

CHAPTER 5: DOING THE MATH: THE FINANCES OF FOSSIL FUEL-FREE

Divestment is primarily a tool of social and political force, but it has economic effects —just not on fossil fuel companies. It tends to hurt the divestors themselves. Does divesting from fossil fuel companies harm or improve the divested portfolio’s performance? Can divestment channel funds toward renewable energy or “sustainable” companies? Might it curb financing for new coal mines and oil wells? These are questions still in play.

How Much Money Has Been Divested?

The answer depends in part on counting how much money actually has been moved out of fossil fuel companies. Twenty-nine American colleges and universities with endowments worth about \$30 billion have pledged some type of divestment. Nearly half (13) of these either publicly self-reported or gave us access to information on their investments. Another 5 offered partial information. The 13 on which we have fuller data, prior to their divestments, owned approximately \$34 million in fossil fuel investments. Of this, one-half (about \$17 million) has been divested. If we include the partial information from the other colleges and universities, we estimate that colleges and universities have divested about \$27 million (of about \$72 million we know was previously invested in fossil fuel companies).⁵⁰⁰ These figures are summarized in Table 15 in chapter 4.

We offer an analysis of the 13 colleges and universities with fuller data (summarized in Table 16). Of these 13 institutions, fossil fuel investments comprised, on average, about 2.5 percent of the endowment. The institution with the highest proportional investment in fossil fuel companies was the California Institute of the Arts, at about 10.5 percent. The institutions with the lowest investments in fossil fuel companies were Humboldt State University (one of our “DINOs”) at 0 percent, Hampshire College at 0.14 percent, and the University of Maine System at 0.29 percent. As of September 1, 2015, an average of 1.1 percent of each endowment remained invested in fossil fuel companies after the divestment decision. Thus about 34 percent of each institution’s fossil fuel investments remained in place after a divestment decision. This sizeable remnant of fossil fuel investments was due, varyingly, to lengthy implementation periods and partial divestment decisions that mandated some portion of fossil fuel investments be retained.

500 We do not include in this list of divestments the University of California’s September 2015 decision to sell (but not necessarily permanently divest) \$200 million in coal and tar sands-extracting companies, for reasons explained later in this chapter.

Table 16: Amount of Money Divested from College and University Endowments

Institution	Endowment Size	Amount Previously Invested in Fossil Fuels	Amount Divested from Fossil Fuels	Percentage of the Endowment Previously in Fossil Fuels	Percentage of the Endowment Divested
Adler University	\$2,010,508	\$35,931	\$35,931	1.79%	1.79%
Naropa University	\$6,250,000	\$104,000	\$104,000	1.66%	1.66%
Brevard College	\$25,000,000	\$500,000	\$500,000	2.00%	2.00%
Humboldt State University	\$27,724,000	\$0	\$0	0.00%	0.00%
Foothill-De Anza Community College Foundation	\$33,700,000	\$674,000.00	\$374,000.00	2.00%	1.11%
Hampshire College	\$37,567,000	\$51,131	\$25,566	0.14%	0.07%
College of the Atlantic	\$44,200,000	\$998,293	\$998,293	2.26%	2.26%
California State University-Chico Foundation	\$52,563,000	\$672,005	\$146,375	1.28%	0.28%
San Francisco State University Foundation	\$65,385,000	\$2,500,000	\$200,000	3.82%	0.31%
Pitzer College	\$134,289,000	\$5,400,000	\$4,400,000	4.02%	3.28%
California Institute of the Arts	\$137,535,000	\$14,400,000	\$3,600,000	10.47%	2.62%

The New School	\$299,890,000	\$7,197,360	\$5,997,800	2.40%	2.00%
University of Maine System	\$589,000,000	\$1,700,000	\$502,000	0.29%	0.09%
Total:	\$1,455,113,508	\$34,232,720	\$16,883,965		

Relative to the total value of the endowment, the divestments are minuscule. The amount divested from these 13 institutions is 1.16 percent of their total endowment values, as shown in Figures 24 and 25.

Figure 24 Proportion of Endowment Divested from Fossil Fuels from 13 College and University Endowments

