Inflation Reduction Act: Here's What's in It 2* (Oct. 24, 2022), <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/the-inflation-reduction-act-heres-whats-in-it>.

<sup>18</sup> See U.S. SENATE, BIPARTISAN INFRASTRUCTURE INVESTMENT AND JOBS ACT SUMMARY: A ROAD TO STRONGER ECONOMIC GROWTH 2–3 (2022), <https://www.cardin.senate.gov/wp-content/uploads/2022/09/Infrastructure-Investment-and-Jobs-Act-Section-by-Section-Summary.pdf>.

<sup>19</sup> See Phred Dvorak, *New Land Grab by Oil Giants Is Deep Underground*, WALL ST. J. (June 19, 2023), <https://www.wsj.com/articles/new-land-grab-by-oil-giants-is-deep-underground-34cd5e97>. In the United States, most states allow the severance of a real property interest into a separate surface estate and a mineral estate. Under this arrangement, the mineral estate owner possesses the title to subterranean minerals such as oil, natural gas, or other minerals. The mineral estate typically dominates the surface estate so that the mineral estate owners can access their minerals in ways that impose reasonable burdens on the surface estate. State laws have varied on which estate includes the pore space — the geologic holes that can actually store the CO<sub>2</sub>. In Texas, for example, the law remains unclear, but surface estate owners typically retain ownership in the pore space even if the mineral estate owner holds title to the oil and gas inside those pores. See RUTH IVORY-MOORE, GLOB. CCS INST., PORE SPACE RIGHTS — U.S. OVERVIEW 1–3 (2022), <https://www.globalccsinstitute.com/wp-content/uploads/2022/05/Brief-Pore-Space-Rights-5.24-12.pdf>; William B. Browder, *The Dominant Oil and Gas Estate—Master or Servant of the Servient Estate*, 1962 A.B.A. SEC. MIN. & NAT. RES. L. PROC. 45, 59 (1962).

during prior oil and gas rushes acquired new economic value precisely because it lacked historical oil and gas drilling wells or other economically valuable minerals.<sup>20</sup>

Second, energy developers are looking offshore for carbon sequestration space. In Texas, for example, the state's General Land Office has already hosted auctions to lease offshore lots within state territorial waters for use in sizable offshore CO<sub>2</sub> sequestration facilities.<sup>21</sup> Talos Energy has entered into a sizable lease near Jefferson County offshore from Port Arthur, Texas for development into a CO<sub>2</sub> storage facility.<sup>22</sup> Notably, Exxon Mobil Corporation has organized efforts by multiple corporations to finance and construct a \$100 billion offshore storage zone located near the Houston Ship Channel.<sup>23</sup> Along the same lines, the federal agencies responsible for offshore leasing in U.S. waters must publish new federal permitting procedures for offshore sequestration leases by November 2022 (although the agencies have already missed this initial statutory deadline).<sup>24</sup>

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<sup>20</sup> See Dvorak, *supra* note 19.

<sup>21</sup> See Press Release, Texas Gen. Land Off., Texas General Land Office, Industry Leaders Usher in New Era of Carbon Sequestration Near Jefferson County (Sept. 3, 2021), <https://www.glo.texas.gov/the-glo/news/press-releases/2021/sep-3/industry-leaders-usher-in-new-era-of-carbon-sequestration-near-jefferson-county>.

<sup>22</sup> See Talos Energy Announces Formal Execution of Texas GLO Carbon Capture Site Lease and Establishes Strategic Alliance with Core Lab, PR NEWswire (Mar. 16, 2022), <https://www.prnewswire.com/news-releases/talos-energy-announces-formal-execution-of-texas-glo-carbon-capture-site-lease-and-establishes-strategic-alliance-with-core-lab-301503625.html>.

<sup>23</sup> See Sabrina Valle, *Exxon Plans Hydrogen and Carbon-Capture/Storage Plant Near Houston*, REUTERS (Mar. 1, 2022), <https://www.reuters.com/business/sustainable-business/exxon-plans-hydrogen-carbon-capture-storage-plant-near-houston-2022-03-02/>.

<sup>24</sup> See Infrastructure Investment and Jobs Act of 2021, Pub. L. No. 117-58, § 40,307, 134 Stat. 429, 1002–03; Kevin Ewing et al., *Under the Sea: Congress Amends OCSLA to Provide for Offshore CCS*, JDSUPRA (Dec. 3, 2021), <https://www.jdsupra.com/legalnews/under-the-sea-congress-amends-ocsla-to-6038717/>. According to the current Unified Regulatory Agenda, the U.S. Department of Interior has not yet issued a proposed or final rule to implement this requirement despite the lapse of the statutory deadline. *Carbon Sequestration*, OFF. OF INFO. AND REGUL. AFFS., <https://www.reginfo.gov/public/do/eAgenda-ViewRule?pubId=202310&RIN=1082-AA04> (last visited May 2, 2024).

Third, some energy companies have begun to place sizable bets on direct air capture (DAC) of ambient CO<sub>2</sub> for geologic storage (including as part of enhanced oil and gas recovery operations).<sup>25</sup> In one of the largest investments, Occidental Petroleum Corporation teamed up with Carbon Engineering, Inc. to build the first commercial-scale million ton per year DAC plant, and it subsequently escalated its role by buying Carbon Engineering outright.<sup>26</sup> This facility will use an intentionally modular design that will allow the duplication of the technology and easy placement in multiple locations. Its modular design will take advantage of the ability of DAC plants to remove CO<sub>2</sub> from any location.<sup>27</sup>

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<sup>25</sup> DAC processes seek to remove CO<sub>2</sub> or other greenhouse gases from the ambient atmosphere (rather than capturing those gases at the point sources which emit them). This approach will likely prove necessary to remove some of the enormous volume of CO<sub>2</sub> emitted by anthropogenic activities since the beginning of the Industrial Era. Most assessments of future climate change effects have emphasized that simple cessation of ongoing emissions—even down to zero emissions—won't halt ongoing climate disruption because of the long residence time of historically emitted CO<sub>2</sub>. See generally U.N. Intergovernmental Panel on Climate Change, *Global Warming of 1.5°C* 326–27 (2018), [https://www.ipcc.ch/site/assets/uploads/sites/2/2022/06/SR15\\_Full\\_Report\\_LR.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2022/06/SR15_Full_Report_LR.pdf). See also *Oxy and Carbon Engineering Partner to Combine Direct Air Capture and Enhanced Oil Recovery Storage*, GLOB. CCS INST. (June 5, 2019), <https://www.globalccsinstitute.com/news-media/latest-news/oxy-and-carbon-engineering-partner-to-combine-direct-air-capture-and-enhanced-oil-recovery-storage/>.

<sup>26</sup> See *Oxy and Carbon Engineering Partner to Combine Direct Air Capture and Enhanced Oil Recovery Storage*, *supra* note 25. See also Amanda Drane, *Oxy to Buy Canadian Carbon Capture Company for \$1.1B as it Aims to Quell Warming Climate*, HOUSTON CHRONICLE (Aug. 17, 2023), <https://www.houstonchronicle.com/business/energy/article/oxy-carbon-capture-acquisition-transition-18298831.php>; *Biden-Harris Administration Announces Up to \$1.2 Billion for Nation's First Direct Air Capture Demonstrations in Texas and Louisiana*, U.S. DEP'T OF ENERGY (Aug. 11, 2023), <https://www.energy.gov/articles/biden-harris-administration-announces-12-billion-nations-first-direct-air-capture>. See also *Direct Air Capture*, INT'L. ENERGY AGENCY (Apr. 25, 2024), <https://www.iea.org/energy-system/carbon-capture-utilisation-and-storage/direct-air-capture> (“Twenty-seven DAC plants have been commissioned to date worldwide, capturing almost 0.01 Mt CO<sub>2</sub>/year. Plans for at least large-scale (> 1000 tonnes CO<sub>2</sub> per year) 130 DAC facilities are now at various stages of development.”).

<sup>27</sup> See Neil Segel, *Direct Air Capture Facilities and Production of Carbon-Neutral Hydrocarbons*, 52 TEX. ENV'T L.J. 83, 85 (2022); David Izikowitz, *Carbon Purchase Agreements, Factories, and Supply-Chain Innovation: What Will It*

The development of large-scale DAC facilities will likely pose novel permitting challenges for federal and state agencies that must approve the operation of facilities designed to remove, rather than emit, atmospheric pollutants for long-term geologic storage or commercial reuse.<sup>28</sup> DAC investments in the United States will likely grow substantially in the next ten years because the IIJA and IRA provide substantial tax credits and direct payments for each ton of CO<sub>2</sub> captured and permanently sequestered.<sup>29</sup> The U.S. Department of Energy has already selected nineteen different DAC hubs for federal funding totaling \$99 million, and industrial partners for these hubs include major corporations such as Shell, Chevron, General Electric, Tenaska, and others.<sup>30</sup>

*B. The Effects of ESG Commitments on Decarbonization Spinoffs and Carbon Shedding*

Investors have increasingly sought to invest in companies whose business practices and goals acknowledge and respond to emerging ESG risks, including climate-related risks. The growing acceptance that climate-related disruptions may threaten existing business models has spurred efforts to rethink ESG investing as a

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*Take to Scale-Up Modular Direct Air Capture Technology to a Gigatonne Scale*, 3 FRONTIERS IN CLIMATE 2, 4 (2021).

<sup>28</sup> See Tracy D. Hester, *The Paradox of Regulating Negative Emissions Technologies Under US Environmental Laws*, 1 GLOB. SUSTAINABILITY 1 (2018).

<sup>29</sup> See MICHAEL GERRARD ET AL., GLOBAL CLIMATE CHANGE AND U.S. LAW 490 (4th ed. 2023) (the IIJA bolsters tax credits for CO<sub>2</sub> sequestration and use, allocates \$2.5 billion for carbon transport infrastructure, and provides \$3.5 billion to establish four DAC hubs for research; the IRA goes further and provides \$369 billion in funding for additional climate and clean energy initiatives).

<sup>30</sup> See OFF. OF FOSSIL ENERGY & CARBON DEV., U.S. DEP'T OF ENERGY, PROJECT SELECTION FOR REGIONAL DIRECT AIR CAPTURE (2023), [https://www.energy.gov/sites/default/files/2023-08/Project%20Selections%20for%20FOA%202735%20Regional%20Direct%20Air%20Capture%20Hubs%20TA1%20and%20TA2\\_1.pdf](https://www.energy.gov/sites/default/files/2023-08/Project%20Selections%20for%20FOA%202735%20Regional%20Direct%20Air%20Capture%20Hubs%20TA1%20and%20TA2_1.pdf). See also Petra Trendafilova, *Tenaska's Longleaf Carbon Capture and Storage Hub Officially Launched*, CARBON HERALD (Mar. 25, 2024), <https://carbonherald.com/tenaskas-longleaf-carbon-capture-and-storage-hub-officially-launched/>; *Liberty Louisiana*, THE CCUS HUB, [https://ccushub.ogci.com/focus\\_hubs/louisiana/](https://ccushub.ogci.com/focus_hubs/louisiana/) (last visited May 10, 2024) (“Shell is working to create the Liberty CCUS hub in Louisiana that would initially focus on decarbonizing Shell’s petrochemicals units in the Baton Rouge — New Orleans area, but would be open to a broad range of existing and new industrial companies in the region.”).

simple recognition of material enterprise risks, rather than a discretionary preference for corporations whose practices promote corollary social goals.<sup>31</sup> As a result, over eighty percent “of institutional investors in the” United States and the European Union “plan to increase their allocations to ESG products” in 2024 and 2025.<sup>32</sup> These commitments would double assets invested in ESG products under management in the United States from “US\$4.5 trillion in 2021 to US\$10.5 trillion in 2026,” and investment managers in Asia and Latin America have similar levels of growth.<sup>33</sup> Investments using ESG parameters accounted for over one-third of all U.S.-domiciled assets under management.<sup>34</sup>

Because ESG metrics explicitly focus on climate-related risks, they have begun to drive publicly-traded corporations to decarbonize their operations and make public commitments to attain net-zero (or even net negative) emissions of greenhouse gases.<sup>35</sup> These

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<sup>31</sup> See *What is ESG and Why It's Important for Risk Management*, GLOB. RISK MGMT. INST., <https://grm.institute/blog/what-is-esg-and-why-its-important-for-risk-management/> (last visited June 20, 2024).

<sup>32</sup> See PWC, ASSET AND WEALTH MANAGEMENT REVOLUTION 2022: EXPONENTIAL EXPECTATIONS FOR ESG 3 (2022), <https://www.pwc.com/gx/en/financial-services/assets/pdf/pwc-awm-revolution-2022.pdf>. See also Virginia Harper Ho, *Modernizing ESG Disclosure*, 2022 U. ILL. L. REV. 277 (2022) (discussing rising prominence of ESG disclosures in institutional investing); Jennifer Wu, *ESG Outlook 2022: The Future of ESG Investing*, J.P. MORGAN ASSET MGMT. (Jan. 2, 2022), <https://am.jpmorgan.com/us/en/asset-management/liq/investment-themes/sustainable-investing/future-of-esg-investing/>; Joan Michelson, *ESG Investing Is 'Soaring.' What Does It Mean?*, FORBES (Nov. 18, 2022), <https://www.forbes.com/sites/joanmichelson2/2022/11/18/esg-investing-is-soaring-what-does-it-mean/?sh=2afea48d51bc>; *ESG Investment Expected to More Than Double in the Next Three Years New Research from Dow Jones Shows*, DOW JONES (Sept. 7, 2022), <https://www.dowjones.com/press-room/esg-investment-expected-to-more-than-double-in-the-next-three-years-new-research-from-dow-jones-shows/>.

<sup>33</sup> See PWC, *supra* note 32, at 3.

<sup>34</sup> See *The U.S. SIF Foundation's Biennial "Trends Reports" Finds that Sustainable Investing Assets Reach \$17.1 Trillion*, U.S. SUSTAINABLE INV. F., [https://www.ussif.org/blog\\_home.asp?Category=3](https://www.ussif.org/blog_home.asp?Category=3).

<sup>35</sup> While there is no universal definition encompassing all ESG metrics, frequently considered metrics include greenhouse gas emissions, energy use, water consumption, and waste management. See Dean Emerick, *What are ESG Metrics?*, ESG: THE REPORT (Oct. 31, 2021), <https://www.esgthereport.com/what-are-esg-metrics/>; Lottie Wright, *What is Net Zero, and How Does ESG Factor In?*,

public commitments have led to concern about their enforceability and reliability, which has evoked criticism of purported “greenwashing” claims by companies and allegations of deceptive practices.<sup>36</sup> The U.S. Securities and Exchange Commission (SEC) has responded with a proposed rule that requires publicly-traded companies to verify and follow through on their public net-zero or emission reduction goals when they make statements about their exposure to material climate risks and their plans to address them.<sup>37</sup> These rules, if finalized, would require corporations making such statements to their investors to meet regulatory standards to assure their credibility.<sup>38</sup> Numerous financial workgroups, including private standard setters, international organizations, and financial and securities regulators, have worked on frameworks for reliable ESG reporting for climate-related risks.<sup>39</sup>

The growing role of ESG investments and the tightening rigor by regulators has led some publicly-traded corporations to take steps

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CONVENE (Sept. 27, 2023), <https://www.azeusconvene.co.uk/blog/what-is-net-zero-and-how-does-esg-factor-in>.

