

Divestment: Advantages and Disadvantages for the University of Cambridge

Ellen Quigley, Emily Bugden, and Anthony Odgers

Acknowledgements

This report benefited from research assistance from Christian Wilson, Ben Paxton, and Hannah Lawrence, editing by Chris Harrison and Phil Meyler of Cambridge University Press, and fact-checking by Steve Davison of Cambridge Zero. The authors also wish to thank members of the Investment Office and the Investment Board, student representatives (particularly the CUSU Ethical Affairs Officers and Zero Carbon), senior members of the University administration, college Bursars, Cambridge Zero, Cambridge University Press, civil society organisations consulted in the course of writing the report (particularly Carbon Tracker), report interviewees, and a peer reviewer for their time and effort.

Author contribution statement

Dr Ellen Quigley, the main author of the report, wrote most of the text; attended events, seminars, conferences, workshops, and background meetings with sources; conducted interviews; performed a thorough literature review; gathered some primary data; reviewed students' written submissions; conducted focus groups; and contributed to the development of the table assessing oil majors' climate alignment.

Emily Bugden supported on background research, compiled materials for the literature review, gathered primary data, performed data analysis, drafted most of the supply-side and Apartheid sections of the report, created the climate and Apartheid timelines, and conceived of and prepared the first iteration of the table assessing oil majors' climate alignment.

Anthony Odgers attended events, seminars, and background meetings with sources; provided detailed feedback at all stages; helped shape the table assessing oil majors' climate alignment; and drafted short sections of text.

Executive Summary

The University of Cambridge holds assets of approximately £3.5 billion, the largest university endowment in Europe. Within the University there is broad agreement about the urgent need to reduce carbon emissions. However, whether full divestment of University funds from fossil fuel assets is the best way to make that happen has been the subject of intense debate. Based on a review of the academic literature, interviews and focus groups with relevant stakeholders inside and outside the University, records of University and college discussions, and some further primary data collection, this report explores the advantages and disadvantages of a policy of fossil fuel divestment across its moral, social, political, reputational, and financial dimensions, ending with a summary of costed divestment scenarios for the University.

Divestment campaigners cite three main reasons for divestment. The first is that divestment is a moral imperative, the second is that divestment promotes necessary societal and political change, and the third is that investments in fossil fuel companies make poor financial sense. Failing to divest would, as a consequence, negatively affect the University's reputation.

The moral question is addressed in Section 3 of the report. Proponents of divestment argue that any investment in fossil fuel companies is inconsistent with the beliefs we hold as a university community. Opponents of divestment, while sharing substantially the same overall objectives of achieving rapid decarbonisation, argue that divestment is a hollow gesture that is unlikely to be effective and that the moral position would be to do something that is more likely to achieve substantial change.

Different theories of change are considered in Section 4 regarding the social and political advantages and disadvantages of divestment. Proponents of divestment consider that the stigmatisation of fossil fuel companies that divestment brings counteracts the political and financial power of these companies and helps to achieve a change in public discourse that in turn creates the conditions for political change. They argue that divestment has reinvigorated the environmental movement, especially among young people; brought "stranded assets" and "carbon budget" into the public lexicon, contributing to a decrease in investors' confidence in fossil fuel companies' long-term prospects; and drawn needed attention to frontline communities and the supply side of the fossil fuel equation. They further claim that shareholder engagement with fossil fuel companies has not, and will not, lead to change on the scale and in the timeframe necessary. Opponents of divestment are uncomfortable with the stigmatisation of individuals and companies and the politicisation of endowments, which they argue would create a precedent for the University to take overt political

actions on a wide array of topics in the future. They consider that other forms of environmental campaigning and concrete decarbonisation action, combined with shareholder engagement with fossil fuel companies, could harness the capabilities required to achieve the energy transition faster. They also object to selling holdings to investors who do not share the University's concerns about climate change.

Preceding this, by way of context, Section 2 discusses the extent to which large fossil fuel companies are changing strategy and practices, whether in response to the changing business landscape or the existing divestment and shareholder engagement campaigns. It notes that while there have been welcome statements of intent and some initial steps moving towards an energy transition by some companies, within the industry as a whole there has been limited action on the short-term targets or changes in current investments that would provide evidence of a commitment to an energy transition consistent with a "well below 2°C" pathway. The section identifies further short-term steps that fossil fuel companies could take to demonstrate commitment, including in the realms of lobbying, executive compensation, and capital expenditure, inter alia. This section also points out that economics now favours renewable energy in most countries, meaning there is a sizable investment opportunity in renewables for fossil fuel companies, and that one (albeit mid-sized) fossil fuel company has successfully transitioned to a renewable energy company, helping to transform the UK offshore wind sector while generating high returns for its investors. On the investment side, evidence suggests that most new financing for fossil fuels comes from bank lending and bond issues, not equity, while at least one divestment-specific study – and other supporting evidence – suggests that divestment may directly affect fossil fuel companies' cost of capital from these main sources (see pages 11-12; see also Appendix IV).

Section 5 considers the reputational arguments for the University, concluding that more evidence is needed but that there would likely be reputational gains from taking bold action on climate change, within constituencies spanning prospective employees, donors, alumni, and students. Divestment advocates point to the reputational benefits of avoiding unwelcome media attention over divestment and related issues, while divestment critics point to concerns about damage to relationships with Cambridge's present and future research partners and donors.

The financial arguments for and against divestment are considered in Section 6. There is much literature on the impact of sector exclusion on index fund investment returns and the risks to fossil fuel investments from the energy transition. Overall, there is little evidence to suggest that a global portfolio invested to exclude fossil fuels would underperform one that included them and such a portfolio might avoid the volatility that is likely to affect the fossil fuel sector in the coming years. On

the face of it, therefore, the financial implications of divestment might appear to be slight for the University. However, the University operates a fund of funds model, investing through dozens of carefully selected third-party managers rather than investing directly in companies or through generally available funds that are geared to the wider public. As at 31st December 2019, the Cambridge University Endowment Fund (CUEF), which significantly supports the University's research and teaching activities, had only 2.8% of the fund invested in fossil fuel companies. In Section 7, analysing the last decade of out-performance of investment indices, the Investment Office explains that a policy of full divestment would necessitate a change in investment model, which would eliminate its ability to achieve above-market returns. Applying the historic 1.2% annual outperformance to the CUEF's entire value as at 31 December 2019 would imply a reduction of c£40 million per year of investment returns. This could in turn breed scepticism on the part of major donors regarding the safeguarding of the value of their benefactions. For the University of Cambridge, then, the primary cost of full divestment would be in the abandonment of its investment model.

1. INTRODUCTION

Climate change may be the ultimate challenge – and threat – of our time. Greenhouse gas emissions are steadily raising the mean surface temperature of the planet, resulting in extreme weather events, droughts and floods, heat waves, forced migration, and a host of other harms. These effects are already observable and have been shown to affect the Global South disproportionately, while the Global North is largely responsible for the historical emissions that have caused the warming we see now. As a community, the University of Cambridge has publicly and repeatedly acknowledged these risks and harms, accepting the science behind climate change and supporting the aim of the Paris Agreement – to keep warming “well below” 2 degrees Celsius. In fact, Cambridge researchers have generated a great deal of research on the topic over many decades.

Keeping warming below 2°C involves a swift and dramatic reduction in emissions – achieving “net zero” emissions – as soon as possible, because the temperature will only stabilise once we have achieved net zero.¹ Thus the speed at which society transitions away from fossil fuels has a direct impact on what degree of warming is achieved. Decarbonisation, whether it happens within the window in which we can avert the effects of catastrophic climate change or whether it is effectuated many disastrous decades hence, will have to occur eventually. Thus all investment portfolios will ultimately be “fossil-free”. The question, then, is when and how society – and our investment portfolios – will decarbonise, and what effect – across social, political, and financial dimensions – Cambridge can have along the way.

Although there is strong recognition at the University of Cambridge of the severity of the threat of climate change and the necessity to act with urgency and ambition, there is significant disagreement as to how to achieve this. From the home of Pigou – progenitor of the concept of externalities – we know we must deploy our core teaching, learning, and research to internalise our era’s most catastrophic externality: climate change. The question is whether, to what extent, and how we also use our capital and influence to help decarbonise the real economy, and which tactics to employ.

This report examines the advantages and disadvantages of one such tactic, that of fossil fuel divestment,² across five dimensions: moral, social, political, reputational, and financial. The fossil fuel divestment movement has grown rapidly over the past decade. Since Hampshire College in the US became the first higher education institution to divest its fossil fuel holdings in 2011 (Ryan and

¹ Vice-Chancellor’s Lecture Series, Nick Stern, 25 February 2019.

² Divestment from fossil fuels refers to institutions’ sale (or blacklisting) of financial assets in the fossil fuel sector for at least partly non-financial (moral, social, political, and/or reputational) reasons.

Marsicano 2020), there are as of 2 May 2020 full or partial divestment commitments from 1195 institutions – including the University of Cambridge – with a combined value of \$14.14 trillion.³ For a history of the divestment movement, globally and at Cambridge, please see Appendix III or consult Chambers, Dimson, and Quigley (2020).

Universities and colleges that have divested from fossil fuels cite several motivations: alignment with the institution’s values, demonstrating support for campus environmental efforts, positive reputational effects, a desire to play a leadership role, the moral imperative to mitigate catastrophic climate change, and long-term stability of the investment portfolio (Grady-Benson and Sarathy 2016; Healy and Debski 2017). To this others add arguments about shifting social norms and generating political pressure for climate legislation. Universities that have decided against divestment, on the other hand, tend to cite financial costs and/or risk, as well as a belief that divestment is ineffectual relative to other courses of action, that divestment is hypocritical for institutions that continue to consume fossil fuels, and that the endowment is not to be wielded as a political tool (Healy and Debski 2017). Some critics of divestment have also taken issue with the idea of transferring ownership of – as well as influence over and oversight of – listed fossil fuel companies to investors who do not share the University’s concern over climate change.

This report has been prepared for University Council in response to the Regent House⁴ Grace⁵ of March 2019.⁶ For the purposes of the analysis that follows, divestment can be defined as the act of selling (or blacklisting) financial assets in the fossil fuel sector for non-financial (moral, social, and political) reasons, although financial arguments may still figure in the overall analysis. Necessarily, then, this report focusses mainly on the production of fossil fuels, not their consumption. The movement’s aims and definitions differ from institution to institution and range from demands to divest from the top listed⁷ 200 oil, gas, and coal companies to the goal of divesting from all direct and indirect fossil fuel sector holdings across all asset classes. Accordingly, institutions’ divestment commitments vary; for some, divestment means divesting from only directly-held fossil fuel assets, only exploration and production companies, or only public equity holdings, and for others de minimis fossil fuel exposure is within the bounds of the definition of divestment. The divestment

³ <https://gofossilfree.org/divestment/commitments/>. This list of commitments includes institutions that have partially divested; the University of Cambridge, having blacklisted coal and tar sands, is already included.

⁴ The governing body of the University, which is made up of senior academic, academic-related, and research staff. Thanks to Ceri Benton for this wording.

⁵ A Grace is a proposal that is submitted by a University body or a group of its members for approval by the University. Thanks to Ceri Benton for this wording.

⁶ Full text in Appendix I and here: <http://www.admin.cam.ac.uk/reporter/2018-19/weekly/6543/section1.shtml#heading2-3>.

⁷ “Listed” = companies that are listed on the stock market.

movement at Cambridge has consistently requested full divestment from the whole fossil fuel sector⁸ and this report consequently focusses on divestment from fossil fuels across all holdings.

Furthermore, the discussion around divestment at Cambridge usually centres on the Cambridge University Endowment Fund (CUEF, or ‘the Fund’), through which the financial assets of the University and some of its colleges and charitable trusts are invested, although it may also affect the remaining Cambridge colleges; Cambridge Enterprise, a wholly-owned University research seed venture fund; and Cambridge Innovation Capital (CIC), an early-stage investor in Cambridge research-derived companies, in which the University is the largest investor (30% of the total). This report principally concerns the University’s investments, however, and the colleges – separate legal entities whose combined endowments come to c£4 billion – must of course make their own decisions. Through distributions of approximately 4% of its value per annum,⁹ CUEF supports the University’s research, teaching, and other activities. In the 2018/2019 fiscal year, this financial support from CUEF to the University totalled £88 million, equivalent to approximately £3,800 per student.¹⁰ CUEF is structured such that a policy of zero exposure to the fossil fuel sector cannot be achieved without materially changing the current fund-of-funds investment model; those unfamiliar with its structure and operations are strongly recommended to consult Appendix II before reading on. As of 31st December 2019, 2.8% of the total value of CUEF was invested – via its fund managers – in the fossil fuel sector.¹¹

This report has benefited from individual semi-structured interviews with 7 key divestment experts, including 3 prominent advocates of frontline communities¹² in 3 different countries; multiple consultations with students including a student-led discussion, a student led full-day conference, dozens of informal conversations, 13 written submissions, and 6 interviews; additional stakeholder events at several Cambridge colleges including Lucy Cavendish, Jesus (2), Christ’s, St Catharine’s, and

⁸ Defined here as companies engaged in exploration and production, refining and marketing, and storage and transportation of oil, gas, coal, and consumable fuels, as well as oil and gas equipment and services.

⁹ As of 31st December 2019 the Net Asset Value (‘NAV’) of the Fund was £3.5 billion, £2.5 billion of which were the University’s assets. Over the last decade, CUEF has paid out more than £750 million to the University, its colleges, and charitable trusts.

¹⁰ To put this number in context, the University’s ten-year financial model indicates that research activities result in an annual cash flow deficit to the University of approximately £100 million per annum. Teaching activities run an annual deficit at the undergraduate level given estimated costs per student to the University of £16,400 per annum, which is only partially met by standard per-student tuition fees of £9,250 per annum.

¹¹ As per the definition in Footnote 9. The new CIML website includes sector and asset class breakdowns, and the new CUEF CIO has committed to increased transparency more generally.

¹² Frontline communities are those that bear the brunt of climate change – due to their proximity to fossil fuel infrastructure or mining facilities, or because of their particular vulnerability to sea level rises, extreme weather, fires, and other climate impacts – and that already experience the effects of socioeconomic or racial inequality. Examples include communities living in low-lying Pacific island nations or a low-income neighbourhood located near a power plant.

Pembroke; two academic conferences organised by the Centre for Endowment Asset Management (CEAM) at the Cambridge Judge Business School; a CEAM-run seminar; a Committee on Benefactions and External and Legal Affairs (CBELA) workshop; a workshop on shareholder engagement run by the Responsible Investment Network – Universities (RINU), of which Cambridge is a founding member; a speech and question-and-answer session at the Cambridge Union Society; several background discussions with professionals from the fossil fuel sector and adjacent industries; a survey of equivalent processes and outputs of peer institutions around the UK and globally; financial analyses conducted by the University’s Investment Office and Investment Board; informal background discussions with fund managers, fellow asset owners, and academics with a focus on divestment and/or sustainable finance; conversations with members of University Council, the Investment Office, Heads of House, the Investment Board, the senior administration of the University, Cambridge Zero, and members of the first two University Working Groups on the topic of responsible investment; focus groups with Cambridge University Development and Alumni Relations (CUDAR) and a large majority of the college Bursars; a review of all divestment- or responsible investment-related Senate House discussions in the past decade, Regent House Graces, petitions, and open letters at Cambridge since 2012; three student reports on divestment; a comprehensive academic literature review on the topic of divestment;¹³ and some original research conducted under the auspices of the Centre for the Study of Existential Risk (CSER). See References for the full list of literature referenced in this report. To find all relevant academic articles, we employed a snowball sampling method using keywords such as divestment, negative and positive screening, exclusions, fossil fuels, responsible investment, and so on, and then consulted bibliographies to find additional works on fossil fuel divestment. We also asked knowledgeable interview respondents and stakeholders to suggest reports and academic articles for inclusion in the report. Insights from these articles, reports, events, interviews, reviews, analyses, and written submissions will be interspersed throughout this report and the appendices where relevant. The authors greatly appreciate the time and effort of hundreds of people who shared their thoughts throughout this process.

The report is structured as follows: we establish a framework to analyse the evidence at hand, and make some necessary clarifications, in Section 2. We examine the advantages and disadvantages of fossil fuel divestment relevant to moral, social and political, reputational, and financial considerations in Sections 3 through 6, respectively, followed by an exploration of possible costed strategies for the University’s endowment fund to divest from fossil fuels in Section 7. Section 8

¹³ This report contains myriad references to the most significant historical case of divestment prior to the current fossil fuel divestment movement: that of the movement to end Apartheid in South Africa. Although there are significant differences between these two cases, some evidence from the latter is still instructive in our discussion of the former.

concludes the report. The references and appendices include additional information not incorporated into the main text. In sum, the report aims to undertake a full evaluation of a policy of fossil fuel divestment for the University of Cambridge according to a variety of financial and non-financial considerations.

2. FRAMEWORK, CONTEXT, AND POINTS OF CLARIFICATION

What follows includes a framework for Cambridge's approach to climate change vis-à-vis its investments; clarifications of misconceptions endemic to discussions of divestment; an overview of the state of the fossil fuel industry; and a provisional set of indicators to assess if a fossil fuel company¹⁴ is credibly moving towards alignment with the Paris Agreement goal of achieving "well below 2°C of warming" (United Nations 2015). Note that none of the points raised here constitutes an argument for or against divestment per se; the report will later explore whether and how a policy of divestment may affect such considerations.

Framework

What do divestment advocates hope to achieve? There is strong and widespread support¹⁵ for the proposition that the University of Cambridge has an important role to play in decarbonising the real economy, both directly and indirectly. Steps to accelerate decarbonisation include: negatively, preventing lock-in of infrastructure or investment for fossil fuel extraction and use through regulation and carbon pricing; and, positively, promoting investment in zero-carbon alternatives; increasing energy efficiency; and swiftly reducing the carbon intensity of hard-to-abate sectors (e.g. aviation). In addition to its core research, learning, and teaching activities, Cambridge's decarbonisation efforts can span the moral, social, political, and financial realms, influencing politicians, public opinion, investors, company boards and executives, and standard-setters.

Clarifications

1. Although the various constituencies' discourse may differ (Deeks 2017), there is substantial agreement at the University of Cambridge on two key points addressed in this report: that we must accept scientists' assessments of the risks climate change poses to us all – particularly the vulnerable

¹⁴ Although this report focusses on fossil fuel companies, it is worth noting that most – if not all – large companies are not yet aligned with the Paris Agreement goal.

¹⁵ Cambridge was the first higher education institution in the UK to adopt science-based targets for its own decarbonisation, and launched a major decarbonisation initiative – Cambridge Zero – to coordinate research and action on climate change across the University.

– and act to address these risks. Disagreement is chiefly around tactics on how best to use the University’s influence to effect change.

2. Fossil fuel divestment advocates do not claim that divestment is the only solution to climate change, any more than proponents of shareholder engagement claim that theirs is the only solution. There is a strong consensus in both camps that government action, in particular, is an absolute necessity. Divestment, engagement, or some combination of the two are all possible tactics among many.

3. Fiduciary duty¹⁶ is not normally a barrier to divestment, nor indeed to responsible investment more generally. It is worth clarifying that the University of Cambridge can divest from fossil fuels if it wishes to, as long as it can satisfy itself either that there is no risk of significant detriment to its investment performance¹⁷ or that continued investment in fossil fuels is seen as running counter to its mission and thus risks causing reputational harm to the institution to an extent that is likely to lead to the alienation of supporters and beneficiaries (Charity Commission 2017). Dozens of other UK universities have now divested with no attendant legal issues, although none has a fund-of-funds model equivalent to that of Cambridge.¹⁸ For the University of Cambridge the question is not whether it can legally divest from fossil fuels, but whether it can do so without incurring significant costs and/or must do so in order to retain supporters and beneficiaries.

5. Most financing for fossil fuel projects comes from bank lending and bond issuance, not equity:

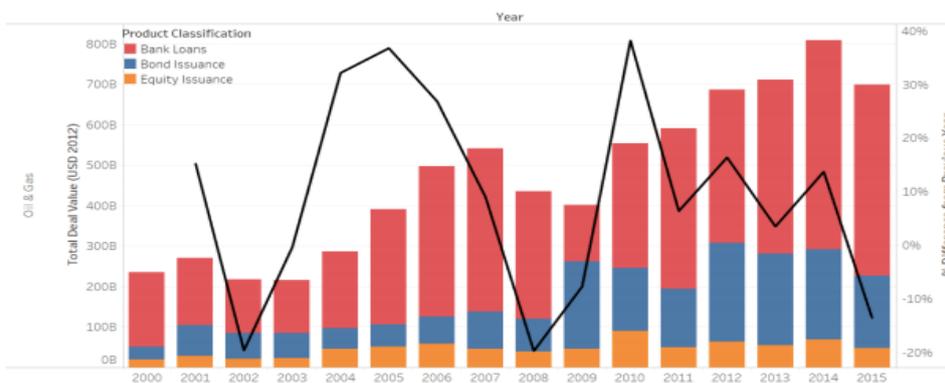


Figure 1: Global oil and gas bank loan financing, equity and bond issuance / underwriting amount. Data from Dealogic.

Source: Cojoianu et al, 2019.

¹⁶ Credit to David Parsons for his assistance with this paragraph.

¹⁷ See Section 7 for a full exploration of the costs of divestment according to several divestment scenarios.

¹⁸ The University of Oxford, which employs a fund-of-funds model, recently announced its divestment from fossil fuels. They will have some exposure to fossil fuels going forward, however; thus Oxford does not meet the strict definition of divestment employed in this report.

Fossil fuel companies generate revenue from extracting, transporting, refining, and selling fossil fuels to consumers, and they raise new investment capital mainly through bank loans and bonds,¹⁹ not shares. Some national oil companies (NOCs) issue bonds that investors purchase, but investors tend not to own the NOCs' shares as these companies are only partially listed if at all.²⁰ Thus an investor may have a greater effect in restricting debt than in selling shares – because that is where most new financing for new projects comes from, and because the bond market extends to NOCs (who hold a majority of fossil fuel reserves). As the source of a majority of new fossil fuel financing, banks are also a key player in the transition. See Appendix IV for further detail.

6. Evidence suggests that there has already been some impact of divestment on fossil fuel companies. Although divestment does not seem to have a direct effect through public equity holdings, it may already have had an impact on fossil fuel companies' cost of new capital (debt) (Cojoianu et al. 2019; Oikonomou, Brooks, and Pavelin 2014; Chava 2014; Bauer and Hann 2010; Ge and Liu 2015; Sharfman and Fernando 2008). This effect may intensify as the divestment movement increasingly focusses on the banking sector, the source of most new finance for fossil fuels (Cojoianu et al. 2019). Furthermore, divestment may have had an impact within the financial sphere by decreasing investors' faith in the fossil fuel sector and by focussing other investors' attention on climate change as a responsible investment issue. Please see Appendix IV for further information, as this point constitutes one of the report's key findings.

7. Because there is greater additionality²¹ in early-stage investments, a divestment mandate – and, more positively, an emphasis on green investments – may have a greater effect on investments in emerging ventures (Ormiston et al. 2015; Brest and Born 2013). See Appendix IV for more detail. Such investments also have the effect of seeding the ecosystem of green investments for other investors to buy. The University of Cambridge and its incubator and (part-owned) accelerator – Cambridge Enterprise and Cambridge Innovation Capital²² (CIC) – are the site of much such activity. Cambridge is second only to Stanford for the number of university commercial spinouts, and it leads the world in volume of capital raised:

¹⁹ While bond holdings are not significant in Cambridge portfolios, they are significant for many other institutional investors.

²⁰ Parts of some NOCs, such as Saudi Aramco, are indeed listed.

²¹ The impact each additional dollar of investment has in the real economy.

²² The University of Cambridge is the largest, but a minority, investor in CIC.

Top universities by capital raised by their spinouts 2013-17



Top universities by number of deals in their spinouts 2013-17



Source: Global University Venturing, 2018.²³

8. Neither divestment nor shareholder engagement has yet been successful in achieving material changes to fossil fuel companies' operations or spending. This is not to say that shareholder engagement will always be ineffective, and indeed there have been some recent positive indications as to its future potential, but on the basis of its historic evidence it would not appear to be a sufficient tactic on its own for the scale and speed of change required to decarbonise the fossil fuel sector (see Appendix V).

9. There is evidence that the top 5 oil and gas majors continue to be involved in lobbying against climate-friendly policies – through trade associations²⁴ and even directly in some cases (InfluenceMap 2019). The activities of two of the most significant trade organisations, the American Petroleum Institute (API) and the Canadian Association of Petroleum Producers (CAPP), are of particular concern. There are signs that some of the majors are starting to distance themselves from such activity but at the time of writing all continue to belong to both the API and CAPP. By way of example of these trade associations' activities, the Trump administration recently rolled back methane regulations and opened up the Arctic National Wildlife Refuge to drilling; the API had [lobbied](#) in [favour](#) of [both](#). In March 2020, CAPP sent a [letter](#) to the Canadian Minister of Natural Resources asking for the temporary suspension of environmental regulations in response to COVID-19, including:

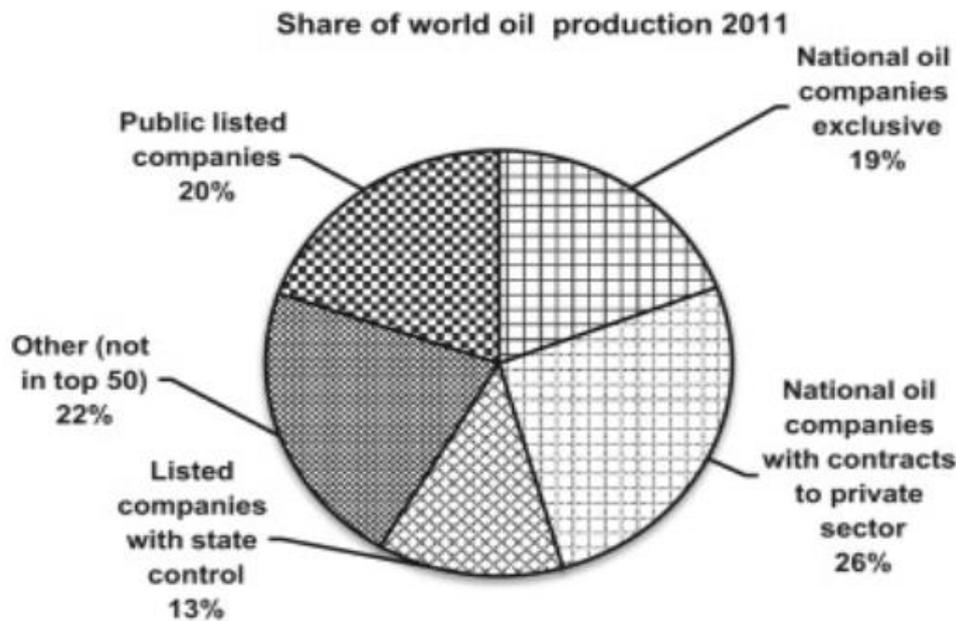
- Suspension of requirement to file lobbying information, while acknowledging that the industry would also need more access to government during this time
- Suspension of testing for air pollutants
- Postponement of changes to strengthen environmental protection rules
- Suspension of measures to reduce emissions and to achieve net zero by 2050

²³ <https://globaluniversityventuring.com/2013-17-data-review/>.

²⁴ Some companies have put a small number of trade association memberships under review, and even abandoned memberships in particular cases; these sorts of actions are welcome, and should expand to encompass all direct and trade association-led anti-climate lobbying.

- Suspension of the development of 5-year legally-binding emissions reduction targets

10. State-owned national oil companies (NOCs) such as Saudi Aramco and Gazprom account for over half of the world’s oil production (Mitchell and Mitchell 2014). Publicly listed companies provide services to the NOCs, however, including extraction, transport, and refining, accounting for just under half of global oil production through their own operations and those of the NOCs they work with combined:



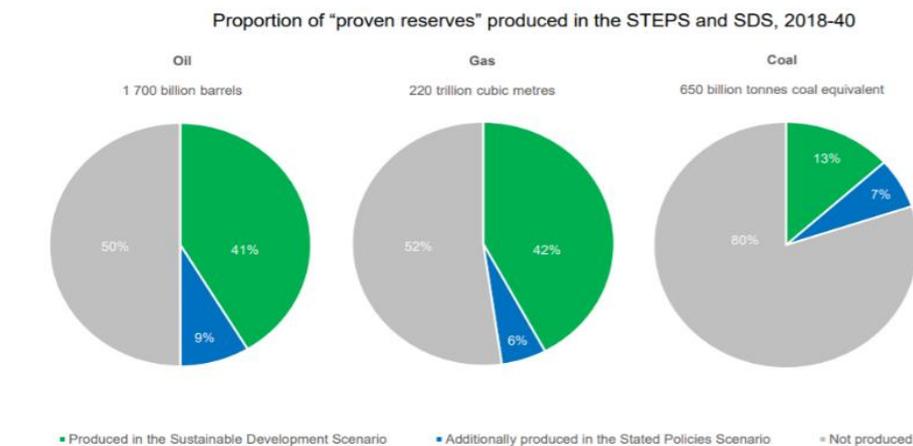
Source: Mitchell and Mitchell (2014).

Although successful climate mitigation will require both NOCs and publicly listed fossil fuel companies to decarbonise, the share and strategic importance of the listed companies is sufficiently high for a shift in their strategy to be impactful. However, it is not possible to predict how NOCs would react to a reduction in activity; in the short term at least, it is likely that they would increase their own production to offset any fall in production on the part of the publicly listed companies. If the listed companies’ reduction in oil and gas activity accompanies an increase in alternative energy spending that accelerates internal combustion vehicles’ and gas-powered plants’ ceding of ground to renewables and energy storage, however, the medium- and long-term results could look very different.

11. To be consistent with the Paris Agreement goal, a large majority of proven fossil fuel reserves would need to be left in the ground (a third of oil reserves, half of gas reserves, and 80% of coal reserves) between 2010 and 2050 in order to keep within a safe warming threshold (McGlade and Ekins 2015). Research suggests that existing fossil fuel infrastructure, in addition to that which is

currently planned, permitted, or under construction, would already exceed the carbon budget needed to retain a 66% chance of staying below 1.5°C (Tong et al. 2019), although other research suggests the target can be met by phasing out existing fossil fuel infrastructure at the end of its intended life and eschewing expansion (Smith et al. 2019). An orderly near-term transition could prevent wastage of up to \$1 trillion that could otherwise occur in more disorderly – delayed – transition scenarios in 2025 or 2030, according to International Energy Agency projections (IEA 2020). Moreover, the difference in the total volume of reserves burned in a “sustainable development” scenario, as opposed to business as usual, is surprisingly small (IEA 2020):

Large volumes of reserves therefore need to be “kept in the ground”, but many of these would not be produced before 2040 even in a higher-emissions pathway



Note: To align with most discussion on stranded volumes, reserves stated are the publicly reported level of “proven reserves”.

This evidence on the future demand for oil under a range of oil price and climate policy scenarios all suggests that there is no likely future without significant stranded assets, i.e. proven reserves being left in the ground, regardless of whether or not the Paris Agreement goal of keeping warming “well below” 2°C is achieved. Stranded asset risk is therefore a key challenge for investors – and this recognition aligns investor interests with those of environmentalists in avoiding investment in unsustainable assets. While the world will need fossil fuels for some time to come and capital expenditure to support near-term production is inevitable, as can be seen from the following table, a significant amount of the planned capital expenditure for the oil and gas majors (as of October 2019) was outside a “well below 2°C scenario”.

Company	% of NPS Capex Outside B2DS to 2030
ExxonMobil	60% - 70%
Shell	30% - 40%
Chevron	30% - 40%
BP	20% - 30%
Total	30% - 40%
Eni	30% - 40%
ConocoPhillips	40% - 50%

Source: Carbon Tracker Initiative (Coffin and Grant 2019).²⁵

On a positive note, BP, Shell, and Total all seem to have recognised these dynamics in recent weeks by writing down billions of dollars’ worth of reserves and changing their assumptions as to the future price of oil. The critical question is whether these companies follow through and permanently cancel projects that are inconsistent with a plausible carbon budget.

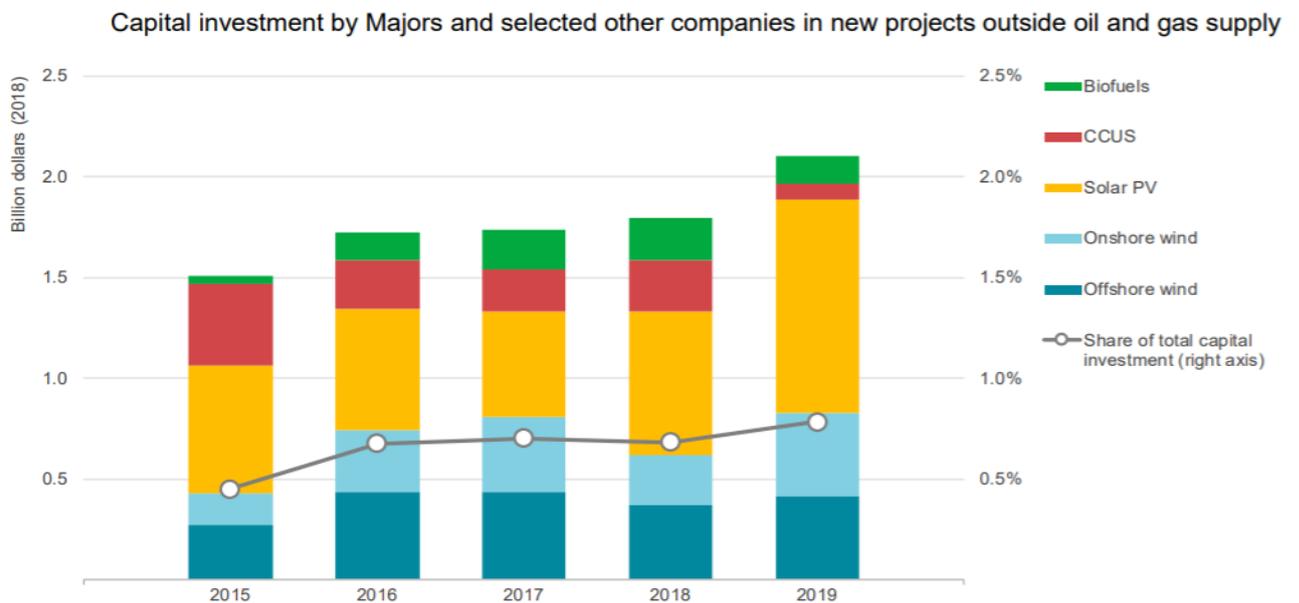
12. Although the oil and gas majors’ announcements of net zero 2050 targets are certainly welcome, none is genuinely compliant with the Paris Agreement goal. All of the majors continue to expend capital to explore for new hydrocarbon reserves, a significant amount of investment which is already incompatible with even a 1.75°C scenario, let alone 1.5°C. Emissions reduction announcements typically reference “net” emissions targets with overly optimistic carbon capture usage and storage²⁶ (CCUS) or net emissions technology²⁷ (NET) assumptions as well as “emissions intensity” targets – targets for emissions per unit of barrel of oil produced, while absolute emissions can continue to rise due to an increase in the total number of barrels. In these models, the emissions curve tends to fall well after the company’s carbon budget would already have been blown and the emissions of NOCs for whom they transport or refine oil and gas are usually not included.

²⁵ “NPS capex outside B2DS” represents the % of future capital expenditure on sanctioned and unsanctioned projects in the IEA’s New Policies Scenario (NPS) (business as usual) that would not be needed in the IEA’s Below 2 Degrees Scenario (B2DS) from 2019-2030. A much greater % of unsanctioned projects are not needed.

²⁶ A recent Cambridge report concludes that “although CCS has been used to increase rates of oil extraction, its total contribution to reducing global emissions is too small to be seen. [. . .] the UK has no current plans for even a first installation and although CCS may be important in future, it is not yet operating at meaningful scale” and is not on track to do so (Allwood et al. 2019, 9).

²⁷ The same Cambridge report finds that one NET, bioenergy with carbon capture and storage (BECCS), is “entirely implausible, due to the shortage of biomass, and should not be considered seriously” (ibid., 33), and others counsel greater caution in the use of NETs as these assumptions tend to push back decarbonisation timelines and may not be feasible at the scale required (van Vuuren et al. 2017).