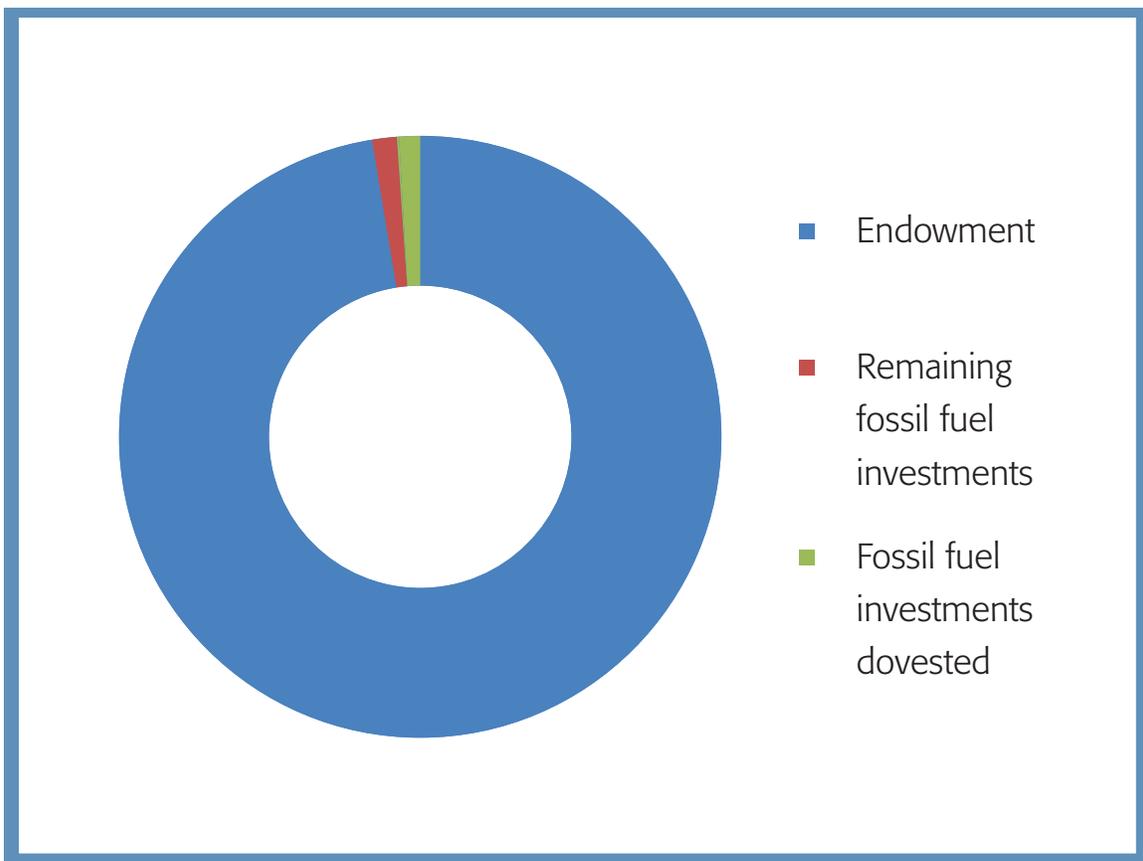
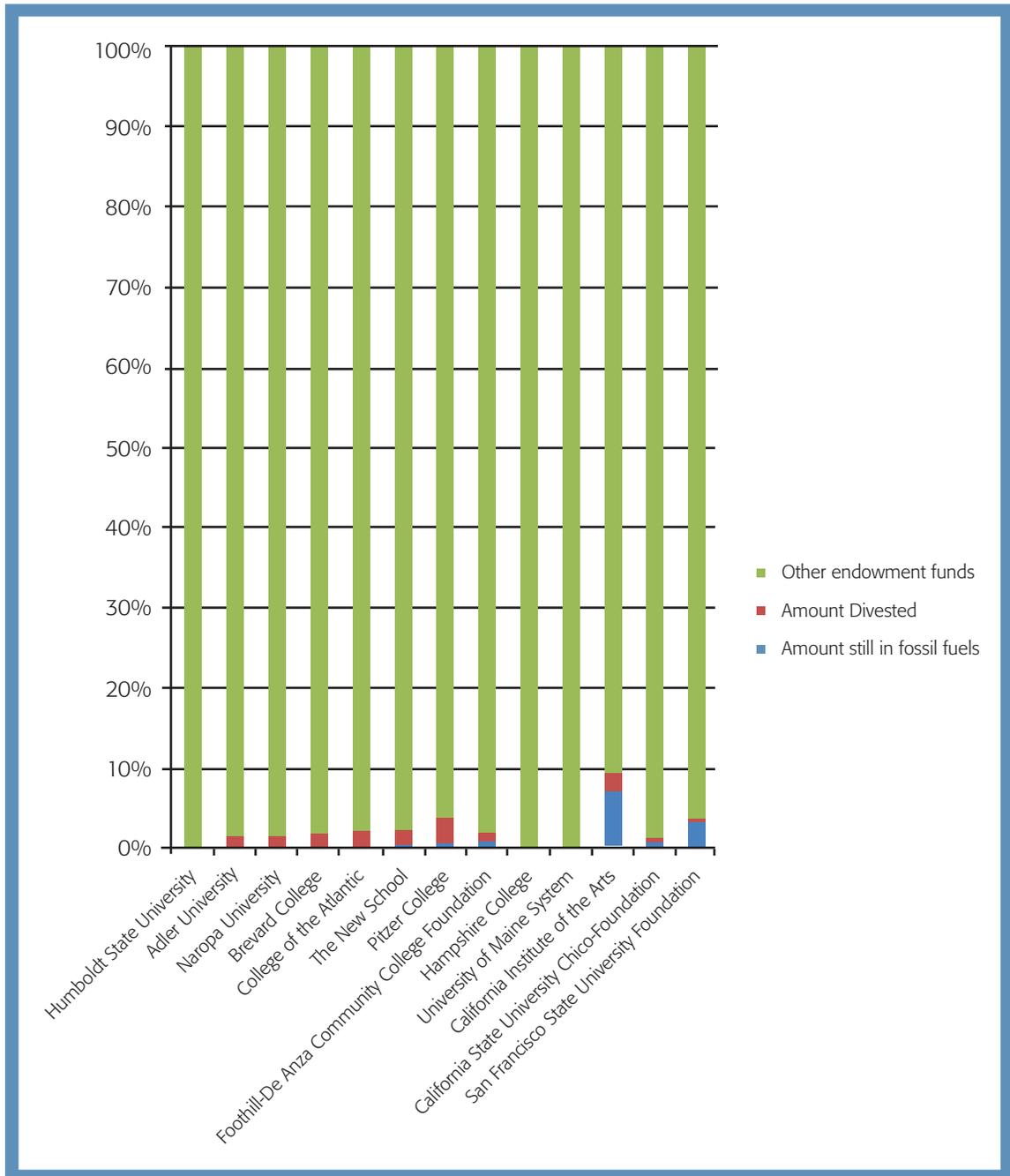


Figure 25 Percentage of Endowment Divested from Fossil Fuels from 13 College and University Endowments



Other organizations have attempted to calculate how much money has been pulled from fossil fuel companies. Arabella Advisors, an “impact investing” advisory group tracking fossil fuel divestment pledges, pegs the value of divesting groups at \$2.6 trillion. Or, as Arabella phrases it in a September 2015 report,

institutions and individuals “representing \$2.6 trillion in assets have committed to divest from fossil fuel companies.”⁵⁰¹

But the amount actually withdrawn from fossil fuel companies is much smaller. \$2.6 trillion is the sum of all investments by all groups and people who have pledged some type of fossil fuel divestment. Those divestment pledges vary widely in scope, implementation periods, and value. Arabella does not calculate the amounts actually slotted for divestment. Arabella says it includes all divestment pledges that require selling off at least some stocks, excluding those “divestments” that merely prohibit future investments. (But it includes some institutions that we categorize as DINO, such as Oxford University, which pledged only to screen out future direct fossil fuel investments, of which it currently has none.)

