



The Global Fossil Fuel Divestment and Clean Energy Investment Movement

December 2016

Executive Summary

On the one-year anniversary of the Paris climate agreement, the value of assets represented by institutions and individuals committing to some sort of divestment from fossil fuel companies has reached \$5 trillion.¹ To date, 688 institutions and 58,399 individuals across 76 countries have committed to divest from fossil fuel companies, doubling the value of assets represented in the last 15 months.² Pension funds and insurance companies now represent the largest sectors committing to divestment, reflecting increased financial and fiduciary risks of holding fossil fuels in a world committed to stay below 2° Celsius warming.

From its start on American college campuses five years ago, fossil fuel divestment has grown into a truly global movement, with more than half of all divesting institutions and individuals based outside the United States. The sectors that initially propelled the movement—universities, foundations, and faith-based organizations—continue steady growth, accounting for 54 percent of new commitments made. However, as large private and institutional asset holders recognize the reputational, financial, and legal risks of remaining invested in fossil fuels, divestment has spread to new sectors, including large insurers, pension funds, and banking institutions. Today no single sector accounts for more than a quarter of commitments made.

Adoption of the Paris Climate Agreement in December 2015 bolstered the economic arguments underpinning

divestment, validating it as a key tool for achieving the agreement's goals. The agreement reinforced the movement's moral argument that energy choices directly impact the planet, and supported the claim that energy finance must take clear account of coming global limits on carbon emissions. While the election of Donald Trump, who campaigned on a pledge to withdraw from the Paris Agreement, calls into question the United States' ongoing commitment to reduce emissions, it does not affect the broader structural changes moving the energy sector away from fossil fuels. Any setback to official US climate policy elevates the importance of divestment as an organizing and financial tool to speed the clean energy transition. Absent effective federal policy to curb emissions, advocates and investors can use their assets and their voice to continue pushing the energy sector beyond fossil fuels.

Today, the mounting financial risks associated with climate change and the prospect that a significant proportion of existing fossil fuel reserves will be “stranded” (losing their value before the end of their economic life) has brought divestment into discussions of fiduciary duty, potentially igniting a new wave of divestment. The divestment movement was sparked by mission-driven institutions acting out of a moral imperative to confront the climate crisis. This initial phase was followed by a second wave of divestment driven by financial concerns about economic risk from stranded fossil fuel assets. Now, diverse legal scholars, businesses, and investors are warning that fiduciaries who fail to consider climate change risks in their investment analyses and decisions may be at risk of breaching their legal duty as fiduciaries. The emerging view that fiduciary duty may actively compel divestment of fossil fuels has the potential to pressure financial managers and institutions that once argued their fiduciary roles acted as a barrier to consideration of climate risk.

New clean energy investment vehicles, fossil-free funds, large investment deals, capital commitments, and coalitions are driving more capital to the clean energy sector with the aim of accelerating the transition to a sustainable, low-carbon economy, and to support communities most impacted by climate change and energy poverty.³ Clean energy investment has continued its steady growth, reaching \$329 billion in 2015,⁴ and several divesting institutions have made explicit commitments to increase their investments in clean energy. Institutions and individuals that have pledged to both divest and invest in clean energy and climate solutions⁵ collectively hold \$1.3 trillion in assets.⁶ Several of these institutions are using their assets to help fill gaps in private sector finance, focusing on poor and vulnerable communities that risk being left behind in the energy transition. The clean energy sector also saw several ambitious new commitments to invest in clean energy innovation and access in the wake of the UN Paris negotiations in late 2015.

Divestment advocacy has converged with broader climate activism and fossil fuel resistance campaigns to create an increasingly unified global movement. Different strains of climate advocacy are now reinforcing each other, framing a larger narrative about the decline of

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fossil fuels, and putting the industry under mounting legal, regulatory, political, and cultural pressures. These include activism under the “Keep It in the Ground” frame being used to oppose extractive projects, efforts to end fossil fuel subsidies, and litigation against fossil fuel companies for climate damages around the world. In addition, the fossil fuel industry finds itself under investigation for potentially fraudulent climate denial and failure to disclose climate risk, following a series of investigative reports by nongovernmental organizations and journalists. Together, these campaigns comprise a multi-faceted, increasingly global movement, with divestment providing an important on-ramp for a new generation of young climate leaders.

As the fossil fuel industry falters in the face of market and regulatory pressures, global divestment campaigns pose even greater risk to the sector. Bankruptcies filed over the past year by some of the world’s largest coal companies, together with dramatic drops in the profitability of leading oil and gas companies, are rooted in economic and political forces quite outside fossil fuel divestment. But they reflect an increasing vulnerability in fossil fuel business models that divestment can potentially exacerbate. The incompatibility of the prevailing fossil fuel business model with globally agreed-upon carbon limits, and the increasingly poor market performance of many former fossil leaders, such as ExxonMobil, will only hasten the financial exit from fossil fuels and the move to invest in clean energy.

Methodology

In this third annual report, Arabella Advisors built on the methodology we deployed in 2014 and 2015 to aggregate and report data on the growth of the global fossil fuel divestment movement. As in prior years, we assembled a committee of diverse divestment movement leaders and other experts to advise on the methodology used to track and vet the commitments in this report. We list these leaders and experts in the Acknowledgments section on page 32.

Given the increasing diversity of commitments made in 2015 and 2016, we have included in this report any public commitment to divest from top fossil fuel companies, with a few exceptions described below.



The original standard for divestment commitments was a pledge to divest from the top 200 companies, as defined by the Carbon Tracker or Carbon Underground indexes. Over time, the range and size of institutions that are divesting have diversified, and we witnessed a proliferation of approaches beyond divesting from the top 200 companies. Several institutions have divested from all fossil fuel companies, committing themselves well beyond withdrawal from the top 200. Other institutions have opted for a sector-based approach: divesting from companies that derive a significant portion of their revenue from coal and/or tar sands companies—and in some cases planning to divest from other fossil fuel companies later. Still others have chosen to divest from specific fossil fuel companies based on a range of criteria, including companies' willingness to engage in meaningful efforts to curb emissions. We have included in this report commitments that employed any of these approaches.

In a few instances, institutions have opted to freeze any future investments in fossil fuels but have stopped short of divesting existing holdings. While that is an important step, we have not counted these commitments in our totals. Similarly, on occasion members of an institution pass a resolution in support of divestment, but those who maintain fiduciary duty decline to implement the resolution. We have not included these commitments in our analysis.

Arabella measured the total assets (or assets under management for financial institutions) of institutions that have committed to divest. As such, asset sizes reported do not represent sums divested from fossil fuel companies. Rather, asset sizes represent total assets held by institutions that have committed to divest. Arabella obtained data on institutions' assets from various sources. For educational institutions, we tracked size of endowment as publicly reported by the institutions. For faith-based organizations, health care institutions, pension funds, philanthropic foundations, and for-profit asset managers, we tracked total assets as cited in organizations' most recent publicly available financial statements (e.g., annual reports or tax forms). For local governments, we tracked total net position as cited in cities' most recent publicly available financial statements. Where assets were not publicly available, we emailed institutions to request information.

A listing of divesting institutions, as well as more information on the asset sizes and divestment approach employed by each institution, can be found at <http://gofossilfree.org/commitments>.

For more information on individuals pledging to divest, visit <http://divestinvest.org/individual>.

Overall, 20 percent of institutions declined to report on their assets. They are counted in the total number of institutions pledging to divest, but their assets are not reflected in our analysis. As such, the \$5 trillion figure is significantly lower than the full scale of commitments made.

Individuals committing to divest from fossil fuels reported their personal investments through an online survey administered by Divest-Invest Individual. Some individuals selected the value of their personal investments from a series of dollar ranges (\$25,000 or less, between \$25,000 and \$100,000, between \$100,000 and \$500,000, between \$500,000 and \$1 million, between \$1 million and \$5 million, between \$5 million and \$10 million, and over \$10 million), while a large majority opted not to disclose a range. As such, the total assets held by divesting individuals are also likely higher than we report.