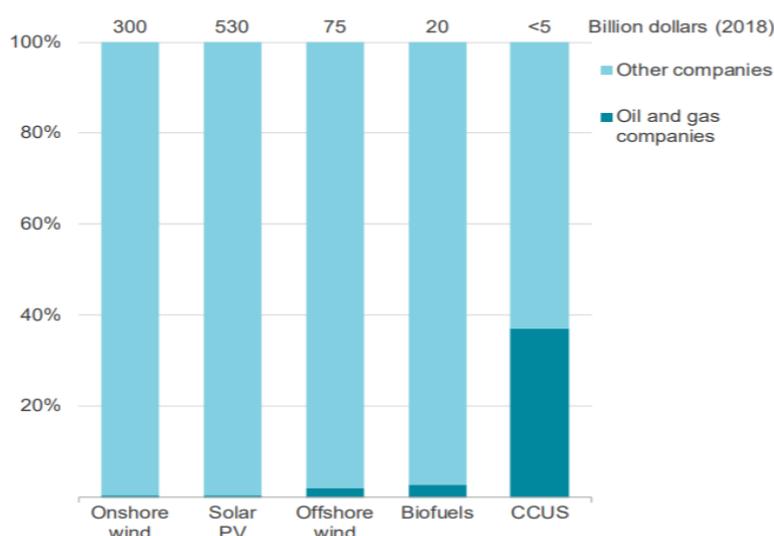
13. While the oil and gas majors have the scale and capability to play a significant role in renewable energy and carbon capture, such investments to date are small. The large listed fossil fuel companies' and NOCs' combined annual capital investment in renewable energy is just over \$2 billion – an average of less than 1% of their total spending (IEA 2020):



Notes: Capital investment is measured as the ongoing capital spending in new capacity from when projects start construction and are based on the owner's share of the project. Companies include the Majors and selected others (ADNOC, CNPC, CNOOC, Equinor, Gazprom, Kuwait Petroleum Corporation, Lukoil, Petrobras, Repsol, Rosneft, Saudi Aramco, Sinopec, Sonatrach). CCUS investment is in large-scale facilities; it includes developments by independent oil and gas companies in Canada and China and capital spend undertaken with government funds.

This compares with total investments in renewables exceeding \$375 billion and \$530 billion for wind and solar, respectively (IEA 2020). Outside the smaller carbon capture and storage market the fossil fuel majors are minor players in “net zero” technology investments.

Global capital investment in selected low-carbon technologies (2015-18)



Note: CCUS only includes large-scale facilities.

14. Such investments can be profitable for investors, however. The best example of a Paris Agreement-aligned company in the fossil fuel sector would have been Orsted (formerly Dong Energy), a fossil-fuel-turned-renewables company, but it is no longer classified as a fossil fuel company due to its evolution. Some companies are capable of making an equivalent transition; others are not. Interestingly, Orsted was able to generate returns that are more highly valued by the stock market (as can be seen by the higher price-to-earnings ratio in the chart below) than their former oil and gas peers after listing on the stock market in 2016, especially after transitioning towards renewable energy:



Source: Financial Times (Sheppard 2020).

Furthermore, following BP's August 4th 2020 announcement that it would significantly reduce its fossil fuel investment and significantly increase its investment in renewable energy alongside clear short-term targets, its share price rose by over 10%, suggesting that investors are willing to be supportive of a transition strategy by the oil and gas majors. BP's longer-term share price is likely to depend at least in part on whether investors see evidence of successful delivery of the strategy.

15. The reasons for potential investor support for reduction in fossil fuel investment are likely to include a desire to avoid "lock in" to huge oil and gas investment projects whose large up-front costs, long operating lives, and comparatively low operating costs incentivise the continued exploitation of resources and "locks in" a carbon-intensive pathway (Lazarus, Erickson, and Tempest 2015). Much attention is rightly paid to reducing fossil fuel demand, and indeed this is the focus of international climate negotiations (Healy and Barry 2017; Marshall 2015). Without supply-side policies, however, the risk of carbon "lock in" rises (Lazarus, Erickson, and Tempest 2015). National

or regional²⁸ supply restrictions – limits on the exploration for, and extraction of, fossil fuels – create certainty by setting out a pathway for fossil fuel phase-out (Green and Denniss 2018). This reduces unnecessary investment and the risk of stranded assets, and can stimulate research and development into low-carbon technology by increasing the costs associated with fossil fuels (Asheim et al. 2019) – creating a more stable business model for the remaining fossil fuel companies (and their investors). Without supply-side policies,²⁹ fossil fuel producers may respond to present or future stranded asset risk by racing to extract reserves, creating a supply glut that forces down prices, thereby increasing demand (and emissions). This dynamic is known as the “green paradox” (Sinn 2012). Saudi Arabia and Russia’s recent price war, in which both countries kept production high while receiving less per barrel of oil they produced, provided a preview of this; in normal times, the resulting low oil price would have increased demand. According to a Nature Climate Change article by Cambridge scholars, a price war and/or new climate policies would each increase costs further than their baseline estimate of \$1-4 trillion USD (a figure that is already in the range of the cost of the 2008 financial crisis) in stranded assets based on *existing* climate policies (Mercure et al. 2018). Physical climate effects, policy change, and large oil producers’ behaviour could make things substantially worse for investors, with fossil fuel stranded asset losses as high as \$12 trillion – or 15% of global GDP.

16. Changes in the oil price cause disruption at both extremes. At levels high enough to sustain the business case for many new projects, the global financial system may come under strain, as a Geological Survey of Finland report suggests occurred in the lead-up to the 2008 financial crisis (Michaux 2019). At a lower price of \$35 per barrel, oil-reliant countries suffer – Russia needs an oil price of \$42/barrel to balance its budget; Saudi Arabia needs \$84 (The Economist 2020) – and a large majority of new oil projects are no longer viable (Wood Mackenzie 2020).

17. Most oil and gas companies incentivise their management teams to pursue growth rather than focus solely on shareholder returns. The climate is rarely taken into account. Given the likelihood that significant amounts of existing reserves are unlikely to be burned, it would not seem to be in investors’ interests for executive compensation to be tied to growth in reserves. Investors’ position on production (or proxy measurements such as cash flow from operations) may be less clear. If executive compensation metrics incentivise the maximisation of production from existing wells, thereby reducing the need to develop new resources and “lock in” future infrastructure, then it may

²⁸ When implemented internationally, supply-side policies can reduce carbon leakage (Erickson, Lazarus, and Piggot 2018) and the risks associated with carbon policy free-riders (Asheim et al. 2019).

²⁹ Interestingly, at a major investment bank’s recent conference on oil and gas, senior executives noted the possibility of a government-imposed ban on exploration – the first attendees had heard this from the C-suite.

even be beneficial; if the incentive applies equally to exploring for or acquiring additional producing resources then it may well be counter-productive both for shareholders and the environment. Companies' commitment to the energy transition can be demonstrated through some material level of executive compensation tied to mitigating climate change. While there has been some movement in changing executive compensation in some areas, it is unusual. All of the oil and gas majors' executive pay packages examined in this report directly or indirectly incentivise growth in production and/or reserves. Several do now include some performance metrics linked to climate change mitigation, although "where they are included, these metrics tend to affect a small minority of compensation, and most of these companies simultaneously encourage fossil fuel growth" (Grant 2019, 4).

18. Renewables (solar, wind, or both) have reached cost parity with coal in electricity generation in all major markets (Carbon Tracker Initiative 2020) and are forecast to outcompete gas in most markets within the next 5 years (McKinsey 2019). Similarly, electric vehicles are slated to achieve cost parity with internal combustion engine vehicles in the near term (Bullard 2019; Carbon Tracker Initiative and Grantham Institute 2017).³⁰

19. Now is a cost-effective time to decarbonise the economy (Point 18 in this section). Orsted has demonstrated that such a transition can be profitable for fossil fuel companies (Point 14). However, a lack of supply-side fossil fuel policies (Point 15) and the ubiquity of reserves- and production-tied executive compensation packages (Point 17) serve as barriers to fossil fuel companies' transition. While there have been some welcome announcements from the oil and gas majors about the transition to zero carbon by 2050, the announcements lack short-term targets³¹ and rely on unrealistic assumptions about future CCUS investments (point 12) that are not reflected in their current CCUS spending (Point 13). What, then, would demonstrate a clear and credible commitment to the transition? First, the elimination of lobbying, directly and through trade associations, beyond legitimate transition-related issues (e.g. carbon capture and storage or the nature of transition for a heavily industry-dependent community) (Point 12); second, removal of the link between executive compensation and the expansion of fossil fuel exploration and production (Point 17); third, a reduction in investment in projects not consistent with a "well below 2°C scenario" (Point 12); fourth, substantial short-term commitments to renewable energy investments and green energy research (Point 13); finally, additional disclosure – although insufficient on its own – as shown in the table below.

³⁰ Renewables compete with coal and gas for electricity, while a majority of oil is used for transport; renewables compete with oil indirectly through electric vehicles.

³¹ With the exception now of BP.

Preliminary Assessment of Fossil Fuel Companies' Transition-Readiness as of 1 September 2020										
	1. Member of Trade Organisations Conducting Anti-Climate Lobbying ³²	2. Spending Aligned with 1.6-2°C Scenario (% of capex) ³³		3. Credible Paris-Aligned Pathway (e.g. CO ₂ Intensity Alignment ³⁴ and Science-Based Targets ³⁵)		4. Lowered oil price forecasts and significant write-down of assets	5. Paris-aligned executive pay ³⁶			6. Low-Carbon R&D (% of total R&D) ³⁷
		Mis-aligned ³⁸	Renewables ³⁹	2°C	1.5°C		Reserve growth targets	Product-ion growth	Green targets	
BP ⁴⁰	Some	TBC	1.3% ⁴¹	Some	No	Yes	Some ⁴²	Yes?	Some	TBC
Chevron	Yes	TBC	0.1%	No	No	Yes	No	Yes	No	TBC
Exxon	Yes	TBC	0%	No	No	No	Yes	Yes	No	TBC
Shell	Some	TBC	0.2%	No	No	Yes	No	Yes	Some	TBC
Total	Some	TBC	2.6%	No	No	Yes	Yes	Yes	Some	TBC
Transition-Ready	No	0%		Yes	Yes	Yes	No	No	Yes	

As of 1 September 2020 none of the major oil and gas companies score highly on the above metrics, but there appears to have been real movement from BP and some movement from Shell and Total. There have been frequent announcements of late and further positive indicators are hopefully soon to come.

³² Lobbying counter to climate-friendly policies, including via trade associations (e.g. see [InfluenceMap data](#)). BP, Shell, and Total have begun to take action on trade associations in recent years; all three have left the American Fuel and Petrochemical Manufacturers, and BP has also left a couple of minor trade associations.

³³ Capital expenditure on exploration/reserve development of projects unneeded in the IEA's Beyond 2°C (B2DS) scenario. [Carbon Tracker Initiative data](#): 100% of fossil fuel companies have unsanctioned upstream projects that fit this definition. Oil Change International [analysis](#) suggests that even burning the carbon from existing fossil fuel reserves would exceed the carbon budget.

³⁴ [TPI data](#): Companies must commit to zero absolute emissions by 2050 to align with the Paris Agreement, plus interim targets that respect the carbon budget.

³⁵ [Science Based Targets initiative data](#) (emissions intensity and absolute emissions, Scopes 1, 2, and 3). Should include supply chain, contractors, and third-party clients (including national oil companies). Should also include planned cuts to production in line with a precautionary 1.5°C scenario.

³⁶ Growth targets: Remuneration not tied to production growth or reserves replacement metrics, including indirectly (e.g. by rewarding increased cash flow). Green targets: Remuneration tied to decarbonisation targets. See 2020 [Carbon Tracker Initiative data](#).

³⁷ Data from the [Financial Times](#). These figures may include bioenergy.

³⁸ Percentage of upstream capex that exceeds the carbon budget of the [B2DS](#), as a proportion of capex aligned with the IEA's [NPS](#) Scenario, in the past 12 months. Data are not yet available.

³⁹ Data 2010 (Q3) to 2018 from [IOP Science](#). Renewables include solar, wind, geothermal, and hydro. Excluding biofuels and biomass.

⁴⁰ BP's [recent announcement](#) is likely to translate into changes in several of the metrics laid out in this table.

⁴¹ BP recently [stated](#) that it will aim to increase its investment in renewables ten-fold by 2030.

⁴² Via subsidiary Aker BP (of which BP owns 30% of the shares); BP itself does not include reserves growth targets in its executive remuneration packages.

In summary, there is a common recognition at the University of Cambridge regarding the urgency of climate change and the necessity to do as much as possible, as quickly as possible, to arrest unchecked warming. The University of Cambridge has an important role to play in decarbonising the real economy. The fossil fuel sector is a significant source of global emissions and a minor investor in renewables. Listed companies only represent one part of the fossil fuel industry as a whole; national oil companies also account for a significant share. Some of the latter and all of the former receive most of their new investment capital in the form of bank loans and bonds. None of these companies is currently Paris Agreement-compliant, and all have substantial stranded asset risk in both high-ambition and status quo scenarios. Renewable energy is increasingly competitive with both gas and coal in almost all markets, however, and electric vehicles are becoming increasingly affordable; this is a cost-effective point in history in which to transition away from fossil fuels. Examples such as that of Orsted suggest it is possible for such a transition to be profitable as well.

3. MORAL ARGUMENTS

The fossil fuel divestment campaign is first and foremost a moral movement (Ayling and Gunningham 2017; Hrynkow 2015) that some advocates compare to historic campaigns to abolish slavery and Apartheid. A Cambridge Head of House argues that universities in particular “have been called upon” to express their “public responsibilities and moral leadership”, and exist to “create people who ask difficult questions” and “remind us that we are not just servicing an inexorable machine”; we also shape the system, have a responsibility to use our influence for the greater good (Godoy 2017a) and to align our investments with the University’s commitment to a zero-carbon future. Some respondents to a student and Council consultation expressed the view that the University’s mission statement carried both reputational and moral weight on the question of divestment. An analysis of the motivations of some of the first universities and foundations to divest cited a culture of sustainability, and in many cases explicit mentions of sustainability in the institutions’ mission statements (Stephens, Palchak, and Reese 2017; Abrash Walton 2018), as part of the rationale for divesting from fossil fuels.

Divestment advocates believe that ‘[i]f it’s wrong to wreck the climate, then surely it’s wrong to profit from that wreckage’.⁴³ The ethical investment movement, which began with exclusions of weapons, pornography, alcohol, and gambling from the portfolios of religious orders, has always had at its heart the view that it is immoral to benefit from others’ suffering, and that there is moral

⁴³ Bill McKibben at a student-led divestment conference at the University of Cambridge, 2 November, 2019.

power in a “clean hands” policy of refusing to benefit financially from harmful acts. It can be a powerful statement, in part because it demonstrates a willingness to sacrifice in service of a cause. As a professor said at a Senate House discussion on the topic, “If there is a hit from divesting from fossil fuels, we need to take that hit”.

If one invests in fossil fuels, one expects to make money from those investments. Divestment advocates fear that this implicitly ties the fate of our endowment to that of the industry. In a recent debate at a Harvard faculty meeting, Professor Richard F. Thomas argued:

When the endowment does well, we are all happy.[. . .] In the current investment climate we all should therefore hope and desire that the companies in which HMC invests will be successful in exploring for and developing and consuming the maximum amount of new fossil fuels. We should even be hoping for continued regulatory relaxation, as a means to that end. In my view there is in that hope and desire a form of corruption, for all of us who hope for the success of the endowment’s performance” (Rosenberg 2019b).

Divestment advocates argue it is much better to decouple the University’s interest from that of the fossil fuel sector and align our interests and incentives with decarbonisation instead.

The divestment movement has also advocated for wider climate justice⁴⁴ issues (Grady-Benson and Sarathy 2016). These include the maltreatment of frontline communities, environmental racism,⁴⁵ intergenerational equity, and the particular responsibility of the UK – and Cambridge as one of its preeminent institutions for centuries – for disproportionate historical and current⁴⁶ emissions (Friedlingstein et al. 2019; Peters et al. 2011) and therefore disproportionate consumption of the carbon budget since preindustrial times (Morrow 2016). As a Head of House asked, “Who is currently paying for our lifestyle, and who is going to be paying for it in 15 or 20 years’ time? [. . .] Climate justice begins with a recognition of who’s paying” as climate change “weighs most heavily on the most vulnerable”, especially people from low-income countries and victims of environmental racism who already bear many of the environmental and health costs of pollution (Sovacool et al. 2016). As legal scholar Coplan notes regarding divestment in the context of emissions and fossil fuel consumption skewed wildly to wealthier countries and individuals: “Although some utilitarian ethical systems allow for harm to others to serve a greater good, no system of ethics allows grievous harms to others to provide luxury goods to some” (2016, 231–32). Many universities that choose to divest

⁴⁴ “Climate justice” refers to other societal issues that intersect with (and sometimes intensify) that of climate change, including income, wealth, racial, and gender inequality, in addition to differential climate impact on countries in the Global South and the Global North.

⁴⁵ Environmental racism refers to, among other things, the location of pollutive infrastructure in majority non-White areas and disproportionate environmental health effects on People of Colour both locally and globally.

⁴⁶ Especially if one considers imbedded carbon from the goods it imports from other countries, which increases the UK’s emissions by nearly 40% (Peters et al. 2011), <https://ourworldindata.org/consumption-based-co2>.

cite their duty⁴⁷ to future generations as a motivation for doing so (Stephens, Palchak, and Reese 2017). Finally, people who took part in a student-led divestment consultation suggested a possible contradiction between the University’s policy of holding fossil fuels and its acknowledgement of the legacies of slavery. One would want to be careful about drawing links between investments in slave labour and fossil fuels,⁴⁸ but the history of efforts to end slavery is instructive here, too; although the United Kingdom was a prime beneficiary of the slave trade, it was also a social and legal leader in the abolition movement⁴⁹ (Coplan 2016).

In an interview for this report, a representative of the Ogoni people from Nigeria’s Niger Delta asked that Cambridge divest in response to his people’s ill-treatment.⁵⁰ Indigenous communities living with the downstream effects of fossil fuel extraction (Rowe, Dempsey, and Gibbs 2016) and fighting pipelines slated to cross traditional lands in North America⁵¹ have also argued in favour of divestment.⁵² One University Council member, who does not favour divestment, felt that the best argument in its favour was the concern over human rights and frontline communities – “what is being done in our name”. Indeed, some divestment advocates claim that there is a “leverage-based” responsibility on the part of institutions that have influence over the relevant actors (Richardson 2017). At the student-led divestment conference, speakers argued that some stakeholders’ voices are never heard; “they have no share certificate”. Frontline communities’ concerns should be taken seriously on their own merits, of course, but elite universities can also amplify their messages.

⁴⁷ Although this does not apply to Cambridge as a charitable educational institution, in some jurisdictions institutions such as pension funds intergenerational equity is encoded in the law; in these cases, some legal scholars argue, “fossil fuel investments impermissibly favor current beneficiaries at the expense of future beneficiaries who will suffer the severest effects of climate change, and . . . breach this duty” (Sarang 2015).

⁴⁸ One reviewer also noted that this and many targets of divestment campaigns, including Apartheid and tobacco, constitute “political systems of structural oppression or else voluntary ‘leisure’ pursuits with significance social costs” and is thus “on an entirely different moral footing” from energy, which is “a basic human need, if not a right”.

⁴⁹ Note that the economics of slavery also changed with the rise of the palm oil industry, which in fact required workers to stay in West Africa to produce this valuable commodity. Hence the success of the abolition movement coincided with a shift in the economics of the whole enterprise.

⁵⁰ In 2009 Shell paid \$15.5 million in an out-of-court settlement to the relatives of environmental activists from Ogoniland due to allegations that the company had been complicit in their 1995 executions (Morris 2009). A UN report concluded it would take 25 to 30 years for local flora and fauna to recover from Royal Dutch Shell’s two disastrous 2008 oil spills there (UNEP 2011), for which the company agreed to pay £55 million to 15,000 affected fishers (Adams and Wallis 2015).

⁵¹ <https://mazaskatalks.org/divestyourself>.

⁵² A prominent indigenous activist interviewed for this report noted that divestment should be carried out in partnership with frontline communities, however; although she is from a community directly affected by the tar sands, no one she knew in the indigenous climate movement had been aware of Cambridge’s existing tar sands restriction. The narrative of a divestment commitment, furthermore, is critical: “How are we ensuring that divestment includes language that is reflective of the systemic challenges that brought us to the place that it was okay for those institutions to invest in dirty energy projects or human rights-violating projects?”

It should be recognised that the views of some local industry-dependent communities are mixed as their economic livelihoods can be tied to that of fossil fuel companies. One interviewee for this report, a Senegalese scientist who nevertheless wanted BP to extract oil in the region, expressed concerns over the extent to which the industry's revenues would benefit the community⁵³ and also feared the work would begin without a baseline health study (particularly on cancers) having been conducted beforehand. He felt that these concerns would be taken more seriously if raised by Cambridge.

Finally, given the University's affiliation with companies knowingly contributing to climate change, plus its knowledge of the attendant harms and the actions necessary to prevent them, some argue that Cambridge is complicit in allowing such foreseen harms to come to pass (Torcello 2018). This consequentialist argument aligns with a separate argument; "[t]he non-consequentialist moral case asks institutions to act with integrity and avoid the moral tarnish that comes from investing in, and thus being supportive of and complicit in, the injustices and grave harms entailed in the fossil fuel industry business model" (Lenferna 2018, 8.6). Avoidance of complicity has been a significant motivator for exclusions and divestment throughout the history of socially responsible investment (Richardson 2017). Others view divestment as a promotional duty, one that contributes to collective action⁵⁴ by encouraging others to act (Cripps 2013, chap. 6).

While the moral case for divestment is a powerful one, there are also moral grounds on which to oppose it. Some argue that is an ineffective gesture, simply washing one's hands of the problem. In response to calls for divestment, some argue that it is a dereliction of duty to sell off fossil fuel investments to someone who cares less about climate change. Such an act could be viewed as failing to take responsibility for the problem or its potential solution. This puts the onus to act elsewhere, rather than placing it squarely within the remit of a university uniquely positioned to wrestle with such an intractable problem. Participants in CEAM's CILT conference argued that Cambridge has an obligation to lead, not just take the easy route and divest. Others argue that divestment is easy precisely because it does not necessitate a sacrifice on the part of those arguing for it, unlike other methods of mitigating climate change. Some further note that fossil fuels allowed for the development of modern civilisation long before humans discovered their negative effects, and that

⁵³ Evidence of which was presented in a 2019 [BBC documentary](#).

⁵⁴ "[T]he divestment movement illustrates a form of collective responsibility that non-governmental agents can take up and share" (Godoy 2017b, 694). This can also be phrased as the "positive moral responsibilities we have to help promote climate action" at a broader collective scale (Lenferna 2018, sec. 8.4).

these same fossil fuels are necessary for human development until we can reliably replace them with renewable energy.⁵⁵

Another common criticism of divestment is that it is morally dubious for an institution built on academic rigour to enact a policy that is largely symbolic, given the relative unimportance of equity as a source of finance in the global fossil fuel industry (see Appendix IV⁵⁶). A non-specialist audience may assume that divesting shares from fossil fuel companies would materially affect the flow of new capital into these companies and their projects. Arguably Cambridge has a duty to explain how its actions will have an impact, and to educate the public regarding the sources of flows of new capital into fossil fuel expansion. As per legal scholar Deeks, “[t]he ethical case at first blush would seem to support divestment, but if the ethical thing to do is that which will be most effective at addressing climate change, divestment may not be the most ethical choice” (2017).

Critics of divestment note that any reduction in returns of the Cambridge University Endowment Fund would also lead to a reduction in the funds available to subsidise the education of future students at the University (see Section 7), and these costs would compound over time. Thus, within the Cambridge community itself there is a potential intergenerational inequity issue, with future students potentially at a disadvantage relative to their predecessors.

Divestment from fossil fuels can also be viewed as hypocritical for an institution and a society that otherwise rely on fossil fuels for heating, cooling, transport, and myriad other uses. Historically divestment campaigns have often combined divestment with boycotts and sanctions (Seidman 2015; Gosiger 1986). Continuing to contribute to the demand for a product whose production we object to arguably puts the University in a morally untenable situation.

Participants at the Centre for Endowment Asset Management CILT conference advanced the argument that one should maximise the endowment’s returns to do good things with the proceeds.⁵⁷⁵⁸ In the words of Harvard professor Harry R. Lewis, if in universities’ working towards decarbonisation “some of the money we use to do that comes from the fossil-fuel industries themselves, the joke will be on them” (Rosenberg 2019a) – especially, as some say, as this would contribute to the decline of the companies’ own business model.

⁵⁵ Wind and solar intermittency will also need to be balanced by some fossil fuel usage until energy storage is deployed at scale.

⁵⁶ Divestment can contribute to “removing capital” from companies, but mainly in the debt markets.

⁵⁷ For the investment office the goal is not to maximise returns through profiting from fossil fuels, but to retain the profitable fund-of-funds model that would otherwise be threatened by a full divestment mandate.

⁵⁸ One academic even proposes the concept of “mission hedging”, wherein a charitable endowment invests in companies counter to its institutional mission in order to maximise returns – and therefore the good it can do as a charity – from underpriced “objectionable” firms (Tran 2019).

Furthermore, fossil fuel companies have immense resources as well as engineering and project management skills, and are capable of contributing significantly to the growth of renewable energy and carbon capture. If analysis shows them to be serious about energy transition, the better moral position would be to assist and encourage this endeavour.

Finally, although calling out bad behaviour is necessary in some cases, some worry about the unintended consequences of vilifying or scapegoating particular entities when the responsibility for climate change is more broadly shared. The divestment movement intends to label the fossil fuel sector as a climate change villain, but there may be a risk of stigmatising individuals within the sector, with conflict and personal attacks as a potential unintended result.

4. SOCIAL AND POLITICAL ARGUMENTS

This section reviews social and political arguments about divestment that are both internal to Cambridge and external to the wider political environment. It is worth emphasising here that although their goals may be similar, divestment proponents' and critics' theories of change differ significantly. There is general agreement on both sides of the debate that government action and international coordination are ultimately required to mitigate climate change. Critics tend to believe that the divestment movement's focus on fossil fuel companies is misguided and off-target; legislative change must be targeted directly in their view, and divestment distracts attention from this goal. Advocates claim that legislative change is not possible until the necessary groundwork has been laid by changing public discourse and generating voter pressure on politicians, and that divestment plays a critical role in this regard. The question is not so much whether divestment has a direct financial effect on fossil fuel companies, but rather whether, by helping to shift societal norms and expectations, it creates more favourable conditions for legislative change. In doing so they aim to redress the power imbalance between the fossil fuel industry and the environmental movement, and to generate public support for climate policy such that politicians are forced to act.

Accordingly, both sides of the divestment argument claim the other side's approach does not properly address the significant share of fossil fuel reserves held by national oil companies (see Section 2, pages 14-15 for more details on NOCs). Critics of divestment point to the divestment movement's focus on a number of publicly-listed fossil fuel companies as an inadequate response to a problem that spans a much greater universe of companies with varying ownership structures. On the other side, divestment advocates argue that divestment's potential to influence legislation – which could affect both the demand for, and supply of, fossil fuels – allows for the possibility of

reaching all fossil fuel companies, regardless of geography or ownership structure. We return to these arguments later in this section.

4.1 DIVESTMENT AND THE CAMBRIDGE COMMUNITY

There is substantial support for divestment within the Cambridge community. Almost 2,400⁵⁹ Cambridge students signed a petition in 2016 requesting that the University of Cambridge divest from fossil fuels; 140 staff members signed a Regent House Grace with the same intent; 360 staff members signed an open letter⁶⁰ asking for full divestment following the adoption of the divestment Grace as “advisory”; democratically-elected student bodies at the University and within the colleges have overwhelmingly voted in favour of divestment; and 324⁶² academic staff members signed on to the Grace requesting the compilation of this report on the advantages and disadvantages of divestment.⁶³ Further support includes a 33-1 vote in favour of divestment by the Cambridge University Students’ Union (CUSU) (Ashworth 2015), a second unanimous confirmation CUSU vote in 2017 (Wernham 2017), and the passage of pro-divestment or pro-positive investment student body resolutions at all 31 colleges over the past several years. Such campaigns are common across the higher education sector. Of the responses to a large-scale Positive Impact Rating survey of students at 51 global business schools regarding measures the schools could take to integrate social and environmental considerations into their teaching, learning, research, and operations, students’ top request was for universities to divest from fossil fuels (Muff and Dyllick 2020). One college Bursar – who was not personally in favour of divestment, and who was surprised by the number of student and staff signatories to a divestment petition at his college – felt that such a democratic outpouring meant that divestment had to be on the table, saying as a parallel, “I didn’t vote for Brexit, but that’s what the electorate wants”.

Another college Bursar, who was not necessarily predisposed towards divestment, felt “we have to address the issue head-on or everyone will be floundering”; he feared a continuation of the rancour

⁵⁹ Based on online searches, this appears to be the largest petition directed at the University of Cambridge since at least 2010 (by a substantial margin).

⁶⁰ <https://zerocarbonsoc.soc.srcf.net/experience/academics-open-letter-2018/>.

⁶¹ For those who suspect that Cambridge seems unusually exercised on the topic of divestment, their hunch may be correct; in a study of 30 pro-divestment faculty letters in North America, only Stanford and the University of California system (which has 10 campuses and a corresponding number of academic staff) garnered more signatories than Cambridge (Stephens, Frumhoff, and Yona 2018). A comparable staff [letter](#) in favour of divestment at Oxford garnered significantly fewer signatures than that of its Cambridge equivalent.

⁶² In a review of all Graces filed by Regent House members since 2010, only one – a 2018 Grace on members’ own pensions – garnered more signatures.

⁶³ For context, there are [6,142 members of Regent House](#), [1,715 academic staff members](#), and [over 19,000 students](#) at the University of Cambridge.

that has characterised the discussion. Another Bursar tiredly welcomed divestment, saying she “doesn’t need the hassle”; her only worry was that we would not have an effect on climate change in doing so. Some divestment critics express concern that the possible cuts stemming from potential endowment losses and reduced research funding from fossil fuel companies due to divestment might deepen community divisions. One former student member of University Council felt a decision to reject divestment would threaten the trust and cohesion of the community, however. Indeed, even partial divestment can invite controversy (Linnenluecke et al. 2015). Other institutions have found that divestment can bring the community together, even facilitating the “forg[ing] staff-student alliances” (Holder 2015), and there is research which suggests that within divested universities the response can be one of pride (Beer 2016).

Divestment also brings climate change into the decision-making realm of university administrators and academics, for whom climate change may otherwise be only one of many important issues of the day (Apfel 2015). This may bring the climate crisis home for these constituencies, and prompt further conversations with peer institutions and colleagues. “By encouraging individuals to think about institutional relationships to foreign events, divestment prompts a collective examination of community links to transnational issues, and offers those communities a concrete way in which they can demonstrate their growing concern” (Seidman 2015, 1030).

Furthermore, proponents of divestment argue that it is hypocritical at a scholarly level to research and warn against the dangers of climate change, yet continue to benefit from an industry that is seen as being at the heart of the problem. During a Senate House discussion one student put it thus:

Academically, we argue that climate change is everyone’s problem, but practically we say that we are doing our bit through research and teaching and need do no more. We leave the world out there to deal with the complexities of the problem, whilst we continue to receive funding⁶⁴ from companies that have a history of denying climate change. [. . .] To the world out there – to the world on which we rely to do our work – this cannot but look selfish or even hypocritical.

A professor concurred, saying, “We espouse ‘concern for sustainability’ while conspicuously failing to take a stand”. Divestment may therefore be seen as an initiative that responds to the will of a significant number of students and staff and aligns the University’s investment portfolio with its commitment to a decarbonised future.

While there is a strong case to be made for the positive social impacts of divestment on the University community, it would not meet with universal favour. During more than one Senate House

⁶⁴ Several points made in this report refer to fossil fuel research funding, affecting the tenor of arguments regarding hypocrisy or delegitimation. Fossil fuel research funding is beyond the scope of this report.

discussion, academics expressed the worry that divestment could impede climate-friendly research that is currently conducted in partnership with the fossil fuel industry. They feared that this would prevent Cambridge academics from contributing to the necessary solutions, and equally that the research would suffer for lack of the industry's technical expertise and real-world experience. As one professor said, "The low-carbon, low-emission, sustainable future that we surely all want is achievable, but only if we work with the people who can (and want to) deliver it. If we isolate them we risk that future. I think we all want to see the same outcome. The way to achieve it is through co-operation and engagement, not disinvestment and disengagement".

University administrators elsewhere have expressed concerns that it is inappropriate to use the endowment for political ends (Grady-Benson and Sarathy 2016). Divestment from fossil fuels may be viewed as a slippery slope that could lead to requests for divestment from a host of other companies associated with social and environmental harms, with no clear standard as to which can be considered acceptable or unacceptable. Those who share this concern point out that the purpose of the endowment is to support the teaching and research activities of the University.

4.2 DIVESTMENT, CAMBRIDGE, AND EXTERNAL AUDIENCES

Externally, advocates argue that a decision by Cambridge to divest would be seen as a material contribution to socialising and normalising wider societal attitudes towards the urgency of decarbonisation. The divestment movement derives its power from its emphasis on moral arguments (Hopke and Hestres 2017); this may be especially true for successful campaigns (Mangat, Dalby, and Paterson 2018). The intent of many in the divestment movement is to influence global moral norms, thereby changing "what counts as appropriate behaviour for [international organisations and multinational corporations] in line with a conception of justice or ethics"⁶⁵ (Green 2018, 104). Due to its basis in moral arguments, some argue that the divestment movement has become a "norm entrepreneur" (Ayling and Gunningham 2017; Piggot 2018). Norm entrepreneurs help to establish, socialise, and normalise attitudes and behaviours in a certain domain (Green, 2018; Ayling & Gunningham, 2017). Commentators point to the importance of shifting norms in order to achieve climate action (Gunningham 2017b); among the norms that divestment advances is, for example, "the desirability of going fossil-free" (Gunningham 2017a, 376).

As a Regent House member argued during a Senate House discussion, "Divestment will not starve fossil fuel companies of money but it will act to change public perception. As another commentator

⁶⁵ An earlier example of a successful shift in global moral norms is the widespread acceptance of the importance of human rights.

put it, ‘We do not aim to take away their money. We aim to take away their credibility’” – otherwise known as the “social license to operate” (Blondeel 2019). This process may be underway already. In a 16 January 2020 speech, the Chair of the UK Oil and Gas Authority (OGA) stated that, in his first 10 months in the role, the “biggest challenge [. . .] has been the speed of the shift in public and industry opinion on climate change[; . . . the industry] is, in my opinion, not doing enough and its social licence to operate is under serious threat” (OGA 2020).

Indeed, the Oxford meta-analysis of divestment literature suggests the divestment movement could affect the long-term value of companies by contributing to uncertainty about the sector’s future – especially in conjunction with investor fear of legislative measures – and reducing other investors’ expectations as to future cash flows (Ansar, Caldecott, and Tilbury 2013).

Gunningham (2017) observes that:

[I]n interviews with financial markets specialists in the United Kingdom, Australia, and the United States, while many disagreed with divestment as a pragmatic strategy [...] none doubted its influence on the climate change discourse. For example, one prominent critic recognized that “it’s been hugely successful at reducing the political capital and influence of the fossil fuel industry.” A second pointed out that “at least eight coal companies in the United States have stated in their regulatory filings that divestment has affected their ability to raise capital and the cost of raising capital.

The aforementioned Oxford report examined several divestment campaigns through history, concluding, “[t]he outcome of the stigmatisation process, which the fossil fuel divestment campaign has now triggered, poses the most far-reaching threat to fossil fuel companies and the vast energy value chain. Any direct impacts pale in comparison” (Ansar, Caldecott, and Tilbury 2013, 65).

Divestment is a powerful symbol, and some people feel there may be value in that for an influential institution. As an academic at a Senate House discussion put it, “Divestment from any harmful industry is foremost a rhetorical gesture. By itself, it will not effect much change. However, in our case it is a potentially powerful gesture in influencing other players to do likewise”. At a college event one Head of House – who otherwise did not support divestment – said that “sometimes the symbolic thing is the right thing to do”. Finally, although he felt divestment was not appropriate for his own fund and that it usually did not have an effect, then-CIO of the Japanese government pension fund Hiro Mizuno told a crowd at the Cambridge Union Society that he felt a university with a brand like Cambridge’s should divest: “If I were [. . .] the Cambridge endowment, I probably would divest, because the combination of Cambridge and divestment will create [a] stronger political statement”.