By Arabella’s count, educational institutions account for about 5 percent of the total value of all divesting institutions, or assets of about \$130 billion. Arabella does not break out higher education as a separate category.

Doing the Math

The fossil fuel divestment movement has had a love-hate relationship with economics. Early on, its proponents cast divestment as a way to defund fossil fuel companies. Then divestment metamorphosed into a tool of moral shame. Recently advocates of divestment have recast their cause once more as a financial weapon—this time as a way to protect portfolios from foreseen price collapses in fossil fuels, rather than as a means to attack the industry’s bottom line.

Initially, Bill McKibben tried out several descriptions of fossil fuel divestment, including picturing it as a financial battle whose victory would defund the fossil fuel industry. Fossil fuel companies were motivated primarily by money, by “greed,” he said in his *Rolling Stone* article.⁵⁰²

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501 “Measuring the Growth of the Global Fossil Fuel Divestment and Clean Energy Investment Movement,” Arabella Advisors, September 2015. <http://www.arabellaadvisors.com/wp-content/uploads/2015/09/Measuring-the-Growth-of-the-Divestment-Movement.pdf>.

502 McKibben, “Global Warming’s Terrifying New Math.”

The “Do the Math” website set up to accompany his nationwide talk tour and subsequent movie focused more sharply on money. Divestment, the website suggested, might economically harm the corporations McKibben blamed for climate change:

*The one thing we know the fossil fuel industry cares about is money. Universities, pension funds, and churches invest a lot of it. If we start with these local institutions and hit the industry where it hurts — their bottom line — we can get their attention and force them to change. This was a key part of how the world ended the apartheid system in South Africa, and we hope it can have the same effect on the climate crisis.*⁵⁰³

In fact, the anti-apartheid divestment campaign had very little economic effect on the South African economy, the United States economy, or the companies targeted for divestment. One review by Teoh, Welch, and Wazzon found that international trade was even “somewhat ‘countercyclical’ with respect to the political sanctions,” so that it increased during the years when sanctions and divestments most heavily targeted South African apartheid.⁵⁰⁴ If anything, Teoh, et al., found that economic actions against apartheid harmed South African consumers while modestly boosting the profitability of South African companies, because the divestments restricted competition from international corporations. They concluded, “In sum, there is no evidence that firms were either negatively or positively affected by their divestment announcement.”⁵⁰⁵ If the anti-apartheid divestment campaign worked, it did so by leveraging political momentum.

Almost immediately economists and social theorists noted this historical discrepancy and disputed 350.org’s claim that divestment could affect fossil fuel companies’ share prices significantly. Christian Parenti, an investigative journalist who had just written a book on climate change (*Tropic of Chaos: Climate Change and the New Geography of Violence*), avowed that McKibben’s campaign was important but misguided. “Future generations will hail the 350 activists of today as heroes,” he wrote for *Huffington Post* in November 2012, but “I am very worried about the pitfalls of 350’s current ‘Do the Math’ campaign.”⁵⁰⁶ Parenti charged that the divestment campaign “misrecognizes the basic economics of the fossil fuel industry and thus probably won’t hurt it” and further “misrecognizes the nature and function of the stock market.” Divesting fossil fuel stocks only left them available for other investors to buy. The divestment campaign also failed to realize that fossil fuel companies earned profits from consumers, not from their

503 “FAQs,” Do the Math, 350.org. <http://math.350.org/>.

504 Siew Hong Teoh, Ivo Welch, and C. Paul Wazzon, “The Effect of Socially Activist Investment Policies on the Financial Markets: Evidence from the South African Boycott,” *Journal of Business*, 1999, vol. 72, no. 1.

505 Teoh, et. al, pg. 77.

506 Christian Parenti, “Problems with the Math: Is 350’s Carbon Divestment Campaign Complete?” *Huffington Post*, November 29, 2012. http://www.huffingtonpost.com/christian-parenti/carbon-divestment-_b_2213124.html.

investors. “The assumption that we can hit the fossil fuel giants’ ‘bottom line’ by going after their stock prices is deeply flawed,” Parenti summed up, adding that he feared such a premise rested on “neoliberal, or right-wing” assumptions that tweaking the market was an effective way to solve any problem. In the *New York Times* a few months later, as part of a “Room for Debate” forum that included McKibben, he argued again that

*Lowering stock price by divestment (a dubious proposition as universities just don’t own that much) is not the same as lowering actual profits. It does not hurt Big Carbon’s bottom line.*⁵⁰⁷

Soon McKibben and other architects of the divestment campaign sidelined claims that the movement would financially bankrupt the industry, replacing them with arguments rooted instead in morality and political expediency. By January 2013, McKibben’s own contribution to the “Room for Debate” admitted that “Divestment won’t do this (harm the fossil fuel industry) by directly affecting share prices, at least in the short run.”⁵⁰⁸

Moral indignation against an indispensable source of energy has failed to resonate with societal stakeholders, rendering McKibben’s “wrong to wreck the planet” rhetoric unpersuasive.

Recently, advocates of fossil fuel divestment have returned to financial arguments, this time making the case that divestment, rather than harming fossil fuel companies’ bottom lines, protects the bottom lines of investors who should be protected from risky fossil fuel investments.

