THE ROAD TO PARIS RUNS THROUGH DELAWARE: CLIMATE LITIGATION AND DIRECTORS' DUTIES

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Abstract

As political and regulatory battles over climate change rage in the United States, and the Trump Administration unwinds regulation on climate change, the directors of some of the largest fossil fuel corporations, often referred to as "carbon-majors," are facing a barrage of climate litigation claims. This is the second time directors of these corporations have faced litigation. The first wave of litigation against carbon majors failed for a number of reasons, including judicial reluctance to engage with the complex issue of climate change. However, climate litigation is evolving. In this second wave of litigation, judges have started to engage more directly with new scientific processes that link specific industry polluters to global climate impacts. Litigants are also becoming more creative, attempting to avoid federal displacement arguments encountered in the first wave by focusing on state-based common law and statutory claims. The number and scope of claims have also increased, with litigants moving beyond tort-based claims to employ diverse causes of action, including ones arising under corporate law. This second wave of litigation will have two implications for corporate law directors' duties. First, the litigation highlights the bidirectional nature of climate impacts and risks. Corporations contribute emissions to the atmosphere, which increase the severity of climate-related impacts. Those impacts, in turn, pose significant risks to corporations themselves. Second, the litigation elevates the risk profile of climate change from an ethical concern to a significant financial risk that directors are legally obligated to consider in order to comply with their directors' duties under current corporate law doctrine. This broad but sudden shift in litigation trends changes the risk equation for directors with respect to climate change.

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INTRODUCTION

Climate change has become the defining issue of this generation. Scientific assessments have become more and more definitive regarding anthropogenic climate change and the severity of its impacts.[1] The window to avoid runaway

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[1] *See* LENNY BERNSTEIN ET AL., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE [IPCC], CLIMATE CHANGE 2007 SYNTHESIS REPORT 5 (R.K. Pachauri & A. Reisinger eds., 2008), https://www.ipcc.ch/site/assets/uploads/2018/02/ar4_syr_full_report.pdf [https://perma.cc/6SCF-4M4B] ("There is *very high confidence* that the net effect of human activities since 1750 has been one of warming."); INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE [IPCC], CLIMATE CHANGE 2014 SYNTHESIS REPORT SUMMARY FOR POLICYMAKERS 2, 4, 8 (2014), https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf [https://perma.cc/AV2R-87QJ] (providing a report on a number of environmental factors including: atmospheric concentrations of carbon dioxide, methane and nitrous oxide [being] unprecedented in at least the last 800,000 years;" "[w]arming of the climate system is unequivocal;" and "[c]ontinued emission of greenhouse gases will cause further warming and long-lasting changes . . . increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems."), [hereinafter IPCC, CLIMATE CHANGE 2014]; Kendra Pierre-Louis, *Ocean Warming Is Accelerating Faster Than Thought*, *New Research Finds*, N.Y. TIMES (Jan. 10, 2019), https://www.nytimes.com/2019/01/10/climate/ocean-warming-

climate change is closing quickly.[2] In 2015, almost 200 countries made commitments under the Paris Agreement in relation to climate change.[3]

The United States was a largely progressive actor in the Paris Agreement negotiations.[4] The subsequent change in administration has reversed the course of the United States in relation to climate change, with President Trump submitting a notice to withdraw the United States from the Paris Agreement and unwinding domestic regulation and policies on climate change.[5] Perhaps due to this regulatory

climate-change.html [https://perma.cc/YW28-DZDW] ("[T]he world's oceans are warming far more quickly than previously thought . . . ."); Brett Molina, *'Dangerous' Antarctic Glacier Has a Hole Roughly Two-Thirds Area of Manhattan, Scientists Warn*, USA TODAY (Jan. 31, 2019, 7:38 AM), https://www.usatoday.com/story/tech/news/2019/01/31/thwaites-glacier-antarctica-melting-could-impact-sea-levels-nasa/2729840002/ [https://perma.cc/G3R6-3ZAU] ("Thwaites has been described as one of the world's most dangerous glaciers because its demise could lead to rapid changes in global sea levels."); Mario Picazo, *Ocean Heat Waves Are Becoming More Severe and Frequent*, WEATHER NETWORK (Mar. 12, 2019, 3:14 PM), https://www.theweathernetwork.com/ca/news/article/ocean-heatwaves-becoming-more-frequent-severe-scientists-say-kelp-krill [https://perma.cc/2UWK-KTC8] ("Earth's atmosphere has been getting warmer over the past century, [and] our oceans have also shown signs of unprecedented warming . . . .").

2 *See* Myles Allen et al., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE [IPCC], *Summary for Policymakers*, *in* GLOBAL WARMING OF 1.5°C. AN IPCC SPECIAL REPORT 12 (V. Masson-Delmotte et al. eds., 2018), https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf [https://perma.cc/3B8Q-GK4D] (stating that in order to have a reasonable chance of not exceeding a 1.5˚C temperature increase, emissions must decrease by "45% from 2010 levels by 2030").

3 *See generally* U.N. Framework Convention on Climate Change, *Adoption of the Paris Agreement*, U.N. Doc. FCC/CP/2015/L.9.Rev.1 (Dec. 12, 2015) (agreeing "to hold the increase in the global average temperature to well below 2˚C").

4 Karl Mathieson & Fiona Harvey, *Climate Coalition Breaks Cover in Paris to Push for Binding and Ambitious Deal*, GUARDIAN (Dec. 8, 2015, 3:19 PM), https://www.theguardian.com/environment/2015/dec/08/coalition-paris-push-for-binding-ambitious-climate-change-deal [https://perma.cc/5X55-PBHT] (finding the United States formed part of the "high ambition coalition" which pushed for including the 1.5˚C aspirational temperature goal).

5 *See* Chris Wold, *Climate Change, Presidential Power, and Leadership: "We Can't Wait,"* 45 CASE W. RES. J. INT'L L. 303, 304–07 (2012) (noting that even though the Obama Administration demonstrated some progressive action on climate change, the issue was not pursued with sufficient urgency and the action that was taken was done primarily through executive action which is vulnerable to changing administrations); Juliet Eilperin, *Trump Administration Proposes Rule to Relax Carbon Limits on Power Plants*, WASH. POST (Aug. 21, 2018, 8:38 PM), https://www.washingtonpost.com/national/health-science/trump-administration-proposes-rule-to-relax-carbon-limits-on-power-plants/2018/08/21/b46b0a8a-a543-11e8-a656-943eefab5daf_story.html [https://perma.cc/ 2N5N-2LZL] (explaining that the current administration has been undoing previous regulatory progress on climate change); Valerie Volcovici, *U.S. Submits Formal Notice of Withdrawal from Paris Climate Pact*, REUTERS (Aug. 4, 2017, 3:25), https://www.reuters.com/article/us-un-climate-usa-paris/u-s-submits-formal-notice-of-withdrawal-from-paris-climate-pact-idUSKBN1AK2FM [https://

void, the battle around climate change has shifted to the courts, and this shift has important implications for directors of fossil fuel-intensive (or carbon-major) corporations.[6]

Carbon-major corporations have faced a deluge of claims in recent years. Cities and municipalities from around the United States, including New York City,[7] Oakland and San Francisco,[8] San Mateo,[9] Marin County,[10] City of Imperial Beach,[11]

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perma.cc/P5VD-LD3E] (reporting on the State Department informing the United Nations that the United States will withdraw from the Paris Climate Agreement); Edward Wong, *Trump Has Called Climate Change a Chinese Hoax. Beijing Says It Is Anything But.*, N.Y. TIMES (Nov. 18, 2016), https://www.nytimes.com/2016/11/19/world/asia/china-trump-climate-change.html [https://perma.cc/5PPT-TD7N] (explaining that Donald J. Trump has consistently questioned the legitimacy of climate science); Emily Holden, *'It'll Change Back': Trump Says Climate Change Not a Hoax, but Denies Lasting Impact*, GUARDIAN (Oct. 15, 2018, 1:48 AM), https://www.theguardian.com/us-news/2018/oct/15/itll-change-back-trump-says-climate-change-not-a-hoax-but-denies-lasting-impact [https://perma.cc/MSK8-SUKS] (finding that President Trump is continuing to question climate science and climate change); David M. Ulhmann, *The Trump Administration's Orwellian SAFE Vehicles Rule*, AM. CONST. SOC'Y (Oct. 30, 2018), https://www.acslaw.org/expertforum/the-trump-administrations-orwellian-safe-vehicles-rule/ [https://perma.cc/LT8A-HJLC] (discussing "President Trump's refusal to acknowledge the dangers of climate change and his dystopian zeal for undoing Obama-era environmental protection rules"); Oliver Milman, *'It's a Ghost Page': EPA Site's Climate Change Section May Be Gone for Good,* GUARDIAN (Nov. 1, 2018, 3:32 PM), https://www.theguardian.com/us-news/2018/nov/01/epa-website-climate-change-trump-administration [https://perma.cc/7CRK-4P67] ("The EPA under the Trump administration has attempted to roll back all key measures designed to address climate change . . . .").

[6] *See The Urgenda Climate Case Against the Dutch Government,* URGENDA, https://www.urgenda.nl/en/themas/climate-case [https://perma.cc/4KDW-YM69] (last visited Oct 8, 2019) (stating that there is a global shift in climate litigation trends with a number of suits being launched, in particular against Governments by their citizens in Europe and the United States); Juliana v. United States, 217 F. Supp. 3d 1224, 1233 (D. Or. 2016), *rev'd and remanded*, No.18-36082 (9th Cir. Jan. 17, 2020); Leghari v. Fed'n of Pakistan (2015) W.P. No. 25501/2015 (Pak.) (challenging "the inaction, delay and lack of seriousness on the part of the Federal Government and the Government of the Punjab to address the challenges and to meet the vulnerabilities associated with Climate Change.").

[7] David Hasemyer, *Fossil Fuels on Trial: Where the Major Climate Change Lawsuits Stand Today*, INSIDE CLIMATE NEWS (Nov. 8, 2019), https://insideclimatenews.org/news/04042018/climate-change-fossil-fuel-company-lawsuits-timeline-exxon-children-california-cities-attorney-general [https://perma.cc/8HVS-GH4M] (detailing the "wave of legal challenges . . . washing over the oil and gas industry, demanding accountability for climate change, [which] started as a ripple after revelations that ExxonMobil had long recognized the threat fossil fuels pose to the world").

[8] *Id.*

[9] *Id.*

[10] *Id.*

[11] *Id.*

County of Santa Cruz,[12] City of Santa Cruz[13] and the City of Richmond in California,[14] King County in Washington,[15] the State of Rhode Island,[16] the City and Mayor of Baltimore,[17] the City and County of Honolulu,[18] as well as crab fishermen in California and Oregon,[19] have all initiated claims against carbon-major corporations. In addition to nuisance-based claims, corporate law fiduciary duties have also been in play, with an initial decision holding that directors of ExxonMobil should have disclosed relevant information on climate risk to shareholders.[20] Together these new cases constitute the second wave of corporate climate litigation.[21]

This second wave of litigation highlights a broader set of risks that face carbon-major corporations. New scientific processes are able to quantify the historical proportion of climate impacts and damages for which carbon-major corporations are responsible.[22] As the science progresses, it is likely that new and better-grounded legal challenges against carbon-majors will escalate. Judges are overcoming their

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[12] *Id.*

[13] *Id.*

[14] *Id.*

[15] *Id.*

[16] *Id.*

[17] *Id.*

[18] City and County of Honolulu v. Sunoco LP, No. 1CCV-20-0000380 (Haw. Cir. Ct, 1st Cir., filed Mar. 9, 2020).

[19] Dana Drugmand, *Commercial Fishermen Sue Fossil Fuel Industry for Climate Impacts*, CLIMATE LIABILITY NEWS (Nov. 15, 2018), https://www.climateliabilitynews.org/2018/11/15/fisheries-crab-climate-change-liability/ [https://perma.cc/G97Q-ZQSY] ("Crabbers in California and Oregon have suffered significant economic losses and are seeking to hold fossil fuel companies accountable . . . .").

[20] Karen Savage, *Federal Judge: Employees Can Pursue Climate Fraud Suit Against Exxon*, CLIMATE LIABILITY NEWS (Aug. 15, 2018), https://www.climateliabilitynews.org/2018/08/15/climate-fraud-suit-exxon-employees-ramirez/ [https://perma.cc/T2AL-THE8] (discussing misrepresentations made about climate change).

[21] *See* Martin Olszynski et al., *From Smokes to Smokestacks: Lessons from Tobacco for the Future of Climate Change Liability,* 30 GEO. ENVTL. L. REV. 1, 14–15 (2017); Geetanjali Ganguly et al., *If at First You Don't Succeed: Suing Corporations for Climate Change*, 38 OXFORD J. LEGAL STUD. 841, 842 (2018) (identifying a second wave of corporate climate litigation). An earlier "first wave" of climate litigation in the United States against corporations floundered for two primary reasons. First, courts viewed climate change as properly within the domain of federal regulation, and held that the federal Clean Air Act displaced climate change claims brought under federal common law tort. *See generally* Am. Elec. Power Co. v. Connecticut, 564 U.S. 410 (2011). Second, plaintiffs struggled to prove causation and judges were reluctant to engage with climate science. *Id.* at 428. At the time, science could not link a specific company's emissions to a specific plaintiff's damages. Even if tort was appropriate, then, it was unclear that plaintiffs could prevail, and so this first wave of climate litigation failed.

[22] *See* Richard Heede, *Tracing Anthropogenic Carbon Dioxide and Methane Emissions to Fossil Fuel and Cement Producers, 1854–2010*, CLIMATIC CHANGE 229 (2013).

prior hesitancy and engaging more directly with new scientific processes and outcomes. Litigants are also attempting to overcome federal displacement hurdles[23] that posed a barrier to successful outcomes in the first wave of litigation by grounding their claims more closely in state-based common law and statutory offenses.[24] Even if these renewed litigation efforts experience setbacks or are ultimately unsuccessful, corporations are likely to be the subject of increased regulatory and public scrutiny as a result.[25] Public opinion on climate change is already shifting, with the majority of Americans now "alarmed" or "concerned" about the issue.[26] Changing public opinion could shift political approaches to the issue, and incentivize federal regulatory action as already evidenced by the

[23] In the first wave of climate litigation, judges deferred to federal statutes such as the Clean Air Act, holding that the Clean Air Act displaces federal common law public nuisance actions. *See Am. Elec. Power Co.*, 564 U.S. at 424; *see also infra* Section II.A. In the second wave, litigants are relying on state-based claims but are facing preemption hurdles. Federal preemption is contained in the Supremacy Clause of the U.S. Constitution art. IV § 1. The two cornerstones of preemption are the purpose of Congress and a presumption against state action where Congress has already legislated. Wyeth v. Levine, 555 U.S. 555, 565 (2009). The common law has established two types of federal preemption: express preemption, where a federal statute explicitly states that state law is preempted; and implicit preemption, where there is no explicit preemption. Alan Untereiner, *The Defense of Preemption: A View from the Trenches*, 84 TUL. L. REV. 1257, 1259 (2010). Federal statutes can reserve state action and protect it from federal preemption by the use of savings clauses. The Clean Air Act has such a savings clause which has been an issue in the second wave of climate litigation. *See infra* note 133 and *infra* Section II.E.

[24] *See infra* Section II.E.

[25] *See* Sophie Marjanac et al., *Acts of God, Human Influence and Litigation*, 10 NATURE GEOSCIENCE 616, 616 (2017); Ganguly et al., *supra* note 21, at 842; Olszynski et al., *supra* note 21, at 21.

[26] Abel Gustafson et al., *Americans Are Increasingly "Alarmed" About Global Warming*, YALE PROGRAM ON CLIMATE CHANGE COMMUNICATION (Feb. 12, 2019), https://climatecommunication.yale.edu/publications/americans-are-increasingly-alarmed-about-global-warming/ [https://perma.cc/R6H9-VZ2U] (noting that six in ten Americans are either alarmed or concerned about climate change, with the proportion of Americans alarmed about climate change doubling from 2013 to 2018); although almost half of Americans are unwilling to pay for climate policies. *See* Adam Aton, *Most Americans Want Climate Change Policies*, SCI. AM. (Oct. 3, 2017), https://www.scientificamerican.com/article/most-americans-want-climate-change-policies/ [https://perma.cc/5MMB-U6PT] (noting that in a 2017 poll 7 out of 10 Americans believed climate change was happening but half would be unwilling to pay even $1.00 more on their electricity bills to lower emissions).

introduction of the Green New Deal in Congress,[27] and renewed efforts by Democrats in the U.S. House of Representatives on climate legislation.[28]

This second wave of litigation has important implications for directors of carbon-major corporations as it highlights the risks of climate change to corporations and the financial implications of those risks. The risks of climate change have become so great that they threaten corporate profits and international fiscal stability.[29] Directors must consider the financial implications of climate risks in order to comply with their fiduciary duties. Risks to corporations include transition and physical risks. Transition risks are those risks associated with the transition to a lower-carbon economy, such as policy or regulatory changes, as well as litigation, technology, market changes, and reputational risk.[30] Physical risks affect operational assets and supply chains and are driven by both slow impacts of climate change, such as a rising sea-level, as well as extreme weather events, such as droughts, wildfires, storms, and flooding. Risks specific to the energy industry include water

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[27] While light on detail at the moment, the Green New Deal proposal puts forward a series of actions to address both climate change and economic inequality, by decarbonizing the electricity grid, transportation systems, and industry. *See* H.R. Res. 109, 116th Cong. (2019).

[28] Ari Natter & Anna Edgerton, *Pelosi Says House to Revisit Climate Bill Based on 2009 Bill*, BLOOMBERG (Jan. 4, 2019, 10:10 AM), https://www.bloomberg.com/news/articles/2019-01-04/pelosi-says-house-to-revisit-climate-plan-based-on-2009-bill-jqiapimq [https://perma.cc/BL4J-RU2L].

[29] Mark Carney, in his position as the Governor of the Bank of England, highlighted the potential risks of climate change to both industries and international fiscal stability. He noted that climate change could negatively affect between four to forty-three trillion dollars of global assets by the end of the century. *See* THE ECONOMIST INTELLIGENCE UNIT, THE COST OF INACTION: RECOGNIZING THE VALUE AT RISK FROM CLIMATE CHANGE (2015), https://eiuperspectives.economist.com/sites/default/files/The%20cost%20of%20inaction_0.pdf [https://perma.cc/6X2E-MYLK]. Carney's 2015 speech to insurers in Lloyds of London stated that the risks of climate change are threefold: physical risks to insured assets, liability risks from litigation, and transition risks, including financial risks from changing regulatory requirements to transition to a lower-carbon economy. He also highlighted the role of initial law suits against pension fund managers of carbon major companies in elevating long-term risks of climate change and their implications for fiduciary duties. His speech at Lloyds of London in 2015 was the precursor to the establishment of the Task Force on Climate-Related Financial Disclosures by the G-20. Nina Chestney, *G20 Task Force Issues Framework for Climate-Related Financial Disclosure*, REUTERS (Jun 29, 2017, 12:08 AM), https://www.reuters.com/article/us-climatechange-financial-disclosure/g20-task-force-issues-framework-for-climate-related-financial-disclosure-idUSKBN19K0JW [https://perma.cc/39VU-TXW2].

[30] TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES, RECOMMENDATIONS OF THE TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES 5 (2017), https://www.fsb-tcfd.org/wp-content/uploads/2017/06/FINAL-TCFD-Report-062817.pdf [https://perma.cc/R2PY-QGWM].

shortages, melting permafrost affecting transportation routes, and damage to coastal energy infrastructure.[31]

Despite these risks, directors, officers, and their legal advisors justifiably may have been, and continue to be, operating under the view that corporate fiduciary duties either prevent or disincentivize directors from focusing corporate attention and resources on combatting climate change. In accordance with this view, some directors will have hesitated or declined to assess and address climate-related risks.[32] This is largely due to corporate law focusing almost exclusively on shareholders and shareholder profits.[33] Directors' fiduciary duties are duties imposed by statute and common law on directors, and owed by directors primarily to the corporation.[34] The shareholder wealth maximization norm is a powerful norm that has guided the interpretation of directors' duties under corporate law for many decades.[35] Like corporate law, it places shareholders, and their perceived need for profit maximization, at the heart of directors' duties.

This Article takes a different perspective and urges a contrary approach. Corporations will face increased legal responsibility as climate science improves, climate impacts escalate in frequency and severity, corporations and the public face increased risks, and public opinion shifts. Corporate fiduciary duties and the shareholder wealth maximization norm that guides their application compel directors to identify and assess the risks of climate change to the corporation, and may even incentivize directors to address these risks, particularly if they take a long-term management approach. While short-term business perspectives may still pose barriers to progressive climate action, new research is pointing to a business case for transitioning away from fossil fuels and towards cleaner energy sources, even for the largest carbon-major corporations. Businesses are also failing to address climate-induced risks and damage in the short-term as well. The business case for climate action, combined with the increased risks of climate change to corporations, should spur progressive action, even as fiduciary duties are interpreted under Delaware law

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[31] *Infra* Section IV.A. Climate change impacts will be felt across economies, and impacts will be differentiated across sectors. *See* Sarah Barker, *An Introduction to Directors' Duties in Relation to Stranded Asset Risks*, *in* STRANDED ASSETS AND THE ENVIRONMENT RISKS, RESILIENCE AND OPPORTUNITY 202 (Routledge 2018). Even within the fossil fuel industry some sectors have already been affected differently, with bankruptcies seen throughout the coal industry.

[32] *See* Milton Friedman, *The Social Responsibility of Business Is to Increase Its Profits*, N.Y. TIMES (Sept. 13, 1970), https://nyti.ms/1LSk9ku [https://perma.cc/XZT8-TC3G].

[33] *Id*.

[34] For example, the Model Business Corporation Act states that all directors shall act in good faith and in a manner that the director reasonably believes to be in the best interest of the corporation. MODEL BUS. CORP. ACT § 8:30(a) (AM. BAR ASS'N 2010). Likewise, Tennessee law states that directors shall discharge all duties in a manner the director reasonably believes to be in the best interests of the corporation. TENN. CODE ANN. § 48-18-301(a) (2019).

[35] *See* Joan Hemingway, *Shareholder Wealth Maximization as a Function of Statutes, Decisional Law and Organic Documents*, 74 WASH & LEE LAW REV. 939, 950–56 (2017).

(where most carbon-major corporations are headquartered). A climate-friendly approach should be viewed by directors not only as a response to risk, but also as part of a strategy to adapt to climate impacts in the short, medium, and long-term, and ensure profitability for shareholders.

Corporate action, moreover, is essential for dramatic and much-needed contributions to meeting global climate goals under the Paris Agreement. As Vandenbergh and Gilligan note, private environmental governance and corporate actions can achieve major greenhouse gas emission reductions in the face of government gridlock.[36] Corporate law can be an important tool to facilitate progressive climate action by corporations.[37] Identifying corporate law as a bridge and not a barrier to ambitious corporate climate action, therefore, has broad relevance. This Article illustrates that the road to meeting the Paris Agreement's climate goals could, in fact, run through Delaware-based corporate law.

This Article is structured as follows. Part I describes why climate change poses difficulties for corporate law, and why carbon-majors are the focus of renewed litigation efforts. Part II charts the evolving nature of climate litigation against these actors, including hurdles encountered in the tort-based first wave of climate litigation, and how the second wave of litigation is attempting to overcome these hurdles.[38] Part III examines new risks and responsibilities thrown up by this second

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[36] Michael P. Vandenbergh & Jonathan M. Gilligan, *Beyond Gridlock*, 40 COLUM. J. ENVTL. L. 217, 220 (2015) (identifying private environmental governance as actions by private organizations performed without government collaboration, delegation or outsourcing). In the existing government gridlock, Vandenbergh and Gilligan explain that while private actions are a second-best option to government action, these activities are critical and could reduce emissions by roughly 1,000 million tons of CO_2 per year between 2016-2025. *Id.*; *see also* Michael P. Vandenbergh, THE DRIVERS OF CORPORATE CLIMATE MITIGATION, *in* THE ENVIRONMENTAL FORUM 29 (2018); Michael P. Vandenbergh, PRIVATE ACTORS: PART OF THE PROBLEM, PART OF THE SOLUTION, *in* THE ENVIRONMENTAL FORUM 48 (2017).

[37] *See generally* Sarah E. Light, *The Law of the Corporation as Environmental Law*, 71 STAN. L. REV. 137 (2019) (arguing that corporate law should in fact be understood as a fundamental part of environmental law).

[38] This Article eschews a comprehensive comparative survey of climate litigation around the globe, as this work has already been undertaken by other scholars. *See, e.g.*, David Markell & J.B. Ruhl, *An Empirical Assessment of Climate Change in the Courts: A New Jurisprudence or Business as Usual?*, 64 FLA. L. REV. 15 (2012); UN ENVIRONMENT PROGRAMME, THE STATUS OF CLIMATE CHANGE LITIGATION: A GLOBAL REVIEW (2017), http://columbiaclimatelaw.com/files/2017/05/Burger-Gundlach-2017-05-UN-Envt-CC-Litigation.pdf [https://perma.cc/BNT5-JPLH]; DENA P. ADLER, COLUMBIA LAW SCHOOL SABIN CENTER FOR CLIMATE CHANGE LAW, U.S. CLIMATE CHANGE LITIGATION IN THE AGE OF TRUMP: YEAR ONE (2018), https://academiccommons.columbia.edu/doi/10.7916/d8-dg03-cm33 [https://perma.cc/E43C-F6R9]; Brian J. Preston, *Climate Change Litigation (Part 1),* 2011 CARBON & CLIMATE L. REV. 3 [hereinafter Preston, *(Part 1)*]; Brian J. Preston, *Climate Change Litigation (Part 2),* 2011 CARBON & CLIMATE L. REV. 244 [hereinafter Preston, *(Part 2)*]; R. Henry Weaver & Douglas A. Kysar, *Courting Disaster: Climate Change and*

wave of litigation by providing a synthesis of directors' duties under Delaware law and highlighting how these developments in climate litigation may (and should) affect corporate behavior in the context of climate risk. It also examines potential barriers to climate liability. Part IV charts a potential way forward for directors, highlighting the management tools and strategies that are available to them.

I. THE CHALLENGE OF CLIMATE CHANGE FOR CORPORATE LAW

Climate change poses significant issues for legal structures and governance. Climate change is highly polycentric, dynamic, uncertain, and socio-politically sensitive, and so poses challenges to legal orders which seek certainty and stability.[39] The structure of the law is subdivided into specific levels of governance and therefore is ineffective in governing a problem such as climate change, which has impacts on local, regional, and international scales.[40] Climate change has been described as a "super wicked" policy problem,[41] as it poses challenges to legal orders that are designed to create and maintain legal stability for traditional governance regimes.[42]

In addition, climate science is a particularly complex discipline. It involves elements of risk, probability, and, therefore, uncertainty. There are uncertain temporal delays between emissions and effects. And since it is impossible to run

the Adjudication of Catastrophe, 93 NOTRE DAME L. REV. 295 (2017); Michael C. Blumm & Mary Cristina Wood, *"No Ordinary Lawsuit": Climate Change, Due Process and the Public Trust Doctrine*, 67 AM. U. L. REV. 1 (2017); JACQUELINE PEEL & HARI M. OSOFSKY, CLIMATE CHANGE LITIGATION: REGULATORY PATHWAYS TO CLEANER ENERGY (2015). This Article focuses instead on the potential impacts of this litigation on corporations generally and on the nexus between climate risk and directors' fiduciary duties more specifically, as this is an under researched area of law in climate litigation scholarship. *See generally* Joana Setzer & Lisa C. Vanhala, *Climate Change litigation: A Review of Research on Courts and Litigants in Climate Governance*, 10 WILEY INTERDISCIPLINARY REVIEW: CLIMATE CHANGE 580 (2019) (identifying 130 articles on climate change litigation published between 200 and 2018 in order to understand and better situate emerging themes of climate change litigation). It is important to note that corporations themselves are not passive players in this arena and have been active in litigation efforts, acting as plaintiffs in a number of suits. It is also important to note that some corporations have been progressive and proactive in the climate change arena, and so not all carbon-major corporations can be classed as "laggards." However, this Article focuses on a small subset of cases where carbon major corporations are defendants in order to assess the implications of these cases for directors' fiduciary duties.

[39] Elizabeth Fisher et al., *The Legally Disruptive Nature of Climate Change*, 80 MOD. L. REV. 173, 174 (2017).

[40] Hari M. Osofsky, *Is Climate Change "International"? Litigation's Diagonal Regulatory Role*, 49 VIRGINIA J. INT'L L. 586, 591 (2009).

[41] Richard Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153, 1159 (2009).

[42] Fisher et al., *supra* note 39, at 176.

controlled experiments, the discipline is heavily dependent upon climate models.[43] As Fisher et al. note, "[t]he dynamic nature of climate change does not sit easily with legal orders that value stability and legal certainty."[44] These are difficult areas for judges to wrap their arms around and may explain previous judicial reticence in engaging with climate change and climate science in particular.

A. The Failure of Corporate Law to Address Climate Change

Climate change challenges legal orders, and this dynamic is further highlighted within the realm of corporate law and its application to carbon-major corporations. Corporate law is traditionally designed to focus on shareholders and profit-making, with non-shareholders being relegated to the realm of environmental law or some other non-corporate legal arena.[45] Environmental issues, including climate change, are traditionally viewed as beyond the responsibility and remit of corporate law. Transnational carbon-major corporations have been largely unregulated in terms of their greenhouse gas (GHG) emissions,[46] and corporate law has been an underused tool to incentivize emissions reduction.[47] Most carbon-major corporations

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[43] *Id.* at 179.

[44] *Id.* at 181.

[45] Shareholder primacy and contractarian theories have consistently argued that externalities are more appropriately catered for by welfare laws and environmental or other regulations outside of the realm of corporate law. They argue that corporate law should focus solely on shareholders and shareholder wealth maximization. *See* Friedman, *supra* note 32; Frank H. Easterbrook & Daniel R. Fischel, *The Corporate Contract*, 89 COLUM. L. REV. 1416, 1446–48 (1989); Jonathan R. Macey, *An Economic Analysis of the Various Rationales for Making Shareholders the Exclusive Beneficiaries of Corporate Fiduciary Duties*, 21 STETSON L. REV. 23, 26–39 (1991); Jonathan R. Macey & Geoffrey P. Miller, *Corporate Stakeholders: A Contractual Perspective*, 43 U. TORONTO L. J. 401, 401–07 (1993); Henry Hansmann & Reinier Kraakman, *The End of History for Corporate Law*, 89 GEO. L.J. 439, 440–43 (2000) [hereinafter Hansmann & Kraakman, *The End of History for Corporate Law*]; Henry Hansmann & Reinier Kraakman, *The Essential Role of Organizational Law*, 110 YALE L. J. 387, 390 (2000); Henry Hansmann & Reinier Kraakman, *What Is Corporate Law?*, *in* THE ANATOMY OF CORPORATE LAW 1, 13 (Reinier Kraakman et al. eds., 2004); Stephen M. Bainbridge, *Director Primacy: The Means and Ends of Corporate Governance*, 97 NW. U. L. REV. 547, 591 (2002) [hereinafter Bainbridge, *Director Primacy*]; Stephen M. Bainbridge, *In Defense of the Shareholder Wealth Maximization Norm: A Reply to Professor Green*, 50 WASH. & LEE L. REV. 1423, 1430–31 (1993) [hereinafter Bainbridge, *In Defense*]; William W. Bratton, Jr., *The New Economic Theory of the Firm: Critical Perspectives from History*, 41 STAN. L. REV. 1471, 1480 (1989); David Millon, *Redefining Corporate Law*, 24 IND. L. REV. 223, 223–27 (1991). *See generally* Lucian A. Bebchuk, *Letting Shareholders Set the Rules*, 119 HARV. L. REV. 1784, 1784–86 (2006); Ronald J. Gilson, *Separation and the Function of Corporation Law*, 2 BERKELEY BUS. L. J. 141, 144–47 (2005).

[46] Lisa Benjamin, *The Responsibilities of Carbon Major Companies: Are They (and Is the Law) Doing Enough?*, 5 TRANSNAT'L ENVTL. L. 353, 353–54 (2016).

[47] *Id.* at 375–76; Lisa Benjamin, *The Duty of Due Consideration in the Anthropocene: Climate Risk and English Directorial Duties*, 11 CARBON & CLIMATE L. REV. 90, 93–96

traditionally approach emissions reductions as a voluntary and largely ethical initiative, and part of broader corporate social responsibility aims.[48] Climate change is a particularly intractable problem for these types of corporations as efforts to reduce or internalize the costs of GHG emissions undermines their business models.[49] GHG emissions are treated as a negative externality by corporate law, a cost to be pushed outside of the corporation and absorbed by society.[50] Climate change is the "mother of all externalities"[51] or "perhaps the greatest negative meta-externality ever imposed by economic systems on the natural world,"[52] and one that corporate law has traditionally been unwilling to address. Corporate law has encouraged the outsourcing of negative externalities beyond the responsibility of the corporation, as this approach is more profitable.[53] Carbon-majors are a major source of GHG emissions, but they have not yet been held legally responsible for their contributions to climate change.

B. *Why Carbon-Majors?*

Carbon-majors have become the focus of a new wave of climate litigation. There are several reasons why they have attracted renewed legal attention. Only a small number of carbon-major corporations contribute a large amount of GHG emissions.[54] The concentration of these entities into large, transnational groups, combined with their long history in the industry, make them accountable entities in terms of the quantity of their historical emissions. They have continued to operate around the globe largely unregulated in terms of their GHG emissions.[55] Lack of

(2017); SARAH BARKER ET AL., DIRECTORS' PERSONAL LIABILITY FOR CORPORATE INACTION ON CLIMATE CHANGE 21 (2015), https://static1.squarespace.com/static/569da6479cadb6436a8fecc8/t/56e211bb27d4bd91a217cd88/1457656252528/Directors_liability_inaction_February_2015.pdf [https://perma.cc/7XEU-G2EB]; Beate Sjafjell, *Why Law Matters: Corporate Social Irresponsibility and the Futility of Voluntary Climate Mitigation*, 8 EUR. COMPANY L. 56, 61–64 (2011).

[48] Benjamin, *supra* note 46, at 368–70.

[49] *Id.* at 357–58; Sjafjell, *supra* note 47, 56–58; Jim Krane, *Climate Change and Fossil Fuel: An Examination of Risks for the Energy Industry and Producer States*, 4 MRS ENERGY & SUSTAINABILITY: REV. J. 1, 5–8 (2017).

[50] An externality is a cost or benefit which is externalized outside of the corporation. A negative externality is a cost.

[51] Richard S. J. Tol, *The Economic Effects of Climate Change*, 23 J. ECON. PERSPECTIVES 29, 29 (2009).

[52] Rosetta Lombardo & Giovanni D'Orio, *Corporate and State Social Responsibility: A Long-Term Perspective*, 3 MOD. ECON. 91, 92 (2012).

[53] Benjamin, *supra* note 46, at 354–58.

[54] Heede, *supra* note 22, at 234.

[55] Peter C. Frumhoff et al., *The Climate Responsibilities of Industrial Carbon Producers*, 132 CLIMATIC CHANGE 157, 158–62 (2015).

regulatory oversight may be another reason for the recent emergence of litigation against these entities.[56]

New scientific processes have clearly identified the monumental contributions corporate emissions have made to climate change and related negative impacts.[57] These new scientific processes can identify the specific contributions corporations have made to climate change, making them a clearer target for litigation as well as, independent of litigation, regulatory attention. New scientific studies challenge the prevailing assumption that corporate law should not consider and address the contributions of corporations to climate change.[58] The studies demonstrate that corporate actors are the primary cause of historical emissions and clearly articulate their factual responsibility. These corporations also have high levels of scientific and technical expertise, and thus were in a position to understand and act on available climate data. Rather than acting on this new data, however, many of the corporations in the United States, Canada, Australia, and the United Kingdom sought to discredit and disparage scientific evidence and lobbied to prevent policies that encouraged a transition away from fossil fuels.[59]

In addition, and combined with increased litigation and regulatory risks, the impacts of climate change are mounting, and directors, as well as investors such as institutional investors and financiers, are now encouraged to view climate risk in a bidirectional manner – considering both the contributions of corporations to climate impacts but also the significant impacts and risks climate change poses to their businesses. These risks are particularly acute for carbon-major corporations, and investors are becoming concerned. Carbon-majors' deceptive approach to climate change, combined with their substantial presence in the value chain and high exposure to climate risk, makes them "prime litigation targets."[60] New scientific

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[56] Hari M. Osofsky & Jacqueline Peel, *Energy Partisanship*, 65 EMORY L.J. 695, 717–18 (2016).

[57] *See infra* Section II.B.

[58] Heede, *supra* note 22, at 229–30.

[59] Frumhoff et al., *supra* note 55, at 159–63. The Union of Concerned Scientists also enumerate the decades-long campaign described in internal corporate documents carried out by a handful of carbon-major corporations such as Chevron, BP, Shell, Conoco Philips, ExxonMobil and Peabody Energy to deceive the American public by distorting the realities and risks of climate change, block policies designed to hasten the transition to clean energy, and carry out a coordinated campaign to spread climate misinformation in order to maintain their profitability. *See generally* KATHY MULVEY & SETH SHULMAN, UNION OF CONCERNED SCIENTISTS, THE CLIMATE DECEPTION DOSSIERS: INTERNAL FOSSIL FUEL MEMOS REVEALED DECADES OF CORPORATE DISINFORMATION (2015), https://www.ucsusa.org/sites/default/files/attach/2015/07/The-Climate-Deception-Dossiers.pdf [https://perma.cc/TYH3-HB2L] (providing a summary of seven "deception dossiers" of internal company and trade association documents that have been leaked to the public as part of a coordinated campaign to allegedly spread climate misinformation and block climate action).

[60] Sonja van Renssen, *Courts Take on Climate Change*, 6 NATURE CLIMATE CHANGE 655, 656 (2016).

studies, combined with the increasing risk of climate change to society and corporations, have helped to make carbon-majors the focus of climate litigation.

II. THE EVOLUTION OF CLIMATE LITIGATION

The first wave of climate litigation against carbon-major corporations faced a number of hurdles.[61] These included problems in proving causation under tort law, how to identify an appropriate class of defendants and issues of standing,[62] the

[61] This first wave of litigation focuses on a select group of cases where carbon-major corporations stood as defendants, but it should be noted that there have been a number of pro- and anti- regulation suits in the United States as well. For example, in *Massachusetts v. Envtl. Prot. Agency (EPA)*, 549 U.S. 497 (2007), the U.S. Supreme Court explicitly accepted climate science and ushered in a regulatory mandate for the EPA to regulate GHG emissions under the Clean Air Act. *See* Melissa Powers, *Country Report: USA Climate Change in the Supreme Court*, 2012 IUCN ACADEMY ENVTL. L.J. 245, 246 (2012) (noting that the outcome of *American Electric Power Co. v. Connecticut*, 564 U.S. 410 (2011), could have been influenced by the changing regulatory context of climate change under the Obama Administration).

[62] While this Article does not deal with issues of standing in depth, standing issues did occur in the first wave of litigation. The U.S. Supreme Court has interpreted Article III of the U.S. Constitution as requiring that, in order to have standing to bring a case in federal court, the plaintiff must establish: (i) the plaintiff has suffered an injury in fact; (ii) that injury is fairly traceable to the defendant's misconduct; and (iii) the injury is capable of being redressed by the court. Massachusetts v. EPA, 549 U.S. 497, 517 (2007); Lujan v. Def. of Wildlife, 504 U.S. 555, 560–61 (1992). The Murphy Oil case is a notable example of both issues of standing and causality in the context of suits against carbon major corporations, though the case is ultimately unhelpful due to a number of procedural oddities that took place. *See* Comer v. Murphy Oil USA, 585 F.3d 858 (5th Cir. 2009). The plaintiffs in *Murphy Oil* sued a number of corporations, including insurance corporations, carbon major corporations, and banks, for damages wrought by Hurricane Katrina. The plaintiffs targeted carbon major corporations due to their contributions to climate change, which the plaintiffs claimed led to the unprecedented strength of the storm. The plaintiffs pointed to the knowledge of carbon major corporations about climate change and their lack of action to use technology or their profits to combat it. *Id.* at 864–65. While the district court dismissed the case for various reasons, including lack of standing, an appellate panel in the U.S. Court of Appeals for the Fifth Circuit concluded that the plaintiffs had standing to bring claims of public and private nuisance, trespass and negligence, which all depended on a causal link between emissions and destruction of their property. *Id.* at 879–80. The Fifth Circuit panel relied on *Massachusetts v. EPA*, which acknowledged a plausible link between man-made emissions and global warning. *Id.* at 865–866 (citing Massachusetts v. EPA, 549 U.S. 497 (2007)). On top of this standing conclusion, the panel's causation analysis is also notable in that the court accepted, at the pleadings stage at least, a fairly traceable connection between the alleged injury in fact and the alleged conduct of the defendant for standing purposes. *Murphy Oil*, 585 F.3d at 879–80. According to the panel, traceability in this context did not require the demonstration of scientific certainty that the corporations' emissions caused the precise harm suffered by the plaintiffs. Instead, the court recognized that injuries could be

political question doctrine,[63] as well as the difficulty in linking harm to a particular person or entity caused by specific emissions from one state or one company.[64] Causation requires that plaintiffs demonstrate a causal connection between the harm suffered and the actions of the defendant. Causation remains factually difficult, if not impossible, to prove due to the disparate nature of GHG emissions, and so remains a challenge for litigation against corporations, even in the second wave of litigation. Emissions of GHGs from different sources mix in the atmosphere and have impacts all over the globe. As a result, this process of mixing makes attributing a particular harm to a particular emitter difficult, if not impossible. This creates significant hurdles for plaintiffs in tort-based actions, although new scientific processes are closing the causation gap. This section will focus on judicial reluctance to take on the complexity of climate science, and judicial preference to defer the issue to legislative bodies based on, among other issues, federal displacement arguments in the first wave of climate litigation. These difficulties have, in the past, created insurmountable barriers for tort-based litigation suits against corporations. This section will demonstrate how litigants are attempting to dismantle these two hurdles in the second wave of climate litigation.

A. Hurdles in the First Wave of Climate Litigation

The first wave of cases against carbon-majors failed primarily due to the federal displacement doctrine – that federal legislation such as the Clean Air Act displaces federal common law. A number of courts in the United States preferred to defer the issue, instead, to legislative bodies. Judges were also reluctant and/or poorly equipped to deal with the complexities of climate science.

Two major cases in the first wave of litigation were *American Electric Power Co. v. Connecticut (AEP)*[65] and *Native Village of Kivalina v. ExxonMobil Corp. (Kivalina)*.[66] These cases illustrate judicial inadequacies when dealing with climate

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fairly traceable to actions that contributed to, rather than solely or materially caused, greenhouse gas emissions and global warming. *Id.* at 864–66.

These initial wins for the *Murphy Oil* plaintiffs were short-lived, however. The panel's decision in *Murphy Oil* was vacated when the Fifth Circuit agreed to an *en banc* review. Although the court agreed to hear the *en banc* panel, it was unable to form a quorum and thus dismissed the case, and the panel's decision remained vacated. Comer v. Murphy Oil, 607 F.3d 1049, 1053–55 (5th Cir. 2010).

[63] The political question doctrine states that courts will only adjudicate matters of law and will refrain from adjudicating matters which are determined to be political questions which are best left to the legislature, as stipulated in the Supreme Court's decision in *Marbury v. Madison*, 5 U.S. 137 (1803). *See, e.g.*, City of Oakland v. B.P., 325 F. Supp. 3d 1017, 1028 (N.D. Cal. 2018), *appeal pending*, No. 18-16663 (9th Cir. argued Feb. 5, 2020).

[64] *See* Preston, (*Part 1)*, *supra* note 38, at 7; Josephine van Zeben, *Establishing a Governmental Duty of Care for Climate Change Mitigation: Will Urgenda Turn the Tide?*, 4 TRANSNAT'L ENVTL. L. 339, 348 (2015).

[65] 564 U.S. 410.

[66] 696 F.3d 849 (9th Cir. 2012).

science, as well as a judicial reluctant to adjudicate such a systemic issue as climate change. Some of these hurdles are being challenged in the second wave of climate litigation.

AEP was a public nuisance suit brought by eight states and New York City against six electric and utility corporations. The plaintiffs argued that the emissions of these corporations interfered with public rights and asked the court to impose declining emission caps on these entities in order to reduce emissions.[67] The Supreme Court rejected the claim, holding that the Clean Air Act "displaced" any federal nuisance action dealing with climate change.[68] Justice Ginsburg, writing for a unanimous Court, wrote that there was no "parallel track" for federal nuisance claims on climate change.[69] This definitive statement by the Supreme Court effectively closed the door to future federal nuisance common law claims on climate change,[70] even though the EPA had not taken comprehensive action on climate change at the time.[71]

AEP also illustrates the judicial reluctance, or "skittishness,"[72] of the courts in dealing with climate change disputes and climate science. Burkett notes the regressive approach of the Court in acknowledging climate science, as the Court in *AEP* cited a skeptical magazine article in the same context as multiple peer-reviewed articles, going on to make a "facile indictment"[73] of all living, breathing individuals as contributing to climate change. The reluctance of the judiciary to appropriately cater for climate science, in this case, stands in contrast to newer judicial attitudes to climate science illustrated in the second wave of climate litigation. The *AEP* case

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[67] *Am. Elec. Power Co.*, 564 U.S. at 418–19.

[68] *Id.* at 423; *see also* James Flynn, *Climate of Confusion: Climate Change Litigation in the Wake of American Electric Power v. Connecticut*, 29 GA. ST. U. L. REV. 823, 846 (2013); Fredric Eisenstate, American Electric Power Company v. Connecticut*: How One Less Legal Theory Available in the Effort to Curb Emissions Is Actually One Step Forward for the Cause*, 25 TUL. ENVTL. L.J. 221, 222 (2012); Phillip Divisek, *Climate Change Torts:* American Electric Power v. Connecticut, 7 MACQUARIE J. INT'L & COMP. ENVTL. L. 108, 108 (2011).

[69] *Am. Elec. Power Co.*, 564 U.S. at 425.

[70] Flynn, *supra* note 68, at 856; Divisek, *supra* note 68, at 109.

[71] The Court in *AEP* held that plaintiffs' nuisance claims were displaced by the Clean Air Act regardless of whether the "EPA actually exercises its regulatory authority," and "[t]he critical point is that Congress delegated to EPA the decision whether and how to regulate carbon-dioxide emissions . . . the delegation is what displaces federal common law." *Am. Elec. Power Co.*, 564 U.S. at 425–26. *But see* Flynn, *supra* note 68, at 847–48 (arguing that the Clean Air Act only addresses domestic air resources whereas the impacts of climate change are more complex, exceeding impacts on air, and are also transboundary). This may point to a general reluctance by the judiciary to tackle what they considered to be a political issue.

[72] Maxine Burkett, *Climate Justice and the Elusive Climate Tort*, 121 YALE L.J. ONLINE 115, 118 (2011).

[73] *Id.* This approach lies in stark contrast to *Massachusetts v. EPA*, where the Supreme Court easily accepted climate science. 549 U.S. at 521–22.

also revealed the concerns of the judiciary over acting as arbiters of scientific debates.[74] The enormity of the issue of climate change and its implications for industrial development may also have been decisive factors for courts in the first wave of climate litigation. Courts have been reluctant to make definitive findings of fact about climate change and are sensitive to climate change policy being the purview of legislative bodies.[75]

In *Kivalina,* the Alaskan Native Village of Kivalina brought a suit for public nuisance against twenty-two fossil-fuel producers.[76] The Village claimed that these corporations contributed to climate change, which led to the dramatic reduction of the Arctic sea ice that had previously sheltered their homes from winter storms.[77] In September 2012, the Ninth Circuit affirmed the district court's dismissal of their claim, concluding that common law tort claims had been "displaced" by federal legislation.[78] The decision did not address the district court's refusal to determine what acceptable levels of emissions by the corporate defendants should be and who should bear the costs of those emissions.[79] The *Kivalina* decision suggests that *AEP* will continue to apply to all federal U.S. climate change tort claims, regardless of the specified remedy.[80] Powers notes that *AEP* effectively foreclosed the use of federal tort law to mitigate climate change.[81] Both *AEP* and *Kivalina* laid bare the

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[74] Osofsky & Peel, *supra* note 56, at 766.

[75] For example, the Court in *AEP* asserted that courts "lack the scientific, economic, and technological resources [of] an agency . . . " to regulate climate change. *Am. Elec. Power Co.* 564 U.S. at 428. As another example, in *People v. General Motors Corp.,* California lost its suit against major automobile manufacturers for impacts from climate change partly due to the court determining it was not able to impose damages without unreasonably encroaching onto global issues. No. C06-05755 MJJ, 2007 WL 2726871, at *16 (N.D. Cal. Sept. 17, 2007); *see* Ganguly et. al., *supra* note 21, at 12; Weaver & Kysar *supra* note 38, at 325 (stating that courts were overwhelmed by the sheer complexity and size of the climate change problem); James Huffman, *Previously Unrecognized Rights: Climate Change Lawsuits and the Rule of Law*, QUILLETTE (Oct. 30, 2018), https://quillette.com/2018/10/30/previously-unrecognized-rights-climate-change-lawsuits-and-the-rule-of-law/ [https://perma.cc/8A69-GCN2].

[76] Native Vill. of Kivalina v. ExxonMobil Corp., 696 F.3d 849 (9th Cir. 2012).

[77] *Id.* at 855; *see* Flynn, *supra* note 68, at 836; Peter Manus, Kivalina *at the Supreme Court: A Lost Opportunity for Federal Common Law*, 8 PITT. J. ENVTL. & PUB. HEALTH L. 223, 225 (2014).

[78] *Kivalina*, 696 F.3d at 858. In May 2013, the Supreme Court denied the plaintiffs' petition for certiorari without comment, leaving the Ninth Circuit decision intact. Native Vill. of Kivalina v. ExxonMobil Corp., 696 F.3d 849 (9th Cir. 2012), *cert. denied*, 569 U.S. 1000 (2013); *see* Karine Péloffy, Kivalina v. ExxonMobil: *A Comparative Case Commentary*, 9 MCGILL INT'L J. SUSTAINABLE DEV. L. POL'Y 119, 122 (2013).

[79] *Kivalina*, 696 F.3d at 854 (affirming the district court's holding that these "were matters more appropriately left for determination by the executive or legislative branch").

[80] Quin M. Sorenson, Native Village of Kivalina v. Exxonmobil Corporation: *The End of "Climate Change" Tort Litigation?*, 44 ABA TRENDS 1, 6 (2013).

[81] Powers, *supra* note 61, at 245.

judicial preference in U.S. courts to ensure that climate change is decided by the legislature.[82] This judicial preference persists in the second wave of climate litigation and, as a result of these cases, federal common law nuisance claims on climate change against corporations still face tremendous hurdles. Litigants in the second wave of climate litigation have attempted to dismantle these hurdles, with varying levels of success. Litigants have started to draft their claims in order to avoid the federal displacement doctrine.[83] They have also been assisted by new scientific

[82] Flynn, *supra* note 68, at 837.

[83] For example, a class action suit was launched by young people in the U.S. District Court for the District Court of Oregon, claiming that the actions of the federal government that caused climate change, as well as the government's inaction to prevent it, had violated the plaintiffs' Fifth Amendment Due Process rights by denying protection provided to previous generations, by favoring economic short-term interests and denying future generations of essential natural resources, including a safe climate. Juliana v. United States, 217 F. Supp. 3d 1224, 1233–34 (D. Or. 2016), *rev'd and remanded*, 947 F.3d 1159 (9th Cir. Jan. 17, 2020). At the time of writing, the case was proceeding to a request for a Ninth Circuit en banc review. Petition for Rehearing En Banc, *Juliana*, 947 F.3d 1159 (9th Cir. Jan. 17, 2020) (No.18-36082). However, industry intervenors had already withdrawn, partly due, according to Blumm and Wood, to concerns about having to respond to disclosure requests. Despite their withdrawal being granted, Blumm and Wood argue that exposure of the relationship between government and the fossil fuel industry will prove to be one of the more devastating outcomes of the case. Blumm & Wood, *supra* note 38, at 28, 55 (citing Order at 5, *Juliana*, 217 F. Supp. 3d at 1224 (No. 6:15-cv-01517-TC)). Blumm and Wood also note *Juliana*'s use of the public trust doctrine (PTD), which would be exempted from the federal displacement doctrine, which only applies to federal common law claims, whereas the District Court recognized the PTD as an "inherent limit on sovereignty and implicit in the Constitution's due process clause." *Id.* at 51–52 (citing *Juliana*, 217 F. Supp. 3d at 1261). If successful, the regulatory implications of this case would be vast and, as a result, it has been called the "trial of the century." *See* Peter Singer, *The Trial of the Century, Fighting for a Healthier Planet*, THE DAILY STAR (Sept. 15, 2018, 12:09 AM), https://www.dailystar.com.lb/ArticlePrint.aspx?id=463429&mode=print [https://perma.cc/DFG3-QSH8]. The procedural elements of the case are extremely complex. As part of these proceedings, Chief Justice Roberts granted a temporary halt in response to a request by the federal government to stay the case. *In re* United States, 139 S. Ct. 16, *vacated*, 139 S. Ct. 452 (2018); *see also* Michael Blumm & Mary Wood, *These Kids and Young Adults Want Their Day in Court on Climate Change*, THE CONVERSATION (Oct. 26, 2018, 6:44 AM), http://theconversation.com/these-kids-and-young-adults-want-their-day-in-court-on-climate-change-105277 [https://perma.cc/8VV3-6PZP]. However, the stay was subsequently lifted. *In re* United States, 139 S. Ct. 452, 453 (2018). An oral hearing was held in front of the Ninth Circuit on June 4, 2019. *See* Oliver A. Houck, *The Children's Climate Case: Our Obligation to Future Generations*, THE HILL (Nov. 6, 2018), https://thehill.com/opinion/energy-environment/415307-the-childrens-climate-case-our-obligation-to-future-generations [https://perma.cc/YR9D-8RCS]. In January 2020, the Ninth Circuit ruled 2-1 to dismiss the lawsuit. *Juliana*, 947 F.3d at 1175. While the court accepted climate science and that urgent action was needed, it dismissed the suit on the basis of lack of standing based on the inability of the court to provide redress. *Id.* Judge Josephine Staton's dissent in the case, however, is notable. *See Juliana*, 947 F.3d at 1175–91 (Staton, J. dissenting). Class action suits by young people were also

processes and developments which have clearly attributed the majority of historical GHG emissions to carbon-major corporations, and judges have started to engage more confidently with this new climate science.

B. New Scientific Processes

Recent developments in scientific processes have identified the contributions of carbon-majors to climate change and provided an impetus to renewed climate litigation efforts. In 2013, Richard Heede published a groundbreaking quantitative analysis of historic fossil fuel and cement production records of 90 leading investor-owned, state-owned, and nation-state producers of oil, natural gas, coal, and cement. His study concluded that these 90 carbon-major entities were responsible for 63% of cumulative worldwide industrial emissions of carbon dioxide and methane from 1854–2010.[84] Investor-owned entities contributed the majority of these emissions, 315 gigatonnes, followed closely by nation-states, and state-owned fossil fuel and cement-producing entities.[85] The twenty largest investor- and state-owned energy corporations were responsible for 29.5% of all global industrial emissions, and the ten largest investor-owned corporations alone were responsible for 15.8% of global industrial emissions through 2010.[86]

Heede's analysis has been revolutionary in terms of its ability to attribute a percentage of global emissions to these entities. Heede's work has been a motivating factor in the second wave of litigation around the world against these entities, and it has been referred to in almost every new suit launched against carbon-major corporations.[87] Heede's research demonstrates the gap between scientific attribution and legal assignment of responsibility. The law has so far fallen behind scientific progress in the context of corporate climate emissions and, therefore, corporate accountability. Whether or not Heede's factual accountability can be translated into legal accountability is unclear, particularly within tort law.

Heede's carbon-major study has been further developed by probabilistic event attribution science, often called attribution science.[88] This discipline is developing

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launched in 2018 in: Canada, Environnement Jeunesse v. Procureur Général du Canada, [2018] No. 500-06; Florida, First Amended Complaint, Reynolds v. Florida, No. 18-CA-000819 (Dec. 26, 2018); Washington, Aji P. v. Washington, No. 18-2-04448-1-SEA (Wash. Super. Ct. Aug. 14, 2018); and Alaska in 2017, Sinnok v. Alaska, No. 3AN-17-09910 (Alaska Super. Ct. Oct. 30, 2018).

[84] Heede, *supra* note 22, at 234.

[85] *Id.*

[86] *Id.*

[87] *See, e.g.*, Hasemyer, *supra* note 7.

[88] *See* GABRIELE C. HEGERL ET AL., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE [IPCC], GOOD PRACTICE GUIDANCE PAPER ON DETECTION AND ATTRIBUTION RELATED TO ANTHROPOGENIC CLIMATE CHANGE 2–7 (Thomas Stocker et al. eds., 2009), http://www.ipcc-wg2.awi.de/guidancepaper/IPCC_D%26A_GoodPracticeGuidancePaper.

quickly and is able to attribute the multiplying contribution of climate change to particular extreme events, although attribution science is more confident in certain areas than others.[89] Event attribution relies on observational records to determine changes in probability or magnitude of climate-related events and uses model simulations to compare the manifestation of an event in a world with human-caused climate change and a world without.[90] It does this by constructing factual and counterfactual probabilities or worlds. A factual probability is one where an event occurs in the currently observed world as it exists in the context of climate change, and a counterfactual probability occurs in a hypothetical "control" world without human influence on the climate.[91] By comparing the real-world events to the hypothetical ones, climate scientists can predict which events were caused, at least in part, by climate change.

This new process of attribution science has been applied to corporate actors as well and has the potential to impact legal tests such as causation. Therefore, attribution science is likely to inspire future litigation efforts against these actors. Fossil fuel corporations are becoming an increasing focal point of attribution efforts,

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pdf [https://perma.cc/DMS3-XGB7] (reviewing the effect climate change is having on the earth via attribution theory and providing for methodology, different approaches, and data usage of the attribution based analysis); *see also* NATHANIEL L. BINDOFF ET AL., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE [IPCC], DETECTION AND ATTRIBUTION OF CLIMATE CHANGE FROM GLOBAL TO REGIONAL (Judit Bartholy et al. eds., 2018), https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter10_FINAL.pdf [https://perma.cc/G5PU-PC5E] (discussing the detection and attribution evaluation methodologies and the effect attribution has on climate change). The National Academies Press recently published a report on the state of attribution science, stating that scientific understanding of climate and weather mechanisms is improving, and as a result rapid progress is being made in event attribution. NAT'L ACAD. OF SCI., ENG'G, & MED., ATTRIBUTION OF EXTREME WEATHER EVENTS IN THE CONTEXT OF CLIMATE CHANGE 1, 6–7 (National Academies Press 2016).

[89] Confidence in attribution studies is strongest where there exist long historical records of observations which can be simulated adequately by climate models. These tend to be purely meteorological events which are not strongly influenced by issues such as infrastructure and population trends, or in circumstances where other factors can be carefully and reliably considered. The findings are strongest for extreme events related to aspects of temperature, such as extreme heat or cold events and heavy rainfall, and tend to be less robust for tropical cyclones, wildfires and drought. *See* NAT'L ACAD. OF SCI. ENG'G, & MED., *supra* note 88, at 1–13.

[90] *Id.* at 2–3.

[91] *Id.* at x (noting the first attribution study was published in 2004 regarding the European heatwave in 2003, and estimated that the summer was 0.5°C warmer); s*ee also* Peter A. Stott et al., *Human Contribution to the European Heatwave of 2003*, 432 NATURE 610, 610–14 (2004). Event attribution science has progressed tremendously since that date, with Daniel Mitchell et al.'s study being able to now attribute a certain number of deaths during the heatwave to human induced climate change. *See* Daniel Mitchell et al., *Attributing Human Mortality During Extreme Heat Waves to Anthropogenic Climate Change*, 11 ENVTL. RESEARCH LETTERS 1 (2016).

building on the initial work by Heede, in relation to specific temperature increases and sea-levels. Heede's work has been expanded by Ekwurzel et al., who recently published a paper tracing the contributions of emissions by several carbon-major corporations to the rise in global mean surface temperatures. Their paper determined that the combustion of products from 90 carbon-major entities from 1880–2010 led to 0.4°C increase in global mean surface temperatures, constituting 50% of the total global increase during this time period.[92] Combustion from 1980–2010 led to a 0.28°C rise, constituting 35.1% of total global mean surface temperature increase during that period.[93] Their models are scalable and allow for the testing of the relative contributions of these entities, even at individual levels for the largest emitters (Chevron, ExxonMobil, Saudi Aramco, and Gazprom).[94] They are also able to trace increments of sea-level rise to the combustion of fossil fuel products from these entities, which has direct relevance to the recent cases launched in the second wave of climate litigation where government entities are claiming abatement costs for sea-level rise.[95]

These new studies make great headway in closing the causation gap highlighted in the first wave of climate litigation. Developments in attribution science have the potential to "change the legal landscape,"[96] leading to implications for directors with legal duties to consider and avoid foreseeable harm. Improvements in attribution science are proving foreseeability, which is key to establishing a tort-based duty of care.[97] These studies make the connection between corporate emissions and their harm very clear. Evidence from attribution science will catalyze future climate change litigation, and may inform common law-based litigation of directors' and officers' liability.[98] Indeed, despite the lack of federal legislative progress on climate change in the United States, a second wave of climate litigation against carbon-major companies has already begun in earnest, as the next Section discusses. While cases

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[92] B. Ekwurzel et al., *The Rise in Global Atmospheric CO_2 Surface Temperature, and Sea Level from Emissions Traced to Major Carbon Producers*, 144 CLIMATIC CHANGE 579, 585 (2017).

[93] *Id.*

[94] *Id.* at 582, 586–88 (noting three sources of uncertainty: equilibrium climate sensitivity; the short-term effects of fossil fuel aerosols; and the policy relevance of different time periods of historical emissions).

[95] *Id.* at 586–88 (clarifying that their work is not designed to assign responsibility, an issue which they reserve for societal judgment). They do acknowledge that the tools of attribution science are being applied to characterize specific damages resulting from specific players in anthropogenic climate change, and therefore societal judgments should be informed by the ongoing scientific analysis.

[96] Marjanac et al., *supra* note 25, at 616.

[97] *Id.*

[98] *Id.* (noting that probabilistic evidence is already accepted in U.K. occupational exposure to toxic substances cases where causation has been proved when the evidence demonstrates a 'doubling-of-the-risk' test, that the risk was increased by a factor of 2:1); *see e.g.*, XYZ v. Schering [2002] EWHC 1420 (UK); Sienkiewicz v. Greif [2011] UKSC 10 (UK).

in the first wave were unsuccessful, cases in the second wave are using multiple legal tools and attempting to scale the hurdles encountered in the first wave of litigation. In addition, judges in these cases are demonstrating more willingness to acknowledge and manage climate science.

C. The Second Wave of Climate Litigation: Hurdling the Hurdles

A number of new suits were launched primarily by government actors in 2017 and 2018 in the United States and around the world. In this second wave, climate litigation is taking a variety of forms, including using tort law, public and private nuisance, human rights, and the public trust doctrine.[99] Newer cases against corporations have also employed fiduciary duty and security law disclosure requirements or statutory offenses,[100] highlighting a turn to corporate law in the second wave of litigation. Litigants in the second wave are also attempting to overcome the federal displacement hurdle by citing state-based claims and breaches of other state legislation.[101]

Tort-based claims are evolving, and attribution science may be influencing both their initiation and outcomes.[102] For example, in 2017, a case in Germany, *RWE v Lliuya*, found the possibility of a causal and proximate relationship between the emissions of a German energy company, RWE, and climate damage experienced in Peru.[103] The plaintiff cited Heede's calculations that RWE was responsible for

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[99] Preston, *(Part 1)*, *supra* note 38, at 4; Preston, *(Part 2)*, *supra* note 38, at 258; Blumm &Wood, *supra* note 38, at 73–83.

[100] For example, New York's Martin Act, N.Y. GEN. BUS. LAW §§ 352–353 (McKinney 2019) has been relied up on by the Attorney General of New York to investigate and sue ExxonMobil. *See* Decision and Order at 2, People of the State of New York v. ExxonMobil Corporation, No. 451962 (N.Y. Sup. Ct. Oct. 26, 2016). The Martin Act is a New York anti-fraud law which provides the Attorney General with expansive powers of investigation into securities fraud. *See* N.Y. GEN. BUS. LAW § 352–353. In December 2019 the court ruled against New York on its Martin Act claim against Exxon. *See* John Schwartz, *New York Loses Climate Change Fraud Case Against Exxon Mobil,* N.Y. TIMES (Dec. 10, 2019), https://nyti.ms/2sdIAYF [https://perma.cc/8BWX-YJFC].

[101] *See supra* notes 9–17.

[102] Weaver & Kysar, *supra* note 38, at 339 (arguing that courts should be re-examining the parameters of tort law considering the catastrophic impacts of climate change).

[103] *See Lliuya v. RWE AG*, CLIMATE CASES CHART, http://climatecasechart.com/non-us-case/lliuya-v-rwe-ag/ [https://perma.cc/W8TF-7DHZ] (last visited Oct. 8, 2019); *see also* Stefan Küper, *Higher Regional Court Hamm*: *Large Emitters Can Be Held Liable for Climate Change Impacts*, GERMANWATCH, (Nov. 13, 2017), https://germanwatch.org/en/14702 [https://perma.cc/V5YE-29FM]. Mr. Lliuya's house sits downhill of a glacial lake, Lake Palcococha. Mr. Lliuya alleged that the volume of the lake has increased from 10 m^3 in the 1930s to 17.3 m^3 in 2016, with glacial melt directly contributing to its increased volume. He also alleged that his home is vulnerable to glacial outbursts—inundations of the natural moraine dams surrounding the lake that would lead to flood waves, possibly reaching over 3 meters. *See* Landgericht [LG] [Essen District Court] Dec. 15, 2016, 2vOv285/15 (Ger.),

0.47% of all historic emissions, and therefore asked for 0.47% of the total costs of remediation actions taken in Peru.[104] On appeal, the Appellate Hamm Court agreed with the plaintiffs, provisionally accepting arguments that it was sufficient that RWE was partially responsible for the flood risk.[105] The case was able to overcome, at least in principle, one of the most intractable legal hurdles to date in terms of tort-based actions against corporations: causation. The civil law jurisdiction of Germany is far removed from common law jurisdictions, such as the United States, and the case may remain an outlier for some time. Despite this, the outcome of the *RWE* case demonstrates that some jurisdictions are willing to base their decisions on new scientific processes and illustrates how the evolution of climate science could affect future U.S. lawsuits.

D. Managing Climate Science

In 2017 and 2018, government entities launched suits against a number of carbon-major corporations. While most of these cases are still at their procedural or initial substantive stages, issues of causation and federal versus state jurisdiction have already been implicated. This second wave of cases can be divided into two

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translation in CLIMATE CASES CHART, http://blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/non-us-case-documents/2016/20161215_Case-No.-2-O-28515-Essen-Regional-Court_decision.pdf [https://perma.cc/S9JV-9PY4] (last visited Mar. 30, 2020) [hereinafter Lliuya v. RWE AG, Essen District Court Decision, English Translation]. He based his claim on paragraph 1004 of the Germany Civil Code, which deals with interference with property. *See id.*

[104] *See* Lliuya v. RWE AG, Essen District Court Decision, English Translation, *supra* note 103. Mr. Lliuya alleged that his abatement costs requested amounted to approximately €17,000 (approximately USD$19,000). *Id.* The first decision in the District Court of Essen dismissed the claim for the usual tort-based causation hurdles. The District Court stated that the lack of precision made the claim inadmissible, and RWE's contribution to climate change was not sufficient to establish legal causality, citing the lack of linear causality between a particular source and particularized damage. *Id.* Similar to *AEP*, Am. Elec. Power Co. v. Connecticut, 564 U.S. 410 (2011), the court also mentioned that every living person is an emitter, and referred to the chain of causation as "scientifically disputed." *Id.*

[105] *Lliuya v. RWE AG*, CLIMATE CASE CHART, *supra* note 103. The case will now move on to the evidentiary phase, and the court has requested expert evidence in two areas: that the flood/mudslide resulting from expansion of water posed serious threats to Mr. Lliuya's property, and whether RWE's emissions rose into the atmosphere and according to the laws of physics led to higher concentrations of GHGs in the Earth's atmosphere. *Id.*

groups, the first brought by the cities of New York,[106] Oakland, and San Francisco,[107] which have made a more limited set of claims and where initial substantive decisions have already been made. The second group of claims has been brought by a number of cities and counties in California, as well as other government entities around the United States,[108] based on a broader set of claims but where no substantive decisions have yet been made.

In the first group of cases, New York City claimed, in federal court, that the City had incurred, and would continue to incur, substantial costs due to climate change, and that the largest five fossil fuel companies should be responsible for these costs as they were responsible for approximately 11% of carbon and methane pollution and had downplayed the risks of climate change.[109] New York's claim was sited upon both public and private nuisance law, as well as illegal trespass due to sea-level rise. In July 2018, the U.S. District Court for the Southern District of New York granted a motion to dismiss filed by the defendant companies on the basis that federal common law governed the City's claims, as they were based on transnational emissions, and their claims were displaced by the Clean Air Act and presented nonjusticiable political questions.[110] The case demonstrates how difficult a hurdle the federal displacement issue is to overcome.

In the Oakland and San Francisco cases, the plaintiffs filed suit in state court against the same five carbon-major corporations, seeking abatement, not damages, for the costs to them of adapting to sea-level rise induced by climate change on the basis of public nuisance.[111] One of the more interesting aspects of the case was that, after the cases were consolidated and removed by the defendants to federal court, the judge ordered a tutorial on climate change that took place in March 2018. Judge Alsup requested specific information on the history of the scientific study on climate change, as well as on the best science now available on global warming, glacial melt,

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[106] *See generally* City of New York v. BP P.L.C., 325 F. Supp. 3d 466 (S.D.N.Y. 2018) (detailing litigation action from the City of New York against the collective defendants for the general affects they have had on the environment), *appeal pending*, No. 18-2188 (2d Cir. argued Nov. 22, 2019).

[107] City of Oakland v. BP P.L.C., 325 F. Supp. 3d 1017, 1019 (N.D. Cal. 2018) (dismissing Oaklands and San Francisco's public nuisance action), *appeal pending*, No. 18-16663 (9th Cir. argued Feb. 5, 2020).

[108] Complaint at 75–94, City of Imperial Beach v. Chevron Corp., C17-01227 (Cal. Super. Ct. July 17, 2017), Doc. 1; Complaint at 95–118, City of Santa Cruz v. Chevron Corp., 18-cv-0458 (Cal. Super. Ct. Dec. 20, 2017), Doc 1; Complaint at 90–111, City of Richmond v. Chevron Corp., C 18-00055 (Cal. Super. Ct. Jan. 22, 2018), Doc. 1; Complaint at 78–97, Cty. of San Mateo v. Chevron Corp., 17-CIV-03222 (Cal. Super. Ct. July 17, 2017) Doc. 1; Complaint at 79–98, Cty. of Marin v. Chevron Corp., CIV-17-02586 (Cal. Super. Ct. July 17, 2017), Doc 1; *see also infra* Section II.C.

[109] *City of New York v. BP*, 325 F. Supp. 3d at 471.

[110] *Id.* at 471–72. An appeal is currently pending in the U.S. Court of Appeals for the Second Circuit, and oral arguments were held in November 2019. City of New York v. BP P.L.C., No. 18-2188 (2d Cir. argued Nov. 22, 2019).

[111] *City of Oakland*, 325 F. Supp. 3d at 1021, 1024.

sea rise, and coastal flooding.[112] The request for a scientific tutorial in a federal lawsuit was called "unprecedented."[113] This innovative approach to climate science may usher in a new approach in U.S. cases of judicial assessment and acknowledgment of climate science, including attribution science. The case demonstrated a more sophisticated judicial approach to climate science than was demonstrated in the first wave of climate litigation.

Judge Alsup's understanding of climate science is reflected in the judgment, which clearly stated that the case was not about climate science but about the law, "whether these producers of fossil fuels should pay for anticipated harm that will eventually flow from a rise in sea level."[114] Ultimately, his answer was no, and the court dismissed the claim in June 2018, based on a number of grounds, including the federal displacement doctrine, and that the issue was largely a political one.[115] The court also applied the Restatement (Second) of Torts' definition of public nuisance: an unreasonable interference with a right common to the general public.[116] Whether the interference was unreasonable under the Restatement's test depended in part on weighing the harm of the conduct against the utility of the conduct. Judge Alsup found that it was necessary to consider the social value of fossil fuels, which outweighed the harm of the conduct.[117] The *Oakland* judgment illustrates that, in this second wave of climate litigation against corporations, judges are able and willing to assess complex climate science. But the case also illustrates that both the federal displacement doctrine, combined with judicial reluctance to adjudicate corporate climate harms, is alive and well in U.S. jurisprudence against carbon-major corporations and will remain a stumbling block in federal common law claims.[118]

In both the New York City and the Oakland and San Francisco cases, the courts rejected the plaintiffs' attempts to invoke state common law to avoid the federal displacement doctrine. In *City of New York*, the court noted that the "City has not

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[112] *Id.*; *see also* California v. BP P.L.C., No. C-17-06011 WHA and No. C-17-06012 WHA (Feb. 27, 2018) (Notice Re Tutorial). Both Chevron's lead attorney and Myles Allen for the plaintiff (and co-author of the original attribution study in 2004), presented to the judge. Chevron's attorney stated that the company acknowledged that humans are playing a major role in climate change, but instead his presentation focused on the scientific uncertainty in the IPCC AR5 reports, particularly around sea-level rise. The roles of population growth and economic development were also stressed. *See* Warren Cornwall, *In a San Francisco Courtroom, Climate Science Gets Its Day on the Docket*, SCI. MAG. (Mar. 22, 2018, 4:00 PM), https://www.sciencemag.org/news/2018/03/san-francisco-court-room-climate-science-gets-its-day-docket [https://perma.cc/9ZL7-473U].

[113] Cornwall, *supra* note 112.

[114] *City of Oakland*, 325 F. Supp. 3d at 1022.

[115] *Id.* at 1024.

[116] *Id.* at 1024 (citing RESTATEMENT (SECOND) OF TORTS § 821B(1) (AM. LAW INST., 1979)).

[117] *Id.* at 1023.

[118] The case has been appealed to the Ninth Circuit. City of Oakland v. BP P.L.C., No. 18-16663 (9th Cir. argued Feb. 5, 2020).

sued under New York law," and its claims were properly analyzed as federal common law claims and were therefore displaced by the Clean Air Act.[119] In contrast, the plaintiffs in *Oakland* expressly brought their original claims under California public nuisance law and in state court, but the defendants nevertheless successfully removed the case to federal court and convinced the federal judge that federal common law governed the claims.[120] In denying the plaintiffs' motion to remand the case to the state level,[121] Judge Alsup commented that if ever a problem "cried out for a uniform and comprehensive solution" at the federal level, it is climate change.[122] The lack of success in the attempts by Oakland, San Francisco, and New York to invoke state law was a fatal flaw for the initial substantive decisions in this first group of cases and has been taken into account by litigants the second group of cases. Most of the claims in the second group specifically ground their actions in a wider set of claims, including state-based common law and statutes.[123]

E. Avoiding Federal Displacement

The second group of cases brought by California cities and counties attempts to avoid the federal displacement doctrine by making a more diverse set of claims grounded in state law, including public and private nuisance, strict liability for failure to warn customers of the dangers of climate change, design defect, negligence, and trespass.[124] These suits were patterned more closely on tobacco and

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[119] City of New York v. BP P.L.C., 325 F. Supp. 3d 466, 474 (S.D.N.Y. 2018), *appeal pending*, No. 18-2188 (2d Cir. argued Nov. 22, 2019).

[120] *City of Oakland*, 325 F. Supp. 3d at 1021.

[121] *Id.*

[122] Order Denying Motion to Remand at 4, ¶ 26, California v. BP P.L.C., No. C 17-06011 WHA and No. C 17-06012 WHA (N.D. Cal. Feb. 27, 2018).

[123] *See* Complaint at 75–94, City of Imperial Beach v. Chevron Corp., No. C17-01227 (Cal. Super. Ct. Jul. 17, 2017), Doc. 1; Complaint at 99–122, Cty. of Santa Cruz v. Chevron Corp., No. 17-cv-03242 (Cal. Super. Ct. Dec. 20, 2017), Doc. 1; First Amend. Complaint at 89–94, King Cty. v. BP P.L.C., No. 2:18-cv-00758-RSL (W.D. Wash. Aug. 17, 2018), Doc. 113; Complaint at 115–139, Rhode Island v. Chevron Corp., No. PC-2018-4716 (R.I. Super. Ct., Providence/Bristol Cty., July 2, 2018); Complaint at 107–129, Mayor of Baltimore v. BP P.L.C., No. 24-C-18-004219 (Md. Cir. Ct., Baltimore City, July 20, 2018).

[124] *See supra* note 123. New York City had also framed their claim as being based on the sales and production of fossil fuels, rather than emissions, but the court rejected this. *See* City of New York v. BP P.L.C., 325 F. Supp. 3d 466, 471–72 (S.D.N.Y. 2018) (holding that New York's climate nuisance claims were displaced, reasoning that "regardless of the manner in which the City frames its claims . . . the City is seeking damages for global-warming related injuries resulting from greenhouse gas emissions, and not only the production of Defendants' fossil fuels"). The original complaint in *Rhode Island v. Chevron Corp.* cites the percentage of total emissions that the defendants as a group are responsible for from the years 1965 to 2015 and, while the plaintiffs acknowledge no linear causation is possible, the claim states that attribution to each defendant of a quantifiable amount of carbon

asbestos litigation.[125] In both the tobacco and asbestos litigation, products that were later understood to create severe health and environmental risks, and where product manufacturers both knew and attempted to disguise the risks of their products, attracted liability. In the tobacco litigation, tobacco company defendants adopted a "scorched earth"[126] litigation strategy, vigorously defending all of the suits against them. Even though the original tobacco litigation suits were unsuccessful, the litigation inspired legislative changes and eventually led to successful litigation.[127] Analogies can also be drawn with litigation recently launched by cities, counties, and states' attorneys general against manufacturers and distributors of opioids.[128] A

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emissions is possible, therefore allowing attribution of ambient air and ocean temperatures, as well as sea-level rise, in response to those emissions on an individual and aggregate basis. *See* Complaint at 4, Rhode Island v. Chevron Corp., No. PC-2018-4716 (R.I. Super. Ct. July 2, 2018). This is the first time specific attribution science for specified temperature increases and sea-level rise has been cited in a case against a carbon major entity in the United States. However, unlike in *City of Oakland v. BP P.L.C.*, the judge in *Rhode Island v. Chevron Corp.* has not requested a "climate tutorial." Rhode Island v. Chevron Corp., 393 F. Supp. 3d 142 (D. R.I. 2019) (Order Granting Motion to Remand).

[125] *See generally* Olszynski et al., *supra* note 21 (tracking the similarities between tobacco and climate litigation and noting that tobacco norms that evolved over time closely tied to evolving scientific understandings of tobacco's impacts on human health). Olszynski et al. describe the "scorched earth" approach that tobacco companies initially adopted in responding to personal injury litigation. The initial tobacco suits by plaintiffs all failed, in part due to tobacco's vigorous litigation strategies which denied the impact of smoking on human health. However, as the link between smoking and lung cancer evolved, so did corporate strategies, shifting to personal responsibility defenses. Olszynski et al. look a decade into the future, characterized by mounting climate damages and in that context highlight the similarities between tobacco litigation and climate litigation against carbon major corporations. *Id.* at 10-21; *see also* Ganguly et al., *supra* note 21, at 17 (noting that *United States v. Philip Morris USA, Inc.*, 449 F. Supp. 2d 1 (D.D.C. 2006) demonstrated that governments could recover health and environmental related costs). Similarities with asbestos litigation can also be noted. Pursuant to Fairchild v. Glenhaven Funeral Ltd. [2002] UKHL 22, a leading U.K. torts case, a plaintiff who contracted asbestos while working for different employers was able to recover from one defendant on the basis of joint and several liability, because the defendant had materially increased the risk of harm, even though the plaintiff was unable to pinpoint which employer had directly caused the harm. *See also* David A. Grossman, *Warming Up to a Not-So-Radical Idea: Tort-Based Climate Change Litigation*, 28 COLUM. J. ENVTL. L. 1, 22–31 (2003); Michael Gerrard, *What Litigation of a Climate Nuisance Suit Might Look Like*, 12 SUSTAINABLE DEV. L. & POL'Y 11, 12–14, 56 (2012).

[126] Olszynski et al., *supra* note 21, at 10.

[127] Gerrard, *supra* note 125, at 18; Olszynski *supra* note 21, at 12–14; Douglas Kysar, *Fossil Fuel Industry's 'Tobacco Moment' Has Arrived*, YALE L. SCH. (July 28 2017), https://law.yale.edu/fossil-fuel-industrys-tobacco-moment-has-arrived [https://perma.cc/C4A5-55DR].

[128] Nicole Fisher, *Opioid Lawsuits on Par to Become Largest Civil Litigation Agreement in U.S. History*, FORBES (Oct. 18, 2018, 6:52 PM),

key distinction between all of these other litigation efforts and climate litigation is the widespread use and reliance on fossil fuels for global development, and this issue was key to Judge Alsup's decision in the Oakland and San Francisco dismissal.[129]

Despite these numerous hurdles, some Californian cities and counties have been procedurally successful at having their claims heard at the state and not the federal level. For example, Judge Chhabria in the U.S. District Court for the Northern District of California agreed to remand *County of San Mateo v. Chevron Corp.*, to the state level.[130] In his order, Judge Chhabria noted that *AEP* did not resolve the issue of whether *state* law claims were preempted by federal statutes such as the Clean Air Act.[131] In his view, once federal common law is displaced by a federal statute, it is no longer possible that state law claims could be superseded by federal common law. In other words, federal law does not preclude the plaintiffs from asserting state law claims. Further, according to Judge Chhabria, federal law does not govern the plaintiffs' claim, and therefore this case could avoid the federal displacement doctrine.[132] The decision cites only a few instances where federal law will preclude state law, and only narrow circumstances justify removing a state law case to federal court.[133]

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https://www.forbes.com/sites/nicolefisher/2018/10/18/opioid-lawsuits-on-par-to-become-largest-civil-litigation-agreement-in-u-s-history/ [https://perma.cc/RV5D-4FEF]; Joanna Walters, *Sackler Family Members Face Mass Litigation and Criminal Investigations over Opioid Crisis*, GUARDIAN, (Nov. 19, 2018, 12:01 AM), https://www.theguardian.com/us-news/2018/nov/19/sackler-family-members-face-mass-litigation-criminal-investigations-over-opioids-crisis [https://perma.cc/UR2P-WPVW] (noting the Sackler family which own Purdue Pharma, one of the manufacturers of OxyContin, is facing class action litigation); Cassandra Bassler, *Suffolk County Sues Purdue Pharma Family over Opioids*, NPR NEWS (Oct. 25, 2018), https://www.wshu.org/post/suffolk-county-sues-purdue-pharma-family-over-opioids#stream/0 [https://perma.cc/U8U7-AZBV].

[129] City of Oakland v. BP P.L.C., 325 F. Supp. 3d 1017, 1022 (N.D. Cal. 2018) ("The scope of plaintiffs' theory is breathtaking. It would reach the sale of fossil fuels anywhere in the world, including all past and otherwise lawful sales, where the seller knew that the combustion of fossil fuels contributed to the phenomenon of global warming."), *appeal pending*, No. 18-16663 (9th Cir. argued Feb. 5, 2020).

[130] Cty. of San Mateo v. Chevron Corp., 294 F. Supp. 3d 934, 938 (N.D. Cal 2018), *appeal filed sub nom.*, Cty. of Marin v. Chevron Corp., No. 18-15503 (9th Cir. Mar. 27, 2018).

[131] *Cty. of San Mateo*, 294 F. Supp. 3d at 937.

[132] *Id.*

[133] The opinion cites instances of "complete pre-emption" by a specified federal statute. *Id.* It also cites the *Grable* jurisdiction as requiring the defendants to cite specific instances of federal law. *Id.* at 938. The opinion also notes that the savings clause in the Clean Air Act "preserve[s] *state* causes of action and suggest[s] that Congress did not intend federal causes of action . . . 'to be exclusive.'" *Id.* at 938 (emphasis added); *see also* 42 U.S.C. §7604(e) (2018) (Clean Air Act Savings Clause). The Clean Water Act contains a similar savings clause. *See* 33 U.S.C. §§1365(e), 1370 (2018).

The *County of San Mateo* opinion provides important insights into how other claims made against carbon-major corporations in the second group of cases, and also future cases, may be decided. In 2018, U.S. states and cities filed several new suits that have not yet resulted in orders or judgments. In April 2018, the Board of County Commissioners of Boulder County, Colorado, along with the City of Boulder, initiated several claims against carbon-major companies for public and private nuisance, trespass, deceptive trade practices, and violations of the Colorado Consumer Protection Act.[134] In May 2018, King County in Washington State filed a suit against the five largest fossil fuel corporations for coastal harms, flooding, storm surge and decreased mountain snowpack.[135] In July 2018, the State of Rhode Island and the Mayor and City of Baltimore filed similar suits against fossil fuel companies citing public and private nuisance, strict liability for failure to warn and design defect, negligence design defect, and breaches of the Rhode Island State Environmental Rights Act[136] and Maryland Consumer Protection Act.[137] Litigants in this second group are clearly responding to the failure of the first wave and crafting their pleadings more directly to invoke state law.

In all of these cases, the corporate defendants submitted motions (with varying degrees of success) to remove the cases to federal court on the grounds that they involved a significant question of federal common law and federal energy law policies.[138] Federal preemption of state law claims is likely to be a significant issue

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[134] Board of Cty. Comm'rs of Boulder Cty. v. Suncor Energy (U.S.A.), Inc., 405 F. Supp. 3d 947, 954–55 (D. Colo. Sept. 5, 2019), *appeal filed*, No. 19-1330 (10th Cir. Sept. 9, 2019). This case was filed in Colorado state court in April 2018. First Complaint, Board of Cty. Comm'rs of Boulder Cty. v. Suncor Energy (U.S.A.) Inc., No. 2018CV30349 (Dist. Ct., Cty. of Boulder, Colo., filed April 17, 2018). However, the case was removed by the defendants to federal court in June 2018. Notice of Removal, *Board of Cty. Comm'rs of Boulder Cty.*, 405 F. Supp. 3d at 954 (No. 1:18-cv-01672). In September 2019, the U.S. District Court for the District of Colorado granted the Plaintiff's motion to remand to state court. *Board of Cty. Comm'rs of Boulder Cty.*, 405 F. Supp. 3d at 954. For a full history of this case, see Board of County Commissioners of Boulder County v. Suncor Energy (U.S.A.), Inc., SABIN CTR., http://climatecasechart.com/case/board-of-county-commissioners-of-boulder-county-v-suncor-energy-usa-inc/ [https://perma.cc/VT9M-FCYH] (last visited Nov. 10, 2019).

[135] First Amended Complaint at 1, King Cty. V. BP P.L.C., No. 2:18-cv-00758-RSL (W.D. Wash. Aug. 17, 2018) Doc. 113.

[136] Complaint at 115–139, Rhode Island v. Chevron Corp., No. PC-2018-4716 (R.I. Super. Ct., Providence/Bristol Cty., filed July 2, 2018).

[137] Complaint, Mayor of Baltimore v. BP P.L.C., No. 24-C-18-004219 (Md. Cir. Ct., Baltimore City, filed July 20, 2018). In addition, in November 2018 a group of crab fishermen in California sued 30 oil and gas companies for damage to their livelihoods due to global warming induced algae blooms which have shortened the crab season. *See* Complaint at 1, Pacific Coast Fed'n of Fishermen's Ass'ns, Inc. v. Chevron Corp., No. CGC-18-571285 (Cal. Super. Ct. Nov. 14, 2018).

[138] *See, e.g.*, Mayor of Baltimore v. BP P.L.C., 388 F.Supp.3d 538 (D. Md. 2019) (No. 1:18CV02357), *aff'd*, No. 19-1644 (4th Cir. Mar. 6, 2020) (remanding from federal court to

in all of these cases and, therefore, a number of these cases may stand or fall together. In October 2018, King County was granted its request for a stay in proceedings until the Ninth Circuit appeal of the San Francisco and Oakland case was decided.[139] In March 2020, the appeal by carbon-majors to remove the Baltimore suit to federal court was denied by the U.S. Court of Appeals for the Fourth Circuit. The Fourth Circuit affirmed the district court's remand order that the suit remain in state court.[140] Courts in some of the recent climate cases have agreed that state common law claims are not completely preempted, because the Savings Clause in the Clean Air Act's Citizen Suit section "preserve[s] *state* causes of action and suggest[s] that Congress did not intend federal causes of action . . . to be exclusive."[141]

While these cases are at the appellate and preliminary stages, respectively, they do provide evidence of a growing trend of corporate climate litigation in the United States—the increasing reliance on climate attribution science and state-based claims. Moreover, the Third Circuit case of *Bell v. Cheswick Generating Station* demonstrates that federal preemption under the Clean Air Act may not be a bar to state-based claims.[142] This case could be applied to GHG emissions, allowing state common law-based claims regarding intrastate emissions, but it would likely not apply to interstate emissions.[143] If this analysis is correct, then the federal preemption

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state court); Rhode Island v. Chevron Corp., 393 F.Supp. 3d 142, 146 (D.R.I. 2019) (No. 1:18-cv-00395-WES-LDA) (remanding from federal court to state court).

[139] *See* Order Granting Partially Unopposed Motion to Stay Proceedings at 2–3, King Cty. v. BP P.L.C., No. 2:18-cv-00758 (W.D. Wash. Oct. 17, 2018), Doc. 138.

[140] Mayor of Baltimore v. BP P.L.C., No. 19-1644 (4th Cir. Mar. 6, 2020), *aff'g* 388 F.Supp.3d 538 (D. Md. 2019).

[141] Cty. of San Mateo v. Chevron Corp., 294 F. Supp. 3d 934, 938 (N.D. Cal 2018) (emphasis added); *see also* Mayor of Baltimore v. BP P.L.C., 388 F.Supp.3d 538, 553–55 (D. Md. 2019), *aff'd*, No. 19-1644 (4th Cir. Mar. 6, 2020).

[142] 734 F.3d 188 (3d Cir. 2013), *cert. denied*, 572 U.S. 1149 (2014). In *Bell*, a community surrounding a Pennsylvania power-generating station complained that fly ash and unburned coal settled on their property, causing a considerable nuisance. The U.S. Court of Appeals for the Third Circuit held that the Clean Air Act did not preempt the plaintiffs' case. The case pointed specifically to the savings clause of the Clean Air Act, which preserves causes of action despite the comprehensive scope of the Act, allows states to adopt or enforce more progressive standards for emissions, and specifically also allows citizen suits. *Id.* at 197 (discussing 42 U.S.C. §7604(e) (2012)). For an analysis of *Bell*, see generally, Samantha Caravello, Bell v. Cheswick Generating Station, 38 HARV. ENVTL. L. REV. 465 (2014) (analyzing the Third Circuit's Decision and arguing that the decision served important functions).

[143] *Bell* followed a case revolving around the savings clause under the Clean Water Act, (the savings clause under the Clean Water Act is largely similar to that of the Clean Air Act), *International Paper Co. v. Ouellette*, 479 U.S. 481, 494 (1987). *Ouellette* states that while the Clean Water Act's savings clause allows states to impose higher standards on water sources within their borders, and individuals are not preempted from bringing claims under state law, it only applies to sources of pollution within that state and not to pollution sources within a different state.

hurdle will have been removed. However, the *Bell* case also creates difficulties. Even if they are successful in avoiding federal preemption, state-based claims are unlikely to be successful given the international and interstate nature of GHG emissions.[144]

In order for these new common law tort suits to be successful on the argument around interstate emissions, courts and plaintiffs will likely need to take a more innovative approach to tort law. State tort law can fill the gap in the statutory regime by providing a compensatory remedy to individuals, which the Clean Air Act does not.[145] This is illustrated by a new development in the second wave of corporate climate litigation—one industry suing another industry over climate impacts. In 2018, the Pacific Coast Federation of Fishermen's Association submitted a claim based on public state-based nuisance, negligence, strict liability, and failure to warn against a number of carbon-major corporations for damage caused to their industry from the impacts of climate change.[146] A number of academics are skeptical of the utility of tort law in climate litigation,[147] and Kysar has suggested that climate change, due to its diffuse and disparate nature and effects, constitutes a "paradigmatic antitort."[148] However, the legally disruptive nature of climate change

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[144] For example, the district courts in the New York and Oakland cases rejected Plaintiffs' attempts to avoid dismissal by arguing that emissions are occurring globally and are thus not entirely addressed by the Clean Air Act. The courts explained that even if the Clean Air Act did not displace claims alleging harm from international emissions, such claims would still be barred by the presumption against extraterritoriality, which counsels against "unwarranted judicial interference" when a claim "reaches conduct within the territory of another sovereign." *See* City of Oakland v. BP P.L.C., 325 F. Supp. 3d 1017, 1025 (N.D. Cal. 2018) (quoting Kiobel v. Royal Dutch Petroleum Co., 569 U.S. 108, 117 (2013)), *appeal pending*, No. 18-16663 (9th Cir. argued Feb. 5, 2020); *see also* City of New York v. BP, P.L.C., 325 F. Supp. 3d 466, 475 (S.D.N.Y. 2018) ("[T]o the extent that the City seeks to hold Defendants liable for damages stemming from foreign greenhouse gas emissions, the City's claims are barred by the presumption against extraterritoriality . . . ."), *appeal pending*, No. 18-2188 (2d Cir. argued Nov. 22, 2019).

[145] Caravello, *supra* note 142, at 475.

[146] Complaint at 76–89, Pacific Coast Fed'n of Fishermen's Ass'ns, Inc. v. Chevron Corp., No. CGC-18-571285 (Cal. Super. Ct. Nov. 14, 2018). See the full history of this case at Pacific Coast Federation of Fishermen's Associations, Inc. v. Chevron Corp., SABIN CTR., http://climatecasechart.com/case/pacific-coast-federation-of-fishermens-associations-inc-v-chevron-corp/ [https://perma.cc/TC5R-VAKG] (last visited Nov. 10, 2018).

[147] *See generally* Eric Biber, *Climate Change and Backlash*, 17 N.Y.U. ENVTL. L.J. 1295 (2009) (arguing that climate change policy is made more difficult to craft due to the delayed effects of climate change); Laurence H. Tribe et al., *Too Hot for Courts to Handle Fuel Temperature, Global Warming and the Political Question Doctrine* (Wash. Legal Found. Critical Legal Issues Working Paper Series No. 169, 2010), https://s3.us-east-2.amazonaws.com/washlegal-uploads/upload/legalstudies/workingpaper/012910Tribe_WP.pdf [https://perma.cc/24BJ-HGTF] (detailing a number of issues of climate change litigation focused around two major problems stemming from concerns about temperature and its chemical and climactic effects).

[148] Donald Kysar, *What Climate Change Can Do About Tort Law,* 41 ENVTL. L. 1, 3–4 (2011).

could mean that tort law will evolve to take into account climate change.[149] Developments in climate science show the contributions of companies to climate impacts and may be sufficient to overcome causation hurdles.[150]

Even if these cases are not successful, climate litigation could serve as a series of "prods and pleas,"[151] effectively calling attention to the inadequacies of existing legal approaches to climate change. Kysar notes that even if climate litigation efforts fail, the use of tort law can contribute to a larger ecosystem of governance institutions, and judicial engagement helps frame litigants' suffering and calls public attention to the issue.[152] The effects of climate change are certainly being felt in the cities and states bringing the suits, with large financial consequences for government entities, which are having to pay for adaptation actions, even if the emissions are being made elsewhere.[153] The international nature of emissions did not hinder the Court in the *RWE* case in Germany,[154] and that case could eventually influence U.S. courts as well.

International judicial decisions are referring to and relying on each other, and consequentially inspiring further climate litigation in other jurisdictions. Indeed, the plaintiffs in *RWE* referred to the Dutch *Urgenda* case, itself an example of "progressive legal reasoning and development" and "ambitious evolution of doctrine,"[155] particularly in the area of causation.[156] The 2015 *Urgenda* case neatly glided over the causation hurdles of past cases by stating that a sufficient causal link can be presumed to exist between Dutch emissions and global climate change, even

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[149] Fisher et al., *supra* note 39, at 190.

[150] *See supra* Section II.B.

[151] *See generally* Benjamin Ewing & Douglas A. Kysar, *Prods and Pleas: Limiting Government in an Era of Unlimited Harm*, 121 YALE L.J. 350 (2011) (evaluating three potential obstacles to merits adjudication in the context of how federal and state tort law interacts with climate change).

[152] Douglas A. Kysar, *The Public Life of Private Law: Tort Law as a Risk Regulation Mechanism*, 9 EUR. J. RISK REG. 48, 50 (2018).

[153] *See* Complaint at 3–6, Pacific Coast Fed'n of Fishermen's Ass'ns, Inc. v. Chevron Corp., No. CGC-18-571285 (Cal. Super. Ct. Nov. 14, 2018) (describing the deprivation of substantive portions of revenue for crab fisheries as well as wholesalers and processers during the 2015–2018 seasons, as well as indirect losses such as loss of commercial fishing lifestyles, identity, and loss of public confidence in the safety and quality of crab products).

[154] 5. Zivilsenat des Oberlandesgericht Hamm [OLG] [Fifth Division for Civil Matters of the Higher Regional Court of Hamm] Nov. 30, 2017 (Ger.)

[155] Fisher et al., *supra* note 39, at 191.

[156] *See The Urgenda Climate Case Against the Dutch Government,* URGENDA, https://www.urgenda.nl/en/themas/climate-case [https://perma.cc/6FS5-LCFX] (last visited Sept. 29, 2019). The *Urgenda* case was brought by a Dutch nongovernmental organization (NGO) claiming that the Dutch state should, by 2030, reduce its GHG emissions by at least 25% below 1990 levels, which would achieve the proportion of emissions agreed in an EU burden-sharing emissions agreement. The NGO was successful, and the government appealed. The English translation of the case is forthcoming.

though Dutch emissions constitute a small fraction of global emissions.[157] In October 2018, the Hague Court of Appeal affirmed, finding that failure of the Dutch government to reduce its emissions to 25% below 1990 levels by 2030 would constitute a breach of the European Convention on Human Rights.[158] The original decision in 2015 had already inspired similar litigation in the European Union and beyond,[159] and the appellate decision is likely to lead to progressive regulatory change within the EU.

The interaction between these judgments discussed above points to a global conversation carried on by courts on the issue of causation, whether through torts, constitutional human rights, or private law mechanisms. Whether the *RWE* case's approach to partial causation will be relied upon in the United States or cases in other jurisdictions against carbon-major corporations remains to be seen. Nonetheless, it seems likely that, as European courts and courts in other countries hold carbon majors accountable, U.S. localities, nongovernmental organizations (NGOs), and individuals will continue to pursue claims in U.S. courts. Further, multinational corporations such as carbon-majors are sensitive to progressive decisions in other jurisdictions due to the global reach of their operations.[160] Litigation risk will persist for carbon-majors, even if the second wave of litigation is unsuccessful.

Beyond litigation risk, regulatory proposals are emerging. In September 2018, U.S. Senator Elizabeth Warren proposed the Climate Risk Disclosure Act, which would require disclosure to the U.S. Securities and Exchange Commission (SEC) of a corporation's total fossil fuel-related assets, how those assets would be affected by

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[157] Rechtbank den Haag 24 juni 2015, m.nt. (Urgenda Foundation/The State of the Netherlands) (unofficial English translation) (Neth.).

[158] Hof den Haag 09 oktober 2018, m.nt. (Urgenda Foundation/The State of the Netherlands) (upheld by the Supreme Court of the Netherlands in December 2019, No. HAZA C/09/456689) (Neth.).

[159] For example, in 2019, NGOs in The Netherlands sued Shell on behalf of 30,000 people in 70 countries to legally compel them to reduce emissions. *See* FRIENDS OF THE EARTH INTERNATIONAL, *Netherlands: Activists Sue Shell over Climate Change*, BUSINESS & HUMAN RIGHTS RESOURCE CENTRE (Apr. 8, 2019), https://www.business-humanrights.org/en/netherlands-activists-sue-shell-over-climate-change [https://perma.cc/KZL2-WRZ9] (last visited Sept. 29, 2019). The *Urgenda* case has also inspired litigation around the world on similar grounds in: the United Kingdom, Plan B and Others v. Secretary of State for Transport (2019) EWHC 1070; France, Notre Affaire à Tous and Others v. France (letter of formal notice filed Dec. 17, 2018), and Commune de Grande-Synthe v. France (filed January 2019)); Ireland, Friends of the Irish Environment CLG v. The Gov't. of Ireland (decided Sept. 19, 2019); and Switzerland, Union of Swiss Senior Women for Climate Protection v. Swiss Federal Council and Others, No. A-2992/2017.

[160] *See generally* Lisa Benjamin, *The Responsibilities of Corporations: New Directions in Environmental Litigation, in* RESEARCH HANDBOOK ON TRANSNATIONAL ENVIRONMENTAL LAW (Veerle Heyveart and Leslie-Anne Duvic-Paoli eds. forthcoming, 2020).

climate change, and how directors are managing climate risks to those assets.[161] In January 2019, Rep. Deutch Theodore reintroduced the Energy Innovation and Carbon Dividend Act to price carbon, provide revenue to households, and reduce domestic greenhouse gas emissions 90 percent by 2050.[162] In addition, the Green New Deal has attracted significant public attention. While the resolution in its current form is broad, it proposes a set of economic stimulus programs designed to address both climate change and economic inequality.[163] It aims for net-zero emissions through decarbonizing the electricity grid, transportation systems, and industry.[164] The Democratic Party is also considering making climate change a fundamental platform in the 2020 federal election in order to appeal to younger voters.[165] These regulatory approaches would certainly provide a more comprehensive and systemic approach to climate change than courts can provide, but may be slower to emerge in the United States than in other jurisdictions.[166] Even

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[161] *See* Climate Risk Disclosure Act of 2019, S. 2075, 116th Cong. (2019); *see also* Karen Savage, *New Bill Would Require the SEC to Police Companies' Climate Risks*, CLIMATE LIABILITY NEWS (Sept. 20, 2018), https://www.climateliabilitynews.org/2018/09/20/climate-risks-disclosure-sec-elizabeth-warren/ [https://perma.cc/WQD5-YSD2]. The recent experience with European privacy laws and data protection is also illustrative. The EU General Data Protection Regulation has introduced sweeping changes in the management of personal data, along with significant fines which may have implications for U.S. corporations with operations in the EU. Justin Jaffe & Laura Hautala, *What the GDPR Means for Facebook, the EU and You*, CNET.COM (May 25, 2018), https://www.cnet.com/how-to/what-gdpr-means-for-facebook-google-the-eu-us-and-you/ [https://perma.cc/3YES-QRDR].

