NET-ZERO TRANSITION AND DIVESTMENTS OF CARBON-INTENSIVE ASSETS

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Abstract

An unfamiliar term in the not-too-distant past, "net zero" has become a headline-maker in the business and financial world with the growing importance of climate change. Succumbing to increasing pressure, companies and financial institutions around the world have come to adopt net-zero transition plans and targets, pledging to hit certain emission-reduction targets in a long-term period. Moreover, regulators around the world have started to require the disclosure or adoption of net-zero transition plans and targets.

However, an unintended consequence of net-zero transition commitments has been the increased popularity of divestments. That is, many firms seeking to fulfill a net-zero plan are passing on carbon-intensive assets (i.e., oil, gas, and coal assets) to other firms that are likely to be non-committal to environmental goals or that operate under less pressure from investors, stakeholders, and regulators. Such divestments, technically mergers and acquisitions (M&A) transactions, present an ideal opportunity to improve a divesting firm's environmental record and reach ambitious net-zero goals, creating the impression that an emission reduction has occurred. However, the key is how acquiring firms handle these assets. If they continue operating as before, there will not be an overall improvement for the global climate. Worse, such assets can be operated by new owners in a way that causes more emissions. In any case, such divestments undermine the credibility and value of net-zero ambitions by allowing firms to reach targets by simply divesting assets.

This article explores the reasons and motivations for divestments or, more broadly M&As of carbon-intensive assets and explains why the increased role of net-zero commitments can be undermined by those transactions. We provide some evidence to illustrate the landscape of such transactions and the concerns they give rise to. Lastly, we explore several policy options to address the problem.

Keywords: net-zero transition, climate change, divestments, mergers and acquisitions, net-zero plans and targets, regulatory arbitrage, net-zero arbitrage

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I. INTRODUCTION

Climate change is currently one of the greatest problems facing humanity.[1] The business and financial world is an important contributor to climate change and, thus, a primary place to achieve substantial improvement on the current ecological pathway.[2] As alarm bells have begun to ring louder in recent years, companies and financial firms have found themselves in a tremendous transformation to become more sustainable. This "sustainability" drive often translates into achieving what is known as "net zero," a status indicating the firm does not impose any climate-related externality on a net basis, and thus the firm's environmental footprint is neutral.[3] Crucially, to have any realistic chance of achieving the Paris Agreement's goals of a global temperature increase of well below 2°C and preferably 1.5°C compared to pre-industrial levels, net zero should be achieved by 2050 with interim goals along the way.[4] This creates an uphill task for firms to reduce their emissions or, in the case of financial institutions, to curb their support for highly polluting activities.

Given the urgency of climate action, companies and financial institutions have come under immense pressure from stakeholders, international groups, investors, and regulators to do their part on the path toward net zero. Stakeholders initiate influential campaigns and landmark litigation to push companies to a more sustainable path.[5] Similarly, net-zero initiatives under the auspices of prominent international bodies engage with and put pressure on both members and non-members to commit to decarbonization in line with Paris Agreement goals.[6] Furthermore, the growing power of institutional investors in today's corporations has made them a natural candidate to discipline investee companies.[7] And indeed, for various reasons,

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[1] Press Release, Security Council, Climate Change 'Biggest Threat Modern Humans Have Ever Faced', World-Renowned Naturalist Tells Security Council, Calls for Greater Global Cooperation, U.N. Press Release SC/14445 (Feb. 23, 2021), https://press.un.org/en/2021/sc14445.doc.htm [https://perma.cc/9EPL-7P2L].

[2] For example, the oil and gas industry directly or indirectly accounts for 42 percent of global emissions. Chantal Beck, Sahar Rashidbeigi, Occo Roelofsen & Eveline Speelman, *The Future Is Now: How Oil and Gas Companies Can Decarbonize*, MCKINSEY & CO. (Jan. 7, 2020), https://www.mckinsey.com/industries/oil-and-gas/our-insights/the-future-is-now-how-oil-and-gas-companies-can-decarbonize [https://perma.cc/M2GD-EMGW].

[3] *See For a Livable Climate: Net-Zero Commitments Must Be Backed by Credible Action*, UNITED NATIONS, https://www.un.org/en/climatechange/net-zero-coalition (last visited Nov. 14, 2022) [https://perma.cc/35FX-KEBR] (defining net zero as "cutting greenhouse gas emissions to as close to zero as possible, with any remaining emissions re-absorbed from the atmosphere, by oceans and forests for instance").

[4] *See id.* (noting "[t]o keep global warming to no more than 1.5°C — as called for in the Paris Agreement — emissions need to be reduced by 45% by 2030 and reach net zero by 2050").

[5] *See infra* notes 27–28 and 30–31 and accompanying text.

[6] *See infra* notes 29 and 40 and accompanying text.

[7] *See generally* ADRIANA DE LA CRUZ, ALEJANDRA MEDINA & YUN TANG, OECD, OWNERS OF THE WORLD'S LISTED COMPANIES (2019), https://www.oecd.org/corporate/ca/Owners-of-the-Worlds-Listed-Companies.pdf [https://perma.cc/LX8X-YY9U] (discussing the share-ownership in listed companies by institutional investors).

powerful shareholders such as the Big Three financial firms[8] have incentives to encourage their investee companies to reduce emissions and to bring them in line with the desired net-zero path.[9] Lastly, regulators have adopted a plethora of rules to bring more transparency on the sustainability performance of companies and reorient financial markets toward greater sustainability.[10] These efforts have culminated in disclosure rules regarding companies' net-zero path and environmental performance.[11] Recently, regulators also made a step toward the mandatory adoption of net-zero transition plans and targets.[12]

Thus, the current landscape is highly focused on pushing companies and financial institutions to decarbonize in line with the Paris Agreement goals. In such a context, net-zero transition plans, targets and pledges have become common business practices. Nevertheless, whether it is done voluntarily or under mandatory rules, achieving net zero is by no means easy for companies operating in carbon-intensive[13] industries. Emissions reduction can require costly operational improvements, early retirements of some assets, or scaling down supply. This means that firms will likely need to forego some cash flows and profits while getting no immediate pecuniary benefit — particularly new capital, except for the freed-up capital from unexecuted capital expenditures on such assets — to invest in new business models such as renewable energy.

Given these disadvantages, it is not surprising that firms are looking for alternatives. And there is a more convenient way for firms to both achieve emissions reduction and obtain funds to invest in new assets: the divestment of some of their legacy assets (oil, gas, and coal) and related businesses, especially if they attract high-valuations from other firms and their investors. These divestments are technically merger and acquisition ("M&A") transactions and should give rise to concerns in terms of climate change mitigation.[14] While divestments allow divesting firms to achieve emissions reductions and hit their targets and plans, if the assets and related businesses operate in the same way as before under the control of new owners, there

[8] *See generally* Lucian Bebchuk & Scott Hirst, *The Specter of the Giant Three*, 99 B.U. L. REV. 721 (2019) (examining the growth of the Big Three index fund managers-BlackRock, Vanguard, and State Street Global Advisors).
[9] *See infra* notes 33–39 and accompanying text.
[10] *See infra* notes 41–43 and accompanying text.
[11] *See infra* notes 44–45 and accompanying text.
[12] *See infra* note 46 and accompanying text.
[13] We use the term "carbon-intensive" in an absolute sense, not in a relative sense; meaning, it indicates an activity or asset with a high carbon footprint (such as oil, gas, and coal assets), rather than its carbon-intensity per certain metrics (such as revenue or output) relative to other similar assets.
[14] In another work, we refer to such transactions as "brown-spinning." Alperen A. Gözlügöl & Wolf-Georg Ringe, *Private Companies: The Missing Link on the Path to Net Zero*, J. CORP. L. STUD. (forthcoming 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4065115 [https://perma.cc/WW9A-48AE].

will be no overall emissions reduction in the atmosphere and thus no accomplishment in fighting climate change. What is worse, new owners might exploit the assets in a way that causes more emissions due to their different practices. Indeed, the economics of M&A transactions of carbon-intensive assets in a climate action context suggests these assets should be passing to owners with a different vision in terms of net-zero transition or to those that do not share climate change concerns (at least to the same degree) or are under little to no pressure to decarbonize (i.e., engaging in "net-zero arbitrage").[15] In the end, we may have a misleading picture and a false sense of security when certain firms — especially carbon majors —[16] appear to reduce their emissions and thus be on their net-zero track when in reality, no emissions reduction will occur. Therefore, going forward, M&A of carbon-intensive assets will be a vital issue in the net-zero transition. It is imperative to ensure carbon-intensive assets do not simply switch to parties that are oblivious to climate concerns and less immune to outside pressure or discipline. Such transactions need to be closely monitored and supervised.

There might be different sides to an M&A transaction in terms of ownership status. Transactions might happen among publicly held companies, privately held companies, and state-owned entities. The most concerning transactions are those involving high-emitting assets sold to privately held companies or state-owned entities. Privately held companies are generally less subject to investor pressure as they do not operate on capital markets.[17] Regulatory rules on disclosure or adoption of net-zero transition plans and targets might only apply to publicly held companies, which leaves the activities of private companies in the dark.[18] Similarly,

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[15] *See infra* notes 60–67 and accompanying text.

[16] We refer to those firms as "carbon majors" that are said to have contributed most to climate change. *See generally* Richard Heede, *Tracing Anthropogenic Carbon Dioxide and Methane Emissions to Fossil Fuel and Cement Producers, 1854–2010*, 122 CLIMATIC CHANGE 229 (2014) (presenting a quantitative analysis of the historic fossil fuel and cement production records of the fifty leading investor-owned, thirty-one state-owned, and nine nation-state producers of oil, natural gas, coal, and cement from 1854 to 2010); *New Report Shows Just 100 Companies Are Source of over 70% of Emissions*, CDP (July 10, 2017), https://www.cdp.net/en/articles/media/new-report-shows-just-100-companies-are-source-of-over-70-of-emissions [https://perma.cc/YL2R-FS7U] (finding that 100 active fossil fuel producers are linked to seventy-one percent of industrial greenhouse gas emissions since 1988).

[17] *See* Gözlügöl & Ringe, *supra* note 14 (manuscript at 20-26) (discussing the lack of institutional shareholder stewardship or activism with regard to sustainability in private companies); *see also* Robin Wigglesworth, *Have Passive Funds Strangled US Oil Production?*, FIN. TIMES (Oct. 18, 2022), https://www.ft.com/content/798ffcd0-17a2-49bc-b877-2797df62188b [https://perma.cc/QEP9-72W4] (showing that while publicly held companies have slowed down production and did not attempt to benefit from rising oil prices (which might be related to the existence of common investors), this was not the case for privately held companies that are expanding oil production at a much higher rate).

[18] On the climate-related disclosure requirements for private companies, see Gözlügöl & Ringe, *supra* note 14 (manuscript at 28-35) (showing that traditionally climate-related disclosures only applied to publicly held companies with no or very limited coverage of privately held companies; although this is changing currently in the UK and the EU, but not in the US). On the mandatory adoption of net-zero transition plans and targets, see *id.* (manuscript at 58-59).

stakeholder pressure groups might primarily target publicly held companies, as there is more transparency in public markets, and the most conspicuous carbon majors are publicly held.[19] When combined, these factors might make private companies (and their investors) immune to outside discipline/pressure and more or less oblivious to climate concerns. A similar case can be made for state-owned entities. State-controlled carbon major entities generally come from those states that are currently unambitious in their climate efforts or unwilling to join efforts to fight climate change, at least not at the pace demanded by other parties.[20] Entities controlled by those states might be less interested in decarbonization or achieving certain climate targets. Thus, acquisitions of high-emitting assets by privately held and state-owned entities deserve special attention. This does not mean, however, that transactions between publicly held companies do not pose their own problems. In such cases, assets might pass to companies that are small-cap (meaning they attract less investor attention),[21] have controlling shareholders whose interests might diverge from climate-conscious investors,[22] or are located in regions with a lighter disciplining ecosystem.[23]

Accordingly, we discuss certain examples of such transactions, highlighting the relevant concerns and risks that might materialize or have already materialized. To provide a bigger

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[19] *See infra* note 153 and accompanying text (noting climate litigation which is one of the primary ways for stakeholders to exert pressure, focuses currently on public carbon majors). Transparency is important to facilitate social/stakeholder pressure over the company by lowering search and information costs for the media, NGOs, employees, corporate and individual customers, and other affected parties. *See* Hans B. Christensen, Luzi Hail & Christian Leuz, *Mandatory CSR and Sustainability Reporting: Economic Analysis and Literature Review*, 26 REV. ACCT. STUD. 1176, 1178 (2021); *see also* Pietro Bonetti, Christian Leuz & Giovanna Michelon, *Internalizing Externalities: Disclosure Regulation for Hydraulic Fracturing, Drilling Activity and Water Quality* 7 (ECGI L., Working Paper No. 676/2023, 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4171246 [https://perma.cc/G9N6-T7GG] (offering findings "consistent with the idea that listed firms likely face more public scrutiny than private operators").

[20] For a list of these state-controlled major carbon entities, see Heede, *supra* note 16, at 231, 235-36, 237-38. Heede discusses how substantial emissions have come from fossil fuels sourced from nations such as China, India, Saudi Arabia, Venezuela, Mexico, Iran, Kuwait, Abu Dhabi, Libya, Nigeria, Indonesia, Brazil, and other countries that have not been at the center of discussions regarding responsibility for controlling emissions; and that entities controlled by these countries show up on the table describing top twenty investor- & state-owned entities and attributed CO_2 & CH_4 emissions.

[21] *See, e.g.*, José Azar, Miguel Duro, Igor Kadach & Gaizka Ormazabal, *The Big Three and Corporate Carbon Emissions Around the World*, 142 J. FIN. ECON. 674, 681 (2021) (showing that the Big Three focus their engagement efforts on the largest firms where they have a significant stake); Kobi Kastiel & Yaron Nili, *The Corporate Governance Gap*, 131 YALE L.J. 782, 804 (2022) (stating "small firms are less likely to receive attention from large institutional investors compared to large or mid-size firms").

[22] A case in point is *Continental Resources Inc.*, a US oil and gas company controlled by Harold Hamm, who clashed with other institutional investors, claiming that "[a] climate change 'religion' had gripped investors." *See* Derek Brower & Justin Jacobs, *Oil Baron's Continental Bid Highlights Sector Dislike of Wall St ESG Scrutiny*, FIN. TIMES (June 15, 2022), https://www.ft.com/content/2ad3eca7-be60-420b-ac82-d4521ea5549a [https://perma.cc/QK33-CCZK]. So much so that, he decided to take the company private. *See* James Fontanella-Khan & Derek Brower, *Shale Oil Pioneer Harold Hamm to Take Continental Resources Private*, FIN. TIMES (Oct. 17, 2022), https://www.ft.com/content/519686d6-8145-4711-a2e1-43d87167dc45 [https://perma.cc/3G4M-5RED].

[23] *See infra* notes 116–120 and accompanying text.

picture of recent M&A transactions, we also provide evidence on the general characteristics of such transactions in the aftermath of the Paris Agreement.

There are different ways to ensure M&A transactions of carbon-intensive assets do not harm net-zero transition efforts. First, an outright ban on such transactions is the most direct tool. But, as with most bans in corporate law, an outright ban could be overinclusive, similar to using a sledgehammer to crack a nut. Relevant regulators, however, might be given some power to vet certain transactions in terms of their compliance with climate goals. Second, self-regulatory frameworks can be strengthened. Shareholders' engagement and activism can be an important component in determining whether and on which terms such transactions take place. Disclosure rules on divestments can be a facilitative factor regarding such investor engagement while also providing tools through which shareholders can exert influence. Third, deal terms can be utilized to bind new owners to some standards, so new owners would have to adhere to certain requirements in terms of how they utilize the acquired assets. Lastly, if such self-regulatory measures fail or are likely to fail, other steps — such as liability rules — might be necessary to ensure some standards are met.

In Part II, we explain how the business and financial world has come under increasing pressure to take a position on the net-zero transition, as well as the channels via which such pressure is exerted. In Part III, we discuss the economics of M&A transactions of carbon-intensive assets. In doing so, we highlight various reasons behind such transactions and explain how climate action may create a lively market for such assets, especially in the case of differences in tastes and opinions. We also answer the broader question of why M&A of carbon-intensive assets are important and can be problematic in terms of net-zero transition. We further explain the initial positive sentiment toward divestments of high-emitting assets and the currently changing attitude. In Part IV, we provide some concerning examples of transactions, as well as the general data on the M&A transactions in the aftermath of the Paris Agreement between 2017 and 2021. We also discuss transaction characteristics, especially in terms of the status of parties to such transactions (privately held, publicly held, or state-owned entities). In Part V, we scrutinize the question of how to create a framework that ensures that M&A transactions of carbon-intensive assets do not harm net-zero transition efforts and analyze the abovementioned measures. Part VI concludes by summarizing the main points and indicating that both regulators and private ordering have a role to play in curbing the potential harmful effects of M&A transactions in this context.