The shift away from environment-focused arguments and toward financial ones has three main causes. First, moral indignation against an indispensable source of energy has failed to resonate with societal stakeholders, rendering McKibben’s “wrong to wreck the planet” rhetoric unpersuasive. Why does all guilt rest on the manufacturers of a widely used, economically necessary good, and none on the behavior of those who use it?

Second, advocates of divestment have failed to demonstrate that divestment can provoke government action against fossil fuel companies or that such action would solve climate and environmental problems, undermining the utilitarian case that divestment measurably improves the natural world. How does

507 Christian Parenti, “A Worthy Goal, but a Suspect Method,” *The New York Times*, January 27, 2013. <http://www.nytimes.com/roomfordebate/2013/01/27/is-divestment-an-effective-means-of-protest/a-worthy-goal-but-a-suspect-method>.

508 McKibben, “Turning Colleges’ Partners Into Pariahs.”

maligning an economic necessity, required even for the production of technologies that relieve our need for fossil fuels, make the environment any cleaner or safer?

Third, serious concerns that fossil fuel divestment could damage the financial stability of institutions that divest have prodded proponents of divestment to counter that divestment could actually improve divestors' finances. The financial case for divestment is an attempt to play offense on trustees' turf, rather than defense against the industry.

In light of the failure of the core arguments for divestment—that holding investments in fossil fuel companies equals moral complicity in causing climate change and that divestment is a solution to environmental woes—the shift to a predominantly financial case for divestment should be understood as a final, flailing effort to keep the divestment campaign from intellectual collapse.

The logic of a financially-motivated divestment cuts against the environmental imperatives of the divestment movement.

To understand why the financial case for divestment is a poor intellectual fit for the fossil fuel divestment movement, consider the premises of the movement's goals. The movement heaps reproach on the fossil fuel industry on the grounds that its avarice—"greed," McKibben put it—leads it to ignore the social and environmental costs its operations impose on mankind and the world. Its central thesis is that it is wrong to choose based on money—that economics is the wrong basis for decision making.

Yet an institution that divests solely for financial reasons invokes none of the moral rationales that make divestment an environmentalist cause. It operates according to the same economic calculus—the same greed—that the divestment movement claims to desire to overturn. If divestment were a strictly economic issue, it would be a movement comprised of mainstream accountants and investment managers, not environmentalists.

The logic of a financially-motivated divestment cuts against the environmental imperatives of the divestment movement. The moral claims of divestment require that a divestment be permanent: no matter how profitable Exxon might become in the future, the moral framework of divestment advocates would lead them to declare that investment in Exxon would still be wrong. A divestment for financial reasons, however, has none of that finality. An institution concerned about the economic value of coal companies might divest coal companies today and reinvest as soon as economic conditions change. That

is, indeed, precisely how investment managers operate. But short-term decisions to sell fossil fuel stocks impose no moral stigma. They cast no aspersions on the dignity of the industry.

The University of California system, for instance, recently decided to sell \$200 million in coal and tar sands investments, on the grounds that regents feared they were risky investments. The university does not call the decision a “divestment,” and it does not promise its divestment is permanent. The university has not even issued a formal statement on this decision. The chief investment officer, Jagdeep Singh Bachher, explained in an op-ed for the *San Francisco Chronicle* that “Blanket divestment from fossil fuels grabs headlines but doesn’t actively address climate change,” and the University of California’s move was not such a “blanket divestment.” Instead, it was “part of our new risk-review process” to “more comprehensively” include environmental, social and governance risks.⁵⁰⁹

Because there is no university policy on fossil fuel divestment—unlike even the institutions we labeled “DINOs,” which did put forth a policy change—we do not include the University of California’s decision on our list of divestments, though 350.org does, and though activists at the University of California have claimed victory. Environmental activists at least practice thrift in their publicity, for they never let a good PR moment go to waste.

The divestment movement’s intellectual opportunism may have some short-term success: their financial rationale at least serves as a handy slogan, and may even buffalo the odd inattentive trustee. Yet it is dangerous to sup with the devil, even with a long spoon—the movement’s invocation of greed, even in the innocuous guise of “financial prudence,” mocks their moralizing pretensions to all with eyes to see. The divesting movement may live to regret summoning up the Mephistopheles of finance.

Does Divestment Cost Money?

Is the financial case for divestment true? On the whole, investors and trustees have not been convinced. Risk of financial loss is among the main reasons trustees reject fossil fuel divestments.

Of the 28 American colleges and universities that have rejected fossil fuel divestment and released public statements explaining why, 22 cited financial concerns as a reason. Eighteen said that divestment could be costly to the endowment. Nine said that divestment could breach the fiduciary duties of the board, and that divestment might violate the intentions of the donors who built the endowment. (A fuller analysis of college trustees’ stated reasons to reject fossil fuel divestment is given in Chapter 6.)

509 Jagdeep Singh Bachher, “UC Investment Plan Seeks Solutions to Climate Change,” *San Francisco Chronicle*, September 10, 2015. <http://www.sfchronicle.com/opinion/article/Why-UC-doesn-t-embrace-blanket-divestment-of-6496833.php?t=28f2ada17fcefdb88&cmpid=twitter-premium>.

