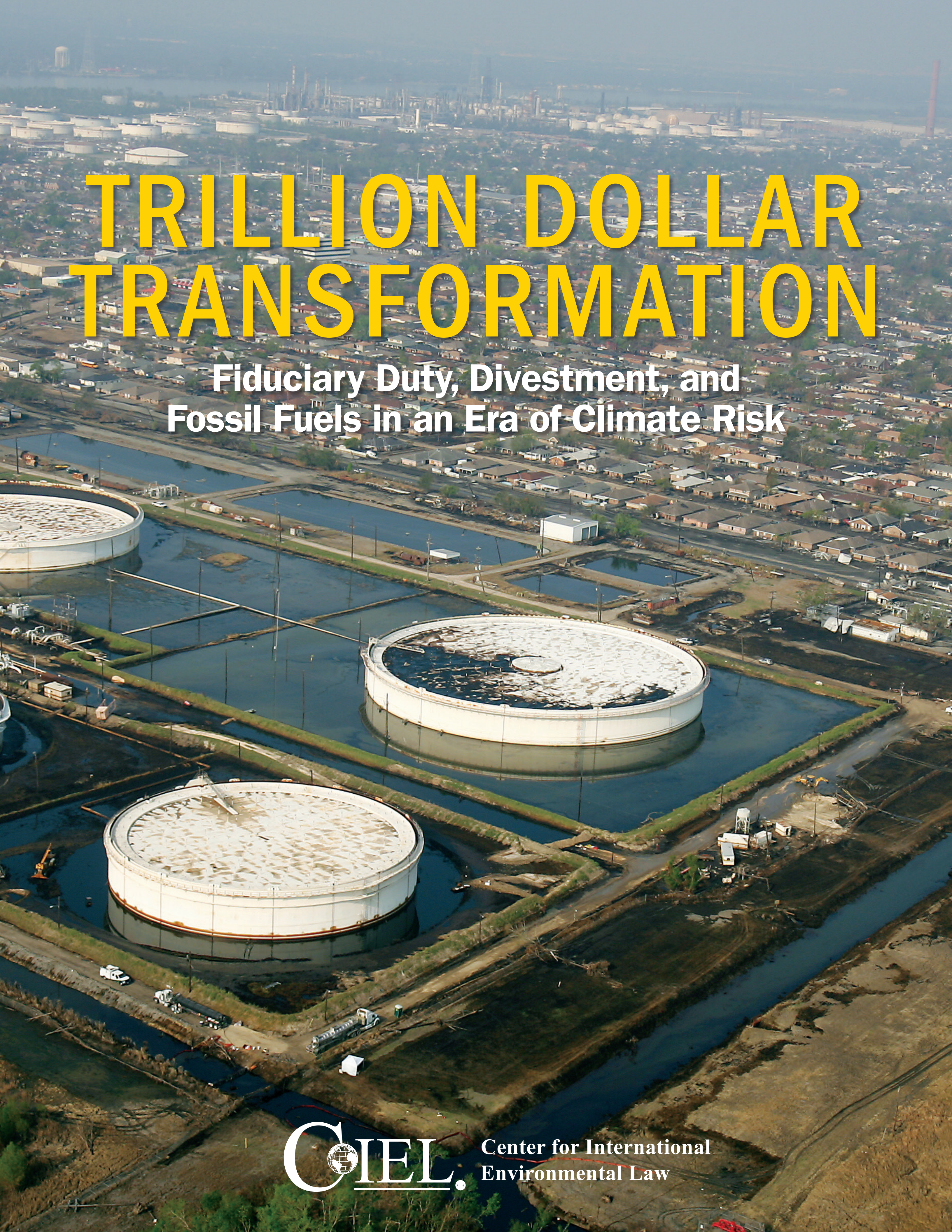
TRILLION DOLLAR TRANSFORMATION

Fiduciary Duty, Divestment, and Fossil Fuels in an Era of Climate Risk



CIEL Center for International Environmental Law

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DECEMBER 2016

Center for International Environmental Law

About CIEL

Founded in 1989, the Center for International Environmental Law (CIEL) uses the power of law to protect the environment, promote human rights, and ensure a just and sustainable society. CIEL is dedicated to advocacy in the global public interest through legal counsel, policy research, analysis, education, training, and capacity building.

This report was authored by CIEL Staff Attorney Steven Feit and edited by Amanda Kistler and Carroll Muffett, with additional contributions by Lisa Hamilton. Special thanks to Muriel Moody Korol, who contributed extensively to this project from its initial conception to research and drafting, and to Alex Bernhardt and Paul Horsman. Many thanks to our interns for their assistance, including Alyssa Beccar, Gregory Berry, Harjot Dhillon, Viv Fernandes, and Chelsea Linsley. We would also like to thank Chris Davis, Keith Johnson, Jay Youngdahl, Rudy Verner, Keith Ambachtsheer, and participants in the Trillion Dollar Transformation briefing for their many useful insights, comments, and contributions. This report was made possible with generous support from the KR Foundation, Sindicatum, V Kann Rasmussen Foundation, Wallace Global Fund, and the WestWind Foundation.

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Contents

Executive Summary

Just as it poses unparalleled social and environmental challenges for humanity and the biosphere, climate change also presents a unique set of financial challenges and opportunities to investors. The early entry into force of the Paris Agreement in November 2016 signals that the era of a fossil-fuel based economy must and will end in the coming decades. As the global community enacts and implements policies to achieve the Paris Vision of a world well below 2 degrees of warming and as markets respond to that action, carbon assets and carbon intensive industries face a fundamental change of economic circumstances that will affect not only their long-term valuation but also, in some cases, their inherent viability. The question now is not *whether* this economic transformation will take place, but how quickly and at what scale. While substantial uncertainties remain with respect to both questions, it is increasingly clear that climate change and climate risk are already reshaping the investment landscape, and that these effects will grow dramatically in the years ahead.

This report, together with a companion financial analysis prepared by Mercer Investments, addresses the implications of this changing landscape for pension funds and pension fund fiduciaries.

Public pension fund fiduciaries have the obligation to act prudently and in the interest of all beneficiaries, including current retirees and future beneficiaries. This standard of prudence requires a fiduciary to act with reasonable care, skill, and caution when making investment and allocation decisions on behalf of their fund. This obligation manifests as a number of distinct fiduciary duties, including the (1) duty to diversify; (2) duty of loyalty; (3) duty of impartiality; (4) duty of inquiry; (5) duty to monitor; and (6) duty to act in accordance with the plan documents.

In the companion report, Mercer Investments provides an overview of climate change investment risk for US public pension trustees and provides quantitative and governance frameworks through which trustees can address that risk. Mercer's analysis demonstrates that, regardless of the route humanity chooses, climate change is poised to have dramatic impacts on pension fund portfolios—and the broader economy—over the coming three decades. Building on Mercer's findings, the present analysis considers the legal implications of those impacts for pension fund fiduciaries in light of long-standing principles of fiduciary duty and ongoing rapid developments in the field.

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The potential financial cost of physical impacts due to climate change, the inability to generate revenue from fossil fuel reserves already held or in development, the costs of transitioning to a low-carbon economy, and legal liabilities related to climate change must be taken seriously by investors. For these and other reasons, climate change should be considered an independent risk variable when making investment decisions, and it will trigger the obligations of pension fund fiduciaries.

Pension fund fiduciaries are required to safeguard the value of their funds, and climate change poses a direct challenge to that objective. As such, climate change and climate-related risks trigger fiduciaries' duties:

- to inquire, requiring fiduciaries to consider the prudence of their investment decisions;
- to monitor, requiring reevaluation of investments already held in the context of new changes in regulations, international mitigation efforts, and market trends;
- to diversify, ensuring that a given portfolio is amply protected against the known idiosyncratic risks inherent in certain investment types, including investments in fossil fuel assets;
- to act impartially with respect to all beneficiaries, protecting fund principal over the long-term and prioritizing preservation of trust capital alongside maximizing fund growth;
- of loyalty, requiring the trustees to act solely in the interests of their funds' beneficiaries, without acting to further personal or ideological interests; and
- to act in accordance with plan documents.

There are several courses of action pension fund fiduciaries can take in order to ensure they act with reasonable care, skill, and caution in the context of climate change. This can include educating themselves on climate-related investment risks and opportunities; modifying the principles guiding investment decisions; engaging as active shareholders in owned companies subject to climate vulnerabilities; avoiding some climate-vulnerable assets altogether; and affirmatively investing in clean energy opportunities.

If pension fund fiduciaries do not take the financial risks posed by climate change seriously, they may be subject to liability. A failure to properly consider climate change as a risk factor could result in lawsuits under various theories of liability for breaches of fiduciary duties.

Climate change presents an environmental, social, and economic challenge on a scale humanity has not previously faced. Trustees, fund managers, and their beneficiaries are not exempt from those challenges. Indeed, in the years ahead they will be confronted with unique questions that will at once reshape our understanding of fiduciary duty and simultaneously demand strict adherence to the foundational principles that define that duty. The transition to a low-carbon economy will have significant, material financial consequences which cannot be ignored. Pension fund fiduciaries should consider their portfolios' exposure to climate-related risk and whether or not they are investing in a manner consistent with the best interests of their beneficiaries.

PART 1
Introduction

Pension fund fiduciaries, including trustees, investment officers, and their internal and external investment managers and advisors, have a responsibility to the beneficiaries of the funds they manage.[1] They are obliged to act solely in the interest of plan beneficiaries, and must exercise reasonable care, skill, and caution when making portfolio investment and management decisions.[2] These fiduciaries have to balance the interests of current beneficiaries with future retirees and benefit recipients, and must ensure stability while pursuing growth.

These responsibilities are expressed as various duties imposed on pension fund fiduciaries. These include the (1) duty to diversify; (2) duty of loyalty; (3) duty of impartiality; (4) duty of inquiry; (5) duty to monitor; and (6) duty to act in accordance with the plan documents.

Climate change, and our global efforts to confront it (together "climate-related risk"), presents financial challenges to pension funds that may trigger trustees' fiduciary duties. Major financial institutions are acknowledging that likely global enactment of policies to reduce carbon emissions will reduce asset values in the near-term, not merely over a timescale of decades.[3] Accordingly, climate-related risk should, at a minimum, be considered a material, independent risk variable along with other modeling and forecasting inputs when making investment decisions.

Addressing the materiality of climate-related risk implicates and triggers several of the duties pension fund fiduciaries owe to their beneficiaries. As with any other financial risk, fiduciaries should weigh climate-related risk when making decisions about risk management strategies, asset allocation (what to invest in, what to avoid or divest from, how to allocate resources), and how to plan for the future. Indeed, in the face of climate-related risks, and in the same way that fiduciaries may not pursue agendas unrelated to achieving adequate risk-adjusted returns, they must balance investment decisions based on short-term horizons with long-term return and liability considerations, and cannot make such decisions based on personal economic assumptions, beliefs, or political preferences.

Moreover, because climate-related risks will likely affect what funds are available for future beneficiaries more than current beneficiaries, a lack of consideration of longer term climate-related risks to the plan's portfolio could be seen as an unreasonable bias favoring short-term gain at the expense of long-term sustainability; favoring older (current) over younger (future) beneficiaries.[4] A failure to consider climate-related risks generally, a failure to take prudent steps to manage and mitigate these risks, and a failure to act to reduce long-term, climate-related portfolio drag on fund investment could constitute violations of the fiduciary's duty to conduct factual inquiry on material investment issues, to act solely in the financial interests of beneficiaries, and to act with impartiality between current fund participant generations.

Failure to act with reasonable care, skill, caution, loyalty, impartiality, and fact-based inquiry in the face of climate-related risks could expose fiduciaries and their attorneys and advisors to legal liability. As the impacts of climate change continue to grow, the science of climate change attribution grows ever more precise, and the trend towards more climate litigation continues, there are a number of claims that could be brought against pension fund fiduciaries for breaching their duties to consider and protect their portfolio from climate-related risks. These breaches may be viewed as particularly serious when viewed in light of the considerable known risks and the corresponding opportunities for improving risk-adjusted returns available to fiduciaries who do consider climate change as they perform the duties entrusted to them.

PART 2

Fiduciary Duties in Public Pension Fund Administration

Pension fund fiduciaries must abide by the duties imposed upon them by trust documents, statute, state constitutions, and common law. For private pension funds, the primary governing law is the Employee Retirement Income Security Act of 1974, as amended (ERISA). Public pension funds are exempt from ERISA and are governed by state law. State law, however, is often very similar to ERISA as the majority of states have adopted an ERISA-like statute, the 1994 Uniform Prudent Investor Act (UPIA). Whether embodied in a state's local adoption of the UPIA, state common, statutory and constitutional law, or ERISA, the law establishes a widely recognized standard of care applicable to all pension fund fiduciaries. Each and every pension fund fiduciary must discharge his or her fiduciary obligations "with the care, skill, prudence and diligence under the circumstances then prevailing that a prudent man acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims."[5]

In exercising "reasonable care, skill, and caution" in the context of climate-related risk,[6] the duties that a prudent trustee must fulfill include: (1) duty to diversify; (2) duty of loyalty; (3) duty of impartiality; (4) duty of inquiry; (5) duty to monitor; and (6) duty to act in accordance with the plan documents. Each of the above duties is relevant to assessing whether and how fully a trustee has complied with his or her overarching duty of prudence.

PART 3

Climate Change As a Material (Financial) Risk

Although climate change is often described as a global problem with purely global impacts, in reality climate impacts are, and will continue to be, experienced by individual companies, sectors, and communities around the world, including the financial sector. These impacts, coupled with the effects of public efforts to reduce emissions, will have material impacts on markets, industries, and individual firms. As such, climate-related risk must be recognized as an independent, material market risk for investors. This is especially true for those managing pension fund assets who must consider the long-term interests of future beneficiaries, for whom the effects of climate change will be most severe.

Climate Change Presents Multiple Financial Risks

Climate change poses four distinct but interrelated categories of risk to the value of fund assets: physical impact risk, carbon asset risk, transition risk, and litigation risk. These four risks can result in direct financial losses, reduce the values of various asset classes, and even threaten the viability of some common business models. Accordingly, these risks must be seriously evaluated in any long-term investment strategy.

Impact risk is the risk of loss due to destructive physical effects of climate change. As the planet warms, sea levels are rising, storms are becoming more violent, and extreme weather events such as droughts, wildfires, and heat waves are increasing in intensity and severity.[7] In addition to their profound impacts on human life, human well-being, and biological diversity, the direct impacts of climate change will result in significant destruction of physical wealth, as well as the disruption of economic activity across wide regions and various sectors.

Impact risk is not allocated evenly among asset classes. Coastal property is especially vulnerable to storm surges and flooding. Critical infrastructure—from fossil fuel assets like oil rigs and pipelines, to municipal drainage, water treatment, and underground transit systems—will be affected by increased flooding from the combined effects of sea level rises and more intense storms. Changes in wind, rainfall, and temperature may lead to short-term crop failures or long-term shifts in agricultural economies. Increased wildfire risk will affect forest, timberlands, and real estate. Finally, droughts, heat waves, floods, stronger storms, and other extreme weather events may simply disrupt the flow of commerce in particular areas.

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Carbon asset risk is the risk that in an increasingly carbon-constrained world, fossil fuel companies cannot fully develop and use the massive carbon reserves they hold, resulting in billions of dollars in "stranded assets." In order to hold atmospheric warming to "well below two degrees Celsius" as envisioned in the Paris Agreement[8]—or within the more ambitious 1.5 degree Celsius supported by many countries and much of the scientific commu-

nity—we must strictly limit how much additional carbon dioxide is added to our atmosphere. This total remaining "carbon budget" is only a fraction of the carbon emissions embedded in proven oil, gas, and coal reserves owned by fossil fuel companies, to say nothing of the fact that many of these companies are continuing to explore and develop costly new sources of fossil fuel.

Given this mismatch, and the necessity and eventual certainty of increasingly stringent greenhouse gas emission regulations, the majority of fossil fuel reserves owned by fossil fuel companies must ultimately remain undeveloped and unsold. These companies will have to pay for the debt incurred in exploring and developing their reserves but will not be able to profit from them, saddling them with a massive financial burden. Presently, most fossil fuel companies are behaving in a "business as usual" manner, not acknowledging the "stranded asset" risk, and creating a substantial risk that many of the investments they make in finding and developing new reserves will result in significant long-term losses.

Transition risk is the risk that a given business or asset will be negatively affected by the global transition to a low-carbon economy, driven by policy, technology, and market changes. As the global community shifts away from fossil fuel use, business models may be negatively affected by new regulatory schemes, changing social attitudes towards carbon use, and—perhaps most quickly and abruptly—by evolving market conditions.

Technology evolution, including falling renewable energy costs, improving energy efficiency of buildings and industrial operations, electric vehicles, and a variety of evolving "clean technologies" will erode demand for fossil fuels.

Transition risk includes immediate risks as well as risks that accrue over time. In the near-term, new taxes or regulations that increase the price of carbon may strain individual businesses or entire industries by virtue of their economic effect. Technology evolution, including falling renewable energy costs, improving energy efficiency of buildings and industrial operations, electric vehicles, and a variety of evolving "clean technologies" will erode demand for fossil fuels. Moreover, as public opinion towards fossil fuel use changes and systems of energy distribution change, business models that appear strong today may be obsolete in the future. These shifts—and their attendant risk—are increasingly evident in the financial sector itself, which is undergoing a rapid evolution in the recognition of and response to climate-related risks.

The most direct example of transition risk is the risk posed to fossil fuel companies. If we are to transition away from fossil fuel use, business models based on the extraction, refining, and sale of fossil fuels will become increasingly unviable. However, transition risk affects other sectors as well. For example, electric utilities will have to adapt to a world of renewable, low-marginal cost energy and distributed generation owned by customers. Automobile manufacturers may need to produce cars that run on electricity, fuel cells, or biofuels. Construction companies and developers may have to comply with new regulations regarding energy use or emergency preparedness. These are just a few of the myriad examples of how the transition to a low-carbon world will affect different sectors, markets, and asset classes, and must be viewed as a material consideration when making investment decisions.

Finally, **litigation risk** is the possibility that a company may be sued as a result of its contribution to climate change, potentially resulting in significant litigation costs and financial losses for both the corporation and its investors. Climate litigation risk may take an array of forms, ranging from suits for direct damages to suits for misrepresenting the known risks of carbon emissions. As discussed below,[9] this type of litigation is not speculative—climate change-related cases in the United States and around the world, brought by governments and private citizens, are proceeding and in many instances succeeding on several different theories of liability. As such, the risk of possible litigation against major players in the fossil fuel and related industries is increasingly significant in both its likelihood and its scale.

BOX 1

A Rapidly Changing Space

It can be hard to see a major market shift while it's happening, but the financial circumstances of the fossil fuel industry are changing rapidly. Over just a few years the American coal industry collapsed, with several of the largest coal companies declaring bankruptcy.[i] The divestment movement has accelerated faster than even its proponents expected, accumulating $3.4 trillion assets under management,[ii] including a US bank (Amalgamated Bank).[iii] BlackRock, the largest asset manager in the world, issued a warning that "all investors should incorporate climate change awareness into their investment processes."[iv] In Europe, France's largest insurer AXA divested from coal equities,[v] and Mark Carney, Governor of the Bank of England, warned in a speech to Lloyd's of London of the looming dangers of climate change.[vi] As this report goes to press, the Securities and Exchange Commission and the Attorney General of New York are actively investigating ExxonMobil, the largest investor-owned petroleum company, for potential securities violations and fraudulent misrepresentation in its accounting and disclosures related to climate risk.[vii] These developments are not isolated, and reflect a growing understanding that the 20th century business models of the fossil fuel industry are no longer compatible with a low-carbon future. Although many investors acknowledge this fact, it remains common to consider climate risk a problem of the remote future. In truth, the future is now. Circumstances are changing quickly, and efforts to game the market and get out in time may end up saddling investors with heavy losses.

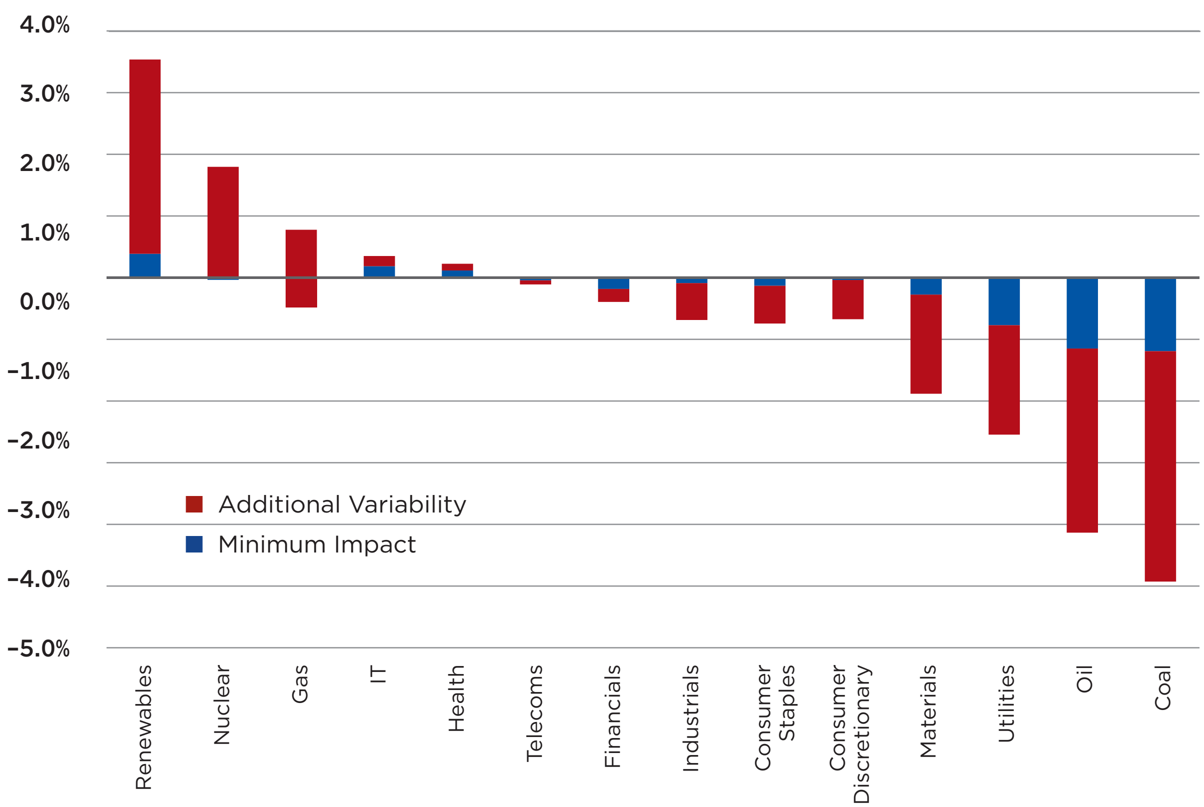
The Risks Presented By Climate Change Are Significant and Imminent

Climate change poses both systemic risks to the financial system as a whole, as well as specific risks to particular investments. The impacts of climate change will impose increasing costs on the global financial system, affecting the demand, pricing, and profitability of fuel stocks and energy sources, increasing insurance costs, and causing damage to infrastructure, among other impacts. These impacts, in turn, may negatively impact the economy at global, regional, and national scales, and across multiple interconnected sectors, thus presenting a systemic risk. As discussed above, well-diversified funds can't fully avoid systemic risk, although they can take steps to manage and mitigate the risk characteristics of their individual investments. This is the context in which climate change and climate-related risk should be of serious concern to investors.

In the companion report to the present analysis, Mercer Investments concludes that, over a 35-year time horizon, returns for a conventionally-allocated public sector pension fund will be impacted by climate-related risk.[10] This impact will be most pronounced in the Transformation (2 degree) scenario,[11] which is projected to experience a net 6% loss over 35 years when compared to a growth future without climate-related risk. It is important to note that this is only true for projections into the middle of the century, after which accelerating climate impacts severely affect returns under 3 and 4 degree scenarios. As Mercer observed, "Extending modelled trends beyond 2050—the end point for this analysis—we would expect the Fragmentation scenarios to have increasingly large negative impacts on returns at the total portfolio level. A Transformation scenario is expected to better protect long-term returns beyond this timeframe."[12] As described above, these projections reflect return scenarios for traditionally-allocated funds which have not adjusted their holdings, either in terms of sector and industry exposure or asset class allocation, to address the new challenges presented by climate change. However, the financial impacts of climate-related risk as described above will not apply equally to all sectors or asset classes. Specifically, fossil fuels

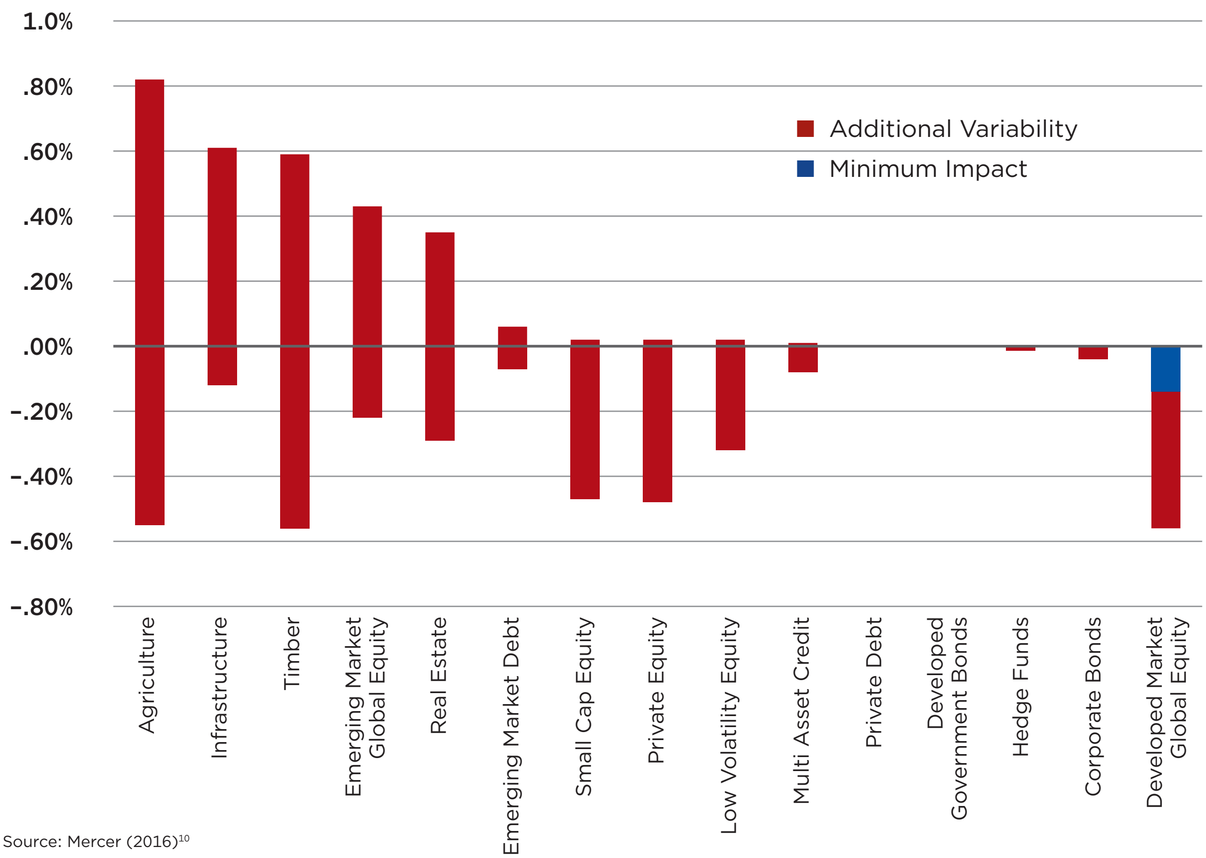
Fossil fuels like oil and coal, as well as utilities, are uniquely vulnerable to climate risk, especially in more aggressive emission-reduction scenarios. Alternatively, low-carbon energy options like renewables are likely to benefit most from a Transformation scenario.

FIGURE 1
Median Additional Annual Returns by Sector Across Scenarios (over the next 35 years)



Source: Mercer (2016)[10]

FIGURE 2
Median Additional Annual Returns by Asset Class Across Scenarios (over the next 35 years)



Source: Mercer (2016)[10]

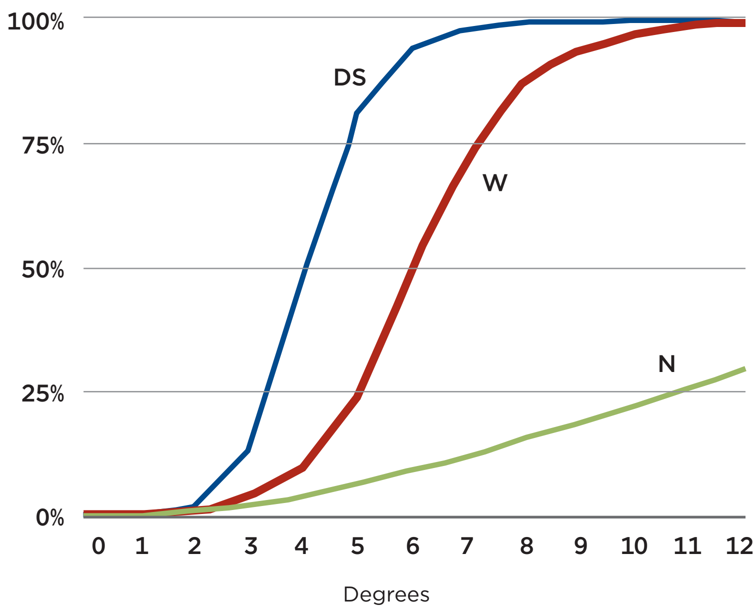
like oil and coal, as well as utilities, are uniquely vulnerable to climate risk, especially in more aggressive emission-reduction scenarios.[13] Alternatively, low-carbon energy options like renewables are likely to benefit most from a Transformation scenario.[14]

That the most prominent examples of such climate-vulnerable investments are in the fossil fuel industry is unsurprising. Fossil fuel companies that have rigs and rely on extensive infrastructure face physical impact risks; the effort to reduce carbon emissions may strand significant fossil fuel assets; changing demand for carbon-intensive fuels, the emergence of new technologies, and evolving regulations will subject fossil fuel companies to transition risk; and the impacts of climate change on property and human populations may present significant litigation risk. Over the next 35 years, the coal industry can expect to see annual returns reduced by 26% to 82%.[15] The oil and utility industries may also see returns diminish, "with expected median returns potentially falling by 38% and 60% respectively" over the same timeframe.[16] Renewables, however, can expect average annual returns to increase as much as 53%.[17]

It is true that, regardless of the scenario, climate change will impose return drag on traditionally-allocated portfolios, and that return drag is most pronounced in a Transformation scenario. However, the most significant sector-level effects are expected in the Transformation scenario as well, as a result of more aggressive action by governments, corporations, and citizens in response to climate change. As a result, not only are expected market returns lower in a Transformation scenario, but the ability to adjust to those risks is highest, because the financial impacts will be most concentrated in specific sectors and asset classes.

These risks have not gone unnoticed. Citigroup, in anticipation of the 2015 Paris Agreement, noted that up to $100 trillion in fossil fuel assets may have

FIGURE 3
Climate Damage Functions



Source: Covington and Thamotheram (2015)

> **"Investors can no longer ignore climate change. . . . We believe all investors should incorporate climate change awareness into their investment processes."** — BlackRock

already been economically stranded.[18] Deutsche Bank claimed that fossil fuel assets were already subject to permanent impairment and value loss, with low oil prices consistent with a low-demand future that may represent the new normal.[19] HSBC declared, "[w]ith lower oil prices, producers have a choice: continue to operate and take losses in the hope that prices will recover, or cut losses and shut down facilities."[20] Finally, in the wake of the Paris Agreement, Barclays concluded that the fossil fuel industry is facing revenue losses of $34 trillion over the next 25 years.[21]

Fossil fuels are not the only sector subject to climate-related risk,[22] although they are likely to be the hardest hit. In 2010, the Securities and Exchange Commission released interpretive guidance regarding disclosures relating to climate change.[23] It served to "remind companies of their obligations under existing federal securities laws and regulations to consider climate change and its consequences,"[24] and it noted that financial disclosure under those requirements is appropriate, even for many companies indirectly affected by climate change. As the SEC observed, "Companies that may not be directly affected by such developments could nonetheless be indirectly affected by changing prices for goods or services provided by companies that are directly affected and that seek to reflect some or all of their changes in costs of goods in the prices they charge."[25] In December 2015, the Financial Stability Board established a Task Force on Climate-Related Financial Disclosures to develop recommendations for a set of voluntary disclosures relating to climate change for broad use by firms across industries and countries.[26] In 2016, Moody's announced that it was incorporating a greenhouse gas reduction scenario consistent with the Paris Agreement into its analyses, noting 13 industries that were exposed to a high degree of transition risk.[27] Finally, acknowledging the transformative nature of the challenges presented, the Sustainability Accounting Standards Board released sustainability accounting standards for 79 different industries, demonstrating the variety of relationships between industries and their exposures to climate risk.[28]

The degree of risk presented by climate change, including the risk of enormous losses in the fossil fuel and other industries, should put all investors on notice. As BlackRock warns in a recent report, "Investors can no longer ignore climate change. . . . We believe all investors should incorporate climate change awareness into their investment processes."[29] This is especially true for pension fund trustees, whose time horizon extends well past that of a typical investor or market participant. Climate risk poses a material threat to the value of what might formerly have been considered a well-diversified portfolio and should be considered as an independent risk variable when making investment decisions.

PART 4

Climate Change Triggers Trustee Duties

The financial risks presented by climate change implicate many of the fiduciary duties that pension fund trustees owe to their beneficiaries. Because they must act impartially in the interest of all current and future beneficiaries, trustees are required to safeguard fund assets in both the near term and over longer time horizons. In what follows, the first section outlines how climate change and climate-related risk implicate trustees' duty of inquiry, duty to monitor, duty to diversify, long-term duty to protect principal, and duty of impartiality. The next section then discusses how trustees acting with reasonable care, skill, and caution in the context of climate change can act to protect their funds and avoid liability. It describes four categories of action trustees can pursue, including modifications of investment principles, active shareholder engagement, avoidance of climate-vulnerable investments, and proactive investment in clean energy opportunities.

Trustees Must Act Solely and Impartially in the Interest of All Beneficiaries

Pension fund fiduciaries must act solely and impartially in the interest of all beneficiaries. This requirement applies in the near term, requiring fiduciaries to protect fund assets from unacceptable risk and devaluation, as well as over the long term, requiring fiduciaries to balance the interests of current and future beneficiaries and ensure investment strategies mitigate long-term risks and pursue long-term growth and value creation. These obligations, as applied to the challenges of climate change, trigger the fiduciary duties to inquire, to monitor, to diversify, and of impartiality.

Safeguarding Fund Assets in the Near and Medium Term

Pension funds must be able to provide consistent payments to beneficiaries while protecting the value of the fund overall. For this reason, pension fund fiduciaries must safeguard the value of fund assets over the near term to ensure the fund remains able to make current payments without impairing its overall value. The Paris Agreement, which entered into force on November 4, 2016, sets preliminary emissions targets that must be reached no later than 2020.[30] Global efforts to confront climate change, including new regulations and other schemes to curb emissions, will have impacts on financial markets in real time, not just in the decades over which they take effect. Climate-related risk therefore presents near-term challenges to that value preservation that must be acknowledged and addressed by pension fund fiduciaries. These challenges trigger fiduciaries' duties to inquire, to monitor, and to diversify.

Pension funds must be able to provide consistent payments to beneficiaries while protecting the value of the fund overall. For this reason, pension fund fiduciaries must safeguard the value of fund assets over the near term to ensure the fund remains able to make current payments without impairing its overall value.

DUTY TO INQUIRE

Pension fund fiduciaries have a duty to investigate and consider the prudence of their investment and management decisions. A trustee must inquire "into the relevant facts and circumstances surrounding the investment decision."[31] Fiduciaries are required to give "appropriate consideration" to the merits of investments.[32] One way in which trustees may appropriately consider investments is by evaluating how an investment, as part of the portfolio, presents "the risk of loss and the opportunity for gain (or other return) associated with the investment or investment course of action[.]"[33] Routine or cursory reviews may not satisfy a trustee's duty to inquire as a prudent investor would.[34] To determine a fiduciary's level of prudence at the time of investment, a court must conduct a fact-based inquiry as to "whether the individual trustees, at the time they engaged in the challenged transactions, employed the appropriate methods to investigate the merits of the investment and to structure the investment."[35]

Because of the financial threat posed by climate change, and the inevitable, if still uncertain, market disruptions that will accompany global emission reduction efforts, fiduciaries should consider climate-related risk as an independent risk variable when making investment decisions. Although some of the effects of climate change will play out over medium- to long-term timescales, government action and new regulation can have immediate impacts on asset prices. For example, in its June 2016 analysis, Moody's Investors Service identified 13 industries in its corporate and infrastructure portfolios that were highly exposed to carbon transition risk. "For three sectors—coal, coal infrastructure and unregulated power utilities—material credit impacts and rating adjustments are already being felt. For the others, Moody's expects that they will be affected over the next three to five years."[36]

In the context of climate-related risk, this consideration can include investigating the financial impacts of new regulations, the indirect consequences of regulations and business trends, the effects of technological change, and the physical impacts of climate change, among others.[37]

The duty to inquire is an obligation that must be demonstrated through process, not outcomes.[38] The important question regarding the duty of inquiry is not whether an individual investment was successful, but whether the fiduciary making the investment decision engaged in an appropriate investigation of the merits of the investment.

DUTY TO MONITOR

In addition to the duty of inquiry, which requires trustees to adequately consider their investment decisions, the duty to monitor requires those same fiduciaries to continually review their positions and monitor their portfolios. A fiduciary has a "continuing duty . . . separate and apart from the duty to exercise prudence in selecting investments at the outset . . .

to monitor investments and remove imprudent ones."[39] This duty means that a fiduciary must "systematic[ally] conside[r] all the investments of the trust at regular intervals," and if an investment is determined to be imprudent, the fiduciary "must dispose of it within a reasonable time."[40] In the same way that buying or selling assets constitutes an investment decision that warrants investigation, choosing not to change positions when circumstances change is also a decision that must be made prudently and with care.

In the context of climate change, the duty to monitor is critical because changes in market conditions, domestic regulations, and international agreements can have drastic and long-lasting effects on climate-vulnerable investments. The duty to monitor is usually a periodic responsibility, and review as infrequently as annually is often considered adequate.[41] However, the duty to monitor is also triggered if and when fiduciaries receive negative information about an investment. Events such as major swings in commodity prices or the adoption or implementation of international agreements may require pension fund fiduciaries to review and reconsider their climate-vulnerable investments. For example, after the signing of the Paris Agreement itself, renewable energy stocks saw an increase in value while coal stocks saw sharp declines.[42]

DUTY TO DIVERSIFY

Pension fund fiduciaries have a duty to diversify their holdings so as to minimize risk. The objective for the diversification duty is to minimize loss and maximize rate of return.[43] The diversification duty both encourages a fiduciary's caution while "express[ing] a warning to trustees, predicated on the duty to exercise care and skill, against taking bad risks—ones in which there is unwarranted danger of loss, or volatility that is not compensated by commensurate opportunities for gain."[44]

To accomplish loss minimization, fiduciaries often rely on Modern Portfolio Theory (MPT), a dominant theory of trust law since the 1970s.[45] MPT emphasizes that the prudence of the investment should be judged based on the risk-reward characteristics of the portfolio as a whole, rather than on the risks and returns of individual investments. Individual investments can have a higher risk profile than the portfolio as a whole, because investing in diverse, uncorrelated assets reduces the negative impacts of individual assets and spreads the risk. The duty to diversify therefore does not require pension funds to be riskless; it merely requires that the fund fiduciaries don't take on *uncompensated* risk. Investments with different degrees of risk are acceptable if they produce returns commensurate with their level of risk. Factors to consider in determining whether a

fiduciary has satisfied the duty to diversify include: (1) the purposes of the plan; (2) the amount of the plan assets; (3) the financial and industrial conditions; (4) the type of investment; (5) distribution as to geographical location; (6) distribution as to industries; (7) dates of maturity; and (8) the time horizon over which the plan will be required to pay out benefits.[46]

Climate change may trigger the duty to diversify by challenging the prudence of investing in climate-vulnerable assets—which include an added element of risk—when they are not outperforming non-climate-vulnerable alternatives. Climate change presents a systemic risk to the global financial system, which cannot be easily protected against. But because it also presents a magnified risk to specific industries and asset classes, trustees who include significant fossil fuel, utility, or other climate-vulnerable holdings in their portfolios will be exposing their funds to risk that is otherwise not present for other investment vehicles.

This risk persists even if a fund chooses to invest broadly in the market. As of July 1, 2016, 48 companies in the S&P 500 index are either oil and gas companies or electric utilities. Moreover, even companies ostensibly outside these sectors may be so closely linked to fossil fuel industries as to be effectively economically coupled with them. For example, the collapse of demand for US coal affected not only the value of the coal companies themselves, but also the companies that manufactured rail cars for coal; similarly, plummeting crude oil prices affected not only oil and gas producers, but also shipping firms focused on oil and gas transport. As a result, even investment strategies focused on diversified assets may conceal clusters of concentrated assets that share a common exposure to fossil fuel intensive industries. Because of the large presence of fossil fuel and energy companies in the financial system, merely investing in the market via broad market indexes may not be enough to adequately avoid dampening portfolio returns as a result of climate-related risk.

Finally, this risk/return analysis must be evaluated in the context of the time horizon over which the fund will be required to issue payments.[47] Because public pension funds have virtually indefinite time horizons, the financial pressure of needing to make consistent payments amplifies the need to protect against downside risk. The possibility of adverse financial outcomes as a result of climate-related risk is therefore more of a threat to those beneficiaries who will rely on payments in the moderate to distant future, and should be a key concern to fiduciaries administering public pension funds.

Investing In Climate-Vulnerable Assets May Prejudice Current Generations Against Future Generations

The previous section discussed how the financial risks posed by climate change may trigger a trustee's fiduciary duties to inquire, monitor, and diversify. Those arguments focus on the clear and present risk posed by climate change in the present and near-term. Even if such climate-vulnerable investments produce acceptable returns in the near-term, it is still possible that they will present undue risks that trigger trustee duties as they relate to future generations.

Because climate change threatens the long-term value of high emitting and energy intensive companies—and some entire industries—pension fund fiduciaries should consider the long-term implications of their climate-vulnerable investments. The possibility of expansive new regulations and major changes in market conditions reveals the incompatibility of certain business models with a low-carbon future. These incongruences present the possibility of large, rapid, unpredictable asset devaluations for investments including, for example, oil and gas industry stocks and bonds, certain commodities, and oceanfront real estate. Continued investments in these industries and assets may not represent a pursuit of long-term value creation, but rather an attempt to time the market and exit at its peak. This kind of investment behavior may implicate pension fund trustees' obligations to future generations by prioritizing short-term returns over long-term value creation, triggering the duty to protect long-term principal and duty of impartiality.

DUTY OF IMPARTIALITY

The duty of impartiality requires the trustee to be "impartial with respect to the various beneficiaries of the trust" and a "duty to so invest and administer the trust, or to so account for principal and income, that the trust estate will produce income that is reasonably appropriate to the purposes of the trust and to the diverse *present and future interests* of its beneficiaries."[48] A trustee's duty to future beneficiaries requires that trustees guard against inadvertently focusing on the present and, most importantly, not strive to "provide higher-than-appropriate yield for the current income beneficiary" by taking undue short-term risks.[49] Indeed, trustees must "administer the system to create and maintain long-term stability and viability in the system[.]"[50]

This duty may also be expressed as a long-term duty to protect fund principal. Pension fund fiduciaries have a long-term duty to protect the principal of their funds, and should prioritize doing so even if it dampens short-term returns for current beneficiaries.[51] Protection of the fund value is a coequal obligation alongside maximizing growth, and investment decisions must be made taking into consideration both obligations.[52]

Because climate change threatens the long-term value of high emitting and energy intensive companies—and some entire industries—pension fund fiduciaries should consider the long-term implications of their climate-vulnerable investments.

Because climate-vulnerable investments may devalue rapidly, they present a looming danger to the value of a pension fund irrespective of their current rates of return. Even if such investments are performing adequately, there is a constant risk of new regulations, major technological disruptions, or other market changes that can quickly and sharply reduce the value of those investments. For example, following the unveiling of President Obama's Clean Power Plan, the financial website *Motley Fool* cited the plan's adoption as a factor in Peabody Energy Corporation's plummeting share prices and abrupt bankruptcy.[53] Exposure to such intensely climate-vulnerable assets in a period of rapid regulatory and technological change may threaten a pension's long-term stability, as major downturns in asset values could permanently impair overall fund value.

The previous section explained that climate-vulnerable assets which yield market-rate returns may be considered too risky because of their greater downside risk. However, because pension fund fiduciaries must consider the interests of future beneficiaries, even assets that provide a *higher* rate of return than the market may be deemed imprudent if they threaten the core of the fund's value. Pension fund trustees should therefore take special care when considering their climate-vulnerable investments, as they may threaten the long-term value of the fund despite producing acceptable returns in the present.

Because climate-vulnerable investments may devalue rapidly, they present a looming danger to the value of a pension fund irrespective of their current rates of return.

THE DUTY OF LOYALTY

A trustee's duty of loyalty is the duty to act solely in the interests of the pension fund beneficiaries.[54] ERISA and similar statutes (and the common law of trusts) require trustees to discharge their "duties with respect to a plan solely in the interest of the participants and beneficiaries and for the exclusive purpose of: (i) providing benefits to participants and their beneficiaries; and (ii) defraying reasonable expenses of administering the plan[.]"[55] In administering the fund, a trustee is "not to be influenced by the interest of any third person or by motives other than the accomplishment of the purposes of the trust."[56] "It is, of course, obvious that a fiduciary cannot allow personal motives to interfere with the discharge of its fiduciary duties."[57]

While discussion of the sole purpose rule within the duty of loyalty often focuses on the stringent requirements of trustees to avoid self-dealing and conflicts of interests, the undivided duty of loyalty extends beyond those two transgressions and fundamentally requires fiduciaries to weigh carefully and decide what is the best course of action for all beneficiaries of the fund.[58] Moreover, trustees "have a duty to protect plan participants from misleading information. Thus, if a fiduciary is aware that participants have been misinformed about facts that implicate the stability of their retirement assets, he or she must take action to protect the participants."[59]

This duty can be violated by a number of behaviors, but this section discusses two in particular. First, compensation structures that reward short-term gains may incentivize investment managers to take risks that are otherwise inappropriate for the fund. Second, a failure to consider climate change as a risk factor due to social or political pressure may constitute a violation of the duty of loyalty, exposing the fund to risks it otherwise could avoid.

INCENTIVE STRUCTURES MAY PROMOTE VIOLATIONS OF THE DUTY OF LOYALTY

Pension fund fiduciaries, especially third-party investment managers and officers, may be compensated based on the performance of their fund. These performance incentives may misalign with what is best for the fund, especially when weighing short-term risk against long-term stability in the climate context. Thus, short-term profits from fossil fuel or other investments may benefit a fiduciary personally, but expose the fund itself to an inappropriate level of risk. This is a greater risk when there are no downside disincentives—i.e., a fiduciary benefits when a fund performs well but does not suffer compensation loss when the fund loses value.

This possibility of a breach of the duty of loyalty is inherent in the issues related to climate change and climate-related risks. If a fiduciary invests in fossil fuel or climate-vulnerable assets to seek higher returns in the near-term then they may be exposing their fund to a higher degree of risk than is appropriate for a pension with long-term liabilities. Subjugating the needs of the fund (and, therefore, the beneficiaries of the fund) for personal gain in this way would be a breach of the fiduciary duty of loyalty.

POLITICAL OR SOCIAL PRESSURE MAY LEAD FIDUCIARIES TO VIOLATE THE DUTY OF LOYALTY

Fossil fuels are a large part of many peoples' lives, and the oil, gas, and coal industries employ many thousands of workers. It is to be expected, especially in parts of the country where oil, gas, or coal production are major components of the local economies, that pension fund trustees may have friends, relatives, or other relationships with individuals in industries contributing to climate change. In the United States, this situation is further made difficult by the position of climate change as a contentious issue in domestic politics.

Publicly acknowledging the problems inherent in, and caused by, fossil fuels may be challenging from a social or political perspective for some pension fund trustees. It might have real consequences for peoples' personal lives or political prospects. This is not, however, a valid reason for fiduciaries to ignore the realities of climate risk as it affects a pension fund's portfolio. As detailed more fully in the Mercer analysis, climate change poses both investment risks and opportunities that make it a material factor to be considered in shepherding fund assets responsibly.

A failure to acknowledge the climate risks inherent in fossil fuel and other climate-vulnerable assets for social or political reasons would constitute a breach of a trustee's duty of loyalty, as it subjugates the interests of fund beneficiaries to the trustee's personal preferences.

Acting with Reasonable Care, Skill, and Caution in the Context of Climate Change

The financial risks posed by climate change may trigger trustees' fiduciary duties, requiring them to take action to protect their funds from harm. This section discusses four ways in which pension fund trustees can act to prevent or reduce harm to the funds they administer and shield themselves from liability. These methods include modifying the fund's investment principles (beliefs or policies), avoiding the most climate-vulnerable investments, actively engaging with the companies whose stock the fund owns, and investing in clean energy opportunities.

It is increasingly recognized that investment strategies that incorporate environmental, social, and governance (ESG) factors where the social benefits are collateral to the investments themselves are appropriate within the framework of a trustee's fiduciary duty.[60] The Department of Labor has affirmatively approved this investment strategy in multiple interpretive bulletins.[61] In these cases, the assets invested in have a commensurate risk-return profile as other alternatives, and the fact that they have social benefits is merely a tie-breaker.

More importantly, a growing body of analysis from both the United States and the international sphere recognizes that ESG factors often represent an underappreciated and frequently unaddressed source of financial risk. In a widely cited legal analysis on fiduciary responsibility prepared for the United Nations Environment Programme's (UNEP) Finance Initiative, the globally recognized law firm Freshfields concluded:

> We believe that through the integration of ESG issues into investment policymaking and decisionmaking, institutional investors—and the

BOX 2

Considering the Full Cost of Climate Change to Beneficiaries

Pension fund trustees must consider the interests of future beneficiaries, and it is reasonable for trustees to consider the human interests and quality of life of those future beneficiaries and their families as well. Investments in clean energy can help move the needle toward a future where catastrophic climate change is avoided and societal climate goals are achieved. Current employees who have yet to retire, as well as future beneficiaries who haven't yet been born, have a genuine interest in a viable world with vibrant ecology, ample resources, and a stable environment, as well as a sustainable economy that will support their families.

Future generations can be expected to want a livable planet, and that interest is real, legitimate, and substantial. Keith Ambachtsheer, a leading thinker on pension fund governance, has recommended that when considering investment strategies, duties to future beneficiaries may mandate that trustees try to accelerate the shift away from fossil fuels and to pursue low-carbon, clean energy investments to help mitigate the future adverse effects of climate change.[viii] Citing the Urgenda case in the Netherlands, he notes "collaboration efforts toward achieving the transformation outcome have a potentially large payoff.[ix] Arguably, the study findings suggest such efforts amount to the required exercise of fiduciary duty."

A failure to acknowledge the climate risks inherent in fossil fuel and other climate-vulnerable assets for social or political reasons would constitute a breach of a trustee's duty of loyalty.

> companies that they invest in—will be able to sustain their wealth creation role and play their fundamental role in the creation of a more sustainable global economy that invests in real and inclusive long-term growth, genuine prosperity and job creation[.][62]

More recently, the UNEP Finance Initiative and the Principles for Responsible Investment declared that "fiduciary duty requires investors to take account of ESG issues in their investment processes, in their active ownership activities, and in their public policy engagement."[63]

The investment approach suggested by this paper includes ESG factors as material economic considerations to be considered in investment decisions. This approach is explicitly supported by the Department of Labor's interpretive bulletin 2015-1, which states, "ESG issues may have a direct relationship to the economic value of the plan's investment. In these instances, such issues are not merely collateral considerations or tie-breakers, but rather are proper components of the fiduciary's primary analysis of the economic merits of competing investment choices."[64]

BOX 3

CalPERS Sustainability Guidelines

The California Public Employees' Retirement System (CalPERS), the largest public pension fund in the United States, has incorporated sustainability concerns into its Global Governance Principles. These principles guide CalPERS trustees and employees in making decisions about how to engage as a shareholder and what to consider when making investment decisions.[x] CalPERS recommends that "[t]o ensure sustainable long-term returns, companies should provide accurate and timely disclosure of environmental risks and opportunities through adoption of policies or objectives, such as those associated with climate change."[xi] Moreover, CalPERS explicitly promotes the Global Framework for Climate Risk Disclosure as the guidelines that owned companies should adhere to when making such disclosures.[xii] Though CalPERS principles do not explicitly call for divestment, it does outline a model of engagement and states unequivocally that climate change is a material risk that should be addressed by owned companies.

Modification of Investment Principles

The most fundamental thing a pension fund can do to protect itself from climate-related risk is to modify its investment beliefs and policies to acknowledge and incorporate that risk. Several of the largest public pension funds—including the largest, CalPERS—have already incorporated investment beliefs to address climate vulnerabilities. These modifications include explicitly recommending adoption of the Global Framework for Climate Risk Disclosure[65] and promotion of the 14-point Ceres Climate Change Governance Checklist[66] as tools to assist in that disclosure.

For those pension fund trustees who are uncertain of the best course of action to take regarding climate-related risk as it pertains to their fund's portfolio, a modification of investment principles can serve as a guidepost for dealing with unexpected developments in the future. Climate change will affect markets, although impacts will vary depending on when and how we respond to it. The major differences in financial outcomes will be the result of new legal regimes, market trends, and the effects of changes in climate and weather patterns. Even were trustees to conclude that no investment changes are appropriate when they make their evaluation, installing guidelines for how to respond to changes in the global effort to confront climate change can help a fund, and the investment officers to whom it delegates, navigate what might otherwise be a more difficult situation. This is especially important when considering the large time scale over which these decisions will be made and the new generations of trustees that will succeed current fiduciaries, and who may need to rely on embedded best practices and institutional knowledge.

Modification of Investment Principles Alone Is Not Sufficient

Although modification of investment beliefs or policies to incorporate climate-related risks and opportunities is a good initial step, it may not be enough to protect a fund from climate-related risk. If the change in principles is not followed by action, then pension fund trustees may find themselves in breach of the duty to act in accordance with plan documents. Moreover, whereas changes in investment principles may offer new insight about how climate-related risk may affect investments, pension fund trustees already have a mandate to protect the long-term value of the fund and provide income to current and future beneficiaries. Pension fund trustees should adopt specific strategies to protect against climate-related risk, including avoidance of carbon-intensive and climate-vulnerable investments, engagement with owned companies, and proactive investing in clean energy opportunities.

DUTY TO ACT IN ACCORDANCE WITH PLAN DOCUMENTS

In addition to the several duties discussed above, pension fund trustees have a duty to act in accordance with plan documents.[67] Plan documents may include current investment policies and procedures. Because the duty to act in accordance with a plan documents is an affirmative duty, "a trustee may commit a breach of trust by improperly failing to act, as well by improperly exercising the powers of the trusteeship."[68]

This duty applies not only to the creation of the plan's documents, but also when the terms of a trust—in this case a public pension fund—are reformed.[69] If pension fund investment policies are modified to address climate change and related ESG risks and opportunities, trustees and other fiduciaries will be held accountable for fully adhering to those changes. A failure to follow up on new commitments or to implement new procedures would be a breach of the duty to act in accordance with plan documents. Modification of fund beliefs or policies should therefore be thought of as one component of a fiduciary's prudent management of fund assets, not as an end in itself.

It is worth reiterating that, even if pension fund fiduciaries do not make adjustments to their funds' investment principles, it is likely that existing provisions in the plan documents will contain mandates that require consideration of climate-related risk insofar as it is a material financial concern. The following three sections describe methods by which pension fund trustees can manage the climate-related risk in their portfolios and ensure they are tackling these challenges head-on.

BOX 4

Amalgamated Bank Becomes First US Bank to Divest

On September 19, 2016, Amalgamated Bank announced that it was divesting from fossil fuels.[xiii] This announcement makes Amalgamated Bank the first US bank to begin the process of divestment. Though this decision only affects assets owned by the bank (not managed for its clients), Amalgamated also announced it is developing new low-carbon financial tools for its clients to use in managing their assets. "We are committed to managing our clients' assets in accordance with our fiduciary obligations," the bank explained in its Climate Risk Policy.[xiv] "Therefore, we commit to working with clients seeking to divest from carbon risks, and instead invest in positive impact investments, which include climate solutions and the just transition to a low carbon economy."[xv]

Even if pension fund fiduciaries do not make adjustments to their funds' investment principles, it is likely that existing provisions in the plan documents will contain mandates that require consideration of climate-related risk insofar as it is a material financial concern.

AVOIDANCE

The cleanest and simplest way to avoid climate vulnerability in a portfolio is to divest or, at minimum, dramatically reduce exposure to fossil fuel and other highly climate-vulnerable holdings. There is no legal obstacle to risk-based negative screening—or selling or avoiding high-risk investments generally—as long as the rest of the portfolio is performing adequately.[70] Doing so may be preferable for risk-averse trustees who do not have confidence that the companies in which their fund is invested will adapt to the challenges posed by climate change or respond to shareholder engagement. Divestment or minimizing exposure may also be the best option for trustees at funds which lack the resources or capacity for sustained, active monitoring of fossil fuel investment risks. Amidst this changing landscape, it is increasingly likely that some asset categories (e.g., coal mining companies) would be deemed de facto imprudent to own already, or will be made so by the continuing evolution of society's response to climate change.

Given both the global commitments to climate action and the clear necessity of additional regulatory action to reduce emissions, many fossil fuel and other highly climate-vulnerable companies will at some point be subject to devaluation.

The Paris Agreement aims to hold "the increase in global average temperature to well below 2°C above pre-industrial levels and pursu[ed] efforts to limit the temperature increase to 1.5°C above pre-industrial levels" and make "finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development." As of October 5, 2016, more than 55 parties representing more than 55% of greenhouse gas emissions have ratified the Agreement, which is the threshold established in Article 21 of the Agreement. The Agreement therefore entered into force on November 4, 2016.[71]

As the recent announcement that the SEC is actively investigating ExxonMobil for its climate accounting practices demonstrates, the timeline over which value losses will be disclosed remains highly uncertain. In light of these realities, a trustee who continues to invest in such assets is implicitly hoping to profit off of the "greater fool" theory of investing, not from the generation of long-term value. Namely, the trustee is hoping they can time the market well enough to sell off assets before they lose value. Although many pension fund trustees have not affirmatively acted to reduce the climate risk in their portfolios, such industry-standard behavior is not a shield to claims of liability. Regardless of its prevalence, this form of investing may be imprudent. As explained by Judge Learned Hand, "there are precautions so imperative that even their universal disregard will not excuse their omission."[72] Moreover, as highlighted in a forthcoming report by the 2 Degrees Investing Initiative, the tendency of current investment analyses to assess risks on a short-term basis, even for long-term investments, creates substantial blind spots for risks that may materialize more than three to five years in the future.[73] In the climate context, the potential for unpleasant surprises is dramatically increased. The mere fact that some or even a majority of trustees have yet to take action to minimize exposures to climate-vulnerable assets does not prove that status quo management is prudent—only that it remains the status quo despite rapidly changing circumstances. For those most-vulnerable assets, avoidance may be the only appropriate action.

ENGAGEMENT

If pension fund trustees believe it is still appropriate to retain their fossil fuel or climate-vulnerable investments, they should undertake "asset stewardship" or "active ownership" and actively engage with company boards and management as a shareholder to ensure the companies in which they invest are prepared for climate change.

Specifically, for carbon intensive enterprises whose business models are particularly vulnerable to the impending climate change transition (e.g. coal, oil, gas, carbon-based electric power), those companies have an urgent need to address how their businesses intend to adapt to changes in policy, market dynamics, and consumer values. These adjustments can include scenario analysis (e.g., 2 degree policies), disclosures about carbon inventories and business plans consistent with internationally agreed upon (Paris Agreement) carbon budgets, greenhouse gas reduction targets, changes in executive compensation to disincentive further spending on high risk exploration and development, investing in diversified, clean energy businesses, and modifying dividend or share repurchase policies to align with long-term value creation, not short-term share price support. As a recent analysis of eight major fossil fuel producers by the Union of Concerned Scientists documents, however, few if any of the most climate-vulnerable companies have put such plans in place.[74] Prudent shareholder engagement could promote these and other actions by owned companies through, for example, filing shareholder resolutions, voting to replace unresponsive board members, or voting to change company bylaws.

Efforts to obtain disclosures are especially salient in the climate context. Pension fund trustees have a duty to inquire as to the prudence of an investment. If companies owned by their funds do not disclose

relevant information as described above, engagement can be a way to obtain some certainty as to the prudence of an investment.

INVESTING IN CLEAN ENERGY OPPORTUNITIES

Whether or not a fund reduces its exposure to fossil fuel and other climate-vulnerable investments, investing in clean energy assets may act as a form of diversification or hedging against climate risks. Mercer's "Investing in a Time of Climate Change" indicates that the Transformation scenario, wherein society achieves the 2 degree threshold, has materially positive investment implications relative to the Fragmentation scenario, wherein the planet warms 4 degrees or more.[75] To avoid the direst impacts of climate change, it is in the interest of nations and investors to pursue the Transformation, or 2 degree, scenario. This suggests both that there will be massive growth in the clean energy sector and that pension funds have an additional incentive to support that transformation.

If the 4 degree Fragmentation scenario occurs, then the physical impacts of climate change will affect the market broadly and will be difficult to hedge against. In that scenario, climate change is a truly systemic risk. Alternatively, an accelerated transition to a low-carbon economy will have more predictable winners and losers that will be easier to anticipate. As discussed above, over a 35 year period the coal, oil, and utility industries may be facing significant losses, whereas annual returns for renewables may increase up to 53%.[76] Moreover, the difference in returns by sector will amplify over time. As explained in a recent report from BlackRock, while long-term investors, like pension funds, are vulnerable to climate-related risk, they are also "better positioned to invest in new technologies that take time to bear fruit."[77] By actively investing in a Transformation scenario, and seeking to benefit from the clean energy transition, a prudent pension fund can potentially achieve higher returns by avoiding those industries and corporations negatively affected by the transformation (e.g. fossil fuels) and investing in industries and corporations which will thrive because of it (e.g. clean energy).

PART 5
Potential Liability

The variety of harms caused by climate change mirrors the variety of climate-related litigation that is already underway. Climate litigation is increasing as climate impacts intensify, attribution science better apportions liability, and evidence mounts that ExxonMobil and other major fossil fuel producers actively promoted climate misinformation efforts that contradicted their own internal understanding of the climate science. Cases range from investigations into potential corporate fraud and misrepresentation, to tort cases for compensation due to impacts, to cases anchored in human rights law. The variety of claims illustrates the numerous ways in which courts have determined climate impact cases as validly justiciable. Considering the emergence and rapid growth of climate litigation, pension fund fiduciaries should take an active role to avoid claims in the current litigation context.

Climate Litigation

Both private and public entities have been sued under various constitutional, statutory, and private tort claims for injury caused by climate change. For example, public trust law could implicate the federal government for climate-induced harm while acting as a trustee of public lands.[78] The organization Our Children's Trust brought one such case against the government, representing 21 youth as well as future generations.[79] It alleges that the federal government failed to mitigate carbon pollution despite knowing that its effects on climate change would harm public lands, over which the government is a trustee.[80] This case is particularly significant because a federal court denied the federal government's motion to dismiss for each of the plaintiff's allegations, determining that factual allegations based upon harm from climate change could plausibly result in a court finding against the federal government for "enable[ing] continued exploitation, production, and combustion of fossil fuels."[81] Notably, industry groups representing fossil fuel interests have intervened as defendants in the case.

ExxonMobil and other major fossil fuel producers actively promoted climate misinformation efforts that contradicted their own internal understanding of the climate science. Cases range from investigations into potential corporate fraud and misrepresentation, to tort cases for compensation due to impacts, to cases anchored in human rights law.

Even more saliently, government entities are now actively investigating major fossil fuel companies under an array of climate related claims. These investigations have arisen in the wake of mounting public evidence that ExxonMobil and other major fossil fuel companies were on notice of the potential for carbon-based fuels to contribute to climate change earlier than widely recognized.[82] This evidence of industry awareness of climate risks casts a new and more legally significant light on the long-standing evidence that ExxonMobil and other companies actively funded climate misinformation campaigns targeted at the public and/or the investment community.[83] Both the Massachusetts and New York Attorneys General have issued subpoenas to ExxonMobil demanding records for pending investigations related to potentially deceptive statements to consumers or investors.[84] New York's Attorney General has already secured a settlement with Peabody Energy that requires it to end its misleading statements with regards to climate change and to begin disclosing its risks.[85] The Attorneys General of California and Maryland may also follow this trend.[86] In September 2016, after several other oil companies had taken write-down losses on their fossil fuel assets, the Securities and Exchange Commission opened an investigation into ExxonMobil, examining the company's accounting practices and determining if it had overvalued its fossil fuel holdings.[87] By October 2016, the company announced that it would write down billions of barrels of reserves based on the drop of global oil prices, leading to the launch of a class action suit on behalf of investors.[88] The rapid change in the value of ExxonMobil's fossil fuel holdings serves to demonstrate how quickly devaluations may occur in the fossil fuel sector given the multiple threats of regulation (transition risk) and changing economics (carbon asset risk).

All of this does not guarantee that charges will be brought or penalties levied, however, these investigations demonstrate that the federal and state governments are examining the evidence in earnest, and may produce more documents, more charges, and more defendants.

Private individuals are filing suit against fossil fuel companies for potential harms caused by climate impact. The Conservation Law Foundation (CLF) recently filed a complaint against ExxonMobil for failing to include known climate change factors into its Storm Water Pollution Prevention Plan (SWPPP) for a facility based in flood prone coastlands on the Mystic River.[89] In its complaint, the Conservation Law Foundation (CLF) alleges that ExxonMobil should have prepared an SWPPP that took into account what it knew about climate change, how it would cause rising sea levels and increased frequency of storm surges, and failed to disclose and accommodate for these specific hazards.[90]

International plaintiffs are also suing fossil fuel producers in tort for money damages. Saul Luciano Lliuya, a Peruvian farmer, is suing German energy company RWE for its contribution to climate change.[91] His village lies below a glacial lake that has increased in volume more than 30 times as a direct result of glacial melt, putting both Liuya and a city of 100,000 people at risk of catastrophic flooding when the dam holding back the lake succumbs to rising waters.[92]

Mr. Lliuya has sued RWE on the grounds that its production of fossil fuels has contributed to melting caused by global warming; accordingly, he seeks a financial contribution from the company in support of Peru's efforts to lower the water level behind the dam and install a warning system to warn villagers of impending floods.[93] Notably, Mr. Lliuya is only asking RWE for 0.47% of the total cost of such an installation, equivalent to the pro-rata emissions contribution RWE is responsible for based on the amount of fossil fuel it has extracted and sold.[94] This legal challenge is emblematic of an emerging trend toward suits against climate impacting companies for contributing to damages caused by climate change.

Across the world, climate litigation has accelerated under theories of international human rights. In June 2015, environmental group Urgenda won its case against the Netherlands, whereby the court ordered the government to regulate climate-impacting companies to reduce the country's greenhouse gas emissions by 25% by the year 2020.[95] In the case, Urgenda argued that failing to limit greenhouse gas emissions constituted a human rights violation in the low-lying nation, whose population is vulnerable to several climate-related impacts.[96] Significantly, the count in Urgenda held that, even though not directly enforceable by the plaintiffs, the international commitments undertaken by the Netherlands under the UN Framework Convention on Climate Change and international human rights agreements, informed the Dutch government's duty to its own citizens—including future generations of citizens—under domestic law. The court held, moreover, that the government's efforts to reduce the near-term economic costs of climate action by shifting climate risk to those future generations violated the Netherlands' duty of care to those future citizens.

Other human rights based strategies involve suing fossil fuel producers directly. Victims of the impacts of climate change in the Philippines recently filed a petition with the Commission on Human Rights of the Philippines.[97] This petition requested that the Commission investigate the human rights violations resulting from climate change in the Philippines and hold the corporate actors (specifically 50 investor-owned fossil fuel companies, including ExxonMobil, Chevron, and Shell) accountable for the harms suffered by Filipino people and communities.[98] The Commission formally accepted the petition and agreed to launch an investigation into the climate harms associated with the historic emissions traceable to the largest investor-owned fossil fuel companies.[99]

Taken together, this body of litigation demonstrates that, although still in its early stages, climate change litigation is real, and climate change is a justiciable issue. Cases are proceeding in several courts, casting renewed light on governmental and corporate obligations to individuals, the international community, and future generations.

Potential Basis for and Risks of Climate Litigation for Pension Fund Trustees

Pension fund beneficiaries have rights that can be enforced against pension fund fiduciaries. These rights and the obligations of trustees may give rise to a number of causes of action, including private common law and statutory causes of action, as well as federal and state enforcement. Potential private common law claims include breach of fiduciary duties, negligence, gross negligence, negligent supervision, breach of contract, unjust enrichment, voluntary assumption of a legal duty, common law fraud, and negligent misrepresentation. Of these, one of the most troubling for fiduciaries in the climate context may be negligent supervision because when pension fund fiduciaries delegate their oversight duties to investment advisors, those advisors may not focus on or seriously consider climate-related risk.

In addition to a negligent supervision claim, traditional claims against pension fund fiduciaries may arise in the climate context. Indeed, a common law breach of fiduciary duty claim for a fiduciary's breach of his/her duties of impartiality, loyalty, and/or prudence may arise under ERISA or common law. While ERISA only regulates private pension funds, non-ERISA pension funds are likely subject to ERISA standards. This is because Congress intended ERISA to simply be a codification of the common law governing all pension fund management law. To state a cause of action for breach of any fiduciary duty, the plaintiff must allege (1) the existence of a fiduciary duty, (2) a breach of that duty, and (3) damages proximately caused by the breach. Damages can also be found in various ways, which may open up pension fund fiduciaries to expansive types of remedies.

Who Is A Fiduciary?

In any breach of fiduciary duty claim, the plaintiff must establish the existence of a fiduciary duty. A person is a fiduciary if they are named as a fiduciary or functionally fulfill fiduciary duties.[100] According to ERISA, a person is a fiduciary if he or she performs functions to the extent that:

> "(i) he exercises any discretionary authority or discretionary control respecting management of such plan or exercises any authority or control respecting management or disposition of its assets, (ii) he renders investment advice for a fee or other compensation, direct or indirect, with respect to any moneys or other property of such plan, or has any authority or responsibility to do so, or (iii) he has any discretionary authority or discretionary responsibility in the administration of such plan."[101]

BOX 5
9 Questions Pension Fund Fiduciaries Should Ask Their Lawyer

1. Do the fiduciary duties of loyalty and impartiality require that I consider and manage climate-related risks irrespective of my personal beliefs regarding climate change?
2. Given the long time horizon over which climate impacts are expected to occur and the relative unpredictability of those impacts, could climate change trigger my fiduciary duties more or differently than traditional risk/return variables?
3. With respect to climate change, what new factors should I consider when making investment decisions to satisfy my duty of inquiry?
4. As an asset owner with exposure to all sectors and several asset classes, do I need to consider and manage the impacts that certain investments are likely to have on my portfolio as a whole?
5. Would it be prudent to modify plan documents, including investment mandates, to consider and manage climate-related risks?
6. Does the duty to diversify prevent negative screening or divestment from investments whose returns may not justify their risks?
7. Could incentive structures that favor short-term returns present conflict of interest issues?
8. With the uncertainty and dynamism of the climate change trajectories, how do I fulfill my fiduciary duties? Do climate-related risks require particular attention to the duty to monitor?
9. Could I be sued for breach of fiduciary duties if I don't consider and manage climate-related risks and the fund underperforms the market? On the other hand, what if I do thoughtfully consider climate-related risks and act to manage those risks, and the fund underperforms the market?

Thus, a fiduciary duty does not attach to a person, but rather to the particular duties an individual conducts within the pension fund.[102] Case law has indicated that this definition is expansive.[103] Individuals have been held liable as fiduciaries even when the precise extent of their fiduciary status was uncertain.[104] Therefore, actors beyond merely pension fund trustees have a fiduciary duty to pay attention, and take action,to mitigate climate-related risks in the portfolios by which they are employed. This may encompass investment advisors, chief investment officers, and others beyond those who are named fiduciaries in a pension fund's plan documents.[105]

Although investment managers may shield pension fund trustees from liability,[106] these investment managers must meet certain requirements.[107] The Department of Labor has also recognized that trustees who formally appoint these managers have a fiduciary duty to prudently select investment managers and continually evaluate their performance. If pension fund trustees find that such investment managers are not prudently considering climate risk in their portfolio when they should be, trustees may be liable for failing to adequately monitor these investment managers.[108]

Negligent Supervision

Beneficiaries might also bring a claim of negligent supervision against a public pension fund fiduciary for failing to supervise a fund or its employees despite having an affirmative duty to do so.[109] To be successful, a negligent supervision claim requires finding that a principal negligently selected, trained, retained, supervised, or otherwise controlled the agent.[110]

Pension fund trustees are particularly vulnerable to claims of negligent supervision even if trustees formally appoint an investment manager. Specifically, case law indicates that trustees who rely on independent advisors must "exercise reasonable judgment in relying on the advice of independent advisors."[111] Exercising reasonable judgment in the climate context means that trustees must monitor their investment advisors and ensure that the advisors' information is up to date and complete.[112] Specifically, trustees should engage with their investment advisors to ensure that they are adequately considering the rapidly evolving risks and opportunities related to climate change. Trustees cannot simply place blind faith in trusted individuals or institutions.[113] If pension fund trustees do not withdraw their capital when they know or should know that the investment is no longer proper for that pension plan, then they may be liable.[114] If trustees hire investment managers who do not consider these financial impacts flowing from climate-related risks, then trustees may be liable for having placed blind faith in investment managers. In sum, trustees who fail to engage with their investment advisors regarding the investment impacts of climate change may be liable for losses due to negligent supervision.

Trustees should engage with their investment advisors to ensure that they are adequately considering the rapidly evolving risks and opportunities related to climate change. Trustees cannot simply place blind faith in trusted individuals or institutions.

Breach of the Fiduciary Duty of Loyalty

The fiduciary duty of loyalty requires pension fund fiduciaries to conduct their duties with an "eye single" to the interests of their beneficiaries. If fiduciaries are found to be incorporating personal biases or political beliefs into fiduciary tasks, they may be liable. Courts have used two avenues to determine whether a fiduciary has violated the duty of loyalty: (1) determining whether there are substantial potential conflicts of interest between fiduciaries and beneficiaries, and (2) a broad inquiry into the fiduciaries' actions where they may have substantial interests.[115] Fiduciaries may be subject to suit if acting, affirmatively or negatively, upon a personal or political belief that climate change does not exist. Further, any ties to organizations that advocate against climate change may implicate a potential conflict of interest with beneficiaries.

Breach of the Fiduciary Duty of Impartiality

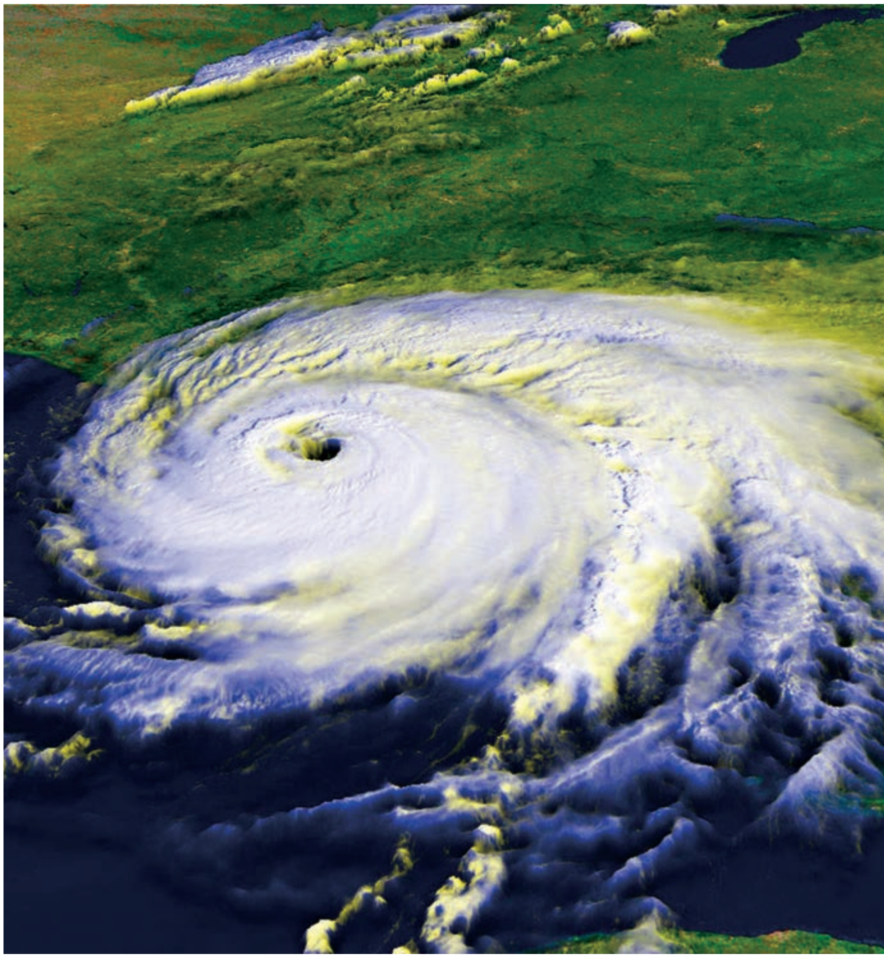
Pension fund trustees who fail to maintain the viability of the plan in the long term may be liable for breaching their fiduciary duty of impartiality to long-term beneficiaries. Indeed, if climate-related risk causes significantly reduced portfolio returns (especially for funds that are already subject to a high percentage of unfunded liabilities), these funds may be unable to satisfy their obligations to future beneficiaries. In this case, a court could find the trustees had not acted in the best interests of all beneficiaries, including future ones.[116] Courts can find that current trustee action is to the detriment of future beneficiaries and liability can attach. A duty to preserve the corpus of the trust in the long-term is found in Bogert's Treatise on Trusts (cited by the US Supreme Court),[117] which reads, "[t]he trustee has a duty to protect the trust property against damage or destruction. He is obligated to the beneficiary to do all acts necessary for the preservation of the trust res which would be performed by a reasonably prudent man employing his own like property for purposes similar to those of the trust."[118]

Breach of the Fiduciary Duty of Prudence

While courts hesitate to second-guess a trustee's application of business judgment or exercise of fiduciary discretion, claims for breach of the fiduciary duty of prudence for pension fund trustees are conceivable. The Supreme Court's recent case makes it clear that pension fund trustees have the duty to monitor existing investments and can be held liable when they fail to remove imprudent investments.[119] Climate-vulnerable assets could be considered imprudent when their risk level is compared to their returns. And while a trustee's prudence is generally considered on the portfolio level, trustees have been held liable even in well-diversified trust funds for making investments that were too risky.[120] Because some climate-vulnerable investments may not provide the composite returns demanded by their risk level, a trustee may potentially be held liable for a failure to account for that risk.

Damages and Remedies

Finally, to bring a successful claim, beneficiaries must be able to show that the breach in fiduciary duty can be remedied.[121] The breach must be "fairly traceable" to an injury.[122] However, the fiduciary does not have to have personally committed the act that



causes injury to establish standing.[123] Even when no actual loss was found, trustees have had to pay damages in the difference between what the pension plan would have earned had the assets been prudently invested and what the pension plan had earned due to the actual imprudent investment.[124] Indeed, "an ERISA plan need not demonstrate that it suffered a loss in order to obtain a disgorgement remedy."[125]

When beneficiaries successfully show damages, judges have prescribed equitable remedies, such as injunctions, against any and every responsible fiduciary.[126] Fiduciaries are personally liable for any breach of fiduciary duty,[127] as are co-fiduciaries who participate in, knowingly conceal, or fail to remedy a known breach of fiduciary duty,[128] so any person conducting fiduciary duties will be subject to remedies when damages are found. Such a remedy must be paid to the plan as a whole, even if an individual brought suit.[129]

PART 6

Conclusion

Climate change is already affecting human lives throughout the United States and across the planet. The financial sector is not immune to these effects. Climate change, and governmental, societal, and market responses to it, will have financial consequences for decades to come. Challenges including loss due to physical impacts, emission regulation, carbon asset stranding, transition costs, and litigation will all have material financial impacts on the market as a whole, various sectors and asset classes, and individual companies. Pension fund fiduciaries should be considering and acting to mitigate the growing climate-related risk in their portfolios. The types of financial consequences, including rapid devaluation and systemic shocks, as well as the likely impacts over the time scale over which pension funds must operate and concern themselves, make these forms of investment organizations specifically vulnerable to climate risk.

The fiduciary duties owed by pension fund fiduciaries—the duty to inquire, duty to monitor, duty to diversify, duty of loyalty, duty of impartiality, and duty to act in accordance with plan documents—serve to guide how fiduciaries should manage the portfolios they are responsible for in the context of climate change and other sources of material financial risk and opportunity. All of these duties are triggered by the reality of climate change and how it will impact our financial markets, our society, and our global economy. Actively engaging with these financial challenges and opportunities can shield a fund from unnecessary risk and loss while allowing it to achieve prudent, safe growth. A failure to acknowledge and act to address these risks may lead to financial loss, litigation, and liability.

Endnotes

1 *See* Restatement (Third) of Trusts § 77 (2007).

2 *See id.*

3 *See, e.g.*, Moody's Investor Service, *Moody's to use greenhouse gas emission reduction scenario consistent with Paris Agreement to analyze carbon transition risk* (June 28, 2016) https://www.moodys.com/research/Moodys-to-use-greenhouse-gas-emission-reduction-scenario-consistent-with--PR_351269 ("Moody's has identified 13 industries in its corporate and infrastructure portfolio as most exposed to carbon transition risk. For three sectors—coal, coal infrastructure and unregulated power utilities—material credit impacts and rating adjustments are already being felt. For the others, Moody's expects that they will be affected over the next three to five years.").

4 Several prominent economists have already projected that investing in carbon-intensive assets are likely to result in poor returns over a 20–30 year time horizon. *See* Letter to Sir Mervyn King, Chairman, Financial Policy Committee, Bank of England (Jan. 19, 2012), *available at* http://www.carbontracker.org/wp-content/uploads/2014/09/Letter-to-Bank-of-England-Financial-Policy-Committee-19th-January-2012-Final.pdf ("As policy and technology work consistently over time to reduce returns in high carbon areas while supporting low carbon ones, investing in high carbon sectors, say as an institutional investor looking to generate good returns over a 20 to 30 year period to successfully cover future pension liabilities, could result in stranded assets and poor returns.").

5 Employee Retirement Income Security Act of 1974, Pub. L. No. 93-406, 29 CFR §2550.404(a)(1)(B) (1974).

6 *See* Restatement (Third) of Trusts § 77 (2007); *see generally* BEVIS LONGSTRETH, MODERN INVESTMENT MANAGEMENT AND THE PRUDENT MAN RULE (1986).

7 *See generally* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, FIFTH ASSESSMENT REPORT (CHRISTOPHER B. FIELD ET AL. EDS., 2014).

8 *See* Paris Agreement art. 2, Dec. 12, 2015 ("Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change").

9 *See* discussion *infra* Part V.

10 *See* MERCER, CLIMATE CHANGE INVESTMENT RISK MANAGEMENT: A GUIDE FOR US PUBLIC DEFINED BENEFIT PLAN TRUSTEES 14 (2016). Under Mercer's analysis, annualized expected returns over 35 years are 7.48% under the base case (no incorporation of climate-related risk factors), 7.29% under a Transformation (2-degree) scenario, 7.45% under a Coordination (3-degree) scenario, 7.46% under a Fragmentation (4-degree) scenario with low damages, and 7.39% under a Fragmentation scenario with high damages. *Id.* In all cases, returns are lower than in the base case.

11 *See* MERCER, INVESTING IN A TIME OF CLIMATE CHANGE 17 (2015).

12 *See* MERCER, *supra* note 10, at 14 ("While the return difference between the Trans-formation and base case scenarios narrows to 19 [basis points] across a 35 year period the cumulative impact doubles to nearly 6% which on the same $1 [billion] in-vested today would equate to nearly $740 [million] in foregone returns.").

13 *See* id, at 12

14 *Id.*

15 *Id. at 11.*

16 *Id.*

17 *Id.*

18 *See* Citi Global Perspectives & Solutions, *ENERGY DARWINISM II: WHY A LOW CARBON FUTURE DOESN'T HAVE TO COST THE EARTH,* at 8, (OCT. 1. 2015) *available at* https://www.citivelocity.com/citigps/ReportSeries.action ("We examine the issue of unburnable carbon and stranded assets, in particular in which countries, industries and companies they are located, and find that at current prices, around $100 trillion of assets could be 'carbon stranded', if not already economically so.").

19 Rineesh Bansal & Stuart Kirk, *Peak Carbon Before Peak Oil*, in DEUTSCHE BANK RESEARCH HAUS, KONZEPT 19, 24 (2015), *available at* https://www.dbresearch.com/PROD/DBR_INTERNET_EN-PROD/PROD0000000000349119/Konzept_Issue_02.PDF (noting that "OPEC's refusal to cut production . . . seems perfectly rational. . . . [M]aximising production before the peak carbon deadline is what matters.").

20 HSBC BANK GLOBAL RESEARCH, *STRANDED ASSETS: WHAT NEXT? HOW INVESTORS CAN MANAGE INCREASING FOSSIL FUEL RISKS,* 1 (APR. 16, 2015), *available at* http://www.businessgreen.com/digital_assets/8779/hsbc_Stranded_assets_what_next.pdf.

21 *See* Barclays, CLIMATE CHANGE: WARMING UP FOR COP-21 8

(2015) ("In a carbon-constrained world consistent with a 2°C outcome, we estimate that the fossil-fuel industry would stand to lose $34trn (in constant 2014 $) of gross revenues over the next two-and-a-half decades relative to the current trajectory.").

22 *See* Mercer, *supra* note 10, at 12.

23 *See* Commission Guidance Regarding Disclosure Relating to Climate Change, 75 Fed. Reg. 6,289 (Feb. 8, 2010) (to be codified at 17 C.F.R. 211, 231, 241).

24 *Id.* at 27.

25 *Id.* at 6.

26 Task Force on Climate-Related Financial Disclosures, https://www.fsb-tcfd.org/about/# (last visited Sept. 14, 2016).

27 Moody's Investor Service, *Moody's to use greenhouse gas emission reduction scenario consistent with Paris Agreement to analyze carbon transition risk* (June 28, 2016), https://www.moodys.com/research/Moodys-to-use-greenhouse-gas-emission-reduction-scenario-consistent-with--PR_351269.

28 Sustainability Accounting Standards Board, Key Dates and Status, http://www.sasb.org/standards/status-standards.

29 BlackRock, Adapting Portfolios to Climate Change 2 (2016), *available at* https://www.blackrock.com/investing/literature/whitepaper/bii-climate-change-2016-us.pdf.

30 *See* Paris Agreement, *supra* note 8, at art. 4; *Paris Agreement —Status of Ratification*, UNFCCC, http://unfccc.int/paris_agreement/items/9444.php (last visited Oct. 5, 2016).

31 Freshfields Bruckhaus Deringer, A Legal Framework for the Integration of Environmental, Social, and Governance Issues Into Institutional Investment 114 (2005), (citing Employee Retirement Income Security Act of 1974, Pub. L. No. 93-406, 29 CFR §2550.404a-1(b) (1974)). *See also Donovan v. Cunningham*, 716 F.2d 1455, 1467 (5th Cir. 1983) ("Under ERISA, as well as at common law, courts have focused the inquiry under the "prudent man" rule on a review of the fiduciary's independent investigation of the merits of a particular investment, rather than on an evaluation of the merits alone.").

32 29 CFR §2550.404a-1(b); *see also GIW Industries, Inc. v. Trevor, Stewart, Burton & Jacobsen, Inc.*, 895 F.2d. 729, 732 (11th Cir. 1990).

33 29 CFR §2550.404a-1(b).

34 *In re Estate of Rowe,* 712 N.Y.S.2d 662, 665-66 N.Y. App. Div. (2000) (finding imprudence in failure to diversify, states: "[A] trustee can be found to have been imprudent for losses resulting from negligent inattentiveness ... [and failure] to conduct more than routine reviews of the IBM stock ... [with] particular con-sideration to the unique needs of this particular trust."). In another case, the court found that even though the investment manager investigated market conditions before making its investment decisions, the investment manager breached its fiduciary duty by failing to investigate the particular cash flow requirements of the fund, thereby failing to adequately diversity the fund's assets. *See GIW Industries, Inc.*, 895 F.2d. at 732-33.

35 *Glennie v. Abitibi-Price Corp*., 912 F. Supp. 993, 1001 (W.D. Mich. 1996).

36 *See* Moody's Investor Service, *supra* note 3.

37 Bevis Longstreth*, Outline of Possible Interpretive Release by States' Attorneys General Under the Uniform Prudent Management of Institutional Funds Act*, InsideClimate News, Jan 24, 2016, at 4–5, http://insideclimatenews.org/sites/default/files/documents/UPMIFAInterpretationBevisLongstrethPDF.pdf. Although this analysis applies to fiduciaries under the Uniform Prudent Management of Institutional Funds Act, which would not apply to public sector pension funds—which are subject to the Uniform Prudent Investor Act—the fundamental fiduciary obligations and concepts of prudence apply across regimes. *See id.* at 2 ("The language in Section 3 of UPMIFA derives from the Revised Model Not-for-profit Corporation Act and from the prudent investor rule of the Uniform Prudent Investor Act. . . . Of high importance to understanding the Act is the fact that the phase "care, skill and caution,". . . is said by the Drafting Committee to be "implicit in the term 'care' as used in the RMNCA", and therefore, equally implicit in that term as used in UPMIFA.").

38 *See Harris v. Amgen*, 788 F.3d 916, 935 (9th Cir. 2015) ("A court's task in evaluating a fiduciary's compliance with this [prudence] standard is to inquire whether the individual trustees, at the time they engaged in the challenged transactions, employed the appropriate methods to investigate the merits of the investment and to structure the investment.").

39 *Tibble v. Edison Int'l*, 135 S. Ct. 1823, 1828-29 (2015).

40 *Tibble*, 135 S. Ct. at 1828 (citing Bogert, et. al., Law of Trusts and Trustees §684-85 (3d ed. 2009)).

41 *See Glennie*, 912 F. Supp. at 1004 (reconsidering an investment "approximately annually would be sufficient," although the fiduciary has to take action if and when they receive negative information about a specific investment).

42 *See, e.g.*, Sudip Kar-Gupta, Annabella Nielsen & Swetha Gopinath, *Paris Climate Pact Sinks Coal Stocks, Lifts Renewable Energy*, Reuters (Dec. 14, 2015, 3:42 PM), http://www.reuters.com/article/us-climatechange-summit-stocks-idUSKBN0TX22A20151214*.*

43 *See, e.g.,* Cal. Const. art. XVI, § 17(d) (Section 17(d) of Article XVI imposes a direct obligation on board members to "diversify the investments of the system so as to minimize the risk of loss and to maximize the rate of return unless under the circumstances it is clearly not prudent to do so."); *see also Brock v. Citizens Bank of Clovis*, 1985 WL 71535 (D.N.M. 1985), aff'd 841 F.2d 344, 346 (10th Cir. 1988) (holding that investing over 65% of the plan's assets in commercial real estate concentrated in one geographic area exposed the plan to a singular economic downturn, which was "precisely the risk" diversification seeks to minimize)*.*

44 Restatement (Third) of Trusts § 90 cmt. *g. See also Donahue v. Donahue*, G040259 (Cal. Ct. App. Feb. 11, 2010).

45 *See* Bogert, et. al., The Law Of Trusts And Trustees § 611.

46 *Metzler v. Graham,* 112 F.3d 207, 209 (5th Cir. 1997).

47 *See Metzler,* 112 F.3d at 209.

48 Restatement (Third) of Trusts § 79 (2007) (emphasis added).

49 Restatement (Third) of Trusts § 79, cmt. (g)(1).

50 *White v. Pub. Emps. Ret. Bd.,* 268 P.3d 600, 607 (Or. 2011).

51 *See White,* 268 P.3d at 605.

52 *See The Woodward School for Girls, Inc. v. City of Quincy,* 13 N.E. 3d 579, 591-92 (Mass. 2014).

53 *See e.g.,* Justin Louiseau*, Did Obama's Clean power Plan Just Kill Coal Stocks?,* The Motley Fool (Aug. 10, 2015), http://www.fool.com/investing/general/2015/ 08/10/did-obamas-clean-power-plan-just-kill-coal-stocks.aspx ("In the wake of Obama's announcement, a corpor-ation that enjoyed a nearly $900 million market capitalization one year ago officially filed for Chapter 11 bankruptcy as it 'weathers a historically challenged coal market.' Even Peabody Energy Corporation, one of the largest coal corporations with mines in the U.S. and Australia and a 25-country market, saw share prices plummet following the unveiling.").

54 *See Cent. States, Se. & Sw. Areas Pension Fund v. Cent. Transp., Inc.,* 472 U.S. 559, 571–72 (1985) (noting that the duty of loyalty is "derived from the com-mon law of trusts. . . . Under the [duty of loyalty], a plan fiduciary 'shall discharge his duties with respect to a plan solely in the interest of the participants and beneficiaries and . . . for the exclusive purpose of providing benefits to participants and their beneficiaries; and . . . defraying reasonable expenses of administering the plan.'" (citing 29 U.S.C. § 1104(a)(1)(A))).

55 ERISA § 404(a); 29 U.S.C. § 1104(a).

56 Restatement (Third) of Trusts § 78 Duty of Loyalty cmt. (f).

57 *Rippey v. Denver U.S. Nat. Bank*, 273 F. Supp. 718, 738 (D. Colo. 1967).

58 *See Bd. of Trs. v. Mayor & City Council of Balt. City,* 562 A.2d 720, 738 (Md. Ct. Spec. App. 1989) ("It is clear that the trustee's duty of loyalty extends beyond a prohibition against self-dealing and conflict of interest, two wrongs that are not present in this case. Even if the trustee has no personal stake in a transaction, the duty of loyalty bars him from acting in the interest of third parties at the expense of the beneficiaries."); *see also Donovan v. Bierwith,* 680 F.2d 263, 271 (2d Cir. 1982).

59 Christian Rahaim, The Fiduciary: An In-depth Guide to Fiduciary Duties—From Studebaker to Enron (iUniverse, Inc. 2005). *See also Eddy v. Colonial Life Ins. Co.,* 919 F.2d 747, 750-51 (D.C. Cir. 1990), *Bussian v. RJR Nabisco, Inc.,* 223 F.3d 286, 296 (5th Cir. 2000).

60 *See, e.g., