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Introduction

The world is facing a climate emergency, and companies lie at the heart of this crisis. Companies contribute a staggering amount of greenhouse gas (GHG) emissions to the atmosphere, and so are central to the problem of climate change. Companies can (and some already have) also harness technology, know-how and capital to contribute to climate solutions. In addition to this dual role, companies themselves are vulnerable to climate risks. Climate risks are therefore bidirectional for companies; these entities create climate risks through their activities but are also subject to these risks. Some industries such as energy, utilities, agriculture and forestry are more culpable (and more vulnerable) than others. In the climate context, companies therefore have a public role and arguably a public responsibility, as their emissions negatively affect society at large. Yet companies are governed primarily by private law. In fact, corporate theories such as shareholder primacy and shareholder wealth maximisation have long influenced corporate activity and company law, particularly in the Anglo-American context, and have fuelled the corporate approach to climate change. This book argues that these private theories and norms are outdated in the Anthropocene, and new approaches to climate change should be adopted by companies and by company law.

Companies are artificial legal creations which have facilitated enormous economic growth and wealth over the past few centuries. From a legal perspective, Anglo-American corporate directors' duties are fairly flexible, with few specific duties required of directors within corporate statutes. It is perhaps due to this tremendous discretion afforded to directors that companies have become such powerful vehicles of wealth creation. This extraordinary accumulation of wealth and power has been accompanied by significant wealth inequality and negative environmental impacts, the climate crisis being one of these. Greenhouse gases are

perhaps the greatest or 'mother of all' negative externalities[1] produced by corporate activity, and their production and the consequential changes to the climate they fuel, are posing extraordinary risks to society, financial systems and the companies themselves, amounting to an existential threat to human existence.

The theory and law of companies in the context of climate change have been understudied, but are extremely important. It is the malleability that corporate law directors' duties afford that provides the most hope that companies will provide more and better solutions to the climate crisis. The backdrop of capitalism and the commodification of the environment are never far from the premise of this book, and these interrelated issues have had a suppressive effect on corporate climate action. As Janet Dine notes, to consider competing models of corporate governance is to consider competing models of capitalism.[2] Globalisation facilitated the high mobility of capital, and supported the explosive growth of transnational corporations (or TNCs). TNCs are the main focus of this book due to their tremendous contribution to GHG emissions. However, companies are not alone in their facilitation of and benefit from the neoliberal capitalist system. Other financial actors such as banks, international financial institutions, hedge funds, institutional investors, management consultants and accounting firms exercise pressure on companies to externalise environmental and social costs.[3] Many of these actors are also incorporated as companies, and so the theories and laws covered in this book may also apply to them. Any changes to company law and theory must be accompanied by changing approaches of capital to climate change and climate risks. This book focuses on the theory and law of companies in the context of climate change, with an emphasis on the United Kingdom.

1.1 THE CLIMATE CRISIS

The current period of human existence has been named the age of the Anthropocene, or the human epoch. This refers to a geological age in which anthropogenic activities are the primary driver of changes to Earth's climate, geology and ecology.[4] Anthropogenic GHG emissions are a significant driver of observed planetary changes. The 1992 United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as anthropogenic, being 'a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability

[1] Richard Tol, 'The Economic Effects of Climate Change' (2009) 23(2) *Journal of Economic Perspectives* 29, 29.
[2] Janet Dine, 'Corporate Regulation, Climate Change and Corporate Law: Challenges and Balance in an International and Global World' (2015) 26 Eur. Bus. L. Rev. 173, 174.
[3] Doris Fuchs, *Business Power in Global Governance* (Lynne Rienner 2007), 111.
[4] The Anthropocene is an unofficial unit of geologic time; see www.nationalgeographic.org/encyclopedia/anthropocene (accessed 20 July 2020).

observed over comparable time periods'.[5] Climate change has been attributed to the natural and anthropogenic emissions of GHGs. Human activity leads to emissions of four main GHGs: carbon dioxide, nitrous oxide, methane and halocarbons.