Global Divestment Commitments Trends

Once seen as a niche movement of student groups and mission-driven nonprofit organizations in the United States, fossil fuel divestment has developed into a truly global movement spanning a broad range of sectors.

The fossil fuel divestment movement has doubled over the past 15 months, with the value of assets held by divesting institutions and individuals now exceeding \$5 trillion.



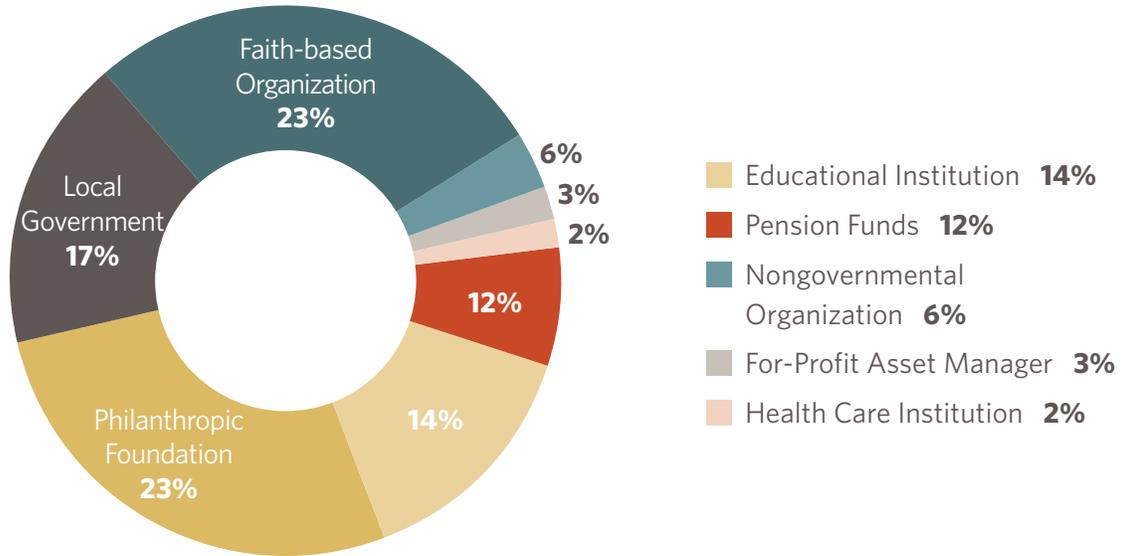
In 2016, commitments to divest from fossil fuels are more global than ever. Individual and institutional pledges span 76 countries, and 55 percent of divesting institutions are based outside of the United States.



The Paris Agreement’s commitment to curbing greenhouse gas emissions and advancing climate-resilient development was a landmark moment for climate action, and has reinforced the divestment movement as essential to meeting international targets.

Adopted at the 2015 Paris climate conference, signed by 193 countries, with an entry-into-force in November 2016, the agreement aims to hold the increase in the global average temperature to well below 2°C over pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C. To achieve this, the agreement calls on the global community to make “financial flows consistent with a pathway toward low greenhouse gas emissions and climate-resilient development.” The cascade of divestment pledges that followed on the heels of the 2015 Paris climate conference confirms that the Paris Agreement and the divestment movement mutually reinforce necessary climate action. In

Divesting institutions are also more diverse than ever: no one sector represents more than a quarter of commitments.



just the three months following the drafting of the agreement, 22 new institutions collectively representing \$17.4 billion pledged to divest from fossil fuels.

The commitment to curb carbon emissions validates divestment as a critical part of climate action. Countries published national greenhouse gas emissions reduction plans leading up to the Paris conference, and they must publish new, ambitious targets every five years that “represent a progression over time.” Further, the agreement aims to reach zero net carbon emissions by the second half of this century. Achieving progressively more ambitious greenhouse gas emissions reduction targets, within the broader goal of reaching carbon neutrality, will increase pressure on asset holders to end their holdings in fossil fuels. While President-elect Donald Trump has said he will seek to withdraw the United States from the Paris Agreement, sustained divestment advocacy can help maintain this pressure on US investors.

A growing recognition by the financial sector of the threat of stranded carbon assets is becoming a pressing fiduciary issue and may drive a new wave of commitments. Fiduciary duty—including the duties



of care, diligence, prudence, loyalty, impartiality, and obedience—regulate investment decisions made by institutional investors and vary according to the type of fund being managed and the jurisdictions under which it falls. Early in the divestment movement, critics claimed that fiduciaries who divest from fossil fuels breached their duty. For example, they argued that fossil-free portfolios would be insufficiently diversified (breaching the duty of prudence), or that considering anything other than financial returns, especially in the case of pension funds, would prohibit fiduciaries from administering funds in the interest of the beneficiaries (breaching the duty of loyalty).

Over the past few years, more legal and financial analysts acknowledge that standards of ordinary prudence may actually require divestment from fossil fuels. Principles for Responsible Investment (PRI), an independent initiative in partnership with United Nations Environment Programme Finance Initiative and the UN Global Compact, analyzed investment practices in eight countries in 2015 and concluded that “failing to consider long-term investment value drivers, which include environmental, social and governance issues, in investment practice is a failure of fiduciary duty.”⁷ More than 1,600 asset owners, investment managers, and services providers from 64 countries, representing \$62 trillion in assets, have agreed to the initiative’s Six Principles for Responsible Investment, standards guiding investment practice.⁸

In January 2016, former US Securities and Exchange Commission (SEC) commissioner Bevis Longstreth released a legal interpretation of what constitutes prudent management of institutional funds, considering fossil fuel risks and the commitments of the Paris Agreement.⁹ In October 2016, the Australia-based Centre for Policy Development and the Future Business Council published a legal opinion stating that, “‘Climate change risks’ may be relevant to a director’s duty of care and diligence ... it is conceivable that directors who fail to consider ‘climate change risks’ now could be liable for breaching their duty of care and diligence in the future.”¹⁰ Similarly, Canadian legal scholar Ed Waitzer argues that “Trustees are increasingly expected to look beyond portfolio performance to the intentional management of systemic risks and rewards, reflecting the longer-term interests of their beneficiaries. Over time, this will likely become an enforceable obligation.”¹¹

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In addition to this growing body of legal analysis, several financial industry reports by BlackRock, Moody's, Mercer, and Fitch have cited climate risk as a fiduciary concern. BlackRock argues that "the longer an asset owner's time horizon, the more climate-related risks compound. Yet even short-term investors can be affected by regulatory and policy developments, technological disruption, or an extreme weather event."¹² Similarly, Mercer's "Investing in a Time of Climate Change" argues that climate change demands a "special focus" from investors, given "its potential impact and narrow time frame left to address it." Mercer offers a framework to help investors assess climate risk factors, including technology, resource availability, environmental impacts (such as storms), and policy.¹³

And while climate change-driven legal interpretations of fiduciary duty have proliferated, practical frameworks and guidelines by the Climate Disclosure Standards Board, the Financial Stability Board's Task Force on Climate-related Financial Disclosures, and others are making it easier for investors to understand their climate risk and exercise their fiduciary duty.

This legal foundation for fossil fuel divestment driven by fiduciary duty and climate risk is now an important force driving the divestment movement. After the initial divestment action of university students, faith-based organizations, and mission-driven organizations led the way, larger-scale institutions began selling off fossil fuel stocks, for fear of the devaluation of their portfolios due to the risk of stranded assets. The Carbon Tracker Initiative published an analysis of the risk of stranded carbon assets in 2013, finding that 60 to 80 percent of the existing coal, oil, and gas reserves and resources would be unburnable if global leaders commit to limiting warming to 2°C. A 2015 report found that \$2 trillion in capital expenditures by fossil fuel companies needs to be avoided by 2025 to cut around 156 GtCO₂ of carbon emissions and stay within international targets for 2°C of warming.¹⁴

Going forward, financial managers in nonprofit and mission-based organizations may be actively required to consider mission conflicts and the long-term climate risks associated with fossil fuels as part of their fiduciary duty. Christopher McCall, one of the UK's leading

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barristers specializing in charity law, considers that the systemic risks posed by climate change may well be thought to undermine the missions of many charities.¹⁵ Accordingly, the trustees of such charities may conclude that it is inappropriate for charities to be invested in high-carbon assets after taking into account the increasing evidence of the financial risks posed by such investments.