As social norms change, so the framing of the debate and the range of policy proposals deemed politically and socially acceptable to discuss will change. The concept of the “Overton Window”, developed by public policy scholar Joseph P. Overton in the 1990s, describes how this process occurs. Shifting the Overton Window can involve adjusting its centre, expanding its range into previously out-of-bounds areas, or rendering previously acceptable ideas unacceptable. A student at a Senate House discussion argued “Make no mistake, those who advocate for a continuation of the status quo, represented here by continued investment in fossil fuels, will be seen by posterity as utter extremists[.]” Such shifts in framing can indeed affect the Overton Window. One US study of over 42,000 newspaper articles on the fossil fuel divestment movement from 2011 to 2015 found a “positive radical flank effect” as divestment helped shift the centre of climate change debate, reframing the conversation such that previously “liberal” concepts such as carbon pricing came into the mainstream while previously unknown or radical concepts such as “stranded assets” and “unburnable carbon” became acceptable to discuss (Schifeling and Hoffman 2019). Blondeel et al (2019) note that references to “carbon bubbles” have spread from divestment campaigners to central bankers in recent years, while an OECD report claims divestment has “put stranded assets on the public policy agenda” (Baron and Fischer 2015). A prominent First Nations environmentalist in Canada specifically mentioned divestment’s effect on the Overton Window, noting cases in which even successful environmental legislation had been repealed because it was not subject to public scrutiny or failed to gain public backing, saying that divestment, conversely, “helps shift that Overton Window and build that base” of popular support.

Divestment advocates also argue that without divestment, its most common foil – shareholder engagement – has no teeth. They suggest that “unconditioned” engagement⁶⁶ with a fossil fuel company renders engagement less effective, in addition to being ethically dubious, as there is no “deal-breaker,” ultimate standard, or penalty if the company fails to progress. “Without clear terms of divestment, [engagement] becomes an indulgent strategy that effectively cedes the standards of performance to the industries in question” (Dawkins 2018). Cambridge scholars’ research suggests that engagement may be more effective when the target company fears negative reputational⁶⁷ effects (Dimson, Karakas, and Li 2015). Arguably the public nature of a divestment campaign has greater potential to trigger companies’ reputational concerns than behind-the-scenes engagement might; research suggests that companies are more likely to change their behaviour on the basis of a negative public environmental rating than a neutral or positive one, for example (Chatterji and Toffel

⁶⁶ Here we refer to engagement with companies whose shares the University owns, which can occur between the company and the University itself or between the company and the endowment through fund managers.

⁶⁷ Divestment being one of several ways of threatening a firm’s reputation.

2010). A Zero Carbon report argues that the change in political discourse induced by divestment is more important than the direct impact of divestment itself. Shareholder engagement, conversely, “tends to affect specific private corporations, leaving the state-backed corporations who extract far more oil and gas untouched [. . . T]he reality is that the share of potential reserve-based CO₂ emissions targeted by shareholder engagement is too small” (Cambridge Zero Carbon Society 2018, 11). The divestment movement’s focus on social norms and the creation of the conditions necessary to pass climate-friendly legislation, on the other hand, has the potential to affect all fossil fuel companies.

Interestingly, the combination of divestment and shareholder engagement appears to generate positive results. A study on the FTSE4Good index finds that companies at risk of exclusion are more likely to comply with the index’s standards (Slager and Chapple 2016), and another FTSE4Good study finds that the combination of shareholder engagement and threat of exclusion substantially increases companies’ compliance with environmental standards (Mackenzie, Rees, and Rodionova 2013). In recent years CalPERS has been able to combine these tactics to good effect by threatening to divest from Engie if they did not reduce their reliance on coal (which they subsequently did) (Krane 2017).

Advocates argue that a divestment announcement from Cambridge could provide an external boost to the efforts of change agents within fossil fuel companies, which may facilitate the internal culture change required to undertake a fundamental shift in business operations. This external boost may also apply to the employees of financial institutions, for whom divestment has prompted conversations that may not have happened otherwise (Bergman 2018). Indeed, the rise of the divestment movement in the US appears to have coincided with an increased focus on climate change within the responsible investment field itself; see Appendix IV for further detail.

Millennials (people in their late 20s and 30s) are themselves reportedly reluctant to work for the oil industry and have a dim view of the sector more generally; younger people, including those of undergraduate age, appear to have even less enthusiasm (Mosendz 2017), and prospective employees to rank the sector lower than others under experimental conditions (Backhaus, Stone, and Heiner 2002). A 2017 survey of 1,204 American consumers and 109 oil and gas executives found that Millennials had a mixed view of the industry but that 2 out of 3 teenagers “believe the oil and gas industry causes problems rather than solves them” (EY 2017, 1). Given that the oil and gas executives in the survey consistently underestimate young people’s concern over the environment and other non-financial considerations (ibid., 4), a divestment statement from a population of potential recruits could potentially raise executives’ awareness of young people’s desire for

decarbonisation and – because recruitment is consistently one of executives’ top concerns (Murray 2017; Hagan 2018; Alderton 2019; The Conference Board 2020) – encourage them to adjust their operations to align with the wishes of a new generation of prospective hires.

Perhaps relatedly, divestment appears to have revitalised the environmental movement in the UK (Bergman 2018) and other countries (Bratman et al. 2016) by appealing to large numbers of people, especially young people at universities and colleges. On some campuses, divestment has allowed for “big tent” organising that connects student groups representing a variety of social justice concerns (Bratman et al. 2016). There is some evidence to suggest that many successful divestment campaigners go on to occupy positions in NGOs and activist groups (Cheon and Urpelainen 2018) as well, meaning these effects can continue after graduation. The growth of the divestment movement may be partly explained by the fact that it provides opportunities to take action in the long stretches between international climate negotiations or national elections (Hestres and Hopke 2020) and because it is a particularly “target-rich” campaign (Apfel 2015) that allows groups to organise around the nearest investment pot. Successful campaigns can generate several headlines per institution, multiplied by the many thousands of institutions that divest – attracting further attention to the movement, and to the climate crisis, in the process. With further divestment announcements, the legitimacy of the movement is enhanced, and this can translate into increased effectiveness for the movement as a whole (Ayling 2017).

Finally, advocates argue that divestment is an effective tactic given particular features of human psychology. Climate change is a diffuse, non-personified danger that manifests on a delayed timeframe, very different from the kinds of dangers human psychology evolved to register as a threat (Marshall 2015; Markowitz and Shariff 2012; McAdam 2017). A body of academic literature addresses the need for careful framing and communication of the issue for this reason (ibid.), some of which – either directly or by implication – finds that climate narratives need a villain (M. D. Jones and McBeth 2010) to tap into moral intuitions and motivate people to take action. In the view of the divestment movement the fossil fuel industry is that villain. Simple frames are more likely to be grasped among the electorate as a whole, rendering the movement more accessible to a broader swath of the public and thus increasing the chances that it might affect public discourse.

4.3 DIVESTMENT: POLITICAL ARGUMENTS

Along with a number of long-established and newly emerging environmental campaign groups, the fossil fuel divestment movement has arguably helped shift public discourse away from a focus on individuals’ and institutions’ carbon footprints and towards broader interventions that would reduce

emissions system-wide (Grady-Benson and Sarathy 2016). The COVID-19 crisis has unfortunately but valuably demonstrated the effect of eliminating all non-essential travel and building usage – a proxy for the outer limit of emissions reductions that could result from individuals’ choices – which has reduced global emissions by only 17% (Le Quéré et al. 2020) while causing significant disruptions due to its rapid and unplanned nature. National, international, and system-level changes are needed to eliminate structural emissions.

The route from divestment commitments to effective legislation action is impossible to chart definitively, and there is no way to establish a firm causal relationship between the two. However, the historic case of Apartheid may be instructive here. Although multiple factors – and multiple tactics⁶⁸ – certainly influenced the outcome, and although “divestment” had a rather different meaning in some cases,⁶⁹ scholars (Mangaliso 1997; Emel 2002) and major figures such as Desmond Tutu (2014) all point to the divestment movement’s contribution to the fall of Apartheid (see Appendix VII and online⁷⁰ for a visual timeline illustrating the interplay between divestment commitments and responses from the Apartheid regime as well as a timeline of events in the ongoing fossil fuel divestment campaign).

How one assesses the evidence in this section, then, may depend on one’s assessment of the momentum evidenced in the two timelines, of the divestment movement’s theory of change, of the extent to which these two movements resemble each other, and of whether they will more closely resemble each other over the coming years.

The political case for divestment rests on expectations that it will accelerate the pace of legislation in favour of an energy transition away from fossil fuels. It does so both through creating a political environment more favourable to legislation and by weakening the political power of the fossil fuel industry.

Legal scholars contend that neither national nor international legal regimes are likely to ban an act in this case, say, the continued extraction of fossil fuels beyond the carbon budget – before having

⁶⁸ Black-led boycotts against White-owned businesses in South Africa, international boycotts of South African sporting events, divestment, disinvestment, sanctions, shareholder resolutions, and pressure on commercial banks operating in South Africa, inter alia. Note that divestment played a much larger role in the US movement against Apartheid than it did in the UK context.

⁶⁹ Referring at times to disinvestment, or companies’ sale of assets of subsidiaries operating in South Africa.

⁷⁰ For a closer look, see <https://prezi.com/view/QqVNHJQRagXs2gBTdjO/> (use track pad to zoom in, not clickable arrows); downloadable PDFs are available at <https://www.dropbox.com/s/dmk9m72lwggdv6j/Climate%20Timeline%20Final.pdf?dl=0> (Apartheid) and <https://www.dropbox.com/s/dmk9m72lwggdv6j/Climate%20Timeline%20Final.pdf?dl=0> (climate change).

agreed that it is immoral; “before a practice can be banned, it must be considered wrongful” (Coplan 2016, 230). It is therefore possible to conceive of the declining legitimacy of the fossil fuel industry as a precondition to its being legislated⁷¹ *at the level required to align with the science* – including the necessary supply-side constraints (see Section 2, pages 18-19 regarding supply-side policies).

Divestment advocates argue that divestment enhances an institution’s authority in climate engagements with policymakers and regulators. As one senior person from the Cambridge Institute for Sustainability Leadership (CISL) put it, “then your engagement with policy makes some sense because the government official, the politician across the table, sees somebody who has actually acted”. Divestment advocates also point out that unlike private shareholder engagements, divestment announcements reach politicians and the public and thus are much more likely to have a political effect.

Advocates further claim that by divesting, the University ceases to confer legitimacy on companies that engage in lobbying against climate-friendly policies. As Bill McKibben recalled at a student-led conference on divestment, Exxon built rigs to account for climate change-related sea rise while funding climate change denialism research (Oreskes and Conway 2010); “intellectual dishonesty on that scale would get you kicked out of Cambridge in a minute”. All of the oil and gas majors are members of trade associations that continue to lobby against climate policies, and some do so directly⁷² (see Section 2). A number of the oil and gas majors have changed their direct lobbying practices, left a small number of trade associations, and noted in their annual reporting only “partial alignment” with other trade associations; however, their membership fees continue to support the full activities of these organisations.

Divestment proponents argue that the power of the fossil fuel industry must be diminished before meaningful climate legislation can be enacted (Rowe, Dempsey, and Gibbs 2016). Indeed, some divestment activists cite the lack of political progress at the national and international levels as a primary reason for getting involved with the movement in the first place (Grady-Benson and Sarathy 2016) – to act as a counterbalance (Hestres and Hopke 2020) to the tremendous political power and influence of the fossil fuel sector (Oreskes and Conway 2010; Tillmann et al. 2015; Gunningham 2017a). The industry’s influence is, indeed, a significant political barrier to action on climate change (Piggot 2018; Braungardt, van den Bergh, and Dunlop 2019). Research suggests that social

⁷¹ Interestingly, in 2015 California legislated on divestment itself – forcing public pension funds to sell coal holdings – following the publication of a report suggesting that the state’s largest fund, CalPERS, would be the world’s 88th largest coal company if it owned its underlying coal companies’ reserves directly (Krane 2017).

⁷² Listed oil and gas majors’ lobbying can also benefit the National Oil Companies, as the purpose of such lobbying is to maintain oil demand.

movements can help address this by shaping political decision-making and legislation (Amenta et al. 2010). This can be true in the domestic political environment, in which “if there is one key variable accounting for policy change, it is the degree of domestic environmentalist pressure in major industrialised democracies” (Keohane, Haas, and Levy 1993, 14), as well as on the global stage – where “history suggests that international agreements are most likely to be pursued with sufficient determination to make them effective if there is a groundswell of popular support” (Gunningham 2017a, 387).

The divestment movement also necessarily draws attention to fossil fuel companies, and therefore the supply of fossil fuels (see Section 2, pages 18-19 for further detail). Government support for fossil fuel supply can take many forms; with pressure to address the supply side, “stigmatised firms may be barred from competing for public tenders, acquiring licenses or property rights for business expansion, or be weakened in negotiations with suppliers” (Ansar, Caldecott, and Tilbury 2013). The demand aspect of climate change mitigation policy has traditionally overshadowed the supply side of the equation, in international treaties and country-level legislation alike (Marshall 2015; Healy and Barry 2017); divestment pressures could be viewed as a policy counterbalance in this regard.

Some critics feel that divestment is no more than a symbolic move that fails to affect the flow of finance into the fossil fuel industry or reduce demand itself, however (See Section 2 and Appendix IV). Divestment critics also argue that the problems faced by frontline communities and the wider intergenerational requirements of climate justice require more than symbolism to address, and that the very real issues of anti-climate lobbying, climate justice, and misallocation of shareholder resources would be lost in a general divestment announcement.

A significant number of senior members of the University and its colleges worry specifically about the impact of divestment. Even if the divestment movement succeeds in damaging the legitimacy of the fossil fuel sector, they feel, this might not result in its demise or benign reform. One prominent US critic of divestment maintains that the fossil fuel industry has already lost its social license to operate, as it consistently performs terribly in opinion polls, with apparently few ill effects on its continued operation (Rowe, Dempsey, and Gibbs 2016). Critics also cite the example of the tobacco industry, which persists – and, until recent years (Au Duong 2020), outperformed the market (Dimson, Marsh, and Staunton 2002) – despite widespread divestment and, indeed, the imposition of other forms of restrictions and expressions of social opprobrium including legislation, lawsuits, and funding bans.

Critics also argue that divestment replaces climate-conscious investors with those who have no such concerns (Richardson 2017), and, in the process, results in a missed opportunity to influence firm-

level decisions and increase directors' and executives' exposure to climate-concerned social norms. During a Senate House discussion a college Bursar remarked, "Divestment from fossil fuels by those that consider them a bad thing means, by extension, leaving the investment to people who are not concerned about the environmental issues. That allows perpetuation and even intensification of those activities and would be an own goal". Absent concerned investors and sensible climate change legislation on the part of government, divestment critics fear that fossil fuel companies would be left with little to no environmental oversight.

Some divestment critics have expressed the related fear that a decision to divest from fossil fuels could constitute a missed opportunity to support employees of oil and gas companies who are dedicated to decarbonising these companies' operations. With fewer interactions with the University and its researchers, such internal allies may no longer receive the intellectual and social support required to change things from within. These critics argue that the University should undertake to welcome, not alienate, potential converts within the fossil fuel industry. If fossil fuel companies and their employees come to see the University as the enemy, they argue, persuasion will no longer be possible. The criminology literature addresses this issue in depth: shame is indeed a powerful motivator for change, but many legal scholars argue it is best matched with the potential for redemption and reintegration for maximum efficacy (Braithwaite 1989). In this way, the divestment movement is only equipped to exclude fossil fuel companies and their affiliates from the fold of social acceptance, but allows them no route by which to regain the esteem of society through swift and meaningful action on climate change.

Indeed, divestment rests on a simple, widely understood message that frames the fossil fuel industry as villains. Even some who share the divestment movement's aims fear that this oversimplification can be problematic. As responsible investment authority Raj Thamotheram sees it:

By mobilising those who are most easily moved by such framing, the campaign risks alienating those who are concerned about climate change but have a more systemic view of the challenge: one inconvenient truth is that many sectors (including agriculture, airlines and insurance) are today profiting by ignoring climate change. If the public comes to believe that the answer to climate change is to punish one or two high profile oil and gas companies, and that other sectors don't have a huge role to play, or that the public itself has no significant responsibility, then this is at best a major missed opportunity and, at worst, a deception. Moreover, the power of fossil fuel companies and the scale of the challenge are such that going into battle in a way which is likely to only mobilise one part of society – however committed and vocal – will turn out to have been a weak strategy. (Thamotheram 2014)

Critics of divestment are not convinced that it will advance political change and suggest that the University loses an opportunity for constructive engagement in divesting. As one college Bursar put

it, divestment makes the news for a day and then the University loses its source of ongoing leverage and engagement. A member of the University administration concurred, asking “What happens the day after we divest? What then?” Some fear divestment’s only legacy would be the forced restructuring of the Investment Office and the attendant shortfall in funding to support the central functions of the University. In this view, the University will have acquiesced to the divestment movement’s pressure, but will have diminished its capacity to influence climate policy or engage with decision-makers in the process – without having meaningfully contributed to the divestment movement’s stated aims, either. For those who genuinely wish to take action on climate change, this is a dispiriting prospect.

There could even be unintended consequences if divestment succeeds in affecting the share price of fossil fuel companies. Low share prices could have the unfortunate effect of benefiting the remaining investors, as may have occurred in the case of “sin stocks” such as tobacco, gambling, and alcohol (Hong and Kacperczyk 2009). This is because companies whose share prices are artificially depressed tend to outperform the market, and their investors tend to pay less (via a lower share price) for the flow of dividends the companies pay out. Outperformance could, in turn, disproportionately benefit the executives of companies that attract divestment campaigns (Davies and Van Wesep 2018). This is because a significant majority of executives’ stock options are paid according to a fixed value,⁷³ and thus “under typical compensation schemes, managers seek to maximize stock returns, not stock prices” (ibid., 560). Depressed share prices could also increase the risk of a hostile takeover and unemployment for the executive, however (Richardson 2017).

There may also be a danger in divestment’s focus on individual institutions. In this view, divestment is a second-rate tactic that misses the central target. Indeed, some academics claim that a “market-based” campaign like divestment could detract from the emphasis on government action (Tollefson 2015) and uncritically perpetuate the power of the financial system instead (Soederberg 2009; Mayes, Richards, and Woods 2017):

[Critics of divestment] might argue that divestment is bad for the climate movement because it is unlikely to achieve its goals and distracts the movement from more urgent and achievable goals such as placing a price on carbon. Worse still (in my view) is the charge that divestment is merely another form of shareholder activism and that no movement (or substantial change) ever came from that quarter (Moss 2017).

⁷³ When the share price is depressed, the executive will receive more shares to reach the value threshold stipulated in the compensation contract. Under other compensation schemes, the contract would be for a certain number of shares (whatever the price) and thus the executive would not benefit financially from a divestment campaign.

Divestment could even act as a barrier to government action. Financial sector actors who embrace the fossil-free norm may do so precisely because, “once ‘rebranded’ as an issue of corporate social responsibility (CSR), governments can be prevented from imposing stricter legal action”, resulting in a “process of passive revolution of small, incremental concessions” as opposed to fundamental change (Blondeel 2019).

5. REPUTATIONAL ARGUMENTS

The University of Cambridge’s reputation has been hard-won over the past 800+ years. As per the University’s communications team, its reputation comprises the perceptions of funding institutions, donors, future hires, students, prospective students, staff, media, and peer academic institutions. Advocates of divestment often invoke the University’s future reputation as a consideration in this debate. If it becomes increasingly evident that the divestment movement changes social norms and policymakers’ political calculus, how will Cambridge be viewed on the basis of its actions now? Cambridge may be viewed as a laggard⁷⁴ if it is one of the last universities in the UK – or among its global peers – to divest. One interview respondent for this report, a prominent Extinction Rebellion activist (and academic), said it is “partly a question of, how do you want to go down in history? Do you want to go down in history as having sort of taken a cautious middle path that didn’t satisfy students but didn’t really annoy fossil fuel-funded think tanks? Or do you want to go down in history as a pathbreaker that did something rather astonishing?”

Given significant levels of support for divestment among current students, as seen in Section 4, it seems possible that divestment could improve the University’s reputation in this quarter. Relatedly, some students view divestment as a “mainstream” option that has been taken by New York City, the Church of England,⁷⁵ and other respected bodies, and view Cambridge’s lack of action on this front as displaying an “embarrassing lack of leadership”.

A 2016 Zero Carbon report also cited the need to maintain the University’s “research integrity” by divesting (Galpin et al. 2016, 33), perhaps particularly in service of academic work on climate change itself. Indeed, one senior CISL representative warned of the reputational risk inherent in being perceived as saying one thing and doing another, referring to a major bank’s presentation on a

⁷⁴ Cambridge is not yet at risk of being viewed as a laggard among global peers, but a majority of UK universities with endowments – and 14 out of 24 Russell Group universities – have now fully divested (with a further 4 having been reported as divested; the supporting evidence is ambiguous).

⁷⁵ The three funds associated with the Church of England are either fully divested or have committed to full divestment by 2023 if the fossil fuel companies it owns do not fully align with the Paris Agreement by then.

genuinely impressive new solar project they had financed: “But the first question they got after this showcase presentation was, ‘What about oil sands?’ And ‘What about the heavy fossil energy lending portfolio of [the bank]?’ Of course the whole thing fell over.”

The University’s ties to the fossil fuel industry have already generated media attention. Although some will argue that this coverage is unfair, the fact remains that such attention is indeed unwelcome. Advocates argue that divestment, and cutting research ties to fossil fuel companies, would spare the University some of its most significant sources of negative coverage in recent years – and thus reduce reputational risk.

However, reputational arguments do not all point in favour of divestment. In a focus group, senior representatives of the development and alumni relations teams expressed the view that divestment would neither help nor harm Cambridge’s relationship with donors or Cantab graduates, but felt that there would be reputational harm if Cambridge were to be viewed as “having our head buried in the sand” on climate issues. One significant donor – having spoken with three other major donors – felt that although they all supported strong action on climate change on the part of the University more generally, they would fear the erosion of the value of their benefactions in the event of full divestment. A review of student applications in a sample of divested and non-divested Russell Group universities suggests that divestment does not make an appreciable difference to a university’s applicant numbers either way.

Others fear that the University could suffer reputational harm among research partners if it were to divest, especially among fossil fuel companies, which could alienate even those that are genuinely committed to decarbonisation – meaning the University would also lose an opportunity to push for decarbonisation in those quarters. Divestment may also create apprehension on the part of research partners in unrelated fields who fear negative media attention should Cambridge turn its divestment focus to other sectors.

Critics of divestment have also expressed concern that if Cambridge divests and the decision does not have a positive impact on climate policy it may have a negative effect on the University’s perceived legitimacy and influence. Furthermore, some argue that if divestment is likely to be ineffective and yet the University pursues it as a tactic, the act of divestment could be viewed as greenwashing – another potential source of reputational harm. If divestment has minimal impact in the end, others say, it could end up having distracted from more impactful actions the University could take. If there is an alternative that actually works, conversely, this would likely enhance the University’s reputation as a world-leading academic institution.

6. FINANCIAL ARGUMENTS

This section begins with a summary of the research on the effect of fossil fuel divestment on financial performance, benefactions, and research funding – not the effect of divestment on fossil fuel companies, which is otherwise addressed in Appendix IV – before outlining some of the advantages and disadvantages of fossil fuel divestment in terms of the University’s investment performance specifically and of the investment performance of directly invested or index-tracking investors more generally. These financial considerations include anticipated legislative or demand-side changes; risk attenuation; research funding; and constraints on the universe of fund managers from which the investment office can choose. It is worth clarifying that not all of this research is relevant to the University endowment (see Appendix II). Perhaps most importantly, the vast majority of the studies cited examine listed equity index or sector returns over time – publicly-listed fossil fuels’ financial performance compared to that of other sectors or the market as a whole – whereas the University endowment invests in boutique fund managers with relatively large holdings in relatively few companies across many asset classes. We will clarify which effects are CUEF-specific in examining the evidence below.

A full summary of historical studies regarding the impact of divestment on investment returns can be found in Appendix VI. From the available evidence,⁷⁶ divestment from fossil fuels would have had little effect on returns in the past 118 years for investors holding the whole market (e.g. through an index fund). In the very longest timeframes studied – by Cambridge scholars – coal was the very worst-performing sector over 118 years in the US,⁷⁷ while oil slightly outperformed the market in the US and slightly underperformed in the UK over the same period (Atta-Darkua and Dimson 2018). There have been both long and short periods of under- and outperformance during that time, however, so the relevant studies’ conclusions are highly dependent on the time period chosen. Studies that examine returns from the past 50 years tend to find that fossil fuels outperform the market, while all studies covering the period from 2010 onwards show fossil fuels underperforming.

Historical studies may discount system-level effects of divestment, however. One working paper model finds that a 10-20% penetration⁷⁸ of “moral investors”⁷⁹ in the market would be sufficient to

⁷⁶ We have only included academic research or independent reports. Six articles commissioned by the Independent Petroleum Association of America are not included; these articles’ estimates of the harms of divestment diverge wildly from those found in peer-reviewed articles, and they share an unusual amount of mutual citation with almost no reference to academic articles on divestment.

⁷⁷ An unbroken dataset from the UK for this period was unavailable.

⁷⁸ Another study, not fully referenced here as its model is not applicable to pure-play fossil fuel companies, suggests that a 60% penetration of responsible investors is required to raise the cost of capital enough for brown companies to incur a cost of green conversion of 10% or more (Heinkel, Kraus, and Zechner 2001).

⁷⁹ Their term.

precipitate a decline in fossil fuel companies' valuations and therefore outperformance of the moral investors' portfolios (Ewers et al. 2019). The authors also find that share prices of fossil fuel companies would be initially unmoved by divestment in liquid markets, as socially responsible investors are replaced by neutral investors – consistent with the findings of the historical studies cited in this section and Appendix VI (ibid.).

In terms of forward-looking academic work, one modelling study projects that low-carbon or fossil-free portfolios' performance will be equivalent to that of a standard portfolio, with lower climate risk (Benedetti et al. 2019). In the bond market, one practitioner study suggests that low-carbon bond portfolios are able to match a standard bond portfolio's tracking error and returns while protecting against stranded asset risk (de Jong and Nguyen 2016). Erlandsson (2017) similarly runs a large-cap bond portfolio through his own low-carbon ECOBAR model and finds that it matches or exceeds the benchmark's performance. However, the latter two studies examine low-carbon, not fossil-free, bond portfolios and thus are not directly applicable to the question at hand.

In the event that Cambridge decides not to accept research funding from fossil fuel companies, this could constitute a direct loss to the University; if Cambridge divests, equally, fossil fuel companies may no longer donate research funds to the University. Universities that divest from fossil fuels could end up benefiting from new sources of funding as climate change becomes more of a focus for grant-making bodies and research funders (Leal Filho et al. 2018), however, and it is not inconceivable that the University could face restrictions on research funding due to its research ties with fossil companies anyway – as has already occurred with tobacco and Cancer Research UK.⁸⁰ At a Senate House discussion, several academics did not share their colleagues' fear about the loss of funding from fossil fuel companies in the event of divestment. One academic stated baldly, "if a company requires us to invest in their stocks before they will fund our research, then they do not really want independent academic research, and so are a poor partner for the University". A National Union of Students (NUS) submission to the Divestment Working Group noted that universities that had divested had not reported a decrease in research funding from fossil fuel companies (National Union of Students and People & Planet 2017).

As noted in Section 5, however, Cambridge could risk losing major donors in choosing to divest. Although it has not been possible to canvass all of the University's significant benefactors, one key donor – who had spoken with a handful of others – felt that divestment poses a risk to the long-term value of these donors' benefactions due to the forced abandonment of the fund-of-funds

⁸⁰ <https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2005/tobacco-industry-funding-to-universities.pdf>.

endowment model, a risk they may be unwilling to take. There may be other benefactors who support Cambridge in response to a divestment commitment, but that is not possible to predict or quantify.

In conclusion, fossil fuel divestment does not much affect indexed or passive fund performance either way. For a passive investor or a fund with a small number of external managers, the cost of divestment is likely to be small or non-existent.⁸¹ For Cambridge, however, with an endowment holding less than 3% in the energy sector, the financial issue is not primarily about the risk and return on those energy assets but about the impact divestment would have on its model of investment. See Section 7 for an explanation of the effects of divestment on the fund-of-funds model. In terms of benefactions and research funding, divestment could present risks or potential benefits, with ambiguous results in known cases. Finally, there are undoubtedly significant risks involved in the fossil fuel industry; whether these are now (and will be in the future) properly priced by the financial markets, and how this would affect fossil fuel investments, is unknowable. Appendix VI provides a synopsis of the current academic literature in this area.

Although less relevant for CUEF,⁸² investors with a more or less market-tracking portfolio could protect against volatility in fossil fuel prices as well as legislative changes and the structural decline of demand for fossil fuels by divesting. The risk of stranded assets⁸³ due to a rapid and unruly transition, litigation risk, declining demand, or a market downturn has been well-documented; see Section 2, pages 15-16 for further detail.

The University endowment's fund-of-funds model means that the investment office chooses fund managers, not the underlying assets. Under this model, because investments are made primarily in pooled funds alongside many other institutional investors, the investment office is restricted in the extent to which it can control whether and how much of its investments are in fossil fuel companies. Because most fund managers do not consider it appropriate to impose investment restrictions based on the stipulations of individual fund participants, full divestment would substantially narrow the range of fund managers among which the divestment office makes selections. CEAM's CILT

⁸¹ Depending on fees, although the fees on fossil-free products have dropped considerably as of late and is unlikely to pose a barrier going forward.

⁸² With fossil fuel exposure of 2.8%, it would take a 43% loss in the value of the fossil fuel sector to equal the fund-of-fund model's effect (of an average of 1.2% outperformance per annum) on CUEF's returns for one year.

⁸³ As per Cambridge scholars' research, stranded assets have a long history in the transport sector in particular – in the transitions from horses to canals, canals to railways, and railways to internal combustion engines, with plenty of asset-stranding along the way (Atta-Darkua and Dimson 2018). It is still possible to make money in declining industries, however (ibid.).

conference participants noted that the fund-of-funds model has made CUEF very successful for over a decade; they also noted that both divestment and engagement may be difficult under this model. Indeed, most higher education institutions that have divested have had smaller, less complex endowment portfolios⁸⁴ (Grady-Benson and Sarathy 2016), which may have made divestment easier and less costly to implement.⁸⁵ Given CUEF's investment model, divestment could entail significant foregone returns.

7. EXPLORATION OF POSSIBLE COSTED STRATEGIES FOR DIVESTING FROM FOSSIL FUELS

NB: This section was authored by the University's Investment Office.

This section explores the (costed) implications of three possible divestment scenarios.

- i. ***Fund of funds model retained, full divestment***
- ii. ***Fully delegated model, full divestment***
- iii. ***In-house asset management, full divestment***

The baseline figures set out below are for 31.12.19 unless otherwise stated, and reflect the investment decisions of the previous CIO and investment team. Winding down illiquid investments would take 5 to 10 years in any of these scenarios, which is in line with student, staff, and college Bursar recommendations and with the announced divestment plans of other universities.

CUEF holds and invests donations in order to provide direct financial support for the University's research, teaching, and other activities, which do not generate sufficient income to cover their costs of operations. To pay its cash distribution of inflation plus 4% per year (£88 million in the year to June 2019), CUEF invests in funds, rather than selecting individual securities to invest in, allocating money to specialist third-party asset managers. These managers have discretion to make security selection decisions on behalf of CUEF; CIML does not control the individual investment decisions made by its managers. **Readers unfamiliar with the structure and operations of CUEF are strongly recommended to consult Appendix II.**

The majority of the asset managers with which CUEF invests do not hold securities in fossil fuels. Moreover, the few non-specialist⁸⁶ asset managers invested in energy companies tend to allocate an

⁸⁴ This is also true for divestment commitments outside of the higher education sector (Hansen and Pollin 2020).

⁸⁵ Ritchie and Dowlatabadi (2015) also suggest that divestment is easier for endowments with a focus on growth as opposed to income – universities that are less reliant on the endowment for operational spending.

⁸⁶ The exception is two specialist energy asset managers that account for most of CUEF's fossil fuel exposure.

average of approximately 1% of their assets under management to such securities. That might suggest divestment should be easy. However, for the reasons described below, the anticipated cost of a policy of guaranteed zero exposure to fossil fuel companies could be considerable.

A) *Option 1: Fund of funds model retained, full divestment*

The Investment Office has consulted CUEF's largest asset managers to understand their willingness and ability to divest from fossil fuels if requested and/or create a separately managed fossil-free account for CUEF. CUEF predominantly invests in pooled vehicles alongside up to 100 or more other investors and the asset managers contracted do not typically impose restrictions relating to a particular sector or sub-sector at the request of a single investor. While many of the asset managers do not currently invest in fossil fuels, they are unwilling to rule out explicitly ever holding fossil fuels, not least because some of their hedging and technical trading strategies may create fossil fuel exposures from time to time. Further, CUEF managers generally do not offer separately managed accounts.

If CUEF were to be subject to a strict policy of full divestment, CUEF would no longer be able to invest in any third party manager not willing or able to explicitly guarantee zero exposure to fossil fuels. As a result, CUEF would be required to redeem its investments from approximately 50% of its current managers in order to divest from energy exposure amounting to 2.8% of the total portfolio as at 31st December 2019.

According to work carried out by the Investment Office there would be two major reinvestment impacts:

- i. **Increased volatility (beta).** Diversifying asset classes on which CUEF relies to reduce the correlation of the Endowment to equity markets will not be investible. Without such sources of diversification, CUEF may be forced to sell equity securities at depressed points in the economic cycle to fund its distribution to investors, resulting in permanent loss that can damage future returns and distributions.
- ii. **Reduced choice, reduced return (alpha).** Very few public equity managers have demonstrated the ability to outperform benchmarks over the long term (R. C. Jones and Wermers 2011). A policy of zero exposure to fossil fuels would severely restrict the choice and therefore ability of the Investment Office to continue to deliver investment

outperformance against benchmarks (alpha) through manager selection.⁸⁷ Based on performance to 31.12.19, CUEF has delivered outperformance equivalent to approximately £29 million per year on a forward-looking basis in its equities portfolio alone.⁸⁸

CUEF cannot fully divest from fossil fuels without materially changing its current investment model. The combination of value-add through asset allocation and manager selection has added 1.2% outperformance per year vs a passive index, equivalent to £309 million since the inception of the current model of management in 2008. Applying the historic 1.2% annual outperformance to the CUEF's entire value as at 31 December 2019 would imply a reduction of approximately £40 million per year of investment returns.⁸⁹ As net asset value of the Fund rises, the absolute outperformance would continue to rise and to compound commensurately. This would materially impact the future value of CUEF and in turn the future distribution to the University, colleges and trusts.

The Investment Office would also be unable to make use of key portfolio management tools, for example hedging the portfolio using major indices such as the S&P500. This may add additional costs and volatility in returns.

B) *Option II: Fully delegated model, full divestment*

A second option is winding down the investments with CUEF's current asset managers, reducing the Investment Office to an operational team only, and reinvesting the capital via a fully delegated model. For this exercise it is assumed that CUEF's capital is reinvested in a simple passively managed strategy tracking a fossil free index. Studies of the performance impact of excluding fossil fuels from indices show limited impact on performance (see Section 6). The cost of switching to this model is therefore calculated as future performance foregone through giving up potential alpha generated by the current fund of funds model.

As noted already, the fund of funds model has proven successful over time and has delivered investment performance of 1.2% in excess of a passive benchmark on an annualised basis. In addition to the aforementioned assumed foregone returns, a fully delegated model would also result

⁸⁷ Even many specialist sustainability-focussed asset managers – who do not invest in fossil fuel companies and do not plan to do so – lack an explicit fossil fuel exclusion.

⁸⁸ Excess return calculated using outperformance relative to the benchmarks of each equity manager multiplied by the CUEF investment in public equity as at 31.12.19. Note that this performance is based on the public equity manager selection of the previous team.

⁸⁹ Excess return and future potential return calculated using the 31.12.19 CUEF NAV of £3.5 billion. Note that this performance is based on the asset allocation and manager selection of the previous team.

in additional management fees⁹⁰ of c.10-15 basis points (0.10-0.15%, or £3.5-£5.3 million) per year, further eroding the University's net investment returns.

C) *Option III: In-house asset management, full divestment*

A third option the University could choose to take is to manage assets, or a proportion of assets, internally. This option has not been explored in detail as it is believed to be prohibitive from an operational cost perspective and the difficulty of building a team with the appropriate skillset. Evidence suggests that the complexity inherent in this approach means it is uncommon for an asset owner of CUEF's size (Franz and Kranner 2019).⁹¹

8. CONCLUSION

Within the University of Cambridge there is broad agreement about the urgent need to reduce carbon emissions. However, whether full divestment of University funds from fossil fuel assets is the best way to make that happen has been the subject of intense debate. Based on a review of the academic literature, interviews and focus groups with relevant stakeholders inside and outside the University, records of University and college discussions, and some further primary data collection, this report has explored the advantages and disadvantages of a policy of fossil fuel divestment across its moral, social, political, reputational, and financial dimensions, including a summary of costed divestment scenarios for the University.