[162] H.R. Res. 763, 116th Cong. (2019)*; see also* Steve Valk, *Climate Action: Bipartisan Energy Innovation and Carbon Dividend Bill Reintroduced in Congress*, RED GREEN & BLUE (Jan. 24, 2019), http://redgreenandblue.org/2019/01/24/climate-action-bipartisan-energy-innovation-carbon-dividend-bill-reintroduced-congress [https://perma.cc/L62C-FGK7].

[163] H.R. Res. 109, 116th Cong. (2019) ("Recognizing the duty of the federal government to create a green new deal"); Lisa Friedman, *What Is the Green New Deal*, N.Y. TIMES (Feb. 21, 2019), https://www.nytimes.com/2019/02/21/climate/green-new-deal-questions-answers.html [https://perma.cc/G74T-8EUN].

[164] *Id.*

[165] Coral Davenport & Sheryl Gay Stolberg, *Pressed by Climate Activists, Senate Democrats Plan to 'Go on Offense,'* N.Y. TIMES (Mar. 4, 2019), https://www.nytimes.com/2019/03/04/us/politics/senate-democrats-climate-change.html [https://perma.cc/6QHF-9F24].

[166] A comprehensive treatment of state and federal action on climate change is beyond the scope of this Article, but it is clear that, despite existing federal hurdles on climate regulation, regulatory action is occurring at the state and local levels. For example, Colorado updated its Climate Action Plan in 2018, incorporating a 2017 Executive Order's goal to reduce GHG emissions by 26% by 2025. *See* H.B. 1261 (codified at COLO REV. STAT. §25-7-102 (2019) (updating original 2007 version); *see also Colorado Climate Plan 2018 Update- State Level Policies and Strategies to Mitigate and Adapt*, ADAPTATION CLEARINGHOUSE (July 2018), https://www.adaptationclearinghouse.org/resources/colorado-

if this second wave of climate litigation faces setbacks or missteps, its effects, combined with the changing balance of the risks of climate change to corporations, will still be felt within corporate law.

III. NEW RISKS AND RESPONSIBILITIES FOR CORPORATE ACTORS

The impacts of climate change are increasing, and, with them, the risks to corporations are rising. Climate impacts and risks entail financial costs for corporations, but climate change also provides opportunities to corporations through a transition to clean energy. Private law can make substantive contributions to climate change and the global energy transition away from fossil fuels. Corporate directors' duties are purposefully open-textured and able to advance and change depending on evolving industry norms and standards.[167] Increasing climate impacts have implications for the interpretation of fiduciary duties. Fiduciary duties remain "largely agnostic" on climate change, allowing directors and officers significant flexibility in how they approach transitions away from fossil fuels.[168] Fiduciary

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climate-plan-2018-update-state-level-policies-and-strategies-to-mitigate-and-adapt.html [https://perma.cc/M5AX-FWM8] (explaining the update to Colorado's 2007 Climate Plan). In addition, North Carolina plans to cut GHG emissions by 40% by 2025. Governor of N.C. Exec. Order No. 80, *N.C.'s Commitment to Address Climate Change & Transition to a Clean Energy Economy* (Oct. 29, 2018); *see also Climate Change*, N.C. DEPT. OF ENVTL. QUALITY, https://deq.nc.gov/energy-climate/climate-change [https://perma.cc/UV68-UZ2R] (last visited Sept. 29, 2019). Oregon has committed to reducing GHG emissions by 10% below 1990 levels by 2020, and by 75% below 1990 levels by 2050. OR. REV. STAT. §468A.205 (2019); *see also* Accelerating Efficiency in Oregon's Built Environment to Reduce Greenhouse Gas Emissions and Address Climate Change, Or. Exec. Order 17-20 (2017), https://www.oregon.gov/gov/Documents/executive_orders/eo_17-20.pdf [https://perma.cc/23X3-PPUW]. Moreover, California has also adopted a goal of transitioning to 100% clean electricity power by 2045. *See* Camila Domonoske, *California Sets Goal of 100 Percent Clean Electric Power by 2045*, NPR (Sept. 10, 2018, 3:59 PM), https://www.npr.org/2018/09/10/646373423/california-sets-goal-of-100-percent-renewable-electric-power-by-2045 [https://perma.cc/B8T9-H3FN]. California also has a statutory commitment to reduce the state's emissions by 40% below 1990 levels by the year 2030, CAL. HEALTH & SAFETY CODE § 38566 (West 2017), as well as a comprehensive set of climate change legislation. *See California Climate Change Legislation,* CALIFORNIA CLIMATE CHANGE, https://www.climatechange.ca.gov/state/legislation.html [https://perma.cc/6WB8-5E69] (last visited Oct. 6, 2019). For a list of resources on state and municipal climate action, *see State and Local Climate Change Resource Center*, SABIN CTR. FOR CLIMATE CHANGE L., http://columbiaclimatelaw.com/resources/archived-materials/state-and-local-climate-change-resource-center/ [https://perma.cc/L24C-59KU] (last visited Sept. 29, 2019).

[167] Joan M. Hemingway, *Shareholder Wealth Maximization as a Function of Statutes, Decisional Law and Organic Documents*, 74 WASH. & LEE L. REV. 939, 947 (2017) (explaining broad definition of corporate director's duties in Delaware, the Model Business Corporations Act, and across other states).

[168] Hari M. Osofsky et al., *Energy Re-Investment*, 94 IND. L. J. 595, 638 (2019).

duties provide directors with sufficient flexibility to accommodate climate risks. Directors have obligations to both assess and keep informed of risks to their business, and consequentially to share this information with investors.

A. Increasing Climate Risks for Carbon-Majors

Climate change and the failure of mitigation and adaptation efforts taken together consistently rank in the top five global risks assessed by the World Economic Forum in the past several years.[169] The risks of climate change are estimated to impact a significant portion of global assets, negatively impacting global fiscal stability, with up to 30% of global manageable assets at risk.[170] Between now and the end of the century, this could lead to between four to forty-three trillion dollars' worth of assets at risk.[171]

Climate risk can be separated into two main categories for corporations: (1) the risks of transitioning to a lower-carbon economy, which may involve policy or regulatory changes, as well as litigation, technology, market changes, and reputational risks; and (2) the physical risks to operational assets of businesses, which may be both acute and event-driven, as well as chronic, due to slow impacts of climate change such as sea-level rise.[172] In terms of the physical risks of climate change, the Fourth National Climate Assessment has estimated that "[m]ore frequent and intense extreme weather [events] and climate-related events" will "continue to damage infrastructure," property, and labor productivity, and in the energy arena will reduce the efficiency of power generation.[173] Climate impacts will also affect U.S. trade and the broader economy, disrupting operations and supply chains both domestically and internationally, with annual losses in some economic sectors reaching the hundreds of billions of dollars by the end of the century.[174]

While climate change threatens a wide variety of industries, the energy and fossil fuel industries are particularly vulnerable. The energy infrastructures of productive, refinement- and distribution-focused corporations are often located in

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[169] WORLD ECONOMIC FORUM, THE GLOBAL RISKS REPORT 2018 2, Fig. I (13th ed. 2018), http://www3.weforum.org/docs/WEF_GRR18_Report.pdf [https://perma.cc/8A9V-62AG] (ranking failure of climate change adaptation and mitigation fifth out of top ten global risks in terms of likelihood, and fourth in top ten risks in terms of impact in 2018).

[170] Global manageable assets are the total stock of assets held by non-bank financial institutions. THE ECONOMIST INTELLIGENCE UNIT, *supra* note 29, at 8.

[171] *Id.* at 2; Allie Goldstein et al., *The Private Sector's Climate Change Risk and Adaptation Blind Spots*, 9 NATURE CLIMATE CHANGE 18, 18 (2018).

[172] TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES, *supra* note 30, at 5–6.

[173] U.S. GLOBAL CHANGE RESEARCH PROGRAM, FOURTH NATIONAL CLIMATE ASSESSMENT: VOLUME II IMPACTS, RISKS, AND ADAPTATION IN THE UNITED STATES ii, 26 (2018), https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf [https://perma.cc/DBA9-2QKQ].

[174] *Id.*

coastal areas and are vulnerable to sea-level rise, storm surges, and flooding.[175] Decreased water and power supplies will also affect energy companies that rely on these resources for the extraction and exploitation of fossil fuels.[176] Their employees and customers will also be negatively affected.[177]

Climate change also poses a new and intensified set of risks for the fossil fuel industry from government policies and legislation, financial restrictions by lenders and insurers, and hostile legal and shareholder actions.[178] These companies can expect increased asset devaluations and increasing insurance and commodity costs.[179] They are also facing changing geopolitical conditions with declining fortunes of petrostates, and challenges from new technology.[180] Financial risks are also increasing, from stranded assets, divestment, and reduced wealth of fossil fuel exporting countries, with investor-owned firms in the developed world likely to feel the impacts of these cumulative risks sooner.[181]

The risks of climate change are not distant future risks; carbon-majors are feeling the effects of climate change now. Natural disasters in 2017 in the United States caused over $300 billion in damage nationwide, with effects being felt acutely in Texas and Florida.[182] Energy companies operating in the Gulf of Mexico were particularly badly hit and continue to be worried about extreme events.[183] Melting permafrost in the Artic also disrupts transportation routes, therefore limiting operating capacity and increasing operational costs for extractive corporations

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[175] *Id*. at 30–31.

[176] *Id*. at 192–93.

[177] *Id*. at 30.

[178] Krane, *supra* note 49, at 2–3.

[179] Perry Wallace, *Climate Change, Corporate Strategy, and Corporate Law Duties*, 44 WAKE FOREST L. REV. 757, 759 (2009).

[180] Krane, *supra* note 49, at 2.

[181] *Id*. (noting, however, that risks will be felt at different time scales across the fossil fuel industry with coal companies feeling the impacts sooner, and oil industry later as fewer substitutes are available and transportation will continue to rely on oil).

[182] CDP, STATE BY STATE: AN ANALYSIS OF U.S. COMPANIES AND CITIES ACROSS SEVEN STATES 4 (Dec. 2018), https://6fefcbb86e61af1b2fc4-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/003/940/original/CDP_State_by_State_2018.pdf?1547134684 [https://perma.cc/5J8K-RG23].

[183] *Id*. Noble Energy stated that the financial impacts of extreme weather events and damages would not be fully recoverable for its operations in the Gulf due to insufficient insurance and could negatively impact revenue. Dipka Bhambhani, *Energy Companies Could Feel the Effects of Climate Change on Their Bottom Lines*, FORBES (Oct. 25, 2018, 1:43 PM), https://www.forbes.com/sites/dipkabhambhani/2018/10/25/energy-companies-feel-the-effects-of-climate-change-where-it-hurts-the-bottom-line/#69cd1a952199 [https://perma.cc/H4YU-EYK3]. ExxonMobil incurred $135 million dollars of costs due to property damage caused by flood debris damaging a pipeline under Yellowstone river in Montana. Matthew Brown, *Oil Spill: Yellowstone Spill to Cost Exxon $135M*, BILLINGS GAZETTE (Nov. 4, 2011), https://billingsgazette.com/news/local/yellowstone-spill-to-cost-exxon-m/article_b231f3f4-0726-11e1-ada7-001cc4c03286.html [https://perma.cc/KFS2-NFNH].

onshore.[184] Risks extend internationally as well for these corporations with capital intensive operating structures and assets situated in some of the most vulnerable parts of the world to climate change.[185] While energy companies are some of the most exposed to climate risk, they demonstrate limited recognition, at least publicly, to physical and other climate risks.[186]

The assumption that companies are failing to account for climate risk has been borne out by quantitative research by Goldstein looking at 1,630 large companies' voluntary reporting on climate change to investors.[187] The report concludes that companies were not adequately characterizing climate risk in their voluntary reporting or adequately preparing for its impacts.[188] The authors found that the potential magnitude of the financial impacts of climate risk was a key blind spot for companies.[189] Directors and managers were also failing to account for indirect and systemic characteristics of climate risk.[190] Companies are focusing only on a narrow view of climate risk, perhaps in part due to a predisposition to short-term thinking, the tendency to heavily discount future costs, and the potential of disclosure of climate risks to lead to a corporate disadvantage in the short term.[191] Short-term thinking is cited as one of the most entrenched barriers to progressive climate action by corporations.[192] However, climate change is posing both risks and opportunities for corporations, and new research points to opportunities, even for carbon-majors, in the transition away from fossil fuels, as discussed in the next section.

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[184] Bhambhani, *supra* note 183. It should also be noted that while climate change may be limiting onshore drilling, climate change is also breaking up arctic sea ice and opening up new opportunities for offshore drilling in the Arctic.

[185] ANDREW HOWARD & MARC HASSLER, SCHRODERS, CLIMATE CHANGE: THE FORGOTTEN PHYSICAL RISKS 2 (July 2018), https://www.schroders.com/en/sysglobalassets/_global-shared-blocks/climate-change/physical-risks.pdf [https://perma.cc/8WNW-Q4MA].

[186] *Id*.

[187] Goldstein et al., *supra* note 171, at 18.

[188] *Id.*

[189] *Id*. It should be noted that the insurance industry has been one of the first-movers on climate action, due to their high exposure. *See, e.g.*, ALLIANZ GROUP & WORLD WILDLIFE FUND, CLIMATE CHANGE AND INSURANCE: AN AGENDA FOR ACTION IN THE UNITED STATES, UNIVERSITY OF MARYLAND 3 (2006), http://www.climateneeds.umd.edu/pdf/AllianzWWF report.pdf [https://perma.cc/CSQ7-MALT].

[190] Goldstein et al., *supra* note 171, at 20–21, 23. While the authors focused only on physical risks, they compared the estimated price tag of climate change in the trillions of dollars with the aggregate financial risks reported from companies which only amounted to tens of billions of dollars. *Id.* at 20.

[191] *Id*. at 23.

[192] *Infra* Section IV.B.

B. Increasing Climate Opportunities for Carbon-Majors

Even for carbon-major corporations, energy transitions away from fossil fuels can be profitable. A recent report by Goldman Sachs highlights the opportunities of a transition to a low carbon economy for global energy markets, and in particular, for 'Big Oils,' being the largest carbon-major corporations.[193]

The report anticipates that as a result of a lack of funding from financial institutions for oil and gas projects in the near future, as well as key parts of the oil value chain becoming stranded assets, the market in oil and gas will tighten.[194] The report notes that, in the short-term, tightening financial conditions for hydrocarbons may lead to higher returns for Big Oils as they consolidate their grip on this industry; however, in the longer-term, the report argues that this funding could be used by Big Oils to convert their business to Big Energy.[195] This could be achieved by leveraging their competitive advantages in global supply chain management, technical expertise, and global footprints to replicate vertical integration in energy by purchasing utilities and providing energy from diversified sources, including biofuels and renewables.[196] Most importantly, this report highlights the business case for transition, stating that the blended returns on these new investments could be materially higher than returns in the past decade on just oil and gas.[197]

The second wave of litigation also highlights the risks of climate change to investors in these corporations. Armed with more and better information about climate risk, investors could also put increased pressure on directors to act on the financial risks and opportunities posed by climate change. A recent report from Wood Mckenzie connects increasing pressure from investors for transparency regarding emissions to capital market responses.[198] The report notes that investors will increasingly seek new instruments for green social investments. Combined with drivers of the transition to renewables and electrification of transport, the report estimates that a "point of singularity" will emerge in 2035, where the global energy

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[193] *See generally* GOLDMAN SACHS, RE-IMAGINING BIG OILS HOW ENERGY COMPANIES CAN SUCCESSFULLY ADAPT TO CLIMATE CHANGE (2018), https://www.goldmansachs.com/insights/pages/reports/re-imagining-big-oils-f/re-imagining-big-oils-report-pdf.pdf [https://perma.cc/GX4L-FN4W] (explaining the role that Big Oil has in producing greenhouse gas emissions and detailing ways that Big Oil can help with de-carbonization).

[194] *Id.* at 15. Although it should be noted that in the natural gas industry U.S. markets are flooded and prices are expected to stay low for some time. Ryan Dezember, *U.S. Glut in Natural-Gas Supply Goes Global*, WALL ST. J. (Aug. 27, 2019, 3:11 PM), https://www.wsj.com/articles/u-s-glut-in-natural-gas-supply-goes-global-11566907200 [https://perma.cc/J3Q9-A6XY].

[195] GOLDMAN SACHS, *supra* note 193, at 3.

[196] *Id.*

[197] *Id.*

[198] WOOD MACKENZIE, THINKING GLOBAL ENERGY TRANSITIONS: THE WHAT, IF, HOW AND WHEN EXECUTIVE SUMMARY (Jun. 2018), https://www.woodmac.com/reports/macro economics-risks-and-global-trends-thinking-global-energy-transitions-the-what-if-how-and-when-23699 [https://perma.cc/3R69-B7H6].

transition away from fossil fuels will be unstoppable and new energy sources will become the dominant choice for investments.[199]

This transition will be supported by an "almost ubiquitous" societal push towards a sustainable future.[200] The global energy transition is information that directors cannot afford to ignore while maintaining their managerial decisions and capital investment choices safely within the realm of compliance with fiduciary duties. Institutional investors are well-resourced and experienced litigants,[201] and corporate lawsuits could become increasingly popular if directors do not take the risks of climate change to their businesses more seriously and do not consider energy transitions as part of their strategic business plans. Research that demonstrates the financial benefits of the global energy transition specifically for carbon-major corporations takes the issue beyond zero-sum environmentalism,[202] to a legitimate business decision. Therefore, the risks of climate change combined with the business case for transition may lead to cleaner energy choices by directors.

Despite the opportunities for transition available to carbon-major corporations, they have largely failed to seize these opportunities. The response has been uneven, with Shell recently announcing short-term caps on emissions as a result of investor pressure,[203] but with most U.S.-based carbon-majors, such as ExxonMobil, doubling down on investments in fossil fuels, and ignoring the risks of climate change to their businesses and to society.[204] This renewed investment in fossil fuels is based on the perception that efforts to reduce emissions undermine short-term commercial opportunities to monetize existing fossil fuel reserves.[205] However, the failure of climate policy is likely to broaden risks across the global economy and increase risks to assets of carbon-majors.[206] These short-term decisions leave carbon-major directors even more exposed to continued climate litigation.

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[199] *Id.* at 1.

[200] *Id.* at 2.

[201] Ganguly et al., *supra* note 21, at 21.

[202] *See generally* Shalanda Baker et al., *Beyond Zero-Sum Environmentalism,* 47 ENV. L. REP. 4 (2017).

[203] *Shell Agrees to Set Short-Term Caps on Carbon Emissions*, FIN. POST (Dec. 3, 2018, 3:06 PM), https://business.financialpost.com/pmn/business-pmn/shell-agrees-to-set-short-term-caps-on-carbon-emissions [https://perma.cc/X7WK-NARA].

[204] *Crude Awakening,* THE ECONOMIST (Feb. 7, 2019), https://gbr.businessreview.global/articles/view/5c6f7846c5be1300076c9094 [https://perma.cc/VYS6-MWG9].

[205] Krane, *supra* note 49, at 1.

[206] *Id*. at 3.

C. Corporate Law-Based Climate Litigation

Several suits and investigations have been launched in the United States that involve corporate and securities law, including securities disclosure claims,[207] as well as investigations by the New York and Massachusetts Attorneys General.[208]

[207] While this article focuses on directors' fiduciary duties, the fiduciary duties of pension fund managers has also been litigated and recently dismissed by a Texas court. In *Fentress v. ExxonMobil Corp*, a class action suit was brought by employees of the Exxon Savings Plan on the basis that senior corporate officers of the company, who were fiduciaries of the employee stock pension plan, knew or should have known that the stock was artificially inflated due to the risks of climate change. 304 F. Supp. 3d 569, 572 (S.D. Tex. 2018). The plaintiffs claimed that the pension managers purchased $800 million worth of Exxon stocks despite the climate change risks, and the company should have written down its assets as stranded, claiming this was a breach of the duty of prudence, which required fiduciaries to manage the assets with care, skill, prudence and diligence pursuant to 29 U.S.C. §§ 1104(a)(1)(B). *Fentress*, 304 F. Supp. 3d at 573–74. A motion to dismiss by Exxon on March 30, 2018 was granted by the Texas court on the basis that the plaintiffs failed to show the risks of climate change had not already been included in the stock price. *Id.* at 580, 587. Relying on the efficient market hypothesis, the judge decided that the markets could take into account public information on climate change, and the plaintiffs had not plausibly linked the realities of climate change to the future health of an oil and gas company. *Id.* at 576–79. The issue of fiduciary duties for pension fund managers became a relevant one in the case, with the plaintiffs having to prove that the duty of prudence had been violated on the basis of non-public information. *Id.* at 580–81. In order to prove a breach of fiduciary duty, the plaintiffs would have to prove that an alternative action was available that was so clearly beneficial that a prudent fiduciary could not conclude it would be more likely to harm the fund than help it. *Id.* The plaintiffs put forward three alternative actions: corrective disclosures regarding Exxon's reserves, halting new purchase orders of Exxon stock, and investing in low-cost hedging stock. *Id.* at 574. These were all dismissed as inappropriate by the judge on the basis that corrective disclosures and freezing stock trading would ultimately lower the price of the stock and could do more harm than good. *Id.* at 580–87. While unsuccessful here, more suits regarding lack of disclosure by private plaintiffs in the context of fiduciary duties are likely to continue where stock prices drop.

[208] In November 2015, the New York Attorney General served Exxon with a subpoena pursuant to N.Y. EXECUTIVE LAW § 63(12) (Consol. 2019), N.Y. C.P.L.R. § 2302(a) (Consol. 2019), and the Martin Act, N.Y. GEN. BUS. LAW § 352 (McKinney 2019)). Exxon Mobil Corp. v. Schneiderman, 316 F. Supp. 3d 679, 687 (S.D.N.Y. 2018). Together, these laws prohibit fraudulent practices in connection with securities sold in New York. *See id.* New York also subpoenaed PricewaterhouseCoopers in August 2016 in connection with the Exxon Mobil investigation. Decision & Order at 1, People v. PricewaterhouseCoopers LLP, No. 451962/16 (N.Y.S. Oct. 26, 2016), Doc. 41. New York's investigation is designed to discover whether Exxon's historical securities filings were misleading because they failed to disclose Exxon's internal projections regarding the potential costs of both climate change and climate change regulation to the company. Memorandum of Law in Support of Motion to Compel Compliance with Investigative Subpoena at 3–6, People v. PricewaterhouseCoopers LLP, No. 451962/2016 (N.Y. App. Div. Oct. 21, 2016), Doc. 38. In April 2016, the Massachusetts Attorney General served Exxon with a Civil Investigative

This section will focus on a new case that turned on fiduciary duties in the context of securities disclosures and corporate statements about climate risks. In 2017, a suit was launched regarding misleading Exxon reserves in *Ramirez v. ExxonMobil*.[209] The plaintiffs in *Ramirez* were successful at the pleadings stage, and the suit is continuing. The U.S. District Court for the Northern District of Texas, in August 2018, held that the plaintiffs, the Greater Pennsylvania Carpenters Pension Fund, successfully pleaded alleged material misrepresentations or omissions constituting securities fraud by ExxonMobil and a breach of the duty of loyalty by a number of its corporate directors and officers, regarding losses attributed to publicly traded stock acquired between 2014 and 2017.[210] These losses were attributed by the plaintiffs to the failure by the directors and financial officers of ExxonMobil to recognize and inform investors of the business risks of climate change, and the value impairment of unconventional fossil fuel operations in the Canadian tar sands, the Rocky Mountain Dry Gas Operation, and Kearl Operations.[211] The directors' actions led, in 2016, to the company disclosing that 20% of its once proved reserves were no longer economically feasible, and therefore fell outside of the SEC definition of proved reserves, leading to a $2 billion impairment announcement in 2017.[212]

Demand pursuing fraudulent claims similar to those pursued by the New York Attorney General. Exxon Mobil Corp. v. Attorney General, 94 N.E. 786, 790 (Mass. 2018). The Massachusetts Attorney General requested from Exxon documents regarding whether the potential for stranded assets should have been disclosed. *See* Brief of Appellee Office of the Attorney General Commonwealth of Massachusetts at 14–15, Exxon Mobil Corp. v. Attorney General, 94 N.E. 786 (Mass. 2018) (No. SJC-12376). In response, Exxon sued the Attorneys General of New York and Massachusetts for abuse of process, civil conspiracy and violations of Exxon's constitutional rights to free speech. Exxon Mobil Corp. v. Schneiderman, 316 F. Supp. 3d 679, 688 (S.D.N.Y. 2018). Exxon claimed the investigations were designed to "silence and intimidate one side of the public policy debate on how to address climate change." *Id.* at 688. A decision in March 2018 in the United States district court in New York provided a scathing order dismissing the motions by Exxon as a "wild stretch of logic." *Id.* at 689. In spite of Exxon's judicial protests, it appears that these investigations might bear fruit, as the Attorney General of New York recently settled with Peabody Energy, requiring a restatement of its financial disclosures. Press Release, New York Attorney General, A.G. Schneiderman Secures Unprecedented Agreement with Peabody Energy to End Misleading Statements and Disclose Risks Arising from Climate Change (Nov. 9, 2015), https://ag.ny.gov/press-release/ag-schneiderman-secures-unprecedented-agreement-peabody-energy-end-misleading [https://perma.cc/PFN9-SRKL]. In October 2018, the New York Attorney General filed a lawsuit against Exxon for defrauding investors over the financial risks of climate change due to changing climate change regulation. Summons & Complaint at 1, People v. Exxon Mobil Corp, No. 452044/2018 (N.Y. App. Div. Oct. 24, 2018), Doc. 1. However, in December 2019, the court dismissed New York's Martin Act claim against Exxon. *See* Schwartz, *supra* note 100.