II. UNDER PRESSURE: BUSINESS WORLD'S NET-ZERO PUSH

If achieving net zero is firm-value maximizing, companies will attain it of their own accord. Yet, absent a robust carbon pricing system, externalities remain unpriced, and companies have weak incentives not to impose these externalities.[24] Another problem is that the financial benefits from decarbonization do not materialize immediately but rather in the long run and are, therefore, not attractive to short-term-oriented managers.[25] Still, companies and financial institutions currently face unprecedented pressure to take a position on the path to net zero. Thus, many adopt net-zero transition plans and targets and may indeed achieve some meaningful emissions reductions.[26] This pressure largely stems from three different sources: stakeholders, investors, and regulators.

Many activists and environmental NGOs engage with high-emitters and produce influential campaigns that can, among other things, create bad publicity for companies that do not heed their concerns and help achieve intended outcomes. Such initiatives include "Carbon Tracker," "Net Zero Tracker," and "Science Based Targets."[27] The latter example helps companies set climate science-based targets while also mobilizing them to do so via the "Business Ambition for 1.5°C campaign."[28] Crucially, these initiatives are strengthened by high-level climate action by influential international groups. For example, the UN has started the "Race to Zero" campaign "to rally leadership and support from businesses […] for a healthy, resilient, zero carbon recovery […]."[29] These groups put pressure on businesses to join ambitious climate action and oversee members' plans and progress.

Climate litigation is another increasingly potent way for stakeholders to discipline companies and bring them towards net-zero transition and emissions reductions. For example, in a groundbreaking judgement, the Hague District Court ordered Shell, a carbon major, to

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[24] This is generally known as the "Pigouvian" tax after Arthur Pigou's seminal work *The Economics of Welfare*, published in 1920. ARTHUR. C. PIGOU, THE ECONOMICS OF WELFARE (1920).

[25] *See, e.g.*, John Armour, Jeffrey Gordon & Geeyoung Min, *Taking Compliance Seriously*, 37 YALE J. ON REG. 1, 21-25 (2020) (making an analogous argument regarding investments in compliance programs).

[26] *See infra* notes 48–50. We use "net-zero" transition plans and targets in a broader sense to denote "GHG reduction plans or targets," including those that do not or might not align with science-based net-zero goals.

[27] For more information on these initiatives, see respectively *Our Mission*, CARBON TRACKER INITIATIVE, https://carbontracker.org/about/#mission (last visited Oct. 14, 2022) [https://perma.cc/5SVG-W4J2]; *About & Contact*, NET ZERO BETA TRACKER, https://zerotracker.net/about (last updated Sept. 28, 2021) [https://perma.cc/52R4-RJL2]; *What Is the Science Based Targets Initiative (SBTI)?*, SCI. BASED TARGETS, https://sciencebasedtargets.org/faqs#what-are-science-based-targets (last visited Oct. 14, 2022) [https://perma.cc/PG66-VLTD].

[28] *See Business Ambition for 1.5 °C*, SCI. BASED TARGETS, https://sciencebasedtargets.org/business-ambition-for-1-5c/ (last visited Oct. 14, 2022) [https://perma.cc/P3VL-PKRZ].

[29] *Race to Zero Campaign*, UNITED NATIONS CLIMATE CHANGE, https://unfccc.int/climate-action/race-to-zero-campaign (last visited Oct. 19, 2022) [https://perma.cc/RT9G-GD63].

reduce its emissions by 45 percent by 2030, relative to 2019 levels.[30] Encouraged by such headline-making decisions, climate cases against companies now abound.[31]

Investor pressure is also a powerful channel for pushing companies to embrace climate action.[32] Institutional investors have various reasons to be concerned with investee companies' carbon footprint and their transition efforts. First, under the motto that "climate risk is investment risk,"[33] institutional investors are concerned about investee companies' transition risk, namely whether and how high-emitting companies' future cash flows and value will be affected by policy and market changes on the net-zero path, and accordingly how companies address those concerns.[34] Second, under an influential theory that institutional investors as diversified shareholders aim to maximize portfolio value rather than firm-specific value, institutional investors are expected to reduce intra-portfolio externalities.[35] Thus, institutional investors may have incentives to engage with high-emitter investees and reduce their emissions to curb value loss in other investee firms under an unmitigated climate change scenario.[36] Third, as is shown in the financial literature, investors increasingly have non-financial preferences.[37] They might be willing to trade off financial returns against green preferences, which means even if emissions reduction in investee firms is costly on a net basis, the utility

[30] *Milieudefensie et al. v. Royal Dutch Shell plc.*, CLIMATE CHANGE LITIG. DATABASES, http://climatecasechart.com/non-us-case/milieudefensie-et-al-v-royal-dutch-shell-plc/ (last visited Nov. 2, 2022) [https://perma.cc/C8WB-NPHA].

[31] *See Climate Change Laws of the World*, GRANTHAM RSCH. INST. ON CLIMATE CHANGE & THE ENV'T, https://climate-laws.org/litigation_cases (last visited Nov. 2, 2022) [https://perma.cc/3BZ8-6YTE]; CLIMATE CHANGE LITIG. DATABASES, http://climatecasechart.com/ (last visited Nov. 2, 2022) [https://perma.cc/7YPG-L6EM].

[32] *See* Wolf-Georg Ringe, *Investor-Led Sustainability in Corporate Governance*, 7 ANNALS CORP. GOVERNANCE 93, 105-20 (2022).

[33] *Larry Fink's 2020 Letter to CEOs: A Fundamental Reshaping of Finance*, BLACKROCK, https://www.blackrock.com/us/individual/larry-fink-ceo-letter (last visited Nov. 3, 2022) [https://perma.cc/H9FM-7BPV].

[34] *See, e.g.*, Philipp Krueger, Zacharias Sautner & Laura T. Starks, *The Importance of Climate Risks for Institutional Investors*, 33 REV. FIN. STUD. 1067 (2020) (finding via a survey, "institutional investors believe climate risks have financial implications for their portfolio firms and that these risks, particularly regulatory risks, already have begun to materialize").

[35] *See, e.g.*, John Armour & Jeffrey N. Gordon, *Systemic Harms and Shareholder Value*, 6 J. LEGAL ANALYSIS 35, 53-56 (2014) (arguing actions by individual firms that can produce losses across the portfolio are meaningful and objectionable from a diversified shareholder perspective).

[36] John C. Coffee, Jr., *The Future of Disclosure: ESG, Common Ownership, and Systematic Risk*, 2021 COLUM. BUS. L. REV. 602, 636-41 (2021); Madison Condon, *Externalities and the Common Owner*, 95 WASH. L. REV. 1, 43-48 (2020); Jeffrey N. Gordon, *Systematic Stewardship*, 47 J. CORP. L. 627, 652-54 (2022). For an earlier articulation of this theory, see Robert G. Hansen & John R. Lott, Jr., *Externalities and Corporate Objectives in a World with Diversified Shareholder/Consumers*, 31 J. FIN. & QUANTITATIVE ANALYSIS 43, 44 (1996).

[37] *See, e.g.*, Samuel M. Hartzmark & Abigail B. Sussman, *Do Investors Value Sustainability? A Natural Experiment Examining Ranking and Fund Flows*, 74 J. FIN. 2789 (2019) (presenting causal evidence that investors marketwide value sustainability, consistent with nonpecuniary motives influencing investment decisions).

they derive from avoided environmental harm surpasses this financial cost.[38] In all these cases, investors' engagement with investee firms (via shareholder proposals, private engagements or supporting activist campaigns) leads companies to adopt net-zero transition plans involving some targets and pledges to assuage investor concerns. Investor engagement groups such as "Climate Action 100+" and "The Shareholder Commons" intend to achieve and do achieve such outcomes.[39] Major players in the investment industry have also committed to decarbonize their investment portfolio and achieve net-zero emissions by 2050 via net-zero alliances. For example, the Glasgow Financial Alliance for Net Zero ("GFANZ"), launched in April 2021 by the UN Special Envoy on Climate Action and Finance Mark Carney and the COP26 presidency, "coordinate[s] efforts across all sectors of the financial system to accelerate the transition to a net-zero global economy."[40]

Lastly, regulatory pressure has become an important driver of companies' net-zero campaigns. Regulators are interested in various outcomes. They seek to provide capital market participants with relevant sustainability information, which allows them to make capital allocation choices in an efficient way and also aligned with their preferences.[41] This information also serves the needs of stakeholders to put pressure on low-performing companies.[42] Accordingly, climate-related disclosures are now on par with traditional financial disclosures across many jurisdictions.[43] As part of this, companies are generally asked to disclose whether they have any net-zero transition plans and targets and, if so, the metrics the company uses to keep track of its progress.[44] Even when these disclosures do not specifically

[38] *See* Oliver Hart & Luigi Zingales, *Companies Should Maximize Shareholder Welfare Not Market Value*, 2 J. L., FIN., & ACCT. 247, 248 (2017).
[39] Ringe, *supra* note 32, at 127-31.
[40] On the GFANZ, see *About Us*, GFANZ, https://www.gfanzero.com/about/ (last visited Oct. 14, 2022) [https://perma.cc/JRC3-5M7E]. It brings together many sector-specific alliances such as the UN-convened "Net Zero Asset Owner Alliance," "Net Zero Asset Managers initiative," "Net-Zero Banking Alliance," and "Net-Zero Insurance Alliance." *See Sector-Specific Alliances*, GFANZ, https://www.gfanzero.com/membership/sector-specific-alliances/ (last visited Oct. 14, 2022) [https://perma.cc/2M6D-PG38].
[41] *See generally* Sebastian Steuer & Tobias H. Tröger, *The Role of Disclosure in Green Finance*, 8 J. FIN. REGUL. 1 (2022) (studying the design features of disclosure regulations that seek to trigger the green transition of the global economy and asking whether such interventions are likely to bring about sufficient market discipline to achieve socially optimal climate targets).
[42] On sustainability disclosures as serving not only shareholders' but also stakeholders' needs, see Gözlügöl & Ringe, *supra* note 14 (manuscript at 47-53).
[43] *See, e.g.*, FIN. STABILITY BD, PROGRESS REPORT ON CLIMATE-RELATED DISCLOSURES (2022), https://www.fsb.org/wp-content/uploads/P131022-2.pdf [https://perma.cc/5HHF-28YD] (discussing the progress made by jurisdictions in promoting climate-related disclosures).
[44] For the United States, see 17 C.F.R. §§ 210, 229, 232, 239, 249 (2023). For the EU, see Directive 2014/95/EU O.J. (L 330) [hereinafter Non-Financial Reporting Directive]; Guidelines on Non-Financial Reporting: Supplement on Reporting Climate-Related Information (EC), 2019 O.J. (C 209). For the successor of Directive 2014/95/EU that has very recently entered into force, see Directive 2022/2464/EU O.J. (L 322) [hereinafter

mandate the adoption of net-zero transition plans and targets, companies may nonetheless opt to do so, anticipating bad publicity among investors and stakeholders that would stem from not disclosing a net-zero transition plan.[45] Furthermore, the EU and the United Kingdom are on the verge of mandating the adoption of net-zero plans and targets for certain companies, going beyond their current disclosure requirements.[46] Generally, via such measures, regulators aim to curb environmental externalities as well as ameliorating potential adverse macroeconomic and financial stability effects under a disruptive transition scenario.[47]

In this new reality, many companies and financial institutions have found it necessary to position themselves on the net-zero path. As part of this, they frequently adopt public net-zero plans, including some pledges and targets.[48] More specifically, these plans include explanations of how companies intend to adapt their business models to reduce their emissions, a schedule for achieving this, and a description of which metrics and measurements will be used to keep track of whether the company is on target.[49] These elements are generally found in detailed net-zero plans. In contrast, some companies adopt a plain net-zero target, pledging to achieve the status of net-zero at a certain future date without much detail unless mandatorily forced to adopt a more detailed transition plan. Overall, these net-zero transition plans mostly vary with respect to their target dates, activities and emissions covered (Scope 1, 2 and 3), level of

Corporate Sustainability Reporting Directive]; *First Set of Draft ESRS*, EFRAG, https://www.efrag.org/lab6 (last visited Jan. 22, 2023) [https://perma.cc/CQ4T-RCRU] (the draft EU Sustainability Reporting Standards adopted under the Corporate Sustainability Reporting Directive).

[45] This is the case currently in the United States with the SEC's proposed disclosure rules. The Non-Financial Reporting Directive in the EU had adopted the 'comply or explain' approach in this respect. The successor, Corporate Sustainability Reporting Directive, and related second-level standards maintain this approach with, however, more stringent requirements. *See* Corporate Sustainability Reporting Directive, *supra* note 44, art. 1(4) and recital §36; *First Set of Draft ESRS*, *supra* note 44, at 6-7.

[46] *See infra* note 157.

[47] The inference is that a disorderly transition where the real economy and the financial system are not prepared for the low-carbon economy might have adverse consequences for both. *See generally* PATRICK BOLTON, MORGAN DESPRES, LUIZ AWAZU PEREIRA DA SILVA, FRÉDÉRIC SAMAMA & ROMAIN SVARTZMAN, THE GREEN SWAN: CENTRAL BANKING AND FINANCIAL STABILITY IN THE AGE OF CLIMATE CHANGE 11-22 (2020) (discussing climate change as a threat for financial and price stability).

[48] *See generally* Albert C. Lin, *Making Net Zero Matter*, 79 WASH. & LEE L. REV. 679, 698-702 (2022) (discussing corporate net zero commitments); Patrick Bolton & Marcin T. Kacperczyk, *Firm Commitments* (Columbia Bus. Sch. Research Paper, 2022), https://papers.ssrn.com/abstract=3840813 [https://perma.cc/2SVC-X4SM] (exploring two major carbon reduction commitment movements).

[49] *See, e.g.*, SHELL, RESPONSIBLE ENERGY: SUSTAINABILITY REPORT 2021, at 20-39 (2021), https://reports.shell.com/sustainability-report/2021/services/downloads.html [https://perma.cc/ZG5Z-V2ED] [hereinafter SUSTAINABILITY REPORT 2021] (detailing Shell's approach to climate change and the energy transition).

implementation detail, and whether they rely on (currently unproven) carbon capture and offsets.[50]

This picture has caused much skepticism as to whether the business world will walk the walk. As net-zero transition plans and pledges remain vague, greenwashing allegations have grown.[51] The credibility problem of these plans and pledges aggravates this issue. Firms failing to comply with their plans and pledges have no hard consequences to fear in terms of penalties, fines, or compensations — the only reasonable consequence being the reputational harm that will likely weigh less than the financial benefits of not complying.[52] Another problem is the reliance on carbon capture and offsets in net-zero plans and pledges.[53] Carbon offsets generally allow firms to continue business as usual (emit similarly) rather than undertaking painful changes, which in turn makes them sought-after. However, technologies relating to carbon capture are currently unproven and too expensive to scale, so it is not a meaningful tool for offsetting.[54] Natural carbon offsets (such as forests and other carbon sinks) are inherently limited and cannot cover emissions at current levels.[55] Therefore, relying on carbon capture and broader offsets may create moral hazard in the sense that firms will not undertake changes in their business model but expect future technologies to solve the problem, which might not

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[50] *See Companies Taking Action*, SCI. BASED TARGETS, https://sciencebasedtargets.org/companies-taking-action (last visited Nov. 17, 2022) [https://perma.cc/5QMB-CPCW]; *Net Zero Tracker*, NET ZERO TRACKER, https://zerotracker.net/ (last visited Nov. 17, 2022) [https://perma.cc/KD45-E4BB]; *see also* Jack Arnold & Perrine Toledano, *Corporate Net-Zero Pledges: The Bad and the Ugly*, (Columbia Ctr. on Sustainable Inv., 2021), https://papers.ssrn.com/abstract=4042058 [https://perma.cc/6UQA-ZFM3] (examining corporate net-zero pledges by 35 companies across seven industries — oil and gas, mining, chemicals, utilities, cement, steel, and food processing — that jointly represent 64% of global GHG emissions on a direct emissions (scope 1) basis).