Following the introduction of the report, Section 2 discussed the extent to which large fossil fuel companies are changing strategy and practices, whether in response to the changing business landscape or the existing divestment and shareholder engagement campaigns. It noted that while there have been welcome statements of intent and some initial steps moving towards an energy transition by some companies, within the industry as a whole there has been limited action on the short-term targets or changes in current investments that would provide evidence of a commitment to an energy transition consistent with a "well below 2°C" pathway. The section identified further short-term steps that fossil fuel companies could take to demonstrate commitment, including in the realms of lobbying, executive compensation, and capital expenditure, inter alia. This section also pointed out that economics now favours renewable energy in most countries, meaning there is a sizable investment opportunity in renewables for fossil fuel companies, and that one (albeit mid-

⁹⁰ All CUEF performance is already reported net of fees, including the cost of running the Investment Office.

⁹¹ Examples of asset owners who have switched from an in-house to fund of fund strategy include the Harvard University Endowment and the National Grid UK Pension Scheme, both multi-billion pound asset owners.

sized) fossil fuel company has successfully transitioned to a renewable energy company, helping to transform the UK offshore wind sector while generating high returns for its investors. On the investment side, evidence suggests that most new financing for fossil fuels comes from bank lending and bond issues, not equity, while at least one divestment-specific study – and other supporting evidence – suggests that divestment may directly affect fossil fuel companies’ cost of capital from these main sources (see pages 11-12; see also Appendix IV).

Sections 3 to 6 explored the substance of the divestment debate. Divestment campaigners have cited three main reasons for divestment. The first is that divestment is a moral imperative, the second is that divestment promotes necessary societal and political change, and the third is that investments in fossil fuel companies make poor financial sense. Failing to divest would, as a consequence, negatively affect the University’s reputation.

Section 3 of the report addressed the moral question. Proponents of divestment argue that any investment in fossil fuel companies is inconsistent with the beliefs we hold as a university community. Opponents of divestment, while sharing substantially the same overall objectives of achieving rapid decarbonisation, argue that divestment is a hollow gesture that is unlikely to be effective and that the moral position would be to do something that is more likely to achieve substantial change.

Section 4 considered different theories of change regarding the social and political advantages and disadvantages of divestment. Proponents of divestment consider that the stigmatisation of fossil fuel companies that divestment brings counteracts the political and financial power of these companies and helps to achieve a change in public discourse that in turn creates the conditions for political change. They argue that divestment has reinvigorated the environmental movement, especially among young people; brought “stranded assets” and “carbon budget” into the public lexicon, contributing to a decrease in investors’ confidence in fossil fuel companies’ long-term prospects; and drawn needed attention to frontline communities and the supply side of the fossil fuel equation. They further claim that shareholder engagement with fossil fuel companies has not, and will not, lead to change on the scale and in the timeframe necessary. Opponents of divestment are uncomfortable with the stigmatisation of individuals and companies and the politicisation of endowments, which they argue would create a precedent for the University to take overt political actions on a wide array of topics in the future. They consider that other forms of environmental campaigning and concrete decarbonisation action, combined with shareholder engagement with fossil fuel companies, could harness the capabilities required to achieve the energy transition faster.

They also object to selling holdings to investors who do not share the University's concerns about climate change.

Section 5 considered the reputational arguments for the University, concluding that more evidence is needed but that there would likely be reputational gains from taking bold action on climate change, within constituencies spanning prospective employees, donors, alumni, and students. Divestment advocates point to the reputational benefits of avoiding unwelcome media attention over divestment and related issues, while divestment critics point to concerns about damage to relationships with Cambridge's present and future research partners and donors.

The financial arguments for and against divestment were considered in Section 6. There is much literature on the impact of sector exclusion on index fund investment returns and the risks to fossil fuel investments from the energy transition. Overall, there is little evidence to suggest that a global portfolio invested to exclude fossil fuels would underperform one that included them and such a portfolio might avoid the volatility that is likely to affect the fossil fuel sector in the coming years. On the face of it, therefore, the financial implications of divestment might appear to be slight for the University. However, the University operates a fund of funds model, investing through dozens of carefully selected third-party managers rather than investing directly in companies or through generally available funds that are geared to the wider public. As at 31st December 2019, the Cambridge University Endowment Fund (CUEF), which significantly supports the University's research and teaching activities, had only 2.8% of the fund invested in fossil fuel companies. In Section 7, analysing the last decade of out-performance of investment indices, the Investment Office explained that a policy of full divestment would necessitate a change in investment model, which would eliminate its ability to achieve above-market returns. Applying the historic 1.2% annual outperformance to the CUEF's entire value as at 31 December 2019 would imply a reduction of c£40 million per year of investment returns. This could in turn breed scepticism on the part of major donors regarding the safeguarding of the value of their benefactions. For the University of Cambridge, then, the primary cost of full divestment would be in the abandonment of its investment model.

REFERENCES

- Abrash Walton, Abigail. 2018. "Positive Deviance and Behavior Change: A Research Methods Approach for Understanding Fossil Fuel Divestment." *Energy Research & Social Science* 45: 235–49. <https://doi.org/https://doi.org/10.1016/j.erss.2018.07.003>.
- Adams, Christopher, and William Wallis. 2015. "Royal Dutch Shell Agrees £55m Nigeria Oil Spill Settlement." *Financial Times*, January 7, 2015. <https://www.ft.com/content/06463b86-95c1-11e4-a390-00144feabdc0>.
- Admati, Anat R., and Paul Pfleiderer. 2009. "The 'Wall Street Walk' and Shareholder Activism: Exit as a Form of Voice." *Review of Financial Studies* 22 (7): 2645–85. <https://doi.org/10.1093/rfs/hhp037>.
- Al-Tuwaijri, Sulaiman A, Theodore E Christensen, and K E Hughes. 2004. "The Relations among Environmental Disclosure, Environmental Performance, and Economic Performance: A Simultaneous Equations Approach." *Accounting, Organizations and Society* 29 (5): 447–71. [https://doi.org/https://doi.org/10.1016/S0361-3682\(03\)00032-1](https://doi.org/https://doi.org/10.1016/S0361-3682(03)00032-1).
- Alderton, Matt. 2019. "Study: Recession, Turnover Top CEOs' List of 2019 Concerns," February 12, 2019. <https://www.northstarmetingsgroup.com/Incentive/Strategy/Top-CEOs-List-of-2019-Concerns>.
- Ali Fekrat, M., Carla Inclan, and David Petroni. 1996. "Corporate Environmental Disclosures: Competitive Disclosure Hypothesis Using 1991 Annual Report Data." *The International Journal of Accounting* 31 (2): 175–95. [https://doi.org/10.1016/S0020-7063\(96\)90003-5](https://doi.org/10.1016/S0020-7063(96)90003-5).
- Allen, Myles R., David J. Frame, Chris Huntingford, Chris D. Jones, Jason A. Lowe, Malte Meinshausen, and Nicolai Meinshausen. 2009. "Warming Caused by Cumulative Carbon Emissions towards the Trillionth Tonne." *Nature* 458 (7242): 1163–66. <https://doi.org/10.1038/nature08019>.
- Allen, R., H Letourneau, and T Hebb. 2012. "Shareholder Engagement in the Extractive Sector." *Journal of Sustainable Finance & Investment* 2 (1): 3–25.
- Allwood, J.M., C.F. Dunant, R.C. Lupton, C.J. Cleaver, A.C.H. Serrenho, J.M.C. Azevedo, P.M. Horton, et al. 2019. "Absolute Zero: Delivering the UK's Climate Change Commitment with Incremental Changes to Today's Technologies." Cambridge, UK. <https://doi.org/10.17863/CAM.46075>.
- Amenta, Edwin, Neal Caren, Elizabeth Chiarello, and Yang Su. 2010. "The Political Consequences of

- Social Movements." *Annual Review of Sociology* 36 (1): 287–307.
<https://doi.org/10.1146/annurev-soc-070308-120029>.
- Andersson, Mats, Patrick Bolton, and Frédéric Samama. 2016. "Hedging Climate Risk." *Financial Analysts Journal* 72 (3): 13–32. <https://doi.org/10.2469/faj.v72.n3.4>.
- Ansar, Atif, Ben Caldecott, and James Tilbury. 2013. "Stranded Assets and the Fossil Fuel Divestment Campaign: What Does Divestment Mean for the Valuation of Fossil Fuel Assets?" *Smith School of Enterprise and the Environment, University of Oxford*.
- Apfel, D.C. 2015. "Exploring Divestment as a Strategy for Change: An Evaluation of the History, Success, and Challenges of Fossil Fuel Divestment." *Social Research* 82 (4): 913–37, 1050.
- Arnold, Patricia, and Theresa Hammond. 1994. "The Role of Accounting in Ideological Conflict: Lessons from the South African Divestment Movement." *Accounting, Organizations and Society* 19 (2): 111–26. [https://doi.org/https://doi.org/10.1016/0361-3682\(94\)90014-0](https://doi.org/https://doi.org/10.1016/0361-3682(94)90014-0).
- Asheim, G B, T Fæhn, K Nyborg, M Greaker, C Hagem, B Harstad, M O Hoel, D Lund, and K E Rosendahl. 2019. "The Case for a Supply-Side Climate Treaty." *Science* 365 (6451): 325 LP – 327. <https://doi.org/10.1126/science.aax5011>.
- Ashworth, Louis. 2015. "CUSU Votes to Back Zero Carbon Campaign." *Varsity*, November 29, 2015. <https://www.verity.co.uk/news/9407>.
- Aslaksen, Iulie, and Terje Synnestvedt. 2003. "Ethical Investment and the Incentives for Corporate Environmental Protection and Social Responsibility." *Corporate Social Responsibility and Environmental Management* 10 (4): 212–23. <https://doi.org/10.1002/csr.47>.
- Atta-Darkua, Vaska. 2019. "Three Essays in Asset Management Ethical and Investment Exclusions." University of Cambridge. <https://www.repository.cam.ac.uk/handle/1810/304752>.
- . 2020. "Corporate Ethical Behaviours and Firm Equity Value and Ownership: Evidence from the GPFG's Ethical Exclusions." SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3388868.
- Atta-Darkua, Vaska, and Elroy Dimson. 2018. "Sector Exclusions." In *Energiaksjer i Statens Pensjonsfond Utland*, edited by NOU, 117–34. Oslo: Norwegian Ministry of Finance.
- Au Duong, Timothee. 2020. "Comment: Is Vice Outdated?" *Responsible Investor*, January 30, 2020. <https://www.responsible-investor.com/articles/comment-is-vice-outdated>.
- Ayling, Julie. 2017. "A Contest for Legitimacy: The Divestment Movement and the Fossil Fuel

- Industry." *Law & Policy* 39 (4): 349–71. <https://doi.org/10.1111/lapo.12087>.
- Ayling, Julie, and Neil Gunningham. 2017. "Non-State Governance and Climate Policy: The Fossil Fuel Divestment Movement." *Climate Policy* 17 (2): 131–49. <https://doi.org/10.1080/14693062.2015.1094729>.
- Backhaus, Kristin B, Brett A Stone, and Karl Heiner. 2002. "Exploring the Relationship Between Corporate Social Performance and Employer Attractiveness." *Business & Society* 41 (3): 292–318. <https://doi.org/10.1177/0007650302041003003>.
- Bagwell, Laurie Simon. 1992. "Dutch Auction Repurchases: An Analysis of Shareholder Heterogeneity." *The Journal of Finance* 47 (1): 71–105. <https://doi.org/10.1111/j.1540-6261.1992.tb03979.x>.
- Baker, M., J. C. Stein, and J. Wurgler. 2003. "When Does the Market Matter? Stock Prices and the Investment of Equity-Dependent Firms." *The Quarterly Journal of Economics* 118 (3): 969–1005. <https://doi.org/10.1162/00335530360698478>.
- Baker, Malcolm, Daniel Bergstresser, George Serafeim, and Jeffrey Wurgler. 2018. "Financing the Response to Climate Change: The Pricing and Ownership of U.S. Green Bonds." Cambridge, MA. <https://doi.org/10.3386/w25194>.
- Banerjee, A. V., and E. Duflo. 2014. "Do Firms Want to Borrow More? Testing Credit Constraints Using a Directed Lending Program." *The Review of Economic Studies* 81 (2): 572–607. <https://doi.org/10.1093/restud/rdt046>.
- Banks, Ollie, Ewan Hawkins, Ahsan Murtaza Memon, Nicolas Castel, and Alejandra Lozano. 2019. "Dismantling the Fossil Fuel University: The Entanglement of the University of Cambridge and the Fossil Fuel Industry." <http://zerocarbonsoc.soc.srce.net/2019/10/28/dismantling-the-fossil-fuel-university-report-release/>.
- Barko, Tamas, Martijn Cremers, and Luc Renneboog. 2018. "Shareholder Engagement on Environmental, Social, and Governance Performance." 509/2017. Finance Working Paper Series.
- Baron, Richard, and David Fischer. 2015. "Divestment and Stranded Assets in the Low-Carbon Transition." 28. [https://www.oecd.org/sd-roundtable/papersandpublications/Divestment and Stranded Assets in the Low-carbon Economy 32nd OECD RTSD.pdf](https://www.oecd.org/sd-roundtable/papersandpublications/Divestment%20and%20Stranded%20Assets%20in%20the%20Low-carbon%20Economy%2032nd%20OECD%20RTSD.pdf).
- Bauer, Rob, and Daniel Hann. 2010. "Corporate Environmental Management and Credit Risk." *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.1660470>.

- Bauer, Rob, Frank Moers, and Michael Viehs. 2015. "Who Withdraws Shareholder Proposals and Does It Matter? An Analysis of Sponsor Identity and Pay Practices." *Corporate Governance: An International Review* 23 (6): 472–88. <https://doi.org/10.1111/corg.12109>.
- Becht, Marco, Julian Franks, Colin Mayer, and Stefano Rossi. 2009. "Returns to Shareholder Activism: Evidence from a Clinical Study of the Hermes UK Focus Fund." *Review of Financial Studies* 22 (8): 3093–3129. <https://doi.org/10.1093/rfs/hhn054>.
- Beck, Thorsten, Asli Demirgüç-Kunt, and Vojislav Maksimovic. 2008. "Financing Patterns around the World: Are Small Firms Different?" *Journal of Financial Economics* 89 (3): 467–87. <https://doi.org/10.1016/J.JFINECO.2007.10.005>.
- Beck, Thorsten, Asli Demirgüç-Kunt, Luc Laeven, and Vojislav Maksimovic. 2006. "The Determinants of Financing Obstacles." *Journal of International Money and Finance* 25 (6): 932–52. <https://doi.org/10.1016/J.JIMONFIN.2006.07.005>.
- Beer, Christopher Todd. 2016. "Rationale of Early Adopters of Fossil Fuel Divestment." *International Journal of Sustainability in Higher Education* 17 (4): 506–19.
- Beltratti, Andrea. 2005. "Capital Market Equilibrium with Externalities, Production and Heterogeneous Agents." *Journal of Banking & Finance* 29 (12): 3061–73. <https://doi.org/10.1016/J.JBANKFIN.2004.11.004>.
- Benedetti, Davide, Enrico Biffis, Fotis Chatzimichalakis, Luciano Lilloy Fedele, and Ian Simm. 2019. "Climate Change Investment Risk: Optimal Portfolio Construction Ahead of the Transition to a Lower-Carbon Economy." *Annals of Operations Research*, November, 1–25. <https://doi.org/10.1007/s10479-019-03458-x>.
- Bergman, Noam. 2018. "Impacts of the Fossil Fuel Divestment Movement: Effects on Finance, Policy and Public Discourse." *Sustainability* 10 (7): 2529. <https://doi.org/10.3390/su10072529>.
- Bewley, Kathryn, and Yue Li. 2000. "Disclosure of Environmental Information by Canadian Manufacturing Companies: A Voluntary Disclosure Perspective." In *Advances in Environmental Accounting & Management*, 1:201–26. Advances in Environmental Accounting & Management. Emerald Group Publishing Limited. [https://doi.org/10.1016/S1479-3598\(00\)01011-6](https://doi.org/10.1016/S1479-3598(00)01011-6).
- Blondeel, Mathieu. 2019. "Taking Away a 'Social Licence': Neo-Gramscian Perspectives on an International Fossil Fuel Divestment Norm." *Global Transitions* 1 (January): 200–209. <https://doi.org/10.1016/j.glt.2019.10.006>.
- Blondeel, Mathieu, Jeff Colgan, and Thijs Van de Graaf. 2019. "What Drives Norm Success? Evidence

- from Anti-Fossil Fuel Campaigns." *Global Environmental Politics* 19 (4): 63–84.
https://doi.org/10.1162/glep_a_00528.
- Bloom, Nicholas, Aprajit Mahajan, David McKenzie, and John Roberts. 2010. "Why Do Firms in Developing Countries Have Low Productivity?" *American Economic Review* 100 (2): 619–23.
<https://doi.org/10.1257/aer.100.2.619>.
- Bottazzi, L., and M. Da Rin. 2002. "Venture Capital in Europe and the Financing of Innovative Companies." *Economic Policy* 17 (34): 229–70. <https://doi.org/10.1111/1468-0327.00088>.
- Braithwaite, John. 1989. *Crime, Shame, and Reintegration*. Cambridge: Cambridge University Press.
- Bratman, Eve, Kate Brunette, Deirdre C. Shelly, and Simon Nicholson. 2016. "Justice Is the Goal: Divestment as Climate Change Resistance." *Journal of Environmental Studies and Sciences* 6 (4): 677–90. <https://doi.org/10.1007/s13412-016-0377-6>.
- Braungardt, Sibylle, Jeroen van den Bergh, and Tessa Dunlop. 2019. "Fossil Fuel Divestment and Climate Change: Reviewing Contested Arguments." *Energy Research & Social Science* 50 (April): 191–200. <https://doi.org/10.1016/J.ERSS.2018.12.004>.
- Brest, Paul, and Kelly Born. 2013. "Unpacking the Impact in Impact Investing." *Stanford Social Innovation Review*, August 14, 2013.
https://ssir.org/articles/entry/unpacking_the_impact_in_impact_investing#.
- Bullard, Nathaniel. 2019. "Electric Vehicle Battery Shrinks and So Does the Total Cost." Bloomberg. 2019. <https://www.bloomberg.com/opinion/articles/2019-04-12/electric-vehicle-battery-shrinks-and-so-does-the-total-cost>.
- Busch, Timo, Rob Bauer, and Marc Orlitzky. 2016. "Sustainable Development and Financial Markets." *Business & Society* 55 (3): 303–29. <https://doi.org/10.1177/0007650315570701>.
- Cambridge Zero Carbon Society. 2018. "Divestment Mythbuster."
- Capelle-Blancard, Gunther, and Nicolas Couderc. 2009. "The Impact of Socially Responsible Investing: Evidence from Stock Index Redefinitions." *The Journal of Investing* 18 (2): 76–86.
<https://doi.org/10.3905/JOI.2009.18.2.076>.
- Carbon Tracker Initiative. 2020. "How to Waste over Half a Trillion Dollars: The Economic Implications of Deflationary Renewable Energy for Coal Power Investments." 2020.
<https://carbontracker.org/reports/how-to-waste-over-half-a-trillion-dollars/>.
- Carbon Tracker Initiative, and Grantham Institute. 2017. "Expect the Unexpected: The Disruptive

- Power of Low-Carbon Technology.” 2017. <https://carbontracker.org/reports/expect-the-unexpected-the-disruptive-power-of-low-carbon-technology/>.
- Chambers, David, Elroy Dimson, and Ellen Quigley. 2020. “To Divest or to Engage? A Case Study of Investor Responses to Climate Activism.” *The Journal of Investing* 29 (2): 10–20.
- Charity Commission. 2017. “Charities and Investment Matters: A Guide for Trustees.” https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/857987/CC14_new.pdf.
- Chatterji, Aaron K., and Michael W. Toffel. 2010. “How Firms Respond to Being Rated.” *Strategic Management Journal* 31 (9): n/a-n/a. <https://doi.org/10.1002/smj.840>.
- Chava, Sudheer. 2014. “Environmental Externalities and Cost of Capital.” *Management Science* 60 (9): 2223–47. <https://doi.org/10.1287/mnsc.2013.1863>.
- Cheon, Andrew, and Johannes Urpelainen. 2018. *Activism and the Fossil Fuel Industry*. New York: Routledge.
- Chung, Huimin, and Till Talaulicar. 2010. “Forms and Effects of Shareholder Activism.” *Corporate Governance: An International Review*. Blackwell Publishing Ltd. <https://doi.org/10.1111/j.1467-8683.2010.00806.x>.
- Clark, Cynthia E, and Elise Perrault Crawford. 2011. “Influencing Climate Change Policy: The Effect of Shareholder Pressure and Firm Environmental Performance.” *Business & Society* 51 (1): 148–75. <https://doi.org/10.1177/0007650311427594>.
- Clark, Gordon L, James Salo, and Tessa Hebb. 2008. “Social and Environmental Shareholder Activism in the Public Spotlight: US Corporate Annual Meetings, Campaign Strategies, and Environmental Performance, 2001–04.” *Environment and Planning A: Economy and Space* 40 (6): 1370–90. <https://doi.org/10.1068/a39198>.
- Clarkson, Peter M, Yue Li, Gordon D Richardson, and Florin P Vasvari. 2008. “Revisiting the Relation between Environmental Performance and Environmental Disclosure: An Empirical Analysis.” *Accounting, Organizations and Society* 33 (4): 303–27. <https://doi.org/https://doi.org/10.1016/j.aos.2007.05.003>.
- Coffin, Mike, and Andrew Grant. 2019. “Balancing the Budget: Why Deflating the Carbon Bubble Requires Oil and Gas Companies to Shrink.” London.
- Cojoianu, Theodor, Francisco Ascui, Gordon L. Clark, Andreas G. F. Hoepner, and Dariusz Wojcik.

2019. "The Economic Geography of Fossil Fuel Divestment, Environmental Policies and Oil and Gas Financing." *SSRN Electronic Journal*, April. <https://doi.org/10.2139/ssrn.3376183>.
- Cook, Jackie. 2012. "Political Action through Environmental Shareholder Resolution Filing: Applicability to Canadian Oil Sands?" *Journal of Sustainable Finance and Investment* 2 (1): 26–43. <https://doi.org/10.1080/20430795.2012.702497>.
- Coplan, Karl S. 2016. "Fossil Fuel Abolition: Legal and Social Issues." *Columbia Journal of Environmental Law* 41.
- Cripps, Elizabeth. 2013. *Climate Change and the Moral Agent: Individual Duties in an Interdependent World*. Oxford: Oxford University Press.
- Cuñat, Vicente, Mireia Gine, and Maria Guadalupe. 2012. "The Vote Is Cast: The Effect of Corporate Governance on Shareholder Value." *The Journal of Finance* 67 (5): 1943–77. <https://doi.org/10.1111/j.1540-6261.2012.01776.x>.
- Curran, Giorel. 2020. "Divestment, Energy Incumbency and the Global Political Economy of Energy Transition: The Case of Adani's Carmichael Mine in Australia." *Climate Policy*. <https://doi.org/10.1080/14693062.2020.1756731>.
- Dathan, Michele, and Sergei A. Davydenko. 2018. "Debt Issuance in the Era of Passive Investment." *SSRN Electronic Journal*, April. <https://doi.org/10.2139/ssrn.3152612>.
- David Diltz, J. 1995. "The Private Cost of Socially Responsible Investing." *Applied Financial Economics* 5 (2): 69–77. <https://doi.org/10.1080/758529174>.
- David, Parthiban, Matt Bloom, and Amy J Hillman. 2007. "Investor Activism, Managerial Responsiveness, and Corporate Social Performance." *Strategic Management Journal* 28 (1): 91–100. <https://doi.org/10.1002/smj.571>.
- David, Parthiban, Michael A. Hitt, Javier Gimeno, and Insead. 2001. "The Influence of Activism by Institutional Investors on R&D." *Academy of Management Journal* 44 (1): 144–57. <https://doi.org/10.2307/3069342>.
- Davies, Shaun William, and Edward Dickersin Van Wesep. 2018. "The Unintended Consequences of Divestment." *Journal of Financial Economics* 128 (3): 558–75. <https://doi.org/10.1016/J.JFINECO.2018.03.007>.
- Dawkins, Cedric E. 2018. "Elevating the Role of Divestment in Socially Responsible Investing." *Journal of Business Ethics* 153 (2): 465–78. <https://doi.org/10.1007/s10551-016-3356-7>.

- Deeks, Laura E. 2017. "Discourse and Duty: University Endowments, Fiduciary Law, and the Cultural Politics of Fossil Fuel Divestment." *Environmental Law* 47 (335): 335–428.
- Denes, Matthew R, Jonathan M Karpoff, and Victoria B McWilliams. 2017. "Thirty Years of Shareholder Activism: A Survey of Empirical Research." *Journal of Corporate Finance* 44: 405–24. <https://doi.org/10.1016/j.jcorpfin.2016.03.005>.
- Derrien, F. 2005. "IPO Pricing in 'Hot' Market Conditions: Who Leaves Money on the Table?" *The Journal of Finance* 60 (1): 487–521. <https://doi.org/10.1111/j.1540-6261.2005.00736.x>.
- Diaz-Rainey, Ivan, Becky Robertson, and Charlie Wilson. 2017. "Stranded Research? Leading Finance Journals Are Silent on Climate Change." *Climatic Change* 143 (1–2): 243–60. <https://doi.org/10.1007/s10584-017-1985-1>.
- Diller, Christian, and Christoph Kaserer. 2009. "What Drives Private Equity Returns?- Fund Inflows, Skilled GPs, and/or Risk?" *European Financial Management* 15 (3): 643–75. <https://doi.org/10.1111/j.1468-036X.2007.00438.x>.
- Dimson, Elroy, Oguzhan Karakas, and Xi Li. 2015. "Active Ownership." *Review of Financial Studies* 28 (12): 3225–68.
- . 2019. "Coordinated Engagements." <https://ssrn.com/id=3209072>.
- Dimson, Elroy, Paul Marsh, and Mike Staunton. 2002. *Triumph of the Optimists: 101 Years of Global Investment Returns*. Princeton: Princeton University Press.
- Dordi, Truzaar. 2016. "An Event Study Analysis of the Fossil Fuel Divestment Movement." University of Waterloo.
- Dordi, Truzaar, and Olaf Weber. 2019. "The Impact of Divestment Announcements on the Share Price of Fossil Fuel Stocks." *Sustainability* 11 (11): 3122. <https://doi.org/10.3390/su11113122>.
- Dummett, Kel. 2006. "Drivers for Corporate Environmental Responsibility (CER)." *Environment, Development and Sustainability* 8 (3): 375–89. <https://doi.org/10.1007/s10668-005-7900-3>.
- Dyck, Alexander, Karl V. Lins, Lukas Roth, and Hannes F. Wagner. 2019. "Do Institutional Investors Drive Corporate Social Responsibility? International Evidence." *Journal of Financial Economics* 131 (3): 693–714. <https://doi.org/10.1016/j.jfineco.2018.08.013>.
- Eesley, Charles, and Michael J. Lenox. 2006. "Firm Responses to Secondary Stakeholder Action." *Strategic Management Journal* 27 (8): 765–81. <https://doi.org/10.1002/smj.536>.

- Emel, Jody. 2002. "An Inquiry into the Green Disciplining of Capital." *Environment and Planning A: Economy and Space* 34 (5): 827–43. <https://doi.org/10.1068/a3428>.
- Erickson, Peter, Sivan Kartha, Michael Lazarus, and Kevin Tempest. 2015. "Assessing Carbon Lock-In." *Environmental Research Letters* 10 (8): 084023. <https://doi.org/10.1088/1748-9326/10/8/084023>.
- Erickson, Peter, Michael Lazarus, and Georgia Piggot. 2018. "Limiting Fossil Fuel Production as the next Big Step in Climate Policy." *Nature Climate Change* 8 (12): 1037–43. <https://doi.org/10.1038/s41558-018-0337-0>.
- Erlandsson, Ulf. 2017. "Credit Alpha and CO2 Reduction: A Portfolio Manager Perspective." *SSRN Electronic Journal*, April. <https://doi.org/10.2139/ssrn.2987772>.
- Ertimur, Yonca, Fabrizio Ferri, and Volkan Muslu. 2011. "Shareholder Activism and CEO Pay." *The Review of Financial Studies* 24 (2): 535–92. <https://doi.org/10.1093/rfs/hhq113>.
- Ertimur, Yonca, Fabrizio Ferri, and David Oesch. 2015. "Does the Director Election System Matter? Evidence from Majority Voting." *Review of Accounting Studies* 20 (1): 1–41. <https://doi.org/10.1007/s11142-014-9284-9>.
- Ertimur, Yonca, Fabrizio Ferri, and Stephen R Stubben. 2010. "Board of Directors' Responsiveness to Shareholders: Evidence from Shareholder Proposals." *Journal of Corporate Finance* 16 (1): 53–72. <https://doi.org/https://doi.org/10.1016/j.jcorpfin.2009.07.005>.
- Ewers, B., J.F. Donges, J. Heitzig, and S. Peterson. 2019. "Divestment May Burst the Carbon Bubble If Investors' Beliefs Tip to Anticipating Strong Future Climate Policy." Kiel Institute for the World Economy -- Working Paper. 2019. <https://www.ifw-kiel.de/publications/working-papers/divestment-may-burst-the-carbon-bubble-if-investors-beliefs-tip-to-anticipating-strong-future-climate-policy-12359/>.
- EY. 2017. "How Do We Regenerate This Generation's View of Oil and Gas? An EY Poll of US Consumers and Oil and Gas Executives Finds Workforce Challenges Are Ahead for the Industry."
- Fang, Mingyu, Ken Seng Tan, and Tony S. Wirjanto. 2019. "Sustainable Portfolio Management under Climate Change." *Journal of Sustainable Finance & Investment* 9 (1): 45–67. <https://doi.org/10.1080/20430795.2018.1522583>.
- Ferraro, Fabrizio, and Daniel Beunza. 2019. "Creating Common Ground: A Communicative Action Model of Dialogue in Shareholder Engagement." *Organization Science* 29 (6): 1187–1207.

<https://doi.org/10.1287/orsc.2018.1226>.

Fitch Ratings. 2019. "Special Report: Credit at a Glance - Asia Corporates." 2019.

<https://www.fitchratings.com/research/corporate-finance/credit-at-glance-asia-corporates-may-2019-07-05-2019>.

Flammer, Caroline. 2015. "Does Corporate Social Responsibility Lead to Superior Financial Performance? A Regression Discontinuity Approach." *Management Science* 61 (11): 2549–68.
<https://doi.org/10.1287/mnsc.2014.2038>.

Franz, Richard, and Stephan Kranner. 2019. "University Endowments: A Primer."
www.cfainstitute.org.

Freedman, Martin, and Charles Wasley. 1990. "The Association between Environmental Performance and Environmental Disclosure in Annual Reports and 10Ks." *Advances in Public Interest Accounting* 3: 183–93.

Friede, Gunnar, Timo Busch, and Alexander Bassen. 2015. "ESG and Financial Performance: Aggregated Evidence from More than 2000 Empirical Studies." *Journal of Sustainable Finance & Investment* 5 (4): 210–33. <https://doi.org/10.1080/20430795.2015.1118917>.

Friedlingstein, Pierre, Matthew W. Jones, Michael O’Sullivan, Robbie M. Andrew, Judith Hauck, Glen P. Peters, Wouter Peters, et al. 2019. "Global Carbon Budget 2019." *Earth System Science Data* 11 (4): 1783–1838. <https://doi.org/10.5194/essd-11-1783-2019>.

Galpin, Chris, David Matthews, Polly Thompson, Allie Weaving, Tim Lornie, Adam Williams, Rory Braggins, et al. 2016. "Fossil Fuel Divestment at the University of Cambridge."
<https://zerocarbonsoc.soc.srccf.net/inform/fossil-fuel-divestment-at-the-university-of-cambridge-official-report/>.

Ge, Wenxia, and Mingzhi Liu. 2015. "Corporate Social Responsibility and the Cost of Corporate Bonds." *Journal of Accounting and Public Policy* 34 (6): 597–624.
<https://doi.org/10.1016/J.JACCPUBPOL.2015.05.008>.

Gifford, E James M. 2010. "Effective Shareholder Engagement: The Factors That Contribute to Shareholder Salience." *Journal of Business Ethics* 92 (1): 79–97.
<https://doi.org/10.1007/s10551-010-0635-6>.

Gillan, Stuart, and Laura Starks. 2007. "The Evolution of Shareholder Activism in the United States." *Journal of Applied Corporate Finance* 19 (1): 55–74.

- Glac, Katherina. 2014. "The Influence of Shareholders on Corporate Social Responsibility." *Economics, Management and Financial Markets* 9 (3): 34–72.
<https://ir.stthomas.edu/ocbeblpub/66>.
- Global Impact Investing Network. n.d. "A Guide for Impact Investment Fund Managers: Developing a Private Equity Fund Foundation and Structure." <https://thegiin.org/developing-a-private-equity-fund-foundation-and-structure/>.
- Glomsrød, Solveig, and Taoyuan Wei. 2018. "Business as Unusual: The Implications of Fossil Divestment and Green Bonds for Financial Flows, Economic Growth and Energy Market." *Energy for Sustainable Development* 44 (June): 1–10.
<https://doi.org/10.1016/j.esd.2018.02.005>.
- Godoy, Eric S. 2017a. "Going Fossil Free: A Lesson in Climate Activism and Collective Responsibility." In *Climate Change Research at Universities: Addressing the Mitigation and Adaptation Challenges*, 55–67. Springer International Publishing. https://doi.org/10.1007/978-3-319-58214-6_4.
- . 2017b. "Sharing Responsibility for Divesting from Fossil Fuels." *Environmental Values* 26 (6): 693–710. <https://doi.org/10.3197/096327117X15046905490344>.
- Gompers, Paul, and Josh Lerner. 2000. "Money Chasing Deals? The Impact of Fund Inflows on Private Equity Valuations." *Journal of Financial Economics* 55 (2): 281–325.
[https://doi.org/10.1016/S0304-405X\(99\)00052-5](https://doi.org/10.1016/S0304-405X(99)00052-5).
- Goranova, Maria, and Lori Versteegen Ryan. 2014. "Shareholder Activism: A Multidisciplinary Review." *Journal of Management* 40 (5): 1230–68.
<https://doi.org/10.1177/0149206313515519>.
- Gosiger, Mary C. 1986. "Strategies for Divestment from United States Companies and Financial Institutions Doing Business with or in South Africa." *Human Rights Quarterly* 8 (3): 517.
<https://doi.org/10.2307/762275>.
- Goss, Allen, and Gordon S. Roberts. 2011. "The Impact of Corporate Social Responsibility on the Cost of Bank Loans." *Journal of Banking & Finance* 35 (7): 1794–1810.
<https://doi.org/10.1016/J.JBANKFIN.2010.12.002>.
- Grady-Benson, Jessica, and Brinda Sarathy. 2016. "Fossil Fuel Divestment in US Higher Education: Student-Led Organising for Climate Justice." *Local Environment* 21 (6): 661–81.
<https://doi.org/10.1080/13549839.2015.1009825>.