Some colleges and universities have tried to calculate how much they might lose by divesting. Swarthmore College estimated \$200 million over 10 years.⁵¹⁰ Pomona asked its principal investment consultant, Cambridge Associates, to analyze the potential costs of divestment, which Cambridge pegged at \$485 million over ten years.⁵¹¹ Wellesley College concluded that “the impact over a ten-year period would be significantly adverse” and could “seriously compromise” funding for the college’s academic programs.⁵¹²

Some institutions that agreed to divest have also acknowledged potential costs. The University of Washington, which divested its holdings in coal companies, decided against a fuller divestment because of the costs. The university projects losing \$13 million in the next 20 years as a result of its coal divestment—substantially less than the \$250 million it expects it would lose over the same period if it divested all fossil fuels.⁵¹³ The University of Hawaii, using estimates put together by UBS, decided to delay the implementation of its fossil fuel divestment decision to avoid the \$462,000 cost that UBS calculated. Rather than immediately divesting fossil fuel-exposed mutual funds, the board of regents authorized waiting as late as 2018 to begin divesting, on the assumption that “As the financial community develops low-cost vehicles for fossil fuel-free investing, the fees for such vehicles are anticipated to decrease.”⁵¹⁴

Other colleges see the situation differently. Of the 29 American colleges and universities that have divested, 4 listed concerns about the overvaluation of fossil fuel investments among their reasons. They see fossil fuel investments as risky, whose value is liable to go underwater if Congress taxes carbon and strengthens pollution caps. If the so-called “carbon bubble” collapses, the universities with investments in those companies could be stuck with worthless stock.

Which side do the risks lie on, divesting, or not divesting? We will consider first the case against divestment.

Risks of Fossil Fuel Divestment

There are four types of financial harms that divestment could bring: lower returns, higher risk, higher fees, and, because fund managers may be unwilling to manage divested funds given the above concerns, loss of access to the best managers.

510 Andrew Karas, “Swarthmore Pegs Cost of Divestment at \$200 Million over 10 Years,” *Swarthmore Daily Gazette*, May 9, 2013. <http://daily.swarthmore.edu/2013/05/09/college-pegs-cost-of-divestment-at-200-million-over-10-years/>.

511 Letter from David W. Oxtoby, president of Pomona College, to the Pomona College Community. September 24, 2013.

512 H. Kim Bottomly, “Wellesley’s Board of Trustees Has Carefully Considered Proposals of Fossil Fuel Divestment.” *Wellesley College*, March 7, 2014. <http://www.wellesley.edu/about/president/mytake/divestment>.

513 Leah Todd, “In Symbolic Move, UW Votes to Divest From Coal,” *The Seattle Times*, May 15, 2015. <http://www.seattletimes.com/seattle-news/education/in-symbolic-move-uw-votes-to-divest-from-coal/>.

514 “Final Report and Recommendation,” *University of Hawaii Board of Regents Task Group on Divestment and Sustainability*, May 23, 2015. http://www.hawaii.edu/offices/bor/finance/materials/201504011330/2._Report_by_Divestment_Task_Group_Regarding_Recommendations_on_Divesting_from_Fossil_Fuels_and_Board_Policies_Regarding_Sustainability.pdf.

The most straightforward of these to measure is the penalty on returns. Studies that track investments over long periods agree that fossil fuel-free portfolios in general have lower returns than their unrestricted competitors, which can add up over time to steep opportunity costs. Energy is an essential sector for diversified investment funds, and fossil fuels historically have performed well. Given that renewable energy is not currently scalable for national, reliable production, fossil fuels are presumably going to be a necessary part of the economy for at least decades to come.

Daniel R. Fischel, president of the consulting firm Compass Lexecon and the emeritus Lee and Brena Freeman Professor of Law and Business at the University of Chicago Law School, calculated in a February 2015 report that over the last 50 years (1965-2014), excluding fossil fuel investments from an average equity fund lowered the fund's performance. The value of a divested portfolio over that time span would be 23 percent lower than a portfolio that maintained fossil fuel investments. Fischel notes that his analysis includes instances of substantial drops in the price of crude oil markets. In 1986 and 2006, the price declined by 60 percent or more in a calendar year.

One of Fischel's colleagues, Bradford Cornell, a senior consultant at Compass Lexecon and visiting professor of financial economics at the California Institute of Technology, estimated the costs to an actively managed investment portfolio over the last 20 years in an August 2015 study, "The Divestment Penalty." Cornell estimated that if five American universities—Columbia, Harvard, Massachusetts Institute of Technology, New York University, and Yale—had divested 20 years ago, they would have forfeited about \$195 million in investment returns every year. Over a 50-year time period, these shortfalls would reduce the endowment sizes by a weighted average of 12.07 percent.⁵¹⁵ Cornell estimates that Harvard alone would lose an average of \$107.81 million each year as a result of divesting fossil fuel companies.

There are also greater risks and fees associated with screening out fossil fuel energy investments. Fischel found that the energy industry—currently predominantly populated by fossil fuel companies—offers the greatest diversification from other industries. Of the ten major industry sectors in the United States, Fischel concluded, "the energy sector has the lowest correlation with all other sectors, and therefore the largest potential diversification benefits relative to the other nine sectors." The second least correlated industry sector was utilities.⁵¹⁶

Fees may increase for ending investment contracts early, for requiring accounts individually tailored to institutions' divestment needs, or because of trading and transactions costs. Fischel notes that processing and execution costs, exchange fees, and taxes are charged for each transaction, averaging about \$0.18

515 Bradford Cornell, "The Divestment Penalty," Compass Lexecon, August 27, 2015, pg. 6.

516 Fischel, pg. 8.

per \$100 of trading activity. Fischel calculates that if every university in the NACUBO database sold its energy investments (\$23 billion) that would add up to \$40.2 million in fees. He also calculates that trading costs could add up to \$308 million.

Estimates from the National Association of College and University Business Officers also project losses as a result of divestment. Ken Redd, director of research and policy at NACUBO, notes that the long-term historical value of fossil fuel companies makes divestment financially risky: "If you tell me I can't invest in anything related to fossil fuels, it's very, very difficult to replace that with something that has the same return but also balances risk." The structure of endowments can place further roadblocks in the way of divestment:

Large endowments are much more complex than smaller ones...The largest endowments tend to be invested in commodities futures and other contracts that have very high surrender charges. That makes divestment from fossil fuels very expensive and difficult.⁵¹⁷

Some colleges and universities that divested have found the process difficult. Naropa University in Colorado has seen lower than expected returns since it divested fossil fuels in November 2014. The university has not determined that its divestment contributed toward its disappointing returns, though it considers the divestment a possible reason.