[209] Ramirez v. ExxonMobil, 334 F. Supp. 3d 832, 840 (N.D. Tex. 2018).

[210] *Id.* at 839–40.

[211] *Id.*

[212] *ExxonMobil Earns $7.8 Billion in 2016; $1.7 Billion During Fourth Quarter*, EXXONMOBIL, https://cdn.exxonmobil.com/~/media/global/files/earnings/2016/news_rele

The *Ramirez* plaintiffs alleged securities fraud under Sections 10(b) and 20(a) of the Securities Exchange Act 1934 and Rule 10b-5.[213] The plaintiffs were successful at pleading material misstatement, including by omission, a breach of the duty of loyalty by the company and its officers in understating the proxy cost of carbon used, and for misstatements made in Form 10-K, and in its Corporate Outlook.[214] Their pleading was successful enough to survive a 12(b)(6) motion, based on assertions that as shareholders they were misled by statements made by directors and officers in the company's policy documents.[215] These statements were misleading in that they stated that the company was properly considering the potential for changing climate regulations as well as carbon asset risks and climate risks to its business.[216]

Ramirez focuses specifically on directors' duties and duties to disclose relevant information on climate change and climate risk to shareholders in the securities context. The case is evidence of the growing use and relevance of corporate and securities law, and more specifically, fiduciary duties in the context of climate change litigation.[217]

D. Fiduciary Duties in the Context of Climate Risk

In the absence of takeover circumstances, directors have obligations to manage the business in the best interests of the corporation and have the flexibility to take a long-term management approach.[218] Fiduciary duties are made up of two primary

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[213] *Ramirez*, 334 F. Supp. 3d at 839.

[214] *Id*. at 847.

[215] *Id*. at 859.

[216] *Id*.

[217] For example, see new shareholder derivative actions in *Montini v. Woods* and *Colditz v. Woods*. *See* Complaint at 120, Montini v. Woods, No. 3.19-cv-01068-K (N.D. Tex. May 2, 2019), Doc. 1; Complaint for Petitioner at 121, Colditz v. Woods, No. 3.19-cv-01067 (N.D. Tex. May 2, 2019), Doc. 1.

[218] *See, e.g.*, Katz v. Oak Industries Inc., 508 A.2d 873, 876 (Del. Ch. 1986). The *Revlon* doctrine applies in takeover circumstances in Delaware and holds that directors in takeover circumstances can deviate from the business judgment rule and focus on the short-term interests of stockholders instead of the long-term interest of the corporation. *See* Derek J. Famulari, *The Revlon Doctrine – the Fiduciary Duties of Directors when Targets of Corporate Takeovers and Mergers*, AM. BAR ASS'N, https://www.americanbar.org/content/dam/aba/administrative/young_lawyers/publications/101/fiduciary_duties_of_directors_coporate_takeover.authcheckdam.pdf [https://perma.cc/8GMU-LYG6] (last visited Sept. 29, 2019) (discussing *Revlon Inc. v MacAndrews & Forbes Holdings Inc.*, 506 A.2d 173 (Del. 1986)); Joshua Fershee, *Is the Revlon Doctrine Creeping into the Business Judgement Rule? (No)*, BUSINESS LAW PROF BLOG (Sept. 17, 2010), https://lawprofessors.typepad.com/business_law/2010/09/is-the-revlon-duty-creeping-into-the-business-judgment-rule-no.html [https://perma.cc/VX6F-VB2N]; *see also* Andrew A. Schwartz, *The Perpetual Corporation*, 80 GEO. WASH. L. REV. 764, 783 (2012) (highlighting that given the perpetual existence of

duties: those of care and loyalty.[219] The duty of care requires that directors make decisions in a carefully considered manner.[220] Courts want to know that directors have considered all material information reasonably available to them, and this now includes climate risks and opportunities based on the best scientifically available information and best industry practice.[221] The duty of care could be applicable where directors fail to take into account material information regarding the risks climate change poses to their businesses, with courts focusing on the process of the directors' decision-making, and whether the decisions were made in good faith.[222]

The duty of loyalty, as interpreted by Delaware Supreme Court in *Stone v. Ritter*,[223] provides that directors have a responsibility to ensure that appropriate information and reporting systems are established by management to ensure compliance with key regulatory regimes.[224] The duty of loyalty can be violated if directors demonstrate a conscious disregard for their responsibilities.[225] Such

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corporations, "immortal investing" should be the guiding principle for corporate directors, which would have public benefits including acting as stewards for natural resources).

[219] *See* Stone v. Ritter, 911 A.2d 362, 367 (Del. 2006) (subsuming the duty of good faith under the duty of loyalty leaving only the duties of care and loyalty as stand-alone, independent duties); *see also* Stephen Bainbridge, *Good Faith in Delaware After* Stone v. Ritter, STEPHEN BAINBRIDGE'S J. L., RELIGION, POL., & CULTURE (Jan. 3, 2007), https://www.professorbainbridge.com/professorbainbridgecom/2007/01/good-faith-in-delaware-after-stone-v-ritter.html [https://perma.cc/BF48-M2SU].

[220] *See* STEPHEN M. BAINBRIDGE, CORPORATE LAW 125 (2d ed. 2009).

[221] *See* Barker, *supra* note 31, at 200–02.

[222] *See* Wallace, *supra* note 179, at 764.

[223] *Stone*, 911 A.2d at 371. The decision is not without its critics, with Bainbridge stating that this intentional failure to act constituting a breach of the duty of loyalty guts the business judgment rule. *See* Stephen Bainbridge, Stone v. Ritter: *Directors Caremark Oversight Duties*, STEPHEN BAINBRIDGE'S J. L., RELIGION, POL., & CULTURE (Jan. 3, 2007), https://www.professorbainbridge.com/professorbainbridgecom/2007/01/stone-v-ritter-directors-caremark-oversight-duties.html [https://perma.cc/NY4V-2NVF] [hereinafter Bainbridge, Stone v. Ritter].

[224] *Stone*, 911 A.2d at 368–71 (applying *In Re* Caremark International Inc. Derivative Litigation, 698 A.2d 959 (Del. Ch. 1996)). The "Caremark' duties" are often referred to as the fiduciary duty of oversight. *See* Bainbridge, Stone v. Ritter, *supra* note 223 (noting that *Stone v. Ritter* reinterprets the *Caremark* duties of oversight as duties of good faith and loyalty and not those of care).

[225] *See Stone,* 911 A.2d at 370. The *Caremark* case illustrated that, in limited circumstances, high profile oversight failures could be regarded as not just gross negligence by directors but instead as acts of disloyalty for sustainable or systemic failure to assure a reasonable information and reporting system exists, and illustrates the increasing importance of board function under Delaware law, as well as the need for the Board to be fully informed. Wallace, *supra* note 179, at 761 (noting, however, that the subsequent Citigroup derivative action suit, *In Re* Citigroup Inc. Shareholder Derivative Litigation, 964 A 2d 106 (Del. Ch. 2009), casts doubt on the *Caremark* approach). Marc Moore highlights how difficult this threshold is to reach in Delaware Courts in the area of systemic risk oversight, citing the *Citigroup* shareholder derivative litigation. *See* Marc T. Moore, *Redressing Risk Oversight*

disregard will demonstrate that they have not discharged their fiduciary obligations in good faith.[226] Similarly, according to the Delaware Supreme Court in *In Re Walt Disney Company Derivative Litigation* (the *Disney* case),[227] acts of bad faith include where a director intentionally acts with a purpose other than that of advancing the best interests of the corporation, where she acts with the intention to violate applicable law or intentionally fails to act in the face of a known duty to act, demonstrating a conscious disregard for her duties.[228] Combined, these duties of care and loyalty focus the courts' attention on whether the director was fully informed, disinterested, and independent in her decision making.

The business judgment rule is a largely process-based rule as defined in Delaware, and used by courts to assess directors' decisions and whether those decisions complied with their directors' duties.[229] Under this rule, the court is not concerned with the content of the decision made by a director, but instead with the process by which the decision was made.[230] Absent illegality, fraud or self-dealing, courts under the business judgment rule presume that directors have employed their own appropriate business judgment to the issue at hand.[231] The court will assess "the good faith *or* rationality of the process employed."[232] However, as a result of this emphasis on process, even if the outcome is ill-advised, courts are unlikely to

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Failure in UK and US Listed Companies: Lessons from the RBS and Citigroup Litigation, 18 EUR. BUS. ORG. L. REV. 733, 743–46 (2017) (noting that security disclosure violations may be a more successful route to addressing systemic risk failures by directors than directors' duties). Hill notes that while liability for breach of the Caremark duties would face significant obstacles, the soft law 'penumbra' of the case has and will encourage compliance action by directors. *See generally* Claire Hill, Caremark *as Soft Law*, 90 TEMPLE L. REV. 681 (2018) (noting that while liability for breach of the *Caremark* duties would face significant obstacles, the soft law 'penumbra' of the case has and will encourage compliance action by directors).

[226] *See In Re* Caremark Intl. Inc. Derivative Litig., 698 A.2d 959, 967–68 (Del. Ch. 1996).

[227] *In re* Walt Disney Co. Derivative Litig., 906 A.2d 27 (Del. 2006).

[228] *Id*. at 67. Wallace notes that *Stone v. Ritter* requires that directors must have been conscious of the fact they were not monitoring and requires 'persistent indolence' on their party in order for a claim of oversight failure to be successful, although he notes the duty of oversight is distinguishable from the duty of care to take decisions on strategic climate action. Wallace, *supra* note 179, at 761.

[229] *See* Aronson v. Lewis, 473 A.2d 805, 812 (Del. 1984); *Stone*, 911 A.2d at 370; *In re* Caremark Int'l Inc. Derivative Litig., 698 A.2d at 970–71; Hanson Tr. PLC v. ML SCM Acquisition, Inc., 781 F. 2d 264, 274–76 (2d Cir. 1986); Brehm v. Eisner, 746 A.2d 244, 262–64 (Del. 2000).

[230] *See Stone*, 911 A.2d at 367.

[231] *See Brehm*, 746 A.2d at 255.

[232] *In re* Caremark Int'l Inc. Derivative Litig., 698 A.2d at 967. Elhauge argues that the business judgment rule was established as courts could not figure out what maximizes profits, and so rely on directors to do so. *See* Einer Elhauge, *Sacrificing Corporate Profits in the Public Interest*, 80 N.Y.U. L. REV. 733, 743 (2005).

intervene, provided the director's decision is the product of good faith and a rational process.[233] Fershee notes that the increasing focus on profitmaking by directors may narrow directors' decision-making power.[234] He notes that this increasing turn in Delaware towards profitability may convert the business judgment rule away from an abstention rule to a more intrusive standard assumed by courts, marking a significant departure from its historical interpretations.[235]

There is a presumption that, in order to benefit from the business judgment rule, directors must have informed themselves of all material information and acted with care on the basis of that information.[236] Directors should also act in accordance with their duties of loyalty and care.

The case of *Pfeffer v. Redstone*[237] established that making a materially false or misleading statement to shareholders can violate state law fiduciary duties.[238] In the securities law context, according to the U.S. Supreme Court decision in *Omnicare, Inc. v. Laborers District Council Constr. Ind. Pens. Fund*,[239] directors breach their duty of loyalty if their statements to shareholders are not honest, and this includes where the directors' opinion is not honestly held.[240] If facts such as the risks of climate change to the business are either held by the company or are within the knowledge of directors, and would undermine any opinion given by directors to shareholders, this could lead to personal liability for breach of the duty of loyalty.[241]

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[233] *See* Bainbridge, Stone v. Ritter, *supra* note 223.

[234] Joshua P. Fershee, *The End of Responsible Growth and Governance?: The Risks Posed by Social Enterprise Enabling Statutes and the Demise of Director Primacy*, 19 TENN. J. BUS. L. 361, 363 (2018) (pointing out there is no reason for a community service mission to itself to not serve the purpose of promoting the value of the corporation for the benefit of its shareholders).

[235] *Id*.

[236] *See* Robert T. Miller, *Wrongful Omissions by Corporate Directors:* Stone v. Ritter *and Adapting the Process Model of the Delaware Business Judgement Rule*, 10 U. PA. J. BUS. & EMP. L. 911, 912–13 (2008) (noting that violation of directors' duties for omission is one of the most difficult to prove, depending on whether a director failed to consider acting at all, or considered an action and then decided not to act).

[237] 965 A.2d 676 (Del. 2009).

[238] *Id.* at 684.

[239] Omnicare, Inc. v. Laborers Dist. Council Constr. Industry Pension Fund, 135 S. Ct. 1318, 1327 (2015).

[240] *See id.* Although *Omnicare* expressly examined the disclosure requirements of Section 11 of the Securities Act of 1933, these statutory disclosure requirements and the *Omnicare* decision implicate state law fiduciary duties. *See* Hillary A. Sale & Donald C. Langevoort, *"We Believe":* Omnicare, *Legal Risk Disclosure and Corporate Governance*, 66 DUKE L. J. 763, 773, 768–88 (2016).

[241] *See generally* David Estrin & Cynthia A. Williams, Hearing Before the Philippines Human Rights Commission, New York (Sept. 28, 2018) (on file with author). Cynthia A. Williams and David Estrin submitted a summary of recommended measures to the Philippines Commission on Human Rights Inquiry at the hearing in New York on September 28, 2018 outlining a number of legal obligations of officers and directors of carbon major

At the pleadings stage, the U.S. District Court for the Northern District of Texas in *Ramirez* paid significant attention to the *Omnicare* decision in the context of material misstatements made by officers of ExxonMobil.[242] While Exxon attempted to rely on the *Omnicare* decision by characterizing its asset valuations and impairment statements as opinions only, the court was clear that if underlying facts are not provided to shareholders, and contradict statements made, that can render directors' statements misleading by omission.[243] The *Ramirez* court noted that, according to the *Omnicare* standard, even if the speaker genuinely holds opinions expressed, it could still constitute a material misstatement by omission if the speaker omits material facts about the speaker's inquiry into or knowledge concerning a statement of opinion if those omitted facts conflict with what a reasonable investor would take from the statements.[244] Based on a Fifth Circuit decision, which held that alleged accounting violations are sufficient to plead material misstatements, the *Ramirez* court stated that ExxonMobil's officers' alleged GAAP violations and opinions regarding the Rocky Mountain Dry Gas Operation not being impaired necessarily omitted particular facts which made their opinions materially misleading.[245] The officers' positions on the board and their familiarity with the proxy cost for carbon used by the company exposed them to a potential breach of their directors' duties.[246]

Increased litigation and escalating climate risks, therefore, have legal implications for directors' and officers' liability. Impact litigation against carbon-major corporations raises the risk metrics of climate change for their businesses, and also raises the profile of climate change for directors and investors. Directors will breach their duties of care and loyalty if they fail to understand the risks of climate change to their business and, where these risks are considerable, have failed to convey these risks to shareholders. Barker and Winter note that the law "does not tolerate decisions based on uninformed assumptions, or that arise by default from a failure to turn the directional mind to a relevant issue."[247] Directors will also be liable if they utterly failed to implement a reporting and information system which is

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enterprises and their investors, as well as recommended voluntary actions by these entities, including committing to corporate policies and actions to achieve emission reductions and decarbonisation of their primary energy supplies, develop specific business plans and investment allocation to ensure peaking of carbon emissions by 2020 using minimum disclosure expectations set out in a 2018 report of the Transition Pathway Initiative, and to have the plans peer-reviewed. They recommend these actions be backstopped by government requirements. *Id.*

242 Ramirez v. ExxonMobil*,* 334 F. Supp. 3d 832, 839 (N.D. Tex. 2018).

243 *Id.* at 848.

244 *Id.* at 847–48.

245 *Id.* at 848 (citing Barrie v. Intervoice-Brite, Inc., 397 F.3d 249, 257–58 (5th Cir. 2006)).

246 *Id.* at 851–54.

247 Sarah Barker & Kurt Winter, *Changing Balance of Evidence*, ESG MAGAZINE, Winter 2016, at 46.

commensurate with corresponding risks to the business and legal obligations, or, if having implemented such a system, they consciously failed to monitor or oversee its operations, thus disabling themselves from being informed of risks or problems requiring their attention.[248] Both limbs of the test require a showing that directors knew they were not discharging their fiduciary obligations in order for liability to be imposed.[249] Barker notes that, in relation to stranded assets, directors who consciously disregard or are willfully blind to stranded asset risks through, for example, 'default denialism' consistent with industry-based or partisan political affiliations, may be subject to a claim that they failed to discharge their duty to prioritize the best interests of the company.[250] A changing balance of evidence from science suggests that a shift is occurring from climate change being seen merely as an ethical concern, to a significant financial concern for carbon-major corporations and their investors, meaning directors are legally obligated to consider climate risks.[251] Directors would have direct and actual notice of climate risk as a result of regulatory investigations or litigation brought against their own company, and potentially by suits brought against other fossil fuel corporations.[252] While *Ramirez* has just passed the pleadings stage, the case provides an important example of how existing fiduciary duties could require directors of public companies with securities duties to disclose information to shareholders about climate change and climate risk.

The rise of this second wave of litigation, therefore, increases the materiality of the risks of climate change to businesses and investors in those businesses and consequentially affects corporate governance. According to the *Omnicare* decision, directors will be at risk of breaching the duty of loyalty if they do not act appropriately with their shareholders, meaning they should inform their shareholders of the transition risks of climate change.[253] Transition risks include increased regulation on climate change, which may affect the bottom lines of these businesses.[254] Increased disclosure by directors to investors of both the material financial risks of climate change as well as transition risks are also being demanded by investors independent of litigation through shareholder proposals submitted at

[248] *See* Stone v. Ritter, 911 A.2d 362, 370 (Del. 2006). *Stone* involved the lack of implementation of a risk-based system in relation to anti-money laundering legal obligations and knowledge by the directors that they were not complying with their fiduciary duties is a requirement. This obligation will be more relevant where directors have legal obligations around emissions. *See* Bainbridge, Stone v. Ritter, *supra* note 223.

[249] Bainbridge, Stone v. Ritter, *supra* note 223.

[250] Barker, *supra* note 31, at 211.

[251] Barker & Winter, *supra* note 247, at 46.

[252] Barker, *supra* note 31, at 212–13.

[253] *See* Omnicare, Inc. v. Laborers Dist. Council Constr. Industry Pension Fund, 135 S. Ct. 1318, 1327 (2015); *see also supra* discussion in note 240.

[254] *See supra* Section III.A.

annual general meetings (AGMs).[255] Directors are unlikely to be able to ward off shareholder proposals, and the issue is likely to remain an agenda item at AGMs.

In April and May 2015, at the AGMs of both BP and Royal Dutch Shell, shareholder resolutions supported by a majority of shareholders as well as by management were passed.[256] The shareholder resolutions requested enhanced reporting by these corporations on their exposure to climate change, including portfolio resistance to the International Energy Agency's 2030 energy scenarios.[257] They also requested further information on operational environmental management and public policy positions on climate change.[258] The resolutions were submitted specifically in light of the Paris Agreement negotiations.[259] The reasoning behind the shareholder resolution, as shared by "Aiming for A," was to understand how these corporations were preparing for the low-carbon transition, reveal systemic risks that may impact investors, and engage in more collective fiduciary duties and enhance shareholder voice on climate change.[260]

In 2015 and 2016, similar resolutions requesting more action on climate change, including increased disclosure and the long-term portfolio impacts of climate change regulations and policies, were put forward at the AGMs of ExxonMobil and Chevron.[261] The Exxon resolution was not accepted by the majority of shareholders.[262] Shareholders did, however, pass a resolution that could enable them to appoint board members with expertise in climate change.[263] In 2017, shareholders of Occidental Petroleum approved a shareholder proposal requiring that the company disclose the business impacts of climate change.[264] This vote marks

[255] *See, e.g.*, AIMING FOR A COALITION, SPECIAL RESOLUTION – STRATEGIC RESILIENCE FOR 2035 AND BEYOND (2015), https://www.iccr.org/sites/default/files/resources_attachments/royaldutchshell2015resolution.pdf [https://perma.cc/WZQ2-36UE].

[256] Megan Darby, *BP Adopts Climate Risk Proposal After Shareholder Vote*, CLIMATE CHANGE NEWS (Apr. 16, 2015, 3:02 PM), https://www.climatechangenews.com/2015/04/16/bp-adopts-climate-risk-proposal-after-shareholder-vote/ [https://perma.cc/EV8F-W46G].

[257] AIMING FOR A COALITION, *supra* note 255.

[258] *Id.*

[259] *Id.*

[260] *Id.*

[261] Karen Savage, *Climate Proposals Fail at Exxon, Chevron Shareholder Meetings*, CLIMATE LIABILITY NEWS (May 29, 2019), https://www.climateliabilitynews.org/2019/05/29/climate-proposals-exxon-chevron/ [https://perma.cc/RA3U-RD55].

[262] *Id.*

[263] Rupert Neate, *ExxonMobil CEO: Ending Oil Production 'Not Acceptable for Humanity*,*'* GUARDIAN (May 25, 2016, 3:25 PM), https://www.theguardian.com/business/2016/may/25/exxonmobil-ceo-oil-climate-change-oil-production [https://perma.cc/2M99-SNGP].

[264] Emily Chasan, *Occidental Holders Override Board in Approving Climate Proposal*, BLOOMBERG (May 12, 2017, 8:02 AM), https://www.bloomberg.com/news/articles/2017-05-12/blackrock-to-back-climate-shareholder-proposal-at-occidental [https://perma.cc/4YVF-ZNMV].

the first time that a climate-related shareholder resolution was passed over the objections of the board.[265]

A number of carbon-major corporations, including Exxon, in relation to the 2016 shareholder resolutions, applied to the SEC under Rule 14a-8(i)(3) requesting permission to exclude these proposals from proxy materials to be circulated to shareholders on the basis that they were vague or indefinite.[266] The SEC, in all cases, disagreed, meaning that these corporations had to include the shareholder proposals in proxy materials, allowing all shareholders to vote on them.[267] Renssen notes that climate litigation has been given a "new lease on life" partly due to these shareholder actions targeting carbon-majors.[268]

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[265] It is important to note that shareholder proposals on their own are not binding on the corporation. In November 2019, the SEC proposed amendments to, among other things, increase the thresholds of shareholder eligibility to submit proposals under Rule 14a-8(b). *See generally* SEC Procedural Requirements and Resubmission Thresholds under Exchange Act Rule 14a-8, 84 Fed. Reg. 66458 (proposed Dec. 4, 2019) (to be codified at 17 C.F.R. Part 240) (The rule was proposed by the Commission on Nov. 5, 2019, but was not published in the Federal Register until Dec. 4, 2019. *See id.* at 66515).

[266] Exxon Mobil Corporation, SEC No-Action Letter (Apr. 2, 2019), https://www.sec.gov/divisions/corpfin/cf-noaction/14a-8/2019/adamseitchik040219-14a8.pdf [https://perma.cc/527Z-MQQC].

[267] However, the SEC allowed the company to reject a shareholder submission requesting ExxonMobil to set emissions targets consistent with the Paris Agreement. *See* Gary McWilliams, *U.S. Regulator Rules Out Exxon Shareholder Vote on Climate Resolution*, REUTERS (Apr. 2, 2019, 2:46 PM), https://www.reuters.com/article/us-usa-exxon-mobil-climatechange/u-s-regulator-rules-out-exxon-shareholder-vote-on-climate-resolution-idUSKCN1RE2E5 [https://perma.cc/Y5Z6-8DQV].

[268] Renssen, *supra* note 60, at 655. In 2010, the SEC issued guidance to investors regarding disclosures obligations in the context of climate change. Commission Guidance Regarding Disclosure Related to Climate Change, 75 Fed. Reg. 6290, 6296 (Feb. 8, 2010) (interpreting 17 C.F.R. pts 211, 231, 241). The SEC guidance lists several disclosure obligations which may be relevant, including Securities Act Rule 408 and the Exchange Act Rule 12b-20, which requires registrants to disclose further "material" information as may be necessary to ensure that statements are not misleading. Commission Guidance Regarding Disclosure Related to Climate Change, 75 Fed. Reg. at 6293–94. In *Basic v. Levinson*, the U.S. Supreme Court deemed a consideration to be material "if there is a substantial likelihood that a reasonable shareholder would consider it important in deciding how to vote." 485 U.S. 224, 231 (1988). While there has been very little action by the SEC in relation to its 2010 guidance, the legal requirement to disclose under the Securities Act of 1933, 15 U.S.C. §§ 77d-1(a)(4), (5) (2012), remains. The Act requires disclosure of material information which would ensure that the filing was not "misleading." 17 C.F.R. § 229.301(b) (2019). Further, the increasing number of extra-judicial resolutions submitted by shareholders against carbon major corporations requesting disclosure of the risks of climate change may exemplify that climate change itself is now considered material by shareholders. In addition, Item 103 of Regulation S-K requires a registrant to briefly describe any material pending legal proceedings to which it or its subsidiaries may be a party to. 17 C.F.R. § 229.103 (2019). Item 303 of Regulation S-K requires disclosure of Management's Discussion and Analysis

Fiduciary duties not only require directors to identify and assess climate risks but can also provide tools for directors to consider and address the risks of climate change. Heminway notes that corporate law in the social enterprise context remains, at least in some states, a very flexible legal tool.[269] She states that corporate law provides sufficient flexibility to directors in for-profit companies to consider what is best for shareholders in the long term, and can incorporate social enterprise approaches that consider shareholder wealth maximization.[270]

E. Shareholder Wealth Maximization and Climate Risk

The shareholder wealth maximization norm is often seen as a barrier to climate action, but in fact, the norm is primarily focused on the long-term profitability of the corporation. It is the most dominant norm undergirding U.S. corporate law and fiduciary duties in particular.[271] While not reflected in statutory obligations, its

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of Financial Conditions and Results of Operations (or MD&A) to enable investors to see the registrant entity from the perspective of management. 17 C.F.R. § 229.303 (2019) (Item 303). This statement should identify known trends, events, demands and uncertainties that are reasonably likely to have a material effect on the financial condition or operating performance of the registrant. *Id.* § 229.303(a)(1). The SEC guidance notes that the time horizon is not specified for the MD&A analysis and will depend on the registrant's particular circumstances. 75 Fed. Reg. at 6290, 6296. The risk factors assessed should include regulation, scientific and technological updates, as well as physical risks of climate change. *See id.*; *see also* Wallace, *supra* note 179, at 776 (noting that directors may determine that litigation risk does not reach the level of materiality that would require disclosure under Item 103 of Regulation S-K, assuming the litigation may not succeed due to causation hurdles, but that the MD&A disclosures may be a more potent tool for climate change disclosures, and that combined with political, economic and "advocacy-driven public consciousness," federal securities law could be the "main impetus for corporate action").