<sup>36</sup> One example of deceptive practices resulting in greenwashing occurred in 2012, when Cargill sued a commodities trader for allegedly selling invalid renewable fuel credits. Cargill needed the credits to comply with an EPA Renewable Fuel Standards Program. This incident undermined the market for such credits and misrepresented the amount of biofuels in circulation. See Eric L. Lane, *Greenwashing 2.0*, 38 COLUM. J. ENV'T. L. 279, 318–19 (2013). See also Lucia Gatti et al., *Grey Zone In - Greenwash Out. A Review of Greenwashing Research and Implications for the Voluntary-Mandatory Transition of CSR*, 4 INT'L J. OF CORP. SOC. RESP. 1 (2019); Jacqueline Poh, *What's Greenwashing and How Can I Avoid It?*, BLOOMBERG (Dec. 18, 2023), <https://www.bloomberg.com/news/articles/2023-12-18/what-s-greenwashing-how-can-i-steer-clear-of-it-quicktake>.

<sup>37</sup> Enhanced Disclosures by Certain Investment Advisers and Investment Companies About Environmental, Social, and Governance Investment Practices, 87 Fed. Reg. 36,654 (June 17, 2022) (to be codified at 17 CFR pts. 200, 230, 232, 239, 249, 274, and 279).

<sup>38</sup> *Id.* at 36659. These proposed rules, however, will likely face strong legal challenges and intense political pressure to moderate their scope. See Jacqueline M. Vallette & Kathryn M. Gray, *SEC's Climate Risk Disclosure Proposal Likely to Face Legal Challenges*, HARV. L. SCH. F. ON CORP. GOVERNANCE (May 10, 2022), <https://corpgov.law.harvard.edu/2022/05/10/secs-climate-risk-disclosure-proposal-likely-to-face-legal-challenges/>.

<sup>39</sup> See Ho, *supra* note 32, at 279–80 (noting that attempts to set ESG reporting frameworks have begun at the United Nations, the World Economic Forum, the International Organization of Securities Commission, the G20's Financial Stability Board, and the International Accounting Standards Board).

to reduce their carbon emissions profile and boost their performance under ESG metrics. As discussed below, these tactics can include selling assets and lines of business to remove their emissions from the selling company's emissions profile.<sup>40</sup> Other companies may choose to simply abandon operations and assets that drag down their ESG metrics or frustrate their ability to meet their public ESG commitments.<sup>41</sup> As the public importance of ESG investment grows as a surrogate public policy tool, these metrics will increase pressure on publicly-traded corporations to take steps to shed their carbon assets or segregate them into ways that minimize their exposure to climate-related disclosure risks.

### *C. Energy Transitions and Critical Risks to Corporations*

These corporate tools will tackle an enormous array of possible carbon risks, but three particular dangers generally illustrate why corporations will use them. The most notable risk is climate tort liability. In the United States, successive waves of climate tort lawsuits have led to an ongoing welter of claims of thirty-two lawsuits by state and local governments under state tort laws against a large array of energy corporations.<sup>42</sup> The U.S. Supreme Court has already

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<sup>40</sup> See discussion *infra* Parts II.A–C.

<sup>41</sup> See, e.g., ANDREW BAXTER ET AL., ENV'T DEF. FUND & CERES, TACKLING TRANSFERRED EMISSION: CLIMATE PRINCIPLES FOR OIL AND GAS MERGERS AND ACQUISITIONS 6–7 (2023), <https://business.edf.org/wp-content/blogs.dir/90/files/Climate-Principles-Asset-Transfer.pdf> (“While transactions may help companies reach their own emissions targets, they do not contribute to global GHG emissions reduction. . . . Transferring assets without considering climate impact represents reputational, climate, and transition risks for the oil and gas industry and financial institutions supporting the transactions. Investors, governments, civil society, and the media are increasingly scrutinizing these transfers and tend not to consider divestment of assets a valid decarbonization strategy, often holding the previous owner responsible for negative climate outcomes post-transfer.”).

<sup>42</sup> See Alex Brown, *After a Long Slog, Climate Change Lawsuits Will Finally Put Big Oil on Trial*, STATELINE (Apr. 4, 2024), <https://stateline.org/2024/04/04/after-a-long-slog-climate-change-lawsuits-will-finally-put-big-oil-on-trial/>. See also U.N. ENV'T PROGRAMME, GLOBAL CLIMATE LITIGATION REPORT: 2020 STATUS REVIEW 4 (Jan. 26, 2021), <http://www.unep.org/resources/report/global-climate-litigation-report-2020-status-review> (providing global overview of U.S. and similar climate tort litigation). For a historical perspective, see generally Tracy D. Hester, *A New Front Blowing In: State Law and*

issued two rulings on climate tort lawsuits,<sup>43</sup> and it has recently rejected a certiorari petition on yet another for its upcoming 2023–2024 term.<sup>44</sup> While the first wave of federal common law tort claims fell to displacement challenges, the new generation of state law tort actions has surmounted preliminary efforts to remove them to federal courts and preemption defenses.<sup>45</sup> As a result, several of these claims are nearing discovery and trial settings. The growing acceptance of climate attribution studies that pinpoint which weather impacts arise from anthropogenic climate change, and—in theory—which nations and corporations share responsibility for damages from those events,<sup>46</sup> will likely magnify the expected size of asserted liability claims and requests for injunctive relief and climate restitution.

The climate tort liability risks extend beyond the U.S. court system because the pace of climate liability lawsuits globally has dramatically accelerated. According to the U.N. Environment Programme, the number of climate lawsuits nearly doubled from 2017 to 2020 to reach at least 1,550 climate change cases filed in thirty-eight countries.<sup>47</sup> After it prevailed in its lawsuit alleging that the

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*the Future of Climate Change Public Nuisance Litigation*, 31 STAN. ENV'T L.J. 49 (2012).

<sup>43</sup> See *Am. Elec. Power Co. v. Conn.*, 564 U.S. 410, 424 (2011). See also *BP P.L.C. v. Mayor of Balt.*, 141 S. Ct. 1532 (2021). *Juliana v. United States*, 947 F.3d 1159 (9th Cir. 2020) also appeared in the Court's shadow docket, but that litigation solely targets the U.S. federal government and does not seek to impose liability on corporations or private actors.

<sup>44</sup> The Court denied the certiorari petition on April 24, 2023. Justice Alito did not participate in the decision and Justice Kavanaugh would have granted the petition (although he did not submit a written opinion). See *Suncor Energy (U.S.A.) Inc. v. Bd. of Cnty. Comm'rs of Boulder City*, 25 F.4th 1238 (10 Cir. 2022), *cert. denied*, 143 S. Ct. 1795 (2023). See also *Petition for Writ of Certiorari, Suncor Energy (U.S.A.) Inc.*, 143 S. Ct. 1795 (No. 21-1550); *Petition for Writ of Certiorari, BP P.L.C. v. Mayor of Baltimore*, 141 S. Ct. 1532 (2022) (No. 19-1189) (arguing that federal common law necessarily and exclusively governs such claims, and therefore federal law broadly preempts state law climate tort claims and displaces).

<sup>45</sup> See, e.g., *City of Hoboken v. Chevron Corp.*, 45 F.4th 699, 706 (3d Cir. 2022); *City of Honolulu v. Sunoco LP*, 39 F.4th 1101, 1106 (9th Cir. 2022).

<sup>46</sup> See Michael Burger et al., *The Law and Science of Climate Change Attribution*, 45 COLUM. J. ENV'T L. 57, 65 (2020).

<sup>47</sup> See U.N. ENV'T PROGRAMME, *supra* note 42. See also HR 20 december 2019, RvdW 2020, 19/00135 m.nt C.A.S. (Staat der Nederlanden/Stichting

Dutch government had illegally failed to undertake an adequate response to climate change risks, the Urgenda Foundation, a Dutch environmental group, brought a parallel action to force action by Shell as a corporate entity headquartered in the Netherlands.<sup>48</sup> Corporate executives and directors may face similar liabilities in their corporate capacity and personally if they fail to adequately address climate risks.<sup>49</sup> For example, one German intermediate court has allowed a tort claim to proceed by a Peruvian citizen claiming that a German utility's CO<sub>2</sub> emissions had accelerated glacial melt in a way that hurt his tourism guide business.<sup>50</sup> The success of a climate tort claim in one nation's judicial system raises the prospect of enforcing that foreign judgment in the courts of another judiciary. Enforcing such judgments would require the application of an entirely different set of laws and legal risks.<sup>51</sup>

Asset stranding poses another carbon liability that will drive corporate risk management strategies. Asset stranding could occur when an entity chooses to abandon or transfer capital resources

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Ugenda) (English translation), <https://www.urgenda.nl/wp-content/uploads/ENG-Dutch-Supreme-Court-Ugenda-v-Netherlands-20-12-2019.pdf>.

<sup>48</sup> See Rb. Den Haag 26 mei 2021, C/09/571932/HA ZA 19-379, ECLI:NL:RBDHA:2021:5337 (Milieudefensie /Royal Dutch Shell) (English translation), [https://uitspraken.rechtspraak.nl/inziendocument?id=ECLI:NL:RBDHA:2021:5339&showbutton=true&keyword=Shell#\\_dd69bcea-b686-4197-9d71-c429f2e238a](https://uitspraken.rechtspraak.nl/inziendocument?id=ECLI:NL:RBDHA:2021:5339&showbutton=true&keyword=Shell#_dd69bcea-b686-4197-9d71-c429f2e238a); Benoit Mayer, *Milieudefensie v Shell: Do Oil Corporations Hold a Duty to Mitigate Climate Change?*, EJIL:TALK (June 3, 2021), <https://www.ejiltalk.org/author/bmayer/>.

<sup>49</sup> See SARAH BARKER ET AL., COMMONWEALTH CLIMATE AND LAW INITIATIVE, FIDUCIARY DUTIES AND CLIMATE CHANGE IN THE UNITED STATES 4–10 (2021), <https://ccli.ubc.ca/wp-content/uploads/2021/12/Fiduciary-duties-and-climate-change-in-the-United-States.pdf>.

<sup>50</sup> See Landgericht Essen [LG Essen] [Regional Court Essen] Dec. 15, 2016, No. 2 O 285/15, Luciano Lliuya v RWE AG (Ger.) (English translation), <http://climatecasechart.com/non-us-case/liuya-v-rwe-ag/> and Dan Collyns, *German Judges Visit Peru Glacial Lake in Unprecedented Climate Crisis Lawsuit*, THE GUARDIAN (May 27, 2022), <https://www.theguardian.com/environment/2022/may/27/peru-lake-palcacocha-climate-crisis-lawsuit>. See also Isabella Kaminski, *Indonesian Islanders Sue Cement Producer For Climate Damages*, THE GUARDIAN (July 20, 2022), <https://www.theguardian.com/world/2022/jul/20/indonesian-islanders-sue-cement-holcim-climate-damages> (detailing climate tort lawsuit brought by Indonesian islanders against large European cement producer).

<sup>51</sup> See Tracy D. Hester, *Transnational Liability in U.S. Courts for Environmental Harms Abroad*, 64 ROCKY MTN. MINERAL L. INST. ANN. PROC. 27–1 (2018).

before the end of their useful life because of concerns over their future viability or risks for liability. According to at least one estimate, attainment of the Paris Agreement's ambitious 1.5°C target will require the abandonment of up to \$2 trillion in carbon energy resources.<sup>52</sup> The risks of future stranding have current consequences: corporations face liability risks for misstating the present value of their hydrocarbon reserves, and the prospect of future stranding risks might also undermine representations that energy corporations make to prospective and current shareholders.<sup>53</sup> The danger that an operator might need to prematurely retire a productive asset has already led to discussions of creative, and sometimes costly, strategies to manage those risks through securitization strategies or insurance options.<sup>54</sup>

Last, energy companies must plan for carbon risks that might create enterprise risks for their current and future business models as a simple matter of long-term survival. If an energy provider relies

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<sup>52</sup> See Carbon Tracker, *The \$2 Trillion Stranded Assets Danger Zone: How Fossil Fuel Firms Risk Destroying Investor Returns* (Nov. 24, 2015), <https://carbontracker.org/reports/stranded-assets-danger-zone/>. See generally STRANDED ASSETS AND THE ENVIRONMENT: RISK, RESILIENCE AND OPPORTUNITY 55–86, 111–24 (Ben Caldecott ed., 2018); ENV'T DEF. FUND, 2020 EDF IMPACT REPORT: REBUILD BETTER (2020), [https://www.edf.org/sites/default/files/documents/2020\\_EDF\\_Impact\\_Report.pdf](https://www.edf.org/sites/default/files/documents/2020_EDF_Impact_Report.pdf). Notably, one of the leading centers for promoting transparency in corporate finance and risk disclosure for environmental liabilities has no information about corporate actions to cabin their climate risks or spin out problematic assets. See LANG ET AL., *supra* note 8.

<sup>53</sup> For example, after the SEC began an investigation into ExxonMobil's alleged failure to properly value its oil reserve assets in light of climate change and potential future risks of stranding existing assets, ExxonMobil subsequently reduced its estimate of recoverable reserves by more than three billion barrels of oil equivalent. This write-down included a complete devaluation of all of ExxonMobil's reserves held within a Canadian oil sands project. See Light, *supra* note 9, at 167–68. As noted earlier, the SEC's proposed rule on ESG disclosures focuses on similar risks. See discussion *supra* note 37.

<sup>54</sup> See Christian Fong & Sam Mardell, *Securitization in Action: How U.S. States are Shaping an Equitable Coal Transition*, RMI (March 4, 2021), <https://rmi.org/securitization-in-action-how-us-states-are-shaping-an-equitable-coal-transition/> (providing an overview of state laws to promote securitization of retirement costs for coal-fired power plants); ROCKY MOUNTAIN INST., SIERRA CLUB, & CARBON TRACKER INITIATIVE, HOW TO RETIRE EARLY: MAKING ACCELERATED COAL PHASEOUT FEASIBLE AND JUST 26–33 (2020), [https://rockymnt.wpenginepowered.com/wp-content/uploads/2021/03/rmi\\_how\\_to\\_retire\\_early.pdf](https://rockymnt.wpenginepowered.com/wp-content/uploads/2021/03/rmi_how_to_retire_early.pdf).

on a carbon energy source or on a method of production that requires fossil fuels, future regulations or market demands may make that mode of operation difficult or impossible. An enterprise risk arising from market abandonment, or even legal prohibition, of a corporation's core business model obviously can pose an existential risk for the company.<sup>55</sup>

Given these realistic and sizable risks, a rational corporate actor would logically take steps to reduce its risks and provide a pathway to continued future operations. These tactics could include the use of subsidiaries, spinoffs, bankruptcies, and enterprise risk shifting. All of these strategies will take place largely behind an opaque curtain of transactional secrecy and, potentially, trade secret protections.<sup>56</sup>

## II. SHEDDING CORPORATE CARBON LIABILITY RISKS

Corporations can take advantage of a broad array of existing corporate law tools to manage their risks arising from the carbon transition—and they likely will. These tools include the use of subsidiaries to cabin problematic carbon assets and liabilities behind a corporate veil, the creation of spinoffs to shed risky or volatile carbon assets, the strategic use of bankruptcy to shed historical or ongoing climate liability risks, and the adoption of corporate divisions to manage carbon enterprise risks. All of these strategies have a long provenance in corporate environmental management, and each of them would naturally apply to carbon risks.<sup>57</sup> If used broadly and comprehensively, however, they may preclude the use of more proactive and transparent climate governance approaches that rely on liability and regulatory tools to constrain corporate behavior.

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<sup>55</sup> A risk is existential in nature when it could cause the end of the business. See OWEN COTTON-BARRATT & TOBY ORD, *FUTURE OF HUMAN. INST., EXISTENTIAL RISK AND EXISTENTIAL HOPE: DEFINITIONS 2* (2015), <https://www.fhi.ox.ac.uk/Existential-risk-and-existential-hope.pdf>.