The Intergovernmental Panel on Climate Change (IPCC) is the main international scientific body on climate change and issues periodic assessment reports. The IPCC concluded with very high confidence (a nine out of ten likelihood) that the global average net effect of human activity since 1750 has been one of warming.[6] GHG emissions, and the resulting impacts from climate change, account for a large and growing share of global environmental damage, estimated to constitute between 69 and 73 per cent of all externalities from 2008 to 2050.[7] The most recent IPCC Assessment Report stated that the concentrations of atmospheric carbon dioxide, methane and nitrous oxide are unprecedented in comparison with the past 800,000 years.[8]

The increase in GHG emissions from pre-industrial times is attributed primarily to fossil-fuel emissions and, secondly, to net land use changes such as deforestation.[9] Fossil-fuel combustion and industrial processes now account for approximately 78 per cent GHG emission increases from 1970 to 2010.[10] Fossil-fuel combustion on its own accounts for approximately 90 per cent of total global carbon dioxide emissions (excluding emissions from forest fires and wood burning).[11]

Emission rates are generally increasing, despite global mitigation policies. The IPCC estimates that GHG emissions increased between 1970 and 2010, with larger absolute increases occurring more recently, between 2000 and 2010.[12] Emissions continued to rise annually through 2018.[13] Further increases will lead to further warming, which in turn will lead to long-lasting and potentially irreversible changes to the climate system.[14] These changes will lead to impacts on ecosystems and

[5] United Nations Framework Convention on Climate Change (adopted 9 May 1992, entered into force on 21 March 1994) (UNFCCC), art. 1.2.
[6] Intergovernmental Panel on Climate Change, 'Climate Change 2007: Synthesis Report' (2008), 37, www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf (accessed 4 May 2020).
[7] UNEP Finance Initiative and Principles for Responsible Investment, 'Universal Ownership: Why Environmental Externalities Matter to Institutional Investors' (2010), 5, www.unepfi.org/fileadmin/documents/universal_ownership_full.pdf (accessed 31 July 2020).
[8] Intergovernmental Panel on Climate Change, 'Climate Change 2014: Synthesis Report' (2014), 4, www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf (accessed 4 May 2020).
[9] IPCC (n 6), 37.
[10] IPCC (n 8), 4.
[11] Jos G. J. Olivier, Greet Janssens-Maenhout and Jeroen A. H. W. Peters, 'Trends in Global CO_2 Emissions' (PBL Netherlands Environmental Assessment Agency 2012), 20.
[12] IPCC (n 7), 4.
[13] United Nations Environment Programme, 'The Emissions Gap Report 2019: A UNEP Synthesis Report' (UNEP, Nairobi, November 2019), iv.
[14] IPCC (n 8), 8.

people which are 'severe, pervasive and irreversible'.[15] At certain ecological or climate tipping points, impacts become irreversible. Near-term choices on emissions can lead to what the IPCC refers to as 'lock-ins or irreversibilities' in the climate system.[16] These events could lead to runaway climate change.

The impacts of climate change are likely to be catastrophic in many countries. Climate impacts are also systemic and non-linear. Due to the complexity of climate science, many of these impacts are as yet unknown and uncertain. This means that there is no certainty that human systems and societies will be able to adapt to all of the changes. At the end of 2019, the United Nations Secretary-General, António Guterres, stated that the point of no return on climate change is in sight, and hurtling towards us.[17]

1.2 CLIMATE ACTION

The main international agreement on climate change is the Paris Agreement, concluded in 2015. Under this agreement, countries submitted nationally determined contributions to emission reductions. Parties also agreed global temperature goals – to keep global mean temperature increases to 'well below 2°C', with an aspirational goal of 1.5°C, compared to pre-industrial averages.[18] Currently, the world is not on track to meet either of these goals, and current estimates, taking into account the Paris pledges, anticipate a 3.2–3.4°C rise.[19] In order to meet the global temperature goal of well below 2°C, net global emissions will have to approach zero by the second half of this century.[20] This will require steep declines in the carbon intensity of all sectors, including the energy sector.[21] While it is still possible to reach the 2°C global goal, the window is 'closing fast'[22] in order to do so. We have approximately ten years to get a handle on the climate crisis and bend the curve of emissions towards net zero by 2050.