[51] *See, e.g.*, Stanley Porter, Jim Thomson & Marlene Motyka, *Utility Decarbonization Strategies: Renew, Reshape, and Refuel to Zero*, DELOITTE (Sept. 21, 2020), https://www2.deloitte.com/us/en/insights/industry/power-and-utilities/utility-decarbonization-strategies.html [https://perma.cc/NDK6-KUAN] (finding that "[t]here are significant gaps between decarbonization targets and the scheduled fossil-fuel plant retirements, renewable additions, and flexibility requirements needed to achieve full decarbonization"); *see also* Joeri Rogelj, Oliver Geden, Annette Cowie & Andy Reisinger, *Net-Zero Emissions Targets Are Vague: Three Ways to Fix*, 591 NATURE 365, 365-68 (2021) (examining three ways to improve vague net-zero emissions targets).

[52] *See generally* John Armour, Luca Enriques & Thom Wetzer, *Green Pills: Making Corporate Climate Commitments Credible* 28-30 (ECGI L., Working Paper No. 657/2022, 2022), https://papers.ssrn.com/abstract=4190268 [https://perma.cc/63BD-L4GG] [hereinafter *Green Pills*] (noting reneging on an undertaking to reduce emissions would not attract liability within the current reach of securities law).

[53] See sources cited *supra* note 50.

[54] *See, e.g.*, Brad Plumer & Christopher Flavelle, *Businesses Aim to Pull Greenhouse Gases from the Air. It's a Gamble.*, N.Y. TIMES, https://www.nytimes.com/2021/01/18/climate/carbon-removal-technology.html (last updated Oct. 10, 2021) [https://perma.cc/M8BE-YNPN] (noting carbon capture technology is physically possible, but too far expensive to be of much use).

[55] *See, e.g.*, IPCC, GLOBAL WARMING OF 1.5 ^{o}C 342-52 (2018), https://www.ipcc.ch/site/assets/uploads/sites/2/2022/06/SR15_Full_Report_HR.pdf [https://perma.cc/DV3T-EQ9M] (discussing issues and uncertainties across carbon dioxide removal options).

materialize.[56] This makes net-zero plans and pledges highly reliant on such offsets less likely to succeed.[57]

Apart from these well-known concerns, an important question is whether firms' net-zero transition plans and targets will translate into a real-world impact. Operational improvements, the retirement of legacy assets, investment in climate-compliant assets, and scaling down supply would help firms achieve emissions reduction to be on their net-zero track. Another way for firms to achieve the same goal is to divest their carbon-intensive assets. This might be a particularly helpful strategy as the firm gets rid of highly emitting assets and satisfies the need for funds to invest in new assets and projects compliant with climate goals. Yet, in this case, the emission reduction by the firm is likely to not translate into a real-world emission reduction, especially if the assets under new owners will be operated as before. In brief, the emissions will switch from one firm's balance to that of the other. Further, in some cases, assets might be exploited by new owners in a way that causes more emissions. Overall, the danger is obvious: some firms, particularly carbon majors, will appear to be making some progress towards their net-zero goals with no real-world impact. This makes it crucial to monitor the M&A transactions on carbon-intensive assets. This also begs the question of to which parties' assets might pass.

III. ECONOMICS OF MERGERS & ACQUISITIONS OF CARBON-INTENSIVE ASSETS

Companies may enter M&A transactions regarding carbon-intensive assets for various reasons. These include optimization regarding the portfolio, geography, and lifecycle, as well as — in the case of divestments — financial purposes, including creating funds for debt repayment, dividend distribution or share buybacks and for new investments.[58] Another increasingly relevant reason is climate action.[59] As firms try to position themselves on their net-zero paths and achieve their net-zero plans and targets, they need to adapt their business

[56] *See, e.g.*, Albert C. Lin, *Does Geoengineering Present a Moral Hazard?*, 40 ECOLOGY L.Q. 673, 673 (2013) (finding it likely that geoengineering efforts will undermine mainstream strategies to combat climate change and suggesting potential measures for ameliorating this moral hazard).
[57] *See* Sam Fankhauser, Stephen M. Smith, Myles Allen, Kaya Axelsson, Thomas Hale, Cameron Hepburn, J. Michael Kendall, Radhika Khosla, Javier Lezuan & Eli Mitchell-Larson et al., *The Meaning of Net Zero and How to Get It Right*, 12 NATURE CLIMATE CHANGE 15, 18 (2022).
[58] *See, e.g.*, GABRIEL MALEK, ENV'T DEF. FUND, TRANSFERRED EMISSIONS: HOW RISKS IN OIL AND GAS M&A COULD HAMPER THE ENERGY TRANSITION 10 (2022), https://business.edf.org/files/Transferred-Emissions-How-Oil-Gas-MA-Hamper-Energy-Transition.pdf [https://perma.cc/TCM9-B6UF] (outlining common drivers of oil and gas dealmaking).
[59] *See, e.g.*, *infra* notes 75–80 (exploring as an example two carbon majors' divestment-heavy net-zero strategy).

models and transition from highly polluting assets to climate-compliant assets. This may create a lively market for carbon-intensive assets and lead to increasing M&A activity in this regard.

For a transaction to happen, there needs to be a surplus, namely the difference between the values the parties attach to the deal or asset. If Company A values an asset at $5 million and Company B values it at $10 million, the $5 million spread between the valuations is the surplus. The transaction would happen at any value between $5 million and $10 million. The reason Company B is willing to pay as much as $10 million is because it thinks it can earn at least $5 million more on a present value basis than what Company A expects to earn on the asset. This may be for various reasons, such as creating new synergies via economies of scope or scale, different specialization between firms, or different vision for the asset.

Climate action offers a new context for discussing the M&A transactions of carbon-intensive assets by creating a 'new' transactional surplus for such transactions to take place. Some firms and their investors may discount (attach relatively low values to) certain legacy assets because these assets can be stranded.[60] In other words, firms may not be able to extract the full present value of cash flows associated with the asset during its lifetime because policy or market changes may prevent this.[61] However, if other firms and their investors do not discount the asset value at all or apply a lower discount for the same reason, they may have a higher valuation of such assets. As a result, different valuations would create a surplus for a transaction to happen between such parties. What matters here is the differences of opinion in terms of at which pace and in what form the net-zero transition should take place. Current uncertainty on the net-zero transition pathway is a breeding ground for firms and their investors to take differing views and adopt different valuations.[62] As a result, one may expect such assets to be acquired by owners that do not anticipate a speedy or sharp transition and thus attach a higher valuation to such assets. When the uncertainty is removed with credible climate

[60] *See, e.g.*, Patrick Bolton, Zachery Halem & Marcin Kacperczyk, *The Financial Cost of Carbon*, 34 J. APPLIED CORP. FIN. 17, 17-18 (2022) (finding financial markets are beginning to broadly discount companies whose high carbon emissions are viewed as subjecting them to higher levels of political and regulatory risk). On stranded assets, see Ben Caldecott, *Introduction to Special Issue: Stranded Assets and the Environment*, 7 J. SUSTAINABLE FIN. & INV. 1, 1 (2017); Gregor Semieniuk, Philip B. Holden, Jean-Francois Mercure, Pablo Salas, Hector Pollitt, Katharine Jobson, Pim Vercoulen, Unnada Chewpreecha, Neil R. Edwards & Jorge E. Viñuales, *Stranded Fossil-Fuel Assets Translate to Major Losses for Investors in Advanced Economies*, 12 NATURE CLIMATE CHANGE 532, 532 (2022).

[61] "Stranding" is generally used in a narrow sense: that assets are kept in the ground. However, we use it here in a wider sense: that regulatory initiatives such as carbon pricing, changes in market demand, technological change, or potential litigation might prevent firms from economically exploiting assets, thus stranding them.

[62] *Cf.* Armour et al., *Green Pills*, *supra* note 52, at 13-24 (analogously discussing that firms and investors face significant uncertainty on the climate transition and how different views and expectations thus might affect valuations).

measures implemented by governments, differences in valuations should disappear as these assets become less attractive on their fundamentals.

Furthermore, when firms are under pressure via the abovementioned channels[63] to decarbonize their business model and reduce their emissions, holding high-emitting assets will be costly, which reduces their value for the relevant firm.[64] Thus, such firms may decide to sell those assets to parties that are not similarly pressured and thus have a higher valuation of the asset (which, in a way, benefit from "net-zero arbitrage"). These different valuations again create a surplus and, thus, a platform for a transaction to take place and for the assets to switch owners. As mentioned above, there are indeed some categories of firms that can be less subject to climate pressure. Those are primarily privately held companies and state-owned enterprises. Stakeholder, investor, and regulatory pressure in the context of net-zero transition may not apply to those firms at all, or it may apply only marginally, which makes it much less costly to have high-emitting operations and acquire such assets.[65] A related point is that the transacting parties may, due to differing local regulatory standards, come with diverging cost profiles due to legal rules requiring more or less transparency or more or less demanding environmental standards.[66] For example, a United States-based buyer of a brown asset is, at present, not obliged to make the same wide-reaching climate-related disclosures as a European seller of the same asset; this will allow the buyer to calculate with a lower amount for the cost of externalization of the harm caused by the brown asset. In contrast to the above scenario, here, differences in taste and preferences matter. For example, if some investors do not want to hold certain highly polluting assets because of their green preferences, they will have a lower valuation of such assets.[67] Their pressure on the investee firm holding such assets to eliminate

[63] *See supra* Part II (discussing stakeholder pressure, investor pressure and regulatory pressure).
[64] *See, e.g.*, Kate Aronoff, *Shell's Internal Emails Show Just How Cynical Oil Companies' Emissions Promises Are*, NEW REPUBLIC (Sept. 19, 2022), https://newrepublic.com/article/167775/shells-internal-emails-show-just-cynical-oil-companies-emissions-promises [https://perma.cc/4V8M-ZSWJ] (showing that Shell labelled some of the assets it divested as "a big greenhouse gas headache with a lot of NGO opposition").
[65] *See supra* notes 17–20 and accompanying text; *see also* Pablo Slutzky, *The Hidden Costs of Being Public: Evidence from Multinational Firms Operating in An Emerging Market*, 139 J. FIN. ECON. 606 (2021) (finding publicly listed companies comply more with business-unfriendly regulations than privately held ones, and this different compliance cost shapes the pattern of M&A transactions in that following the passage of a business-unfriendly regulation, private firms acquire operations from listed ones at an extraordinary pace); *infra* Part V.B.
[66] *See, e.g.*, Tong Li, Dragon Yongjun Tang & Fei Xie, *Climate Laws and Cross-Border Mergers and Acquisitions* (Working Paper, 2023), https://litong17.github.io/home/papers/LiTangXie.pdf [https://perma.cc/VRU5-FZQY] (finding climate laws reduce the attractiveness of a target in a cross-border M&A transaction, consistent with the overall idea that climate-related regulation might affect M&A transactions on relevant assets in various ways).
[67] For the seminal paper in this regard, see Eugene F. Fama & Kenneth R. French, *Disagreement, Tastes, and Asset Prices*, 83 J. FIN. ECON. 667, 675-76 (2007). For more recent contributions, also see Ľuboš Pástor, Robert F. Stambaugh & Lucian A. Taylor, *Sustainable Investing in Equilibrium*, 142 J. FIN. ECON. 550, 556-57 (2021); Lasse Heje Pedersen, Shaun Fitzgibbons & Lukasz Pomorski, *Responsible Investing: The ESG-Efficient Frontier*, 142 J. FIN. ECON. 572, 591-93 (2021).

those externalities will make holding these assets costly for the firm. In contrast, these assets then become particularly attractive for investors oblivious to climate concerns and for their investee firms. As a result, in this case, one may expect such assets to be acquired by owners that do not care about a swift net-zero transition.

In cases where a firm has investors that value their brown and green assets differently, firms may also engage in asset partitioning,[68] meaning they separate their green assets and brown assets via a spin-off. In such a case, the relevant firm would distribute the shares of SpinCo to its current shareholders, who may then exit those investments according to their inclinations. In other words, investors preferring green assets would remain as shareholders in the company, while investors with a preference for brown assets would become shareholders of the spin-off. Both companies would then have higher valuations separately than combined, as investors would otherwise apply a discount.

Overall, under the conditions of differing opinions and operating ecosystems holding firms to different degrees of pressure to decarbonize, the equilibrium is likely to be the following: highly-polluting assets switch to owners that do not expect or care about a speedy net-zero transition and thus aim to fully exploit the asset (i.e., extracting the full net present value of cash flows associated with those assets).[69] This might mean that acquired assets will be longer operable than would have been the case under the original owner or will be operated in a way that causes more emissions because new owners do not engage in costly emission-cutting measures.[70] Given that the net-zero transition in compliance with Paris Agreement goals

[68] *See* John Armour, Luca Enriques & Thom Wetzer, *Dark and Dirty Assets: Greening Climate-Driven Asset Partitioning*, OXFORD BUS. L. BLOG (June 14, 2022), https://blogs.law.ox.ac.uk/business-law-blog/blog/2022/06/dark-and-dirty-assets-greening-climate-driven-asset-partitioning [https://perma.cc/FRW4-KBSP].

[69] It is conceivable that under certain conditions, firms that might lower emissions associated with certain assets have a higher valuation of those assets than their current owners and thus have incentives to acquire those assets. This might be possible through certain efficiencies or technological advances. For example, firms expecting a carbon tax regime will lower their valuations of brown assets, but firms with carbon capture technologies might have a higher valuation of those assets as, via that technology, they will not emit and pay the relevant tax as much. However, for this to be true, the cost of carbon capture per ton needs to be lower than the carbon tax per ton. This is currently highly unlikely as carbon capture technology remains quite expensive and unscalable. *See* Plumer & Flavelle, *supra* note 54. A firm can also lower the emissions of an asset because of certain efficiencies or synergies and thus has a lower cost of emitting GHG and a higher valuation of the asset than the current owner. These instances have, however, limited relevance as efficiency improvements in carbon-intensive sectors can lower emissions only to a certain point. *See, e.g.*, Arjan Trinks, Machiel Mulder & Bert Scholtens, *An Efficiency Perspective on Carbon Emissions and Financial Performance*, 175 ECOLOGICAL ECON. 1, 2 (2020) (estimating carbon efficiency and investigating its relationship with financial performance outcomes).

[70] For examples, see *infra* notes 103 to 104 and accompanying text.

requires some oil, gas, and coal assets to remain unoperated,[71] such M&A transactions, when made on climate action grounds, may not be social welfare improving, even if the transaction is in itself efficient (as a surplus is created).[72] Even if such transactions are not conducted for climate-related reasons, they might create consequences for climate action if the new owners are less subject to climate pressure or do not care about externalities. Therefore, monitoring M&A transactions of carbon-intensive assets should be an important agenda item for achieving net zero.

Initially, divestment of carbon-intensive assets was conceived as favorable.[73] Obviously, as mentioned above, it may be beneficial for strategic or financial reasons. Crucially, it also helps firms reduce their emissions, comply with their (interim) net-zero targets and pledges, and create funds to invest in climate-compliant business models such as carbon capture technology (for remaining legacy assets) or renewable energy. This might be seen as a positive step by investors (for financial or non-financial reasons), stakeholders, or regulators. Yet, a problem is that the economics of such transactions in the context of climate change suggests new owners expect to exploit these assets fully by extracting full cash flow during their lifetime. In other words, the balance of one company shows emissions reduction and being on track towards net zero, but in reality, assets behind those emissions reductions are likely to continue to emit as before or even more.[74]

Indeed, divestment plays an important role in firms' net-zero strategy and their emission reduction. Shell, for example, clearly states divestments are a key part of its net-zero transition strategy and notes acquisitions and divestments could have a material impact on its ability to meet targets.[75] In 2020, Shell divested $4 billion worth of assets, and in 2021 a staggering $15

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[71] *See generally* INT'L ENERGY AGENCY, NET ZERO BY 2050: A ROADMAP FOR THE GLOBAL ENERGY SECTOR 21 (2021), https://www.iea.org/reports/net-zero-by-2050 [https://perma.cc/Y7RF-6CJM] (arguing for no new fossil fuel supply in the net-zero pathway).

[72] *But see supra* note 69 (noting that some efficient transactions (i.e., where there is a surplus) from the transacting parties' perspective can also be social welfare improving).

[73] *See, e.g.*, Thomas Biesheuvel, *Investors Pushed Mining Giants to Quit Coal. Now It's Backfiring*, BLOOMBERG (Nov. 8, 2021, 4:01 PM PST), https://www.bloomberg.com/news/articles/2021-11-09/investors-pushed-mining-giants-to-quit-coal-now-it-s-backfiring?leadSource=uverify%20wall [https://perma.cc/Y73D-P7T5] (discussing a salient example).

[74] Emerging empirical evidence substantiates these concerns. *See, e.g.*, Ran Duchin, Janet Gao & Qiping Xu, *Sustainability or Greenwashing: Evidence from the Asset Market for Industrial Pollution* 18-22 (Working Paper, 2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4095885 [https://perma.cc/9BAH-XFL3] (firms divest pollutive plants following scrutinized environmental risk incidents; however, after divestitures, emissions do not decline at the sold plants. While buyers tend to be private and non-ESG rated, seller firms improve their ESG scores and lower their regulatory compliance costs, among others).