<sup>56</sup> See, e.g., *State v. DuPont de Nemours & Co.*, 2021 WL 3236479, at \*4–\*7 (Ohio App. 4. Dist. 2021) (rejecting privilege claim in PFOA tort action); *Rowe v. DuPont de Nemours & Co.*, 2008 WL 4514092, \*7–\*11 (D.N.J. 2008) (accepting privilege claims asserted over in-house counsel advice on regulatory issues).

<sup>57</sup> See discussion *infra* Parts II.A–B (overview of notable cases involving corporate use of bankruptcy, spin-offs, and subsidiaries to limit legacy environmental risks that threatened the viability of the parent or predecessor company).

Before examining these corporate law tactics to manage climate liabilities, it's worth briefly noting the unique nature of these "damages." As opposed to other environmental damage liability legal claims such as contaminated real property, toxic injuries, spills to water or land, or natural resource damage claims rooted in hazardous substance releases, the historical emissions of greenhouse gases by a particular corporation or facility do not have a fixed locus or permanent state. The gases, once released, rapidly mix into the global atmosphere and do not linger in the portfolio of corporate assets, land, or possessions. To the extent these facilities are environmentally impaired, it is due to their contribution to global atmospheric concentrations of greenhouse gases and the damage they cause through contributing to climate change.<sup>58</sup> While they may need modifications to stop emitting greenhouse gases if their current operations still cause them, a corporation with carbon intensive operations does not own assets "damaged" or impaired by their past emissions (as opposed to facilities that release toxic substances or other pollutants that reside in the ground or water). This attenuated causality and impermanent harm to the corporation's facility itself may make it difficult to assert some of the tort and liability claims discussed earlier.

#### A. Carbon Subsidiaries, Spinoffs, and Sales

A likely first recourse for corporations seeking to limit their carbon risks will be the aggressive creation of wholly-owned subsidiaries to segregate their problematic assets and liability responsibilities. Alternatively, a corporation may seek to move its carbon-impaired assets into a spinoff entity that will become responsible for satisfying historical claims and managing future ones.<sup>59</sup> Companies

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<sup>58</sup> See *Greenhouse Gases*, BRITANNICA, <https://www.britannica.com/science/air-pollution/Greenhouse-gases> (last visited July 6, 2024).

<sup>59</sup> The creation of a wholly-owned subsidiary would allow the parent corporation to retain indirect ownership and control of the assets within the subsidiary with the protection of a corporate veil of limited liability. A spin-off would entirely remove the carbon assets from the shedding corporation's control and place them within a new and separate corporate entity. Of course, these two tactics can blend and overlap. For example, a corporation may spin off carbon assets into a new corporate entity, but still maintain a sizable minority ownership stake in the new corporation.

may even take the step of selling carbon assets to other companies and operators who may have less expertise, resources, or rigorous management frames.<sup>60</sup> All of these tactics seek to interpose a corporate veil between the parent and subsidiary or spinoff. While the parent corporation may face a loss of value in the assets placed into the successor entity, its risk is capped at those assets.

This tactic has a long history as a tool to constrain environmental risks, but it has a mixed record of success.<sup>61</sup> On a fundamental level, the interplay between limited corporate liability and responsibility for environmental damages can be complex and mercurial. Corporate liability precepts typically rely on state corporate statutes,

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For an explanation of the corporate veil doctrine, see Robert Thompson's excellent article analyzing corporate veil-piercing cases, *Piercing the Corporate Veil: An Empirical Study*, 76 CORNELL L. REV. 1036 (1991).

<sup>60</sup> See JACK ARNOLD ET AL., COLUM. UNIV. SCH. OF L., TRANSFERRED EMISSIONS ARE STILL EMISSIONS: WHY FOSSIL FUEL ASSET SALES NEED ENHANCED TRANSPARENCY AND CARBON ACCOUNTING 5–6 (2023), [https://scholarship.law.columbia.edu/sustainable\\_investment/14/](https://scholarship.law.columbia.edu/sustainable_investment/14/). This report notes that numerous fossil energy companies have sold substantial upstream assets to smaller operators or investors who may lack the expertise, resources, or legal obligation to pursue reduced greenhouse gas emissions from the assets. This strategy allows the energy corporations to pursue “net zero” goals without actually reducing emissions from the assets after their sale. See also Rachel Adams-Heard, *What Happens When an Oil Giant Walks Away*, BLOOMBERG (Apr. 14, 2021), <https://www.bloomberg.com/graphics/2021-tracking-carbon-emissions-BP-hilcorp/?srnd=premium-middle-east&leadSource=uverify%20wall&embedded-checkout=true> (providing example of sale of depleted oil and gas assets from sophisticated large energy corporation to smaller entity lacking expertise and resources).

<sup>61</sup> Other spinoffs or bifurcations of corporations have had greater success when they serve other overriding goals beyond allocation of environmental liabilities. For example, ConocoPhillips spun its refining and chemical assets into Phillips 66 Corporation to allow it to focus on its oil and gas exploration and production activities. This division also allocated most of the company's historical environmental liabilities to Phillips 66, but it served much larger corporate goals and required substantially larger capitalization of the spin-off entity. See *ConocoPhillips' Board of Directors Approves Spin-off of Phillips 66*, CONOCOPHILLIPS (Apr. 4, 2012), <https://www.conocophillips.com/news-media/story/conocophillips-board-of-directors-approves-spin-off-of-phillips-66/>; *Separation and Distribution Agreement By and Between ConocoPhillips and Phillips 66 Dated as of April 26, 2012*, SEC, <https://www.sec.gov/Archives/edgar/data/1163165/000119312512200896/d341683dex21.htm> (last visited May 2, 2024) (Sections 2.3 and 2.4 of Separation Agreement allocate Environmental Liabilities to Phillips 66 unless specifically scheduled).

and federal courts have often sought to avoid disrupting these state law precepts unless federal laws clearly override them. In its seminal *United States v. Best Foods*<sup>62</sup> decision, for example, the Supreme Court expressly declined to interpret the response cost liability provisions of the federal Superfund statute to disturb basic limited liability expectations of state corporate laws.<sup>63</sup>

State corporate laws typically impose several fundamental limits on attempts by a parent corporation to shuttle its environmentally problematic assets into a subsidiary or a spinoff. As an initial step, the parent must assign debts, assets, and contingent liabilities to the new firm.<sup>64</sup> While the magnitude of the assigned debts and assets might be straightforward, the estimation of contingent liabilities—especially possible environmental obligations that might not mature for decades—can be challenging. Typically, the parent corporation will retain an outside firm to estimate the size of the contingent liabilities. The parent’s management and board will then review and accept the estimated valuation, but they have a sizable degree of discretion in assigning a final value to the liabilities.<sup>65</sup> Importantly,

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<sup>62</sup> 524 U.S. 51 (1998).

<sup>63</sup> See *id.* at 51–52, 62 (“Although this respect for corporate distinctions when the subsidiary is a polluter has been severely criticized in the literature, see, e.g., Notes, *Liability of Parent Corporations for Hazardous Waste Cleanup and Damages*, 99 HARV. L. REV. 986, 997 (1986), nothing in CERCLA purports to reject this bedrock principle, and against this venerable common-law backdrop, the congressional silence is audible. Cf. *Edmonds v. Compagnie Generale Transatlantique*, 443 U.S. 256, 266–267 (1979) (“Silence is most eloquent, for such reticence while contemplating an important and controversial change in existing law is unlikely”).”).

<sup>64</sup> See ANDREW C. BAKER ET AL., ENVIRONMENTAL SPINOFFS: THE ATTEMPT TO DUMP LIABILITY THROUGH SPIN AND BANKRUPTCY 1 (Stan. Closer Look Series, 2020), [https://www.gsb.stanford.edu/sites/default/files/publication-pdf/cgri-closer-look-87-environmental-spinoffs\\_0.pdf](https://www.gsb.stanford.edu/sites/default/files/publication-pdf/cgri-closer-look-87-environmental-spinoffs_0.pdf).

<sup>65</sup> FIN. ACCT. STANDARD BD., SUMMARY OF STATEMENT NO. 5 (July 1, 1975), <https://www.fasb.org/page/PageContent?pageId=/reference-library/superseded-standards/summary-of-statement-no-5.html&bcpath=tff>. See also Richard M. Cieri et al., *Breaking Up Is Hard to Do: Avoiding the Solvency-Related Pitfalls in Spinoff Transactions*, 54 BUS. L. 533, 558 n.90 (1999) (quoting *Ohio Corrugating Co. v. DPAC, Inc.*, 91 B.R. 430, 438 n.11 (Bankr. N.D. Ohio 1988)) (Under generally accepted accounting principles (GAAP), the parent corporation is permitted to assess the fair market value of assets provided to a subsidiary using a “balance sheet” test. Balance sheet entries can be modified by a court in bankruptcy proceedings based on the debtor’s financial condition.). As a result, while state law may

the value of the assets conveyed to the spinoff entity or subsidiary must exceed the amount of its estimated liabilities. Otherwise, the new entity would not be solvent, and the entire transaction risks being labeled as a fraudulent conveyance.<sup>66</sup>

Even when federal law does not displace the protective power of a corporate veil between a corporate parent and its subsidiary or spinoff, the segregation of environmentally problematic assets into other corporate entities can often run awry. Three high-profile examples highlight the potential dangers of this approach to both the parent corporation and, potentially, injured parties and the public: Monsanto Corporation's spinoff of its chemical assets into Solutia,<sup>67</sup>

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allow a board of directors to use GAAP principles under the business judgment rule to determine whether a new spinoff or subsidiary has received sufficient assets, subsequent reviews by courts or bankruptcy assessors will likely use stricter standards. *Id.* at 567 n.114; Stan Bernstein et al., *Squaring Bankruptcy Valuation Practice with Daubert Demands*, 16 AM. BANKR. INST. L. REV. 161, 201 (2008) (describing how experts in bankruptcy proceedings may adjust the fair valuation provided by a "beginning" GAAP balance sheet to better reflect fair value of assets, including stricter assessment of contingent liability claims).

<sup>66</sup> See *infra* notes 67–69. See also Alisa H. Aczel, *The Solvency of Mass Tort Defendants: A Reasonable Approach to Valuing Future Claims*, 20 BANKR. DEV. J. 531, 540–41 (2004) (noting that solvency analysis for determining whether a parent has fraudulently conveyed assets is "much more demanding" than simple GAAP assessment under FASB Statement No. 5).

<sup>67</sup> Baker et al., *supra* note 64, at 2–3. In 1997, the pharmaceutical and agricultural chemicals giant Monsanto Corporation spun off its chemical assets into a new publicly traded entity named Solutia. As part of the spin-off, Monsanto obligated Solutia to satisfy environmental remediation and litigation costs associated with the chemicals business. These contingent liabilities exceeded, by Monsanto's estimate, \$220 million at the time of the deal (\$150 million in contingent liabilities, and an additional \$70 million available for remediation costs).

These estimates quickly proved too low, and by 2001 Solutia had already bumped its estimated environmental liabilities upward by \$30 million. After a high-profile exposé that alleged Monsanto had knowingly dumped large amounts of carcinogenic polychlorinated biphenyls (PCBs) into the Anniston, Alabama community, Solutia's stock values plummeted and the company declared bankruptcy in 2003. Solutia then sued Monsanto and alleged that the parent had improperly assigned "onerous liabilities" to Solutia in the spin-off.

During the following two years of litigation, Monsanto accrued an additional \$600 million in liabilities related to claims against Solutia. When Solutia ultimately emerged from bankruptcy in 2005, Monsanto allocated an additional \$250 million to the company and received a 30 percent stake in the emerging entity. The saga finally ended when Eastman Chemical purchased Solutia in 2012 for \$3.4 billion.

KerrMcGee's transfer of its titanium dioxide business (and historic environmental liabilities) to its new subsidiary Tronox,<sup>68</sup> and DuPont Corporation's shift of its perfluorinated chemicals business lines into the new spinoff Chemours.<sup>69</sup> Notably, all three of these

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<sup>68</sup> *See id.* at 3–4. Kerr McGee, known as a large oil and gas exploration corporation with sizable side businesses in chemicals and minerals production, spun off its chemical subsidiary Tronox in 2005. Tronox had produced titanium dioxide (a mineral used as a pigment in industrial operations), and Kerr McGee set Tronox's reserved environmental liabilities at \$239 million. While Kerr McGee agreed to reimburse Tronox for legacy environmental liabilities that exceeded the reserved amount, it capped its maximum obligation at \$100 million.

Once again, the estimated value of the environmental liabilities proved drastically low, and after the financial crisis of 2008 Tronox declared bankruptcy. Tronox then sued Anadarko Corporation, which had acquired Kerr McGee shortly after the spinoff. The ensuing litigation highlighted that Kerr McGee had saddled Tronox with a broad array of legacy environmental liabilities from chemical operations beyond the core titanium dioxide business. It also disclosed that Kerr McGee had actively and overtly attempted to shift its environmental legacy liabilities to the new spinoff as part of its strategy to increase Kerr McGee's value for potential acquirers. Given that some of the potential purchasers had impliedly estimated that these legacy liabilities exceeded \$900 million, Tronox argued that Kerr McGee had drastically undercapitalized the new spinoff entity. After these revelations, federal prosecutors and the U.S. Environmental Protection Agency intervened into the litigation and asserted that Kerr McGee's actions amounted to a fraudulent conveyance.

When Tronox emerged from bankruptcy in 2011, a litigation trust took over its claims against Anadarko and continued the lawsuit. The court ultimately ruled in 2013 that Anadarko owed the trust up to \$14.17 billion to satisfy the historical liabilities, although it eventually reduced that amount to \$5.15 billion in 2014. Tronox remains an active and viable corporate entity today.

<sup>69</sup> *See id.* at 4–5. Against a backdrop of brewing concerns over the environmental and health risks posed by perfluorinated compounds, in 2015 Dupont spun off its fluoroproducts (including Teflon) and other chemical lines into a new spinoff named Chemours. As litigation over the chemicals began to yield jury verdicts against the company, Chemours ultimately sued DuPont. Chemours alleged that its ultimate environmental liabilities could exceed \$2.5 billion (over five times the reserves that DuPont allocated to the company in the spinoff), and that DuPont had also improperly saddled the company with legacy liabilities from operations unrelated to its chemical operations (e.g., asbestos exposure claims). In particular, Chemours claimed that DuPont had made it responsible for over two-thirds of DuPont's legacy environmental liabilities but had only provided Chemours with 19 percent of DuPont's business lines.

In January 2021, DuPont, Chemours and Corteva agreed to divide the costs of cleanups and future litigation related to contamination from perfluorinated compounds which took place prior to 2015. *See* Press Release, Chemours, DuPont, Corteva, and Chemours announce resolution of legacy PFAS claims (Jan. 22,

attempts to use spinoffs or subsidiaries to shield parent corporations from their historical environmental obligations degenerated into litigation quagmires. The management of Tronox and Solutia each concluded that the money that their parent companies provided to them in their spinoffs was grossly inadequate to clean up contaminated assets and to satisfy the claims allocated to the spinoffs.<sup>70</sup> Each company ended up declaring bankruptcy and suing its parent to get more money, and both succeeded in obtaining judgments that required the allocation of substantially more funds to satisfy their environmental obligations.<sup>71</sup>

These examples offer some clear signposts for future corporate carbon spinoffs and subsidiaries. In the climate context, a large energy corporation may choose to segregate its assets by moving its operations with a strong carbon footprint (e.g., coal assets or heavy sour crude oil assets) into a corporate subsidiary or spinoff. This step could provide important interim protection against climate liability claims that might exceed the value of the assets placed into the successor entity, but corporations adopting these tactics should assure property capitalization of the new spinoff or subsidiary and scrupulous observance of corporate forms to avoid the litigation morass that mired the Tronox and Chemours transfers.