Shareholders and regulators are demanding that companies disclose their exposure to climate risk, exposing fossil fuel companies to further divestment and legal action. Policymakers are increasingly demanding that fossil fuel companies disclose their exposure to climate risk. Regulators in France, Sweden, and California have all released climate-risk transparency initiatives. In June, the European Union released a directive requiring pension funds to assess “risks related to climate change, use of resources, the environment, social risks, and risks related to the depreciation of assets due to regulatory change (‘stranded assets’),” and to disclose the methods and results of such assessments.¹⁶ The directive affects funds with combined assets worth over \$3.4 trillion.¹⁷

Shareholders have filed resolutions demanding that companies report on the alignment of their capital expenditures with policymakers’ goals to limit greenhouse gas emissions, or to report on strategies companies are employing to address the risk of stranded assets presented by global climate change and demand reductions for oil and gas. For example, ExxonMobil and Chevron shareholders have pressured the companies to disclose climate risk and to explain how resilient their portfolios and strategy would be if policy measures to restrict warming to 2°C, as agreed in Paris, are successfully implemented.¹⁸ Bank of England Governor and Financial Stability Board Chair Mark Carney announced the creation of the Task Force on Climate-related Financial Disclosures shortly after Climate Week in September 2015. The Financial Stability Board drafts global financial regulation for the Group of 20 economies (G20), and the climate task force will develop consistent climate-related financial risk disclosures for companies to use to provide information to investors, lenders, insurers, and other stakeholders. Currently, only an estimated one-third of the world’s largest 1,000 companies provide adequate

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disclosure to investors about the potential impact of carbon pricing on their businesses, and the task force is poised to help change that.¹⁹

Similarly, investors are committing to disclose their exposure to climate risk. The Montreal Carbon Pledge, which commits investors to measure and publicly disclose the carbon footprint of their portfolios on an annual basis, has attracted over 120 institutional investors representing \$10 trillion in assets under management as of December 2015.²⁰

Mission-driven institutions that first led the movement—including educational institutions, faith-based organizations, and philanthropic foundations—continue to pledge in large numbers and represent 54 percent of new divestment commitments made over the past 15 months.

While the divestment movement was born on campuses in the United States, today university campaigns have spread around the globe. Two years ago, all but one university pledging to divest their endowments from fossil fuels were based in the United States. Today, non-US universities represent 81 percent of educational institutions that have pledged to divest over the past 15 months, with the UK and Australia topping the list. In addition, faith-based organizations are divesting in higher numbers—with an additional 38 institutions committing since our last report—and are increasingly organizing coalitions to mobilize faith-based climate action. For example, the Global Catholic Climate Movement, which was founded in 2015 and unites lay people, members of religious communities, and activists to act on climate change, has recruited more than 400 members in the past 15 months.²¹ At COP22 in Marrakesh, the Islamic Society of North America became the first Muslim institution globally to make a divestment commitment, and the Global Muslim Climate Network held an official side event focused in part on issues of climate finance in relation to Islamic principles.

Also at the COP22, 303 faith leaders from 58 countries, including Buddhist, Christian, Hindu, Jains, Quakers, Muslim, Sikh, Unitarian Universalists, and Indigenous and Spiritual leaders, announced the COP22 Interfaith Climate Statement. In addition to urging institutions and governments to divest, the statement calls for “global financial flows to be increased and consistent with the 1.5°C goal and be

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coordinated more closely with the SDGs [Sustainable Development Goals] to recognize the intrinsic relationship between climate change, poverty eradication and equitable sustainable development.”

Several cultural institutions are divesting from fossil fuel companies, including museums dedicated to educating the public about science and natural history. These institutions include the Field Museum of Natural History in Chicago, the Phipps Conservatory and Botanical Gardens in Pittsburgh, the California Academy of Sciences in San Francisco, and the Australian Academy of Science in Canberra.²³

At the same time, profit-driven institutions—including large pension funds, private insurers, and banks—are divesting from fossil fuels in increasing numbers. They represent \$4.6 trillion in assets divesting from fossil fuels. In explaining their rationale for divesting, these institutions demonstrate that the core arguments for divestment—both the moral imperative to halt global warming and the financial risk of stranded carbon assets—are broadly relevant, even to institutions that do not identify as part of the Divest-Invest movement. For example, the German financial services giant, Allianz SE, which has \$668 billion in assets, pledged to divest its holdings in coal companies and boost its funding of the wind power sector shortly before the Paris climate conference. Allianz’s chief of investment remarked that the company “want[s] to support the negotiations at the climate summit in Paris in December, but also send a signal to our industry and the capital markets” that it does not believe climate-damaging investments will pay off. Then, in May 2016, the \$791 billion multinational life insurance, pensions, and asset management company Aegon pledged to divest from coal. Aegon’s head of strategy and sustainability explained that “by excluding coal mines as an investment option [Aegon] put[s] even more emphasis on the switch to sustainable forms of energy.” The company’s CEO added that Aegon “strongly believe[s] that our company should have a positive impact on all our stakeholders. Not just customers, employees and shareholders, but broader society too.”²⁴

Financial institutions are facing mounting pressure to divest. In September, Amalgamated Bank, a chartered commercial bank with \$4 billion in assets under management, became the first US bank



According to Islam’s most basic and fundamental teachings, human beings have been uniquely charged with the great responsibility of being Guardians and Caretakers of the Earth. It goes against the overall service-based mission of the Islamic Society of North America (ISNA) to invest in fossil fuel companies whose operations and products cause such grave harm to humanity and to Creation.

- DR. AZHAR AZIZ,
President, ISNA²²



to divest from fossil fuels. The bank also declared its commitment to working with clients that are investing in sustainable energy and technologies, helping to create quality jobs in the clean energy economy. Environmental groups such as Australia-based Market Forces have organized bank customers to advocate for their banks to divest. In October, over 1,000 customers in 13 locations across Australia publicly demonstrated and closed their bank accounts in favor of financial institutions that are shedding fossil fuel holdings.²⁵

Large asset holders are systematically pulling substantial holdings out of the industry due to the steep financial risks associated with stranded fossil fuel assets. Barclays projects that in a 2°C world, the oil industry is poised to lose more than \$22 trillion of expected revenue, the coal industry would lose \$5.8 trillion, and the gas industry would lose \$5.5 trillion.²⁶ In response, several large asset holders are committing to divest. For example, the \$36 billion Fourth Swedish National Pension Fund (AP4) has committed to decarbonizing its global equity portfolio by 2020 and to investing \$3.2 billion in passive investment funds that track low-carbon performance. A spokesperson for the fund explained its decision, asserting that “companies with lower emissions than their competitors will enjoy a financial advantage and deliver better performance.” AP4 made this pledge as it joined the Portfolio Decarbonization Coalition, a group of large institutional investors that have committed to gradually decarbonizing their portfolios. The coalition’s 27 investor members are overseeing the decarbonization of \$600 billion in assets out of \$3.2 trillion in assets under management.²⁷ DONG Energy, the Danish state-run offshore developer of wind energy, has decided to exit its oil and gas business. The \$2.7 billion company stated that it no longer considers oil and gas to be “a long-term strategic commitment” and affirmed its goal for “strategic transformation towards becoming a global leader in renewables.”²⁸