[75] *See* SHELL, SUSTAINABILITY REPORT 2021, *supra* note 49, at 21-22, 63, 72; SHELL, RESPONSIBLE ENERGY: SUSTAINABILITY REPORT 2020, at 84 (2020), https://reports.shell.com/sustainability-

billion worth of assets.[76] These divestments helped Shell to report a 2.2 million tonnes CO_2e reduction in 2021, which is close to what it achieved via the change in output and abatement and efficiency projects.[77] BP, another firm lauded for its net-zero ambitions, also notes that divestments are, and continue to be, important in achieving net-zero aims.[78] Remarkably, BP also acknowledges that "divestments may not lead directly to a reduction in absolute global emissions but by redeploying investible funds to bp they accelerate the pace at which [bp] can grow low carbon businesses."[79] While BP states it exceeded its 2025 target (twenty percent emissions reduction against the baseline year of 2019), it is clear that most of the emissions reduction came from divestments rather than operational improvements.[80]

Some investors started to see the dangers associated with the divestment of carbon-intensive assets, especially when those assets switch to privately held or state-owned players. In their letters to CEOs, BlackRock's Larry Fink and State Street's Cyrus Taraporevala noted divestments will not get the world to net zero.[81]

Yet, differences of opinion and conflicts of interest may exist between firm value-driven investors and climate-conscious investors. Some investors might want their investee firms to divest carbon-intensive assets and reduce their value dependence on cash flows associated with those assets, given that market and policy changes might reduce the value of highly polluting assets under climate action. These investors are not necessarily concerned with emissions

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report/2020/servicepages/download-centre.html [https://perma.cc/YJP8-MSQA] [hereinafter SUSTAINABILITY REPORT 2020].

[76] SHELL, SUSTAINABILITY REPORT 2021, *supra* note 49, at 63; SHELL, SUSTAINABILITY REPORT 2020, *supra* note 75, at 84.

[77] *See* SHELL, SUSTAINABILITY REPORT 2021, *supra* note 49, at 25. Shell reported a similar emissions reduction via divestment in its response to Carbon Disclosure Project's disclosure request. *See* SHELL, CDP CLIMATE CHANGE 2022 INFORMATION REQUEST 130-31, 160-61 (2022), https://www.shell.com/sustainability/transparency-and-sustainability-reporting/performance-data/greenhouse-gas-emissions.html [https://perma.cc/5ARR-59BG].

[78] *See* BP, REIMAGINING ENERGY FOR PEOPLE AND OUR PLANET: BP SUSTAINABILITY REPORT 2021, at 20 (2021), https://www.bp.com/en/global/corporate/sustainability.html [https://perma.cc/PPZ2-YEPP] [hereinafter SUSTAINABILITY REPORT 2021].

[79] *Id.*

[80] *See id.* at 22-25; BP, CDP CLIMATE CHANGE QUESTIONNAIRE 2022, at 81, 93-94 (2022), https://www.bp.com/en/global/corporate/sustainability/data-and-how-we-report/cdp.html [https://perma.cc/MVC4-PMK8].

[81] Larry Fink, *Larry Fink's 2022 Letter to CEOs: The Power of Capitalism*, BLACKROCK (Jan. 17, 2022), https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter [https://perma.cc/Q25A-YXNV] (stating that "divesting from entire sectors — or simply passing carbon-intensive assets from public markets to private markets — will not get the world to net zero"); Cyrus Taraporevala, *CEO's Letter on SSGA 2022 Proxy Voting Agenda*, HARV. L. SCH. F. ON CORP. GOVERNANCE (Jan. 18, 2022), https://corpgov.law.harvard.edu/2022/01/18/ceos-letter-on-ssga-2022-proxy-voting-agenda/ [https://perma.cc/P2SN-V9CD] (stating that brown-spinning "reduces disclosure, shields polluters and allows the publicly traded company to appear more 'green,' without any overall reduction in the level of emissions on the planet").

reduction *per se* — rather, they are concerned with the firm-specific transition risk. This group is likely to include undiversified investors such as hedge funds or controlling shareholders. A cynical view might also hold that some investors favor divestments by investee firms because it also helps improve the outward "green" credentials of the fund that is invested in the relevant firms, which might serve as greenwashing and increase fund flows, etc.[82] Another more "climate-conscious" group of investors, however, might be more interested in fighting climate change for two reasons. They might be so widely-diversified that climate externalities harm overall portfolio value, giving them incentives to curb such externalities to a certain point. Or, they might have green preferences and derive utility from curbing environmental harm. This group, however, would not necessarily benefit when the investee firms divest their highly polluting assets because, as pointed out, the risk is that these assets will switch to players that want to exploit the assets and are not attentive to climate concerns.

Indeed, these conflicts have played out in some high-profile cases. Glencore, a major publicly held commodities company with substantial coal assets, was pressured into selling off its coal mines by Bluebell Capital Partners, an activist hedge fund.[83] Bluebell argued Glencore's share price could rise 40 to 45 percent over the medium term when following Bluebell's recommendations.[84] Bluebell contended Glencore's plan to run down its coal business and close all its mines within the next thirty years was "morally unacceptable and financially flawed."[85] The activist argued for a spin-off (a demerger) to increase shareholder value, which would involve separating coal and other assets.[86] The Glencore management rejected that approach by arguing mines are likely to go into the hands of other players (such as Chinese companies) who have no intention of reducing emissions; thus, it is better off to run down the mines and use the proceeds to expand the production of minerals needed for clean energy.[87] Management's plan was met with overwhelming approval by shareholders at the annual meeting, who had started to realize spinning off fossil fuel assets might be the wrong

[82] *See, e.g.*, Hartzmark & Sussman, s*upra* note 37, at 2789 (finding that "being categorized as low sustainability resulted in net outflows of more than $12 billion while being categorized as high sustainability led to net inflows of more than $24 billion").
[83] Neil Hume, *Activist Calls on Glencore to Spin off Coal Assets*, FIN. TIMES (Nov. 29, 2021), https://www.ft.com/content/6f5a8c43-76d4-4843-a15e-47bc767ec6d8 [https://perma.cc/2LT4-82LU].
[84] *Id.*
[85] *Id.*
[86] *Id.*
[87] Neil Hume, *Glencore Defends Coal Rundown Strategy as Right for the World*, FIN. TIMES (Dec. 2, 2021), https://www.ft.com/content/81696e63-38c5-4454-8a03-8a92fdc4ca5a [https://perma.cc/B9ZF-MVR7] [hereinafter *Glencore Defends Coal Rundown Strategy*]; Neil Hume & Henry Sanderson, *Glencore's Glasenberg Dismisses Coal Divestment as Pointless*, FIN. TIMES (Oct. 16, 2020), https://www.ft.com/content/3e778f6f-5008-454b-ab5c-c52adec6576b [https://perma.cc/7SZ3-JHV7].

thing to do.[88] In turn, Bluebell came up with a new plan, suggesting a dual-share structure to maintain control over the spun-off assets.[89] Glencore would retain class "A" shares that would give it control of the demerged company, but only a 9.09 percent economic interest while existing shareholders would get class "B" shares with a 90.91 percent economic interest.[90] Bluebell argues this strategy helps Glencore stay in control over coal assets while separating coal in the interests of shareholders.[91] The result of the campaign remains to be seen.[92] Many more companies, such as Shell and RWE, are facing or already have faced similar campaigns by activist hedge funds to break up their brown and green assets.[93]

Such activist campaigns should not necessarily be frowned upon, as there is no guarantee that the current owners will responsibly run down the assets and achieve emissions reduction in line with Paris Agreement goals. It might also be difficult for firms to raise finance for their green projects unless they follow a strict separation of brown and green assets. Furthermore, management might use as an excuse the fact that divestments may lead to worse outcomes for the planet in order to have a "quiet" life and to be able to manage a bigger company, which indicates agency costs.[94] Nevertheless, the fact remains that divestments of carbon-intensive

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[88] Hume, *Glencore Defends Coal Rundown Strategy*, *supra* note 87.

[89] Neil Hume, *Activist Investor Sets out Plan for Glencore Coal Demerger*, FIN. TIMES (Feb. 13, 2022), https://www.ft.com/content/9c0a4be1-b2bc-4bad-a4d6-78d2bdd6b4ef [https://perma.cc/KA9N-QVFM].

[90] *Id.*

[91] *Id.* The assumption is that this would increase shareholder value by increasing the value and investability of Glencore.

[92] At its latest shareholder meeting, Glencore's climate transition plan did not attract much shareholder support, though it still received a majority of shareholder votes. Neil Hume, *Glencore Suffers Shareholder Rebuke on Climate Plan*, FIN. TIMES (Apr. 28, 2022), https://www.ft.com/content/5781b305-3547-4fc8-b5a1-0c6b8e4c862f [https://perma.cc/42G2-GKM9]. Bluebell recently reiterated its demands for "the responsible separation of coal" and asked the company to put up a plan for a vote at the next year's annual general meeting. Nishant Kumar & Thomas Biesheuvel, *Activist Bluebell Adds Pressure on Glencore to Fix Coal Unit*, BLOOMBERG, https://www.bloomberg.com/news/articles/2022-06-08/activist-bluebell-piles-pressure-on-glencore-to-fix-coal-unit (last updated June 8, 2022, 5:36 AM PDT) [https://perma.cc/CS8W-JTUC].

[93] The activist shareholder Enkraft targeted Germany's largest power producer, RWE, for a spin-off of its brown coal activities, which was rejected at a shareholder vote. Christoph Steitz & Tom Kaeckenhoff, *Two Top-10 RWE Investors Won't Back Brown Coal Spin-Off Motion*, REUTERS, https://www.reuters.com/business/energy/rwe-top-10-investor-union-investment-wont-back-brown-coal-spin-off-motion-2022-04-26/ (last updated Apr. 26, 2022, 3:50 AM PDT) [https://perma.cc/V3W8-E6XL]. Third Point, an activist hedge fund run by Dan Loeb, targeted Shell with a proposal to break up the firm to unleash trapped shareholder value. Ortenca Aliaj, Derek Brower, Myles McCormick & Justin Jacobs, *Activist Fund Third Point Calls for Break-Up of Shell*, FIN. TIMES (Oct. 27, 2021), https://www.ft.com/content/b4fc6926-e991-43ca-9ac8-3b1478c23dd5 [https://perma.cc/5ZH9-9K3T]. Management and some big shareholders see the integrated company as a better "business" strategy for the company's transition and thus opposed the activist's proposal. *See* Attracta Mooney & Tom Wilson, *Leading Shell Investor Rejects Call for Energy Group to Split*, FIN. TIMES (Oct. 28, 2021), https://www.ft.com/content/51b6ddd3-cbbf-46ae-abdf-c1f5c1945e37 [https://perma.cc/QP5Q-R7DE]; Tom Wilson, *Shell Warns Hedge Funds Risk Derailing Energy Transition*, FIN. TIMES (Oct. 28, 2021), https://www.ft.com/content/6570670d-715e-433b-95dc-674e3e496a24 [https://perma.cc/Y5PE-BQPG].

[94] In economics, under the agency theory, unmonitored managers might be tempted to enjoy the "quiet life" instead of making hard decisions or taking on difficult tasks. *See, e.g.*, Marianne Bertrand & Sendhil Mullainathan,

assets might indeed not be in the best interest of society. Below, we discuss in detail how and when this might be the case in light of some examples, examine some real-world evidence, and provide exploratory data on the M&A transactions of carbon-intensive assets post the Paris Agreement.

IV. MERGERS & ACQUISITIONS OF CARBON-INTENSIVE ASSETS IN THE FIELD

A. Examples and Recent Trends

In this Part, we discuss certain transactions (or transaction types) to demonstrate the concerns enumerated above in relation to the M&A of carbon-intensive assets. We also consider recent trends.

As previously argued, transactions between publicly held companies and privately held companies should be seen as particularly concerning.[95] For example, Hilcorp, a privately held company, acquired Alaskan oil and gas assets from BP for $5.6 billion in 2020.[96] Following this acquisition, BP reported a substantial decrease in its greenhouse gas ("GHG") emissions.[97] The divestment by BP actually accounted for an emissions reduction that is more than five times greater than the reduction BP achieved through operational improvements.[98] However, it is doubtful whether there will be any emissions reduction in the atmosphere as Hilcorp's statements around the sale suggest that it aims to fully exploit the assets.[99] What is worse,

Enjoying the Quiet Life? Corporate Governance and Managerial Preferences, 111 J. POL. ECON. 1043 (2003) (when managers are not closely monitored, active empire building may not be the norm, and managers may instead prefer to enjoy the quiet life); Naoshi Ikeda, Kotaro Inoue & Sho Watanabe, *Enjoying the Quiet Life: Corporate Decision-Making by Entrenched Managers*, 47 J. JAPANESE & INT'L ECONS. 55 (2018) (finding results consistent with the quiet life hypothesis of the entrenched managers). On the managerial reluctance and hesitation to sell assets, see generally Lucian Arye Bebchuk, *The Case for Increasing Shareholder Power*, 118 HARV. L. REV. 833, 903 (2005) (stating "management might refrain from taking actions that would reduce the size of the empire under its control"); Yihui Pan, Tracy Yue Wang & Michael S. Weisbach, *CEO Investment Cycles*, 29 REV. FIN. STUD. 2955, 2957 (2016) (noting due to agency conflicts, the CEO might be reluctant to divest assets, even if the firm is no longer an optimal owner of the assets).

[95] *See supra* notes 63–67 and accompanying text.

[96] *BP Completes Sale of Alaskan Oil and Gas Producing Properties to Hilcorp Energy*, REUTERS, https://www.reuters.com/article/us-bp-divestiture-alaska-idUSKBN2426PP (last updated July 1, 2020, 9:26 AM) [https://perma.cc/DVR4-3VB7] [hereinafter *BP Completes Sale*].

[97] *See* BP, SUSTAINABILITY REPORT 2020, at 34 (2021), https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/sustainability/group-reports/bp-sustainability-report-2020.pdf [https://perma.cc/23KU-NB8F].

[98] *Id.*; *see* Rachel Adams-Heard, *What Happens When an Oil Giant Walks Away*, BLOOMBERG (Apr. 14, 2021), https://www.bloomberg.com/graphics/2021-tracking-carbon-emissions-BP-hilcorp/?leadSource=uverify%20wall [https://perma.cc/95YE-VG7G].

[99] *See BP Completes Sale*, *supra* note 96 (quoting CEO of Hilcorp Energy's statement that the firm "look[s] forward to continuing to drive economic growth, create Alaskan jobs and contribute to local economies for decades to come").

Hilcorp does not report on its GHG emissions in a meaningful way and does not have any apparent net-zero plan or target.[100]

This is not a standalone example. Indeed, a recent study by the Environmental Defense Fund finds that upstream oil and gas assets are mostly acquired by privately held parties, with sales from public to private companies accounting for the largest share of deals.[101] And as predicted by our theoretical explanation, acquirors often do not have net-zero plans and strategies or have less ambitious plans and also have less ambitious methane and flaring targets in comparison to their counterparties.[102] In some cases, these transactions resulted in more investment and production in the underlying asset[103] or greater pursuit of environmentally harmful activities,[104] both of which cause more emissions.