Familiar precepts of corporate law may implicitly encourage and shield this type of asset segregation. The canonical business judgment rule in corporate law shields corporate managers from liability for decisions that fall within the zone of expectations for a reasonable business executive.<sup>72</sup> As a result, the business judgment

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2021), <https://www.chemours.com/en/news-media-center/all-news/press-releases/2021/dupont-corteva-and-chemours-announce-resolution-of-legacy-pfas-claims>; David Gelles & Emily Steel, *How Chemical Companies Avoid Paying for Pollution*, N.Y. TIMES (Oct. 21, 2021), <https://www.nytimes.com/2021/10/20/business/chemours-dupont-pfas-genx-chemicals.html>.

<sup>70</sup> See Baker et al., *supra* note 64, at 4.

<sup>71</sup> See *id.* at 4–6.

<sup>72</sup> See Light, *supra* note 9, at 182–83; Eric Fryar, *The Duty of Loyalty and the Business Judgement in Texas*, <https://shareholderoppression.com/images/pdf/Business%20Judgment%20Rule.pdf> (last visited June 20, 2024) (explaining exceptions to the Texas Business Judgement Rule and noting that Texas courts often refer to Delaware law regarding corporate issues); Jeff J. Friedman, *Corporations — The Business Judgment Rule Shields the Good Faith Decision of Disinterested Directors to Terminate a Derivative Suit Against the Corporation's Directors*, 25 VILL. L. REV. 551, 553–55 (1980).

rule would presumptively shield corporate managers who erroneously value assets placed into a subsidiary or spinoff, incorrectly select assets for segregation, or fundamentally step awry when they chose to create the subsidiary or spinoff at all.<sup>73</sup> While some state corporate laws impose limits on the outer boundaries of the business judgment rule, those constraints typically apply in narrow circumstances (e.g., during a hostile tender offer for the corporation).<sup>74</sup> As a result, standard corporate law concepts would insulate corporate managers in most circumstances who choose to spin off or segregate carbon assets that pose potential liabilities—even if those managers get it partially, or entirely, wrong.

To some extent, early corporate actions hint that some of these maneuvers have begun to occur. For example, some energy major corporations have established subsidiaries or spinoffs to house their low-carbon assets or emerging low-emissions technologies.<sup>75</sup> As the

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<sup>73</sup> See Light, *supra* note 9, at 182–83.

<sup>74</sup> By contrast, management of public benefit corporations enjoy broader protection from litigation than the business judgment shield. State laws typically allow benefit corporations to pursue the dual mission of protecting both shareholder profit as well as a social or environmental purpose. See *id.* at 183 n.238, 185–86; Dana Brakman Reiser, *Benefit Corporations — A Sustainable Form of Organization?*, 46 WAKE FOREST L. REV. 591, 592–95 (2011); Kevin V. Tu, *Socially Conscious Corporations and Shareholder Profit*, 84 GEO. WASH. L. REV. 121, 154–60 (2016). As of 2018, thirty-four states have adopted laws enabling public benefit corporations, with many of them following the model benefit corporation legislation. See Light, *supra* note 9, at 186–87.

<sup>75</sup> For example, Occidental Petroleum Corporation established a separate business unit name Oxy Low Carbon Venture to advance low-carbon technologies. This unit has made sizable investments in zero-emission natural gas electrical power plants (with Net Power Inc.) and DAC operations (with Carbon Engineering, Inc.). See *Oxy Low Carbon Ventures Fast Facts*, OXY (Aug. 2022), [https://www.oxy.com/globalassets/documents/publications/fast-facts/oxy\\_fast\\_facts\\_olev.pdf](https://www.oxy.com/globalassets/documents/publications/fast-facts/oxy_fast_facts_olev.pdf). See also BP's withdrawal from oil assets in Mexico, *infra* note 106. By contrast, other energy companies have chosen to consolidate their renewable energy lines of business with their existing oil and gas refining units or other legacy assets without creating separate subsidiaries. See, e.g., Ron Bousso, *Shell CEO's First Changes Combine Upstream and LNG Operations*, REUTERS (Jan. 30, 2023), <https://www.reuters.com/business/energy/shell-combine-its-integrate-gas-upstream-businesses-2023-01-30/> (describing how Shell is combining its renewable energy operations with its oil and gas refining operations). See also *ExxonMobil Low Carbon Solutions to Commercialize Emission-Reduction Technology*, EXXONMOBIL (Feb. 1, 2021), [https://corporate.exxonmobil.com/news/news-releases/2021/0201\\_exxonmobil-low-carbon-solutions-](https://corporate.exxonmobil.com/news/news-releases/2021/0201_exxonmobil-low-carbon-solutions-)

valuation of these low-carbon subsidiaries and spinoffs grows, and the potential liabilities and asset valuations of carbon-intensive parents become increasingly problematic, we may begin to see a carbon analog of corporate inversions:<sup>76</sup> where a carbon-intensive parent reallocates assets and liabilities to a subsidiary or jointly-held spinoff as a strategy to minimize financial carbon risks, and then effectively makes the smaller subsidiary entity into the operating primary corporate vehicle. Other corporate actions may reflect growing corporate efforts to segregate or minimize their exposure to carbon liabilities, including relocation of their headquarters to more favorable jurisdictions or reincorporation under more protective corporate laws.<sup>77</sup>

Last, corporations may cabin problematic carbon assets in less explicit ways. For example, some law firms and consultants have begun to offer explicit due diligence strategies to account for future climate risks.<sup>78</sup> These services include sophisticated modeling of prospective climate scenarios to identify specific corporate assets at risk of disruptive climate change or lines of business that may become less profitable in light of growing climate change

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to-commercialize-emission-reduction-technology (providing another example of a major energy corporation housing a low-carbon business in a separate entity).

<sup>76</sup> “A corporate inversion occurs when a U.S. multinational corporation completes a merger that results in its being treated as a foreign corporation in the U.S. tax system, even though the shareholders of the original U.S. company retain more than 50 percent of the new combined company.” CONG. BUDGET OFF., AN ANALYSIS OF CORPORATE INVERSIONS 1–2 (2017), <https://www.cbo.gov/system/files/115th-congress-2017-2018/reports/53093-inversions.pdf>.

<sup>77</sup> See Danica Kirka & Mike Corder, *Shell Wants to Move Headquarters Amid Cleaner Energy Shift*, ASSOCIATED PRESS (Nov. 15, 2021), <https://apnews.com/article/business-netherlands-europe-united-kingdom-992001e21e5acaec4412207c1c767387> (“Royal Dutch Shell proposed moving its headquarters from the Netherlands to the United Kingdom and streamlining its structure Monday in hopes of making it easier to move forward in a world transitioning away from a dependence on fossil fuels.”).

<sup>78</sup> For examples of marketing approaches that highlight climate due diligence strategies, see *Environmental Due Diligence*, HUSCH BLACKWELL, [https://www.huschblackwell.com/industries\\_services/environmental-due-diligence](https://www.huschblackwell.com/industries_services/environmental-due-diligence) (last visited Nov. 13, 2023). See also *Moody’s on Climate*, MOODY’S, <https://climate.moody’s.com> (last visited Jul. 6, 2024).

constraints.<sup>79</sup> One likely outcome of these diligence services will be to cull carbon assets from corporate portfolios through either write-offs of potential asset value, excluding carbon assets from portfolio transfers or asset purchases, or the simple winnowing of valuable assets from a corporation during its operation to leave a residue of legacy carbon assets in a hollowed shell.

### B. *Climate Bankruptcies and Corporate Dissolutions*

Carbon-intensive corporations facing significant climate liability claims will likely also turn to bankruptcy as a tool to limit their liability. This tactic could prove especially potent for claims rooted in historical emissions or wholly past activities.

Bankruptcy law, with its goal to provide an equitable resolution for insolvent debtors so that they can obtain a “fresh start,” has frequently conflicted with the imposition of environmental liability and obligations to mitigate environmental risks.<sup>80</sup> Under the federal Bankruptcy Code, firms whose assets cannot satisfy their liabilities can seek reorganization or liquidation. Under liquidation, a debtor entity terminates its operations, and a trustee distributes the firm’s assets to creditors. By contrast, a reorganization action restructures the entity’s liabilities, confirms a plan of reorganization, and discharges any pre-petition liabilities.<sup>81</sup>

The rub, of course, is whether a bankruptcy discharge relieves a debtor of obligations to satisfy environmental liabilities or address ongoing environmental risks. In other contexts, such as abandoned waste site cleanups, the federal courts have allowed the discharge of pre-petition environmental liabilities in the form of money

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<sup>79</sup> See UNITED NATIONS ENV’T PROGRAMME, PRINCIPLES FOR RESPONSIBLE INVESTMENT, TECHNICAL GUIDE 5–13 (2021), <https://www.unpri.org/download?ac=13337>.

<sup>80</sup> See generally ALAN S. TENENBAUM & JEANNE T. COHN, AM. BAR ASS’N, ENVIRONMENTAL BANKRUPTCY LAW: A PRACTICE GUIDE 1–3 (2023).

<sup>81</sup> See 11 U.S.C. §§ 701–784 (liquidations); 1101–1174 (reorganizations). See generally Light, *supra* note 9, at 190–91; Jared A. Ellias & George Triantis, *Government Activism in Bankruptcy*, 37 EMORY BANKR. DEV. J. 509, 516 (2021) (providing a general review of framework of U.S. bankruptcy law); TENENBAUM & COHN, *supra* note 80 (outlining discharge and management of environmental liabilities in federal bankruptcy).

judgments or obligations.<sup>82</sup> Those courts have taken a narrower view on whether a debtor can similarly shed its responsibility to comply with injunctive orders or affirmative obligations to mitigate environmental risks that persist on property or operations after its discharge from bankruptcy.<sup>83</sup>

While no company has yet expressly included climate liability claims in their bankruptcy discharge petitions or plans of reorganization under Chapter 11, defendants in state law climate tort actions have already raised bankruptcy defenses in motions either to bar further proceedings or to discharge their alleged liability. For example, Peabody Coal Company successfully moved to dismiss the County of San Mateo's climate tort action against it because Peabody had already undergone a Chapter 11 reorganization that discharged all general liability claims against it.<sup>84</sup> The success of this argument has not gone unnoticed: Chevron has already argued that it should benefit from Texaco's prior bankruptcy discharge as its corporate successor and that, therefore, the County of San Mateo's lawsuit against it should also be dismissed.<sup>85</sup>

The proactive use of bankruptcy as a tool for corporate reorganization and scrubbing of environmental claims is not new. For example, the rising use of the "Texas Two Step" strategy overtly

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<sup>82</sup> The U.S. Supreme Court has found that financial obligations to remediate hazardous waste sites can be dischargeable in bankruptcy, but the debtor's power to discharge may not extend to abandonment of contaminated assets in the debtor's estate when doing so would pose an imminent hazard. *See Ohio v. Kovacs*, 469 U.S. 274, 283 (1985) (finding debtor's legal obligation to pay for clean-up of a hazardous waste site was an "obligation to pay money" that it could discharge in bankruptcy).

<sup>83</sup> *See Midlantic Nat'l Bank v. N.J. Dep't of Env't Prot.*, 474 U.S. 494, 507 n.9 (1986) (barring corporation from abandoning contaminated property that it currently owned when doing so would violate a state statute or regulation reasonably designed to protect public health and safety, and if abandonment would pose an imminent and identifiable harm). *See also United States v. Apex Oil Co.*, 579 F.3d 734, 735–36 (7th Cir. 2009) (finding EPA injunction was not a dischargeable claim because EPA lacked the authority to sue for money damages under that statutory provision).

<sup>84</sup> *See In re Peabody Energy Corp.*, 958 F.3d 717, 718 (8th Cir. 2020).

<sup>85</sup> *See Cnty. of San Mateo v. Chevron Corp.*, 32 F.4th 733, 762 (9th Cir. 2022). The Ninth Circuit, in remanding the dispute for further proceedings in California state courts, denied a motion by Chevron Corp. (as Texaco's corporate successor) to remove the case to federal bankruptcy court. *See id.* at 760–61.

seeks to use bankruptcy as a tool to segregate assets into subsidiaries or corporate affiliates that then strategically use Chapter 11 bankruptcy to discharge liabilities.<sup>86</sup> Johnson & Johnson Company attempted to use this tactic to shield the corporate parent from liability for claims arising from exposure to asbestos in various products (including baby powder). The company created a new subsidiary expressly to host its operations affiliated with the exposure claims, capitalized the new subsidiary with funds to handle those claims, and then—when those funds proved insufficient—benefitted from the new subsidiary’s Chapter 11 reorganization to discharge pending claims.<sup>87</sup> This strategy allowed Johnson & Johnson to use aggressive valuations of the pending claims as a basis for deciding what level of capitalization would prove sufficient.<sup>88</sup>

The Third Circuit Court of Appeals recently rejected this tactic because the spun-off entity failed to show financial distress at the time of its creation that was sufficient to prove that it had declared bankruptcy in good faith.<sup>89</sup> The court’s rationale, however, leaves the door open for future corporations to file for bankruptcy if they lack similarly deep guarantees or financial resources, or if they face climate liabilities of larger size and certainty. Despite the Third Circuit’s conclusion and the obvious concerns that this bankruptcy strategy overall raises about fairness to creditors and opportunities for self-dealing, other federal courts have upheld the legality of this general approach.<sup>90</sup> Johnson & Johnson has announced that it will

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<sup>86</sup> See Katharine H. O’Neill, *Dirty Dancing: Is the Texas Two-Step a Bad Faith Filing?*, 91 FORDHAM L. REV. 2471, 2477–80 (2023). See generally Edward J. Janger, *Aggregation and Abuse: Mass Torts in Bankruptcy*, 91 FORDHAM L. REV. 361, 368–69 (2022); Baker et al., *supra* note 64, at 2.

<sup>87</sup> See O’Neill, *supra* note 86, at 2497–500.

<sup>88</sup> See *In re* LTL Management, LLC, 64 F.4th 84, 95–96 (3d Cir. 2023).

<sup>89</sup> See *id.* at 85. The Third Circuit subsequently refused to rehear the case en banc, and it also refused to stay its mandate in the case pending the U.S. Supreme Court’s review of LTL Management’s petition for certiorari. See *In re* LTL Mgmt., LLC, 654 B.R. 433, 438–39 (Bnkr. D.N.J. 2023). See also Amanda Bronstad, *“Landmark” Win for Talc Plaintiffs, Third Circuit Dismisses Johnson & Johnson Unit’s Bankruptcy*, LAW.COM (Jan. 30, 2023), [www.law.com/2023/01/30/in-landmark-win-for-talc-plaintiffs-third-circuit-dismisses-johnson-johnson-units-bankruptcy](http://www.law.com/2023/01/30/in-landmark-win-for-talc-plaintiffs-third-circuit-dismisses-johnson-johnson-units-bankruptcy) (“A Johnson & Johnson spokeswoman said the company planned to petition the Third Circuit to rehear the bankruptcy case en banc.”).