- Grant, Andrew. 2019. "Paying with Fire: How Oil and Gas Executives Are Rewarded for Chasing Growth and Why Shareholders Could Get Burned." London.
- Green, Fergus. 2018. "Anti-Fossil Fuel Norms." *Climatic Change* 150 (1–2): 103–16. <https://doi.org/10.1007/s10584-017-2134-6>.
- Green, Fergus, and Richard Denniss. 2018. "Cutting with Both Arms of the Scissors: The Economic and Political Case for Restrictive Supply-Side Climate Policies." *Climatic Change* 150 (1–2): 73–87. <https://doi.org/10.1007/s10584-018-2162-x>.
- Grewal, Jody, George Serafeim, and Aaron Yoon. 2016. "Shareholder Activism on Sustainability Issues." *Harvard Business School Working Paper*. Vol. 17–003.
- Griffin, Paul A., Amy Myers Jaffe, David H. Lont, and Rosa Dominguez-Faus. 2015. "Science and the Stock Market: Investors' Recognition of Unburnable Carbon." *Energy Economics* 52 (Part A): 1–12. <http://www.ssrn.com/abstract=2362154>.
- Gunningham, Neil. 2017a. "Building Norms from the Grassroots Up: Divestment, Expressive Politics, and Climate Change." *Law & Policy* 39 (4): 372–92. <https://doi.org/10.1111/lapo.12083>.
- . 2017b. "Review Essay: Divestment, Nonstate Governance, and Climate Change." *Law & Policy* 39 (4): 309–24. <https://doi.org/10.1111/lapo.12085>.
- Hachenberg, Britta, and Dirk Schiereck. 2018. "Are Green Bonds Priced Differently from Conventional Bonds?" *Journal of Asset Management* 19 (6): 371–83. <https://doi.org/10.1057/s41260-018-0088-5>.
- Hadani, Michael, Jonathan P Doh, and Marguerite Schneider. 2019. "Social Movements and Corporate Political Activity: Managerial Responses to Socially Oriented Shareholder Activism." *Journal of Business Research* 95: 156–70. <https://doi.org/https://doi.org/10.1016/j.jbusres.2018.10.031>.
- Hagan, Shelley. 2018. "Global CEOs' Recession Concerns Fade as Talent Shortage Bites." *Bloomberg*, January 18, 2018. <https://www.bloomberg.com/news/articles/2018-01-18/global-ceos-recession-concerns-fade-as-talent-shortage-bites>.
- Haigh, Matthew, and James Hazelton. 2004. "Financial Markets: A Tool for Social Responsibility?" *Journal of Business Ethics* 52 (1): 59–71. <https://doi.org/10.1023/B:BUSI.0000033107.22587.0b>.
- Halcoussis, Dennis, and Anton D. Lowenberg. 2019. "The Effects of the Fossil Fuel Divestment Campaign on Stock Returns." *The North American Journal of Economics and Finance* 47

- (January): 669–74. <https://doi.org/10.1016/J.NAJEF.2018.07.009>.
- Hansen, Tyler, and Robert Pollin. 2020. "Economics and Climate Justice Activism: Assessing the Financial Impact of the Fossil Fuel Divestment Movement." *Review of Social Economy*, July, 1–38. <https://doi.org/10.1080/00346764.2020.1785539>.
- Harris, Laurence. 1986. "South Africa's External Debt Crisis." *Third World Quarterly* 8 (3): 793–817. www.jstor.org/stable/3991924.
- Hart, Mark, and Helena Lenihan. 2006. "Estimating Additionality and Leverage: The Interplay between Public and Private Sector Equity Finance in Ireland (2000 – 2002)." *Venture Capital* 8 (4): 331–51. <https://doi.org/10.1080/13691060600836192>.
- Hassel, Lars G., and Natalia Semenova. 2019. "Engagement Dialogue as a Nordic Sustainable and Responsible Investment (SRI) Strategy." In *Challenges in Managing Sustainable Business: Reporting, Taxation, Ethics and Governance*, 179–204. Palgrave Macmillan. https://doi.org/10.1007/978-3-319-93266-8_8.
- Hauck, David, Meg Voorhes, and Glenn Goldberg. 1983. *Two Decades of Debate: The Controversy over U.S. Companies in South Africa*. Edited by Carolyn Mathiasen. Washington, D.C.: Investor Responsibility Research Center, Inc. <https://doi.org/10.5555/AL.SFF.DOCUMENT.bmdv2>.
- Healy, Noel, and John Barry. 2017. "Politicizing Energy Justice and Energy System Transitions: Fossil Fuel Divestment and a 'Just Transition.'" *Energy Policy* 108 (September): 451–59. <https://doi.org/10.1016/J.ENPOL.2017.06.014>.
- Healy, Noel, and Jessica Debski. 2017. "Fossil Fuel Divestment: Implications for the Future of Sustainability Discourse and Action within Higher Education." *Local Environment* 22 (6): 699–724. <https://doi.org/10.1080/13549839.2016.1256382>.
- Heinkel, Robert, Alan Kraus, and Josef Zechner. 2001. "The Effect of Green Investment on Corporate Behavior." *The Journal of Financial and Quantitative Analysis* 36 (4): 431. <https://doi.org/10.2307/2676219>.
- Henriques, Irene, and Perry Sadorsky. 2018. "Investor Implications of Divesting from Fossil Fuels." *Global Finance Journal* 38 (November): 30–44. <https://doi.org/10.1016/J.GFJ.2017.10.004>.
- Hestres, Luis E., and Jill E. Hopke. 2020. "Fossil Fuel Divestment: Theories of Change, Goals, and Strategies of a Growing Climate Movement." *Environmental Politics* 29 (3): 371–89. <https://doi.org/10.1080/09644016.2019.1632672>.

- Hill, John. 2020a. "ESG, SRI, and Impact Investing." In *Environmental, Social, and Governance (ESG) Investing*, 13–27. London: Academic Press. <https://doi.org/10.1016/B978-0-12-818692-3.00002-5>.
- . 2020b. "Financial Markets: Bonds." In *Environmental, Social, and Governance (ESG) Investing*, 117–43. London: Academic Press. <https://doi.org/10.1016/B978-0-12-818692-3.00007-4>.
- . 2020c. "Shareholder Engagement." In *Environmental, Social, and Governance (ESG) Investing*, 145–65. London: Academic Press. <https://doi.org/10.1016/B978-0-12-818692-3.00008-6>.
- Hoepner, Andreas G. F., Ioannis Oikonomou, Zacharias Sautner, Laura T. Starks, and Xiaoyan Zhou. 2016. "ESG Shareholder Engagement and Downside Risk." 671/2020. *European Corporate Governance Institute*. Finance Working Paper. <https://doi.org/10.2139/ssrn.2874252>.
- Hoepner, Andreas, Ioannis Oikonomou, Bert Scholtens, and Michael Schröder. 2016. "The Effects of Corporate and Country Sustainability Characteristics on The Cost of Debt: An International Investigation." *Journal of Business Finance & Accounting* 43 (1–2): 158–90. <https://doi.org/10.1111/jbfa.12183>.
- Hoffman, Andrew J. 1996. "A Strategic Response to Investor Activism." *Sloan Management Review* 37 (2): 51–64.
- Holder, Jane. 2015. "Fossil Free." *Environmental Law Review* 17 (4): 233–36. <https://doi.org/10.1177/1461452915609823>.
- Hong, Harrison, and Marcin Kacperczyk. 2009. "The Price of Sin: The Effects of Social Norms on Markets." *Journal of Financial Economics* 93 (1): 15–36. <https://doi.org/10.1016/j.jfineco.2008.09.001>.
- Hopke, Jill E., and Luis E. Hestres. 2017. "Communicating about Fossil Fuel Divestment." In *Oxford Research Encyclopedia of Climate Science*, June 28.
- Hrynkow, Christopher. 2015. "Putting Your Capital Where Your Mouth Is: Cultures of Peace, Fossil Fuel Divestment, and Post-Secondary Educational Institutions' Ethical Investing Policies on JSTOR." *Peace Research* 47 (1/2): 143–78.
- Hughes, Susan B, Allison Anderson, and Sarah Golden. 2001. "Corporate Environmental Disclosures: Are They Useful in Determining Environmental Performance?" *Journal of Accounting and Public Policy* 20 (3): 217–40. [https://doi.org/https://doi.org/10.1016/S0278-4254\(01\)00031-X](https://doi.org/https://doi.org/10.1016/S0278-4254(01)00031-X).

- Hunt, Chelsie, and Olaf Weber. 2019. "Fossil Fuel Divestment Strategies: Financial and Carbon-Related Consequences." *Organization & Environment* 32 (1): 41–61.
<https://doi.org/10.1177/1086026618773985>.
- Hunt, Chelsie, Olaf Weber, and Truzaar Dordi. 2017. "A Comparative Analysis of the Anti-Apartheid and Fossil Fuel Divestment Campaigns." *Journal of Sustainable Finance & Investment* 7 (1): 64–81. <https://doi.org/10.1080/20430795.2016.1202641>.
- IEA. 2020. "The Oil and Gas Industry in Energy Transitions." IEA. Paris.
<https://www.iea.org/reports/the-oil-and-gas-industry-in-energy-transitions>.
- InfluenceMap. 2019. "Big Oil's Real Agenda on Climate Change."
<https://influencemap.org/report/How-Big-Oil-Continues-to-Oppose-the-Paris-Agreement-38212275958aa21196dae3b76220bddc>.
- Ingram, Robert W, and Katherine Beal Frazier. 1980. "Environmental Performance and Corporate Disclosure." *Journal of Accounting Research* 18 (2): 614–22. <https://doi.org/10.2307/2490597>.
- International Finance Corporation. 2019. "Creating Impact: The Promise of Impact Investing."
www.ifc.org.
- John, Nerys. 2000. "The Campaign against British Bank Involvement in Apartheid South Africa." *African Affairs* 99 (396): 415–33. www.jstor.org/stable/723949.
- Jones, Michael D., and Mark K. McBeth. 2010. "A Narrative Policy Framework: Clear Enough to Be Wrong?" *Policy Studies Journal* 38 (2): 329–53. <https://doi.org/10.1111/j.1541-0072.2010.00364.x>.
- Jones, Natalie, and Mark Burrell. 2019. "Report on AGM Attendance, June 2019."
- Jones, Robert C., and Russ Wermers. 2011. "Active Management in Mostly Efficient Markets." *Financial Analysts Journal* 67 (6): 29–45. <https://doi.org/10.2469/faj.v67.n6.5>.
- Jong, Marielle de, and Anne Nguyen. 2016. "Weathered for Climate Risk: A Bond Investment Proposition." *Financial Analysts Journal* 72 (3): 34–39. <https://doi.org/10.2469/faj.v72.n3.2>.
- Karpf, Andreas, and Antoine Mandel. 2018. "The Changing Value of the 'Green' Label on the US Municipal Bond Market." *Nature Climate Change* 8 (2): 161–65.
<https://doi.org/10.1038/s41558-017-0062-0>.
- Keohane, R. O., P.M. Haas, and M.A. Levy. 1993. "The Effectiveness of International Environmental Institutions." In *Institutions for the Earth: Sources of Effective International Environmental*

- Protection*, edited by P.M. Haas, M.A. Keohane, and M.A. Levy, 3–24. Cambridge, MA: Massachusetts Institute of Technology.
- King, Brayden G. 2008. “A Political Mediation Model of Corporate Response to Social Movement Activism.” *Administrative Science Quarterly* 53 (3): 395–421.
<https://doi.org/10.2189/asqu.53.3.395>.
- Kiyar, Dagmar, and Bettina Wittneben. 2015. “Carbon as Investment Risk—The Influence of Fossil Fuel Divestment on Decision Making at Germany’s Main Power Providers.” *Energies* 8 (9): 9620–39. <https://doi.org/10.3390/en8099620>.
- Knight, Richard. 1990. “Sanctions, Disinvestment, and U.S. Corporations in South Africa.” In *Sanctioning Apartheid*, 1–433. Africa World Press.
- Kölbel, Julian F, Florian Heeb, Falko Paetzold, and Timo Busch. 2020. “Can Sustainable Investing Save the World? Reviewing the Mechanisms of Investor Impact.” *Organization & Environment* June.
<https://doi.org/https://doi.org/10.1177/1086026620919202>.
- Krane, Jim. 2017. “Climate Change and Fossil Fuel: An Examination of Risks for the Energy Industry and Producer States.” *MRS Energy & Sustainability* 4. <https://doi.org/10.1557/mre.2017.3>.
- Lazarus, Michael, Peter Erickson, and Kevin Tempest. 2015. “Carbon Lock-in from Fossil Fuel Supply Infrastructure.” SEI Discussion Brief. Stockholm. <https://www.sei.org/publications/carbon-lock-in-from-fossil-fuel-supply-infrastructure/>.
- Leal Filho, Walter, Ali Beynaghi, Abul Quasem Al-Amin, Charbel Jose Chiappetta Jabbour, Miguel Esteban, and Masoud Mozafari. 2018. “Low-Carbon Transition through a Duty to Divest: Back to the Future, Ahead to the Past.” *Renewable and Sustainable Energy Reviews* 94 (October): 183–86. <https://doi.org/10.1016/J.RSER.2018.05.059>.
- Lee, Min-Dong Paul, and Michael Lounsbury. 2011. “Domesticating Radical Rant and Rage: An Exploration of the Consequences of Environmental Shareholder Resolutions on Corporate Environmental Performance.” *Business & Society* 50 (1): 155–88.
<https://doi.org/10.1177/0007650310394640>.
- Lenferna, Alex. 2018. “Divest-Invest: A Moral Case for Fossil Fuel Divestment.” In *Climate Justice: Integrating Economics and Philosophy*, edited by Ravi Kanbur and Henry Shue. Oxford: Oxford University Press.
- Levit, Doron, and Nadya Malenko. 2011. “Nonbinding Voting for Shareholder Proposals.” *The Journal of Finance* 66 (5): 1579–1614. <https://doi.org/10.1111/j.1540-6261.2011.01682.x>.

- Levy, Philip I. 1999. "Sanctions on South Africa: What Did They Do?" *The American Economic Review* 89 (2): 415–20. <http://www.jstor.org/stable/117146>.
- Linnenluecke, Martina K, Cristyn Meath, Saphira Rekker, Baljit K Sidhu, and Tom Smith. 2015. "Divestment from Fossil Fuel Companies: Confluence between Policy and Strategic Viewpoints." *Australian Journal of Management* 40 (3): 478–87. <https://doi.org/10.1177/0312896215569794>.
- Logsdon, Jeanne M., and Harry J. Van Buren. 2009. "Beyond the Proxy Vote: Dialogues Between Shareholder Activists and Corporations." *Journal of Business Ethics* 87 (S1): 353–65. <https://doi.org/10.1007/s10551-008-9807-z>.
- Lornie, Tim, Emma Bryan, Fieke van der Spek, Rory Goldring, Khem Rogaly, Emma Hei, Emma Bryan, et al. 2018. "Decarbonising Cambridge: A Pathway to Divestment and Positive Reinvestment." <https://zerocarbonsoc.soc.srccf.net/inform/decarbonising-cambridge-a-pathway-to-divestment-and-positive-reinvestment/>.
- Ma, Vincent C, and John S Liu. 2016. "Exploring the Research Fronts and Main Paths of Literature: A Case Study of Shareholder Activism Research." *Scientometrics* 109 (1): 33–52. <https://doi.org/10.1007/s11192-016-2035-x>.
- Mackenzie, Craig, William Rees, and Tatiana Rodionova. 2013. "Do Responsible Investment Indices Improve Corporate Social Responsibility? FTSE4Good's Impact on Environmental Management." *Corporate Governance: An International Review* 21 (5): 495–512. <https://doi.org/10.1111/corg.12039>.
- Maina, Naomi Mumbi, Jaylene Murray, and Marcia McKenzie. 2020. "Climate Change and the Fossil Fuel Divestment Movement in Canadian Higher Education: The Mobilities of Actions, Actors, and Tactics." *Journal of Cleaner Production* 253 (April): 119874. <https://doi.org/10.1016/j.jclepro.2019.119874>.
- Majoch, Arleta A.A., E. James M. Gifford, and Andreas G. F. Hoepner. 2012. "Active Ownership and ESG Performance." In *Contemporary Issues in Sustainability Accounting, Assurance and Reporting*, edited by Stewart Jones and Janek Ratnatunga, 115–38. Bingley: Emerald Publishing Limited.
- Mangaliso, Mzamo P. 1997. "South Africa: Corporate Social Responsibility and the Sullivan Principles." *Journal of Black Studies* 28 (2): 219–38. <https://doi.org/10.1177/002193479702800205>.

- Mangat, Rupinder, Simon Dalby, and Matthew Paterson. 2018. "Divestment Discourse: War, Justice, Morality and Money." *Environmental Politics* 27 (2): 187–208.
<https://doi.org/10.1080/09644016.2017.1413725>.
- Marens, Richard. 2002. "Inventing Corporate Governance: The Mid-Century Emergence of Shareholder Activism." *Academy of Management Proceedings* 2002 (1): D1–6.
<https://doi.org/10.5465/apbpp.2002.7517511>.
- Markowitz, Ezra M., and Azim F. Shariff. 2012. "Climate Change and Moral Judgement." *Nature Climate Change* 2 (4): 243–47. <https://doi.org/10.1038/nclimate1378>.
- Marshall, George. 2015. *Don't Even Think about It: Why Our Brains Are Wired to Ignore Climate Change*. Bloomsbury Publishing.
- Mayes, Robyn, Carol Richards, and Michael Woods. 2017. "(Re)Assembling Neoliberal Logics in the Service of Climate Justice: Fuzziness and Perverse Consequences in the Fossil Fuel Divestment Assemblage BT - Assembling Neoliberalism: Expertise, Practices, Subjects." In , edited by Vaughan Higgins and Wendy Larner, 131–49. New York: Palgrave Macmillan US.
https://doi.org/10.1057/978-1-137-58204-1_7.
- McAdam, Doug. 2017. "Social Movement Theory and the Prospects for Climate Change Activism in the United States." *Annual Review of Political Science* 20 (1): 189–208.
<https://doi.org/10.1146/annurev-polisci-052615-025801>.
- McGlade, C., and P. Ekins. 2015. "The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2°C." *Nature* 517: 187–90.
- McGray, Robert, and Jonathan Turcotte-Summers. 2017. "Austerity-Privacy and Fossil Fuel Divestment Activism at Canadian Universities." *Australian Universities' Review* 59 (2): 36–49.
<https://files.eric.ed.gov/fulltext/EJ1157055.pdf>.
- McKinsey. 2019. "Global Energy Perspective 2019: Reference Case."
[https://www.mckinsey.com/~media/McKinsey/Industries/Oil and Gas/Our Insights/Global Energy Perspective 2019/McKinsey-Energy-Insights-Global-Energy-Perspective-2019_Reference-Case-Summary.ashx](https://www.mckinsey.com/~media/McKinsey/Industries/Oil%20and%20Gas/Our%20Insights/Global%20Energy%20Perspective%202019/McKinsey-Energy-Insights-Global-Energy-Perspective-2019_Reference-Case-Summary.ashx).
- McLaren, Duncan. 2004. "Global Stakeholders: Corporate Accountability and Investor Engagement." *Corporate Governance* 12 (2): 191–201. <https://doi.org/10.1111/j.1467-8683.2004.00360.x>.
- Meinshausen, Malte, Nicolai Meinshausen, William Hare, Sarah C. B. Raper, Katja Frieler, Reto Knutti, David J. Frame, and Myles R. Allen. 2009. "Greenhouse-Gas Emission Targets for

- Limiting Global Warming to 2 °C." *Nature* 458 (7242): 1158–62.
<https://doi.org/10.1038/nature08017>.
- Menz, Klaus-Michael. 2010. "Corporate Social Responsibility: Is It Rewarded by the Corporate Bond Market? A Critical Note." *Journal of Business Ethics* 96 (1): 117–34.
<https://doi.org/10.1007/s10551-010-0452-y>.
- Mercer. 2019. "European Asset Allocation Survey 2019." <https://info.mercer.com/rs/521-DEV-513/images/ie-2019-european-asset-allocation-survey-2019.pdf>.
- Mercure, J, H Pollitt, J E Viñuales, N R Edwards, P B Holden, U Chewpreecha, P Salas, I Sognaes, A Lam, and F Knobloch. 2018. "Macroeconomic Impact of Stranded Fossil Fuel Assets."
<https://doi.org/10.1038/s41558-018-0182-1>.
- Meyer, Gregory. 2020. "ExxonMobil Dismisses Carbon Targets as a 'Beauty' Match." *Financial Times*, March 5, 2020. <https://www.ft.com/content/6b785d00-5f23-11ea-b0ab-339c2307bcd4?desktop=true&segmentId=7c8f09b9-9b61-4fbb-9430-9208a9e233c8>.
- Michaux, Simon. 2019. "Oil from a Critical Raw Material Perspective."
https://tupa.gtk.fi/raportti/arkisto/70_2019.pdf.
- Mitchell, John V., and Beth Mitchell. 2014. "Structural Crisis in the Oil and Gas Industry." *Energy Policy* 64 (January): 36–42. <https://doi.org/10.1016/J.ENPOL.2013.07.094>.
- Monks, Robert, Anthony Miller, and Jacqueline Cook. 2004. "Shareholder Activism on Environmental Issues: A Study of Proposals at Large US Corporations (2000-2003)." *Natural Resources Forum* 28 (4): 317–30. <https://doi.org/10.1111/j.1477-8947.2004.00104.x>.
- Morris, Harvey. 2009. "Shell in \$15.5m Settlement over Executions." *Financial Times*, June 9, 2009.
<https://www.ft.com/content/c0ab3768-547e-11de-a58d-00144feabdc0>.
- Morrow, David R. 2016. "Climate Sins of Our Fathers? Historical Accountability in Distributing Emissions Rights." *Ethics, Policy & Environment* 19 (3): 335–49.
<https://doi.org/10.1080/21550085.2016.1226240>.
- Mosendz, Polly. 2017. "Oil Giants Make a Play for Millennial Hires." Bloomberg. 2017.
<https://www.bloomberg.com/news/articles/2017-07-17/oil-giants-make-a-play-for-millennial-hires>.
- Moss, Jeremy. 2017. "The Morality of Divestment." *Law & Policy* 39 (4): 412–28.
<https://doi.org/10.1111/lapo.12088>.

- Muff, Katrin, and Thomas Dyllick. 2020. "Positive Impact Rating for Business Schools." Lucerne. https://4d7bdf5-e48e-44f8-9aae-099e82448ba1.filesusr.com/ugd/d46c06_d0fdc1dc16224eb796692ad49b40d791.pdf.
- Murray, Alan. 2017. "What CEOs Fear Most Right Now." *Fortune*, January 2017. <https://fortune.com/2017/01/31/ceo-survey-fear-conference-board/>.
- NACUBO, and TIAA. 2019. "Detailed Asset Allocations for U.S. College and University Endowments and Higher Education Foundations, FY19."
- National Union of Students, and People & Planet. 2017. "A Case for Fossil Fuel Divestment at the University of Cambridge (Submission to the University of Cambridge Divestment Working Group)." <https://sustainability.nus.org.uk/divest-invest/articles/a-case-for-fossil-fuel-divestment-at-the-university-of-cambridge>.
- NBIM. 2017. "Norges Bank Recommends the Removal of Oil Stocks from the Benchmark Index of the Government Pension Fund Global (GPF)." Norges Bank Investment Management. 2017. <https://www.nbim.no/en/the-fund/news-list/2017/norges-bank-recommends-the-removal-of-oil-stocks-from-the-benchmark-index-of-the-government-pension-fund-global-gpfg/>.
- Neubaum, Donald O., and Shaker A. Zahra. 2006. "Institutional Ownership and Corporate Social Performance: The Moderating Effects of Investment Horizon, Activism, and Coordination." *Journal of Management* 32 (1): 108–31. <https://doi.org/10.1177/0149206305277797>.
- Neville, Kate J. 2020. "Shadows of Divestment: The Complications of Diverting Fossil Fuel Finance." *Global Environmental Politics* 20 (2): 3–11. https://doi.org/10.1162/glep_a_00555.
- Neville, Kate J., Jackie Cook, Jennifer Baka, Karen Bakker, and Erika S. Weinthal. 2019. "Can Shareholder Advocacy Shape Energy Governance? The Case of the US Antifracking Movement." *Review of International Political Economy* 26 (1): 104–33. <https://doi.org/10.1080/09692290.2018.1488757>.
- O'Rourke, Anastasia. 2003. "A New Politics of Engagement: Shareholder Activism for Corporate Social Responsibility." *Business Strategy and the Environment* 12 (4): 227–39. <https://doi.org/10.1002/bse.364>.
- OECD. 2016. "The Role of Business Angel Investments in SME Finance." In *Financing SMEs and Entrepreneurs 2016*. Financing SMEs and Entrepreneurs. Paris: OECD. https://www.oecd-ilibrary.org/industry-and-services/financing-smes-and-entrepreneurs-2016_fin_sme_ent-2016-en.

- OGA. 2020. "Oil and Gas Authority: OGA Chairman Challenges the Sector to Respond to the Energy Transition Challenge." *Oil and Gas Authority*, January 16, 2020.
<https://www.ogauthority.co.uk/news-publications/news/2020/oga-chairman-challenges-the-sector-to-respond-to-the-energy-transition-challenge/>.
- Oikonomou, Ioannis, Chris Brooks, and Stephen Pavelin. 2014. "The Effects of Corporate Social Performance on the Cost of Corporate Debt and Credit Ratings." *Financial Review* 49 (1): 49–75. <https://doi.org/10.1111/fire.12025>.
- Oreskes, Naomi., and Erik M. Conway. 2010. *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*. New York: Bloomsbury Press.
- Ormiston, Jarrod, Kylie Charlton, M. Scott Donald, and Richard G. Seymour. 2015. "Overcoming the Challenges of Impact Investing: Insights from Leading Investors." *Journal of Social Entrepreneurship* 6 (3): 352–78. <https://doi.org/10.1080/19420676.2015.1049285>.
- Patten, Dennis M. 2002. "The Relation between Environmental Performance and Environmental Disclosure: A Research Note." *Accounting, Organizations and Society* 27 (8): 763–73.
[https://doi.org/https://doi.org/10.1016/S0361-3682\(02\)00028-4](https://doi.org/https://doi.org/10.1016/S0361-3682(02)00028-4).
- Paul Brest, Ronald Gilson, and Mark Wolfson. 2016. "How Investors Can (and Can't) Create Social Value." *Stanford Social Innovation Review*, December 2016.
https://ssir.org/up_for_debate/article/how_investors_can_and_cant_create_social_value.
- Peabody Energy. 2014. "Peabody Energy Annual Report."
https://www.annualreports.com/HostedData/AnnualReportArchive/p/NYSE_BTU_2014.pdf.
- . 2016. "Peabody Energy Annual Report."
https://www.annualreports.com/HostedData/AnnualReportArchive/p/NYSE_BTU_2016.pdf.
- . 2017. "Peabody Energy Annual Report."
https://www.annualreports.com/HostedData/AnnualReportArchive/p/NYSE_BTU_2017.pdf.
- . 2018. "Peabody Energy Annual Report."
https://www.annualreports.com/HostedData/AnnualReportArchive/p/NYSE_BTU_2018.pdf.
- . 2019. "Peabody Energy Annual Report."
https://www.annualreports.com/HostedData/AnnualReports/PDF/NYSE_BTU_2019.pdf.
- Peters, Glen P, Jan C Minx, Christopher L Weber, and Ottmar Edenhofer. 2011. "Growth in Emission

- Transfers via International Trade from 1990 to 2008." *Proceedings of the National Academy of Sciences of the United States of America* 108 (21): 8903–8.
<https://doi.org/10.1073/pnas.1006388108>.
- Piggot, Georgia. 2018. "The Influence of Social Movements on Policies That Constrain Fossil Fuel Supply." *Climate Policy* 18 (7): 942–54. <https://doi.org/10.1080/14693062.2017.1394255>.
- Plantinga, Auke, and Bert Scholtens. 2016. "The Financial Impact of Divestment from Fossil Fuels."
- Proffitt, W. Trexler, and Andrew Spicer. 2006. "Shaping the Shareholder Activism Agenda: Institutional Investors and Global Social Issues." *Strategic Organization* 4 (2): 165–90.
<https://doi.org/10.1177/1476127006064067>.
- Pulver, Simone, and Emily McAteer. 2009. "The Corporate Boomerang: Shareholder Transnational Advocacy Networks Targeting Oil Companies in the Ecuadorian Amazon." *Global Environmental Politics* 9 (1). <https://doi.org/10.1162/glep.2009.9.1.1>.
- Puttick, Ruth, and Joe Ludlow. 2012. "Standards of Evidence for Impact Investing."
www.nesta.org.uk.
- Quéré, Corinne Le, Robert B. Jackson, Matthew W. Jones, Adam J. P. Smith, Sam Abernethy, Robbie M. Andrew, Anthony J. De-Gol, et al. 2020. "Temporary Reduction in Daily Global CO₂ Emissions during the COVID-19 Forced Confinement." *Nature Climate Change*, May, 1–7.
<https://doi.org/10.1038/s41558-020-0797-x>.
- Quigley, E.C. 2020. "Universal Ownership Theory and the Double Hermeneutic: Norms and Feedback Loops in the Age of COVID-19."
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3612928.
- Rainforest Action Network, BankTrack, Indigenous Environmental Network, Oil Change International, Reclaim Finance, and Sierra Club. 2020. "Banking on Climate Change: Fossil Fuel Finance Report 2020." https://www.ran.org/wp-content/uploads/2020/03/Banking_on_Climate_Change__2020_vF.pdf.
- Rajan, Raghuram G, and Luigi Zingales. 1998. "Financial Dependence and Growth." *The American Economic Review* 88 (3): 559–86. www.jstor.org/stable/116849.
- Raji, Michelle Y. 2014. "Timeline: Fossil Fuels Divestment." *The Harvard Crimson*, October 2, 2014.
<https://www.thecrimson.com/article/2014/10/2/timeline-fossil-fuels-divestment/>.
- Reid, Erin M, and Michael W Toffel. 2009. "Responding to Public and Private Politics: Corporate

- Disclosure of Climate Change Strategies.” *Strategic Management Journal* 30 (11): 1157–78.
<https://doi.org/10.1002/smj.796>.
- Renneboog, Luc, and Peter G Szilagyi. 2011. “The Role of Shareholder Proposals in Corporate Governance.” *Journal of Corporate Finance* 17 (1): 167–88.
<https://doi.org/https://doi.org/10.1016/j.jcorpfin.2010.10.002>.
- Richardson, Benjamin J. 2017. “Divesting from Climate Change: The Road to Influence.” *Law & Policy* 39 (4): 325–48. <https://doi.org/10.1111/lapo.12081>.
- Ritchie, J., and H. Dowlatabadi. 2014. “Understanding the Shadow Impacts of Investment and Divestment Decisions: Adapting Economic Input–Output Models to Calculate Biophysical Factors of Financial Returns.” *Ecological Economics* 106 (October): 132–40.
<https://doi.org/10.1016/J.ECOLECON.2014.07.005>.
- Rivoli, Pietra. 2003. “Making a Difference or Making a Statement? Finance Research and Socially Responsible Investment.” *Business Ethics Quarterly* 13 (3): 271–87.
<https://doi.org/10.5840/beq200313323>.
- Rojas, Miguel, Bouchra M’Zali, Marie-France Turcotte, and Philip Merrigan. 2009. “Bringing About Changes to Corporate Social Policy through Shareholder Activism: Filers, Issues, Targets, and Success.” *Business and Society Review* 114 (2): 217–52. <https://doi.org/10.1111/j.1467-8594.2009.00341.x>.
- Rosenberg, John S. 2019a. “Debating Divestment in the Faculty of Arts and Sciences.” *Harvard Magazine*, November 5, 2019. <https://www.harvardmagazine.com/2019/11/harvard-faculty-of-arts-and-sciences-divestment-debate>.
- . 2019b. “A Faculty Motion on Divesting Fossil-Fuel Investments.” *Harvard Magazine*, December 4, 2019. <https://www.harvardmagazine.com/2019/12/harvard-faculty-motion-on-divestment>.
- Rowe, James, Jessica Dempsey, and Peter Gibbs. 2016. “The Power of Fossil Fuel Divestment (And Its Secret).” In *A World To Win: Contemporary Social Movements and Counter-Hegemony*, edited by William K. Carroll and Kanchan Sarker, 27. Winnipeg: ARP Books.
- Royal Dutch Shell. 2017. “Shell Annual Report and Accounts 2017: Strategic Report.”
<https://reports.shell.com/annual-report/2017/strategic-report/strategy-business-and-market-overview/risk-factors.php>.
- . 2018. “Shell Annual Report and Accounts 2018: Strategic Report.”

<https://reports.shell.com/annual-report/2018/strategic-report/strategy-business-and-market-overview/risk-factors.php>.

———. 2019. “Shell Annual Report and Accounts 2019: Strategic Report.”

<https://reports.shell.com/annual-report/2019/strategic-report/strategy-business-and-market-overview/risk-factors.php>.

Ryan, Christopher, and Christopher Marsicano. 2020. “Examining the Impact of Divestment from Fossil Fuels on University Endowments.” *New York University Journal of Law and Business* 17. <https://doi.org/10.2139/ssrn.3501231>.

Sanzillo, T., and K. Hipple. 2019. “Fossil Fuel Investments: Looking Backwards May Prove Costly to Investors in Today’s Market.” <https://ieefa.org/wp-content/uploads/2019/02/Divestment-Brief-February-2019.pdf>.

Sanzillo, T., K. Hipple, and C. Williams-Derry. 2018. “The Financial Case for Fossil Fuel Divestment.” http://ieefa.org/wp-content/uploads/2018/07/Divestment-from-Fossil-Fuels_The-Financial-Case_July-2018.pdf.

Sarang, Surbhi. 2015. “Combating Climate Change through a Duty to Divest.” *Columbia Journal of Law and Social Problems* 49. <https://heinonline.org/HOL/Page?handle=hein.journals/collsp49&id=307&div=13&collection=journals>.

Schifeling, Todd, and Andrew J. Hoffman. 2019. “Bill McKibben’s Influence on U.S. Climate Change Discourse: Shifting Field-Level Debates Through Radical Flank Effects.” *Organization & Environment* 32 (3): 213–33. <https://doi.org/10.1177/1086026617744278>.

Schneider, Thomas E. 2011. “Is Environmental Performance a Determinant of Bond Pricing? Evidence from the U.S. Pulp and Paper and Chemical Industries*.” *Contemporary Accounting Research* 28 (5): 1537–61. <https://doi.org/10.1111/j.1911-3846.2010.01064.x>.

Seidman, Gay W. 2015. “Divestment Dynamics: Mobilizing, Shaming, and Changing the Rules.” *Social Research: An International Quarterly* 82 (4): 1015–37. <https://muse.jhu.edu/article/610671>.

Seidman, Gay W. 2003. “Monitoring Multinationals: Lessons from the Anti-Apartheid Era.” *Politics & Society* 31 (3): 381–406. <https://doi.org/10.1177/0032329203254861>.

Sharfman, Mark P., and Chitru S. Fernando. 2008. “Environmental Risk Management and the Cost of Capital.” *Strategic Management Journal* 29 (6): 569–92. <https://doi.org/10.1002/smj.678>.

- Sheppard, David. 2020. "Can Orsted Be the First Green Energy Supermajor?" *Financial Times*, February 4, 2020. <https://www.ft.com/content/74b377c8-4435-11ea-abea-0c7a29cd66fe>.
- Shrivastava, Paul, and Amr Addas. 2014. "The Impact of Corporate Governance on Sustainability Performance." *Journal of Sustainable Finance & Investment* 4 (1): 21–37. <https://doi.org/10.1080/20430795.2014.887346>.
- Sinn, Hans-Werner. 2012. *The Green Paradox : A Supply-Side Approach to Global Warming*. MIT Press.
- Sjostrom, Emma. 2020. "Active Ownership on Environmental and Social Issues: What Works?"
- Sjöström, Emma. 2008. "Shareholder Activism for Corporate Social Responsibility: What Do We Know?" *Sustainable Development* 16 (3): 141–54. <https://doi.org/10.1002/sd.361>.
- Slager, Rieneke, and Wendy Chapple. 2016. "Carrot and Stick? The Role of Financial Market Intermediaries in Corporate Social Performance." *Business & Society* 55 (3): 398–426. <https://doi.org/10.1177/0007650315575291>.
- Smith, Christopher J., Piers M. Forster, Myles Allen, Jan Fuglestedt, Richard J. Millar, Joeri Rogelj, and Kirsten Zickfeld. 2019. "Current Fossil Fuel Infrastructure Does Not yet Commit Us to 1.5 °C Warming." *Nature Communications* 10 (1): 101. <https://doi.org/10.1038/s41467-018-07999-w>.
- Social Impact Investment Taskforce. 2014. "Impact Investment: The Invisible Heart of Markets." www.unpri.org/news/pri-fact-sheet.
- Soederberg, Susanne. 2009. "The Marketisation of Social Justice: The Case of the Sudan Divestment Campaign." *New Political Economy* 14 (2): 211–29. <https://doi.org/10.1080/13563460902825999>.
- Solsvik, Terje. 2019. "Norway Sovereign Wealth Fund to Divest Oil Explorers, Keep Refiners." *Reuters*, October 1, 2019. <https://www.reuters.com/article/us-norway-swf-oil/norway-sovereign-wealth-fund-to-divest-oil-explorers-keep-refiners-idUSKBN1WG4R9>.
- Sovacool, Benjamin K., Raphael J. Heffron, Darren McCauley, and Andreas Goldthau. 2016. "Energy Decisions Reframed as Justice and Ethical Concerns." *Nature Energy* 1 (5): 16024. <https://doi.org/10.1038/nenergy.2016.24>.
- Stephens, Jennie C., Peter C. Frumhoff, and Leehi Yona. 2018. "The Role of College and University Faculty in the Fossil Fuel Divestment Movement." *Elem Sci Anth* 6 (1): 41. <https://doi.org/10.1525/elementa.297>.