Other colleges and universities have watered down their divestment plans to make the divestment less disruptive to the endowment. Donald Gould, chairman of the investment committee at Pitzer College and the trustee who pushed divestment through the board, said that in order for divestment to be "reasonable," it would need to retain a residue of fossil fuel investments. "An absolutist form of divestment usually would be very disruptive to the portfolio," he noted.⁵¹⁸

Benefits of Fossil Fuel Divestment

Countervailing studies make the opposite claim: selling fossil fuel stocks now is a financially smart move, destined to pay huge dividends in the future. These studies look at shorter, recent time periods during which the price of oil and gas have plunged, largely due to the explosion of energy production brought about by fracking. They argue that the value of fossil fuel companies will keep plunging no matter what OPEC does, especially as research and development improves renewable energy technology and as nations begin tightening restrictions on and lessening subsidies to fossil fuel companies.

517 Colleen Leahy, "In Divesting From Fossil Fuels, Universities Make Compromises," *Morning Consult*, July 10, 2015. <http://morningconsult.com/2015/07/in-divesting-from-fossil-fuels-universities-make-compromises/>.

518 Lawrence Biemiller, "Pitzer College Charts a Different Course on Fossil-Fuel Divestment," *The Chronicle of Higher Education*, April 21, 2014. <http://chronicle.com/article/Pitzer-College-Charts-a/146091/>.

Proponents of the financial benefits of divestment often charge that studies linking fossil fuel investments to higher returns are funded by groups with ties to the fossil fuel industry. Both studies cited above from Compass Lexecon, by Fischel and Cornell, were financed by the Independent Petroleum Association of America. Studies with the opposite conclusions are funded by groups with advocacy interests in renewable energy—such as 350.org and the Carbon Tracker Initiative.

An August 2015 study from Trillium Asset Management chartered by 350.org concluded that the California state pensions for teachers (CalSTRS) and public employees (CalPERS) had lost \$840 million from investments in coal companies in the previous fiscal year ending June 2015. Trillium estimated that losses from all fossil fuel companies (oil, natural gas, and coal) totaled \$5.1 billion in that year. In that 12-month period, “most other stock investments held by CalSTRS and CalPERS rose,” Trillium found.⁵¹⁹

MSCI, a stock market index company, concluded that over the last 5 years index funds with fossil fuel investments underperformed funds without coal, oil, and gas investments. According to MSCI’s calculations, an index fund excluding fossil fuel companies saw annualized gross returns of 9.21 percent, compared to 7.97 percent for funds including fossil fuels.⁵²⁰

Which studies should trustees trust? The answer depends on what timeframe offers the best insights. Studies over the past 20-50 years show fossil fuels as financial bedrocks of investment portfolios, despite occasional market cycles and dips. Studies over the last 1-5 years suggest that the value of fossil fuel investments is faltering. Advocates of the longer view argue that an extended time horizon is necessary to account for short-term bubbles and one-off market events. Advocates of focusing on the recent past say the economy has changed significantly in the last 20 years, and that plunging oil prices are here to stay.

The argument in favor of holding on to fossil fuel investments draws support from evidence that fossil fuels will remain an important source of energy for years to come. According to the Energy Information Administration’s September 2015 Monthly Energy Review, fossil fuels meet about 82 percent of American energy demand, while renewables (hydro, geo-thermal, solar, wind, and biomass) provide less than 10 percent. Nuclear power provides about 8 percent.⁵²¹

519 “CalPERS & CalStrS Carbon Reserve Holdings in Fiscal Year 2014/2015,” *Trillium Asset Management*, August 10, 2015. https://d3n8a8pro7vhmx.cloudfront.net/350bayarea/pages/2568/attachments/original/1439526996/Trillium_Asset_Management_Analysis.pdf?1439526996.

520 “MSCI ACWI EX Fossil Fuels Index (GBP)” *MSCI*, September 20, 2015. https://www.msci.com/resources/factsheets/index_fact_sheet/msci-acwi-ex-fossil-fuels-index-gbp-gross.pdf.

521 “Monthly Energy Review,” Section 1.3., *U.S. Energy Information Administration*, September 2015. <http://www.eia.gov/totalenergy/data/monthly/pdf/mer.pdf>.

The argument in favor of divesting fossil fuels relies upon the assumption that regulatory machinery will press fossil fuels out of the market. This theory is called the “carbon bubble.” The “carbon bubble” argument is a central piece of the argument for fossil fuel divestment and is worth considering in depth.

The Carbon Bubble

The main premise of the “carbon bubble” theory, also known as the “stranded assets” theory, is that fossil fuel sources of energy are underpriced, making the companies that produce them artificially competitive. These companies’ value is inflated by their ability to emit—or more accurately, permit consumers to emit—greenhouse gases without paying for these external costs. If the “social cost” of carbon, estimated by President Obama’s administration at \$36 (in 2007 dollars) per metric ton of CO₂),⁵²² were incorporated into the cost of coal, oil, and gas, then their prices would increase substantially. Once the external cost of fossil fuel is internalized—put another way, once the government enacts legislation such as a carbon tax, new cap and trade emissions policies, or strict limits on emissions—the competitive edge that fuel companies currently enjoy will crumble away, renewable sources of energy will become competitively priced, and the profits and value of fossil fuel companies will fall drastically. This blow would be worsened if the U.S. government simultaneously eliminated federal subsidies for fossil fuel companies and increased subsidies for renewable energy.