<sup>90</sup> See Lindsey D. Simon, *Bankruptcy Grifters*, 131 YALE L.J. 1154, 1185 n.154 (2022); Jeffrey R. Gleit & Matthew R. Bentley, *The Texas Two-Step: a*

appeal the Third Circuit's decision to the U.S. Supreme Court,<sup>91</sup> which has already granted certiorari to review a different notorious bankruptcy decision that affects or releases tort claims by non-consenting third parties.<sup>92</sup>

Climate change tort liability claims seem facially susceptible to discharge in bankruptcy proceedings, just like any other contingent liability. Two aspects of climate tort actions make them especially vulnerable to bankruptcy discharges. First, while bankruptcy discharges typically do not extend to exercises of police power by governmental agencies to respond to environmental hazards posed by contaminated assets or ongoing non-compliance, past emissions of CO<sub>2</sub> likely do not pose an immediate ongoing threat to public health posed by the asset itself that would qualify for this discharge exclusion.<sup>93</sup> Second, the inability to abandon contaminated assets in bankruptcy likely won't extend to operations that emit CO<sub>2</sub> or other

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*Problematic Reframing of the Bankruptcy Code Toolkit or an Equitable Solution for Productive Conglomerates and their Mass Tort Claimants?*, 31 NORTON J. BANKR. L. & PRAC. 148, 150 (2022).

<sup>91</sup> See Press Release, Johnson & Johnson, Johnson & Johnson Subsidiary to Appeal Bankruptcy Court Ruling that Deprived Talc Claimants of an Equitable and Efficient Resolution (July 28, 2023), <https://www.jnj.com/johnson-johnson-subsidiary-to-appeal-bankruptcy-court-ruling-that-deprived-talc-claimants-of-an-equitable-and-efficient-resolution>.

<sup>92</sup> The U.S. Supreme Court granted certiorari on August 10, 2023 in *Harrington v. Purdue Pharma, LLC*, which centers on the bankruptcy court's approval of a proposed reorganization of Purdue Pharma to discharge claims arising from the company's promotion and marketing of opioids. The discharge purportedly includes claims against the Sackler family and would bind claimants who are not participating in the bankruptcy action. In granting the petition for review, the Court directed the parties to brief specifically "[w]hether the Bankruptcy Code authorizes a court to approve, as part of a plan of reorganization under Chapter 11 of the Bankruptcy Code, a release that extinguishes claims held by nondebtors against nondebtor third parties, without the claimants' consent." The Court also directed a briefing schedule that would allow the Justices to hear oral argument on the case during its December 2023 session. See *Harrington v. Purdue Pharma, LLC* 69 F.4th 45 (May 30, 2023), cert. granted 144 S. Ct. 44 (2023) (No. 23-124). For an explanation of the lower court's analysis, see *In Re Purdue Pharma L.P.*, 69 F.4th 45, 80, 83 (2d Cir. 2023). As this Article went to press, the Court held that the Bankruptcy Code does not allow extinguishment of non-debtor claims against non-debtor third parties without their consent. See *Harrington v. Purdue Pharma L.P.*, No. 23-124 (June 27, 2024).

<sup>93</sup> See 11 U.S.C. § 362(b)(4) (providing an exception to bankruptcy discharges for enforcement actions by government agencies).

greenhouse gases because those assets do not pose an ongoing localized contamination risk once they cease or alter their operations.

Corporations could invoke bankruptcy law in other contexts beyond simply discharging contingent climate liability claims. As climate change creates regulatory compliance risks or makes existing production approaches unprofitable, it may push many corporations into bankruptcy as well. For example, when Pacific Gas & Electric Company (PG&E) declared bankruptcy because of extraordinary strict liability losses due to damages from forest fires, commentators noted that climate change had magnified the scope and intensity of the fires resulting from sparks caused by PG&E's transmission lines. As a result, PG&E's bankruptcy was labeled as the "First Climate Change Bankruptcy" by researchers at Columbia University's Center on Global Energy Policy in 2019.<sup>94</sup> Corporations may also use bankruptcy as a tool to consolidate environmentally problematic assets, including carbon-intensive assets and operations, into bankruptcy trusts that allow for consolidation of historical operations and liabilities in a process analogous to creating an environmental spinoff or subsidiary.<sup>95</sup>

The bankruptcy discharge of carbon liabilities may extend beyond climate change tort claims and asset impairment. At least one bankruptcy court has held that a purchaser of an electricity generation facility could avoid liability as a corporate successor for the bankrupt predecessor's obligations to provide emissions allowances

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<sup>94</sup> See JOHN J. MACWILLIAMS ET AL., PG&E: MARKET AND POLICY PERSPECTIVES ON THE FIRST CLIMATE CHANGE BANKRUPTCY 8 (2019), [https://www.energypolicy.columbia.edu/wp-content/uploads/2019/08/PGE-CGEP\\_Report\\_111722.pdf](https://www.energypolicy.columbia.edu/wp-content/uploads/2019/08/PGE-CGEP_Report_111722.pdf). Given the recovery of utility expenses allowed by California law, these costs ultimately were paid by PG&E's customers. See *id.*

<sup>95</sup> See discussion *infra* Part II.C. Many bankruptcies result in the creation of environmental response trusts that receive a set amount of funding to resolve outstanding historical environmental liabilities. See Elliott Laws, *Environmental Response Trusts: Surrogate for Federal and State Regulators?*, ACOEL (Apr. 14, 2022), <https://acoel.org/environmental-response-trusts-surrogate-for-federal-and-state-regulators/>. For example, in 2011 General Motors Corporation consolidated many of its legacy assets to produce fossil-fueled vehicles into the Revitalizing Auto Communities Environmental Response (RACER) Trust via a consent decree as part of its bankruptcy. This process allowed GM to relocate many of its environmentally problematic facilities and operations into a new entity that offered a functional equivalent of limited liability through the bankruptcy code. See *Who We Are and What We Do*, RACER TR., <https://www.racertrust.org/who-we-are-and-what-we-do> (last visited June 20, 2024).

under the California Global Warming Solutions Act.<sup>96</sup> As a result, the purchaser did not have to provide \$63 million in emission allowances for the three-year period when the predecessor owned and operated the facility in bankruptcy. The bankruptcy effectively extinguished the obligation to provide emissions allowances for greenhouse emissions over those three years.<sup>97</sup>

Beyond bankruptcy proceedings and liability discharges, corporate operators may choose to limit their liability with a more drastic option: dissolution of the corporation itself and distribution of its assets. This step would—after expiration of any periods that allow clawbacks through state law or common law remedies—return the assets to the shareholders and terminate any corporate form that an injured party could sue.<sup>98</sup> Under Delaware law, this process can take place under the supervision of the Chancery Court, and the judges arguably have the power to require preservation of sufficient assets to address remaining claims (including environmental damage actions).<sup>99</sup> While the Delaware court has not invoked this power to address climate liabilities or contingent future environmental contamination claims, at least one judge has appointed an *ad litem* to assess potential future environmental liabilities arising from the dissolution of a midstream pipeline corporation.<sup>100</sup> It is unclear, however, whether the *ad litem* assessed possible climate tort liabilities or other climate risks, and no other chamber in the Chancery Court has taken this expansive view of the environmental liability assessment during the corporate dissolution process.

### C. Enterprise Shifting and Legacy Asset Arbitrage

Extending these conceptual frameworks from environmental spinoffs and bankruptcies, corporations may also modify their business operations to shed enterprise risk by essentially outsourcing

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<sup>96</sup> See Cal. Air Res. Bd. v. La Paloma Generating Co., LLC, 2018 WL 3637963, at \*1 (D. Del. 2018). See also CAL. HEALTH & SAFETY CODE § 38500 (California Global Warming Solutions Act) (2006).

<sup>97</sup> See Light, *supra* note 9, at 199–200.

<sup>98</sup> See, e.g., DEL. CODE ANN. tit. 8, §§ 280–81 (explaining how Delaware corporations address claims during the dissolution process).

<sup>99</sup> See *In re Riviera Res.*, 291 A.3d 1091, 1103, 1105 (Del. Ch. 2023).

<sup>100</sup> See Opinion Addressing Appointment of Guardian Ad Litem Under Section 280(a)(3), *In Re Riviera Res.*, 291 A.3d 1091, No. 2022-0862-JTL (Del. Ch. 2023).

entire classes of assets. Under this approach a company could choose to exit a particular line of business and shift its problematic assets to a smaller entrepreneurial operator. This approach already plays a prominent role in the energy sector, where large corporations will often spin off assets in lower profit production oil and gas fields or business lines to midsize or small independent operators.<sup>101</sup> These smaller successor operators often, by definition, will lack the resources and expertise to handle large-scale environmental remediations or liabilities. Under this approach, the energy sector may soon see the transfer of problematic carbon assets to these less capitalized entities.<sup>102</sup>

This enterprise risk shifting has already begun to take place, even if largely for financial reasons unrelated to climate or carbon risks. Apache Energy, for example, has sold the bulk of their operating gas wells to Slant Energy, a small and relatively little-known operator. Apache sold 2,100 wells in this transaction, and up to forty percent of those wells were inactive.<sup>103</sup> Many of these wells allegedly leaked methane, and Slant has announced that its schedule for plugging inactive wells will move much more slowly than Apache's schedule for well repairs when it owned the wells.<sup>104</sup> Second, Diversified Energy—another little-known operator—has become the largest purchaser of oil and gas wells in the United States. Diversified Energy specializes in acquiring and holding scavenger wells, and its business model seeks to keep its wells (even extremely marginal wells) operating to 2095.<sup>105</sup> This aggressive use of extended operational periods for such wells allows Diversified Energy to

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<sup>101</sup> See GABRIEL MALEK ET AL., ENV'T DEF. FUND, TRANSFERRED EMISSIONS: HOW RISKS IN OIL AND GAS M&A COULD HAMPER THE ENERGY TRANSITION 6–8 (2023), <https://business.edf.org/wp-content/blogs.dir/90/files/Transferred-Emissions-How-Oil-Gas-MA-Hamper-Energy-Transition.pdf>.

<sup>102</sup> See *id.*

<sup>103</sup> See *id.* at 27.

<sup>104</sup> See Hiroko Tabuchi, *Oil Companies Sell Dirty Wells to Buyers with Looser Climate Goals, Study Finds*, N.Y. TIMES (May 10, 2022), <https://www.nytimes.com/2022/05/10/climate/oilfield-sales-pollution.html>.

<sup>105</sup> See Zachary Mider & Rachel Adams-Heard, *An Empire of Dying Wells*, BLOOMBERG (Oct. 12, 2021), <https://www.bloomberg.com/features/diversified-energy-natural-gas-wells-methane-leaks-2021/> (Diversified Energy “buys used wells that generate just a trickle or nothing at all. Over the past four years . . . Diversified Energy Co. has amassed about 69,000 wells, eclipsing Exxon Mobil Corp. to become the largest well owner in the country.”).

postpone well closure obligations, wellsite contamination remediation, and methane collection mandates.<sup>106</sup>

This strategy has appeared in other declining carbon-intensive industrial sectors. For example, aging refining operations have shifted from unprofitable commodity bulk fuels to smaller specialty fuel start-ups and biofuel refining, and uneconomic steel mills have shifted historic assets to smaller specialty operators as part of a re-orientation to smaller mini-mill operations to produce specialized grades of steel.<sup>107</sup> These new operators often lack the same level of operational expertise and financial resources as the legacy operators. Major coal producers have recently sold increasingly unprofitable coal mining operations to smaller specialty start-ups with relatively low capitalization, less experience and expertise, and risky novel financing structures.<sup>108</sup>

While this asset shifting serves to protect the legacy corporation by separating it from problematic holdings that might require

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<sup>106</sup> See 16 TEX. ADMIN. CODE § 3.14 (detailing the closure obligations for inactive wells, which must commence within a period of one year after drilling ceases). These transfers may also take place without public emphasis on how they shift carbon emissions away from the selling corporation. For example, BP recently announced that it intended to leave the oil exploration business in Mexico by concluding its participation in three exploration contracts in the Gulf of Mexico. BP took this action, in part, because its partners on one block (Equinor Upstream and Total) had announced their intent to leave Mexico to focus, in part, on renewable energy projects. See Amy Stillman, *BP Is Exiting Its Oil Assets in Mexico Amid Renewables Push*, BLOOMBERG L. (Aug. 15, 2022), <https://www.bloomberglaw.com/product/blaw/bloomberglawnews/environment-and-energy/BNA%200000182-a637-de36-a3d7-aeffbea80000?bwid=00000182-a637-de36-a3d7-aeffbea80000>.

<sup>107</sup> See Tabuchi, *supra* note 104. See also Christoph Scherrer, *Mini-Mills: A New Growth Path for the U.S. Steel Industry*, 22 J. OF ECON. ISSUES 1179, 1182 (1988) (confirming that mini-mills have sprung up because they are more economic and produce specialty materials that require less finishing).

<sup>108</sup> See Joshua Macey & Jackson Salovaara, *Bankruptcy as Bailout: Coal Company Insolvency and the Erosion of Federal Law*, 71 STANFORD L. REV. 879, 936–942 (2019). See also Josh Saul et al., *The Coal is Gone, But the Mess Remains*, BLOOMBERG (Oct. 17, 2022), <https://www.bloomberg.com/features/2022-west-virginia-coal-mining-alpha/&cd=29&hl=en&ct=clnk&gl=us> (detailing a joint investigation by Bloomberg News and NPR which concluded that several large U.S. coal companies “transferred old mines in need of cleanup to smaller operators with meager, financial resources, raising the risk that taxpayers, rather than industry, will eventually be stuck with the cost” in part through leveraging their ability to shed liabilities and cleanup obligations via bankruptcy discharges).

expensive cleanups or environmental retrofitting, it also serves a larger goal. By moving away problematic assets and lines of business, the progenitor corporation can help insulate itself from legal claims related to its legacy operations and its sales of products that might trigger liability claims. For example, a corporation that sells its petroleum refining assets as part of a shift to renewable fuels not only potentially sheds its remediation obligations for the shuttered refineries, but it also distances itself from claims against the refining sector overall for its contributions to climate change damages.<sup>109</sup>

The transfer of carbon-emitting portfolios to smaller rivals or private equity purchasers will substantially reduce the regulatory scrutiny and public disclosure of corporate commitments to net-zero greenhouse gas emissions or other shifts away from carbon assets. For example, while sixty-nine of the top one hundred publicly-listed companies set net zero emission targets, only thirty-two private companies set similar goals. Those private companies also were far less likely to publish a plan on how they intend to achieve their goals, and their net zero targets are less likely to include Scope 3 emissions.<sup>110</sup>

#### D. Mass Tort Settlements

In addition to spinoffs, subsidiary shelters, strategic bankruptcies, and legacy enterprise shifting, corporations facing significant carbon liability claims may use another tool to consolidate and control their risks: mass tort settlements. For example, while the majority of current state law tort actions against fossil fuel producers have come from state and local governmental plaintiffs,<sup>111</sup> earlier climate tort actions under federal common law included class action lawsuits and mass torts brought by large numbers of individual plaintiffs. These actions included a tort action by a consolidated class of individuals injured by the magnified strength of Hurricane

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<sup>109</sup> See generally Baker et al., *supra* note 64.

<sup>110</sup> See JOHN LANG & RICHARD BLACK, EVERYBODY'S BUSINESS: THE NET ZERO BLIND SPOT 4–5 (2022), [www.zerotracker.net/analysis](http://www.zerotracker.net/analysis).

<sup>111</sup> See Karen C. Sokol, *Seeking (Some) Climate Justice in State Tort Law*, 95 WASH. L. REV. 1383, 1406–09 (2020).