[269] Joan MacLeod Heminway, *Let's Not Give Up on Traditional For-Profit Corporations for Sustainable Social Enterprise*, 86 UMKC L. REV. 779, 786 (2018).

[270] *Id.*

[271] There are a variety of theoretical normative approaches to the objective of the corporation. Shareholder primacy was originally based on shareholders as owners of the company or, alternatively according to agency theorists, that shareholders own residual claims over corporate assets. Easterbrook & Fischel, *supra* note 45, at 1436. The ownership theory has been supplanted by the nexus of contracts or contractarian theories, which evolved from Coase's transactional costs theories, and generally characterise the corporation as a nexus or series of default contracts, and particularly as a species of private law. *Id.* at 1430. For a description of the varieties of theoretical approaches in the contractarian vein, see Bainbridge, *Director Primacy*, *supra* note 45, at 606. For a critique of this approach to the corporation, see William W. Bratton, Jr., *The New Economic Theory of the Firm: Critical Perspectives from History*, 41 STAN. L. REV. 1471, 1527 (1989). Contractarian theories are not uncontested. Lipton and Rosenblum contest the private characterization of corporations, pointing to their ties to the state and public welfare histories. In particular, they put forward an alternative model of the corporation as an entity, having its own independent interests in long-term business success. Martin Lipton & Steven A. Rosenblum, *A New System of*

normative power is still considerable, and it has been deemed a "fundamental norm" guiding corporate decision making, particularly in Delaware. Fershee has noted that recent Delaware cases and judicial writings have elevated this norm to a more "singular and narrow obligation for for-profit entities."[272] Norms are powerful tools in corporate law. Corporate actors, such as directors, are often influenced by corporate culture and norm-based standards.[273] So while often criticized, it is important to determine where synergies or complementarities between shareholder wealth maximization and climate risks to corporations can be found.

Contractarian theory characterizes the corporation as a nexus or series of private, default contracts or reciprocal arrangements between constituents who have a stake in its operations and profitability.[274] As these contracts are necessarily incomplete, fiduciary duties stand as "gap fillers," available to courts where cracks or holes in these contracts between shareholders and corporate officers and directors appear.[275] The hypothetical bargain analysis asks what contractual terms rational parties would have agreed to had they addressed these gaps *ex ante*, and the prevailing theoretical view is that they would have agreed to maximize shareholder value.[276] The purpose of fiduciary duties and the shareholder wealth maximization norm that guides their application, according to contractarians, is to focus the loyalty

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Corporate Governance: The Quinquennial Election of Directors, 58 U. CHI. L. REV. 187, 189, 202–03 (1991). Blair and Stout also put forward the team production theory, where directors focus instead on key contributors, which provide valuable inputs to the firm. *See* Margaret M. Blair & Lynn A. Stout, *A Team Production Theory of Corporate Law*, 85 VA. L. REV. 247, 249–55 (1999).

[272] Fershee, *supra* note 234, at 362 (attributing this increased focus partly on the rise of social enterprise corporate forms, but also to the general decline of director primacy towards a more intrusive interpretation of the business judgment rule by the courts in Delaware).

[273] Edward B. Rock & Michael L. Wachter, *Norms & Corporate Law, Introduction*, 149 U. PA. L. REV. 1607, 1608 (2001).

[274] Melvin A. Eisenberg, *The Conception that the Corporation Is a Nexus of Contracts, and the Dual Nature of the Firm*, 24 J. CORP. L. 819, 822–23 (1999). There is some debate whether the corporation in this approach is itself the nexus of contracts or is separate and apart from the nexus of contracts. For example, Bainbridge argues that the corporation is a nexus of contracts. Bainbridge, *Director Primacy*, *supra* note 45, at 553. Hessen also argues that the corporation is not an entity, but instead a group of contracting individuals. *See* Robert Hessen, *A New Concept of Corporations: A Contractual and Private Property Model*, 30 HASTINGS L.J. 1327, 1336 (1979).

[275] Bainbridge, *Director Primacy*, *supra* note 45, at 586; *see also* Jonathan R. Macey, *An Economic Analysis of the Various Rationales for Making Shareholders the Exclusive Beneficiaries of Corporate Fiduciary Duties*, 21 STETSON L. REV. 23, 41 (1991).

[276] Thomas A. Smith, *The Efficient Norm for Corporate Law: A Neotraditional Interpretation of Fiduciary Duty*, 98 MICH. L. REV. 214, 217 (2000). There are clear critiques of this approach. *See, e.g.*, LYNN A. STOUT, THE SHAREHOLDER VALUE MYTH: HOW PUTTING SHAREHOLDERS FIRST HARMS INVESTORS, CORPORATIONS, AND THE PUBLIC (2012).

of directors towards shareholders.[277] Shareholders are reified and elevated in this characterization of the corporation through a hypothetical bargain analysis. Shareholder wealth maximization appears as the majoritarian default rule or the governing principle that the majority of participants in this hypothetical bargain would choose.[278]

According to many contractarians, the role of shareholder wealth maximization is to seek long-term shareholder value or gain.[279] However, Jensen describes the ultimate goal of the corporation in terms of the firm and not shareholder value. He states that the value maximization norm means that corporate managers should make all decisions so as to increase the total long-run market value of the firm.[280] Allen et al. describe one possible aim of corporate law as being to achieve the best results for stockholders, based on the property model of the corporation that generates value for the entity in the long term.[281] Delaware law has embraced the property model of the corporation as an entity, which still incorporates shareholder wealth maximization, but in a form that emphasizes long-term wealth maximization by reinforcing some powers of corporate directors.[282]

Hansmann and Kraakman describe the primary aim of corporate law as striving to increase long-term shareholder value.[283] However, the definition of shareholder value is often unclear.[284] Shareholders represent a shifting class of investors, some with long term and others with short term profit profiles. It is difficult for managers to determine the time and risk preferences of existing and future shareholders.[285] As

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[277] Bainbridge, *In Defense*, *supra* note 45, at 1441.

[278] Bainbridge, *Director Primacy*, *supra* note 45, at 573.

[279] *Id.* at 583.

[280] Michael C. Jensen, *Value Maximization, Stakeholder Theory and the Corporate Objective Function*, 14 J. APPLIED CORP. FIN. 3, 12 (2002) (defining the value of the firm as the sum of all financial claims on firms including equity, debt, warrants and preferred stock).

[281] William T. Allen et al., *The Great Takeover Debate: A Meditation on Bridging the Conceptual Divide*, 69 U. CHI. L. REV. 1067, 1071 (2002).

[282] *Id.* at 1079; *see also* William T. Allen, *Our Schizophrenic Conception of the Business Corporation*, 14 CARDOZO L. REV. 261, 272–75 (1992) (noting that, historically, theories of wealth maximization have 'papered over' the conflict over the conceptual approaches of the corporation by invoking what he calls a murky distinction between long-term profit maximization and short-term profit maximization).

[283] Hansmann & Kraakman, *The End of History for Corporate Law*, *supra* note 45, at 439–41.

[284] *See* Hemingway, *supra* note 167, at 970–71 n.90 (noting that value can often be a broader term than wealth maximization, with the latter often focusing solely on profit whereas shareholder can value a number of outputs in addition to profits).

[285] Henry T. C. Hu, *Risk, Time, and Fiduciary Principles in Corporate Investment*, 38 UCLA L. REV. 277, 287 (1990) (noting that directors must satisfy both widows and orphans seeking sure and immediate succor as well as cowboy capitalists waiting for a bigger score); Mark E. Van Der Weide, *Against Fiduciary Duties to Corporate Stakeholders*, 21 DEL. J. CORP. L. 27, 37 (1996) (explaining that shareholders diverge in their interests in several ways including long-term versus short term, diversified versus non-diversified, and individual

a result, directors may seek to maximize share price, but markets are not always efficient in terms of absorbing and assessing information.[286] As Keay notes, the strong version of the efficient market hypothesis states that the share price will automatically take into account all public and private information at any given time about the corporation, and the semi-strong version takes into account all public information.[287] Therefore, while descriptions of shareholder wealth maximization often incorporate a long-term view, its application does not always (or even typically) clearly distinguish between shareholder value and share price, or provide guidance to directors on whether their focus should be on share value or overall firm value.[288]

Reliance solely on share price depends on the efficient market hypothesis – that markets accurately, efficiently, and timely absorb and assess all relevant information about the corporations.[289] Stout describes this as the "Achilles heel" of the hypothesis because it is not clear how information flows into share price valuation.[290] Market prices may not closely reflect actual expected risks and returns. Therefore, the use of share price alone as a decisional tool may encourage mismanagement of assets by directors in favor of short-term returns.[291] Markets are not very good at assessing and taking into account long-term systemic risk.[292] Information that is complex or difficult to acquire may take a long time to be

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versus institutional); Lisa M. Fairfax, *Making the Corporation Safe for Shareholder Democracy*, 69 OHIO ST. L.J. 53, 83–85 (2008) (noting several ways in which shareholder interests can diverge with specific differences of alignment between short-term and long-term investors and their potential alignment with stakeholders); Stephen M. Bainbridge, Response, *Director Primacy and Shareholder Disempowerment*, 119 HARV. L. REV. 1735, 1745 (2006) (arguing that "[a]ll organizations must have some mechanism for aggregating the preferences of the organization's constituencies and converting them into collective decisions," and that "[a]uthority-based decisionmaking structures . . . tend to arise when the firm's constituencies face information asymmetries and have differing interests").

[286] *See* Hu, *supra* note 285, at 357–58.

[287] Andrew Keay, *Getting to Grips with the Shareholder Value Theory in Corporate Law*, 39 COMM. L. WORLD REV. 358, 369–70 (2010); *Id.* at 375 (questioning in the social context whether share prices are an appropriate proxy for societal values).

[288] Hu, *supra* note 285, at 295–300.

[289] Lynn A. Stout, *The Mechanisms of Market Inefficiency: An Introduction to the New Finance*, 28. J. CORP. L. 635, 639–40 (2003).

[290] *Id.* at 637; *see also id.* at 659–60 (noting that informational efficiency is the speed at which prices respond to information, but that this theory assumes a *homo economicus* model of human behaviour—that people are rational actors with stable preferences who promote their own welfare).

[291] *Id*. at 657.

[292] The financial crisis of 2008 illustrates these failings. *See, e.g.*, Richard A. Posner, *On the Receipt of the Ronald H. Coase Medal: Uncertainty, the Economic Crisis, and the Future of Law and Economics*, 12 AM. L. & ECON. REV. 265, 278 (2010); U.N. Conference on Trade and Development, *Corporate Governance in the Wake of the Financial Crisis: Selected International Views*, 59–63, U.N. Doc. UNCTAD/DIAE/ED/2010/2 (2010).

absorbed into the share price and may never be fully absorbed.[293] This is particularly the case in the context of climate change and climate risk – businesses are generally not accurately accounting for and incorporating the significant, short-, medium-, or long-term risks of climate change to their business.[294]

Despite the significant levels of risk facing corporations due to climate change, short-termism still persists with the reliance on efficient capital market theories that blur or dismiss the distinction between short-term and long-term interests.[295] The impacts of climate change are already affecting companies in terms of increased operational costs, disrupted production, plant shutdowns, worker absences due to extreme events, as well as compromised assets.[296] Because the impacts of climate change are only predicted to worsen in the coming decades, companies must shift from an incrementalist adaptation approach to transformational and long-term approaches to decision-making and disclosures on climate risk and climate change.[297] This requires long-term thinking, and the ability to manage large time scales and complex information on climate change and to adapt these into smaller pieces of information that can be absorbed into industry sectors and individual corporate strategies. Directors will need guidance and expertise to do this, and they must adopt long-term thinking.[298]

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[293] Stout, *supra* note 289, at 656.

[294] THE ECONOMIST INTELLIGENCE UNIT, *supra* note 29, at 3; WORLD ECON. FORUM & PRICEWATERHOUSECOOPERS, HOW TO SET UP EFFECTIVE CLIMATE GOVERNANCE ON CORPORATE BOARDS GUIDING PRINCIPLES AND QUESTIONS 10 (2019), http://www3.weforum.org/docs/WEF_Creating_effective_climate_governance_on_corporate_boards.pdf [https://perma.cc/AD95-CAB7] [hereinafter WEF & PwC]; Goldstein et. al., *supra* note 171, at 18.

[295] *See* Lipton & Rosenblum, *supra* note 271, at 203. *See generally* Eduard Gracia, Corporate Short-Term Thinking and the Winner Takes All Market (Oct. 28, 2003) (unpublished manuscript), https://dx.doi.org/10.2139/ssrn.445260 [https://perma.cc/ADC9-5UAC] (discussing the impact of corporate short-term thinking); David Millon, *Shareholder Social Responsibility*, 36 SEATTLE U. L. REV. 911, 911 (2013); Daniel M. Gallagher, *Activism, Short-Termism and the SEC: Remarks at the 21st Annual Stanford Directors' College* (June 23, 2015), https://www.sec.gov/news/speech/activism-short-termism-and-the-sec.html [https://perma.cc/3MS6-4PT7]; Leo E. Strine Jr., *One Fundamental Corporate Governance Question We Face: Can Corporations Be Managed for the Long Term Unless Their Powerful Electorates Also Act and Think Long Term?*, 66 BUS. LAWYER 1, 10–12 (2010).

[296] Goldstein et al., *supra* note 171, at 22 tbls. 1 & 2.

[297] *Id*. at 23.

[298] The Center for American Progress (CAP) recently petitioned the SEC to create a standard disclosure for environmental, social, and governance indicators. Letter from Cynthia A. Williams et al., to Brent J. Fields, Secretary, SEC, Petition for a Rulemaking on Environmental, Social, and Governance Disclosure (Oct. 1, 2018), https://www.sec.gov/rules/petitions/2018/petn4-730.pdf [https://perma.cc/5LX8-4C7U]. Signatories to the petition included investors managing over US$5 trillion worth of assets, including city and state retirement organizations, pension funds, academic institutions, and investment firms. *Id*. Their petition is based on a CAP report that cites excessive short-

While the shareholder wealth maximization norm is commonly interpreted as allowing directors to take a long-term view, systemic market forces that tend towards short-termism still have a powerful grip over the norm's application. Therefore, fiscal incentives, along with broader and deeper regulatory changes on corporate emissions, are required for swift and effective transitions away from fossil fuels. Despite these disincentives, fiduciary duties as currently interpreted are sufficiently flexible to allow directors to take into account the risks of climate change to their businesses and take a longer-term perspective on value creation that incorporates the risks and opportunities of energy transitions. In particular, fiduciary duties as guided by the shareholder wealth maximization norm at the very least require directors to be informed of and take into account the risks of climate change to their businesses. Barker notes that as climate risks have evolved to become an issue of financial import for many corporations, assessing climate risk is not only consistent with but is now a prerequisite to the maximization of wealth.[299] In addition, directors' views on maximization of wealth may be changing. In August 2019, the Business Roundtable (a group of CEOs of approximately 200 of the largest U.S. corporations) issued a statement on the purpose of the corporation, which differed significantly from all of their previous statements issued since 1997 which had all focused primarily on shareholders. In the 2019 statement, a commitment to all stakeholders is emphasized, as well as a focus on generating long-term value for shareholders.[300]

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termism as a key obstacle preventing shareholders and other stakeholders access to the long-term information they need to assess the long-term stability of their target investments in the context of climate change. *Id.* The CAP report connects the detrimental effect of short-term profit making in the context of the shareholder wealth maximization norm to the issue of climate change. ANDY GREEN & ANDREW SCHWARTZ, CORPORATE LONG-TERMISM, TRANSPARENCY AND THE PUBLIC INTEREST (2018), https://www.americanprogress.org/issues/economy/reports/2018/10/02/458891/corporate-long-termism-transparency-public-interest [https://perma.cc/5BC2-RAP3]. The SEC response in its guidance note on Modernizing Regulation S-K notably excluded any standardized requirement for reporting on climate change. *See* Commissioner Allison Herren Lee, *'Modernizing' Regulation S-K: Ignoring the Elephant in the Room,'* U.S. SEC. & EXCH. COMM'N. (Jan. 30, 2020), https://www.sec.gov/news/public-statement/lee-mda-2020-01-30 [https://perma.cc/244X-MZNQ].

[299] Barker, *supra* note 31, at 205.

[300] *See* Business Roundtable, Statement on the Purpose of a Corporation (Aug. 19, 2019), https://opportunity.businessroundtable.org/wp-content/uploads/2020/03/BRT-Statement-on-the-Purpose-of-a-Corporation-with-Signatures.pdf [perma.cc/63LU-44PU]; *see also* Press Release, Business Roundtable, Business Roundtable Redefines the Purpose of a Corporation to Promote 'An Economy That Serves All Americans' (Aug. 19, 2019), https://www.businessroundtable.org/business-roundtable-redefines-the-purpose-of-a-corporation-to-promote-an-economy-that-serves-all-americans [https://perma.cc/A4MP-8CKG] (explaining that previous statements—which had endorsed a concept that corporations exist principally to serve their shareholders—no longer accurately describe the ways in which CEOs endeavor to create value for all stakeholders, whose long-term interests are inseparable).

While increasing litigation on climate change has raised the profile of climate risks, and fiduciary duties provide sufficient flexibility to directors to assess and consider climate risk, several barriers still remain. One such barrier is the structure of corporate groups, as will be discussed in the next section. Shareholders of companies enjoy limited liability, meaning that shareholders, absent certain circumstances, are not liable for debts incurred by the corporation in which they hold shares.[301] These shareholders may themselves be corporations, called parent corporations, and together they form a corporate group.[302] Limited liability is one of the hallmarks of corporate law, and only when courts decide to pierce the corporate veil will limited liability not apply to parent companies.[303] Climate litigation against subsidiary companies may encounter difficulties in attempting to fix liability on the parent companies due to the firmly entrenched system of segregating liability into individual corporate entities within a corporate group structure. As a result, climate policies decided by the parent company and applied to subsidiary companies may not attract liability at the parent level.

F. Corporate Group Structures – A Barrier to Climate Liability?

One area which has received less attention in this recent spate of cases is the role of the corporate group structure in terms of liability. In many of these cases, the parent company has been the focus of liability. However, large corporations often segregate jurisdictional activity into separate legal entities within a corporate group structure to purposefully disaggregate liability away from the parent company, even if the profits are issued via dividends up to it.[304] Firms facing higher litigation risk often tend to have more subsidiaries.[305] The separate liability of corporate actors within group structures has long been established in law.[306] But liability can be overcome by courts piercing the corporate veil, imposing liability on parent companies for debts of their subsidiaries. Common law jurisdictions such as the United States and the United Kingdom use similar tests for piercing the corporate

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[301] Bainbridge, *In Defense*, *supra* note 45, at 1428.

[302] PHILIP I. BLUMBERG, THE MULTINATIONAL CHALLENGE TO CORPORATION LAW 52 (1993).

[303] *Id.* at 59.

[304] *Id*.

[305] James A. Ligon & James Malm, *Litigation Risk, Financial Distress, and the Use of Subsidiaries,* 67 Q. REV. ECON. & FIN. 255, 256 (2018).

[306] *See* Salomon v. A. Salomon & Co. [1897] AC 22 (HL) (appeal taken from Eng.); Adams v. Cape Indus. [1990] Ch 433 (C.A.). The U.S. jurisdiction has also had a spate of cases which demonstrate that piercing the veil within corporate groups is difficult. *See, e.g.*, Walkovsky v. Carlton, 223 N.E.2d 6, 10 (N.Y. 1966); Gardemal v. Westin Hotel Co., 186 F.3d 588, 596 (5th Cir. 1999) (finding that personal jurisdiction over the defendant was lacking due to lacking evidence of defendant's business dealings in Texas). *But see* OTR Assocs.' v. IBC Servs., Inc., 801 A.2d 407, 412 (App. Div. 2002) (finding the veil pierced when fraud is present).

veil, including: the alter ego test; the test of whether there has been complete domination by a parent company of a subsidiary company; the test of whether the parent has abused the privilege of incorporation; and the single business enterprise doctrine.[307]

A recent case in the United Kingdom illustrates how difficult piercing the veil can be in the carbon-major group structure. The case of *HRH Emere Godwin Bebe Okpabi*[308] highlights the relevance of this doctrine in the context of climate change litigation. Here, the claimants were seeking damages as a result of serious and ongoing pollution from leaks of oil from a pipeline in the Niger Delta from the parent company of the Royal Dutch Shell group.[309] The local subsidiary, Shell Petroleum Development Company of Nigeria Ltd (RDS), and its subsidiary, SPDC, were also respondents. The claimants claimed negligence under the common law of Nigeria, which is the same as the common law test in the United Kingdom, and brought a suit in the English courts, which was appealed to the Court of Appeal.[310] The Court of Appeal considered the 3-part test of the duty of care as foreseeability, proximity, and reasonableness, and considered that a parent company could owe a duty of care to an employee of a subsidiary or a party directly affected by its operations in certain circumstances: where the parent has taken direct responsibility for devising a material health and safety policy and its adequacy is the subject of the claim, or the parent controls the operations which give rise to the claim.[311]

However, issuing mandatory policies was not sufficient, in the majority's opinion, to demonstrate the sufficient nexus of control by the parent over the operations of the subsidiary.[312] The policies in question were at a high level, and none came close to establishing the sort of proximity necessary to establish a duty of care. There was, however, a strident dissent by LJ Sales, who noted that RDS did

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[307] This latter test is more prevalent in the United States. *But see Walkovsky*, 223 N.E.2d at 10 (applying alter ego test). In the U.K., despite vigorous attempts by Lord Denning to establish group liability through a single economic unit theory, subsequent cases since the 1970s have not used this approach.

[308] [2018] EWCA (Civ) 191 (appeal taken from EWHC (TCC)) [hereinafter HRH Emere].

[309] *Id.* at [1].

[310] *Id.* at [3].

[311] *Lungowe v.* Vendanta Res. [2017] EWCA (Civ) 1528; [83] (appeal taken from EWHC (TCC)); *see also Chandler v. Cape* PLC [2012] EWCA (Civ) 525 [80] (appeal taken from EWHC (QB)) 525 (imposing liability on a parent company for responsibility for the health and safety of the subsidiary's employees where the parent had employed a doctor whose specific function was to protect the employees, thereby establishing the requisite nexus of responsibility). In HRH Emere, the issue of proximity was problematic for the court. The court was concerned about whether RDS was in control of the SPDC operations. Five elements of the relationship of proximity were examined: mandatory policies, standards and manuals on engineering design and practice, systems of supervision and oversight, financial control over SPDC, and a high level of direction and oversight of SPDC's operations were exercised by RDS. [86].

[312] HRH Emere at [89].

put in place security, motivated by the negligent management of the pipeline by the subsidiary and the negative reputational damage this was causing the parent company.[313] He argued that, because RDS directed what steps SPDC should take, and joint decisions had been taken, this activity was enough to establish a direct and substantial relationship and, therefore, a pattern of distribution of expertise and control, which was arguably capable of piercing the corporate veil and meeting the criteria in *Chandler v. Cape*.[314] The Vice Chancellor was less sanguine, stating bluntly that the corporate structure itself is specifically designed, and therefore militates against, requisite proximity being met.[315] However, the U.K. Supreme Court in 2019 accepted jurisdiction to hear the appeal of another case regarding a claim brought by 1,800 Zambian villagers against U.K.-based Vedanta and its Zambian subsidiary regarding waste discharges from a copper mine, specifically on the basis that group policies can, in fact, establish a sufficient nexus of control between parent and subsidiary.[316]

These cases on liability by a parent in the group structure are relevant in the climate change context, as most policies on climate change and emissions reductions are produced at the parent level, and the issuing of mandatory guidance is clearly established by this case as not providing a sufficient relationship of proximity. While a U.K. case, the outcome in relation to mandatory policies is similar to a U.S. case on piercing the corporate veil.[317] In *Gardemal v. Westin Hotel*,[318] a widow attempted to sue the U.S. parent company of Westin Hotels regarding the death of her husband while they were staying at a Mexican subsidiary of the hotel chain. The plaintiff attempted to rely on a number of circumstances, including standard mandatory policies and practices shared within the group structure, as well as similar trademarks.[319] These were specifically held to be insufficient in establishing the single business enterprise ground of piercing the corporate veil.[320]

While many states in the United States use a totality of circumstances test, and therefore each case is decided on its facts, the use of standard climate policies within a corporate group on its own,[321] and without significant control exercised by the

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313 *Id.* at [163–64] (Sales, L.J., dissenting).

314 *Id.* at [165] (citing *Chandler*, *supra* note 311)

315 *Id.* at [196].

316 *Vendanta Res*. v. *Lungowe* [2019] UKSC 20. [2] (appeal taken from EWCA (Civ)).