The International Energy Agency estimates that global emissions should peak in 2020, which means ending coal and oil use within the next few years.[23] A transition to low- or zero-carbon sources in the energy sector is a critical piece of the global

[15] Ibid.
[16] Ibid., 87.
[17] Associated Press, 'U.N. Chief Warns of "Point of No Return" on Climate Change' 2 December 2019, www.nbcnews.com/news/world/u-n-chief-warns-point-no-return-climate-change-n1093956 (accessed 10 July 2020).
[18] Article 4, UNFCCC, The Paris Agreement, FCCC/CP/2015/L.9.
[19] UNEP (n 13), ix.
[20] IDDRI and SDSN, 'Pathways to Deep Decarbonization' Interim 2014 iii, www.iddri.org/Publications/Pathways-to-deep-decarbonization-Interim-2014-Report (accessed 10 August 2015).
[21] Ibid., iii.
[22] Ibid., ix.
[23] OECD and IEA, 'World Energy Outlook Special Report, Energy and Climate Change' (2015), 13, www.iea.org/publications/freepublications/publication/WEO2015SpecialReportonEnergyandClimateChange.pdf (accessed 10 August 2019).

response to climate change,[24] as two-thirds of all anthropogenic GHG emissions result from the energy sector.[25] Power must be produced almost exclusively from zero- or low-carbon sources in all countries in order to reach this goal.[26] Business-as-usual responses or incremental changes will not be sufficient.[27] Amid the coronavirus pandemic, 2020 is anticipated to be the warmest year on record, with an estimated 1.2°C rise, illustrating that we have much work to do, and quickly, if we are to avoid climate catastrophe. Companies have a large and critical role to play in this transition.

1.3 THE CAUSAL RELATIONSHIP BETWEEN COMPANIES AND CLIMATE CHANGE

Companies are major contributors to the climate crisis through the emission of GHGs. Richard Heede's quantitative analysis of historic fossil fuel and cement production records of ninety leading investor-owned, state-owned and nation-state producers of oil, natural gas, coal and cement concluded that 63 per cent of cumulative worldwide emissions of carbon dioxide and methane from 1854 to 2010 were attributed to these 'carbon major'[28] entities. 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.[29] Of the eighty-five existing entities examined, fifty-four were headquartered in developed countries, and seven Anglo-American companies appear in the top twenty of emitters.[30] Two English companies, BP and Anglo American, appear in the top twenty carbon-major emitters, emitting 2.74 per cent (or 35,837 Mt CO_{2e}) and 0.50 per cent (or 7,242 Mt CO_{2e}), respectively of global totals.[31] Five US companies – Chevron, ExxonMobil, ConocoPhillips, Peabody Energy and CONSOL Energy – appear in the top twenty, emitting 3.52 per cent (or 51,096 Mt CO_{2e}), 3.22 per cent (or 46,672 Mt CO_{2e}), 1.16 per cent (or 16,866 Mt CO_{2e}), 0.86 per cent (or 12,432 Mt CO_{2e}) and 0.63 per cent (or 9.096 Mt CO_{2e}), respectively.[32] Anglo-American corporate approaches to climate change are therefore critical.

The majority of these emissions originate from activities such as fossil-fuel combustion, flaring, venting, fugitive or vented methane, fuel use by those entities and

[24] IDDRI and SDSN (n 20), x; OECD/IEA (n 23), 3.
[25] OECD/IEA (n 23), 20.
[26] IDDRI and SDSN (n 20), 35.
[27] Ibid., x.
[28] Richard Heede, 'Tracing Anthropogenic Carbon Dioxide and Methane Emissions to Fossil Fuel and Cement Producers, 1854–2010' (2014) 122(1) *Climatic Change* 229, 229.
[29] Ibid., 234.
[30] Ibid., 236.
[31] Ibid., 237.
[32] Ibid.

cement production.[33] The twenty largest investor- and state-owned energy companies are responsible for 29.5 per cent of all global industrial emissions, and the ten largest investor-owned companies alone are responsible for 15.8 per cent of global emissions through 2010.[34]