Katrina<sup>112</sup> and a public nuisance action by the tribal Inuit residents of the village of Kivalina, Alaska.<sup>113</sup> As climate liability lawsuits continue to proliferate and include claims by larger groups of plaintiffs,<sup>114</sup> corporations may attempt to consolidate those claims into a global settlement that resolves their liabilities and provides certainty against future litigation risks.

While a full examination of the use of mass tort settlements as a vehicle to constrain global climate liability risks lies beyond the scope of this Article, a few potential applications immediately suggest themselves. Drawing by analogy to global tort strategies used in products liability cases alleging harm from exposure to asbestos, hearing loss due to defective ear protection, and exposure to emerging contaminants such as PFOAs and PFAS, future corporate defendants facing carbon liability claims will likely seek to consolidate federal and state actions via the multidistrict litigation process into a core action.<sup>115</sup> This path may even lead the potential corporate defendants to initiate litigation for a declaratory judgment on key issues of liability and gateway defenses.<sup>116</sup> By doing so, these

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<sup>112</sup> See *Comer v. Murphy Oil Co.*, 585 F.3d 208 (5th Cir. 2009), *vacated en banc*, 598 F.3d 208 (5th Cir. 2010), *appeal dismissed for lack of quorum*, 607 F.3d 1049 (5th Cir. 2010).

<sup>113</sup> See *Village of Kivalina v. Exxon Mobil Corp.*, 696 F.3d 849 (9th Cir. 2012).

<sup>114</sup> The number of climate lawsuits continues to grow in both the United States and international fora. The cumulative number of climate change-related lawsuits has more than doubled since 2015, and roughly one-fourth of those cases were filed between 2020 and 2022. This litigation includes actions against companies with carbon-intensive operations in food and agriculture, transport, plastics, and finance, and an increasing proportion of these lawsuits now take place outside the United States. See JOANA SETZER & CATHERINE HIGHAM, GLOBAL TRENDS IN CLIMATE CHANGE LITIGATION: 2022 SNAPSHOT POLICY REPORT 1–5 (2022), <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2022/08/Global-trends-in-climate-change-litigation-2022-snapshot.pdf>. Climate tort claims have expanded to include allegation of false marketing statements, claims on behalf of future generations, and transnational claims. See *id.* at 41–44. See also Benjamin Franta, *Climate Litigation Rising: Hot Spots to Watch*, AM. BAR ASS'N (Dec. 21, 2021), [https://www.americanbar.org/groups/environment\\_energy\\_resources/publications/trends/2021-2022/january-february-2022/climate-litigation-rising/](https://www.americanbar.org/groups/environment_energy_resources/publications/trends/2021-2022/january-february-2022/climate-litigation-rising/).

<sup>115</sup> For an example of this tactic, see *In re 3M Combat Arms Earplug Products Liability Litigation*, 366 F. Supp. 3d 1368 (J.P.M.L. 2019).

<sup>116</sup> For example, some gateway defenses in U.S. climate tort litigation might include assertions that the federal Clean Air Act preempts state tort laws that impose liability for greenhouse gas emissions, the application of federal or state

defendants could seek to resolve their claims in a global settlement that purports to build all existing and future members of the relevant class. This approach could also consciously seek to maximize potential collateral estoppel and res judicata aspects of the settlement against future claimants.<sup>117</sup>

### III. POLICY FREEZES AND CORPORATE CARBON ZOMBIES

If corporations predictably begin to make sizable restructuring moves in part to limit their liabilities arising from climate change, the cumulative impact of this shift in corporate strategy could have sizable consequences. One outcome is the likely rise of a class of corporate entities that serve primarily as shelters for carbon transition risks and liability claims against historic corporate carbon operators.

As a premise, it's important to emphasize that none of these corporate tactics are necessarily atypical or nefarious. If conducted properly and with adequate capitalization, the proactive use of spinoffs and subsidiaries is a defining feature of modern U.S. corporate law and typically will survive judicial scrutiny if the corporation's management's decisions fall within the bounds of the

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statutes of limitation or statutes of repose, the role of comparative negligence and other fault-shifting defenses, and implications of state climate tort reform statutes that could limit claims against emitting corporations in either the emitting or receiving state. See *Comer v. Murphy Oil USA, Inc.*, 839 F. Supp.2d 849, 854, 865 (S.D. Miss. 2012); *Gaggero v. Cnty. of San Diego*, 124 Cal. App. 4th 609, 613–14, 618 (Cal. Ct. App. 2005) (providing an example of how statutes of repose have already been used to defeat environmental law claims); Douglas A. Kysar, *What Climate Change Can Do About Tort Law*, 41 ENV'T L. 1, 20–22 (2011); Tracy Hester, *A New Front Blowing In: State Law and the Future of Climate Change Public Nuisance Litigation*, 31 STAN. ENV'T L. J. 49, 66–67 (2012); TEX. WATER CODE § 7.257 (creating a statutory affirmative defense for greenhouse gas emitters in Texas).

<sup>117</sup> For an analogous use of mass litigation to force resolution of third-party claims, see Jeanne Schroeder & David Gray Carlson, *Third Party Releases Under the Bankruptcy Code After Purdue Pharma*, 31 AM. BANKR. INST. L. REV. 1 (2023). See also Tracy Hester, *Consent Decrees as Emergent Environmental Law*, 85 MO. L. REV. 687, 723–30 (2020). It remains unclear whether such a global tort settlement would affect claimants located outside the U.S. court system or U.S. jurisdictional reach. A settlement, however, might affect a federal or state court's willingness to enforce a future climate liability judgment rendered by a foreign court. See Hester, *supra* note 51.

business judgment rule.<sup>118</sup> Despite its familiarity, however, these corporate law standards may remain subject to abuse, and they can lack transparency, democratic accountability, or any public policy principles to guide their collective outcome. The cumulative, ad hoc approach fostered by existing corporate laws instead relies on an atomistic bottom-up outcome of individual decisions in a market-based framework which presumably results in the most efficient allocation of resources and produces the most economically productive outcome. This economically efficient result, however, may not provide the best results from perspectives of public health, environmental protection, or environmental justice and equity.

As a result, if Congress or state governments in the future decide that they want to set a coherent and integrated policy to accomplish specific climate outcomes, they may find that the potential field of policy action has been pre-committed by a large number of individual decisions to spin off assets to subsidiaries, to declare bankruptcy, or to shift operations so that few parties remain with sufficient assets to carry out new climate mandates or to satisfy climate liability obligations when they mature. A new federal or state policy would need to navigate a complex maze of recently vested property interests backed by investments, overcome other reliance interests created by permitting decisions and dedication of capital, and a host of new actors with comparatively little experience and fewer resources than the major corporations who have abandoned the field.<sup>119</sup>

Beyond potentially freezing out the field by straitjacketing policies through individual investment decisions and commitments, the expanding use of individual asset spinoffs and bankruptcies by corporations to shield themselves from carbon risks may result in a growing number of “carbon zombie” corporations. The typical

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<sup>118</sup> See Kevin M. Warsh, *Corporate Spinoffs and Mass Tort Liability*, 1995 COLUM. BUS. L. REV. 675, 693–95 (1999); Edward S. Adams & Arijit Mukherji, *Spin-offs, Fiduciary Duty, and the Law*, 68 FORDHAM L. REV. 15, 16 (1999) (“In some circumstances, avoiding liability and providing takeover defenses may be appropriate justifications for spin-offs. In circumstances where these are not appropriate justifications, safeguards against entrenchment and state fraudulent conveyance laws have proven to be adequate deterrents to abuse.”); John C. Heenan, *Graceful Maneuvering: Corporate Avoidance of Liability through Bankruptcy and Corporate Law*, 65 MONT. L. REV. 99, 115–20 (2004).

<sup>119</sup> See discussion *supra* Part I.C.

definition of a zombie corporation is an entity that uses roll-over debt obtained from new creditors to pay for its existing debt load when the company lacks the ability to pay the interest on its current debt.<sup>120</sup> Legacy corporations burdened with carbon-intensive assets may adopt a parallel two-level strategy: one approach to resolve risks associated with particular assets that have contributed to climate damages and potentially in themselves trigger a remediation claim, and another approach to cabin enterprise risks of the corporation's line of business.

The asset-level strategy could encourage the creation of a “dead man walking” operating asset whose costs of closure exceed the benefit of continuing operations. In these circumstances, these operators may rationally choose to continue running a facility at a loss or minimal profit if its operation postpones or avoids dramatically larger remediation or closure costs. In this context, a corporate subsidiary or spinoff may face pressures to continue carbon-intensive operations to avoid triggering liabilities through closures or termination of operations.

At the enterprise level, a residual spinoff or legacy corporation that primarily contains carbon assets with inadequate resources to satisfy liability claims or regulatory obligations may face a similar situation: it cannot operate profitably on a long-term basis, and it predominantly generates income needed to service its prospective carbon risks or manage its long-term liabilities from historic carbon operations. Strong economic and political pressures can make it

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<sup>120</sup> Other examples of environmental corporate zombies include shut-down refineries that continue operations as terminals to postpone future closure obligations under federal and state regulations for hazardous waste treatment, storage, and disposal facilities, *see* Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, 40 C.F.R. pt. 264, Subpart G (1980) (closure and post-closure requirements); coal-fired power plants that continue to operate even though retrofits needed to assure future commercial viability are not cost effective, *see* New Source Performance Standards for Greenhouse Gas Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule, 88 Fed. Reg. 80,682 (Nov. 20, 2023) (to be codified at 40 C.F.R. pt. 60); and the operation of industrial facilities that require Clean Air Act permits as major sources in ozone non-attainment areas that need the ongoing purchase of expensive emission credits to meet their permit limits because the cost of retrofitting their facilities exceeds the value of the corporate asset, *see, e.g.*, 42 U.S.C. § 7511a (offset requirements for ozone nonattainment areas).

difficult for governments or investors to halt operations liability claims.

#### IV. PRINCIPLES FOR REGULATING CARBON RESTRUCTURING

As corporations begin to broadly respond to climate risks through wide use of these carbon restructuring tools, regulators should explicitly adopt governance principles to identify and minimize social risks arising from this form of private corporate conduct. While corporate law tools in this context often lack the hallmarks of transparency, accountability, and democratic input that usually accompany public governmental policies and regulations, several options exist to promote public oversight and sway individual corporate decisions to favor certain policy goals. The most immediately apparent tools are disclosure transparency standards, expanded use of existing regulatory authorities for environmental liability transfers, and instituting new statutory authorities.

##### A. Goals and Standards

An effective governance framework for corporate climate liability restructuring will need to serve several complementary goals.<sup>121</sup> First, as a predicate for other governance options, the framework will need to promote transparency and generate data on the extent and nature of corporate carbon restructuring activities. The field of climate liability governance currently has few, if any, disclosure obligations, and the lack of information about the extent and degree of climate restructuring activities is one of the key areas of concern for public review.<sup>122</sup>

Second, with this information in hand, governance standards will need to balance the needs to promote a speedy transition, support legal economic growth and activity, shield vulnerable communities, and minimize disruptive social change and damages. As a result, governance standards will need to serve multiple additional goals that might conflict. For example, a normative governance

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<sup>121</sup> In this context, a governance framework is not limited to a single compulsory oversight program. It can include a mix of federal and state regulatory, statutory, and voluntary standards that work in concert to promote transparency and coordinated policy goals.

<sup>122</sup> See discussion *supra* notes 64–66 (operation of GAAP requirements and valuation principles for adequate funding of spin-offs and new subsidiaries).

structure for corporate carbon restructuring governance might explicitly seek to promote the fastest possible transition to emission-free sources of energy and manufacturing. This aspiration, however, might not entirely accord with parallel goals to promote environmental and social justice interests that corporate carbon restructuring might affect.<sup>123</sup> The fundamental need to protect and promote underlying legal economic activity also would favor some degree of caution in imposing sweeping restrictions on corporate responses to climate risks and carbon operations, but this commitment could explicitly conflict with desires to seek climate restitution for damaged communities and needs for larger stakeholder participation by historically marginalized groups.

Some existing corporate standards may help serve some of these goals, albeit incompletely. For example, disclosure obligations for publicly traded corporations typically compel disclosures of material risks and corporate responses to them, and many corporations have voluntarily committed to disclosing their carbon risk evaluations and climate footprints of their operations to third-party monitors and auditors.<sup>124</sup> The SEC has proposed regulations that

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<sup>123</sup> This conflict of priorities and values has already surfaced in challenges to accelerated decarbonization and carbon sequestration projects raised by environmental justice advocates concerned about the local impacts of these efforts on their communities. See Gabriel Pacyniak, *State Sequestration: Federal Policy Accelerates Carbon Storage, But Leaves Full Climate, Equity Protections to States*, 14 SAN DIEGO J. CLIMATE & ENERGY L. 95 (2023) (discussing environmental justice objections to carbon capture and sequestration development efforts and projects). See also Kiley Price, *'Greenhushing' Is On the Rise as Companies Go Silent on Climate Pledge*, INSIDE CLIMATE NEWS (Mar. 17, 2024), <https://insideclimate-news.org/news/17032024/todays-climate-greenhushing-companies-greenwashing/>; Maxine Joselow, *'Greenhushing': Why Some Companies Quietly Hide Their Climate Pledges*, WASH. POST (July 13, 2023), <https://www.washingtonpost.com/climate-environment/2023/07/13/greenhushing-climate-trend-corporations/>.

<sup>124</sup> See *Companies Taking Action*, SCI. BASED TARGETS, <https://sciencebasedtargets.org/companies-taking-action> (last visited June 20, 2024). See also Nathan Campbell, *The Duty to Update Corporate Emission Pledges*, 74 VAND. L. REV. 1137, 1143–46 (2021). The growing scrutiny devoted to greenhouse gas emission pledges by publicly traded corporations has led to a growing trend where large companies have begun to decline disclosing their climate targets and emission reduction goals. See also Camille Bond, *"Green Hushing": The New Threat to Net Zero?*, E&E ENERGY WIRE (Nov. 1, 2022), <https://subscriber.politicopro.com/article/eenews/2022/11/01/corporate-green-hushing-could-lead-to-missed-opportunities-00062310>.

will substantially bolster some of these climate risk disclosure obligations.<sup>125</sup> These approaches, however, do not comprehensively require disclosure of all relevant climate risks and carbon restructuring activities. They also do not offer integrated and comprehensive enforcement frameworks to assure full compliance.<sup>126</sup>

Another aspect of corporate risk management—obtaining third-party insurance and risk hedges on commercial markets—can also promote governance objectives of protecting resources to address climate and carbon risks as well as providing a counterweight to self-interested corporate behavior.<sup>127</sup> This tool, however, suffers from its own drawbacks. First, it typically operates retrospectively by providing financial resources to address covered claims. While insurance companies may insist on behavioral changes as a condition for issuing coverage policies, or may even decline to issue policies entirely for high-risk activities in certain industry segments or geographic areas, insurers typically do not assume a management role in corporate governance or dictate corporate climate risk priorities.<sup>128</sup>

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<sup>125</sup> See Enhanced Disclosures by Certain Investment Advisers and Investment Companies About Environmental, Social, and Governance Investment Practices, 87 Fed. Reg. 36,654 (June 17, 2022).

<sup>126</sup> In part, the SEC pointed to variations in ESG reporting metrics for climate change as well as exaggerated labels and claims as a reason to propose its ESG disclosure enhancement rule. See *id.* at 36,657–59.

<sup>127</sup> See James Rossi & Michael Vandenberg, *The Gap-Filling Role of Private Environmental Governance*, 38 VAND. ENV'T L.J. 1, 32–34 (2020) (“Insurance is another instrument that is growing in importance for private climate mitigation initiatives. Major insurance companies such as Allianz and Chubb have recently announced plans to stop insuring firms that rely on coal.”). See also Michael Vandenberg, *Private Environmental Governance*, 99 CORNELL L. REV. 129, 158–60 (2013).