Variations of this argument have been present since the very beginning of the fossil fuel divestment movement. When *As You Sow* and others convened by the Wallace Global Fund released in 2012 a “Coal Divestment Toolkit” for student activists to use, it included a section titled “Coal Is a Risky Investment.”⁵²³ The Toolkit argued that investing in coal was a bad idea “for two primary reasons”:

*First, more than half of the U.S. coal-fired plants are old, inefficient, and require major costly retrofits—costs that will not be recovered in the course of the plant’s useful life. Second, the price of coal and cost of extraction is going up, while investments in wind and solar reached record levels making coal-fired electricity a financial loser.*⁵²⁴

522 “Technical Support Document: - Technical Update on the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 – Interagency Working Group on Social Cost of Carbon,” United States Government, published May 2013, revised July 2015. <https://www.whitehouse.gov/sites/default/files/omb/inforeg/scc-td-final-july-2015.pdf>. Assuming a discount rate of 3%.

523 Corinne Bendersky, et. al., “Coal Divestment Toolkit – Moving Endowments Beyond Coal,” *As You Sow*, 2012. http://www.wearepowershift.org/sites/wearepowershift.org/files/Coal_Divestment_Toolkit_2012.pdf.

524 *Ibid.*

The toolkit drew on a white paper that As You Sow had published the year before, in 2011. That paper, “Financial Risks of Investments in Coal,” likewise argued that coal companies faced prohibitive infrastructure costs and growing competition from other sources of energy, especially natural gas.⁵²⁵

The analysis that sparked McKibben’s and Klein’s interest in a divestment campaign questioned fossil fuel companies’ viability at a more fundamental level. The report “Unburnable Carbon” from the Carbon Tracker Initiative argued that regardless of other economic factors, fossil fuel-extracting companies were doomed because the regulations required to curb global warming would make most of their stock unusable. That report gave McKibben the numbers for his math and the concept of a “carbon bubble.” McKibben drew on the idea in his initial *Rolling Stone* article. To stop global warming, politicians would have to legislate so as to keep 80 percent of fossil fuels in the ground. Once the onslaught of climate change drove them to do so, financial investors would find their fossil fuel investments worthless:

*Suddenly those Chevron reserves would be a lot less valuable, and the stock would tank. Given that risk, the Carbon Tracker report warned investors to lessen their exposure, hedge it with some big plays in alternative energy.*⁵²⁶

The “carbon bubble” idea has attracted some significant endorsers. In October 2013, former US vice president Al Gore and his business partner David Blood argued in a *Wall Street Journal* op-ed, “The Coming Carbon Asset Bubble,” that a “subprime carbon asset bubble” threatened investors who “mistakenly treat carbon risk as an uncertainty.” Gore and Blood’s math differed slightly from McKibben—they thought “at least two-thirds of fossil fuel reserves” would need to stay in the ground to hold temperature rises to 2 degrees Celsius, not McKibben’s 80 percent—but they came to the same conclusion. Global climate regulations could burst the bubble, Gore and Blood warned. So could competition from alternative sources of energy, and even “sociopolitical pressures” such as the fossil-fuel divestment campaign. In their list of recommendations for investors wishing to escape the popping bubble, Gore and Blood included divesting fossil fuels as “certainly the surest way to reduce carbon risk.”⁵²⁷

Bevis Longstreth, former commissioner of the Securities and Exchange Commission, is another proponent of the carbon bubble theory. He has traversed the country testifying in favor of the theory to the University of Hawaii, University of Maine, the San Francisco Employee Retirement System (SFERS) Trustees, and more. In his speech to the San Francisco Pension Trustees, reprinted as an article at the *Huffington Post*,

525 “White Paper: Financial Risks of Investments in Coal,” As You Sow. 2011. http://www.asyousow.org/ays_report/white-paper-financial-risks-of-investments-in-coal/.

526 McKibben, “Global Warming’s Terrifying New Math.”

527 Al Gore and David Blood, “The Coming Carbon Asset Bubble,” *Wall Street Journal*, October 29, 2013. <http://www.wsj.com/articles/SB10001424052702304655104579163663464339836>.

Longstreth asserted that the coal sector's stock price, careening down 61 percent over three years while the S&P 500 ticked up 47 percent, was "the canary in the oil well."⁵²⁸

A few months earlier in another piece for *Huffington Post* Longstreth elaborated:

*On the assumption that, in a Darwinian awakening, the world will rally to protect itself and all living things, by holding to the 2 degree level (of warming), investments in the 200 (fossil fuel companies blacklisted by Carbon Tracker) are severely overpriced in the market. Again, on that assumption, fiduciaries have a compelling reason on financial grounds alone to divest these holdings before the inevitable correction occurs. I'm certain any reputable investment manager, if directed by an endowment to accept that assumption, would agree with this conclusion.*⁵²⁹

Bevis Longstreth and David Blood are both college trustees—Blood at Hamilton College in New York, and Longstreth at the New School, which in February 2015 announced its decision to divest all fossil fuels, largely at his urging.

Other trustees have also embraced the carbon bubble analysis. The University of Hawaii's Task Group on Divestment and Sustainability, which recommended divestment to the full board (which approved), noted that

*The long term value of fossil fuel companies may decrease because their assets (fossil fuel reserves) will not be able to be developed if the world is to avoid existential threats to human lives that will result if carbon dioxide increases are not contained.*⁵³⁰

Similarly, the investment committee at the University of Maine System noted that the pro-divestment advocates had emphasized the carbon bubble:

Fossil fuel divestment's strategy seeks to appeal to trustees' fiduciary duty of care. It points out that, over time, it is likely that huge reserves of fossil fuel will be "stranded" and cost of recovery

528 Bevis Longstreth, "The Case for Fossil Fuel Divestment," *Huffington Post*, July 11, 2014. http://www.huffingtonpost.com/bevis-longstreth/post_8010_b_5577323.html.

529 Bevis Longstreth, "The Financial Case for Divestment of Fossil Fuel Companies by Endowment Fiduciaries," *Huffington Post*, November 2, 2013. http://www.huffingtonpost.com/bevis-longstreth/the-financial-case-for-di_b_4203910.html.