A record number of local authorities, cities, and states around the world are pledging to divest, demonstrating the growing political strength of the divestment movement. Cities and states that have passed bills or resolutions to divest include Berlin, California, Copenhagen, Melbourne, Oslo, Portland, OR, Seattle, Stockholm, Sydney, and Washington, DC. More than 30 cities in France are

divesting, and more than six million Americans live in a city that is divesting. Divestment campaigners around the globe have worked diligently over the past several years to educate lawmakers on climate risk and to appeal to leaders of public investments and pension funds. Many mayors and city councils responded, recognizing that cities are often hardest hit by the effects of climate change. Sydney's city council unanimously voted to divest from fossil fuels; its leading councilor explained the success as a recognition that "climate change is the most important issue of our times."²⁹ Commenting on the District of Columbia Retirement Board's decision to purge its \$6.4 billion fund of fossil fuels, a DC council member stated, "This is a decision that is morally and ethically the right thing [from a climate perspective]. It is also financially the right thing [to do]."³⁰

The number of individuals pledging to divest their personal assets of fossil fuels has grown exponentially. Today, more than 58,000 individuals have formally pledged to divest. In 2015, 2,040 individuals had pledged to divest. Those pledging to divest cite a wide range of rationales. They want to align their personal assets with their values, maintain competitive returns as fossil fuel holdings become less valuable, avoid climate risk in their portfolios, and redeploy their capital to build the clean energy economy.

A growing number of fossil-free investment products and tools are making it easier to divest. Tools such as Fossil Free Funds screen out mutual funds and exchange-traded funds that include fossil fuel companies, efficiently providing investors with a list of fossil-free fund options. Clean Capitalist allows users to test how a portfolio would have performed financially if it had been decarbonized three years earlier. Index providers such as FTSE, MSCI, STOXX, and Solactive have created low-carbon indexes for investors seeking to reduce climate risk across their holdings. In addition, asset management firms such as Arcadia, State Street, BlackRock, Amundi, and BNP have launched low-carbon exchange-traded funds in the United States and Europe that combined have assets just under \$500 million as of July 2016.³¹ In Denmark, influential banks such as Danske Bank and Jyske Bank have started offering fossil free investment funds as the result of prodding from municipalities seeking to divest and divestment campaigners.³²



[Pledging to divest] is one of many steps I am taking so that I can look my children and other children in the world in the eye in 10 years when they truly start to understand and say, "Yes we knew it was serious, and yes, we took action."

- CINDY COLTMAN,
Amsterdam, the Netherlands



Many large institutions have made incremental moves to divest, shifting significant assets without making a public pledge. Others are threatening divestment as part of engagement with fossil fuel companies. These commitments mark a growing trend of institutions adopting diverse approaches to significantly reducing their fossil fuel holdings. For example, the Bill & Melinda Gates Foundation, which has \$40 billion in assets, has not pledged to divest but has reduced its fossil fuel holdings by 85 percent over the past two years and recently sold all its holdings in BP.³³ The Hewlett Foundation has opted not to make any future investments in private partnerships involved in oil and gas drilling.³⁴

Several cultural institutions, especially public museums focused on science and natural history, are also cutting ties with fossil fuel companies. They include London's Science Museum, which decided not to renew a sponsorship deal with Royal Dutch Shell;³⁵ the Leonardo Museum in Salt Lake City, which has committed to exploring divestment in order to "contribute to the betterment of society";³⁶ and the American Museum of Natural History in New York City, which has adopted a policy that encourages its investment managers to consider climate change risks and to actively consider renewable energy investment opportunities. The American Museum of Natural History has also halved its indirect holdings in fossil fuel companies over the past two years.³⁷ In 2015, UK-based insurer Aviva, which has \$572 billion in assets, began shareholder engagement with 40 companies that earned more than 30 percent of their revenue from coal mining or power generation activities. Aviva set expectations for the companies to incorporate responsible climate action into their governance, strategy, and operations, and to halt investment in new coal generating capacity. Eight companies declined to engage with Aviva, and the insurer recently announced it has earmarked at least two of these companies for potential divestment. And Legal & General Investment Management (LGIM), the UK's largest asset manager with just over \$1 trillion in assets, recently launched a new fund composed primarily of companies that contribute to a low-carbon future and excluding most oil and coal companies. LGIM will give the remaining fossil fuel companies in the fund 12 months to meet a set of climate change-responsive criteria; if the companies do not make substantial

improvements, LGIM will divest. “It’s a very powerful message we’re sending,” LGIM’s head of sustainability and responsible investment strategy commented. “I don’t think a message like this has come from [stock] index managers before.”³⁸ Note that while these actions are important steps, we have not counted these institutions’ assets in the divestment totals cited in this report.

Clean Energy Investing Trends

The clean energy sector reached an all-time high in investment last year, with a significant amount of capital flowing into renewable energy and clean technology innovation. The field has witnessed rapid development of new investment vehicles for institutional and individual investors. Additionally, as the divestment movement grows, new investment commitments are driving more capital to the communities most impacted by climate change and energy poverty.

Many of the institutions that have pledged to divest from fossil fuels have also taken meaningful action to invest in climate solutions.

Climate solutions include investments in renewable energy, energy efficiency, clean technology across a wide range of industrial sectors, and energy access, through off-grid, distributed energy technologies. Many divested institutions have set ambitious targets for investments in climate solutions in order to align with the 2°C limit set by the Paris Agreement. Philanthropic institutions have crafted a “Divest-Invest” pledge in which signatories commit to divesting from all fossil fuels, and investing five percent of their assets in climate solutions.⁴⁰ This call to commit five percent comes from an assessment by the International Energy Agency that an additional \$36 trillion in clean energy investment is needed through 2050 to maintain the 2°C limit, amounting to a “clean trillion” each year. In response, Ceres, a prominent investor coalition, has called for investors to set a five percent target for their portfolios.⁴¹ One of the most prominent philanthropies that pledged to divest, the Rockefeller Brothers Fund, has invested \$10 million into Mainstream Renewable Power, a



The financial sector is working hard to lay the foundations for filling gaps in financing climate action and to support nations in delivering on their corresponding commitments.

– AXEL WEBER,
Chairman of the Board of Directors
of UBS Group AG³⁹



renewable energy company financing wind and solar projects in South Africa, Egypt, Senegal, and Ghana.⁴² Similarly, the Nia Community Fund has pledged \$5 million for clean energy investment and is supporting the development of broad clean-energy investment options in public markets.

In addition to philanthropy, other sectors are making significant commitments to align their portfolios with global climate targets. After the Dutch pension fund Pensioenfonds Zorg en Welzijn (PFZW) pledged to divest its \$187 billion in assets of its highest emissions-producing holdings, it also pledged to invest approximately 12 percent of its portfolio—over \$22 billion—into climate solutions, including water scarcity and food security investments.⁴³ Several divested universities have also made investment commitments. Stanford University has launched a research partnership to accelerate integration of 50 percent renewable energy into its electric supply across all its facilities. And the University of California has committed to significant investments in clean energy technology solutions.

To date, there has been no dedicated system for tracking new investments in climate solutions made by institutions divesting from fossil fuels. However, social investing intermediaries are increasingly tracking the growth in climate investing. For instance, the US Forum for Sustainable and Responsible Investment, formerly the Social Investment Forum (SIF), noted in its 2016 trends report that there has been a 33 percent growth in sustainable, responsible, and impact investing in the United States over the past two years: such investments now total \$8.72 trillion, which is one-fifth of all investment under professional management.⁴⁴ The report cited concern about climate change and carbon emissions as one of the two most important drivers for this uptick.