<sup>128</sup> See Kenneth S. Abraham, *Environmental Liability and the Limits of Insurance*, 88 COLUM. L. REV. 942, 947, 954–55 (1988) (explaining that insurance companies can refuse to cover high-risk activities and those refusals can cause a company to follow the insurance company’s advice regarding safety). See Gene A. Lucero & Tracy Hester, *Public Law, Private Policemen: Revitalizing Private Regulation Through Pollution Liability Insurance Requirements*, 1 ENV'T CLAIMS J. 339, 352–55 (1989) (discussing similar balance of management responsibilities between corporations compelled to obtain pollution liability insurance by federal hazardous waste management regulations and the insurance companies that issued the policies).

Second, many of the historical comprehensive general liability policies that might cover long-ago actions may have already been settled or exhausted during prior intense environmental insurance coverage litigation.<sup>129</sup> Current policies, by contrast, typically provide environmental impairment liability coverage on a claims-made basis with numerous exclusions that might deny coverage for climate liability claims.<sup>130</sup> These insurance products can also interact in complex and unpredictable ways with policy coverage limits and excess carrier policies that contain their own exclusions.<sup>131</sup> Third, it remains unclear how past or existing insurance policies would cover liability claims arising from alleged climate change damages. One insurance company has already denied any duty to defend an insured energy company against climate tort liability litigation.<sup>132</sup>

Last, these commercial liability policies do not necessarily overlap with the coverage provided to individual officers and directors under their errors and omissions insurance policies. Such a gap may leave corporate decision-makers exposed to liability claims created by corporate actions covered by their liability policies, but excluded from their errors and omissions coverage. These policies also may exclude intentionally wrongful conduct that might include

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<sup>129</sup> For example, the Superfund program under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 triggered a firestorm of litigation over the scope of environmental coverage provided under commercial general liability policies. See U.S. GEN. ACCT. OFF., GAO/RCED-93-108, ENVIRONMENTAL LIABILITY: PROPERTY AND CASUALTY INSURER DISCLOSURE OF ENVIRONMENTAL LIABILITIES 1–5 (1993). The ultimate resolution of many of these claims included releases of any future environmental claims under those CGL policies.

<sup>130</sup> See MARSH & MCLENNAN COS., ENVIRONMENTAL IMPAIRMENT LIABILITY INSURANCE 1–2 (2017), <https://www.marsh.com/content/dam/marsh/Documents/PDF/UK-en/environmental-impairment-liability-insurance-factsheet.pdf>. Modern environmental impairment liability (EIL) policies limit coverage to a claims-made basis that only covers historical liabilities preceding the policy if the parties include an express rider.

<sup>131</sup> See James M. Fischer, *Understanding the “Exhaustion of Coverage” Doctrine in the Context of Continuous Trigger Coverage*, 25 CONNECTICUT INS. L.J. 263, 296–97 (2018).

<sup>132</sup> See Daphne Zhang, *Hawaii Gas Chain Sues AIG to Cover Climate Change Lawsuits*, BLOOMBERG L. ENV'T & ENERGY (Aug. 11, 2022), <https://news.bloomberglaw.com/insurance/hawaii-gas-chain-sues-aig-to-cover-climate-change-lawsuits>.

allegations of deliberately misleading or fraudulent misstatements by energy companies regarding climate change.<sup>133</sup>

### B. *Expand Existing Regulatory and Statutory Tools*

From a narrow tactical perspective, the use of spinoffs to create new types of carbon subsidiaries could become subject to aggressive and coordinated shareholder suits.<sup>134</sup> These private enforcement actions would allow more aggressive use of existing standards and regulations to monitor the new entities, force disclosure of particular information related to the financial expectations for the spinoff, and prevent a corporation from spinning off a carbon enterprise without adequate capitalization. Supervisory litigation could even include civil or criminal enforcement actions for fraudulent misrepresentations or financial deception related to the spinoff.<sup>135</sup>

In carbon bankruptcy actions, the federal or state governments could play an aggressive oversight role because they frequently appear in proceedings as one of the debtors or claimants in the case. The U.S. federal government has already played a very proactive environmental role in major bankruptcy actions, and it has expressly

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<sup>133</sup> Ann M. Waeger, *Current Insurance Products for Insuring Against Environmental Risks*, 15 PRAC. REAL EST. LAW, 9, 12 (Sept. 1999) (noting that key exclusions in typical EIL policies include “dishonest, willful, intentional acts or omissions or deliberate, intentional or willful non-compliance with law, directives, notices, etc.”).

<sup>134</sup> A shareholder derivative action is a lawsuit by shareholders on behalf of the corporation against its officers and directors who have breached their fiduciary duties to the firm or otherwise caused it damage. *See* Discover Prop. & Cas. Ins. Co. v. Blue Bell Creameries USA, Inc., 73 F.4th 322, 325–26 (2023); Sarah Wells, *Maintaining Standing in a Shareholder Derivative Action*, 38 U.C. DAVIS L. REV. 343, 345–46 (2004). *See also* FLETCHER CYC. CORP. § 5939 (2023).

<sup>135</sup> As an example, the Attorney General of New York brought enforcement actions against coal and fossil fuel companies under the state’s Martin Act for failing to adequately disclose material risks that climate change would pose to the companies’ operations. As a result of these actions, Peabody Energy agreed to a settlement requiring it to expand its securities filing disclosures on climate risk. Richard A. Epstein, *Regulatory Enforcement Under New York’s Martin Act: From Financial Fraud to Global Warming*, 14 N.Y.U. J.L. & BUS. 805, 808–809 (2018); Jessica Wentz, *Peabody Energy Agrees to Update SEC Filings to Acknowledge Financial Risks of Climate Change Policies*, CLIMATE LAW (Nov. 9, 2015), <https://blogs.law.columbia.edu/climatechange/2015/11/09/peabody-energy-agrees-to-update-sec-filings-to-acknowledge-financial-risks-of-climate-change-policies/> (last visited Apr. 13, 2024).

promoted policy goals as part of the settlement process.<sup>136</sup> During the economic crisis of 2009, for example, the Obama Administration actively intervened in the bankruptcies of major automakers to successfully negotiate mileage efficiency standards and other environmental conditions for future automobile production.<sup>137</sup> The federal government could readily play a similar role in carbon bankruptcies by systematically identifying material bankruptcies of concern that have carbon implications and then taking a similar proactive stance in the bankruptcy as the United States as a claimant. State courts could play a similar role in assessing the sufficiency of assets preserved during dissolutions of corporations under their jurisdiction.<sup>138</sup>

Beyond these immediate tools, governments and private plaintiffs can explore other statutory remedies and legal theories to force more financial accountability and transparency for attempted carbon liability transactions. Some of these options might include invoking existing direct action statutes that allow the ability to sue parents, successors, or insurers under certain conditions for environmental violations, and environmental agencies could aggressively interpret financial assurance obligations for environmental permits to include potential carbon liabilities.<sup>139</sup> For example, the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) includes a little-known direct action provision<sup>140</sup> that allows cost recovery claimants to directly sue insurers in industries where the U.S. Environmental Protection Agency (EPA) has established sectoral financial assurance requirements. While EPA has not yet taken regulatory action to trigger this option and other prior

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<sup>136</sup> See Ellias & Triantis, *supra* note 81, at 517.

<sup>137</sup> See *id.* at 523–30 (detailing efforts by the Obama Administration to bolster environmental policies during Chrysler’s bankruptcy action).

<sup>138</sup> See discussion *supra* of appointment of environmental *ad litem*s during corporate dissolution process.

<sup>139</sup> See Direct Action Statute, N.J. STAT ANN. § 17:28-2. See also *Crystal Point Condo. Assoc., v. Kinsale Ins. Co.*, 277 A.3d 1059, 1066–68 (N.J. 2022) (holding that claimants pursuing cause of action directly against insurance company must satisfy the terms of the underlying policy with the insured, including arbitration provisions).

<sup>140</sup> See 42 U.S.C. § 9608(c)(2).

attempts by private parties to invoke it have failed,<sup>141</sup> CERCLA theoretically empowers EPA to promulgate new regulations that would permit future direct insurer actions for environmental claims.<sup>142</sup> Such a regulation would first require sweeping financial assurance rulemaking for relevant industrial sectors and careful structuring of the rule to motivate productive corporate behavior in lieu of triggering direct action against insurers.<sup>143</sup>

The tactic of creative interpretation of existing statutes to reach new environmental challenges faces increasingly daunting judicial challenges. In particular, the U.S. Supreme Court has rejected EPA's proactive readings of section 111(d) of the federal Clean Air Act to promulgate the Clean Power Plan.<sup>144</sup> The Plan would have compelled reductions in CO<sub>2</sub> emissions through technology standards and compliance incentives to promote electricity generator operators to shift their power sources away from coal to lower carbon sources.<sup>145</sup> The Court relied on an expanded version of the major questions doctrine to interpret the statute, and it found that EPA could not exercise such sweeping regulatory authority over a major question without a clear statement from Congress authorizing the

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<sup>141</sup> For example, when EPA considered whether to propose financial assurance rules under CERCLA section 108(c)(2) that would have allowed direct actions against insurers, 82 Fed. Reg. 3,388, 3,413–14 (June 11, 2017), it ultimately declined to issue CERCLA financial assurance regulations because other regulatory programs provided sufficient guarantees of financial capacity to perform clean-up actions within the industry sector. 83 Fed. Reg. 7,556 (Mar. 23, 2018). Federal courts have also rejected attempts to characterize existing financial assurance obligations under the Resource Conservation and Recovery Act as the functional equivalent of CERCLA financial assurance rules that arguably authorized CERCLA direct actions against insurers. *See* Port Allen Marine Serv., Inc. v. Chotin, 765 F. Supp. 887, 888–89 (M.D. La. 1991). *See also* S.C. Dep't of Health v. Com. and Indus. Ins., 372 F.3d 245, 258–59 (4th Cir. 2004) (noting that CERCLA's direct action provision only takes effect when EPA promulgates CERCLA financial assurance requirements, which EPA has not done).

<sup>142</sup> One significant limitation of section 108(c)(2) is that it allows direct actions only for claims under sections 107(a) and 111 of CERCLA. To date, no private cost recovery claimant has alleged recoverable response costs from greenhouse gas emissions under CERCLA section 107(a).

<sup>143</sup> In a similar vein, bankruptcy claimants could explore the creative use of special purpose trusts to expand the pool of assets available to assure adequate resources to settle claims.

<sup>144</sup> *See* West Virginia v. EPA, 142 S. Ct. 2587, 2616 (2022).

<sup>145</sup> *See id.* at 2611.

action.<sup>146</sup> Other creative interpretations of existing statutes to regulate risks from corporate carbon restructuring or climate bankruptcies will likely meet similar challenges.<sup>147</sup>

### C. *The Need for New Statutes and Regulations*

All of these oversight surrogates focus on handling the potential hazards of corporate carbon tactics without dealing with the root cause of concern: the ability of corporations to spin away carbon risk. One way to grasp the heart of the issue would be to actively modify the ability of corporations to spinoff assets into subsidiaries or third parties with the express design of limiting carbon liability. This approach asks the broader question: is there anything fundamentally different about climate carbon liabilities and risks that make them unsuitable for resolution by conventional corporate law tools? This bolder approach also allows greater freedom to grapple with important harms and disruptions that corporate spinoffs, bankruptcies, and subsidiaries may cause which rarely get attention under existing corporate law, such as the needs for environmental justice and equity.<sup>148</sup>

Climate carbon liabilities have unique features that distinguish them from conventional environmental liabilities. Most importantly, the vast size and geographic scale of damages attributable to global climate change makes these potential risks uniquely large, difficult to manage, and hard to attribute to specific actions or corporate strategy decisions. To some extent, these qualities reflect the familiar hallmarks of climate change as a “super wicked” problem that complicate similar difficulties for corporate law responses to

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<sup>146</sup> See *id.* at 2616.

<sup>147</sup> The U.S. Supreme Court’s recent expansion of the major questions doctrine has sparked strong criticism from legal scholars. Their objections focus on the doctrine’s murky provenance, blurred thresholds for determining what questions qualify as “major,” lack of analytic rigor on how much clarity the Court can demand when interpreting statutes used to address major questions, and the whole-scale shift of power away from the executive branch to the judiciary in implementing administrative statutes in a fashion that conflicts with long-standing precedent. See, e.g., Natasha Brunstein & Richard L. Revesz, *Mangling the Major Questions Doctrine*, 74 ADMIN. L. REV. 217 (2022); Jonas J. Monast, *Major Questions About the Major Questions Doctrine*, 68 ADMIN. L. REV. 445 (2016); Marla D. Tortorice, *Nondelegation and the Major Questions Doctrine: Displacing Interpretive Power*, 67 BUFFALO L. REV. 1075 (2019).

<sup>148</sup> See discussion *infra* Part IV.D.

climate risks.<sup>149</sup> The framing of climate change risks as a super wicked challenge has had enormous influence in climate governance debate and climate law discussion.<sup>150</sup> This mindset, however, may have grown outdated. Some of its key assumptions—the disconnect between current emissions and future problems; the ability to shift risks to a future generation by an unaccountable present emitter; the unequal distribution of risk, climate harm, and adaptation capacity between poor and rich nations—have become less salient as accumulating climate changes have become more obvious because of severe weather disruptions, persistent megadroughts, and explosive wildfire risks.<sup>151</sup> As climate change evolves from a future risk to a present problem, its unique status as a “super wicked” problem (in a political economic sense) arguably has begun to wane.

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<sup>149</sup> See Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153, 1159–60 (2009). For example, some key aspects of prior conventional corporate climate liability strategies might prove intractable because delays in addressing climate change liability risks can magnify the future costs of mitigating or adapting to it at a later date. Similarly, corporate law imposes some current costs to creating spinoff entities, segregating assets, or declaring bankruptcy, but delays in triggering any of these mechanisms can allow those liabilities to accumulate into a much larger future risk that corporate liability tools may have to adequately resolve at that point.

Second, corporations need innovation to solve chronic climate issues and carbon liabilities. Invoking corporate veil protections or strategic bankruptcy protections, however, may result in the shifting of assets in a fashion that disrupts the funding and commitment needed for innovation. Third, as with wealthier nations that benefit from current emission patterns, the largest corporate actors may have the least incentive to address climate change effects and may suffer comparatively less than smaller corporations with thinner asset bases.

And last, as with public international law, corporate law lacks a centralized institutional framework to support a coordinated and consistent response to climate change that includes binding obligations or materially effective tools to assure compliance in a fashion that attains collective climate policy goals.

<sup>150</sup> See Jonathan M. Gilligan & Michael P. Vandenberg, *Beyond Wickedness: Managing Complex Systems and Climate Change*, 73 VAND. L. REV. 1777 (2020); MARK NEVITT, UNIV. OF PA. KLEINMAN CTR. FOR ENERGY POL’Y DIGEST, CLIMATE ADAPTATION STRATEGIES: HOW DO WE ‘MANAGE’ MANAGED RETREAT? 1, 8 (2020), <https://kleinmanenergy.upenn.edu/wp-content/uploads/2020/11/KC-013-Climate-Adaptation-Strategies-singles.pdf> (noting how framing of problem as “superwicked” affects treatment of issue in climate strategies).

<sup>151</sup> See J.B. Ruhl & Robin Kundis Craig, *4°C*, 106 MINN. L. REV. 191, 192–95 (2021).