- Stephens, Jennie C., Elizabeth Palchak, and Bonnie Reese. 2017. "Divestment and Investment: Strategic Financial Decisions in Higher Education to Promote Societal Change Toward Sustainability." In , 305–15. Springer, Cham. https://doi.org/10.1007/978-3-319-47889-0_22.
- Sutantoputra, A W, M Lindorff, and E Prior Johnson. 2012. "The Relationship between Environmental Performance and Environmental Disclosure." *Australasian Journal of Environmental Management* 19 (1): 51–65. <https://doi.org/10.1080/14486563.2011.646752>.
- Sveva, Magnanelli Barbara, and Izzo Maria Federica. 2017. "Corporate Social Performance and Cost of Debt: The Relationship." *Social Responsibility Journal* 13 (2): 250–65. <https://doi.org/10.1108/SRJ-06-2016-0103>.
- Tang, Dragon Yongjun, and Yupu Zhang. 2020. "Do Shareholders Benefit from Green Bonds?" *Journal of Corporate Finance* 61 (April): 101427. <https://doi.org/10.1016/J.JCORPFIN.2018.12.001>.
- Teoh, Siew Hong, Ivo Welch, and C. Paul Wazzan. 1999. "The Effect of Socially Activist Investment Policies on the Financial Markets: Evidence from the South African Boycott." *The Journal of Business* 72 (1): 35–89. <https://doi.org/10.1086/209602>.
- Thamotheram, Raj. 2014. "The Fossil Fuel Divestment Debate: Is There a Consensus Way Forward?" *Responsible Investor*, April 22, 2014. <https://www.responsible-investor.com/articles/rt-div>.
- The Conference Board. 2020. "C-Suite Challenge 2020: Risks, Opportunities and Hot Button Issues." *The Conference Board*, January 2020. <https://conference-board.org/topics/c-suite-challenge/press/c-suite-survey-2020>.
- The Economist. 2020. "The Collapse - An Unprecedented Plunge in Oil Demand Will Turn the Industry Upside Down," April 8, 2020. <https://www.economist.com/briefing/2020/04/08/an-unprecedented-plunge-in-oil-demand-will-turn-the-industry-upside-down?cid1=cust/ednew/n/bl/n/2020/04/8n/owned/n/n/nwl/n/n/UK/446101/n>.
- Thomas, Randall S, and James F Cotter. 2007. "Shareholder Proposals in the New Millennium: Shareholder Support, Board Response, and Market Reaction." *Journal of Corporate Finance* 13 (2): 368–91. <https://doi.org/https://doi.org/10.1016/j.jcorpfin.2007.02.002>.
- TIAA, and NACUBO. 2019. "2019 NACUBO-TIAA Study of Endowments: Summary Results and Key Insights." <https://www.nacubo.org/-/media/Nacubo/Documents/EndowmentFiles/2019-NTSE-Summary-Results-and-Key-Insights--FINAL-Jan-30-2020.ashx?la=en&hash=25B49EC2E66D155AE00FC0D7332BE3F0FAA525B7>.
- Tillmann, Taavi, Jonny Currie, Alistair Wardrope, and David McCoy. 2015. "Fossil Fuel Companies and

- Climate Change: The Case for Divestment.” *BMJ* 350 (June).
<https://doi.org/10.1136/BMJ.H3196>.
- Tkac, Paula. 2006. “One Proxy at a Time: Pursuing Social Change through Shareholder Proposals.” *Federal Reserve Bank of Atlanta Economic Review* Q3: 1–20.
- Tollefson, Jeff. 2015. “Fossil-Fuel Divestment Campaign Hits Resistance.” *Nature* 521 (7550): 16–17.
<https://doi.org/10.1038/521016a>.
- Tong, Dan, Qiang Zhang, Yixuan Zheng, Ken Caldeira, Christine Shearer, Chaopeng Hong, Yue Qin, and Steven J. Davis. 2019. “Committed Emissions from Existing Energy Infrastructure Jeopardize 1.5 °C Climate Target.” *Nature* 572 (7769): 373–77. <https://doi.org/10.1038/s41586-019-1364-3>.
- Torcello, Lawrence. 2018. “The Acceleration of Global Warming as Crime Against Humanity: A Moral Case for Fossil Fuel Divestment.” In *The Palgrave Handbook of Philosophy and Public Policy*, 779–93. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-93907-0_58.
- Tran, Brigitte Roth. 2019. “Divest, Disregard, or Double Down? Philanthropic Endowment Investments in Objectionable Firms.” *American Economic Review: Insights* 1 (2): 241–56.
<https://doi.org/10.1257/aeri.20180347>.
- Trinks, Arjan, Bert Scholtens, Machiel Mulder, and Lammertjan Dam. 2018. “Fossil Fuel Divestment and Portfolio Performance.” *Ecological Economics* 146 (April): 740–48.
<https://doi.org/10.1016/J.ECOLECON.2017.11.036>.
- UNEP. 2011. “Environmental Assessment of Ogoniland (Executive Summary).”
https://postconflict.unep.ch/publications/OEA/UNEP_OEA_ES.pdf.
- Ungar, Sanford J., and Peter Vale. 1985. “South Africa: Why Constructive Engagement Failed.” *Foreign Affairs* 64 (2): 234. <https://doi.org/10.2307/20042571>.
- United Nations. 2015. “Framework Convention on Climate Change, Article 2, Adoption of the Paris Agreement.” In *21st Conference of the Parties*. Paris: United Nations.
<https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf>.
- Urban, Michael, and Dariusz Wójcik. 2019. “Dirty Banking: Probing the Gap in Sustainable Finance.” *Sustainability* 11 (6): 1745. <https://doi.org/10.3390/su11061745>.
- Uysal, Nur, Aimei Yang, and Maureen Taylor. 2018. “Shareholder Communication and Issue Salience:

- Corporate Responses to ‘Social’ Shareholder Activism.” *Journal of Applied Communication Research* 46 (2): 179–201. <https://doi.org/10.1080/00909882.2018.1437643>.
- Vasi, Ion Bogdan, and Brayden G. King. 2012. “Social Movements, Risk Perceptions, and Economic Outcomes.” *American Sociological Review* 77 (4): 573–96. <https://doi.org/10.1177/0003122412448796>.
- Voorhes, Meg, and Joshua Humphreys. 2011. “Recent Trends in Sustainable and Responsible Investing in the United States.” *The Journal of Investing* 20 (3): 90–94. <https://doi.org/10.3905/joi.2011.20.3.090>.
- Vuuren, Detlef P. van, Andries F. Hof, Mariësse A. E. van Sluisveld, and Keywan Riahi. 2017. “Open Discussion of Negative Emissions Is Urgently Needed.” *Nature Energy* 2 (12): 902–4. <https://doi.org/10.1038/s41560-017-0055-2>.
- Wagemans, Frank A J, C S A (Kris) van Koppen, and Arthur P J Mol. 2013. “The Effectiveness of Socially Responsible Investment: A Review.” *Journal of Integrative Environmental Sciences* 10 (3–4): 235–52. <https://doi.org/10.1080/1943815X.2013.844169>.
- Wernham, Patrick. 2017. “CUSU Council Unanimously Votes to Reaffirm Support for Divestment.” *Varsity*, November 20, 2017. <https://www.varsity.co.uk/news/14140>.
- Westermann-Behaylo, Michelle. 2009. “Institutionalizing Peace through Commerce: Engagement or Divestment in South African and Sudan.” *Journal of Business Ethics* 89 (S4): 417–34. <https://doi.org/10.1007/s10551-010-0398-0>.
- Wiseman, J. 1982. “An Evaluation of Environmental Disclosures Made in Corporate Annual Reports.” *Accounting, Organizations and Society* 7 (1): 53–63. [https://doi.org/10.1016/0361-3682\(82\)90025-3](https://doi.org/10.1016/0361-3682(82)90025-3).
- Zerbib, Olivier David. 2019. “The Effect of Pro-Environmental Preferences on Bond Prices: Evidence from Green Bonds.” *Journal of Banking & Finance* 98 (January): 39–60. <https://doi.org/10.1016/J.JBANKFIN.2018.10.012>.

Grace for submission to the Regent House under Special Ordinance A (i) 5 (report on the advantages and disadvantages of a policy of divestment)

22 March 2019

The Council has received the following Grace, which has been initiated under [Special Ordinance A \(i\) 5](#) by 324 members of the Regent House.

Grace 1 of 11 January 2017 called for the University to divest its Endowment from *companies whose business is wholly or substantially concerned with the extraction of fossil fuels*. The Regent House **notes** that in its response to the Grace, the Council announced its intention to commission a *report specifically into the advantages and disadvantages of the policy of divestment which the Grace supports*.

The Regent House has not received such a report because the terms of reference of the Divestment Working Group (DWG) did not refer to advantages or disadvantages of divestment but asked for a broader consideration of the issues. The Council's response, published on the 20 June 2018 similarly did not weigh the advantages and disadvantages but rather stated the Council's opposition to a policy of divestment, and passed on to other matters.

The Regent House therefore **directs** the Council to produce a report to the University that will

1. set out fully the advantages and disadvantages, including the social and political ones, of a policy of divestment from fossil fuels,
2. assess the moral acceptability of a University committed to educating future generations, and whose core values include sustainability, benefitting from investments in fossil fuels that threaten that future,
3. provide costed estimates of the effects, positive and negative, on the performance of the University's investments of such a policy,
4. provide a full assessment of the reputational effects, positive and negative, of a policy of divestment,
5. provide, as requested by the Grace of 11 January 2017, costed details of possible strategies for how the University might divest from fossil fuels.

Such a report should be compiled with appropriate Regent House and student input. It should be completed within 6 months, or failing that an interim report with a detailed timeline to completion should be produced.

APPENDIX II: THE CAMBRIDGE UNIVERSITY ENDOWMENT FUND

NB: This section was authored by the university's Investment Office.

The following section provides background on the Cambridge University Endowment Fund ('CUEF' or 'the Fund') and how its manager, Cambridge Investment Management Limited ('CIML') and the Investment Office, fulfil their fiduciary responsibilities to a wide variety of stakeholders.⁹² As an asset owner, CUEF holds and invests donations made to the university and certain of its colleges and charitable trusts, as well as other long-term capital, in order to provide direct financial support for the university's research, teaching, and other activities. At 31st December 2019, the Net Asset Value ('NAV') of the Fund was £3.5 billion, and the NAV of the university's assets held within the Fund were £2.5 billion.

As a charity dedicated to education, learning and research, offering Cambridge's unique support structures, quality of student learning experience and exceptional research focus, income the university receives from tuition fees, research and other grants, and donations is not sufficient to cover the cost of its operations.⁹³ The regular drawdown distribution from CUEF is therefore vital to ensure sustained excellence in education and research and to contribute to the long-term financial health of the university. The Fund pays its investors a distribution of approximately 4% of its value per annum. For the fiscal years ended 30th June 2019, 2018, and 2017, that payment to the university as an investor in CUEF equaled £88 million, £80 million, and £76 million, respectively. To put these figures in context, in the fiscal year 2018/19, CUEF drawdown provided cash funding equivalent to approximately £3,800 per student⁹⁴ attending the university in that year. Put another way, the endowment distribution funded the equivalent of three-quarters of the cash deficit of the university's combined research activities, where research sponsors do not fund the full cost of related activities and supporting infrastructure. Over the last decade, CUEF has paid out more than £750 million to support the university, its colleges and charitable trusts.⁹⁵

⁹² CUEF's stakeholders include not only current and future students and faculty members, but also administrative staff including college Bursars as well as alumni, donors, and other parties associated with the university.

⁹³ The university's ten-year financial model indicates that research activities result in an annual cash flow deficit to the university of approximately £100 million per annum, while teaching activities run an annual deficit at the undergraduate level, given estimated costs per student to the university of £16,100 per annum which is only partially met by standard per student tuition fees of £9,250 per annum.

⁹⁴ Including both undergraduate and graduate students.

⁹⁵ <https://www.cam.ac.uk/about-the-university/how-the-university-and-colleges-work/cambridge-university-endowment-fund>

CUEF invests in funds, rather than selecting individual securities to invest in, allocating money to specialist, third-party fund managers.⁹⁶ This approach is based on two key considerations. First, the Investment Office itself lacks the scale to execute the range of investments required to diversify the assets of the Fund and manage its volatility through different market environments. Second, to generate the financial returns that its investors rely on, the Fund must deliver returns in excess of those available from 'passive' or index-based investments. The Investment Office therefore does not invest directly on behalf of CUEF but instead allocates funds to managers with demonstrated specialist skills. These managers have discretion to make security selection decisions on behalf of CUEF; CIML does not control the individual investment decisions made by its managers. For the reasons discussed in the body of the report, CUEF cannot fully divest from fossil fuels in the short-term without abandoning its current investment model. The current model has been proven to work over time. CUEF has added £309m above the passive benchmark since the inception of the fund of fund model in 2008⁹⁷ and it is estimated that moving away from CUEF's current investment model would result in approximately £40 million per year of foregone investment returns in the future, based on calendar year 2019 net asset value. This would impact the future value of CUEF and in turn the future distribution.

The Fund as at 31st December 2019

The new Chief Investment Officer of the Investment Office joined in January 2020, just over a year after the departure of the previous CIO and the majority of his team. Since joining, the CIO has hired a new team, including the Fund's first Sustainable Investment Officer, and has explicitly committed to using CUEF's influence to contribute to mitigating climate change. Due to data availability the snapshot presented here reflects the position of the fund at the end of December 2019, before the new CIO and new team took over management of the assets.⁹⁸

⁹⁶ The Endowments of the University of Cambridge and University of Oxford are the only UK University endowments with assets in excess of £1billion. These two endowment are able to pursue a different model of asset management in comparison to smaller peers.

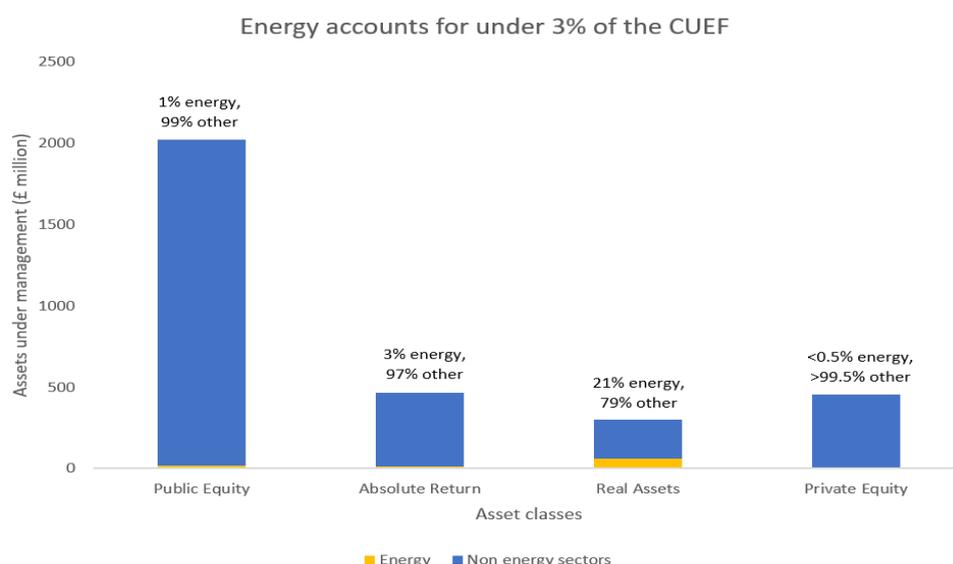
⁹⁷ Calculated by modelling CUEF inflows into a passive composite benchmark (65% public equity, 35% public debt) and comparing the performance of this benchmark against CUEF's actual performance.

⁹⁸ CUEF's year end is June. June 2020 data was not available at the time of writing this report. Where possible the Investment Office has updated information to December 2019. Where June 2019 data is used it is noted explicitly.

As of 31st December 2019, the 68 asset managers acting on behalf of CUEF held 2.8% of total assets in energy-related investments. Over 95% of the energy holdings were in oil and gas companies; therefore the energy sector can be viewed as a proxy for fossil fuel companies in this report.⁹⁹

The majority of the asset managers with which CUEF invests do not hold securities in fossil fuels.¹⁰⁰ Moreover, the few non-specialist¹⁰¹ asset managers within the CUEF portfolio that do invest in energy companies tend to allocate an average of approximately 1% of their assets under management to such securities. The exception is two specialist asset managers in the real assets asset class that primarily invest in energy. Figure 1 shows a breakdown of CUEF’s energy exposure by asset class and highlights that energy exposure is relatively larger in the real assets category, driven by the two specialist asset managers.

Figure 1: CUEF energy exposure broken out by asset class



A new asset allocation currently being implemented by the Investment Office aims to gradually increase private equity exposure and reduce public equity exposure commensurately over time, inter alia. It is anticipated that a consequence of the new asset allocation will be a structurally lower exposure to energy securities. Further to this the Investment Office is currently evaluating opportunities in renewable energy which would result in a lower exposure to conventional energy within the real assets portfolio.

⁹⁹ CUEF has negligible tar sands holdings and minimal holdings, less than 0.03% of NAV, in thermal and consumable coal. The remainder of the energy exposure is in other energy assets including three holdings in private renewable energy companies.

¹⁰⁰ As at 31st December 2019, 30% of CUEF’s managers held some energy securities.

¹⁰¹ Not specialising in energy investments.

The Investment Office has consulted with CUEF's largest asset managers to understand their willingness and ability to divest from fossil fuels if requested. The results of these discussions highlight one of the key challenges that the Investment Office faces: while many of the asset managers do not currently invest in fossil fuels, almost all of those interviewed are currently unwilling to rule out explicitly ever holding fossil fuels. Asset managers give three main reasons. The predominant reason CUEF managers will not explicitly rule out investments in energy, or any other sector or subsector, is that CUEF typically invests in pooled vehicles with up to 100 other asset owners. Asset managers CUEF spoke to do not feel it is appropriate to impose restrictions relating to a particular sector or sub sector as a request from individual investors. Second, asset managers communicated concern that multiple exclusionary rules of this type would restrict their ability to be flexible and proactively take advantage of investment opportunities. A third reason is that many managers rely on the option to hedge their strategy using an index or other technical trading strategies. Discussions with asset managers indicate that fossil-free indices are not currently sufficiently liquid to enable this type of trading strategy.

If CUEF were to be subject to a strict policy of full divestment, CUEF would no longer be able to invest in any third party manager not willing or able to explicitly guarantee zero exposure to fossil fuels. CUEF would be required to redeem its investments from approximately 50% of its current managers in order to divest from energy exposure amounting to 2.8% of the total portfolio. The implication of this research is that CUEF cannot pursue a full divestment from fossil fuels in the short-term without materially changing its current investment model.

The Investment Office believe that a full divestment from fossil fuels is not possible within the current investment model but have identified an alternate suite of tactics to mitigate climate change. These will be proposed as part of a response to the Divestment Report. Actions already completed include: unprecedented access to the author of the report to information about the CUEF portfolio; invitation to the author of this report to meet with managers in the CUEF portfolio; a commitment to deliver increased transparency on portfolio details in regular investor reporting; increased frequency and interactivity of communication with investors; commitment to a regular town hall meeting once per year with students commencing in October 2020.

APPENDIX III: HISTORY OF FOSSIL FUEL DIVESTMENT, GLOBALLY AND AT CAMBRIDGE

The fossil fuel divestment movement began nearly a decade ago on university and college campuses in the US, with the first protests beginning at Swarthmore College in the spring of 2011 (Raji 2014; Grady-Benson and Sarathy 2016); Hampshire College became the first to divest its holdings in fossil fuel companies later that same year (Ryan and Marsicano 2020), and it has since spread to other countries (Maina, Murray, and McKenzie 2020; Beer 2016; McGray and Turcotte-Summers 2017). The fossil fuel divestment campaign is the fastest-growing divestment movement in history (Ansar, Caldecott, and Tilbury 2013), with divestment commitments from 1195 institutions with a combined value of \$14.14 trillion as of 2 May 2020.¹⁰² Universities and colleges that have divested from fossil fuels cite several motivations: alignment with the institution's values, demonstrating support for campus environmental efforts, positive reputational effects, a desire to play a leadership role, the moral imperative to mitigate catastrophic climate change, and long-term stability of the investment portfolio (Grady-Benson and Sarathy 2016; Healy and Debski 2017). To this Cambridge divestment advocates add arguments about shifting social norms and generating political pressure for climate legislation, among others. Universities that have decided against divestment, on the other hand, tend to cite financial costs and/or risk, as well as a belief that divestment is ineffectual relative to other courses of action, that divestment is hypocritical for institutions that continue to consume fossil fuels, and that the endowment is not meant to be wielded as a political tool (Healy and Debski 2017). Some critics of divestment have also taken issue with the idea of transferring ownership of – as well as influence over and oversight of – listed fossil fuel companies to investors who do not share the university's concern over climate change.

The fossil fuel divestment movement at Cambridge began in the 2012-2013 academic year with the student- and staff-led Cambridge University Socially Responsible Investment Campaign (CUSRIC), which morphed into Positive Investment Cambridge (PIC)¹⁰³ in 2014 to reflect a shift in strategy towards an array of campaign goals, of which divestment was one. The Cambridge Zero Carbon Society re-launched itself as a fossil fuel divestment-focussed student group the following year. Both Zero Carbon and Positive Investment Cambridge were able to secure widespread support for climate-friendly investments among the student body, with resolutions in favour of university action on the issue passed by the Junior Common Rooms (JCRs, representing undergraduates) of all colleges and nearly all Middle Common Rooms (MCRs, representing graduate students).

¹⁰² <https://gofossilfree.org/divestment/commitments/>. This list of commitments includes institutions that have partially divested; the University of Cambridge, having blacklisted coal and tar sands, is already included.

¹⁰³ Expression of interest: author Ellen Quigley is a co-founder of PIC.

In 2015, at Zero Carbon's behest, the Cambridge University Students' Union (CUSU) voted 33-1 in favour of divestment (Ashworth 2015). Around the same time, PIC collected over 300 signatures from Regent House members in favour of a Grace requesting the creation of an Ethical Investment Working Group (EIWG) to study how the university could incorporate social and environmental issues into its endowment's policy and practices. Having well exceeded the 50 signatures required to take the Grace to a vote, PIC approached the university directly instead, who acceded to the request to create a Working Group. The IEWG submitted its report in June of 2016, which recommended that the university improve transparency and publicise avenues for members to express views on investment practices, engage with fund managers and investee companies, seek opportunities for profitable ESG investments across all asset classes, and vote its proxies as a shareholder, inter alia.

That same year, Zero Carbon collected almost 2,400 student signatures in favour of divestment from fossil fuels. In January 2017, they collected 140 staff signatures for a Regent House Grace. The university adopted the Grace as advisory and struck the Divestment Working Group (DWG) to undertake an investigation of the topic. This decision, in turn, prompted a pro-divestment open letter from 360 academic staff members.¹⁰⁴ CUSU passed a unanimous resolution reaffirming its support for fossil fuel divestment some months later (Wernham 2017). The DWG released its report in 2018, recommending a policy of "considered divestment", including a moratorium on coal and tar sands investments (aside from de minimis exposure); the creation of a dedicated research centre on climate change; a push into environmental, social, and governance (ESG) investing; and several other recommendations, most of which the University Council approved. The report was met with protests from some students, who felt the report, and the Council's decisions, did not go far enough.

Finally, in early 2019, 324 Regent House members supported a Grace requesting a report detailing the moral, social, political, reputational and financial advantages and disadvantages of fossil fuel divestment, with costed estimates of various divestment scenarios. University Council considered the Grace at its April 2019 meeting and agreed to commission such a report, which fell to the new Advisor to the Chief Financial Officer (Responsible Investment), Dr Ellen Quigley, co-author of the report you are now reading.

Through this period and since, divestment has continued to be a live issue for the University of Cambridge. The proliferation of open letters, petitions, Graces, resolutions, protests, marches, occupations, and banner drops – even a hunger strike – speaks to the importance of this issue in the university community. At least eight colleges have committed to full or partial divestment during this

¹⁰⁴ <https://zerocarbonsoc.soc.srccf.net/experience/academics-open-letter-2018/>.

time, while the university agreed to blacklist coal and tar sands. In three separate reports¹⁰⁵ since 2016, Zero Carbon has expressed frustration with the university's lack of transparency as well as a dearth of evidence that any actual engagement or alterations to investment practices had occurred in the wake of the EIWG and DWG reports (Galpin et al. 2016; Lornie et al. 2018; Banks et al. 2019).

¹⁰⁵ Among other demands, these reports advocate for a 5-year runway to divestment and an initial 5% allocation of the endowment to impact investing.

Working Paper – Impact of Divestment on the Fossil Fuel Sector

What follows summarises the literature examining the impact of fossil fuel divestment on fossil fuel companies themselves. The evidence points to differential impacts across asset classes. Recall that a large majority of new financing for fossil fuels comes from bank lending (64%) and bond issuance (26%):

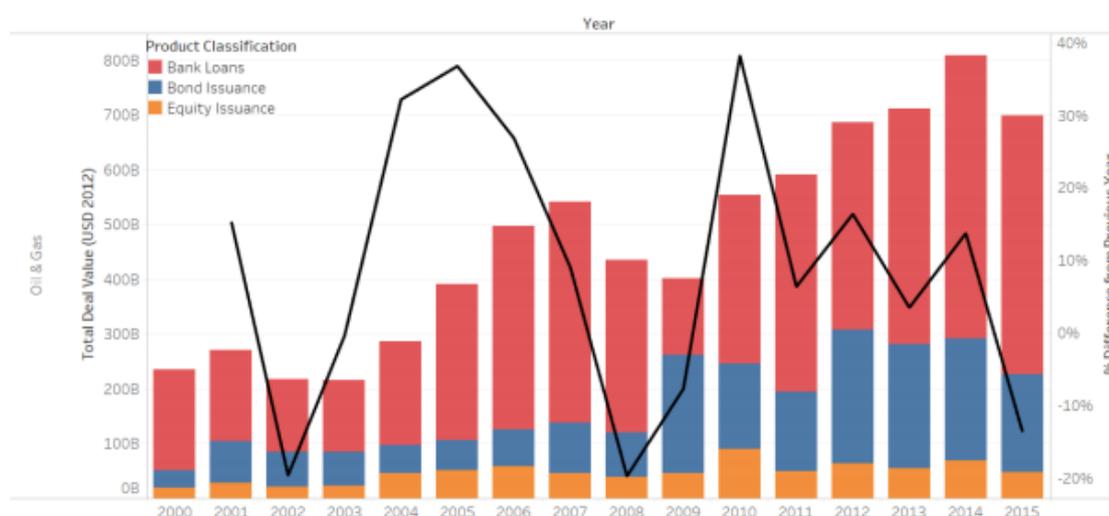


Figure 1: Global oil and gas bank loan financing, equity and bond issuance / underwriting amount. Data from Dealogic.

Source: Cojoianu et al. 2019.

It is in the debt markets that we might expect to see the greatest effect from divestment, and this does indeed appear to be the case. In public equity, the effect is less apparent. Divestment appears to have little effect on share price (Hansen and Pollin 2020), for example, except perhaps in the short term – and even then, it appears to be the announcement itself that causes the pricing adjustment (Atta-Darkua 2020; Dordi and Weber 2019). Other major announcements – unrelated to the sale of securities – that relate to stranded asset risk or the carbon budget appear to have a similar effect (Dordi 2016). There may even have been a short-term effect on fossil fuel companies’ share prices following the publication – and subsequent media coverage – of two papers (M. R. Allen et al. 2009; Meinshausen et al. 2009) in the April 30 2009 issue of Nature warning that more than half of fossil fuel reserves would have to remain in the ground to keep warming below 2°C (Griffin et al. 2015). Inclusion in an ESG index has a similar short-term positive effect on share prices (Capelle-Blancard and Couderc 2009), and indeed the index-pricing effect theoretically could affect share

prices to a marginal degree (Rivoli 2003), but again, index inclusion¹⁰⁶ is subject to publicity. Aslaksen and Synnøstvedt (2003) suggest that “screening might create incentives for changes in firms’ behaviour” but cite no evidence that it has. An empirical study of a Dutch auction for share buybacks of listed companies did find that increases and decreases in demand for stocks can have a small effect on share prices, however (Bagwell 1992). Yet during the beginning of the Apartheid South Africa divestment movement in the early 1980s, around \$7.6 billion USD was invested in South African companies’ shares (Gosiger 1986, 519); despite this volume of securities ownership, the divestment campaign itself had an indiscernible effect on share prices for South African companies (Ansar, Caldecott, and Tilbury 2013; Teoh, Welch, and Wazzan 1999). The reason for this may be that public equity investments are in the secondary market, meaning that shares are traded between and among shareholders as opposed to with the company itself. For this reason, it would be inaccurate to suggest that reallocations of publicly-listed shares would reduce greenhouse gas emissions in the real world (Ritchie and Dowlatabadi 2014). At the risk of quoting the oil majors’ executives themselves, in the words of Chevron CEO Michael Wirth in the Financial Times (Meyer 2020): “You could change the carbon footprint of your profile by changing your asset mix, and you could move higher emission assets to less responsible operators that won’t have commitments to reduce the intensity of those operations. And guess what, the world hasn’t reduced greenhouse gas emissions”.¹⁰⁷ Although acknowledging the symbolic impact of the divestment movement, scholars from the social impact investing field concur; “When can investments or divestments in public capital markets have impact by affecting the behavior of investee firms directly through purely financial mechanisms? The answer is, virtually never. [. . .] Unless the firm raises fresh capital in the primary markets, the scale of its activities are largely unaffected by transactions in the secondary market” (Paul Brest, Gilson, and Wolfson 2016). Accordingly, most responsible investments “promise only modest and perhaps even negligible investor impact” (Kölbel et al. 2020, 2). Ewers et al’s (2019) model suggests that the carbon bubble could burst if divested institutions were to represent 10-20% of the market, however, suggesting that the effects of divestment could set in at higher levels of involvement on the part of large investors like pension funds and insurance companies.

Indeed, some companies do appear to think divestment poses a risk to their share price. From 2017 onwards, Shell has included in its annual report a risk statement regarding divestment, saying,

¹⁰⁶ Ansar et al (2013, 62) still suggest this could have an effect, however; “If due to even small outflows from a set of ‘lead divesting investors’ indexed ETFs were to become unavailable to fossil fuel firms, the effect on stock price could be substantial”.

¹⁰⁷ It is worth emphasising here that this is unrelated to arguments not to vote in elections or excuses in “the plane is flying anyway” vein. What the Chevron CEO (unconcerned as he may be about climate change) is referring to is an actual displacement effect, since there is a fixed number of shares being traded – unlike each citizen’s additional vote, or each flyer’s additional unit of demand for the airline industry.

“some groups are pressuring certain investors to divest their investments in fossil fuel companies. If this were to continue, it could have a material adverse effect on the price of our securities and our ability to access equity capital markets” (Royal Dutch Shell 2017, 2018, 2019). Peabody, the coal giant, did the same in the years leading up to its bankruptcy (Peabody Energy 2014, 2016, 2017, 2018, 2019). A case study on four large German energy providers found that divestment had not yet affected their decision-making, however; the firms’ modest moves towards decarbonisation, as well as their ongoing reliance on coal, both appeared to have been influenced more by other factors (Kiyar and Wittneben 2015). Krane (2017), however, suggests that CalPERS’ threat to divest from Engie (formerly GDF Suez) led to the company’s decision to reduce its coal portfolio by around 20% and shelve some coal expansion plans.

Divestment is more likely to affect smaller companies with less liquid shares or bonds, such as independent oil companies¹⁰⁸ (Ansar, Caldecott, and Tilbury 2013), some of which are themselves listed on the stock market. Non-fundamental changes in stock price – due to growing divestment commitments, for example – are unlikely to affect the growth or investment decisions of a large cash-rich company, but could have an effect on companies (including listed companies) with financing constraints (M. Baker, Stein, and Wurgler 2003). Older, larger, and foreign-owned firms face fewer obstacles to financing (Beck et al. 2006). In practice this means that an oil and gas major is unlikely to change its investment decisions even if divestment depresses its share price, but evidence suggests that a finance-constrained company is significantly more likely to respond to changes in its share price with a change in investment decisions. Smaller companies report greater financing constraints than larger companies, as do companies in the Global South more so than companies in the Global North (Bloom et al. 2010). An empirical study in India supports the contention that additional capital helps even fairly large unlisted finance-constrained companies to grow, and concomitantly that a lack of such financing is a barrier to these companies’ growth (Banerjee and Duflo 2014). Companies in external finance-dependent sectors grow faster in countries in which they have a lower cost of external financing, with a stronger effect for smaller firms (Rajan and Zingales 1998).

The potential for divestment to have a direct financial impact on companies is greater in the debt markets, given their overwhelming role in providing new capital to fossil fuel companies. Indeed,

¹⁰⁸ This could be positive from an emissions standpoint per unit of production, given that independent oil companies’ emissions intensity exceeds that of the majors (IEA 2020), but may, from the perspective of divestment advocates, have negative consequences – including the potential concentration of market and/or political power on the part of the majors and the possibility of fossil fuel benefits flowing ever more to the Global North. If oil and gas majors were to make a future push into renewables, the same risks could apply (Neville 2020).

debt markets are significantly larger than equity markets (Hill 2020b), and institutional investors like pension funds, insurance companies, and endowments tend to own a disproportionate share of the corporate bond market relative to their holdings in the same companies on the public equity side (Oikonomou, Brooks, and Pavelin 2014; Erlandsson 2017). Furthermore, companies facing opprobrium on environmental or social grounds appear to turn to the debt markets more so than average¹⁰⁹ (Hong and Kacperczyk 2009; Urban and Wójcik 2019) and, more so than equity markets, the bond market includes some national oil companies (NOCs). As explored in Section 2, NOCs hold a majority of the world's fossil fuel reserves.

A number of studies suggest that environmental or social factors have already affected companies' credit ratings and cost of capital – for both bonds and bank loans (Cojoianu et al. 2019; Oikonomou, Brooks, and Pavelin 2014; Chava 2014; Bauer and Hann 2010; Ge and Liu 2015; Sharfman and Fernando 2008; Schneider 2011).¹¹⁰ This conclusion may not hold in the European bond market (Menz 2010),¹¹¹ however, and for bank loans this may affect low-quality borrowers more than highly-rated peers (Goss and Roberts 2011). Magnanelli and Izzo (2017) find that banks do not appear to view corporate social performance as a significant factor in reducing risk, and thus such considerations do not affect cost of capital. Several studies – although not all (Karpf and Mandel 2018; Tang and Zhang 2020)¹¹² – suggest that green bonds enjoy a lower cost of capital than non-green equivalents (Malcolm Baker et al. 2018; Hachenberg and Schiereck 2018), however, including in cases in which green and conventional bonds from the same issuer are compared (Zerbib 2019). Finally, one model of electricity generation finds that a combination of green bond investment and divestment does increase the cost of capital for coal, thereby decreasing its consumption by 2.5% by 2030 (Glomsrød and Wei 2018).

In Cojoianu et al's (2020) study specifically examining divestment's effect on new financing for fossil fuels through bank loans and bond issuance in 33 countries, they find that every 1% increase in assets under management (AUM) committed to divestment is associated with a 0.11% decline in debt (and primary market equity) financing for oil and gas companies in the same country. This is significant because new financing for fossil fuels has otherwise surged in recent years (see graph above) (Urban and Wójcik 2019; Cojoianu et al. 2019).

¹⁰⁹ This may be in part due to the lack of transparency in debt markets as opposed to public equity.

¹¹⁰ Hoepner et al. (2016) found a relationship for sovereign debt, but not for bank loans to companies.

¹¹¹ Zerbib (2019) points out that Menz's results are "weakly significant", however.

¹¹² Karpf and Mandel find that in the case of US municipal bonds, green bond issuers happen to be lower-risk on average, which explains the apparent premium. Tang and Zhang simply find an inconsistently significant premium.

Cojoianu et al's study may understate divestment's potential financial impact, however; many funds do not apply public equity environmental and social frameworks to their bond portfolios (Menz 2010; Hill 2020b). For example, the largest sovereign wealth fund in the world, Norway's Government Pension Fund Global (GPF), recently sold their shares in around a hundred oil and gas companies but retained corporate bond holdings in the same firms (Solsvik 2019; NBIM 2017). Fewer funds have divested from tobacco debt than tobacco equity as well (Ansar, Caldecott, and Tilbury 2013, 12). If they were to do so, divestment's effect on cost of capital could be yet greater. Although not unequivocal, the balance of evidence suggests that environmental or social considerations can and may already have had an effect on companies' cost of capital (Quigley 2020). Further evidence is needed to conclude that changes in cost of capital lead to material changes in company behaviour or growth, however (Kölbel et al. 2020).

It is logical that divestment would affect primary market financing. Although academic evidence in this area is scant, that which exists supports the view that demand for primary market investments can affect pricing and/or cost of capital. A recent SSRN working paper suggests that due to the rise of passive investing in the bond market,¹¹³ the increased automatic demand for bond issues "increases firms' propensity to issue bonds, and results in larger bonds, lower spreads, longer maturities, and fewer covenants" (Dathan and Davydenko 2018). Similarly, even after controlling for other factors, there is a clear relationship between initial public offering (IPO) pricing – and therefore how much capital a company is able to raise in listing on the stock market for the first time – and demand (oversubscription levels) (Derrien 2005).