Across the globe, public and private institutions are investing in clean energy solutions for communities that bear the brunt of climate change impacts. Investors are looking to provide capital to companies, funds, and projects that deliver clean, distributed energy to the hardest to reach populations. For example, the Off-Grid Renewable Energy Note, created by Developing World Markets, raises funds to lend to



off-grid companies and financial institutions in developing countries. It attracted \$70 million in investment by its first close. In response to the UN's Sustainable Development Goal 7—which calls for universal access to clean, affordable, and reliable energy—a new coalition of global development, faith, philanthropy, and health organizations has gathered under the banner “One for All.” The One for All campaign calls on mission-driven organizations to direct one percent of their assets, as a blend of grants and investments, to ending energy poverty by 2030. The Wallace Global Fund and GreenFaith, leaders in their sectors calling for divestment, have spearheaded the initiative.

Many foundations have also begun investing in sustainable, climate-resilient communities. The Russell Family Foundation, for example, has deployed six percent of its portfolio to place-based investing opportunities. Its investments focus on climate solutions that benefit local communities, including a sustainable local farming enterprise, and the protection of Pacific Northwest timberland through ecosystem services.⁴⁵ In addition to investing in clean power and sustainable agriculture, timber, and farming, the Compton Foundation invests in an international fund that develops green, affordable housing for low- and middle-income families in South Africa. With investments by the Chorus Foundation, a community and business collaborative called “Reinvest in Our Power” has explicitly channeled divested assets into locally controlled worker- and community-owned enterprises. The Appalachia Funders Network, with the support of the Mary Reynolds Babcock Foundation, has launched a Just Transition Fund for projects designed to support the economic transition and job creation in communities historically dependent on the extractive sector.⁴⁶

The clean energy sector reached an all-time high in investment last year, and market trends point to its ascendance within the energy industry. Globally, renewable electric capacity has overtaken coal for the first time as the world's largest installed power source.⁴⁷ Electricity from offshore wind and solar are approaching cost parity with fossil fuels, and in many parts of the world are already cheaper.⁴⁸ Solar power is projected to cost no more than fossil fuel power—without subsidies—by the end of this decade.⁴⁹ McKinsey estimates solar and wind will represent almost 80 percent of net-added electricity capacity

Globally, renewable electric capacity has overtaken coal for the first time as the world's largest installed power source.



and 34 percent of generation by 2050,⁵⁰ while BNEF projects that zero emissions energy will make up 60 percent of the world's energy mix by 2040.⁵¹ Technologies such as fuel-efficient products and electric vehicles have significant potential to reduce oil consumption and represent a growing market share for clean energy companies.

Clean energy investments are rapidly scaling to capitalize on the energy transition. Total annual new investment in clean energy, across all asset classes and sectors, reached \$329 billion in 2015.⁵² This marks a 20 percent increase over the previous five years, and a four percent increase over the previous year. Clean energy investment also made up a considerable 18 percent of all global energy investment, primarily led by wind and solar.⁵³ Several funds have been supporting clean energy for many years—such as the Global Environment Fund, which has invested approximately \$1 billion in sustainable energy, environment, and natural resources companies since 1990.⁵⁴ At the same time, newer funds are seizing the opportunity to support the energy transition. For example, BlackRock, which has \$8.3 billion invested in and committed to its infrastructure business, has raised over \$2 billion in equity capital focused on investment in renewable power projects since 2011.⁵⁵

Investors, project financiers, and investment banks executed hundreds of thousands of clean energy deals over the past year. For example, Banco Santander provided \$3.1 billion in asset finance across 53 clean energy deals, including financing the 336-megawatt Galloper Offshore Wind Farm, and Centerbridge Partners executed the largest clean energy private equity deal of the year, acquiring Senvion, a wind-turbine manufacturer, for \$1.1 billion. In the first three quarters of 2016 alone, new clean energy equity investments by public companies totaled \$5.5 billion, new clean energy private equity and venture capital investments totaled \$5.9 billion, and new asset financing for utility-scale renewable energy generating projects totaled \$120.8 billion.⁵⁶ An especially high-profile commitment to the energy transition is the Breakthrough Energy Coalition, 28 investors from 10 countries that commit to investing patient capital in early-stage clean energy technology development. Climate bonds are another growing investment class. In the first six months of 2016, investors purchased \$38.4 billion in green bonds. This represents a significant outpacing of climate bond sales from

Clean energy investments are rapidly scaling to capitalize on the energy transition.



2015, when, during the full year, investors purchased \$41.8 billion in green bonds. The demand came from a range of investors, including mainstream institutional investors such as Aviva, BlackRock, and State Street, specialty environment-focused investment funds, corporate treasuries such as Barclays and Apple, sovereign and municipal governments, and retail investors.⁵⁷

Trends in the Global Anti-Fossil Fuel Movement

Divestment advocacy has converged with broader campaigns to move beyond fossil fuels and hasten the clean energy transition, building a mutually reinforcing movement that has won groundbreaking victories.

Campaigns to end fossil fuel subsidies are gaining traction globally, which would strike a significant financial and political blow to the industry. In May, the G7 nations committed to eliminating government subsidies for coal, oil, and gas companies by 2025, and called on all countries to do the same.⁵⁸ The G7 countries have historically provided a majority of annual fossil fuel subsidies each year, a figure that totaled \$5.3 trillion in 2015—more than the total health spending of all the world’s governments. A campaign to #StopFundingFossils, backed by 66 organizations, is calling on G20 countries to end fossil fuel subsidies earlier than the G7 target date, by 2020. Last year, the campaign’s International Day of Action garnered support across 10 countries.⁵⁹ Large multinational development agencies, including the World Bank and IMF, have also supported phasing out fossil fuel subsidies. In 2014 the World Bank president argued that “the \$1.9 trillion in subsidies can be redirected to support investment in clean growth. This challenges the notion that responding to climate change is not affordable.”⁶⁰

Advocates are taking legal action against fossil fuel companies over denial of climate science and for economic losses from climate impacts. Shortly after Climate Week 2015, new evidence emerged that ExxonMobil knew in the late 1970s that carbon emissions were causing climate change. That was well over a decade before it became a public



issue. Activists took to social media with the hashtag #ExxonKnew to demand an in-depth investigation and insist that ExxonMobil be held accountable if it intentionally misled the public and its shareholders to delay action to address climate change. Following rising calls for action, New York Attorney General Eric Schneiderman announced investigations into ExxonMobil's potential climate fraud.

Legal action against fossil fuel companies for climate-related damages have the potential to set a powerful precedent. In 2015, the Philippines Human Rights Commission launched an investigation of German utility giant RWE and 46 other corporations for their role in the human rights impacts of climate change. The investigation was in response to a petition filed by survivors of Typhoon Haiyan, who argued that investor-owned "Carbon Majors" violated their human rights due to damages from the storm.⁶¹ In addition, a Peruvian farmer and mountain guide filed suit against RWE in German court seeking financial compensation for financial loss and damage to his property in the Andes and that of his hometown caused by climate change and glacial melting. The court plans to announce its decision about whether to allow the case to proceed on December 15.⁶² The Conservation Law Foundation recently filed suit alleging that ExxonMobil failed to adapt its Everett Terminal, which transfers and stores oil, to climate change (despite evidence it knew about climate impacts), putting the local community at risk.⁶³

Advocates are also pursuing cases against governments around the world for not doing enough to reduce climate impacts on at-risk communities or to help them adapt. In Pakistan, a farmer petitioned the Lahore High Court seeking an order that the government act to protect its citizens from climate impacts. The court ordered the government to implement a "National Climate Change Policy" and create a Climate Change Commission to oversee the work and provide a progress report to the court. In the Netherlands, The Hague District Court held that the government has a responsibility to protect its citizens and the environment from climate change. These cases have the potential to put significant pressure on fossil fuel business practices, evidenced by industry groups such as the National Association of Manufacturers, the American Fuel and Petrochemical Manufacturers, and American Petroleum Institute deciding to intervene in one case.