While the intractability of climate liability issues and governance policies may be fading, current dynamics may more powerfully drive new statutory action and regulatory requirements.<sup>152</sup> The lack of a clear economic driver for management of greenhouse gases (either via a carbon price or an attributable social cost of carbon) also makes their control via market mechanisms unpredictable and indirect. In some circumstances, efforts to encourage reductions in greenhouse gas emissions may create perverse incentives that would encourage corporate restructurings that damage the climate in the long term.<sup>153</sup>

Climate carbon liabilities will also arise from an unusually complex mix of federal and state laws, and corporations may have some limited control over the forum and choice of law to resolve their liabilities. The corporation that prefers the certainty and efficiency of federal law, for example, may avail itself of a strategic bankruptcy action to consolidate its risks and produce a unified outcome. A different corporation may instead prefer to refer to the protections of a state's laws if it provides protection against outsized tort liabilities or offers a favorable corporate law forum.<sup>154</sup> This complicated blend of differing state and federal liability standards may yield an incoherent outcome from a climate policy perspective and encourage active efforts to either shop for favorable state forums or shape state legislation to create safe liability havens. This

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<sup>152</sup> The recent passage of the IRA and the IIJA suggest that some of the resistance to climate legislative action is waning, although both bills passed under the special procedural processes allowed for budget reconciliation (which, in turn, exempted them from potential filibuster challenges).

<sup>153</sup> A corporation may have a perverse incentive to maintain operations of an inefficient carbon-intensive unit if it receives compensation for reducing emissions at that unit in the future. Similar self-defeating economic outcomes resulted under the Clean Development Mechanism for the Kyoto Protocol in some cases. See Mark Schapiro, *'Perverse' Carbon Payments Send Flood of Money to China*, YALE ENV'T 360 (Dec. 13, 2010), [https://e360.yale.edu/features/perverse\\_co2\\_payments\\_send\\_flood\\_of\\_money\\_to\\_china](https://e360.yale.edu/features/perverse_co2_payments_send_flood_of_money_to_china). The risk of these types of outcomes will depend on the potential incentives deployed to bring down carbon emissions, and they will undoubtedly have similarly unpredictable effects on preferred corporate restructurings to manage climate liability risks.

<sup>154</sup> Texas law, for example, provides an affirmative defense against nuisance actions based on greenhouse gas emissions if the facility's operator has an air permit that authorized its operations (even if the permit lacked an overt emission limit on greenhouse gases). See TEX. WATER CODE ANN. § 7.257 (West 2011).

danger of statutory incoherence and conflicting legal obligations could propel federal legislative action.

Another strategy to reduce risks from carbon restructuring would center on clarifying how existing limits on fraudulent corporate asset transfers would apply to attempts to shift problematic carbon assets into new corporate subsidiaries or spinoffs with inadequate capitalizations. Current law limits the ability of corporate directors to favor shareholders or insiders with corporate distributions that occur when a corporation is insolvent, or if the transfers would render the corporation insolvent.<sup>155</sup> In such circumstances, a bankruptcy trustee can claw back the distributions as voidable preferential transfers. Outside the bankruptcy context, similar transactions may become voidable under the Model Uniform Fraudulent Transfer Act (or its successor, the Uniform Voidable Transfer Act) if the transfer exposes the corporation to undue risk of insolvency.<sup>156</sup> Under the model acts, the claimant need not prove that the transfer took place for intentionally fraudulent reasons.<sup>157</sup> State legislatures or regulatory agencies could offer guidance on the specific application of these voidable transfer statutes to corporate reallocations designed to shed carbon liability risks.

One state statute offers an intriguing model to avoid undue shifting and stranding of carbon assets: New Jersey's Industrial Site

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<sup>155</sup> See Irina Fox, *Protecting All Corporate Stakeholders: Fraudulent Transfer Law as a Check on Corporate Distributions*, 44 DEL. J. CORP. L. 81, 84 (2020).

<sup>156</sup> See NAT'L CONF. OF COMM'RS ON UNIF. STATE LS., UNIFORM FRAUDULENT TRANSFER ACT § 4(a)(2)(i)–(ii) (2013) (Listing as voidable transactions where the debtor's remaining assets are "unreasonably small in relation to the business or transaction" or the debtor "believed or should have reasonably believed that the debtor would incur, debts beyond the debtor's ability to pay." These risky transactions, if not voidable, could threaten the solvency of the business.); Frank R. Kennedy, *Reception of the Uniform Fraudulent Transfer Act*, 43 S.C.L. REV. 655, 663 (1992) (noting that the Uniform Fraudulent Conveyances Act also made voidable transactions without fair consideration by debtors who were insolvent or would become insolvent by the transaction); Peter A. Alces & Luther M. Dorr, Jr., *A Critical Analysis of the New Uniform Fraudulent Transfer Act*, 1985 U. ILL. L. REV. 527, 530–31, 542–44 (1985).

<sup>157</sup> See David Gray Carlson, *Constructive Trusts and Fraudulent Transfer: When Worlds Collide*, 103 MARQ. L. REV. 365, 382 (2019).

Recovery Act.<sup>158</sup> This statute aims to prevent the improper abandonment of contaminated industrial sites in the state by focusing specifically on their sale, closure, and transfer.<sup>159</sup> Operators in designated industrial sectors must obtain approval from the New Jersey Department of Environmental Protection before they can transfer such sites. To do so, the owners and operators must either (i) declare that no discharge of a hazardous substance had occurred at the site (or, if it had, that the spill was cleaned according to state standards), or (ii) submit a cleanup plan and post a bond to assure the remediation.<sup>160</sup> Failure to do either of these steps can result in voiding the property transfers and imposition of significant fines.<sup>161</sup> While New Jersey has significantly modified the underlying statute to ease brownfields development in broad regions and to eliminate burdensome requirements under its former brownfields program,<sup>162</sup> the Industrial Site Recovery Act framework still assures that industrial operators do not attempt to shed contaminated property liabilities through transfers to third parties or corporate reorganizations.

Federal or state action could modify this approach to protect against undesirable shifting or stranding of carbon liability and risks. Under this framework, a corporation falling into certain industrial categories historically associated with heavy carbon emissions would notify either a federal agency or a state regulatory authority when it intends to sell, transfer, or close assets that emit greenhouse gases above a pre-determined threshold. Before the transfer or sale could take place, the operator would need to either confirm that the terms of the transaction (typically, the assets accompanying the transferred asset) are sufficient to answer for any liabilities associated with climate risk caused by the asset. Alternatively, the operator could also commit to offset the emissions (in

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<sup>158</sup> See N.J. STAT. ANN. § 13:1K-6 (West 2023). The Industrial Site Recovery Act was formerly called the Environmental Cleanup Responsibility Act of 1983. See *id.* at K-9.4 (amending and renaming ECRA, 1983 N.J. Laws 330).

<sup>159</sup> See *id.* at K-7.

<sup>160</sup> See *id.* at K-9.

<sup>161</sup> See *id.* at K-13–13.1.

<sup>162</sup> See Alexander Maro, *Outsourcing the Filth: Privatizing Brownfield Remediation in New Jersey*, 38 B.C. ENV'T AFF. L. REV. 159, 164–66, 174–76, 180 (2011); Andrew N. Davis et al., *When Is the Parent Company Liable*, 12 BUS. L. TODAY 29 (2002); Richard L. Revesz, *Federalism and Environmental Regulation: A Public Choice Analysis*, 115 HARV. L. REV. 553, 605–07 (2001).

essence, “remediating” the release resembling an industrial site cleanup) before the transfer can occur.<sup>163</sup>

Such a sweeping remedy would require explicit federal statutory action to create express remedies to address these risks. For example, CERCLA provides an explicit safe harbor to lenders and bona fide purchasers who meet statutory disclosure obligations and management requirements.<sup>164</sup> This approach assures a baseline of protective conduct while relieving risks of regulatory uncertainty and potential liability for the regulated community. More broadly, other federal statutes have imposed uniform federal statutory remedies for any claims of damages or loss in particular industry sectors and types of claims.<sup>165</sup> While corporate law theoretically would accommodate these types of interventions, the prospects of such statutory action by the federal government or a relevant state government (in particular, Delaware) currently seem remote.<sup>166</sup>

#### D. *Environmental Justice and Equity Concerns*

This proposed statutory framework and governance approach focuses on preventing corporate actions that unduly move assets away from needed efforts to respond to climate change damages and liabilities. These losses, of course, fall most heavily on

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<sup>163</sup> In a similar vein, one proposal has creatively called for the retroactive imposition of CERCLA-style liability on emitters of greenhouse gases that cause harmful climate change. See Anthony Moffa, *From Comprehensive Liability to Climate Liability: The Case For a Climate Adaptation Resilience and Liability Act (CARLA)*, 47 HARV. ENV'T L. REV. 473, 474 (2022).

<sup>164</sup> See 42 U.S.C. §§ 9602, 9607(b)(3).

<sup>165</sup> For example, the federal Price Anderson Act precludes state law claims for liability arising from releases of regulated radioactive materials from licensed nuclear facilities, and it establishes a cap on total damages that such facilities might pay under federal causes of action. See 42 U.S.C. § 2210. The Oil Pollution Act imposes liability caps and mandates streamlined claims processing for certain spills of petroleum onto land or into waters of the United States. See 33 U.S.C. § 2701 *et seq.*; 33 C.F.R. § 138.230 (implementing regulation concerning vessels, deepwater ports, and onshore facilities).

<sup>166</sup> See Paul J. Shim et al., *Don't Bite the Hand that Feeds You: Delaware Court of Chancery Holds Spin-Offs Are Not Unconscionable*, CLEAR M&A & CORP. GOVERNANCE WATCH (Apr. 7, 2020), <https://www.clearmawatch.com/2020/04/dont-bite-the-hand-that-feeds-you-delaware-court-of-chancery-holds-spin-offs-are-not-unconscionable/>.

environmental justice communities and historically disadvantaged groups.<sup>167</sup> This conjunction mandates that any solution which provides resources to satisfy climate liabilities and damages must also assure that the special needs of these groups do not get ignored.

On one level, these groups will enjoy some positional advantages. At the least, these groups will likely have some of the strongest legal claims with significant damages arising from climate change. Corporate restructuring to limit climate risk therefore will, by definition, disproportionately affect the legal position of environmental justice communities because they suffer the greatest risks and harms. For climate tort actions, these groups will therefore offer some of the most powerful and attractive plaintiffs.<sup>168</sup> Their potentially favorable legal position, however, means little without adequate resources to pursue legal action, and lawsuits have historically proven a lackluster way to accomplish systemic environmental justice and equity under existing federal and state laws.<sup>169</sup>

To the extent some of the tools proposed by this Article would rely on existing federal and state environmental laws and disclosure standards, they may already require more emphasis on environmental justice concerns. The Biden Administration has placed a high priority on addressing environmental justice and climate change, and it has issued numerous executive orders and guidance that require federal agencies to explicitly address and ameliorate

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<sup>167</sup> See, e.g., U.S. ENV'T PROT. AGENCY, CLIMATE CHANGE AND SOCIAL VULNERABILITY IN THE UNITED STATES: A FOCUS ON SIX IMPACTS 6–8 (2021), [https://www.epa.gov/system/files/documents/2021-09/climate-vulnerability\\_september-2021\\_508.pdf](https://www.epa.gov/system/files/documents/2021-09/climate-vulnerability_september-2021_508.pdf).

<sup>168</sup> For example, one of the plaintiffs in the initial wave of climate tort litigation under federal common law was a native Inuit tribal community and residents. See Jeff Todd, *A "Sense of Equity" in Environmental Justice Litigation*, 44 HARV. ENV'T L. REV. 169, 171–72 (2020) (“[The Kivalina lawsuit] exhibit[s] the characteristics of environmental justice litigation. The plaintiffs are among the most marginalized and vulnerable while the defendants are rich and powerful. Their situations highlight the distributive injustice of companies profiting from environmentally-hazardous operations that cause personal and property damage to communities.”).

<sup>169</sup> See John E. Bonine, *Removing Barriers to Justice in Environmental Litigation*, 1 RUTGERS INT'L L. & HUM. RTS. J. 100 (2021); Melissa O'Connor, *A Failure to Protect: After 13 Years, Environmental Justice Never Materializes*, 35 S.U.L. REV. 119 (2007).

environmental justice and racial justice concerns in all of their programs.<sup>170</sup> These executive directives would provide a legal basis for federal agency initiatives to govern carbon shedding and spinoffs in ways that also foster environmental justice. The implementation of the Justice 40 program,<sup>171</sup> to the extent it intersects with these initiatives to moderate climate risk shifting, would offer an additional platform to address environmental justice concerns and historical inequities in U.S. economic policy and practice while controlling risks from carbon shedding.

A federal or state statutory framework would offer a final layer of opportunity. Any statutory solution that regulates the risks of carbon spinoffs and climate bankruptcies needs to expressly account for likely disproportionate impacts of these actions on these communities and their heightened vulnerability to the damages and risks caused by climate change.<sup>172</sup> At the least, any legislative mandates to quantify and assess potential climate liability should explicitly require that harms and losses related to environmental justice are included in that calculation. This transparency and rigor would bolster the attention paid to environmental justice concerns during the quantification of climate harms and ameliorative steps required by the program.

#### CONCLUSION

The global transition away from carbon energy to renewable energy and non-emitting sources is catalyzing fundamental industrial and economic change at an accelerating pace. Large legacy

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<sup>170</sup> See Exec. Order No. 13,985, 86 Fed. Reg. 7,009 (Jan. 20, 2021); Exec. Order No. 14,008, 86 Fed. Reg. 7,619 (Jan. 27, 2021). See also Exec. Order No. 12,898, 59 Fed. Reg. 7,629 (Feb. 16, 1994).

<sup>171</sup> See Exec. Order No. 14,008, 86 Fed. Reg. 7,619 (Jan. 27, 2021). See also *Justice40: A Whole-Of-Government Initiative*, WHITE HOUSE, <http://www.whitehouse.gov/environmentaljustice/justice40/> (last visited June 20, 2024).

<sup>172</sup> For a discussion of climate bankruptcy reform, see Alexander Gouzoules' recent article. Alexander Gouzoules, *Going Concerns and Environmental Concerns: Mitigating Climate Change Through Bankruptcy Reform*, 63 B.C. L. REV. 2163 (2022). For a recent article discussing possible regulatory regimes to prevent or control divestments of carbon-intensive assets, see Alperen A. Gözlügöl & Wolf-Georg Ringe, *Net Zero Transition and Divestments of Carbon-Intensive Assets*, 56 U.C. DAVIS L. REV. 1963 (2023).

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corporate energy corporations are keenly aware of this shift, and we should expect them to react rationally by restructuring their operations, abandoning problematic carbon-intensive assets, and shielding themselves from liability by segregating or spinning off assets and lines of operations. While this work will likely take place largely out of view, it has undoubtedly already begun.

Some of the harms from this economic transition have gotten attention under the recently passed IRA, the IIJA, and the Biden Administration's initiatives to assure a just transition away from fossil fuels and address environmental justice concerns for affected communities. Current corporate laws cannot fully address these impacts, however, without taking steps to assure that companies do not shift assets behind corporate veils, spin off problematic assets to smaller companies with shallow resources, and shed liabilities through bankruptcy and restructuring. We have seen similar corporate actions in other environmental debacles with enormous harm to the public as a result. Early action to compel greater transparency, adequate capitalization and assets for legacy liabilities, and sharper standards of accountability for corporate management will help assure that the ongoing global transition can occur as quickly as possible without the disruption and harms that fundamental economic change, no matter how desirable, can cause.