Interestingly, although studies on the impact of divestment on the share prices of South African companies during the Apartheid era conclude that it did not have an effect, few examine the impacts it may have had on the country's cost of capital. South Africa, perhaps not unlike many fossil fuel companies in the current age, was highly reliant on foreign loans; US banks provided around a quarter of all loans to the country, to the tune of \$4.6 billion in outstanding debt in 1984 (Gosiger 1986). The Oxford review of literature regarding historical divestment campaigns identifies fossil fuel bank loans as a target that "maximis[es] the direct impacts" of divestment (Ansar, Caldecott, and Tilbury 2013). Crucially, the Apartheid divestment movement included banks¹¹⁴ as targets, as the

¹¹³ According to a Mercer survey of over 800 European institutional investors, even the largest funds now have an average of 31% of their bond portfolio invested passively (Mercer 2019). Yet it appears that only one of the big four index providers – S&P, MSCI, Bloomberg, and FTSE Russell – offers an off-the-shelf fossil-free bond index; Bloomberg's [lone offering](#) is in Australian dollars. Thus even aside from conscious decisions to provide new capital to fossil fuel companies, many of Europe's institutional investors are doing so automatically.

¹¹⁴ Incidentally, a focus on banks could help address both supply and demand for fossil fuels. Banks are not just major lenders to fossil fuels; they also provide significant debt financing to utilities, the builders of two out of

fossil fuel divestment movement of today is beginning to do.¹¹⁵ It appears that foreign banks' restrictions on debt financing in the mid-1980s increased borrowing costs for South Africa and devalued their currency (Gosiger 1986); when Chase Manhattan Bank¹¹⁶ decided not to roll over the country's short-term debt in 1985, South Africa faced a liquidity crisis as other banks did the same (Levy 1999). South Africa's debt structure was already precarious by this point. Fully 82% of its debt had a maturity of under a year by 1986 (Knight 1990), the product of international public pressure to halt more longer-term financing (Harris 1986); for this reason, and unlike in other countries' debt crises at the time, South Africa largely faced a crisis of private debt rather than sovereign debt (ibid.). Beltratti's (2005) equilibrium model combining stocks and loans finds weak effects on share price, production, and profits due to screening out a pollutive company, but suggests that "[a]ctive investors should try to affect the behavior of the lending institutions in order to make their discriminating behavior with respect to stocks truly effective" and that companies would be particularly affected by negative screens as they attempt to raise new capital at the venture capital or initial public offering (IPO) stage. Small firms, especially in countries with poor institutions, tend to face particular constraints due to reduced access to bank financing (Beck, Demirgüç-Kunt, and Maksimovic 2008) – the source of a majority of financing of fossil fuels and other real-economy activity (Cojoianu et al. 2019) – which does affect the growth of such companies. In Australia, the targeting of banks appears to have substantially reduced the size of what was going to be the world's largest coal-mining project; although the divestment movement had hoped to put a halt to the mine altogether, it was partially successful¹¹⁷ in that the company (Adani) was unable to raise external financing and was forced to self-finance a smaller version of the project instead (Curran 2020).

Practitioner literature appears to take it as a given that decreased demand in the primary market – bond issues, for example – will lead to a higher cost of capital, difficulty rolling over existing debt, and the potential to discourage new issuance in the first place (Fitch Ratings 2019). Bond investors

three of the investments most prone to carbon lock-in: coal power plants and gas power plants (the third is internal combustion engine vehicles) (Erickson et al. 2015). Carbon lock-in refers to infrastructure or technologies that are often expensive to build but inexpensive to run, locking in high emissions even after climate-friendly technologies could have normally competed.

¹¹⁵ For example, <https://mazaskatalks.org/#theboycott> and <https://peopleandplanet.org/divest-barclays>.

¹¹⁶ The bank claimed this was a business risk decision, however, not an attempt to harm the Apartheid regime. One could argue that it was in fact responding to the country's instability, but contributed to this same instability in doing so.

¹¹⁷ The article suggests that government subsidies backfilled some of the shortfall in financing, however, and that the Australian government is reportedly considering enacting legislation that would curtail the divestment movement's activities. It further notes the importance of the insurance industry in such fights; although the company could proceed with the project by self-financing, without insurance a coal mine cannot operate.

tend to be more cautious than their public equity peers, and thus could be scared away from (especially long-term) issues because they do not want to be stuck with stranded assets in the end – even if they have no particular view of the fossil fuel industry themselves (ibid.). Corporate bonds are also less liquid than shares in the same company, with 1,000 out of 15,000 bonds accounting for most of the trading (Hill 2020b). Thus increases in cost of capital may not capture the full risk in the bond market; at a certain point, as occurred in Apartheid South Africa in 1985, lenders or bondholders simply decide not to roll over debt at all.¹¹⁸

The bond market appears to more easily trigger an internal loss-of-creditworthiness feedback loop, too, in part for this reason and in part because companies raise capital from the debt market much more often than from equity. The same Fitch Ratings report notes that there can be “convexity” in the bond market, or “negative price spirals”, a concern the European Commission identified in its short-selling and credit default swap¹¹⁹ (CDS) regulation (European Commission 2011). In some circumstances credit default swap pricing can affect the cost of capital for new bond issuance (Erlandsson 2017; Che and Sethi 2014), which can increase the company’s default risk, which itself can in turn further increase the cost of capital – intensifying a company’s loss of creditworthiness. Even without triggering such a feedback loop, however, a higher cost of capital could impose a higher “hurdle rate” on projects, making marginal projects – those that are particularly expensive, which often also translates into high emissions intensity – no longer economical to undertake (Ansar, Caldecott, and Tilbury 2013).

Regarding CDS, some hedge funds make use of such derivatives, but there is a dearth of evidence on the impact of these firms’ activities on companies’ environmental and social behaviour. There is an equal lack of evidence in the realm of private equity, which does appear to finance a sizeable segment of oil and gas companies in the US in particular:

¹¹⁸ These foreign banks later attracted criticism – and the withdrawal of \$40 million in business from Westchester County, New York in the case of Citicorp – for striking deals that allowed for short-term lending to be converted to longer-term debt, however (Knight 1990).

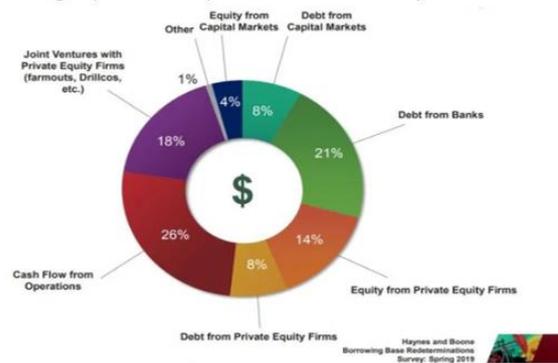
¹¹⁹ Credit default swaps are a form of credit derivative that serve as insurance for credit-holders.

U.S. Private Equity Activity in Oil and Gas



Source: BDO Pitchbook, 2019

Oil and gas producers' planned source of capital in 2019



Source: Hayes Boone, 2019

Specialist oil and gas private equity firms account for the vast majority of private equity fossil fuel financing. Furthermore, there does seem to be a measurable degree of “additionality” in private markets, where a change in demand appears to have a material effect on the underlying investments’ valuations – more demand from investors increases the target companies’ valuations, and less investor demand decreases target companies’ valuations (Diller and Kaserer 2009). All things being equal, one might expect that a sector with high valuations would stimulate the creation of new companies, and that persistently low valuations – due to a lack of demand from divested institutions, for example – would logically discourage entrepreneurs from establishing new companies in the low-valuation sector. The Global Impact Investing Network (GIIN) also notes that “[t]hrough private equity, impact investors can shape portfolio companies’ strategies and work directly with companies to help them meet the intended impact” (n.d.).

Finally, in the words of an Extinction Rebellion member and academic interviewed for this report, “divestment is likely to be more actually effective if it’s coupled with positive investment strategies, [. . .] if you take some of that money and actually put it into something that wouldn’t have been funded otherwise.” This has also been the view of investors such as Nesta, whose aim is to invest in early-stage ventures due to their impact potential, saying that impact from capital allocation “decreases with the age and size of the company, as well as with the maturity of the financial market in which the company’s financial assets are traded” (Puttick and Ludlow 2012, 13). The literature on impact investing supports this, contending that among the most high-impact investments one can make are in small companies in developing financial markets (Kölbel et al. 2020) or early-stage companies/venture capital¹²⁰ (Ormiston et al. 2015; Brest and Born 2013).¹²¹ Although there may be

¹²⁰ Not all evidence supports this contention, as in Bottazzi and Da Rin’s (2002) European venture capital market sample.

¹²¹ “A distinction of impact investing is that most assets tend to be in other asset classes. Private debt (34%), real assets (22%), and private equity (19%) account for 75% of assets invested by impact investors” (Hill 2020a).

some “deadweight” (lack of additionality) in some cases, a sample of Irish venture capital investments did generally demonstrate additionality (Hart and Lenihan 2006), and one study of 4000 venture investments finds that a doubling of demand for venture capital investments leads to average valuation increases of 7% to 21% (Gompers and Lerner 2000). According to the G8 Social Impact Investment Taskforce, “[r]egardless of whether they are social sector organisations or impact-driven businesses, the most common obstacle faced by impact entrepreneurs is securing early stage risk capital” (2014, 12). The International Finance Corporation (IFC) further notes that “[r]isk-tolerant early stage impact investors can also play an important role in creating new markets” (2019, 71).

Venture capital is a particularly relevant consideration for endowments of Cambridge’s size and larger; in surveys of US foundations (NACUBO and TIAA 2019) and US higher education endowments (TIAA and NACUBO 2019), larger funds had a much higher allocation to venture capital. Private foundations over \$500 million, whose exposure to fossil fuels – 4% – was also at least twice that of smaller or community peers, had an average venture capital allocation of 13%. Similarly, higher education endowments over \$1 billion had a 9% venture capital allocation relative to a 2.2% equal-weighted average among all such institutions in a sample of nearly 800. As venture capitalists have begun to invest in later-stage businesses over the past couple of decades, early-stage investing fills a widening financing gap for new companies (OECD 2016). As mentioned in Section 2, this is particularly relevant for Cambridge because of the role Cambridge Enterprise and CIC play in this space.

More broadly, according to a US SIF Foundation survey of institutional investors and money managers as recently as 2010, the conflict in the Sudan (\$446 billion AUM) and tobacco (\$235 billion) were taken into consideration in the investment decisions of a much higher total of assets under management than climate change (\$66 billion) and all other environmental issues combined (\$228 billion) in the US, the world’s largest financial market (Voorhes and Humphreys 2011). A study on shareholder resolutions filed by an ethical investment coalition found that, although environmental issues were the greatest focus in 1999 and 2000, they came in second, third, and even fourth place from 2001-2005 (Logsdon and Van Buren 2009). Since then, climate change has become the top environmental and social issue for responsible investors (A. G. F. Hoepner et al. 2016). Thus the divestment movement – alongside other factors, of course – may have an effect via the behaviours of other investors, a greater proportion of whom appear to have adopted climate change as a top concern in the past decade.

Divestment may also have an indirect financial impact on a company or sector by impairing investors' level of certainty as to the future cash flow of a company (Ansar, Caldecott, and Tilbury 2013). This is an area in which divestment is likely to have a greater effect than other forms of responsible investment¹²² – because its influence on social norms and public discourse means that concepts like stranded assets can begin to seed other investors' doubts in the fossil fuel sector's business model. This potential effect is impossible to predict or measure, but it is linked to investors' belief in the likelihood of the introduction of ambitious climate policy that would, in turn, impair fossil fuel companies' future performance.

Finally, the historical example of the anti-Apartheid movement suggests that divestment is most effective combined with other tactics and targets. While remaining an investor, CalPERS was able to change Engie's energy mix by threatening to divest (Krane 2017). Companies most willing to engage on the standards of the FTSE4Good index are those that are threatened with exclusion (divestment) (Slager and Chapple 2016). Fossil fuel divestment advocates and frontline communities such as Mazaska Talks have expanded their focus to include major global banks and insurance companies. Pressure on the South African Apartheid regime came in the form of international shaming, capital flight, and boycotts on the part of Black South Africans and their international allies alike, with these factors compounding one another. In South Africa's ruling National Party's 1989 election manifesto, as Apartheid crumbled, they stated: "boycotts, sanctions and disinvestment have strained the economy of the country and of every business and household" (John 2000, 433).

In summary, a narrow focus on divestment's impact on public equity holdings replicates the responsible investment industry's disproportionate emphasis on stock-picking in the secondary market, which may reduce the movement's direct financial impact on companies. Indeed, "[m]ost economists agree that it is virtually impossible for a socially motivated investor to increase the beneficial outputs of a publicly traded corporation by purchasing its stock" (Brest and Born 2013). Although divestment does not appear to have much of a direct financial effect on companies via public equity holdings – leaving aside its indirect effects on these same companies, as outlined in Sections 5, 6, and 7 – it may already have had an effect on the cost of capital of fossil fuel companies on the debt side, and could affect companies' ability to roll over debt or issue new debt in the first place. This may increasingly be the case as the divestment movement turns its attention to the banking sector, the source of a majority of new finance for fossil fuels. A divestment mandate – and,

¹²² Without such effects on other investors' perceptions, the companies may not even notice responsible investment funds' silent screening, tilts, or best-in-class exclusions, which is why "the bulk of [responsible investment] assets are invested in ways that promise rather modest and perhaps even negligible investor impact" (Puttick and Ludlow 2012, 14).

on the positive side, an emphasis on green investments – may have a yet greater effect on investments in smaller companies and in early-stage ventures, a relevant consideration for the University of Cambridge as the site of much such activity. Finally, divestment may be having a broader influence on the priorities of other investors.

Working Paper: Impact of Engagement on Companies' Environmental and Social Performance

This report rightly centres on the advantages and disadvantages of divestment, but its most commonly proposed alternative – shareholder engagement – merits some of the same scrutiny. What follows explores the claims of critics and proponents of shareholder engagement against the available academic literature on the impact of shareholder resolutions and shareholder engagement on environmental and social outcomes.

Proponents of shareholder engagement argue, as explored in Section 4, that shareholder engagement is likely to be more effective than divestment for two main reasons: because the sale of shares in the secondary market does not appear to have a substantial impact on the target companies or their operations, and because engagement allows for investors to retain their seat at the table and prevent the dilution of investor concern that could occur as divested institutions remove themselves from the shareholder register. Advocates point to rising numbers of shareholder resolutions on environmental issues and a corresponding increase in support for the resolutions filed over the course of many years (Neville et al. 2019; Sjöström 2008). Some also argue that oppositional tactics such as divestment are more likely to provoke resistance as opposed to cooperation, while shareholder engagement holds out the promise of respectful dialogue that could lead to a greater willingness to change on the part of the companies.

Critics of shareholder engagement¹²³ argue that it is a tactic ill-suited to an industry that is being asked to change its business model in its entirety. As a Regent House member noted during a Senate House discussion, “we don’t need fossil fuel companies to just invest a bit more, or even a lot more, in research into renewable alternatives. We need them to stop what they are doing altogether. We need them to have a plan to shut down their current business activities entirely in the course of the next twenty years. Shareholder engagement as a way of achieving that seems to be like asking a lion very politely if he would consider the advantages of vegetarianism”. The charge is that the goals of shareholder engagement represent incremental changes at best; there is no shareholder engagement programme that aims towards winding down whole business lines or companies that are incompatible with the Paris Agreement goals. Critics further argue that incumbent industries rarely lead fundamental change in the market, that the trend in support for shareholder resolutions

¹²³ With thanks to Julia Peck for many of these points.

has not been straightforwardly positive and that they do not promote company accountability because most resolutions are non-binding anyway, that shareholder engagement has never delivered fundamental changes to a business model,¹²⁴ and that engagement is a behind-the-scenes effort for the few – only those who own shares, meaning most stakeholders are cut out of the process. Finally, some argue that shareholder engagement could even do harm; it can serve as a form of greenwashing, and effectuate a delay during this crucial period for climate action. According to a divestment conference presenter, “Shareholder engagement is a form of waiting”.

What follows will assess the claims of efficacy or ineffectuality from both proponents and critics of shareholder engagement according to the available evidence. Shareholder engagement can be defined as the use of shareholder pressure on companies – via private dialogue, shareholder-filed resolutions to be voted on at company annual general meetings (AGMs), and/or public statements – to achieve particular operational or disclosure-related outcomes. For the purposes of the current analysis, the evidence will largely be confined to studies examining the real-world environmental and social impact of shareholder resolutions and private shareholder engagements (excluding studies on stakeholder engagement on the part of non-shareholder NGOs, for example), with a particular focus on environmental outcomes. Although some important earlier studies are included, most of the literature covered here addresses shareholder engagement from 2000 onwards; this is because some studies suggest that shareholder engagement began to gain more traction in the early 2000s (Ertimur, Ferri, and Stubben 2010; Grewal, Serafeim, and Yoon 2016). It is worth noting that, of all assets managed according to responsible investment (RI) principles, shareholder engagement accounts for only 18% of the total (10% in the US) (Kölbel et al. 2020, 14), so it is among the lesser-practiced approaches to responsible investment. Shareholder activism on environmental issues has become more common in recent years, however (Ma and Liu 2016).

It is worth noting some parameters as to the measurement of the efficacy of shareholder engagement. What should constitute effective shareholder engagement for the purposes of this analysis? Because the main issue at hand is climate change, the mitigation of which requires an ambitious plan to cease emitting carbon into the atmosphere (a real-world outcome for which there is no substitute), a successful engagement will be defined as one that results in real-world material outcomes so that it is possible to evaluate shareholder advocacy for the purpose for which it is intended. This requires a deeper examination of particular shareholder resolutions and engagement

¹²⁴ The best example may be Nike, which worked to end child labour in its supply chain, but no one asked them to stop selling shoes (and shareholder pressure in this case was combined with a boycott, which can have a direct effect on revenue).

goals, as a large majority of these currently focus on disclosure, voluntary standards, and policy changes that do not clearly lead to real-world outcomes.

As the aim of a majority of contemporary shareholder engagement, disclosure warrants a particularly close look. It is a rare ESG conference whose panelists fail to mention the need for better data, and therefore better disclosure. It is, of course, necessary for companies to disclose their absolute scope 1, 2, and 3 emissions, emissions intensity, water usage, waste management practices, and more; without this information, it is difficult to assess real-world outcomes in the first place. As an indicator of real-world outcomes itself, however, it may not be sufficient.

Some studies find no correlation between disclosure and companies' actual environmental performance (Freedman and Wasley 1990; Wiseman 1982; Ingram and Frazier 1980; Ali Fekrat, Inclan, and Petroni 1996), while others – controlling for size and sector – find a negative correlation (Patten 2002; Sutantoputra, Lindorff, and Johnson 2012; Hughes, Anderson, and Golden 2001; Bewley and Li 2000) – as in, companies with worse environmental performance are more likely to issue environmental disclosures. Clarkson et al (2008) and Al-Tuwaijri et al (2004) find that companies with good environmental performance disclose more. Clark and Crawford (2011) find that poor performers are more likely to disclose to CDP publicly in response to shareholder pressure, and to withdraw resolutions and agree to “disclose policies and plans” instead. Finally, Reid and Toffel (2009) find that disclosure does not tend to lead to other changes beyond disclosure itself. In other words, the relationship between disclosure and environmental performance is mixed at best, and often negative. Compelling evidence of a causal relationship between disclosure and improved performance is lacking. For these reasons, it would be difficult to assume as successful any engagement that secured improved disclosure as its only outcome. Thus the analysis below focusses on real-world outcomes with evidence of implementation where possible, not just disclosure or reporting.

Finally, the literature on the environmental and social impact of shareholder engagement represents a small subset of a large body of work on shareholder engagement more generally, much of which centres on the financial and operational effects of engagement. Evidence on the effects of shareholder engagement on financial returns is mixed, according to reviews of the literature (Goranova and Ryan 2014; Barko, Cremers, and Renneboog 2018; Becht et al. 2009), but it has had a more positive than negative influence on company operating performance since the beginning of the 21st century according to one meta-analysis (Denes, Karpoff, and McWilliams 2017), including in terms of reducing downside financial risk due to environmental factors (A. G. F. Hoepner et al. 2016). There are fewer articles concerning the effect of shareholder engagement or voting on company

environmental or social behaviour, and most of the evidence in the area centres on the US and UK markets (Chung and Talaulicar 2010). It is worth, however, exploring the evidence that is available.

In a historical study of shareholder engagement beginning in the US in 1942, Marenz concludes that there is no evidence of meaningful advancements on ESG issues aside from some governance concessions in the first couple of decades and a few token appointments of woman to board seats, companies having “learned how to burnish their public image without any surrendering any real power or independence” (2002, D4). Another historical study covering 2,158 labour and human rights shareholder proposals from 1969 to 2003, however, makes the argument that one must take a longer view to evaluate the efficacy of shareholder engagement; Proffitt and Spicer (2006) suggest that, over the course of decades in some cases, businesses did alter practices and expenditures in South Africa and Northern Ireland, for example. The authors’ definition of proxy voting success was reaching the threshold of 10% of investor support, however, making their examples more powerful than their empirical conclusions. Moreover, their work raises the question of whether shareholder engagement can deliver on the issue of climate change specifically, for which a timeframe of decades is simply unworkable.

These and other studies of the effectiveness of contemporary proxy voting tend to focus on indicators such as the number of shareholder resolutions that are withdrawn (Bauer, Moers, and Viehs 2015) – with the understanding that a withdrawal signals that the company has met the shareholders’ standards such that a resolution is no longer required – as well as the level of support for shareholder proposals, with some also measuring the degree to which companies implement the changes requested (Majoch, Gifford, and Hoepner 2012). Such works do not tend to measure actual real-world outcomes, though. Of those that do, most find little to no effect from social and environmental proxy voting, and some even find negative effects.

Monks et al’s (2004) study of shareholder resolutions filed with 81 large US companies from 2000-2003 finds that climate change and renewable energy resolutions received well above-average investor support compared to that for CSR resolutions more generally, but still only received an average of 13.3% of votes in favour; the authors further note that Exxon has been the top (or near to top) target of environment-related shareholder resolutions since the 1990s. The study does not provide evidence of concrete changes emerging from the 671 resolutions examined, and indeed Exxon cannot be said to have responded meaningfully to shareholder pressure on the climate even as one of the most scrutinised companies. Thomas and Cotter’s (2007) study of shareholder resolutions from 2002-2004 finds that, of 403 social responsibility resolutions, none received majority investor support and company boards took action on none of the proposals. In Tkac’s

(2006) study of 2,829 social and environmental shareholder resolutions from 1992 to 2002, only four achieved more than 50% shareholder support and the average level of support was 8.2%. Tkac views withdrawals largely as indicators for success, however, finding that of 298 (35%) of 859 withdrawn proposals, 79% resulted in some action on the part of companies. Of the actions specifically mentioned in the paper, however, almost all related to commitments the companies had made – not necessarily whether they had indeed implemented the changes they had committed to. Of the environment-related examples, it was difficult to detect evidence of implementation; Citigroup, Bank of America, and JP Morgan Chase were all cited as positive examples of engagement success on environmental issues, yet they currently represent three out of the top four lenders to fossil fuel companies and projects in the world (Rainforest Action Network et al. 2020). Finally, Clark et al (2008) find that US companies' average InnoVest scores very slightly *declined* following campaigns of multiple shareholder resolutions over the period of 2002-2004.

Grewal et al (2016) find changes in environmental performance for financially immaterial ESG resolutions from 1997-2012, perhaps because “immaterial sustainability issues tend to be easier to address and they do not involve fundamental changes in the business model, processes and products of a company” (14). A majority of the proposals in their sample of 2,665 were on immaterial ESG issues. The authors suggest that companies may be engaged in “goodwashing,” providing “supportive evidence that increases in performance on immaterial issues may be driven in part by firms that are trying to divert attention from their poor performance on material issues” (ibid., 33). The companies' performance on both material and immaterial ESG issues appeared to improve over time, however, with more significant gains in the 2005-2012 period. Reid and Toffel (2009) find that 44% of the S&P500 companies that CDP (formerly the Carbon Disclosure Project) contacts do publicly disclose at least part of what was requested – which would constitute a financially immaterial action – and that this rises for companies that have been targeted with a shareholder resolution and/or threatened with future government regulations. Cook's (2012) study of shareholder resolutions directed at Canadian oil sands companies finds that “[t]he largest majority of requests are for improved disclosures” and that investor impatience with the companies themselves may have led them to successfully pressure regulators in Canada and the US to improve climate risk disclosure requirements – thereby achieving the aims of the disclosure-based proxy proposals, but via government intervention.

Among the most favourable studies for shareholder engagement is that of Lee and Lounsbury (2011), who find that each additional shareholder resolution on environmental issues is correlated with a 3% increase in the rate of internalisation of benzene (an environmental pollutant) every year. Another study suggests dialogue can be more successful than shareholder resolutions, exploring two

case studies – one regarding a large manufacturing company, and another regarding a technology company (Logsdon and Van Buren 2009). What constituted a success in this study seemed a stretch, however. In the former case, the shareholders did not achieve their central goal of wage increases – in fact, the issue was explicitly excluded from the dialogue – and do not appear to have achieved anything other than the inclusion of some additional material in the company’s Corporate Social Responsibility (CSR) report. In the latter case, the company agreed to improved monitoring of companies in its supply chain after two years of engagement. In neither case is there evidence that any material changes resulted. Yet another case study of a “successful” engagement with BP Amoco resulted in somewhat improved disclosure, with the author writing, “The main impacts of shareholder activism in its current guise can thus be summarized as increased accountability and increased participation by shareholders in corporate business and decision-making. At least, this is the ideal situation” (O’Rourke 2003, 237), although the “ideal situation” does not appear to involve concrete changes to business practices. McLaren (2004) lists several examples of successful shareholder engagement through proxy proposals, but almost all relate to disclosure or voluntary initiatives with no clear impact. However, he notes the example of an unnamed company that had withdrawn its operations from Burma, and in another example, “Oxfam collaborated with Friends Ivory Sime and the Universities Superannuation Scheme to persuade GlaxoSmithKline to drop its court action against the South African government over patent rights” (ibid., 193).

Such examples appear to be few and far between, however. Levit and Malenko find that, even on corporate governance issues, “nonbinding voting for shareholder proposals generally has little advisory role for management” (2011, 1581). It may not be a surprise, then, that a study of 844 shareholder resolutions on environmental issues in 2006-2014 finds that “[t]he changes corporations adopt as a result of engagement have been marginal procedural adjustments, rather than substantive changes” (Uysal, Yang, and Taylor 2018). In the course of expounding upon the lack of efficacy of socially responsible investment more generally, Haigh and Hazelton (2004) describe shareholder advocacy as ineffective, noting that shareholder resolutions almost always lose.

In a study of over 12,000 shareholder resolutions from 1997 to 2009, Bauer et al (2015) find that withdrawn resolutions aimed at decreasing executive pay are associated with changes in pay packages, but that there is no evidence as to whether changes result from corporate social responsibility (CSR) resolutions. CSR resolutions were more likely to be withdrawn than governance equivalents (31.2% versus 16.8%) over the period studied, but the authors posit that this may be because the former were easier to implement or because managers found it easier to enact “symbolic changes to convince the shareholders to withdraw” (ibid., 477). David et al (2007) concur; in their study of 1,906 shareholder resolutions from 1992-1998, they find that corporate social

performance (CSP) “declines even when firms settle with salient shareholders. We infer that managers’ responses are symbolic rather than substantive, and so no real changes to core policies are made” (98). For this reason, shareholder engagement may even be harmful; “rather than pressuring firms to improve CSP, [shareholder] activism may merely engender diversion of resources away from CSP into political activities used by managers to resist external pressures and retain discretion” (ibid., 97).

David et al’s view of the potential harms of shareholder engagement is unfortunately echoed in the work of Rojas et al (2009), who suggest on the basis of an empirical study of US resolutions from 1997-2004 that resolution withdrawals – the source of some of the few positive results in the work cited above – are not a sign of successful engagement but rather the result of a failure of negotiations with the company and/or a fear that fellow shareholders will not support the resolution in sufficient numbers (or even that the proposal will fail to achieve the minimum threshold required to re-file in subsequent years). Of 657 withdrawn proposals, they found just over a third to be successful while noting that they had not evaluated the extent to which even successful proposals were implemented (ibid.).

Indeed, even when a shareholder resolution is successful, the evidence on implementation rates is dispiriting. For governance-related shareholder resolutions, which enjoy the support of a greater proportion of shareholders (Gillan and Starks 2007; Grewal, Serafeim, and Yoon 2016; Thomas and Cotter 2007), several studies (Cuñat, Gine, and Guadalupe 2012; Ertimur, Ferri, and Stubben 2010; Ertimur, Ferri, and Muslu 2011) suggest that the implementation rate hovers just over the 30% mark even for proposals that win a majority shareholder vote, although the figure rises substantially for a smaller sample of majority voting firms in Ertimur et al (2015) and Renneboog et al (2011) find that 41.2% of socially responsible investors’ successful (passed) governance-related resolutions were implemented between 1996 and 2005. In two studies of executive pay proposals covering the period 1997 to 2004 and 1997 to 2007, however, no social executive compensation resolutions¹²⁵ achieved a majority vote, nor were any implemented (Ertimur, Ferri, and Stubben 2010; Ertimur, Ferri, and Muslu 2011). In Flammer’s (2015) sample of CSR shareholder resolutions from 1997-2011, she finds that 52% were implemented – but concludes this on the basis of improvements in ESG ratings, not actual evidence of implementation.

Interestingly, implementation improves substantially when a vote-no strategy (shareholders voting against the re-election of board members) is employed, however; Ertimur et al (2011) “find a

¹²⁵ These include 116 resolutions on linking executive pay to social criteria and 46 resolutions aimed at capping the CEO-to-worker pay ratio (Ertimur et al, 2011).

decrease of excess CEO pay in firms targeted by vote-no campaigns. This decrease is driven by firms with excess CEO pay before the campaign and amounts to a \$7.3 million reduction (corresponding to a 38% decrease) in CEO total pay". Thus voting against board members, a relatively rare tactic, may be significantly more effective than the much more common tactic of filing advisory shareholder resolutions.

As noted above, some academics believe that private dialogue is more effective than shareholder resolutions as well. Kolbel et al's (2020) review article suggests that shareholder engagement can be effective based on their analysis of the evidence. They identify five empirical studies on the efficacy of (largely private) engagement on companies' social and environmental performance, concluding that it is a promising tactic with success rates ranging from 18% to 60%.

However, the study reporting the highest success rate (of 60%) is as yet not published in a peer-reviewed journal, and the authors write that the shareholder "activist's request for a material change from the engaged company (which we call a reorganization) reduces the likelihood of a successful outcome, relative to an engagement that, e.g., stimulates the target to be more transparent in its ESG policies" (Barko, Cremers, and Renneboog 2018, 3). In the study there was not one climate change-related engagement that aimed for the standard of "reorganisation", meaning this was not even the intended outcome and thus does not add any evidence as to the effectiveness of engagement on anything other than disclosure (requests for which were successful 81% of the time); the average success rate for other environmental engagements aiming for "reorganisation" ranged from 27.4% to 30.8% (ibid., 41). The case study of a successful environmental engagement cited in the report concerned a utility company that agreed to publish a sustainability report; the successfully social case study was similar (ibid., 50).¹²⁶

Another study cited in Kolbel et al's (2020) paper, Hoepner et al (2016), also an as-yet unpublished working paper, finds a shareholder engagement success rate of 31.4% in a sample of 1,712 engagements with 573 global firms from 2005-2018. It is unclear what the engagement goals were, however; if they followed the pattern common to the field, they will have been largely disclosure-related.

The study reporting the third-highest success rate (of 33%), furthermore, does not distinguish between shareholder proposals that met with actual implementation as opposed to simply counting

¹²⁶ Interestingly, the study finds that "[f]or environmental engagements, large cash holdings are associated with a reduced probability that the case is closed successfully, perhaps because large cash holdings occur at corporations that are less dependent on external capital markets and that accordingly are less interested in good investor relationships" (ibid., 21), which links with the evidence in Appendix IV on the impact of divestment in the bond markets.

as successes cases in which “sources report successful negotiations or productive discussions”, nor do they note if the proposals that were implemented resulted in actual changes in environmental and social performance or simply enhanced disclosure, and this finding was based on a smaller sample of shareholder resolutions in Canada only (Dyck et al. 2019). That said, the authors find a correlation between ESG investors and improved ESG performance. However, of the 70 indicators they cite, only a handful could be definitively tied to improvements in environmental performance, such as reductions in emissions or hazardous waste; the vast majority concern reporting, monitoring, policies, commitments, and targets, not actual operational changes. Perhaps most concerning, one of the *positive* indicators is whether the company is developing liquefied natural gas (LNG) – hardly a sign of environmental progress. They also examine US firms, “find[ing] that US investors in aggregate play no role in pushing for E&S improvements at US firms” (ibid.).

Cambridge scholars’ research on the subject, based on hundreds of engagements on the UN PRI’s coordinated engagement platform, finds that a large minority – 42% – of engagements achieve their stated goal (Dimson, Karakas, and Li 2019). Even these successful instances of shareholder engagement may have had little real-world effect, however; the goals of most shareholder efforts listed in the study were generally of the disclosure, reporting, written policies, and voluntary standards variety (Dimson, Karakas, and Li 2019), which is common in shareholder engagement campaigns more generally (R. Allen, Letourneau, and Hebb 2012; Neville et al. 2019).

Indeed, during the 2018 proxy season fully 27 of the 31 most supported resolutions requested disclosure (Sjostrom 2020). This is important to note because, as mentioned earlier, such goals may not always correlate with real-world, real-economy changes. One corporate governance study found that, even among a subsample of S&P 500 and EURO 500 companies that actually had climate change policies in place, only a minority of their boards had so much as discussed climate risks or opportunities (Shrivastava and Addas 2014), let alone reduced emissions.

Studies that examine case studies of shareholder engagements are generally disappointing as well. Hoffman’s (1996) case study of engagement with Amoco suggests that the result was increased disclosure and some board appointments and board-level committees on environmental and social matters, although of the principles at the centre of the engagement “many environmentalists [. . .] think that the principles have been diluted to insignificance” and that the group that had sought these changes had been “co-opted by corporate interests” (63). In Ferraro and Beunza’s (2019) case study of GM and Ford from 1997-2009, the authors contrast the tone of the engagement the two companies had with lead engager Sister Patricia Daly, although the results appear to have been similar (aside from improved reporting from Ford) – uninspiring – in both cases, with the companies

continuing to lobby against fuel efficiency standards and so on. Gifford (2010) examines 11 case studies of successful engagements conducted by three bodies, although in only one case (the establishment of a computer recycling and take-back programme) was it clear what precise change in company practice had occurred. Perhaps most promising was McAteer and Pulver's (2009) case studies of two indigenous shareholder activism campaigns, with Burlington and Chevron respectively. In the Burlington case the activists were somewhat successful; two blocks of land were not exploited for oil, and the company passed a "weak" policy on indigenous rights and committed not to proceed with development by force. Engagement with Chevron was ineffective, however.

Further studies on shareholder engagement come to similar conclusions. Neubaum and Zahra (2006) find that although long-term institutional ownership is associated with corporate social performance (CSP) across social and environmental factors, shareholder activism itself is not associated with CSP. Sjostrom's (2008) influential review of the literature on social and environmental shareholder engagement finds that a majority of articles on the impact of engagement on corporate environmental performance are "leaning towards a sceptical stance" (147), with several such studies "warning that [shareholder engagement] can only achieve modest and corporate-specific changes rather than more fundamental and industry-wide change" (152). Wagemans et al (2013) similarly find, in a review of more than 200 articles on socially responsible investing (including screening, shareholder resolutions, and shareholder engagement), that "overall, SRI does not yet play a major role in changing ESG performance", echoing the conclusions of other studies in the process (Busch, Bauer, and Orlitzky 2016; Haigh and Hazelton 2004). Glac (2014), similarly, suggests that "[w]hile research is inconclusive on whether SRI investors can pursue social goals without having to pay a financial price, there is significant doubt if and how SRI can have an effect on the conduct of corporations." Some even claim that progress on climate change via shareholder engagement is impossible due to the very largest fund managers' conflicts of interest. Some fund managers manage (or wish to manage) a target company's retirement funds and therefore tend to vote with management (Neville et al. 2019; Becht et al. 2009).