Overall, on the supply side, public carbon majors have shed and are expected to shed many more carbon-intensive assets.[105] On the demand side, private equity firms, for the most part, appear to be so far willing to acquire those assets and finance the relevant transactions.[106] This might reflect the valuation differences that could arise due to differences of opinion or companies' being subject to different ecosystems in terms of decarbonization. The first

[100] *See Environmental*, HILCORP, https://www.hilcorp.com/esg/environmental/ (last visited Nov. 2, 2022) [https://perma.cc/WN8J-NVZJ].
[101] MALEK, *supra* note 58, at 19.
[102] *Id.* at 17.
[103] *See* Aronoff, *supra* note 64 (noting deals between private equity-backed players and public carbon majors after which the production increased (e.g., Hilcorp-BP and Shell-Assala Energy)).
[104] *See* MALEK, *supra* note 58, at 27-29 (showing how after some deals between private equity-backed players and publicly held firms, there was reduced climate performance (for example, more unplugged inactive wells or increased flaring activity)).
[105] Anjli Raval, *A $140bn Asset Sale: The Investors Cashing in on Big Oil's Push to Net Zero*, FIN. TIMES (July 6, 2021), https://www.ft.com/content/4dee7080-3a1b-479f-a50c-c3641c82c142 [https://perma.cc/XEV2-MKJR] (citing energy consultancy Wood Mackenzie which says that "ExxonMobil and Chevron in the US and BP, Royal Dutch Shell, Total and Eni in Europe have sold $28.1bn in assets since 2018 alone. Now they are targeting further disposals of more than $30bn in the coming years. The total value of oil and gas assets up for sale across the industry stands at more than $140bn").
[106] *Who Buys the Dirty Energy Assets Public Companies No Longer Want?*, ECONOMIST (Feb. 12, 2022), https://www.economist.com/finance-and-economics/who-buys-the-dirty-energy-assets-public-companies-no-longer-want/21807594 [https://perma.cc/7B72-F7RJ] (finding that "[i]n the past two years alone, [private equity firms] bought $60 bn-worth of oil, gas and coal assets, through 500 transactions — a third more than they invested in renewables"); *see* Madeline Shi, *PE Investors Revive Appetite for Fossil Fuel Deals*, PITCHBOOK (May 23, 2022), https://pitchbook.com/news/articles/private-equity-fundraising-oil-and-gas-ESG [https://perma.cc/R48D-8B5T]. For a recent report on the private equity investments in "brown" assets, see *Scorecard 2022*, PRIV. EQUITY CLIMATE RISKS, https://climatenexxus.wpengine.com/ (last visited Nov. 5, 2022) [https://perma.cc/X27G-XR4Y]; *cf.* Miriam Gottfried, *Blackstone, Carlyle Take Different Sides on Oil-and-Gas Investment*, WALL ST. J. (Sept. 1, 2022, 5:33 AM ET), https://www.wsj.com/articles/blackstone-carlyle-take-different-sides-on-oil-and-gas-investment-11662024781 [https://perma.cc/VD7F-HTDS] (discussing the efforts of some private investment companies to reduce investment in oil and gas and an overall decline in the total of investments since 2014).

indicates that private equity firms may have different views in terms of net-zero transition[107] or that being private may help investee companies to escape pressure from public market investors and even stakeholders and regulators.[108]

Goals intended to be achieved through sustainable finance initiatives can also be undermined by similar transactions. For example, sustainability-linked bonds and loans punish/reward borrowers for emissions increase/reduction via adjustments in higher/lower borrowing costs.[109] In a recent case, Singaporean listed company, Sembcorp Industries, sold its Indian coal power plants to a private consortium to cut its GHG emissions and avoid triggering paying higher interest payments on its sustainability-linked debts.[110] While the market for sustainability-linked instruments might indeed incentivize 'greening', the emission reduction might not be real when achieved through such divestments.

The passing of assets to state-owned entities might produce similar problems. This could mean that brown assets will be increasingly under the control of national oil companies, which are typically based in countries with lower climate action ambitions (due to, for example, their economies being mostly dependent on related revenues) and thus usually have unsatisfactory net-zero strategies.[111] As these companies are usually controlled by the relevant state, investor pressure is also a weak disciplining mechanism.[112] Examples of transactions between public carbon majors and state-owned entities also abound. For instance, Rio Tinto, one of the world's biggest metals and mining corporations, sold off its coal assets to the Chinese-state-backed Yancoal Australia in the aftermath of the Paris Agreement, which won the bidding war with

[107] Noting that when Vale S.A., one of the largest public mining companies in the world, wanted to divest its coal assets, many private equity firms appeared as potential bidders, its Executive Vice President, Luciano Siani Pires, argues that "[i]n both [c]oal and [o]il, private equity firms are betting that the energy transition will take longer than expected and that demand will outpace a shrinking supply." *See* Luciano Siani Pires, LINKEDIN, https://www.linkedin.com/feed/update/urn:li:activity:6883150109136224256/ (last visited Nov. 3, 2022) [https://perma.cc/C3DD-HWXJ].

[108] *See supra* notes 17–19 and accompanying text.

[109] *See* Sehoon Kim, Nitish Kumar, Jongsub Lee & Junho Oh, *ESG Lending* (ECGI Fin., Working Paper No. 817, 2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3865147 [https://perma.cc/YJ5N-G4S8].

[110] Marcedes Ruehl, Kenza Bryan & George Steer, *Sembcorp Coal Deal Raises Concerns About Distortions in Green Bonds*, FIN. TIMES (Nov. 8, 2022), https://www.ft.com/content/78565764-5ada-419e-a55f-c617319a9105 [https://perma.cc/YQ45-8NU4].

[111] Nick Ferris, *Data Shows Early Signs of a Fossil Fuel Asset Exodus*, ENERGY MONITOR (Dec. 9, 2021), https://www.energymonitor.ai/finance/investment-management/deals-data-shows-early-signs-of-a-fossil-fuel-asset-exodus [https://perma.cc/FXF2-EBHM]; Raval, *supra* note 105.

[112] *See* Ernest W.K. Lim, *Concentrated Ownership, State-Owned Enterprises and Corporate Governance*, 41 OXFORD J. LEGAL STUD., 663, 685-88 (2021); Ernest Lim & Dan W. Puchniak, *Can a Global Legal Misfit Be Fixed?: Shareholder Stewardship in a Controlling Shareholder and ESG World*, *in* GLOBAL SHAREHOLDER STEWARDSHIP 599, 599 (Dan W. Puchniak & Dionysia Katelouzou eds., 2022).

Glencore by offering a better price.[113] Similarly, QatarEnergy, the Qatari state-owned oil and gas company, has been buying stakes from public carbon majors as part of its expansion strategy to become an international player.[114]

Transactions among publicly held companies should not, however, be deemed entirely unalarming. As stated above, even if the new owner of an asset is a publicly held company, it might be controlled by a dominant shareholder or be a small-cap company, which makes them less subject to investor pressure in a similar fashion to private companies.[115] When carbon majors sell their overseas assets, these publicly held companies might also be local producers and could thus be subject to a more "comfortable" ecosystem in terms of climate action due to different investor base and societal expectations.[116] For example, as part of its withdrawal from the Niger Delta, ExxonMobil sold four oilfields to the local producer Seplat Energy for $1.28 billion in 2022.[117] Despite being listed on the London Stock Exchange, Seplat Energy's investor base features two block holders (shareholdings over 10 percent but below or around 20 percent), one being a state-owned oil company and the other being a private oil company.[118] The remaining investor base does not feature any of the largest asset managers, such as the Big Three.[119] Seplat described the deal as "a transformational transaction" that would create "one of the largest independent energy companies."[120] Some public company acquisitions may also reflect different visions of the energy transition. For example, Northern Oil and Gas Inc, a publicly held United States company, is one of the frequent acquirers,[121] and it explains those

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[113] *See* James Regan, *Rio Tinto Shareholders Okay $2.69 Billion Coal Assets Sale to China-Backed Yancoal*, REUTERS, https://www.reuters.com/article/us-rio-tinto-divestiture-yancoal-idUSKBN19K0E7 (last updated June 28, 2017, 10:03 PM) [https://perma.cc/Z3WV-DAXW].

[114] *QatarEnergy to Continue Its International O&G Expansion*, FITCH SOLS. (Jan. 19, 2022), https://www.fitchsolutions.com/oil-gas/qatarenergy-continue-its-international-og-expansion-19-01-2022 [https://perma.cc/L4QM-BV4H].

[115] On the small-cap companies and investor engagement, see *supra* note 21. On the potential clash of interests and preferences of controlling shareholders and institutional investors and for a discussion of an example, see *supra* note 22; see also Bill Holland, *BHP Deal Extends 2021 Global M&A Trend of Majors Shedding Oil and Gas Assets*, S&P GLOB. MKT. INTEL., https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/bhp-deal-extends-2021-global-m-a-trend-of-majors-shedding-oil-and-gas-assets-66158345 (last visited Nov. 3, 2022) [https://perma.cc/RTB3-L9NG] (finding that "large international oil and gas companies selling assets to smaller firms accounted for just over 35% of estimated oil and gas deal value in 2021").

[116] *See* Aronoff, *supra* note 64 (noting that Shell considers certain locations as less politically sensitive to own GHG-intensive assets).

[117] Aanu Adeoye & Tom Wilson, *ExxonMobil Completes Exit from Niger Delta with $1.3bn Deal*, FIN. TIMES (Aug. 9, 2022), https://www.ft.com/content/aa3d7984-42b1-43b5-b9b8-bc92830c4dc9 [https://perma.cc/E6HA-QE56].

[118] This is based on own research on S&P Capital IQ Database. The ownership is as of 02.11.2022. Two blockholders include PT Pertamina (Persero), an Indonesian oil company with a 20.62% stake and Petrolin Group, a private oil company with a 13.87% stake.

[119] *Id.*

[120] Adeoye & Wilson, *supra* note 117.

[121] *See infra* tbl. 3.

acquisitions based on its view that especially natural gas will be an important part of the energy mix in the future as a relatively low source of GHG emissions.[122] Another frequent buyer in our data, the London-listed Diversified Energy Corp, says that it adopted the "acquire and operate" business model[123] and has thus become the owner of the largest number of oil and gas wells in the United States but has been criticized for its accounting practices that push cleanup costs far into the future and for its potential inability to responsibly retire its wells.[124]

Furthermore, spin-offs of carbon-intensive assets by publicly held companies can be problematic even if the new entity (SpinCo) is listed as well.[125] This was clearly illustrated by Anglo American plc's spin-off of its thermal coal operations in South Africa under a new entity called Thungela Resources Limited, with a dual listing on the Johannesburg Stock Exchange and the London Stock Exchange.[126] The aim was to let investors decide whether to hold coal assets who were already pressuring the company and "to ensure that the assets were operated responsibly until the end of their life, with all the responsible environmental and social standards and expectations met."[127] Surprisingly and to the dismay of many, shortly after Thungela began trading as a separate business, its CEO July Ndlovu signaled his intention to increase output,[128] saying, "I didn't take up this role to close these mines."[129]

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[122] N. OIL & GAS, INC., INAUGURAL ESG REPORT 8 (2022), https://d1io3yog0oux5.cloudfront.net/northernoil/files/pages/about/corporate-governance/esg/NOG_SEPTEMBER_2022_ESG_Report_FINAL_-_Single_Page.pdf [https://perma.cc/4XVL-GPJB].

[123] DIVERSIFIED ENERGY, 2021 SUSTAINABILITY REPORT 7-8 (2022), https://d1io3yog0oux5.cloudfront.net/dgoc/files/Company+Reports/2021+Sustainability+Report/Diversified_ESG_Report_2021_Final_Website.pdf [https://perma.cc/9EG7-FVW3].

[124] Bill Holland, *Activists Say Largest Well Owner in US Should Not Get Public Money*, S&P GLOB. MKT. INTEL. (Apr. 14, 2021), https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/activists-say-largest-well-owner-in-us-should-not-get-public-money-69800222 [https://perma.cc/7RBA-Q4LR]; Hiroko Tabuchi, *Oil Giants Sell Dirty Wells to Buyers with Looser Climate Goals, Study Finds*, N.Y. TIMES (May 10, 2022), https://www.nytimes.com/2022/05/10/climate/oilfield-sales-pollution.html [https://perma.cc/456T-X7BJ].

[125] On the spin-offs, see *supra* note 68 and accompanying text and *supra* notes 83–93 and accompanying text.

[126] Press Release, Anglo American, Anglo American Completes Demerger of Thungela Thermal Coal Business (June 7, 2021), https://www.angloamerican.com/media/press-releases/2021/07-06-2021 [https://perma.cc/S2VE-HH98].

[127] Ferris, *supra* note 111; *see* Biesheuvel, *supra* note 73.

[128] *See id.*

[129] *Id.*; Cat Rutter Pooley, *Glencore Split Proposal Shows How Tricky It Is to Clean Up Coal*, FIN. TIMES (Feb. 14, 2022), https://www.ft.com/content/0eda0f2c-d32b-4e07-888b-887b26189d32 [https://perma.cc/58N2-JX8H]; *see* Neil Hume, *Coal Miners Profit from Energy Market Turmoil*, FIN. TIMES (Nov. 3, 2021), https://www.ft.com/content/30415edc-1643-4334-a381-96ede6d88e2c [https://perma.cc/5H3Q-5LX5] (explaining how Thungela's valuation has dropped upon independent listing but rose again recently and citing its CEO who states that "[w]hile the [energy] transition is going to happen it's not going to happen as quickly as everyone in the western world is shouting that it will be").

B. Data

Beyond the anecdotal background provided above, to have a bigger and more complete picture, it is worth looking at the data on M&A deals in the field. The following provides exploratory data on the M&A transactions of upstream oil and gas assets post the Paris Agreement.

(i) Methodology

We use Refinitiv's SDC Platinum and Eikon for accessing global M&A data. We screen transactions for each year after the conclusion of the Paris Agreement. Thus, we have five datasets for the years 2017, 2018, 2019, 2020, and 2021. The datasets include global M&A transactions announced during the relevant year on the condition that the transaction is either completed or pending. Transaction types include majority or minority stake or asset acquisitions and mergers. We identify transactions on upstream oil and gas assets via the "target" SIC code. We use SIC codes 131 (crude petroleum and natural gas) and 132 (natural gas liquids).[130] We eliminate transactions that are the results of debt restructuring with creditors.[131]

Refinitiv also provides information on the ultimate parent of the acquirer, of the target, and, where relevant, of the seller and their respective status. We rely on this information to identify the transactional parties and their status. However, Refinitiv only provides "public," "private," and "government" classifications.[132] We self-identify state-owned enterprises ("SOEs") by coding them so if the state or related entity holds more than a 25 percent stake in the relevant company.[133] We also use "private" status for the private equity acquisitions/divestments, even though the ultimate private equity firm might be publicly traded.[134] Thus, we have three main categories of transactional parties: public, private, and SOEs/government.

[130] On the relevant SIC codes, see *Structure of SIC Code 13 – Oil and Gas Extraction*, SIC CODE, https://siccode.com/sic-code-hierarchy/13/oil-gas-extraction (last visited Nov. 4, 2022) [https://perma.cc/DU46-5V86].
[131] We also eliminate transactions where the target appears to have no relation to upstream oil and gas operations despite our related SIC filtering.
[132] Refinitiv also uses "private" status for undisclosed acquirer, target, or seller, which we keep as it is a reasonable assumption.
[133] We mainly rely on the S&P Capital IQ database.
[134] These include firms such as KKR, Blackstone, Carlyle, etc.

(ii) Data

Our main results are presented in the below chart (Figure 1) and table (Table 1).