Half of the total carbon and methane emissions have been produced since 1984,[35] indicating that emission levels are not abating. In a sample of 153 large companies, Caring for Climate (C4C) estimated that these companies were responsible for the release of approximately 2,107 million metric tonnes of carbon dioxide in 2010 alone.[36] The CDP (previously the Carbon Disclosure Project) found that the emissions from the largest fifty emitters actually increased by 1.65 per cent since 2009.[37] These fifty global companies emitted 73 per cent of total Global 500 emissions in 2013.[38]

The role of companies as major contributors to climate change is therefore enormous. Contributions by companies to GHG emissions are so great that Heede concludes that the vast productive capacity and reserves of 'carbon major' entities, combined with their profit-seeking motives, mean that these companies and nation states arguably control 'the future of the planetary climate system'.[39] It is likely then, as the climate change crisis becomes more severe, corporate GHG emissions will be subjected to further scrutiny and regulation. This is already occurring in some jurisdictions, particularly in the United Kingdom. This leads to the question of what regulations are companies currently subject to, and what would be the best mechanism(s) to mediate corporate contributions to climate change in the future. Corporate theory and law have largely been overlooked as a tool to incentivise and facilitate corporate climate action, and this book hopefully goes some way towards filling that gap.

1.4 COMPANY LAW AND CLIMATE CHANGE

The modern company evolved during the nineteenth century's Industrial Revolution, and was primarily used as a vehicle to pool assets to enable large-scale investments.

[33] Ibid., 234.
[34] Ibid.
[35] Ibid.
[36] Caring for Climate, 'Caring for Climate Progress Report 2012' (May 2012), 7, www.unglobalcompact.org/library/1121 (accessed 4 May 2020).
[37] CDP, 'Sector Insights: What Is Driving Climate Change Action in the World's Largest Companies?' Global 500 Climate Change Report (2013), 8, www.pwc.com/mu/en/pressroom/assets/g500_2013_report_embargoed__500bst_12_september_2013.pdf (accessed 1 July 2020). Scope 1 emissions are those emitted directly from sources the company owns or controls. Scope 2 emissions are indirect emissions that arise from the consumption of products/services of a company. The Global 500 are the largest companies by market capitalisation included in the FTSE Global Equity Index Series.
[38] Ibid.
[39] Heede (n 28), 237–8.

The United Kingdom was the site of some of the earliest company law statutes of this time, including the Joint Stock Companies Act of 1844 which expanded access to the incorporation of companies, and the Limited Liability Act of 1855 which established that shareholders were not liable for any debts of the company they invested in, provided they had fully paid for their shares. These legal innovations allowed for the pooling of large amounts of capital, with fairly low risks for investors, within the corporate form. These companies then built railroads, bridges, factories and other infrastructure and industry which drove the Industrial Revolution forward.[40]

While these companies maintained a level of public and social character, due in part to their government-based charter,[41] automatic chartering and the lifting of restrictions on the size and scope of corporate activities led to the morphing of companies away from public-facing entities into purely for-profit entities.[42] This movement took off in the latter half of the next century, partly due to a theoretical understanding of companies existing to serve only shareholder interests. In particular the period from the 1970s to the 1990s saw the emergence of several neoliberal ideologies which remain prevalent today. From the 1970s onwards, trends of deregulation by politicians, combined with theories such as shareholder wealth maximisation, formed the foundation for Anglo-American approaches to company law and corporate regulation.[43] These powerful neoliberal paradigms did not recognise negative corporate externalities as problematic, and emphasised deregulation in a global context.[44] The 1980s, in particular, was a critical time, witnessing corporate takeovers in the United States and United Kingdom, and the rise of capital markets as drivers of productivity.[45] Due to these socio-economic developments, TNCs now command financial and human resources of a magnitude previously unseen.[46] These developments led to the principles of shareholder primacy and wealth maximisation becoming the dominant driving forces behind Anglo-American corporate activities.