A historical comparison with the anti-Apartheid divestment campaign is worth exploring. An article comparing the Apartheid South Africa and fossil fuel divestment campaigns observes that there is no equivalent of the Sullivan Principles for the fossil fuel industry in order to differentiate between and among companies that succeed or fail at aligning with the Paris Agreement goals (Hunt, Weber, and Dordi 2017). As an exemplar for the effectiveness of engagement, however, the Sullivan Principles appear to fall short. Developed in 1977 by Reverend Leon Sullivan, the Sullivan Principles established a voluntary code of conduct for corporations active in South Africa during the Apartheid regime. The principles were highly influential; almost all the institutional investors in the US that made Apartheid

divestment commitments made exceptions for Sullivan Principle signatories (Arnold and Hammond 1994; Hauck, Voorhes, and Goldberg 1983), and there is some evidence that the principles brought about positive changes in South African workplaces (Seidman 2003). A majority of Sullivan Principles signatories either did not report at all or did not meet the minimum requirements by 1985, however, and it is unclear to what extent the Principles were followed given that all evidence was self-reported by the companies without input from employees or employee representatives (Gosiger 1986). “Reverend Leon Sullivan himself eventually lost faith in the ability and determination of signatories to the Sullivan Principles to effect change. Impatient with the slow pace of change in 1985, he set a 2-year deadline for the end of apartheid. Sullivan kept his word and in June 1987, when apartheid had not ended, he called for the withdrawal of all US Companies” (Westermann-Behaylo 2009, 425). Indeed, “constructive engagement” appears to have had a “negligible” effect on ending Apartheid divestment; boycotts, sanctions, and South Africans’ own efforts were generally considered to be more effective (Hill 2020a). Much worse, “[s]ome have argued that the development of the codes of conduct such as the Sullivan Principles and the constructive engagement policy actually resulted in the loss of 5 years when the United States might have influenced South Africa more strongly to resolve its racial problems” (Ungar and Vale 1985, 426).

In discussions with stakeholders across the University and within the field of responsible investment more generally, there was a significant degree of heterogeneity in the various responses. Some felt divestment was ineffective in terms of shifting companies’ behaviour; some felt engagement and/or voting was ineffective in shifting companies’ behaviour, sometimes even when they themselves participated in such engagements; and some worried that both were ineffective. Several people in the shareholder engagement space privately shared the view that it was unlikely that the oil and gas majors would be able to transform themselves in accordance with what is required, and are therefore unlikely to continue to exist in the long term. A Trinity Responsible Investment Society (TRIS) report, written by Trinity College students who had attended several AGMs to ask questions and vote the College’s shares, suggested that such a form of shareholder engagement was unlikely to be effective unless more resources – and senior voices from the College – were to be deployed (N. Jones and Burrell 2019). In a college Bursars’ focus group, some expressed skepticism as to whether engagement could deliver the required changes, but also felt that much has changed in just the past year or two and there are no data from the new era. This may indeed be the case; “72% of S&P 500 companies reported engaging with shareholders in 2017, compared to just 6% in 2010” (Hill 2020c). A panelist (and Cambridge alum) at the RINU-hosted event “Can Engagement Deliver Decarbonisation?” similarly felt that serious engagement with oil and gas companies had only really begun in the last 2 to 3 years.

Shareholder engagement may have its niche besides. It appears to be effective in increasing firms' spending on research and development; David et al (2001) find that for the 73 large industrial companies in their sample, "[i]nstitutional activism increased R&D inputs over both the short and long terms" and that "proxy-based activism is more effective than non-proxy-based activism in enhancing R&D intensity". Shareholder engagement may also help to influence other investors' perception of a company's risk; Vasi and King (2012) find that, for a sample of the 700 largest companies in the US from 2004 to 2008, shareholder activism was able to influence the firms' environmental risk rating – and such ratings, in turn, have a significant effect on financial performance – whereas stakeholder activism was not. In a study of 600 stakeholder actions from 1971 to 2003, Easley and Lenox (2006) find that "confrontational" stakeholder engagement such as protests and boycotts are more likely than shareholder engagement to affect companies' environmental performance. Indeed, companies are more likely to accede to the demands of a boycott campaign if it generates a lot of media coverage (King 2008). Thus shareholder engagement can be viewed as a mechanism to generate particular outcomes – such as shifts in perception of a firm's environmental risk, or increases in firms' R&D spending – but not necessarily others such as actual increases in environmental performance, which may be better achieved through direct stakeholder pressure.

Legislation, or the threat of it, is by far the most important driver of corporate environmental performance according to Dummett's (2006) qualitative study of Australian and international executives, while shareholder pressure plays a very minor role.¹²⁷ Another study of shareholder resolutions on hydraulic fracturing (fracking) from 2010 to 2016 shows that most of the resolutions concerned disclosure, and that insufficient progress on the part of companies led investors to simply lobby the US government to change regulations (Neville et al. 2019). Cook (2012) finds the same for oil sands shareholder resolutions and disclosure-related securities regulation in Canada and the US. Recall that Reid and Toffel (2009) find that shareholder resolutions are more likely to be successful with companies that are threatened with future government regulations. A further study finds that firms that engage in corporate political activity (lobbying and campaign contributions) are less likely to engage with shareholders on issues relating to corporate social responsibility (Hadani, Doh, and Schneider 2019), perhaps because they are directly countering the threat of legislation through another channel and thus have less of a need to comply with shareholders' requests.

¹²⁷ Interestingly, the executives display a surprising level of support for corporate environmental legislation in this study.

On the basis of all of the above evidence, what would be reasonable to conclude about the efficacy of shareholder engagement in terms of real-world environmental and social outcomes? Critics charge that as a tactic engagement cannot deliver fundamental changes – just incremental changes at best. Kolbel et al (2020) concur, saying that the impact of shareholder engagement “decreases as the cost of the requested reforms rises, meaning that shareholder engagement is more likely to trigger incremental improvements rather than transformative change” (13). Most engagement does happen behind closed doors (Dyck et al. 2019; Mackenzie, Rees, and Rodionova 2013), although Mackenzie et al (2013) note that shareholder resolutions are public. Shareholder resolutions are indeed largely non-binding, and results in this quarter are poor regardless; most resolutions fail, and a majority of those that pass or are withdrawn fail to be implemented. Those that are implemented tend to fall into the category of disclosure only, leaving open the charge that there is indeed some greenwashing – and delaying – going on in the field. Evidence of positive results are lacking, and these results are incremental at best – if there is any real-world outcome at all (except, perhaps, improved spending on R&D and small increases in benzene internalisation). By any threshold one could devise as to the efficacy of a tactic for action on climate change and other social and environmental issues, it would be difficult to deem shareholder engagement a success.

There may be some hopeful lessons among the reams of studies on the topic, however. As mentioned in Section 4 (page 33), the combination of divestment and shareholder engagement may increase the potency of each tactic in isolation – a sort of emergent property. Studies on the FTSE4Good index find that companies at risk of being excluded from the index are more likely to change their behaviour (Slager and Chapple 2016) and that engagement on environmental standards is more effective for companies that face exclusion from the index¹²⁸ (Mackenzie, Rees, and Rodionova 2013). CalPERS’ threat to divest from Engie resulted in material changes to the company’s coal exposure (Krane 2017). Admati and Pfleiderer (2009) suggest that the threat of exit may, depending on circumstances, enhance active ownership.

Several studies suggest other factors that tend to improve engagement’s success levels. Hassel and Semenova (2019) find “that successful forms of engagement dialogue target global companies with higher levels of pre-engagement environmental, social and governance (ESG) performance, ESG transparency, and operating performance than a matched sample”, and Kolbel et al (2020) suggest that companies with higher ESG ratings or who have complied with previous requests are more likely

¹²⁸ Glac (2014), in a review of literature on shareholder engagement and SRI screens, suggests that one of the weaknesses of SRI exclusions is that they are unlikely to run in the same direction and therefore gaining a “critical mass” to affect prices is very difficult – but that indices could be an impactful lever because it helps concentrate exclusions on the same targets.

to do so in future engagements. Sjostrom (2020), on the basis of a thorough review of the literature, suggests a number of tactics that can improve engagement success, including making a strong business case to the company, ensuring that the shareholder activist has a good reputation more generally, targeting companies that are larger and consumer-facing, and more. Ertimur et al's (2011) aforementioned finding that voting against directors is more effective than shareholder resolutions provides a further clue as to which tactics could improve the efficacy of shareholder engagement. It is possible that, alongside a focus on outcomes other than disclosure, shareholder engagement could become more effective than it currently is. It has not yet proven itself an effective tactic to date, however.

APPENDIX VI: IMPACT OF FOSSIL FUEL DIVESTMENT ON FINANCIAL RETURNS

There have been more than 2000 studies of the effect of ESG (environmental, social, and governance) investing on financial returns/stock price,¹²⁹ with the vast majority indicating that there is little to no negative effect and, indeed, sometimes a small positive effect on portfolios managed in accordance with some form of ESG investing (Friede, Busch, and Bassen 2015).

The literature on the effect of fossil fuel divestment on portfolio performance is more limited. It largely concludes that divestment has little to no risk-adjusted effect on portfolio returns, especially in recent years. Fossil-free portfolios appear to have outperformed the market on a risk-adjusted basis in 2011-2015 for the TSX 260 (Hunt and Weber 2019), from 2013-2018 for the MSCI ACWI (covering over 3,000 stocks) (Sanzillo, Hipple, and Williams-Derry 2018), and since 2010 for the S&P 500 (Sanzillo and Hipple 2019). Halcoussis and Lowenberg (2019) concur that fossil-free portfolios slightly outperformed the S&P 500 throughout 15 out of 16 sample time periods since the divestment movement began – from 2010 to 2018.¹³⁰ Fang et al (Fang, Tan, and Wirjanto 2019) find that the energy, materials, and utilities sectors underperformed (sometimes significantly) the S&P 500 (US) and S&P TSX Composite (Canada) indices from 2007 to 2017; Henriques and Sadorsky (2018) find that, in the timeframe 2005-2016, a fossil-free S&P500 portfolio with clean energy outperforms a portfolio with fossil fuels, and that a fossil-free portfolio without clean energy slightly outperforms its fossil fuel equivalent in most scenarios; and Diltz (1995) finds little impact on performance from ethical screens across the board, but that good environmental performance is somewhat rewarded by the markets. Andersson et al construct a low-carbon index (with 50% less exposure to CO2 emissions) than the benchmark with equivalent returns (Andersson, Bolton, and Samama 2016). A study (Plantinga and Scholtens 2016) of the fossil fuel sector from 1973 to 2015 finds no statistically significant difference in performance between portfolios with and without fossil fuel stocks, although the former is the highest-performing sector (by a relatively small margin, however, with a mean of 0.17% outperformance) throughout the period if one does not take risk into account; if one does, it is worth noting that fossil-free portfolios are exposed to less systematic risk. Once this risk is taken into account, the difference becomes statistically insignificant. The

¹²⁹ The abundance of studies on this particular question stands in contrast to the dearth of climate-related finance studies, especially in top finance journals (Diaz-Rainey, Robertson, and Wilson 2017).

¹³⁰ Studies that examine the financial effects of divestment on portfolio performance are right to choose a post-2010 time period in that that it when the fossil fuel divestment movement began, although the past decade has been particularly terrible for fossil fuel companies and thus some critics claim this amounts to cherry-picking the data. That said, historical studies may have a bias as well, as they do not take into account the present-day threats to the viability of the industry – particularly society's increasing concern over climate change and the growing cost-effectiveness of renewable alternatives.

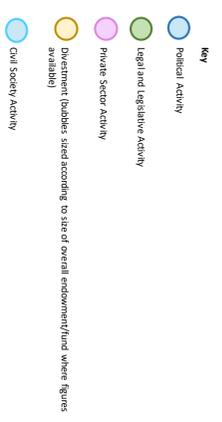
authors conclude, “fossil fuel stocks do not earn risk-adjusted returns that are statistically different from zero and have significantly higher exposure to systematic risk. This suggests that the fossil fuel investment restriction as such does not seem to harm investment performance” (ibid.). Regarding diversification, they say, “the main result is that the impact of the restriction is very small for typical investors. Portfolios with the restriction do not systematically differ in terms of risk and return from portfolios without the restriction. For investors with a preference for less risky portfolios, however, the restriction is likely to have a small and negative impact on their utility. For investors with a desire for riskier portfolios, the restriction actually appears to be beneficial” (ibid.). A study of historic (1927-2016) returns for 6 fossil-free (minus Carbon Underground 200 shares) and 6 unconstrained US portfolios found that fossil-free funds’ risk-adjusted returns were comparable to those of unconstrained funds and did not suffer from diversification issues (Trinks et al. 2018); “fossil fuel company stocks do not outperform other stocks on a risk-adjusted basis and provide relatively limited diversification benefits”, they conclude. For the five years after the advent of the divestment movement the fossil fuel industry did underperform the market, they find, but this was likely due to the oil price shock during those years (ibid.). Finally, a very long-term study by Cambridge scholars Atta-Darkua and Dimson (2018) covering the years 1900-2018 in the UK and the US reveals several interesting findings. First, the worst performer over 118 years in the US sample was coal, a \$1 initial investment in which would have generated \$1,612 over the whole period (relative to tobacco, the best performer, which would have generated \$9.4 million) (Atta-Darkua and Dimson 2018, 121). Over the period 1911 to 2017, oil outperformed the US market by an annualised mean of 0.88%, underperformed in the period leading up to 1950 and (more dramatically) in the 25-year period between 1975 and 1999 but outperformed from 1950-1974 and again from 2000-2017 (Atta-Darkua 2019, 118). In the UK sample across the same 118 years, oil underperformed the market, although by a relatively small margin;¹³¹ a £1 investment in 1900 would have generated £31,078 relative to the market’s 40,838 (ibid., 114).

Regarding the university endowment sector specifically, evidence suggests that US endowments were already underweight fossil fuels by 2013, at a portfolio weighting of 2-3% (Ryan and Marsicano 2020, 14; Ansar, Caldecott, and Tilbury 2013). Using two statistical methods, one study observes no evidence of negative performance consequences to divestment in their sample of 697 US college and university endowments – of which only a small number had divested, however, making the comparison group small – with evidence of minor outperformance in the cases of some of the larger

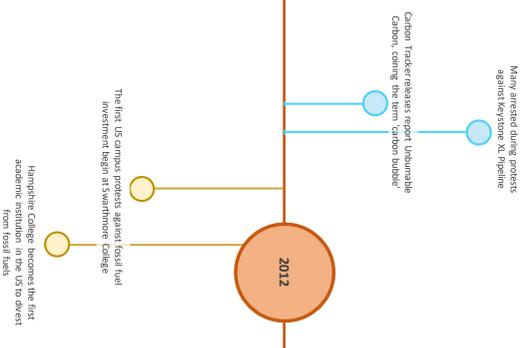
¹³¹ The U.S. data did not include an unbroken time series for oil, and the UK data did not include an unbroken time series for coal, so the authors could not determine their overall return relative to the market over the 118-year period.

universities and underperformance for one institution with a very small endowment (Ryan and Marsicano 2020).

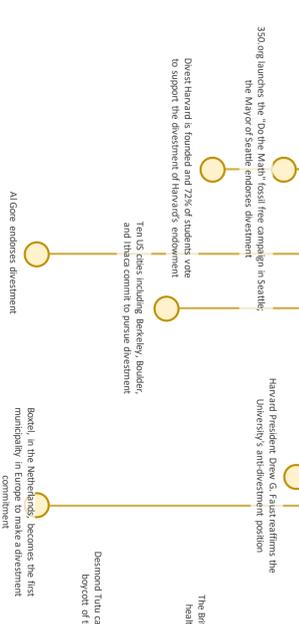
Timeline of Divestment Activity in Response to Climate Change



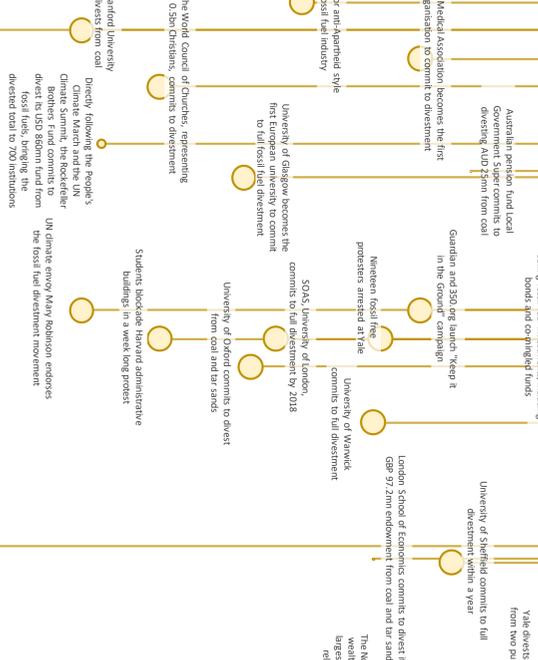
2012



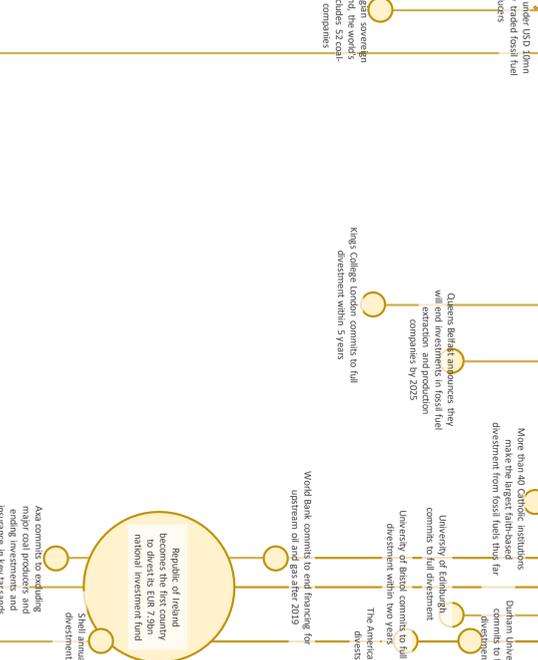
2014



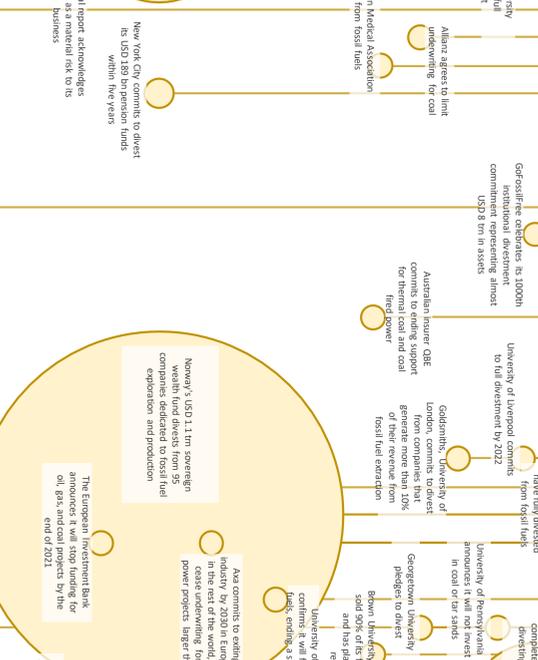
2016



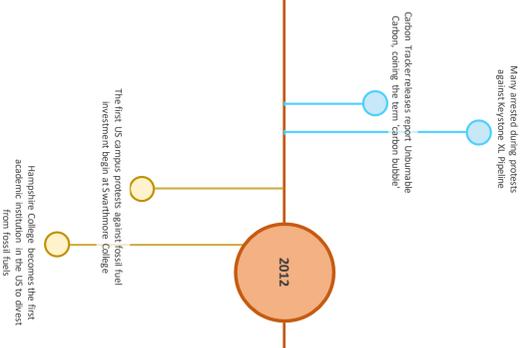
2018



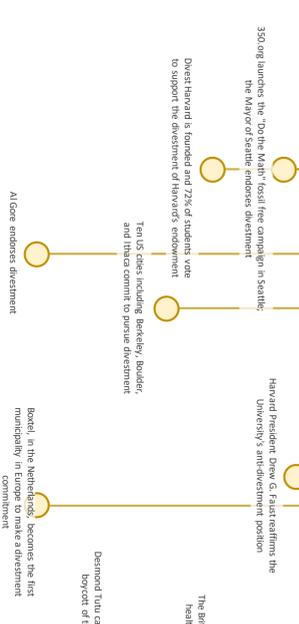
2020



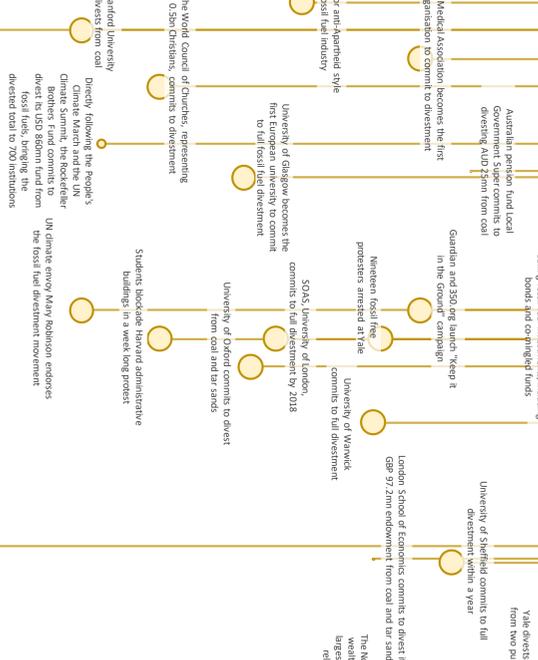
2012



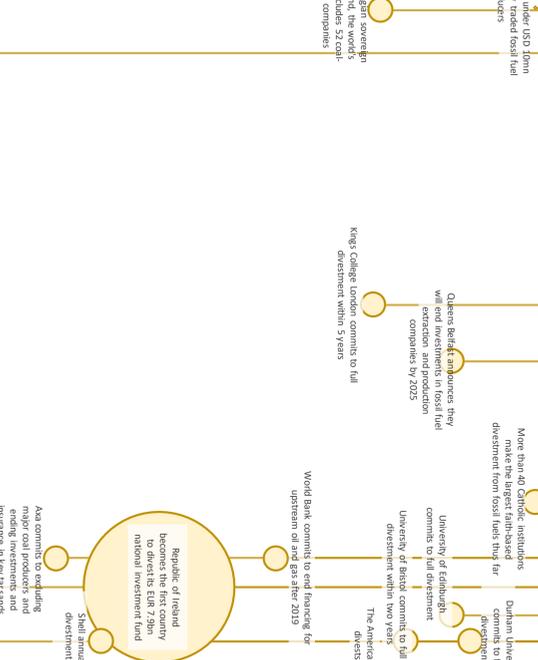
2014



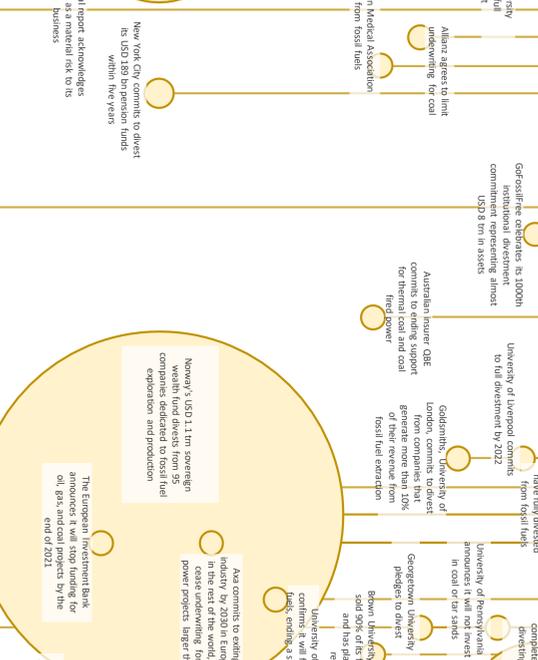
2016



2018



2020



Investment Office and Investment Board Briefing Note to Council

Executive Summary

Anthropogenic climate change, ecological destruction, and biodiversity loss present an existential threat, with severe risks to humankind and all other life on Earth. The Investment Office and the Investment Board, as stewards of the Cambridge University Endowment Fund ("CUEF" or "the Fund"), share the concerns of the Regent House for sustainability as it relates to the environment.

To meet those concerns, the Investment Office will embark on the following ambitious programme, which aims to align the Fund's investment portfolio with the University's determination to contribute to the decarbonisation of the global economy:

- **By December 2020, the Fund will redeem from all investments with conventional energy-focused public equity managers;**
- **By 2025, the Investment Office aims to have allocated significant capital to renewable energy assets which have a return profile appropriate for the Fund;**
- **By 2030, the Investment Office aims to have no meaningful direct or indirect exposure to fossil fuels in the Fund's portfolio;**
- **The longer-term ambition of the Investment Office is to achieve net zero greenhouse gas emissions from the Fund's investment portfolio, in line with the University's previously-announced programme to reduce its own emissions to net zero.**

The Investment Office has recruited a Sustainable Investment Officer to oversee the Fund's transition and seek out fossil fuel-free investment opportunities that will allow the Investment Office to reduce portfolio-level greenhouse gas emissions while meeting its fiduciary duty to maximise returns for its investors.

Enhanced information will be required from the CUEF's fund managers on the carbon impact and wider environmental and social impacts of their portfolios, in order to make accurate assessments of risk.

As part of its commitment to the University's wider mission to society and education, the Investment Office will partner with the Cambridge Institute for Sustainability Leadership (CISL) to provide current fund managers, who combined have more than \$250 billion under management, with access to high quality resources and research on sustainable finance.

As a charity, the University's main activities of teaching, learning and research are not intended to be profit-making. Accordingly the support the Fund provides is critical to the success and sustainability of the University and its ability to contribute to society. Over the past decade more than £750m has been paid out of the Fund to support more than 800 research, teaching and other activities across the University.

A specific example of support by the Fund is the provision of a significant proportion of the income for Cambridge Zero, the University's flagship Climate Change initiative -- with more than a thousand researchers seeking solutions from developing the next generation of power and heating systems to re-imagining the future of transport, cities and a global economy without fossil fuels.

The Case for Decarbonisation

The Investment Office acknowledges that the harm carbon-based fuels cause to the environment and society is not currently captured in market prices, with resulting implications for future investment returns. The Investment Office and Investment Board are therefore committed to the principle of achieving net zero anthropogenic greenhouse gas emissions globally, in line with the ambitions of the Paris Agreement and supported by the University through Cambridge Zero, among other initiatives. We believe that this principle is consistent with the primary fiduciary duty of the Investment Board and Investment Office to ensure the financial sustainability of the CUEF and the long-term growth and protection of Fund assets for the benefit of all current and future stakeholders. To align with net zero and fulfil their fiduciary duty, the Investment Office and Investment Board have adopted a strategy, outlined below, that aims to maximise the Fund's positive impact on the environment while, at the same time, securing its financial future.

The ambition of the Investment Office is to achieve net zero greenhouse gas emissions from the Fund's investment portfolio, in line with the University's previously-announced programme to reduce its own emissions to net zero. Our recommended implementation strategy is based on three interrelated pillars:

- **Investing** to achieve a transition to net zero;
- **Engaging** to decarbonise the real economy; and
- **Reporting** with transparency and accountability to our stakeholders.

To execute this strategy, the CIO has recruited senior investment professionals with significant experience in engagement and stewardship, including the Fund's first Sustainable Investment Officer, who has substantial experience developing and leading responsible investment approaches on behalf of institutional investors. The Sustainable Investment Officer will be responsible for monitoring the sustainability profile of the CUEF portfolio and the Investment Office's engagement strategy. The new team has already made a number of important changes to the Fund's decision-making process, investment portfolio, and stakeholder engagement approach.

This short paper sets out why we believe the three pillars outlined above are critical to our strategy and how we intend to act upon them.

1. Investing to achieve a transition to net zero

The Investment Office team has recently been rebuilt following the recruitment of a new Chief Investment Officer ("CIO") who joined the Investment Office in January 2020. The new CIO has explicitly committed to ensuring the CUEF is positioned to prosper in a future net zero economy. In order to transition to a net zero economy, global dependence on fossil fuels must be dramatically reduced and the pace of development of renewable alternatives must be accelerated. The Investment Office is committed to eliminating investments in fossil fuel-focused funds in the CUEF as quickly as possible, in a manner consistent with the Fund's successful investment model. The Investment Office is also actively researching the addition of renewable energy and other investments consistent with a sustainable future energy mix to the portfolio.

How will we achieve our aims?

The Investment Office and the Investment Board recognise that climate change is a threat requiring urgent attention and action on a global scale. However, climate change is not a simple issue in relation to endowed assets. Its complexity demands a thoughtful and careful treatment, which will allow the CUEF to continue to support Cambridge in the pursuit of its academic mission, while acknowledging the myriad risks of a changing climate and positioning the portfolio for a zero-carbon future. On this basis, **our ambition is to invest to achieve a transition of the investment portfolio to net zero, in a manner consistent with the Fund's successful investment model, and in conjunction with ongoing active engagement with our fund managers.**

The CUEF does not directly hold any investments in any fossil fuel securities and will exit all investments in public equity managers specialising in conventional energy investments by December 2020. However, like most major endowments, the CUEF portfolio is comprised largely of investments in funds managed by third parties, which may occasionally hold such assets. The Investment Office has analysed the holdings of these indirectly held investments; as at 31st December 2019, 2.8% percent of the Fund's indirect holdings relate to the conventional energy industry, including fossil fuels. This exposure is significantly lower than the FTSE 100 (14%) or the MSCI All Country World Index (6%) as at the same date.

Cambridge's strategy of investing through third party fund managers has been very successful for the University, delivering excess returns of 1.2% per year - or a total of £309 million - above the endowment's passive benchmark since the inception of the current model of management in 2008. The CUEF's indirect exposure to fossil fuel securities is typically embedded in larger generalist (i.e. not energy focussed) funds, or market indices. Energy related investments in turn typically comprises a small proportion of these generalist portfolios. Were we to eliminate all indirect conventional energy holdings immediately, we would be forced to abandon our hitherto highly successful investment model as we would severely restrict our access to talented external fund managers. The Investment Office estimates that full redemption from 50% of its current (or potential replacement) fund investments would be needed to eliminate fossil fuel exposure entirely in the near-term. Without the right external fund managers, investment returns will revert to average levels at best; applying the historic 1.2% annual outperformance to the CUEF's entire value as at 31 December 2019 would imply a reduction of approximately £40m per year in investment returns¹. This reduction would negatively impact teaching and research budgets without reducing carbon emissions into the environment.

Despite the challenge outlined above, the Investment Office believes that fossil fuel exposure can be reduced to a de minimis level over time, in partnership with external fund managers, if a considered approach is taken. By 2030 the ambition of the Investment Office is to have no meaningful direct or indirect exposure to fossil fuels in the Fund's portfolio.

What We Are Doing Now

Since the appointment of the new team the Investment Office has made the decision to exit all investments with public equity managers specialised in conventional energy investment by December 2020.

- **Zero fossil fuel exposure in direct holdings.** The CUEF commits to not investing directly in any fossil fuel-related securities. This commitment includes energy equipment and services, oil, gas and consumable fuels such as thermal coal.
- **Continued reduction in conventional energy exposure.** The Fund already has a significantly lower exposure to fossil fuel companies than the market weight. The CUEF will continue to reduce its exposure to conventional energy-focused investments in the CUEF's real assets portfolio as quickly as possible, in a manner consistent with the Fund's successful investment model. The longer-term ambition of the Investment Office is to have no meaningful direct or indirect exposure to fossil fuels in the Fund's portfolio by 2030.
- **Transition to renewable energy.** The Investment Office is actively investigating investment opportunities in the renewable energy sector. We will allocate significant capital to the sector as soon as investments with an acceptable return profile can be identified.

¹ This estimate is based on the 31st December 2019 net asset value ("NAV") of £3.5 billion. As the NAV of the CUEF rises, the absolute outperformance would continue to rise and to compound commensurately. A full discussion of divestment tactics and the impact of short-term divestment to achieve 0% exposure to fossil fuels is covered in the Divestment Report.

- **Selecting Fossil Free options where available.** The Investment Office will seek out fossil free options alongside unconstrained fund alternatives, where available. Where other factors are equal, the Investment Office will select a fossil free option as the preferred option and indeed is already in discussions with one incumbent fund manager to transfer the CUEF's investment to a fossil free strategy.

2. Engaging to decarbonise the real economy

The Investment Office is committed to using the University's influence to engage with fund managers across the entire Fund – including the more than 97% of assets not currently invested in energy securities – to reduce emissions from underlying portfolio companies in a manner consistent with a rapid transition to a net zero global economy. This commitment reflects the fact that the entire economy needs to decarbonise rapidly in order to meet climate change objectives. Hence, engagement with companies across a wide range of industries is likely to have a far greater impact on carbon emissions than divestment alone.

How will we achieve our aims?

What We Are Doing Now

Pilot engagements are already in place; for example the Investment Office has initiated engagement with a UK listed equity manager in the CUEF portfolio regarding an investment in UK airlines. The manager has responded positively, including raising our concerns with company management.

- **Rigorous sustainability due diligence.** The newly-appointed Sustainable Investment Officer will design and implement due diligence processes to assess fund managers' capabilities in engaging to reduce greenhouse gas emissions from underlying portfolios across all sectors.
- **Enhanced measurement of environmental risk.** We will demand information from our fund managers on the carbon impact and wider environmental and social impacts of their portfolios, in order to make accurate assessments of risk. Changing behaviours and fuel sources will require sustained intelligent policy and choices based on data. Measurement and disclosure are cornerstones of a successful transition to an economy that reflects the central goals of the Paris Agreement.
- **Enhanced monitoring of the CUEF portfolio.** The Sustainable Investment Officer will conduct an annual review with investment managers to discuss their sustainability policies and engagement efforts. The bar for continued inclusion in the portfolio will be progressively raised for managers who do not meet our expectations in this area.
- **Integration with University-based experts.** The Investment Office is in active discussion with the Cambridge Institute for Sustainability Leadership, among others, to develop workshops and access to technical sustainability expertise to support the engagement efforts of incumbent fund managers. Initial interactions with fund managers suggest that many are eager to participate in such programmes, which the Investment Office will facilitate.
- **Leveraging the broader investment community.** To strengthen its internal resources, the Investment Office will join the Transition Pathway Initiative and the Institutional Investors Group on Climate Change; high impact organisations that can bring further knowledge and inform on best practise in the areas of investment sustainability and stewardship.

3. Reporting with transparency and accountability to our stakeholders.

The new CIO is committed to a significantly higher level of transparency around the composition and performance of the CUEF than has been the case historically. The Investment Office will measure progress against the investment and engagement objectives discussed above and will report back to stakeholders on a frequent and consistent basis. Objectives will become more precise and challenging over time as we work with asset managers and the broader industry to improve investment product availability, data quality and reporting systems.

How will we achieve our aims?

What We Are Doing Now

The Investment Office will hold an annual “town hall” meeting, open to all members of the University.

- **Increased transparency to investors and stakeholders.** The new CIO is committed to providing both significantly increased detail on the portfolio and meaningfully enhanced access to the Investment Office team to its investors². Initiatives already include a quarterly investor call and will be expanded to include portfolio look-through analyses, performance attribution and individual annual meetings with each investor.
- **Explicit reporting on Sustainability.** The Sustainable Investment Officer will provide a full report annually to the Investment Board on the Investment Office’s adherence to its investment and engagement commitments, including analysis of the carbon emissions intensity of the Fund; highlights will be made public in the Fund’s annual report.
- **Involving the Cambridge community.** An internship will be offered annually for at least one Cambridge student who has shown commitment to sustainable investment activities to assist the Investment Office in reporting its activities to stakeholders.

Conclusion

The Investment Office and the Investment Board recognise that climate change is a threat requiring urgent attention and action on a global scale. However, climate change is not a simple issue in relation to endowed assets. Its complexity demands a thoughtful and careful treatment, which will allow the CUEF to continue to support Cambridge in the pursuit of its academic mission, while acknowledging the myriad risks of a changing climate and positioning the portfolio for a zero-carbon future. On this basis, **our ambition is to invest to achieve a transition of the investment portfolio to net zero greenhouse gas emissions, in line with the University’s determination to contribute to the decarbonisation of the global economy.** We will pursue this goal in a manner consistent with the Fund’s successful investment model, and in conjunction with ongoing active engagement with our fund managers. We will report with consistency and transparency on progress to stakeholders as this strategy is implemented. We believe that this three-pronged strategy of investing, engaging and reporting is the best way to leverage the capital and influence of the University and the CUEF to reduce emissions in the economy and drive towards net zero. We look forward to working with our stakeholders over the coming months and years to achieve our goals.

² Investors in the Fund, which are all connected to the University, include the University and, since 2010, a number of its Colleges and various charitable trusts connected with the University.