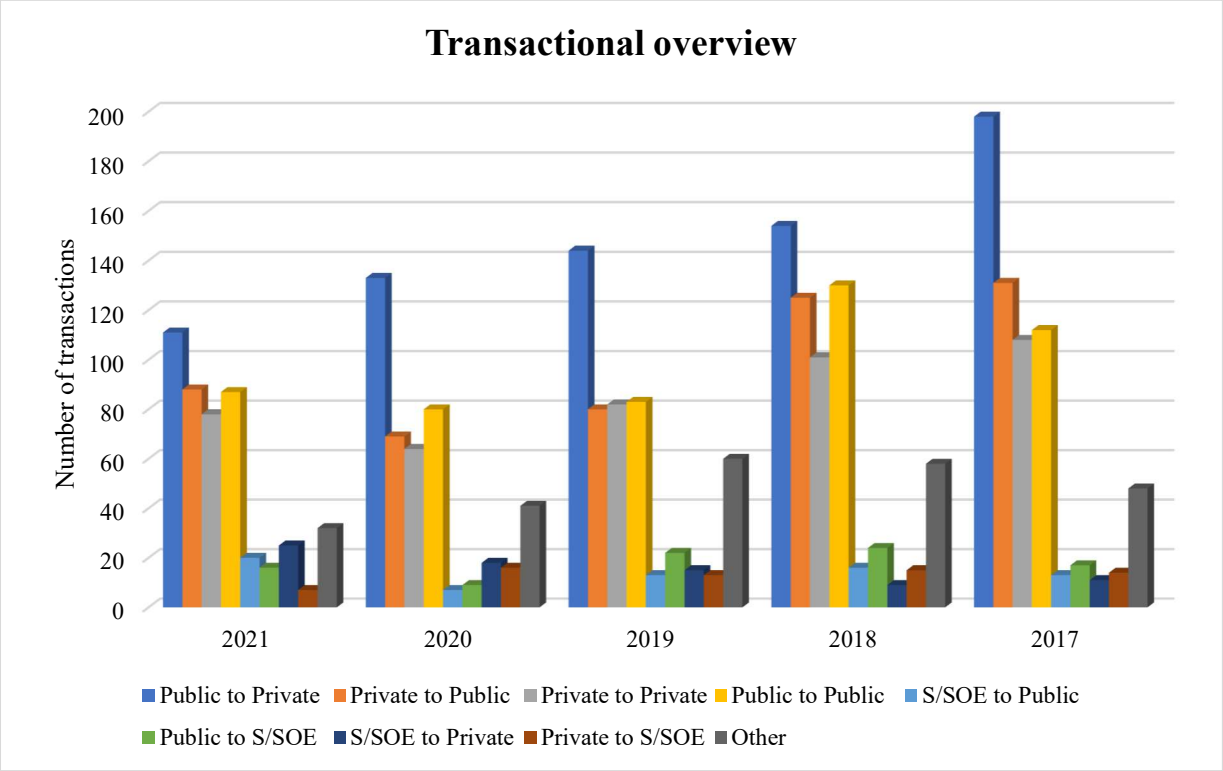

Figure 1

	Public to Private	Private to Public	Private to Private	Public to Public	S/SOE to Public	Public to S/SOE	S/SOE to Private	Private to S/SOE	Other [135]	Total
2021	111	88	78	87	20	16	25	7	32	464
2020	133	69	64	80	7	9	18	16	41	437
2019	144	80	82	83	13	22	15	13	60	512
2018	154	125	101	130	16	24	9	15	58	632
2017	198	131	108	112	13	17	11	14	48	652

Table 1

The data shows that acquirers of oil and gas stakes or assets are mostly private parties. In all years, the transactions where the ultimate acquirer was a private party while the ultimate target or seller was a public party ("Public to Private") exceeded the number of transactions where this was the vice versa ("Private to Public"), albeit to different degrees. In aggregate, there were 742 "Public to Private" deals in comparison to 495 "Private to Public" deals, meaning the former exceeded the latter by almost 50 percent. Similarly, transactions, where the ultimate acquirer was a state or an SOE ("S/SOE") while the ultimate target or seller was a

[135] Other includes "individuals", "investor groups" with participants of different public/private/SOE statuses (coded "mixed"), unknown and transactions between parties not included in other classifications (such as "S/SOE-to-S/SOE").

public party ("Public to S/SOE"), exceeded the number of transactions where this was the vice versa ("S/SOE to Public"), except for one year (2021). However, margins, in this case, are very low: in the aggregate, 82 transactions in the former group in comparison to 69 transactions in the latter. Furthermore, it is difficult to establish a relative trend (such as that more 'public-to-private' or 'public-to-S/SOEs' transactions are happening over time) as the percentage of such transactions under the total number appears to fluctuate within a certain range (e.g., for public to private transactions from 2017 to 2021, ~30 percent, 24 percent, 28 percent, 30 percent and 24 percent respectively). These are depicted in the following table.

	Public to Private	Private to Public	Private to Private	Public to Public	S/SOE to Public	Public to S/SOE	S/SOE to Private	Private to S/SOE	Other
2021	24%	19%	17%	19%	4%	3%	5%	2%	7%
2020	30%	16%	15%	18%	2%	2%	4%	4%	9%
2019	28%	16%	16%	16%	3%	4%	3%	3%	12%
2018	24%	20%	16%	21%	3%	4%	1%	2%	9%
2017	30%	20%	17%	17%	2%	3%	2%	2%	7%

Table 2

When we compile the frequent counterparties (including those with or over 7 transactions) in all years, the following picture emerges:

Acquirer[136]	Status	Freq.	Freq.	Target/Seller	Status
TotalEnergies SE (including Total SA)	Public	22	46	Shell PLC	Public
Investore AS	Private	14	34	TotalEnergies SE (including Total SA)	Public
Diversified Energy Corp (including Diversified Gas & Oil PLC)	Public	14	32	Petroleo Brasileiro SA Petrobras	SOE
Shell PLC	Public	13	27	BP PLC	Public
Rosneftegaz AO	SOE	12	20	United Arab Emirates	State
Gazprom PAO	SOE	12	19	Chevron Corp	Public
Petro Rio SA	Public	11	17	Rosneftegaz AO	SOE
The Carlyle Group LP (and Inc)	Private	10	17	ConocoPhillips	Public
Repsol SA	Public	10	16	Repsol SA	Public
Eni SpA	SOE	10	15	Republic of Brazil	State
Equinor ASA (including Statoil ASA)	SOE	9	14	Equinor ASA (including Statoil ASA)	SOE
Waterous Energy Fund LP	Private	9	14	Gazprom PAO	SOE
Qatar Petroleum	SOE	9	12	Exxon Mobil Corp	Public
Oil Co LUKOIL PJSC***	Public	9	11	Novatek PAO***	Public
Northern Oil & Gas Inc	Public	9	11	EQT Corp	Public
Novatek PAO***	Public	9	11	Eni SpA	SOE

[136] Refinitiv uses the term "investor group" for cases where there is more than one acquirer. Those cases might also include the single parties listed as acquirer in the table, which, however, does not cover multi-party transactions.

EIG Global Energy Partners LLC	Private	9	10	Occidental Petroleum Corp	Public
China National Petroleum Corp	SOE	9	10	OMV AG	SOE
Serica Energy PLC	Public	8	10	LINN Energy Inc	Public**
INPEX Corp*	Public	8	9	Pioneer Natural Resources Co	Public
Exxon Mobil Corp	Public	8	9	Hess Corp	Public
BP PLC	Public	8	9	Anadarko Petroleum Corp	Public**
Chevron Corp	Public	8	8	Santos Ltd	Public
US Energy Corp***	Public	7	8	Petroliam Nasional Bhd	SOE
Zenith Energy Ltd	Public	7	8	Noble Energy Inc	Public**
Warburg Pincus LLC	Private	7	8	Devon Energy Corp	Public
Reabold Resources PLC	Public	7	8	Cenovus Energy Inc	Public
Perenco SA	Private	7	7	Stamper Oil & Gas Corp	Public
RockRose Energy PLC	Public**	7	7	Oasis Petroleum Inc	Public
Polskie Gornictwo Naftowe I Gazownictwo Sa	SOE	7	7	Marksmen Energy Inc	Public
PTT PCL	SOE	7	7	China Petrochemical Corp	SOE
Premier Oil PLC	Public**	7	7	Abraplata Resource Corp	Public**
Nezavisimaia Neftegazovaia Kompaniia-Kholding OOO	Private	7			
General Electric Co	Public	7			
Diamondback Energy Inc	Public	7			
Government of Abu Dhabi	State	7			
Canadian Natural Resources Ltd	Public	7			
ConocoPhillips	Public	7			

* Government of Japan with an over 20% stake
** At the time of the relevant transactions
*** Controlled

Table 3 (as of Dec. 31, 2021)

As can be expected, the most frequent players in M&A transactions are carbon majors, whether public or SOEs. Without knowing the exact motives behind the transactions, it is difficult to pinpoint specific implications. Some general comments can be made, however. Public carbon majors are generally sellers rather than buyers. Some SOEs (like Gazprom, Rosneftegaz or Equinor) are nearly equally buyers and sellers, while others are usually buyers (e.g., Qatar Petroleum) or sellers (e.g., Petrobras). It is noteworthy that while privately held companies are ubiquitous among frequent acquirers, there is no private company among frequent sellers/targets.

In Figure 2 and Table 4, we provide aggregate deal value (using "rank value"[137]) for each transaction classification we use (with its ratio to the total deal value for the relevant year). Since deal value is not known for all transactions, we also note the number of transactions

[137] It is defined as the amount paid by the acquiror for the target, including net debt, which mostly overlaps with the consideration but better allows the comparison between transaction values.

where it is available and how representative this sample is (by providing the percentage of this sample to the complete sample for each transaction classification in each year).

One might expect transactions where public players are acquirors to be the largest in value, although the relevant transaction numbers might be relatively lower in the sample. This would be because these companies are generally the biggest/major players and have more financing opportunities.[138] This is mostly borne out by the data. But, remarkably, the "public-to-private" transaction value is quite close to that of the "private-to-public" transactions (except in one year when it was much lower (the pandemic year 2020) and in another year when it was much higher (2019)).[139] It should also be kept in mind that transactional motives are not known. Integrated oil and gas companies, which are generally public firms, can more easily exploit the abovementioned efficiencies (that normally drive M&A transactions on these assets outside the climate context)[140] and obtain bigger assets with their extensive operations. Looking at transactions between players classified as "public" and "S/SOE" (which are also mostly big and major players), the aggregate transaction values are quite close (except in one year where the sample is unreliable (2020) and in another year where "public-to-S/SOE" transaction value is higher (2019)).[141] Deal values, therefore, do not reveal a clear trend overall.

The following is also noteworthy: transaction values do not reflect the surplus divide, which shows how parties value the assets. Private parties might have a higher valuation of the assets, but if public players have low valuations of the same asset and have incentives to get rid of the asset, the transaction can happen at the lower bound of the surplus, which would push down the transaction values in "public-to-private" transactions. On the contrary, when private companies sell their assets, they might not have a sustainability pressure-related discount and thus would have a relatively high valuation of assets. On the other hand, public players have

[138] The same may not be true, however, for emissions, which is the main concern in this article. Although emissions related to the assets can correlate with size, how the assets are operated is also important. *See, e.g.*, CLEAN AIR TASK FORCE & CERES, BENCHMARKING METHANE AND OTHER GHG EMISSIONS OF OIL & NATURAL GAS PRODUCTION IN THE UNITED STATES 3, 27 (2022), https://cdn.catf.us/wp-content/uploads/2022/07/14094726/oilandgas_benchmarkingreport2022.pdf [https://perma.cc/39V5-9Y75] (demonstrating that, in some cases, smaller private players have more emissions reported to the Environmental Protection Agency than their much bigger public counterparts).

[139] In 2020, this is mostly driven by the fact that in that year, more than 70% of the transaction value (12.952,02 USD (mil.)) in "private-to-public" transactions was due to three mergers between public and private parties where the deal value is very high as the acquisition is for the whole company. In 2019, the "private-to-public" transaction value sample is still representative but smaller than in other years.

[140] *See supra* note 58 and accompanying text.

[141] In 2020, there is only one transaction where the deal value is known for the "public-to-S/SOE" transactions. Generally, the sample size is quite small across the years for this group of transactions. In 2019, the overwhelming part of "public-to-S/SOE" transactional value (88%) comes from three big transactions.

this discount, but they should then have other sources of synergies, which should be high since they have incentives to acquire the assets despite this discount. These factors would then push the transactional values to be on the higher end in "private-to-public" transactions. The same reasoning is also true for the transactions between the public and S/SOE players.

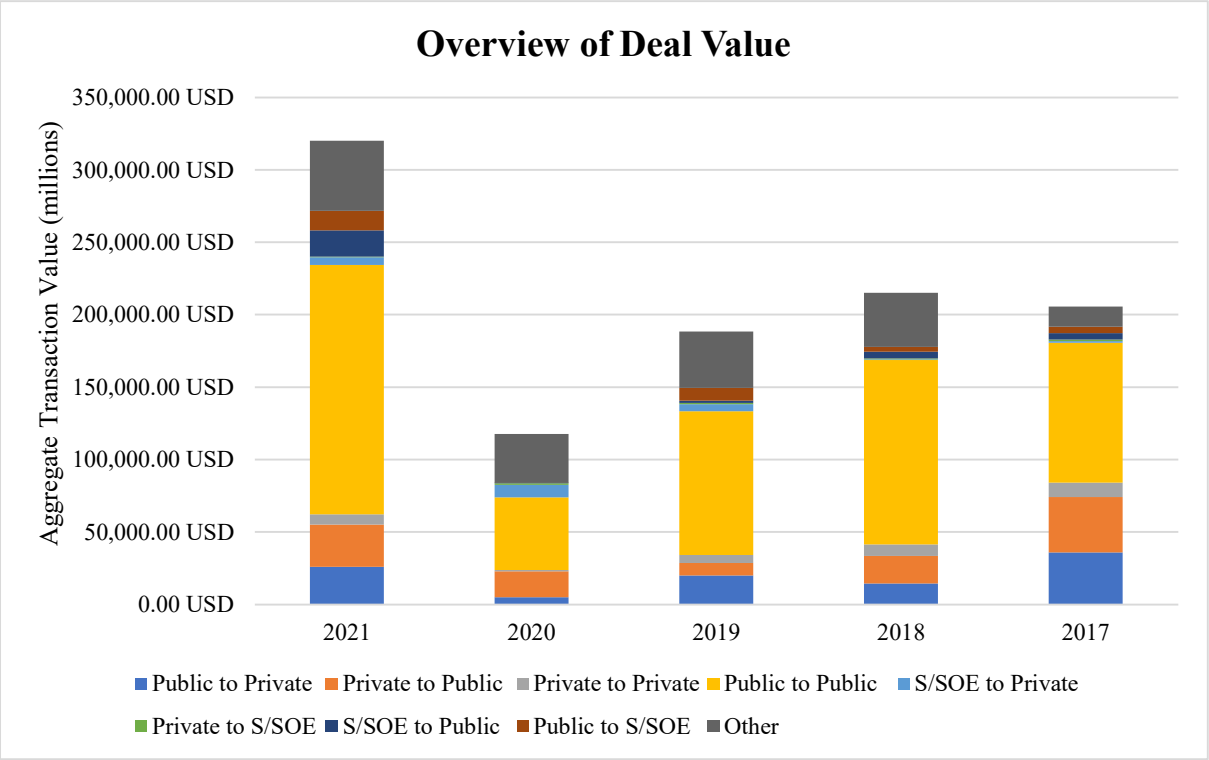

Figure 2

Table 4

Years	Public to Private		Private to Public		Private to Private		Public to Public		S/SOE to Private		Private to S/SOE		S/SOE to Public		Public to S/SOE		Other	Total
Millions (USD)	Value	Sample Size	Value	Sample size	Value	Sample Size	Value	Sample Size	Value	Sample Size	Value	Sample Size	Value	Sample Size	Value	Sample Size	Value	Value
2021	25.887,62 (8%)	82 (74%)	29.247,69 (9%)	64 (73%)	7.085,14 (2%)	20 (26%)	172.173,15 (54%)	57 (66%)	5.163,00 (2%)	5 (20%)	615,00 (0%)	1 (14%)	17.979,94 (6%)	16 (80%)	13.604,59 (4%)	8 (50%)	48.281,62 (15%)	320.037,74
2020	4.993,62 (4%)	109 (82%)	17.777,07 (15%)	51 (74%)	903,77 (1%)	16 (25%)	50.235,17 (43%)	60 (75%)	8.677,03 (7%)	12 (67%)	980,62 (1%)	7 (44%)	321,78 (0%)	5 (71%)	31,62 (0%)	1 (11%)	33.697,96 (29%)	117.618,65
2019	19.999,47 (11%)	112 (78%)	8.660,37 (5%)	47 (59%)	5.477,10 (3%)	22 (27%)	99.231,87 (53%)	60 (72%)	4.908,14 (3%)	8 (53%)	736,11 (0%)	5 (38%)	1.523,71 (1%)	9 (69%)	8.747,78 (5%)	13 (59%)	38.980,49 (21%)	188.394,12
2018	14.504,48 (7%)	111 (72%)	18.865,55 (9%)	87 (70%)	7.934,45 (4%)	31 (31%)	127.311,35 (59%)	91 (70%)	504,66 (0%)	3 (33%)	601,55 (0%)	3 (20%)	4.624,88 (2%)	10 (63%)	3.500,87 (2%)	11 (46%)	37.176,94 (17%)	215.024,74
2017	35.914,35 (17%)	147 (74%)	38.186,87 (19%)	80 (61%)	9.861,18 (5%)	43 (40%)	96.606,95 (47%)	80 (71%)	1.111,21 (1%)	4 (36%)	1.225,09 (1%)	6 (43%)	4.463,17 (2%)	7 (54%)	4.274,10 (2%)	5 (29%)	13.936,67 (7%)	205.579,97

V. HOW TO ENSURE THAT M&A TRANSACTIONS DO NOT HARM CLIMATE GOALS

We have seen above that M&A transactions on carbon-intensive assets give rise to policy concerns, as they may lead to lower public scrutiny, lower climate awareness, more climate harm, and ultimately reduce social welfare at the equilibrium. As in other cases in corporate law (related party transactions, takeovers etc.), the optimum strategy should be to prevent undesirable transactions (in terms of climate goals in this context) while allowing other (value-increasing) transactions. With this goal in mind, this Part continues the discussion by evaluating several policy options that could address the problems we identify.

A. Regulatory options: outright ban and transactional vetting

There are some corporate law rules that ban some types of transactions by companies. For example, after scandals such as the Enron scandal, the Sarbanes-Oxley Act of 2002 banned publicly held companies from making personal loans to their directors and executive officers.[142] In a similar vein, rules in the EU on "financial assistance" prohibit or restrict payments from a company for the purchase of its own shares or the shares of its holding companies.[143]

Similarly, a conceivable tool in the context of transactions of carbon-intensive assets would be to ban them under certain conditions. For example, a law might ban the divestment of assets to entities controlled by states that do not engage in a cooperative manner in international efforts to fight climate change.[144] This can be particularly effective for the overseas assets of domestic companies.