Many shareholder primacists take an economic approach to the role and function of a company. In their view, the overall objective of a company is to serve the interests of the whole of society but primarily through increasing profits for

[40] British trading companies and the English chartering system were the roots of the American corporation, Barnali Choudhury and Martin Petrin, *Corporate Duties to the Public* (Cambridge University Press 2019), 11.
[41] Ibid., 10.
[42] Ibid., 13.
[43] Ibid., 17.
[44] Dine (n 2), 174.
[45] William M. Bratton and Michael L. Wachter, 'The Case against Shareholder Empowerment' (2010) 158 U. Pa. L. Rev. 653, 669.
[46] Fuchs (n 3), 2.

shareholders – the pursuit of social efficiency in economic terms.[47] As a result, the main, and sometimes only, objective of a company is to increase the wealth of its shareholders. The shareholder wealth maximisation norm is considered by shareholder primacists as the best means of achieving overall social efficiency, although they do acknowledge there are differing opinions over whether this is empirically correct.[48]

One of the key themes of the shareholder primacy norm is that it privileges the role and value of shareholders within a company, thereby diminishing the role of other, non-shareholder constituents, such as the environment. In addition, shareholder primacists do not value the contributions made to companies by the environment, nor attempt to decrease negative externalities, such as GHG emissions, as this may detract from the profitability of the company.

According to shareholder primacists, any attempt at environmental protection is mainly viewed as an agency cost to be avoided.[49] The global atmosphere thereby becomes a free polluting ground for companies to exploit. Dealing with climate change reduces shareholder wealth as it diverts assets from other investments that may be more profitable for shareholders.[50] Shareholder primacy, in its strong form, also reduces the role of state intervention in a company. This approach to the company is inadequate when the climate is viewed as an important stakeholder in the company. Companies rely on a stable climate in order to operate. However, under the shareholder primacy norm, non-shareholders can be excluded from consideration by company law, and must rely instead on regulation external to the company for protection. The shareholder primacy and wealth maximisation norms may also have influenced recent amendments to English company law through Section 172 of the United Kingdom's Companies Act 2006, and have had a pervasive and systemic impact on Anglo-American company law, and company law around the world.

Despite their pervasive character, these corporate norms do not always dominate interpretations of directors' duties. Company law has often balanced shareholder power with directorial discretion, with directors often being privileged in that balance.[51] Directors are consistently provided with a certain amount of discretion

[47] John Armour, Henry Hansmann and Reinier Kraakman, 'What Is Corporate Law?' in Reinier Kraakman et al. (eds.), *The Anatomy of Corporate Law: A Comparative and Functional Approach* (2nd ed., Oxford University Press 2009), 28–9.

[48] Ibid., 29.

[49] Paddy Ireland, 'Company Law and the Myth of Shareholder Ownership' (1999) 62 *MLR* 32, 33; Marc T. Moore and Antoine Reberioux, 'Revitalizing the Institutional Roots of Anglo-American Corporate Governance' (2011) 40(1) *Economy and Society* 84, 85; Diane Denis, 'Corporate Governance and the Goal of the Firm: In Defence of Shareholder Wealth Maximization' (2016) 51 *The Financial Review* 467, 479.

[50] Audrey Wen-hsin Hsu and Tawei Wang, 'Does the Market Value Corporate Responses to Climate Change?' (2013) 41(2) *The International Journal of Management Science* 195, 195.

[51] Bratton and Wachter (n 45), 659.

or leeway by courts in how and for whom they exercise their discretion, provided it is linked to some benefit to the company. This book challenges traditional corporate norms as being outdated and inappropriate in the context of climate change, and illustrates how even a shareholder-centric jurisdiction such as the United Kingdom can move towards a more climate-friendly approach to company law and climate regulation.

1.5 VARYING CORPORATE FORMS

There are several different types of corporate forms that are often available to shareholders. By far the most popular of these forms, particularly in the developed world, has been the for-profit company. For-profit companies can be either small, private (or close) companies with only a few shareholders, or large companies with thousands of shareholders. In the Anglo-American for-profit company, there is often a unitary board of directors which establishes and monitors corporate policies. The board can delegate management to other officials, and shares are owned by shareholders who are afforded varying degrees of power and control in certain circumstances. While directors can also be shareholders, they occupy two different roles – the directors manage the company and shareholders own shares.