317 Tests for piercing the corporate veil are similar between U.K. and U.S. jurisprudence. While both jurisdictions state that the tests for piercing the corporate veil between parent and subsidiary companies are fact-specific, they often involve similar tests of abuse of the corporate form, using the corporation as an alter ego.

318 Gardemal v. Westin Hotel Co., 186 F.3d 588 (5th Cir. 1999).

319 *Id.* at 593–94.

320 *Id.* at 594–95.

321 *See* Kinney Shoe Corp. v. Polan, 939 F.2d 209, 211–12 (4th Cir. 1991). Kinney Shoe Company brought an action to recover money owing under a sublease between Kinney and Industrial Realty Company but brought the suit against the parent company, Polan. The court considered a totality of circumstances including primarily the undercapitalization of the

parent company, will likely not be sufficient to fix liability on the parent company. This means that litigation in jurisdictions where parent corporations are located may be cut short if litigation is only directed at the parent company and not the local subsidiary where the harm is being felt. Climate litigation against carbon-major corporations is therefore not likely to coalesce in the near future into a wave of successful suits against parent corporations and, therefore, the impacts of litigation may be muted if parent corporations are not subject to any awards of damages.

IV. WHICH WAY FORWARD FOR DIRECTORS?

Climate risks for corporations are increasing dramatically. As discussed in the previous sections, litigation is likely to only continue against carbon-major corporations, and new scientific processes will continue to advance understanding of these companies' contributions to climate impacts, thereby increasing the chances of success of litigation efforts. Climate litigation matters in an era of failing global governance, as it has the ability to connect different actors and governance scales.[322] Climate change has been called a "multi-scalar" problem[323] due to the fact that its governance is found among multiple levels of actors at the local, regional, national and international levels. Interactions amongst these governance scales are often problematic, and so litigation can serve a unique governance function, as it "creates fluid pathways for interactions among regulation at subnational, national, and international levels."[324] The role of litigation in transnational law is particularly pertinent for multinational entities such as carbon-major corporations, which have subsidiaries and/or operations in disparate jurisdictions. Multinational corporations are sensitive to regulatory changes and progressive judicial decisions in various jurisdictions due to their global footprints.

Climate change is posing tremendous risks to corporate assets globally.[325] The impacts of climate change will put corporate assets at risk, including their infrastructure, consumer base, supply chains, and, therefore, business models. Directors sit in the crosshairs of these emerging impacts, information, and risks, and they must act. This section highlights the publicity risks of increased litigation, the links between litigation and directors' decision-making, as well as some potential climate-based management strategies that could be adopted by directors in the face of mounting climate impacts and risks.

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subsidiary, a lack of corporate formalities being adhered to, and using the subsidiary as a shell with no substantial transactions flowing through it, and granted the equitable remedy of piercing the corporate veil.

[322] PEEL & OSOFSKY, *supra* note 38, at 53.

[323] *Id.*

[324] *Id.*

[325] *See supra* Section III.A.

A. Courtrooms as Key Battlegrounds

Courtrooms have become key battlegrounds in the public debate over climate change.[326] As Blumm and Wood note, courts offer a deliberative fact-finding forum that can balance both scientific and political climate-related concerns.[327] Corporatizing climate litigation, therefore, has expository value. It lays bare the previously secreted role of carbon-major corporations and relates it to the human pain and suffering, as well as financial costs caused by climate-induced extreme events. It also exposes the persistent refusal by the most regressive corporations to act in a societally responsible manner. Many of these corporations have pursued a self-fulfilling prophecy; the absence of regulation would ensure that fossil fuels would be a good investment and that corporations would, therefore, maximize their profits to the detriment of the world.[328] As Fromhoff, Heede, and Oreskes note, many carbon-major corporations "are actively creating the future that they claim to accept the need to avoid."[329] The public narrative told in these cases is important, and provides a public forum for "an understanding of social and factual issues [to be] co-produced and settled."[330] The corollary of this understanding is the proposition that these corporations are also well placed in terms of their capacities in access to political power, wealth, technological advancement, and expertise to lead the transition to clean, safer energy.[331]

Having shed their previous reluctance to engage with climate science, judicial actors now recognize the important role that new scientific disciplines play in the arena of tort law. New scientific processes could also provide progressive judges with the opportunity to rethink older interpretations of legal and evidentiary thresholds around tort, burdens of proof and causation, as well as obligations under corporate law.[332] This second wave of climate litigation demonstrates an evolving global conversation between courts, government actors, private victims, tortfeasors, directors, and investors in the context of climate change.[333] As the negative impacts of climate change increase, the global responses are likely to increase in a corresponding fashion.

While political will in the United States may still be lacking at the federal level, state-based actions have gained traction.[334] Federal resistance may also wane as the

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[326] PEEL & OSOFSKY, *supra* note 38, at 1.

[327] Michael C. Blumm & Mary Cristina Wood, *"No Ordinary Lawsuit": Climate Change, Due Process and the Public Trust Doctrine*, 67 AM. U. L. REV. 1, 56 (2017).

[328] Frumhoff et al., *supra* note 55, at 164.

[329] *Id.* at 166.

[330] *See* Fisher et al., *supra* note 39, at 198.

[331] *See* Henry Shue, *Responsible for What? Carbon Producer CO_2 Contributions and the Energy Transition,* 144 CLIMATIC CHANGE 591, 591 (2017).

[332] Ganguly et al., *supra* note 21, at 2.

[333] Weaver & Kysar, *supra* note 38, at 36.

[334] Domonoske, *supra* note 166; Kirsten H. Engel & Barak Y. Orbach, *Micro-Motives for State and Local Climate Change Initiatives* 2 HARV. L. & POL'Y REV. 119, 119–120

impacts of climate change become more severe and apparent, more information is forthcoming due to improved climate science and corporate disclosures, and carbon-majors begin to spend less money opposing the science on climate change. State and local actions can also increase the costs of operating for carbon-majors through increased regulation and permitting processes and enhanced incentives for clean energy. New scientific processes give climate-focused political groups new tools to target these companies and increase public pressure. As a result, anti-carbon-major movements may grow, implicating directors and requiring that they respond to social media and other public campaigns.

As a public forum to highlight the importance of climate science, courts can also act as drivers of public and private sector action on climate change, even if the cases themselves are unsuccessful.[335] As Ganguly et al. note, these cases could be "sublime failures," achieving the aims of the litigants without achieving judicial success.[336] The simple act of adjudicating climate change can help to shape the norms and beliefs of the broader public about the importance of climate change, and the contributory role and responsibilities of carbon-major companies.[337] These cases highlight the importance of the evolving nature of climate risk, even if no damages or liability awards are ever made.

The public attention these cases garner should capture the attention of responsible directors, as these litigation trends may lead to shifting social norms and political contexts. While it is unclear what the causal relationship is between litigation and strengthened climate governance, enhanced regulatory obligations are certainly emerging.[338] Common standards on disclosure are likely to become global

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(2008); Kristen H. Engel & Marc L. Miller, *State Governance: Leadership on Climate Change* 441–42 (Arizona Legal Studies Discussion Paper No. 07-37, 2009); *see* WE ARE STILL IN, https://www.wearestillin.com [https://perma.cc/7925-9ZLY] (last visited Nov. 1, 2018).

[335] *See* Marjanac et al., *supra* note 25, at 616.

[336] Ganguly et al., *supra* note 21, at 25; *see also* Wallace *supra* note 179, at 314 (noting that due to weaknesses in causation links, climate litigation is unlikely to be disclosed under Item 103 Regulation S-K as directors may determine that success in this litigation is unlikely so poses only a weak risk to financial circumstances).

[337] Ganguly et al., *supra* note 21, at 20.

[338] *See* EXPERT GROUP ON CLIMATE OBLIGATIONS OF ENTERPRISES, PRINCIPLES ON CLIMATE OBLIGATIONS OF ENTERPRISES LEGAL PERSPECTIVES FOR GLOBAL CHALLENGES 39 (2018), https://climateprinciplesforenterprises.files.wordpress.com/2017/12/enterprises principleswebpdf.pdf [https://perma.cc/L24P-T93U] [hereinafter PRINCIPLES]. *See also generally* Noel Hutley & Sebastian Hartford Davis, *Climate Change and Directors' Duties, Supplemental Memorandum of Opinion* (Mar. 26 2019), https://cpd.org.au/wp-content/uploads/2019/03/Noel-Hutley-SC-and-Sebastian-Hartford-Davis-Opinion-2019-and-2016_pdf.pdf [permalink unavailable] (discussing the impact of climate change litigation on businesses in Australia); Janis Sarra, *Fiduciary Obligations in Business and Investment: Implications of Climate Change*, COMMONWEALTH CLIMATE & LAW INITIATIVE (Apr. 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3356024 [https://perma.

industry norms, and therefore will affect the nature of what information directors should both consider and disclose to their shareholders.[339] Disclosure obligations will put the issue of climate change directly on the agendas of AGMs, becoming an increasing concern for shareholders and, therefore, directors. The impacts of climate change are costly to corporations, and the bidirectional risk metrics of climate change should now necessarily inform directorial duties, significantly boosting the potential contribution of private law to resolving the climate crisis.

B. Connecting Litigation with Directors' Duties

Legal obligations for corporations in the context of climate change are already slowly transitioning towards greater liability.[340] At the very least, the materiality and risk thresholds for disclosure and fiduciary considerations for directors are increasing. The Task Force on Climate-Related Financial Disclosure (TCFD) has issued guidance to assist investors in assessing both the transition plans of the companies in which they have invested and potential changes in the value of underlying assets due to climate change.[341] If investors perceive increased risks of climate change to companies, they are likely to push for increased disclosure by directors and continue to put pressure on directors to address these risks. Directors may also be under pressure to disclose private governance risks from their emissions, including reputational risks, supply chain risks, increased customer and investor

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cc/UAQ7-HKTS]; Lord Sales, Justice of the U.K. Supreme Court, *Directors' Duties and Climate Change: Keeping Pace with Environmental Challenges*, ANGLO-AUSTRALIAN L. SOC'Y (Aug. 27, 2019), https://www.supremecourt.uk/docs/speech-190827.pdf [https://perma.cc/W9JZ-YHU3].

339 The Task Force on Climate-Related Financial Disclosure has issued guidance to assist investors in assessing the transition plans of the companies in which they have invested, and potential changes in the value of underlying assets due to climate change. The Task Force's first report identified barriers facing investors in relation to climate change, which included lack of coherent and consistent reporting on climate change by corporations, as well as weak corporate governance structures. *See* TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES, PHASE I REPORT OF THE TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES 29–32 (2016), https://www.fsb-tcfd.org/wp-content/uploads/2016/03/Phase_I_Report_v15.pdf [https://perma.cc/TPV8-4842]. The work of the Task Force helped to disseminate knowledge around the bidirectional character of corporate climate risk – encouraging directors and investors to assess potential risks of climate change to their businesses. The final report highlighted the risks of climate change to global fiscal stability. While the impacts of climate change are both industry-specific and variable, the Task Force identified best practices in corporate disclosures on climate change, including seven broad principles for effective reporting. *See id.* at 4.

340 *See* PRINCIPLES, *supra* note 338, at 38.

341 TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES, FINAL REPORT: RECOMMENDATIONS OF THE TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES 13–24 (2017), https://www.fsb-tcfd.org/wp-content/uploads/2017/06/FINAL-2017-TCFD-Report-11052018.pdf [https://perma.cc/7M9N-RB5F].

demands, and financial risks.[342] Attorneys may also be at risk of ethics rules violations if their clients fail to disclose the risks of climate change.[343]

As impacts and risks materialize more clearly, litigation is likely to increase and take even more varied forms. Already, industries such as the fishing industry have started suing carbon-majors for harm from climate change.[344] Banks and international financial institutions are moving away from financing fossil-fuel intensive activities and industries,[345] and if financial institutions become the target of litigation, carbon-majors could encounter difficulties finding financing for future activities. Litigation imposes both direct costs on companies of settlements and attorneys' fees, but also indirect costs such as investor uncertainty about firm prospects, loss of customers, suppliers and prestige, and a diversion of management time and resources.[346] Litigation can also affect credit ratings, the cost of debt, and other financing costs.[347] Litigation "will progress as the threat of runaway climate change materialises" more clearly, and courts are likely to "step in and interpret the law in a way that meets society's most urgent demands."[348] However, it should be noted in the U.S. context that President Trump's most enduring legacy will be the appointment of conservative judges.[349] These judicial appointments may provide a

[342] Michael P. Vandenberg & Ben Raker, *Private Governance and the New Private Advocacy*, 32 NAT. RESOURCES & ENVIR. 45, 45–49 (2017).

[343] Victor Flatt, *Disclosing the Danger: State Attorney Ethics Rules Meet Climate Change*, 2020 UTAH L. REV. (forthcoming 2020).

[344] Complaint, Pacific Coast Fed'n of Fishermen's Ass'ns, Inc. v. Chevron Corp., CGC-18-571285 (Cal. Super. Ct. Nov. 14, 2018).

[345] World Bank Group [WBG], *World Bank Group Announcements at One Planet Summit*, Press Release No. 2018/087/CCG (Dec. 12, 2017), https://www.worldbank.org/en/news/press-release/2017/12/12/world-bank-group-announcements-at-one-planet-summit [https://perma.cc/N2RU-CUTF] (announcing the World Bank is to stop financing upstream oil and gas projects after 2019 except in exceptional circumstances in the poorest countries); *see also* NEW ECONOMIC FOUNDATION, *European Central Bank to Consider Climate Impact* (Jul. 10, 2018), https://neweconomics.org/2018/07/european-central-bank-to-look-into-assessing-climate-impact [https://perma.cc/C8RD-GWB6] (lauding move by European Central Bank to conduct a climate impact assessment of its quantitative easing program because the Foundation is concerned that "ECB policy inadvertently subsidises carbon intensive activities and risks reinforcing the current 'carbon lock-in' of energy systems centred upon fossil fuels, endangering financial stability and undermining the Paris Climate Agreement").

[346] Matteo P. Arena, *Corporate Litigation and Debt*, 87 J. BANKING & FIN. 202, 203 (2018).

[347] *Id*. at 202.

[348] PRINCIPLES, *supra* note 338, at 38; *see, e.g.*, WildEarth Guardians v. Zinke, 368 F. Supp. 3d 41, 51, 55 (D.D.C. 2019) (ruling that the U.S. Bureau of Land Management did not sufficiently consider climate effects of oil and gas leasing in its National Environmental Policy Act review for 282 leases and sales covering over 300,000 acres in Wyoming).

[349] Tom McCarthy, *Trump's Legacy: Conservative Judges Who Will Dominate US Law for Decades*, GUARDIAN (Mar. 10, 2019, 4:00 AM), https://www.theguardian.com/us-news/2019/mar/10/trump-legacy-conservative-judges-district-courts [https://perma.cc/6N

dampening effect on climate litigation trends, and any successful district court cases may have a short shelf life.

Despite this judicial dampening potential, this Article has demonstrated that a shift is emerging in the context of litigation launched against carbon-major corporations, with judges engaging more closely with new climate science processes, litigants becoming more creative, and, consequentially, raising public consciousness of climate change. This litigation shift is putting direct pressure on directors' duties by highlighting the risks of climate change to corporations and is likely to have several impacts. It will directly affect the procedural elements of directors' duties by raising the profile of climate risk and the role and contribution of carbon-major corporations to climate risk, and by triggering a legal obligation to both consider and incorporate this information into their decision-making processes.

Litigation may also have more indirect effects by influencing the content of directors' decisions if directors take a long-term perspective. The open-textured nature of directors' duties allows directors to react to evolving risks and industry norms. Directors are supposed to be informed and responsible actors, and the increased profile of climate change risk can no longer be ignored by directors of corporations that are highly vulnerable to climate risks.

Whether or not tort law adapts to climate change or these cases are successful, climate change triggers the application of fiduciary duties by the sheer scale of the risk it poses to businesses. In many instances, climate change is leading to an adaptation of legal orders and legal reasoning,[350] and this will continue to be the case in the area of corporate law. While corporate law was historically insulated from environmental concerns, the risks of climate change are becoming so great that directors can no longer afford to ignore them, or not to pass on risk-based information to their shareholders. As a result, private law may contribute to better and more informed climate-decision making by directors and investors on climate change.

Short-term profit-making has traditionally been the sole focus of many directors, and in this vein, directors may be reluctant to make long term transition decisions if short-term costs are incurred due to a short-term approach to shareholder wealth maximization. As a result, market forces may continue to exert adverse pressure on directors' decision making.[351] But shareholder wealth maximization does not require a short-term approach, and directors should pay attention to climate change not just because of the increasing risks of climate litigation, but because climate-induced risks and damages are occurring now and are only expected to

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[350] PRINCIPLES, *supra* note 338, at 48, 71, 153.

[351] *See generally* BENJAMIN J. RICHARDSON, FIDUCIARY LAW AND RESPONSIBLE INVESTING: IN NATURE'S TRUST (2015) (examining reforms in fiduciary law necessary to shift financial markets away from the current focus on asset returns toward investment decisions that promote environmental sustainability).

worsen over time, and so it makes good long-term sense for their shareholders.[352] Overcoming short-term thinking will be critical for directors to take action on climate change.

The corporate trend in climate litigation has other, perhaps more indirect, implications for directors. While concrete legal obligations for corporations may be in their infant stages, Flynn notes that, even if litigation suits are unsuccessful, they can persuade corporations to shift assets to more sustainable sources, put pressure on them to lobby legislatures to develop comprehensive climate change legislation, and also keep the issue of climate change alive in the public consciousness.[353] Private law could ultimately lead directors to decide to divest assets away from fossil fuels and re-allocate assets into cleaner energy sources if they use tools available to them.

C. Climate-Based Management Tools and Strategies

While directors may feel overwhelmed by the complexity of climate change, there are existing steps they can and should take. They should use existing tools made available by the TCFD to assess the risks of climate change to their business, including direct and indirect risks. Directors should acquire a more detailed understanding of the impacts of climate change to broader society in order to understand and assess systemic risks, indirect risks, impacts on social welfare and consumption patterns, and the risks of non-linear impacts of climate change. They should also assess climate-related opportunities.

Several factors impede directors from addressing climate-related risks and opportunities. These include competing priorities such as cybersecurity, the sheer complexity of climate change and its systemic nature, and short-term business cycles and risk assessments.[354] While information and climate models are complex, industry guidance under the TCFD is providing more and more tools to directors and managers to incorporate climate change more appropriately to their business strategies. One of these tools is scenario analysis.[355] This tool allows directors to create scenarios to predict the impact of climate change on their existing and future profitability models. Directors should adopt scenario analysis approaches and industry-specific guidance provided by the TCFD. While there will be some temporal dissonances between the long time scales of climate change and the shorter profit horizons of corporations, scenario analysis provided by the TCFD can help

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[352] Beate Sjafjell, *Beyond Climate Risk: Integrating Sustainability into the Duties of the Corporate Bond*, 23 DEAKIN L. REV. 41, 48–53 (2018) (noting that "shareholder primacy" and short-term maximisation of returns for shareholders constitute key barriers to boards addressing not only climate risk but also wider "planetary boundary" risks as well) [hereinafter Sjafjell, *Beyond Climate Risk*].

[353] Flynn, *supra* note 68, at 861–63; *see also* Sjafjell, *Beyond Climate Risk*, *supra* note 352, at 56 (noting that the sheer scale of climate litigation regardless of their outcomes should make them "a driver for change" at the board level).

[354] WEF & PwC, *supra* note 294, at 10.

[355] TCFD, *supra* note 30, at 25–31.

directors to manage this dissonance, and craft corporate strategies to better cater for a variety of time scales which are relevant to their businesses.[356] Climate impacts should no longer be considered as only long-term risks. Climate impacts are happening now, and directors should assess short-, medium- and long-term impacts.

Directors should also gain a better understanding of the contributions of their businesses to climate impacts and employ scenario analysis to assess their predicted emissions against global temperature goals. Carbon-major companies, in particular, should assess increasing litigation and other transition risks, including in the realm of securities and corporate law, as well as physical risks to their assets, including potentially stranded assets. These risks should be disclosed to investors, following TCFD guidelines.

In addition, the acquisition of knowledge cannot remain static as the accuracy of the science of climate change and assessment of its impacts increases. Increasing disclosure requirements also mean that directors should implement appropriate reporting and information systems, which are kept up to date as the science and impacts of climate change improve and increase. Failure to monitor and disclose risks appropriately to shareholders may violate the duty of loyalty and could also attract litigation from investors. Litigation claims are likely to arise when fiduciary actors fail to share and disclosure relevant information and risks to shareholders or fail to take adaptive actions based on their knowledge.[357] Litigation aside, investors are increasingly expecting boards to have fluency with "climate-related risks and opportunities."[358] As stated above, directors' duties are open-textured and as a result do not remain static. The content and requirements of these duties will change as scientific knowledge about the risks of climate change evolves.

Finally, directors should assess the profitability and feasibility of energy transitions away from fossil fuels. They should look at both mitigation and adaptation actions beyond incrementalistic action and consider transformational actions and the opportunities and reduction of risks they hold.

Directors of all corporations should become aware of the relevance of climate change to their businesses, and this may involve hiring experts on the board to achieve this. As the impacts of climate change are only predicted to worsen in the coming decades, directors must have a clearer understanding of the specific risks from climate change to their businesses and investigate and prepare for transformational approaches to climate risk and climate change. This requires that directors take longer-term perspectives but also a phased approach. In order to do this, directors need to develop the ability to manage and understand the large time

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[356] *See generally* Lisa Benjamin & Stelios Andreadakis, *Corporate Governance and Climate Change: Smoothing Temporal Dissonance to a Phased Approach*, 40 BUS. L. REV. 146 (2019) (examining how new initiatives, such as TCFD, the Enterprise Principles, and the Oxford-Martin Principles, encourage directors to consider the risks from climate change, including emissions scenarios which take into account short-, medium- and long-term scenarios).

[357] *See* Marjanac et al., *supra* note 25, at 616.

[358] WEF & PwC, *supra* note 294, at 10.

scales and complex information on climate change. New research is emerging, which clearly points to the business case for transition, even for carbon-major corporations.[359] Directors should now be both fully aware of the risks that climate change poses to their business and the opportunities available to them for cleaner alternative energy production. Directors will need guidance and expertise to do this, as well as long-term thinking.

Fiduciary duties provide directors with sufficient flexibility to take on the challenge of climate change.[360] However, barriers remain. While the second climate litigation wave is ostensive, corporate group structures could pose a further barrier to success against parent companies.[361] If litigants and regulators cannot reach the parent companies, the scope of the second wave's impact may be diminished. The interstate nature of emissions may also prove problematic. A myopic focus on short-term profitability also poses significant barriers to climate action. Even if this second wave of corporate climate litigation is largely unsuccessful, increased climate risk combined with shifting industry norms should lead responsible directors to both cater to and carefully consider the risks climate change poses to their businesses and shareholder interests.

While climate litigation serves useful purposes as outlined above, other regulatory changes and fiscal incentives are required, as corporate law alone cannot tackle the enormous challenges of climate change. But increased climate risks and impacts also increases public awareness, which is likely to spur on regulatory action. Directors should consider these shifts and their implications for their businesses. This Article concludes that while a variety of regulatory and fiscal developments are needed to provide a more comprehensive approach to climate change, existing fiduciary duties guided by shareholder wealth maximization norms provide sufficient flexibility for directors to tackle climate change.

CONCLUSION

The world is facing a climate crisis. Global temperatures are increasing more rapidly than even once expected and, if emissions remain unabated, we could see global average temperatures rise by 4ºC (or higher) by the end of the century, and we have very little time to correct course.[362] Crises can and do have impacts on corporate law. While corporate law remains largely a default set of rules and laws with few mandatory requirements relating to climate change, regulatory changes are

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[359] *See* GOLDMAN SACHS, *supra* note 193, at 32.

[360] *See supra* Section III.D.

[361] *See supra* Section III.F.

[362] IPCC, CLIMATE CHANGE 2014, *supra* note 1, at 11, 16; *see also* Will Steffen et al., *Trajectories of the Earth System in the Anthropocene*, 115 PROC. NAT'L ACAD. SCI. 8252, 8257–58 (2018); LAURIE LAYBOURN-LANGTON ET AL., THIS IS A CRISIS: FACING UP TO THE AGE OF ENVIRONMENTAL BREAKDOWN 15 (2019), https://www.ippr.org/research/publications/age-of-environmental-breakdown [https://perma.cc/K3G9-82HS].

often inspired by crises.[363] Social and political regimes are reacting to the climate crisis. Regulatory and fiscal restraints on carbon are starting to emerge, and litigation against corporations on climate change is escalating and only likely to increase in the future. While still in their infancy, these changes and movements could be seen as the beginning of the end of the fossil fuel economy and could herald in a global transition towards a lower-carbon economy.

Irrespective of the outcomes of existing cases, this new spate of corporate climate litigation serves a different and perhaps more lasting purpose – it highlights and publicizes the risks of climate change to directors, investors, and the public. Directors must take into account increased climate risks when making business decisions. Existing litigation and regulatory efforts are by no means sufficient, and larger and broader fiscal instruments and regulatory policies will be needed to usher in a uniform and swift energy transition. At the same time, markets and, therefore, corporations are not accurately considering the risks of climate change, or of transitions away from fossil fuels. Directors should consider and assess escalating climate risks to their business and should disclose these risks to shareholders where they are material. Fiduciary duties provide them with sufficient flexibility to take action on climate change in the interests of their shareholders. Corporate law, along with new industry guidance and tools, provides directors with the strategies they require to address the climate crisis. It is in the best interests of shareholders, but also the public at large, that directors harness the power of corporations to tackle the climate crisis head-on, before it is too late.

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[363] Jill E. Fisch, *Institutional Competition to Regulate Corporations: A Comment on Macey*, 55 CASE W. RES. L. REV. 617, 618 (2005).