However, apart from those obvious cases, banning the divestment of carbon-intensive assets is too overinclusive to be an efficient tool. To begin with, it would affect the legitime use of such transactions for strategic or financial reasons.[145] Even when there is a risk of assets ultimately passing to parties that do not have satisfactory net-zero ambitions or are relatively

[142] Sarbanes-Oxley Act of 2002, Pub. L. No. 107-204, § 402, 43.
[143] *See* Directive 2017/1132, of the European Parliament and of the Council of 14 June 2017 Relating to Certain Aspects of Company Law, art. 64, 2017 OJ L (169) 46, 77.
[144] A primary example is currently Russia which we expect to become more isolated after the war in Ukraine and thus more unresponsive to climate commitments and coordination efforts.
[145] *See* MALEK, *supra* note 58, at 10.

immune to discipline, this would not justify a blanket ban. It may be better for involved stakeholders in a transaction to monitor on an individual basis, as we explain below.[146]

Another regulatory option is to vet certain transactions *ex ante*. Apart from corporate law requirements, M&A transactions are occasionally subject to significant regulatory scrutiny from various perspectives, including competition, takeover, national interests etc.[147] A similar vetting process can be provided for M&A transactions on carbon-intensive assets by a relevant authority. The strictness of vetting might vary. A light-touch approach would involve providing some general principles or guidelines parties follow on a comply or explain basis. They would relate to pre-contractual due diligence and the handling of contractual assets.[148] A strict vetting, however, might involve requiring some contractual undertakings to uphold some standards to protect the climate or the right to veto some transactions that are found to be likely to harm climate goals.[149] Accompanying this vetting process, regulators should be given some powers to enforce the undertakings they impose on contractual parties.[150]

B. Remove Arbitrage Opportunities

As we hinted above, some firms might be under less pressure to decarbonize and achieve any climate goals.[151] In this case, they would have stronger incentives to acquire carbon-intensive assets, as they do not discount such assets. Ironically, this means disciplining some firms to be more sustainable might not achieve much if it benefits other firms that are less exposed to this discipline.

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[146] *See infra* Section C.

[147] *See generally* John C. Coates IV, *Mergers, Acquisitions, and Restructuring; Types, Regulation, and Patterns of Practice*, *in* THE OXFORD HANDBOOK OF CORPORATE LAW AND GOVERNANCE 570 (Jeffrey N. Gordon & Wolf-Georg Ringe eds., 2018).

[148] For a similar private sector initiative, see ENV'T DEF. FUND & CERES, TACKLING TRANSFERRED EMISSIONS: CLIMATE PRINCIPLES FOR OIL AND GAS MERGERS AND ACQUISITIONS 12 (2023), (developing "The Climate Principles for Oil and Gas Mergers and Acquisitions" which involves "pre-contractual due diligence," "disclosure," "emissions reduction targets and strategy," and "decommissioning").

[149] These contractual undertakings might relate to how acquired assets are to be handled in terms of disclosure, emission reduction and decommissioning. *See id.* at 14-18; *see also infra* Section D (discussing how parties might use covenants to bind acquirors to certain standards).

[150] This might remedy some problems with private enforcement we discuss in Section D, see *infra* notes 194-195 and accompanying text. *See also* Daniel E. Wolf, *Social Covenants in Mergers: Legal Promises or Moral Commitments?*, HARV. L. SCH. F. ON CORP. GOVERNANCE (Apr. 4, 2016), https://corpgov.law.harvard.edu/2016/04/04/social-covenants-in-mergers-legal-promises-or-moral-commitments/ (discussing, among others, the Duke/Progress Energy merger where North Carolina regulators launched an inquiry when approved contractual terms were not complied with after the transaction, which resulted in a settlement).

[151] *See supra* note 65.

This arbitrage might be inevitable in some cases. For example, investor pressure is most powerful and conspicuous in publicly held companies in comparison to privately held and state-owned entities where there are most likely controlling shareholders.[152] In theory, stakeholder pressure is equally applicable to all firms. But resources are limited, and ultimately, some firms (such as carbon majors) are likely to be subject to more stakeholder pressure than others.[153]

Regulation can also be part of this arbitrage opportunity. For example, when firms are subject to climate disclosure rules to facilitate investor and stakeholder pressure, the disclosure mandate should be equally applicable to all similar firms. When, however, disclosure is implemented via a securities regulation regime, it will usually be applicable to publicly held companies, which means that privately held companies are not subject to disclosure-related discipline.[154] This will be the case in the United States, as the SEC's proposed climate-related disclosure rules will if adopted, be applicable to publicly held companies only.[155] This has also previously been the case in the EU and the United Kingdom, but the discrepancy has now been somewhat remedied.[156]

There might also be other arbitrage opportunities. Some lawmakers adopted rules that require companies to implement or publish net-zero transition plans and targets, as well as forming quasi-regulatory bodies to engage with companies in this regard.[157] While in the EU, these rules will apply on the basis of size,[158] in the UK, it appears that the rules are applicable

[152] On privately held companies, see Gözlügöl & Ringe, *supra* note 14 (manuscript at 20-26). On state-owned entities, see sources cited *supra* note 112.
[153] Consider, for example, climate litigation, which is one of the primary ways for stakeholders to exert influence. These cases concentrate on carbon majors, *see Climate Change Laws of the World*, *supra* note 31.
[154] We mean here disclosure-induced stakeholder discipline as, in private companies, investors normally do not need disclosure. For a discussion on this, see Gözlügöl & Ringe, *supra* note 14 (manuscript at 47-51).
[155] *See* 17 C.F.R. §§ 210, 229, 232, 239, 249 (2023), *supra* note 44.
[156] Gözlügöl & Ringe, *supra* note 14 (manuscript at 28-35).
[157] In the EU, the proposed Directive on the Corporate Sustainability Due Diligence includes such requirements. It requires a certain group of companies, under some conditions, to adopt net-zero transition plans and targets. *See* Proposal for a Directive of the European Parliament and of the Council on Corporate Sustainability Due Diligence and amending Directive (EU) 2019/1937, art. 15 (2022), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022PC0071 [https://perma.cc/2TWX-M3CK] [hereinafter Proposal for a Directive]; *see also* Wolf-Georg Ringe, *Net-Zero Plans Under the Proposed CSDD*, OXFORD BUS. L. BLOG (Apr. 28, 2022), https://blogs.law.ox.ac.uk/business-law-blog/blog/2022/04/net-zero-plans-under-proposed-csdd [https://perma.cc/D9LN-6S67]. The UK is adopting similar measures as of 2023 under the auspices of the newly set up Transition Plan Taskforce, requiring addressees to publish transition plans that consider the government's net zero commitment or provide an explanation if they have not done so. *See About: Background Information Regarding the Transition Plan Taskforce*, TRANSITION PLAN TASKFORCE, https://transitiontaskforce.net/about/ (last visited Nov. 18, 2022) [https://perma.cc/MN4K-PHHL]; *see also Fact Sheet: Net Zero-Aligned Financial Centre*, GOV.UK (Nov. 2, 2021), https://www.gov.uk/government/publications/fact-sheet-net-zero-aligned-financial-centre/fact-sheet-net-zero-aligned-financial-centre [https://perma.cc/7GUF-EBK6] [hereinafter *Fact Sheet*].
[158] Proposal for a Directive, *supra* note 157, arts. 2, 15.

only to publicly held companies, at least initially.[159] This will signal that only publicly held companies need to transition — a false premise, given the significant contributions to climate change by privately held companies[160] — and will ultimately put more pressure on publicly held companies.

Ultimately, regulators need to adopt strategies that do not create different ecosystems for different types of companies in climate-relevant sectors so that they do not use arbitrage opportunities to keep polluting. A global carbon pricing system is an example of one such strategy.[161] Ideally, there should be coordination and uniform action among global actors to prevent arbitrage geographically.[162] In the case of non-financial reporting, the new standard-setting board — the International Sustainability Standards Board ("ISSB") — can create a global baseline and ensure at least minimum standards.[163]

C. Facilitate Investor Engagement

An important monitoring mechanism for M&A of carbon-intensive assets is shareholder engagement. Some shareholders might be interested in preventing highly polluting assets from switching to owners that do not have (credible) climate action-related goals. These shareholders are likely to include investors that have non-financial green preferences, as well as diversified investors concerned about their overall portfolio value that would suffer under unmitigated climate change.[164] These investors might be opposed to deals that will increase a firm's value but potentially harm the climate.[165]

A relevant question is whether shareholders have any formal power over M&A transactions. As M&As are fundamental changes, shareholders are generally granted voting rights. For mergers, jurisdictions generally require supermajority or majority shareholder

[159] *See Fact Sheet*, *supra* note 157.
[160] Gözlügöl & Ringe, *supra* note 14 (manuscript at 6-19).
[161] For a brief overview of carbon pricing, see *Pricing Carbon*, WORLD BANK, https://www.worldbank.org/en/programs/pricing-carbon (last visited Nov. 3, 2022) [https://perma.cc/QQC9-6MPW].
[162] *See, e.g.*, Martin L. Weitzman, *Can Negotiating a Uniform Carbon Price Help to Internalize the Global Warming Externality?*, 1 J. ASS'N ENV'T & RES. ECON. 29, 29 (2014) ("[N]egotiating a single internationally binding minimum carbon price (the proceeds from which are domestically retained) counters self-interest by incentivizing agents to internalize the externality.").
[163] On the ISSB, see *International Sustainability Standards Board*, IFRS, https://www.ifrs.org/groups/international-sustainability-standards-board/ (last visited Nov. 18, 2022) [https://perma.cc/DBP4-UMC8].
[164] For a discussion on this, see *supra* notes 81–93 and accompanying text.
[165] *Id.*

authorization.[166] Some jurisdictions also grant shareholders voting power over "significant transactions."[167] However, even if shareholders have some formal voting powers on M&A transactions, it could be a cost-intensive exercise to monitor each transaction for which asset managers may have weak financial incentives due to high agency and coordination costs.[168] This approach might also be disfavored as micromanagement. Looking at the voting statistics of the Big Three, for example, they seem to vote with management generally for shareholder votes on M&As.[169]

Shareholders can also influence how companies develop their net-zero transition plans and implement them. They can be particularly opposed to plans that depend on the divestment of assets unless certain conditions are complied with.[170] This is possible through increasingly popular "say on climate" proposals where shareholders demand corporate management put a net-zero transition plan up to a shareholder vote or where shareholders vote on similar management resolutions.[171]

Apart from their normal voting power, shareholders can privately engage with corporate management. Indeed, private engagements form a main part of how the Big Three engages with the investee companies.[172] In these engagements, shareholders can voice their concerns

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[166] For the US, see DEL. CODE ANN. tit. 8 § 251(c) (2022); REVISED MODEL BUSINESS CORPORATION ACT § 11.04(e) (AM. BAR ASS'N 2016). For the EU, see Directive (EU) 2017/1132 of the European Parliament and of the Council of 14 June 2017 Relating to Certain Aspects of Company Law, *supra* note 143, art. 93.

[167] *See generally* Edward Rock, Paul Davies, Hideki Kanda, Reinier Kraakman & Wolf-Georg Ringe, *Fundamental Changes*, *in* THE ANATOMY OF CORPORATE LAW: A COMPARATIVE AND FUNCTIONAL APPROACH 171 (3d ed. 2017) (discussing fundamental or structural changes in the relationship among the participants in the firm, and how corporate law mitigates the opportunism that can accompany these changes).

[168] *See, e.g.*, Lucian A. Bebchuk & Scott Hirst, *Index Funds and the Future of Corporate Governance: Theory, Evidence, and Policy*, 119 COLUM. L. REV. 2029 (2019) [hereinafter *Index Funds*] (explaining an agency-costs theory of index fund stewardship).

[169] *See* BLACKROCK, INVESTMENT STEWARDSHIP ANNUAL REPORT JANUARY 1 - DECEMBER 31, 2021, at 125 (2022), https://www.blackrock.com/corporate/literature/publication/annual-stewardship-report-2021.pdf [https://perma.cc/QT2V-3K8Z]; VANGUARD, INVESTMENT STEWARDSHIP 2021 ANNUAL REPORT 47 (2022), https://corporate.vanguard.com/content/dam/corp/advocate/investment-stewardship/pdf/policies-and-reports/inv_stew_2021_annual_report.pdf [https://perma.cc/8TVY-JN4M]; STATE ST. GLOB. ADVISORS, STEWARDSHIP REPORT 2021, at 54 (2022), https://www.ssga.com/library-content/pdfs/asset-stewardship/asset-stewardship-report-2021.pdf [https://perma.cc/VF58-BLUG]. However, this "voting with management" should be cautiously interpreted. Since generally, transactions that are likely to be not approved by shareholders or privately opposed by shareholders before the vote will likely be withdrawn (i.e., not being voted upon at all), voted transactions' outcomes might be misleading.

[170] On how some terms can be utilized to impose some standards on the buyer, see *infra* Section D; see also Biesheuvel, *supra* note 73.

[171] *See generally* Courteney Keatinge, *Say on Climate Votes: Glass Lewis Overview*, GLASS LEWIS Apr. 27, 2021), https://www.glasslewis.com/say-on-climate-votes-glass-lewis-overview/ [https://perma.cc/4A88-A34Z] (discussing different varieties of management and shareholder proposals regarding say on climate).

[172] *See generally* Bebchuk & Hirst, *Index Funds*, *supra* note 168, at 2084-88 (examining private engagements by the Big Three); Jan Fichtner, Eelke M. Heemskerk & Javier Garcia-Bernardo, *Hidden Power of the Big Three? Passive Index Funds, Re-concentration of Corporate Ownership, and New Financial Risk*, 19 BUS. & POL. 298

about certain transactions or the overall strategy of divestment of corporate management.[173] Investors have become increasingly concerned with the divestment of carbon-intensive assets and have started to engage with investee companies in this regard.[174] For example, Legal & General Investment Management, one of the largest asset managers in Europe, states that risks from oil and gas M&A are a topic on the agenda when they engage with companies in the sector.[175] Overall, private engagements might be a more effective way than voting on single transactions or even on the general strategy, which can be an overly costly or rigid approach.

Occasionally, harder forms of shareholder activism can come into question. In one case concerning Australia's biggest carbon emitter, AGL Energy, the management put into action a demerger plan, spinning off the company's coal-fired power plants.[176] It, however, required 75 percent of shareholder votes.[177] A billionaire climate activist amassed an 11.3 percent stake in the company to oppose the breakup and persuade other shareholders to support him to achieve the 25 percent threshold.[178] In the end, the plan could not get the required majority vote and failed as opposing shareholders, including the activist and Australia's largest pension fund (Hesta), considered that demerger was not the right option on environmental grounds.[179]

As hinted above, many activist hedge funds now target energy companies in terms of what kind of strategy they should follow in adapting their business model and in decarbonizing. Activist hedge funds ultimately need the support of hefty investors in pushing the management to implement their models. In those cases, shareholders can team up with activists or reject their approach, whichever helps achieve a "socially responsible" way of handling carbon-intensive assets.[180] As previously explained, some hedge funds argue for a breakup between

(2017) (noting the Big Three may exert "hidden power" through private engagements with the management of invested companies); Azar et al., *supra* note 21, at 679-81 (analyzing the Big Three's private engagements with the firms in their portfolios).

[173] *See, e.g.*, Biesheuvel, *supra* note 73 (citing the CEO of the BHP group, who states that "[t]he big push from investors is around ensuring that any divestment that occurs is to parties that are responsible").

[174] *See, e.g.*, *id.* (citing the head of responsible investment at Royal London Asset Management, who says that "[s]elling the problem to a third party has unintended consequences"); *see also* sources cited *supra* note 81 and accompanying text.

[175] Sam Meredith, *An Energy Transition Loophole is Allowing Big Oil to Offload High-Polluting Assets to Private Buyers*, CNBC, https://www.cnbc.com/2022/05/19/climate-how-big-oil-sells-off-polluting-assets-in-a-bid-to-look-green.html (last updated May 19, 2022, 2:16 AM EDT) [https://perma.cc/DL9H-FLVU].

[176] James Furnyhough & Nic Fildes, *Tech Billionaire Wins Activist Fight Against Australia's Biggest Polluter*, FIN. TIMES (May 30, 2022), https://www.ft.com/content/3eb3c42d-d740-460e-a8d8-a9f499f4f1ce [https://perma.cc/5Q9E-HBT9].