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Lastly, young people are pursuing legal action over the threat climate change poses to their own future well-being. In *Juliana v. the United States*, 21 youth and others are challenging the federal government and President Obama over decisions made regarding fossil fuel production that “have substantially caused the planet to warm and the oceans to rise.” In November 2016 a federal District Court judge ruled that the case could move to trial, denying a motion to dismiss by the federal government and industry intervenors.⁶⁴

The SEC has advised publicly traded corporations that, under existing disclosure regulations, they may be required to publish information about how climate change could affect their financial performance. Stricter enforcement of this regulation, especially alongside concerns about fiduciary duty, could put fossil fuel companies at increased legal risk. Such litigation weakens the fossil fuel industry both financially and politically, and may force companies to bear the costs of their climate impacts on communities and the environment.

Grassroots activists are challenging large extractive projects around the globe, winning several victories over the past year. The “Keep It in the Ground” campaign has amassed over 210,000 supporters in more than 170 countries that have led local fights against fossil fuel projects. Activists in Australia are opposing new coal developments at the Galilee Basin that would triple the country’s greenhouse gas emissions. Thousands of volunteers and petitioners, organized by the Reef Defenders and supported by seven global organizations, are mounting pressure on Australian banks to deny financing for the project, including by closing their personal bank accounts and switching to fossil-free banks.⁶⁵ The “Shell No” campaign, led by eight organizations, has generated significant resistance to Arctic drilling, helping secure new bans and contributing to Shell’s cancellation of its drilling plans. Actions associated with Global Frackdown, an annual international day of action to ban fracking, have resulted in passage of more than 500 measures against fracking across the globe, including moratoria or delays in multiple localities in Argentina, Canada, Ireland, Lithuania, Mexico, Poland, Romania, South Africa, Spain, and the Netherlands.⁶⁶ And the indigenous peoples-led campaign, Não Fracking Brasil, has helped secure over 50 city bans on fracking across Brazil.

This movement has also grown in Australia, where advocates hosted the first Divest-Invest conference in April and offered resources to help faith and development investors divest.

In the United States, local activists, ranchers, tribal leaders, and concerned citizens advocated for several years against government approval of the Keystone XL tar sands oil pipeline. In November 2015, President Obama ultimately rejected the construction of Keystone XL after several years reviewing the project, remarking that “if we’re going to prevent large parts of this Earth from becoming not only inhospitable but uninhabitable in our lifetimes, we’re going to have to keep some fossil fuels in the ground rather than burn them and release more dangerous pollution into the sky.”⁶⁷ The decision avoided emissions equivalent to putting nine million new cars on the road. Soon after the Keystone XL victory, the Obama administration ordered a moratorium on new federal land leases for coal mining.⁶⁸

The US government also blocked significant offshore drilling activities over the past year, signaling to the fossil fuel industry that the Obama administration was serious about its commitments to curb fossil fuel emissions. Acknowledging the language and logic of fossil fuel activists around the world, the US Senate and House of Representatives introduced companion “Keep It in the Ground” Acts to prohibit new leases for coal, oil, and gas extraction on all federal lands, to prohibit new leases for offshore oil drilling in the Pacific and Gulf of Mexico, and to prohibit any offshore oil drilling in the Atlantic and Arctic Oceans.⁶⁹ These proposals, along with significant activism, culminated in a significant policy reversal by the Obama administration in March,⁷⁰ when the White House scrapped an earlier proposal to open up as many as 104 million acres of the Atlantic Ocean to offshore oil drilling and blocked plans for drilling in the Arctic.⁷¹ The president also announced a moratorium on new leases for coal mined from federal lands. While these gains are threatened by a Trump administration, the campaigns have helped to mobilize an influential movement that has cultivated strong new climate leadership.

Escalating protests against the construction of the Dakota Access Pipeline, which would run from the Bakken oil fields in North Dakota to



...if we’re going to prevent large parts of this Earth from becoming not only inhospitable but uninhabitable in our lifetimes, we’re going to have to keep some fossil fuels in the ground rather than burn them and release more dangerous pollution into the sky.

- US PRESIDENT
BARACK OBAMA



facilities in Illinois, have gained significant attention globally. Thousands of activists have joined with the Native American tribes leading the protest, arguing that the Dakota Access Pipeline may contaminate the Missouri River and destroy sacred and historical Native sites, and that indigenous communities were not adequately consulted before the project commenced. Protestors have set up resistance camps along the pipeline route. In November, President Obama announced that the US Army Corps of Engineers would examine rerouting the pipeline away from the Standing Rock Sioux Reservation.⁷² There has also been significant pressure on banks to withdraw funding for the project, and Norway's largest bank recently sold its assets in the pipeline. On December 4, the US Army Corps of Engineers announced that it would not approve permits for construction of the pipeline under Lake Oahe, on the Missouri River near sacred burial sites, and would conduct an environmental impact statement to "explore alternate routes for the pipeline crossing."⁷³ This is a major win for the movement. The future of the project will likely be a flash point for the climate movement in the coming year, as President-elect Trump has signaled his strong support for the pipeline.⁷⁴

Calls for a moratorium on new fossil fuel capital expenditures and exploration are putting increasing pressure on the largest fossil fuel companies. Fossil fuel companies risk wasting billions of dollars of investment in expensive exploration and development of new carbon resources, or capital expenditures (capex). With the emissions targets set by the Paris Agreement, further capital expenditures for fossil fuel development exacerbate the risk of stranded assets. Carbon Tracker Initiative's Capex Tracker has found a significant downturn in capex budgets, with \$32.7 billion in reductions between the first quarters of 2013 and 2015.⁷⁵

"Beyond fossil fuel" advocates have long called for a moratorium on new fossil exploration, noting that conventional oil, coal, and gas reserves, if burned, would already exceed the planet's carbon budget of 473 gigatons of CO₂ by 500 percent. Oilwatch called for a moratorium on new fossil exploration in 1997 and again in 2002, before the Johannesburg World Summit on Sustainable Development. Oil Change International found that no new fossil fuel extraction or transportation

Fossil fuel companies risk wasting billions of dollars of investment in expensive exploration and development of new carbon resources, or capital expenditures (capex).



infrastructure can be built if the world is to stay within 2°C of warming.⁷⁶ Achievements against new development to date include a moratorium on mining projects in the Antarctic, a moratorium on oil exploration in Costa Rica at least through 2021, and progress toward a fossil fuel exploration moratorium in Panama and Ecuador.⁷⁷

Large institutional investors have called for an end to fossil fuel capital expenditures that push beyond a scenario where climate change is limited to 2°C. The Carbon Asset Risk Working Group, organized by Ceres, has made significant progress recruiting institutional investors to file resolutions challenging fossil fuel companies to restrict capital expenditures and to publish business plans aligned with emissions targets limiting warming to 2°C.⁷⁸ And a group of 70 global investors managing more than \$3 trillion of collective assets has launched an effort to pressure the world's top 45 fossil fuel companies to assess the risks posed by emissions limits to their business plans.⁷⁹

The divestment and investment movement has engaged young activists around the world—serving as an on-ramp for climate activism—and many who first advocated for divestment now work on other climate campaigns. The fossil fuel divestment movement originated on campus, and continues to be driven by students and youth around the world. There are over 600 campus campaigns in the United States alone. In spring 2016, campuses across the country led their campaigns in the second year of escalation, calling out conflicts of interest within their administrations and boards of trustees. Escalation at the University of Massachusetts resulted in 34 arrests, with the administration ultimately working with the student campaign to announce it would divest its endowment from coal, oil, and gas. Student advocates from university divestment campaigns are growing into leadership positions in the climate movement around the world. Several alumni activists created an independent Divestment Student Network to carry this work forward. Fossil fuel divestment has also provided strategic tools and framework for students and youth to engage in elections and the political process.