530 "Final Report and Recommendation," University of Hawaii Board of Regents Task Group on Divestment and Sustainability, March 23, 2015. http://www.hawaii.edu/offices/bor/finance/materials/201504011330/2._Report_by_Divestment_Task_Group_Regarding_Recommendations_on_Divesting_from_Fossil_Fuels_and_Board_Policies_Regarding_Sustainability.pdf.

*will exceed the market value of the fuel. Accordingly, divestiture is in the enlightened self-interest of the fiduciary.*⁵³¹

When Sterling College in Vermont divested, trustee Rian Fried commented, “the safety of the long-term financial returns will also be significantly enhanced by shielding the College from direct exposure to companies whose production levels are unsustainable.”⁵³²

The Wager

Divesting for fear of the carbon bubble is a wager that carbon energy will crash soon. What is the likelihood of that happening? Ben Caldecott, who directs the stranded assets program at Oxford University’s Smith School, has researched the efficacy of fossil fuel divestment and concluded,

*In our research we find that the direct impacts of fossil fuel divestment on equity or debt are likely to be limited. The maximum possible capital that might be divested by university endowments and public pension funds from the fossil fuel companies represents a relatively small pool of funds. Even if the maximum possible capital was divested from fossil fuel companies, their shares prices are unlikely to suffer precipitous declines.*⁵³³

Caldecott notes, though, that “even if the direct impacts of divestment outflows are meagre in the short term,” divestment “can create long-term impact on the value of target firms” by stigmatizing them. The wager, then, is not that divestment can itself weaken the finances of the fossil fuel industry, but that it can set off a chain reaction of further policies to drive fossil fuel companies toward unprofitability.

Is there any evidence that the divestment campaign has done so?

Divestment advocates point to a few signs of wavering faith in fossil fuels. Peabody Coal, for instance, noted in its recent filings with the SEC that the divestment campaign could decrease its share price and curtail its access to financing:

There have also been efforts in recent years affecting the investment community, including investment advisors, sovereign wealth funds, public pension funds, universities and other

531 Minutes from the University of Maine System Board of Trustees Investment Committee, December 3, 2014. <http://www.maine.edu/wp-content/uploads/2013/06/Investment-Committee-Minutes-Dec-3-2014.pdf>.

532 Tim Johnson, “UVM Trustees Reject Fossil-Fuel Divestment,” *Burlington Free Press*, December 18, 2013. <http://www.burlingtonfreepress.com/story/news/2013/12/18/uvm-trustees-reject-fossil-fuel-divestment/4117649/>.

533 Ben Caldecott, “What Does Divestment Mean for the Valuation of Fossil Fuel Assets?” *Business Green*, October 8, 2013. <http://www.businessgreen.com/bg/opinion/2299216/what-does-divestment-mean-for-the-valuation-of-fossil-fuel-assets>.

*groups, promoting the divestment of fossil fuel equities and also pressuring lenders to limit funding to companies engaged in the extraction of fossil fuel reserves. The impact of such efforts may adversely affect the demand for and price of securities issued by us, and impact our access to the capital and financial markets.*⁵³⁴

Bank of America in May 2015 announced that it would rein in its financing for coal companies. Andrew Plepler, head of corporate social responsibility, said the policy would “continue to reduce our credit exposure over time to the coal mining sector globally.”⁵³⁵ One month before, HSBC released a note to client analysts called “‘Stranded assets: what next?’ warning that fossil fuel companies may become “economically non-viable.”⁵³⁶

The bubble, though, must be a self-fulfilling prophecy if it is to come true. The bubble will only pop if divestment works. “Divesting because of the carbon bubble is a wager that we will win,” says Marcie Smith, executive director of Responsible Endowments Coalition, the group that advised Swarthmore early in its divestment campaign.⁵³⁷ The divestment movement’s judgment of the financial unprofitability of the fossil fuel industry presupposes the efficacy of its own advocacy.

Consider the scenario that divestment advocates present: The government will not stop climate change, because climate change is caused by burning fossil fuels and fossil fuel companies have bought the politicians. Divestment is necessary because it sidesteps mercenary state actors, ostracizes the fossil fuel industry, and thereby makes it harder for politicians to accept campaign contributions from and vote for policies that benefit fossil fuel companies. Divestment, and only divestment, can induce the government to enact the policies that strand fossil fuel assets and make their reserves unusable. Fossil fuel assets will only plummet in price if divestment becomes widespread.

In other words, divesting now to escape the carbon bubble is also the means of popping the carbon bubble. If enough people divest, the carbon bubble bursts, harming the stragglers who failed to divest soon enough, and benefiting those who simultaneously fled and destroyed the investments.

534 Peabody Energy Corporation, “Annual Report to the Securities and Exchange Commission” for Fiscal Year Ended December 31, 2014. <http://www.sec.gov/Archives/edgar/data/1064728/000106472815000021/btu-20141231x10k.htm>.

535 Valerie Colcovici, “Bank of America’s New Policy to Limit Credit Exposure to Coal,” *Reuters*, May 6, 2015. <http://www.reuters.com/article/2015/05/06/banking-coal-climatechange-idUSL1N0XX3SQ20150506>.

536 Luke Hurst, “HSBC Warns Clients of Fossil Fuel Investment Risks,” *Newsweek Europe*, April 21, 2015. <http://europe.newsweek.com/hsbc-warns-clients-fossil-fuel-investment-risks-323886>.

537 Marcie Smith, interview with Rachelle Peterson, October 7, 2015.

So is it financially savvy to divest? Only if the herd effect begins—only if you think everyone else will divest along with you. The carbon bubble case for divestment is the ideological version of a Ponzi scheme. It requires divestors to convince others to join in order to protect the financial advantages of having divested. Perhaps that is why “leadership” is a popular reason that colleges and universities say they will divest. Chapter 6 explores other reasons for divestment.