[177] *See id.*

[178] *Id.*; James Fernyhough, *Tech Billionaire Mike Cannon-Brookes Launches Corporate Raid on Power Producer AGL*, FIN. TIMES (May 2, 2022), https://www.ft.com/content/344dac7d-e6e7-4974-b3df-cec6bc03e60e [https://perma.cc/X6N4-8RTT].

[179] Fernyhough & Fildes, *supra* note 176.

[180] On team-building between different (types of) investors, see Ringe, *supra* note 32, at 123-27.

green and brown assets or the spin-off of the latter, mostly on the basis of increasing shareholder value.[181] This approach so far has not found favor with most shareholders.[182]

Disclosure rules could facilitate institutional investor engagement in this regard by providing *ex ante* and *ex post* information on whether companies engage in M&A transactions on carbon-intensive assets and whether emissions reductions reported are associated with those transactions. Thus, investors may have a better view of how investee companies achieve their transition goals and whether this is in line with their preferences and would take a position accordingly. Some voluntary disclosure frameworks, such as the Carbon Disclosure Project ("CDP"), already provide this level of granularity by asking companies to report on their divestments and related emission reduction.[183] However, among the upcoming regulatory standards, there is no specific disclosure mandate on divestment and related emissions reduction or net-zero target achievement.[184]

D. Utilize Deal Terms & Structure

Deal terms can be an important mechanism for handling M&A transactions of carbon-intensive assets in a climate-friendly way. The idea is to put some covenants or other provisions in the relevant transaction to bind new owners to certain standards or commitments. For example, if the seller is committed to net zero by a certain date, the buyer must commit to the same target.[185] Or, on a less ambitious level, buyers can commit to activities that would help prevent emissions increase after the sale, such as methane mitigation, flaring reduction and well remediation.[186] Similarly, the buyer can be required to disclose emissions related to the

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[181] *See supra* notes 83–93 and accompanying text.
[182] *Id*.
[183] *See CDP Climate Change 2022 Questionnaire*, CDP, https://guidance.cdp.net/en/guidance?cid=30&ctype=theme&idtype=ThemeID&incchild=1&microsite=0&otype=Questionnaire&page=1&tags=TAG-646%2CTAG-605%2CTAG-600 (last visited Feb. 13, 2022) [https://perma.cc/2NHB-4VAF].
[184] *See* 17 C.F.R. §§ 210, 229, 232, 239, 249 (2023), *supra* note 44; *First Set of Draft ESRS*, *supra note* 44; IFRS FOUND., [DRAFT] IFRS S2 CLIMATE-RELATED DISCLOSURES 40-43 (2022), https://www.ifrs.org/content/dam/ifrs/project/climate-related-disclosures/issb-exposure-draft-2022-2-climate-related-disclosures.pdf [https://perma.cc/T5SP-GBAJ] (detailing climate-related disclosures on metrics and targets).
[185] *See* John C. Coffee, Jr., *Climate-Risk Disclosures and "Dirty Energy" Transfers: "Progress" Through Evasion*, COLUM. L. SCH.: CLS BLUE SKY BLOG (Jan. 25, 2022), https://clsbluesky.law.columbia.edu/2022/01/25/climate-risk-disclosures-and-dirty-energy-transfers-progress-through-evasion/ [https://perma.cc/UQB2-XXN3] ("Public companies should not sell significant emissions-creating assets unless the buyer agrees to observe a 'net zero' emissions pledge roughly comparable to its seller's.").
[186] *See* MALEK, *supra* note 58, at 8 ("[B]uyers can commit to enhanced climate disclosure and best-in-class methane mitigation, flaring reduction, and well remediation.").

acquired assets if, under the legal regime, this would not be the case (for example, when acquired by privately held companies).[187]

What are the incentives of parties to agree to such terms? When the buyer has incentives to buy those assets because of differences of opinion and/or tastes regarding net zero or because of discipline arbitrage (i.e., not being subject to climate action pressure), the buyer would not agree to such terms as the reason why the buyer values the asset higher than the seller is because the buyer is not otherwise subject to such rules (either legally or imposed by shareholders or stakeholders). This means that in cases where deal terms binding the buyer to certain standards and commitments have the most value, such terms would reduce the buyer's valuation and thus eliminate the surplus for a transaction to happen. This would still be, however, beneficial in terms of climate goals as assets would be prevented from switching to such parties.

Another scenario where the buyer still has incentives to buy the asset despite such deal terms is possible. This is when the asset has more value for the buyer, not only because of the above reasons but also for other strategic reasons such as optimization. In this case, putting climate-related terms would still reduce the buyer's valuation and its offer, which the seller would then need to accept. In other words, there is a reduced surplus for a transaction to happen.

In cases where the buyer and the seller share the same climate goals, any deal terms related to the use of assets in a climate-compliant way would not affect the valuation but would not also have any added value, as the buyer has the same commitment either way. The buyer might then want to use the deal terms in this regard to signal its credible commitment to such goals.

Across all cases, the usefulness of such covenants involves the fact that they remove the transactional surplus where it stems from the ability or willingness of the buyer to exploit the assets fully or to engage more in climate-harmful activities by prohibiting the buyer from doing so. By eliminating this transactional surplus, these covenants would stop transactions dependent on such surplus from happening but would not prevent otherwise efficiency-driven transactions. If perfectly functionable and sellers care about climate goals, such covenants can effectively target 'undesirable' M&As.

However, while it is now common to observe ESG-related terms in M&A agreements which are usually demanded by the buyers for the ESG-related risks in the target, deal terms in our context (that are imposed by the seller on the buyer for climate goals compliance) are not

[187] *Id.*

yet visible.[188] Some seller companies that actively use divestment in their decarbonization strategies — such as Shell and BP — do not seem to adopt such terms yet. For example, Shell states that it carries out due diligence on potential buyers when divesting parts of the business, conducts checks and examines the key attributes of potential buyers.[189] These attributes include "health, safety, security and environment ("HSSE") policies" and "their approach to ethics and compliance."[190] The attributes are then assessed against Shell's policies, as well as the requirements of relevant laws and regulations.[191] It is not clear whether this due diligence exercise includes net-zero plans and targets of the buyers and, if yes, whether it translates into any relevant deal terms. Another example is BP which states that it aims to pass any carbon management plans related to the relevant assets on to the buyer. BP also notes that "[a]ll businesses and assets we sell remain covered by local regulatory requirements. This includes jurisdictions where we are advocating for effective policies and regulations to help the world to get to net zero."[192]

Even if some terms are conceivable and put into deals, another important issue is whether they would be enforceable or would constitute credible commitments. Otherwise, buyers might agree to such terms as "cheap talk."[193] Or, sellers might impose those terms on buyers to appease the concerns related to the divestment by stakeholders, investors, or regulators but have no intention of enforcing those terms, which could be communicated to buyers and thus would not affect the valuation. Thus, enforcing deal terms, rather than just adopting them, is important. Parties such as investors and regulators interested in a climate-friendly outcome then need to monitor deal enforcement by sellers.

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[188] *See, e.g.*, BEATRIZ ARAUJO, LAURA GONZALEZ, ABBAS JUMA, CHARLIE LANGDALE & GLENN O'HALLORAN, MITIGATING ESG RISKS IN M&A TRANSACTIONS 3 (2021), https://www.bakermckenzie.com/en/insight/publications/2020/08/mitigating-esg-risks-ma-transactions [https://perma.cc/QKN2-JWZ8] ("[T]here are additional key considerations for buyers as part of an ESG due diligence exercise.").

[189] *See* SHELL, SUSTAINABILITY REPORT 2020, *supra* note 75, at 84 ("We carry out due diligence on potential buyers when divesting parts of our business. . . . [and] conduct checks and examine key attributes of potential buyers."); SHELL, SUSTAINABILITY REPORT 2021, *supra* note 49, at 63 (same).

[190] SHELL, SUSTAINABILITY REPORT 2020, *supra* note 75, at 84.

[191] *Id.*; *see also Acquisitions & Divestments*, SHELL GLOB., https://www.shell.com/sustainability/integrating-sustainability-into-our-activities/divesting-responsibly.html (last visited Nov. 11, 2022) [https://perma.cc/B7K8-MHZG].

[192] BP, SUSTAINABILITY REPORT 2021, *supra* note 78, at 20.

[193] We use "cheap talk" to denote costless and non-credible commitment that does not have direct effects on the payoffs of actions. Cheap talk is generally used in game theory. *See* Vincent P. Crawford & Joel Sobel, *Strategic Information Transmission*, 50 ECONOMETRICA 1431 (1982) (providing a seminal cheap talk model). *See generally* Joseph Farrell, *Cheap Talk, Coordination, and Entry*, 18 RAND J. ECON. 34 (1987) (discussing how "costless, nonbinding, nonverifiable communication (cheap talk) can achieve partial coordination among potential entrants into a natural-monopoly industry").

Nevertheless, even if the seller company has intentions to enforce climate-related terms in the deal, enforcement may prove a thorny issue. An important question is whether specific performance (or injunction) is available, which might not be as those are seen as exceptional remedies.[194] In this case, penalties and damages will come into question. But any damages for infringement will not prevent harm to the climate. In this regard, a way to credibly bind the buyer to a certain climate-related provision could be to set high penalties in the case of infringement, which would disincentivize any breach *ex ante*. Yet, such penalty clauses might also not be enforceable in most jurisdictions.[195] This also requires the seller to monitor the buyer and the buyer to give reliable information to the seller, which is costly and cumbersome for both sides. There can be, however, reputational costs of not complying for the buyer. Infringement of relevant deal terms would indicate that the buyer is not reliable, and this information, if it becomes public, might discourage others from transacting with the buyer further.

Utilizing certain structures when firms engage in restructuring activities regarding their carbon-intensive assets can be another way to ensure the control of assets does not pass to "irresponsible" owners. This is especially relevant in spin-offs or demergers where the ParentCo separates its brown assets under a SpinCo and lists the SpinCo separately under independent management (rather than selling). Whether the new SpinCo will follow the same ambitions as the ParentCo is an open question, as seen in the abovementioned case of Anglo-American plc and its spin-off of Thungela.[196] To preempt such a risk, one might use a dual-class share structure. In such a case, the SpinCo is spun off by creating two share classes: one that gives voting rights disproportionate to the economic stake, and the other following the one-share-one-vote rule. The class of shares that gives disproportionate voting rights will be held

[194] *See, e.g.*, RESTATEMENT (SECOND) OF CONTS. § 345 CMT. B (AM. L. INST. 1981) ("In most contract cases, what is sought is enforcement of a contract. Enforcement usually takes the form of an award of a sum of money due under the contract or as damages."); *id.* § 357 CMT. A (specific performance "is seldom granted unless there has been a breach of contract, either by non-performance or by repudiation"); *cf.* Armour et al., *Green Pills*, *supra* note 52, at 40 (discussing this in the context of a carbon reduction promise). Under English law, the situation is similar. *See generally* ANDREW BURROWS, REMEDIES FOR TORTS, BREACH OF CONTRACT, AND EQUITABLE WRONGS 401-39 (4th ed. 2019).

[195] *See* RESTATEMENT (SECOND) OF CONTS. § 356 (AM. L. INST. 1981) ("Damages for breach by either party may be liquidated in the agreement but only at an amount that is reasonable in the light of the anticipated or actual loss caused by the breach and the difficulties of proof of loss. A term fixing unreasonably large liquidated damages is unenforceable on grounds of public policy as a penalty."). Under English law, the legal test for the enforceability of penalty clauses is stipulated in *Makdessi v Cavendish Square Holdings* [2015] UKSC 67 (UK). For a summary, see Damian Crosse, *Practical Implications of Penalty Clauses in English Law*, PINSENT MASONS (July 18, 2018, 1:12 PM), https://www.pinsentmasons.com/out-law/guides/practical-implications-penalty-clauses-english-law [https://perma.cc/3DM3-SCE2].

[196] *See supra* notes 125–129.

by the ParentCo to retain control over the SpinCo while having a minimal economic stake. This is the same structure promoted by the activist Bluebell, arguing for the spin-off of the coal assets of Glencore.[197] A downside of this structure is that shareholders of SpinCo need to contend with a dual-class share structure, which is currently disfavored by most institutional investors.[198] Furthermore, listing with a dual-class share structure might not be possible under the relevant legal regime or listing rules.[199]

E. Liability Rules

Lastly, some liability rules can be conceived to bring transactions on carbon-intensive assets in line with climate goals. An example is the rules on the handling of wells. Oil and gas wells need to be shut down at the end of their lives; otherwise, they further emit certain GHG such as methane and pose other environmental hazards.[200] A well-known problem is that these wells end up in the hands of companies with no ability to clean them up or any intention of attempting to, and they thus become "orphan wells."[201] A certain type of liability rule can be used to address this problem: if the current owner does not clean up the well, the previous owners are also liable for it.[202] This then creates *ex ante* incentives to choose the transactional parties carefully and ensure they have the means to take care of the wells at the end of their lifetime.[203] For example, recently, a federal ruling passed on substantial liabilities for retiring aging wells in the Gulf of Mexico to prior owners (including some majors such as ExxonMobil, BP and Shell) and insurers when the current owner, Fieldwood Energy LLC, a privately held

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[197] *See supra* notes 89–93.

[198] *See, e.g.*, George S. Dallas, *Letter: Investor Concerns Are Not Served by Dual-Class Share Structures*, FIN. TIMES (Mar. 4, 2021), https://www.ft.com/content/469a307d-bc37-4d1d-99d3-4fe49149b6a1 [https://perma.cc/Y4AU-YQS6] (stating that "the nature of [a dual-class share structure] is that it purposely waters down shareholder rights and has the effect of entrenching management in a way that diminishes external accountability to shareholders and other stakeholders").

[199] *See, e.g.*, Aurelio Gurrea-Martínez, *Theory, Evidence, and Policy on Dual-Class Shares: A Country-Specific Response to a Global Debate*, 22 EUR. BUS. ORG. L. REV. 475 (2021) (providing an overview of jurisdictional choices on allowing dual-class share structures).

[200] *See, e.g.*, *Plugging Orphan Wells Across the United States*, ENV'T. DEF. FUND, https://www.edf.org/orphanwellmap (last visited Oct. 13, 2022) [https://perma.cc/8UPC-2LRW] (discussing orphan wells and their dangerous impact).

[201] *See, e.g.*, MALEK, *supra* note 58, at 27 (showing a case study where an asset transfer from a public company to a private-equity backed operator extends the life of inactive wells and thus related methane emissions); Meredith, *supra* note 175 (defining "orphan wells" as oil and gas wells abandoned by fossil fuel extraction industries which can end up in the hands of companies with no ability or intention of cleaning them up); *see also* Joshua Macey & Jackson Salovaara, *Bankruptcy as Bailout: Coal Company Insolvency and the Erosion of Federal Law*, 71 STAN. L. REV. 879, 906-42 (2019) (showing how coal companies evade their environmental and retiree liabilities via bankruptcy proceedings).

[202] *See* Meredith, *supra* note 175.

[203] *Id.*

company, declared bankruptcy.[204] Similar rules can be conceived for extending the liability for certain practices that cause emissions increase, such as flaring.[205]

VI. CONCLUSION

Climate change is one of the biggest challenges facing humanity. Recently, businesses have found themselves under immense pressure to transition their operations in line with a low-carbon future, which has led many to adopt net-zero commitments. Divestments of "brown" assets have proven to be an attractive option to achieve those goals and are actively used by some carbon majors. However, the economics of mergers and acquisitions of carbon-intensive assets suggests that in the equilibrium, those assets will be valued more by firms and investors that expect to fully exploit them due to differences of opinion and tastes/preferences and/or due to different ecosystems they find themselves in regarding the pressure to decarbonize. These firms (and their investors) will therefore have incentives to acquire those assets. Although efficient from the perspective of the individual transaction, given the costs of climate change, this might not improve social welfare. Worse, such transactions would undermine the purpose of net-zero plans and give the public the wrong sense of actual trends in terms of net-zero achievements.

This article provides examples to illustrate concerns related to those transactions, as well as data on the general characteristics of those transactions in recent years. Lastly, we explore options to prevent the harm those transactions might inflict on global climate goals. In this regard, we see a role both for regulators and private ordering.

[204] Christopher M. Matthews, *Oil Companies Are Ordered to Help Cover $7.2 Billion Cleanup Bill in Gulf of Mexico*, WALL ST. J. (July 6, 2021, 7:00 AM ET), https://www.wsj.com/articles/oil-companies-are-ordered-to-help-cover-7-2-billion-cleanup-bill-in-gulf-of-mexico-11625569200 [https://perma.cc/Y8UZ-9Z5F].
[205] *See* MALEK, *supra* note 58, at 28-29 (providing case studies on how asset transfers from public companies to private equity-backed operators resulted in significantly higher flaring and thus emissions).