Activists from faith, environmental justice, indigenous rights, and civil rights communities are focusing on the disproportionate effects

of climate change on marginalized communities. Globally, a wave of protests in May marked the largest coordinated civil disobedience movement in the history of the climate movement. Tens of thousands of activists across six continents blocked fossil fuel projects and held protests and meetings under the banner “Break Free,” which refers to the need to shift away from fossil fuels and support a just transition to a clean energy economy. Achievements of the protests include the halting of \$20 million worth of coal shipments when activists shut down the world’s largest coal port, in Newcastle, Australia; a one-day closing of the UK’s largest coal mine; a 10,000-person march against a proposed coal plant in Batangas, the Philippines; and indigenous activists’ blocking, by land and water, of the Kinder Morgan tar sands facility in First Nations territories in Metro-Vancouver.⁸⁰

Leading up to the Paris climate conference, African American clergy in the United States wrote an open letter asserting that “climate change most directly impacts the poor and marginalized” and calling on world leaders to take “bold action to address climate change.”⁸¹ Over 78 percent of African Americans live within a 30-mile radius of coal-fired power plants, which also emit sulfur dioxide, nitrogen oxide, mercury, arsenic, and lead,⁸² and 71 percent of African Americans live in counties in violation of EPA air quality standards.⁸³ Black Lives Matter activists gathered in Paris during the climate negotiations to highlight the importance of climate action for securing dignity and justice for black lives.⁸⁴ Later, the Movement for Black Lives called for divestment from fossil fuels and investment in community-based sustainable energy solutions in its movement agenda, “A Vision for Black Lives.”⁸⁵

Similarly, the Indigenous Peoples Meeting on Climate Change, held in conjunction with the Council of Canadians in January, organized a first-of-its-kind gathering to develop an action plan for implementing climate policy in line with indigenous peoples’ rights and with the goals of the Paris Agreement.

Several fossil fuel companies and their partners are reacting to increased pressure from advocates by pushing back on activists and government officials, in many ways validating the growing influence of divestment activism. America Rising Squared, a campaign of the

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Republican opposition group America Rising, has deployed “trackers” with video cameras to follow noted environmentalists and divestment supporters Bill McKibben and Tom Steyer, producing videos intended to hold them accountable for their “extreme positions which threaten America’s future prosperity.” McKibben described the personal toll of the harassment in a *New York Times* op-ed, but noted that it is a “tribute to our movement’s work in helping kill the Keystone pipeline and highlighting Exxon’s climate history, campaigns that cost the industry a lot of money.”⁸⁶

The House Science, Space and Technology Committee, chaired by Texas Congressman Lamar Smith, has issued subpoenas to New York Attorney General Eric Schneiderman and Massachusetts Attorney General Maura Healey, as well as eight environmental groups, to disclose their research on ExxonMobil and all internal and interorganizational communications that pertain to the #ExxonKnew campaign. A group of nine high-profile legal scholars argued that Representative Smith’s subpoenas of state attorneys general and organizations were “invalid and constitutionally impermissible.”⁸⁷

In September, the SEC was reported to be examining ExxonMobil’s finances, specifically looking to uncover how the corporation had been valuing its oil reserves—potentially misleading investors—and whether it considered the impact that regulations pertaining to climate change would have on its assets. The House Science Committee swiftly issued a letter to SEC Chairman Mary Jo White, requesting documentation and communications related to the investigation, as well as all correspondence between SEC employees, state attorneys general, and various climate NGOs. Chairman White is not obligated to share information about any possible investigations, which are private until the commission files charges.⁸⁸ Recently, ExxonMobil has accused the Rockefeller family of “funding a conspiracy” against it. Several industry-backed groups and conservative news outlets, such as Energy in Depth and *The Daily Caller*, are also criticizing the family and its philanthropy in their articles.⁸⁹ The Rockefeller Brothers Fund and Rockefeller Family Fund are among those organizations that the House Science Committee subpoenaed in July. A recent two-part article in the *New York Review of Books*, written by Rockefeller family member David

Kaiser and Rockefeller Family Fund Executive Director Lee Wasserman, represents a new forum in which this significant debate is playing out.⁹⁰

The fossil fuel industry has also ramped up its media response to the divestment movement. The Divestment Facts campaign, funded by the Independent Petroleum Association of America, has used social media to call attention to unsuccessful divestment campaigns, and is highly critical of universities and pension funds' decisions to divest as costly due to "transaction and management costs" and other factors.⁹¹

Trends in the Fossil Fuel Industry

Global market and legal pressures in recent years has put the fossil fuel industry in a state of decline.

A number of larger market trends signal an increasingly poor economic outlook for the fossil fuel industry. An analysis of the performance of the 100 largest public coal and 100 largest public oil and gas reserve owners found a 10-year median cumulative return of -10 percent. During the same period, the 200 largest, public clean energy companies experienced a median cumulative return of 106 percent.⁹³ These trends in returns for fossil fuel and clean energy companies indicate that capital is misallocated within the \$1.8 trillion⁹⁴ of annual investment in the global energy sector.

Several prominent bankruptcies in the industry indicate the beginning of a systemic decline. At least 105 North American oil and gas companies have filed for bankruptcy between January 2015 and October 2016, representing nearly \$68 billion in cumulative secured and unsecured debt. The most notable bankruptcies included Ultra Petroleum, Energy XXI, Samson Resources, and Pacific Exploration and Production. As crude oil prices fall below \$40 a barrel, analysts anticipate more producer bankruptcy filings in 2017.⁹⁵ Four coal giants—Peabody Energy (once the largest publicly traded coal company in the world), Arch Coal, Patriot Coal, and Alpha Natural Resources—filed for bankruptcy in early 2016. Peabody's president and chief



Climate factors have been under-appreciated and underpriced because they have been perceived to be distant [problems]. [But] investors can no longer ignore climate change.

- BLACKROCK INVESTMENT INSTITUTE⁹²



executive recognized the industry's decline and "ongoing regulatory challenges," stating that, through declaring bankruptcy, Peabody sought a solution to its "substantial debt burden amid a historically challenged industry backdrop."

Few oil and gas companies have launched initial public offerings (IPOs) over the past year, indicating that the sector has a limited number of young, successful companies. In the UK, the number of annual coal, oil, and gas company IPOs fell dramatically from 42 in 2006 to two in 2016.⁹⁶ And the Phoenix-based mining company Freeport-McMoRan attempted to sell off its energy business in May, but was unsuccessful. It appears that the company could not proceed with the initial public offering due to the downturn in crude oil prices, as well as several quarters of falling share prices and rising debt.⁹⁷

Several large-scale fossil fuel projects are on hold due to low prices. Canadian oil sand projects from Suncor Energy, Cenovus Energy, and Meg Energy have stalled, and executives have described the need to shift from larger-scale, multibillion-dollar projects to smaller projects to stay afloat.^{98,99} Fitch Ratings, a leading credit rating agency, reported in October that "widespread adoption of battery-powered vehicles is a serious threat to the oil industry" and forecast a scenario in which asset holders observing a new tide of electric transportation sell out of oil companies, making debt and equity more expensive. Fitch noted that battery costs have fallen by 73 percent since 2008 and electric cars are nearing cost competitiveness with gas- and diesel-powered vehicles.¹⁰⁰

Fossil fuel companies, particularly those based in Europe where there are relatively strong carbon policies, have been responding to increasing regulatory pressures by writing down the value of their assets. Last year, Statoil, the Norwegian oil giant, wrote down the value of its North American shale and oil sands assets by \$4 billion. Royal Dutch Shell reported a write-down of more than \$8 billion.¹⁰¹ Declines in fossil fuel companies' value are causing some banks to revise their loan agreements with oil and gas producers.¹⁰² Over the past two years, the world's 300 largest oil and gas companies have lost 39 percent of their value, or \$2.3 trillion.¹⁰³ The Dow Jones US Oil and Gas Index has fallen by 40 percent during the same period.¹⁰⁴

Several large-scale fossil fuel projects are on hold due to low prices.