The power of the corporate form was advanced considerably by the seminal English House of Lords case of *Salomon* v. *Salomon*.[52] This case held that even within a small private for-profit company, where there were only seven shareholders, those shareholders were not responsible for the debts of the company as it was a separate legal entity. The intertwined principles of limited liability and separate legal personality established the for-profit company as a low-risk vehicle for investors to pool capital. It also allowed groups of companies to flourish, with the parent company in the role of a shareholder not being liable for the debts of its subsidiaries.[53]

Companies can be private in that they do not offer their shares for sale to the public, with pre-emption rights often included in their founding documents to restrict sales to third parties. They can also be public, and/or listed on a public stock exchange such as the London Stock Exchange or New York Stock Exchange. Non-profit companies also exist, such as companies limited by guarantee, which do not distribute profits back to their shareholders. Charitable incorporated organizations or community interest companies in the U.K., and Benefit Companies in the U.S., are newer forms of social enterprise corporate models.

[52] [1897] AC 22.
[53] *Re Southard and Company Ltd.* [1979] 1 WLR 1198.

Community interest companies (CICs) were developed in the U.K. in 2005 as part of a larger social enterprise policy.[54] CICs are primarily limited companies that operate not for the benefit of their shareholders, but instead for the benefit of an identified community.[55] Profits are to be dedicated to these community interests. While these entities are allowed to pay dividends to shareholders, these are capped, and an asset lock ensures that assets must be preserved and not sold for the profit of shareholders.[56] CICs have a statutory obligation to ensure the company meets the needs of the community interest, and must file an annual report demonstrating how they have done so. These types of companies have struck a balance by accepting higher level of constraints upon profitability, in exchange for providing a clear signal regarding their community purposes.[57] CICs can be used as a legal vehicle to attract private capital and distribute benefits to local communities,[58] although they may be more appropriate for the non-profit sector rather than for the private sector.[59]

Benefit companies were introduced in the U.S. in 2010, and are designed to be 'for profit' companies.[60] Originally developed in Delaware, benefit companies have spread throughout several states in the U.S.. B Lab is a private, non-profit company that certifies its own type of B-corporations, and has been a major lobbying force behind the passing of benefit company legislation in various states.[61] Legislation on benefit companies varies from state to state, but essentially it is designed to allow these companies to work in the best interests of those stakeholders who are materially affected by benefit companies. These obligations are identified in the certificate of incorporation of the benefit company.[62]

[54] Alex Nicholls, 'Institutionalizing Social Entrepreneurship in Regulatory Space: Reporting and Disclosure by Community Interest Companies' (2010) 35 *Accounting, Organization and Society*, 394, 396.

[55] Department of Business Innovation and Skills, 'Office of the Regulator of Community Interest Companies: Information and Guidance Notes' Chapter 1 (November 2012), 3, www.gov.uk/government/organisations/office-of-the-regulator-of-community-interest-companies (accessed 8 May 2019).

[56] Ibid, 10–11.

[57] Timothy Edmonds, 'Briefing Paper No. 03426, Community Interest Companies' (30 April 2014), 6, http://researchbriefings.files.parliament.uk/documents/SN03426/SN03426.pdf (accessed 8 May 2019).

[58] Carol Liao, 'Limits to Corporate Reform and Alternative Legal Structures' in Beate Sjåfjell and Benjamin J. Richardson (eds.), *Company Law and Sustainability: Legal Barriers and Opportunities* (Cambridge University Press 2015), 292Adam Brown, David Cox and Roy Pinnock, 'United Kingdom: Community Benefits Incorporated: Shale and Other Contentious Infrastructure' (2013) *International Energy Law Review*, 2–3.

[59] Liao (n 58) 295.

[60] Karsten Engsig Sorensen and Mette Neville, 'Social Enterprises: How Should Company Law Balance Flexibility and Credibility?' (2014) 15(2) *European Business Organization Law Review* 5, 6.

[61] J Haskell Murray, 'Social Enterprise Innovation: Delaware's Public Benefit Corporation Law' (2014) 4 *Harvard Business Law Review* 345, 348.

[62] Sean W Brownridge, 'Canning Plum Organics: The Avant-Garde Campbell Soup Company Acquisition and Delaware Public Benefit Corporations' (2014) 39 Del. J. Corp. L. 703, 710.