And the amount of fossil fuel energy needed for economies to grow continues to fall. PricewaterhouseCoopers found that the global carbon intensity, or carbon emissions per unit of GDP, fell by 2.8 percent in 2015. China led the way, as its decline in coal consumption resulted in a 6.4 percent drop in its carbon intensity.¹⁰⁵ While the growth of economies like China and India will depend on the continued use of fossil fuels for some years, these countries' recent efforts—including to develop a national cap-and-trade program in China¹⁰⁶ and to double the coal tax in India¹⁰⁷—signal their intention to uphold their Paris Agreement commitments and keep carbon emissions in check.

Major oil and gas companies, despite their massive assets, have been heavily impacted by downtrends across the industry.

ExxonMobil now spends more paying out earnings to shareholders than its current annual profit. Shell is halving its investment in exploration to pay off debts and pay dividends, and Chevron posted its biggest losses since 2001 in the second quarter of 2016. And these large companies are taking on considerable levels of debt to pay their shareholders. BP's debt-to-equity ratio is at the highest level since 2002, increasing to 24.7 percent from 18.8 percent a year prior. Earlier this year, S&P stripped ExxonMobil of its AAA credit rating because of rising leverage, noting that the "company's debt level has more than doubled in recent years, reflecting high capital spending on major projects in a high commodity price environment and dividends and share repurchases that substantially exceeded internally generated cash flow."¹⁰⁸ Many oil and gas bonds have been downgraded to junk bond status. A recent analysis found that investors suffered at least \$150 billion in losses of the value of oil and gas company bonds.^{109, 110}

The increasing cost of oil production is another troubling trend for the industry. Between 2000 and 2014, total capital expenditures of the major oil companies grew from \$41 billion to \$166 billion. Yet despite these increases in capital investment, the total oil equivalent production from the oil majors decreased 1.7 percent in the same period, reflecting in part, the rising costs of replacing reserves. Most independent oil companies are attempting to develop unconventional, higher-cost resources (e.g., shale, deep water, Arctic, and tar sands), which are often in extreme and remote locations and require

complicated extraction processes.¹¹¹

Projections of oil demand by ExxonMobil and others indicate that oil companies are not accounting for the realities of a carbon-constrained economy. McKinsey expects demand for oil to increase by just 0.4 percent per year through 2050, when it is predicted to flatten out. Because of these downward trends, the analysis concludes, sector players “would be well advised to ... consider the implications for investment in the long term.”¹¹² However, fossil fuel companies’ own projections of energy demand often look different. For example, ExxonMobil predicts that oil demand will grow by 20 percent by as early as 2040.¹¹³ A 2016 report from Fitch also found that several oil majors have not taken necessary steps to diversify in response to the threat posed to the industry by innovation in battery technologies.¹¹⁴

Sustained advocacy has led to increasing policy and regulatory pressure on fossil fuel companies as national governments commit to transitioning away from fossil fuels. Before the Paris Agreement, there were already more than 800 climate change laws—ranging from carbon taxes to clean energy investment mandates—in effect globally.¹¹⁵ Since Paris, China has made progress toward launching a national cap-and-trade program slated to be the most sophisticated carbon market in the world,¹¹⁶ India has planned to double its coal tax and boost investment in clean energy,¹¹⁷ and Norway¹¹⁸ and the Netherlands¹¹⁹ have proposed bans on the sales of gasoline-fueled cars after 2025. Recently, a proposal to stop sales of new combustion-engine cars by 2030 has gained cross-party support in Germany’s upper house of parliament.¹²⁰

Many of the world’s largest economies have made significant commitments to move away from fossil fuels. Germany’s coalition government has reached an agreement on a national action plan that aims to reduce greenhouse gas emissions by 80 to 95 percent compared to that of 1990s by 2050. France has committed to shutter its coal plants by 2023,¹²² the UK has pledged to do so by 2025,¹²³ and Canada will follow suit by 2030.¹²⁴ An additional 50 countries have pledged to source 100 percent of their energy from renewables by 2050.¹²⁵



[The world cannot] write a big fat check enabling the widespread development of the dirtiest source of fuel in an outdated way. It just doesn’t make sense. That’s suicide.

– JOHN KERRY,
US Secretary of State¹²¹

Acknowledgments

Arabella Advisors acknowledges the efforts of the many partners who helped to gather and analyze data for this report:

Allison Barlow, *Wallace Global Fund*
Andrew Behar, *As You Sow*
Brett Fleishman, *350.org*
Clara Vondrich, *Divest-Invest Philanthropy*
Denise Patel, *Divest Invest Network*
Ellen Dorsey, *Wallace Global Fund*
Fletcher Harper, *GreenFaith*
Gary Cohen, *Health Care Without Harm*
James Irwin, *Mayors Innovation Project*
Jenna Nicholas, *Divest-Invest Philanthropy*
Jennifer Gleason, *Environmental Law Alliance Worldwide*
Jenny Phillips, *GreenFaith*
Julien Vincent, *Market Forces*
Lindsay Meiman, *350.org*
Mark Campanale, *Carbon Tracker Initiative*
Michael Northrop, *Rockefeller Brothers Fund*
Pamela Payne, *GreenFaith*
Ray Nakano, *350.org*
Richard N. Mott, *Wallace Global Fund*
Sian Ferguson, *Sainsbury Family Charitable Trusts*
Thomas Van Dyck, *RBC Wealth Management*
Tom Harrison, *Sainsbury Family Charitable Trusts*
Vanessa Green, *Divest-Invest Individual*
Yossi Cadan, *350.org*



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Endnotes

- ¹ Note that because 20 percent of the institutions covered in this report did not disclose financial assets, the \$5 trillion figure is significantly lower than the full scale of commitments made.
- ² *Measuring the Growth of the Global Fossil Fuel Divestment and Clean Energy Investment Movement*, Arabella Advisors, September 2015, <https://www.arabellaadvisors.com/wp-content/uploads/2016/10/Measuring-the-Growth-of-the-Divestment-Movement.pdf>.
- ³ Increases in private financing of the clean energy transition are all the more urgent considering that achieving the 2030 Agenda for Sustainable Development and the Paris Agreement—the most ambitious multilateral goals ever set—will require some \$90 trillion over the next 15 years. Source: “Financing Sustainable Development - UNEP Inquiry,” UNEP Inquiry, September 2016, <http://unepinquiry.org/publication/financing-sustainable-development/>.
- ⁴ “Clean Energy Defies Fossil Fuel Price Crash to Attract Record \$329BN Global Investment in 2015,” Bloomberg New Energy Finance, January 14, 2016, <https://www.bloomberg.com/bcause/global-investment-in-clean-energy-increased-to-329-billion-in-2015>.
- ⁵ Climate solutions are broadly defined to include renewable energy, climate justice initiatives, sustainable agriculture and food security initiatives, water scarcity projects, and more.
- ⁶ This figure is not an amount pledged for investment in clean energy and climate solutions; rather, it is the collective assets of institutions and individuals that have made a commitment, of an undisclosed amount, to invest in climate solutions.
- ⁷ *Fiduciary Duty in the 21st Century: Scoping Paper 2016-2017*, Generation Foundation, UNEP Finance Initiative, and Principles for Responsible Investment, June 2016, https://www.unpri.org/download_report/6131.
- ⁸ We did not count Principles for Responsible Investment signatories’ assets in the \$5 trillion in assets of institutions that have committed to divest from fossil fuels unless signatories made an explicit commitment to divest. The principles include integrating environmental, social and governance (ESG) issues into investment analysis and decision-making processes, encouraging high standards of ESG performance in the companies in which they are invested, and promoting implementation of responsible investment principles within the investment industry. Source: “Signatory Directory,” Principles for Responsible Investment, accessed December 6, 2016, <https://www.unpri.org/directory/>.
- ⁹ Bevis Longstreth, “Outline of Possible Interpretative Release by States’ Attorneys General Under the Uniform Prudent Management of Institutional Funds Act,” Inside Climate News, January, 29, 2016, <http://insideclimatenews.org/sites/default/files/documents/UPMIFAInterpretationBevisLongstrethPDF.pdf>.
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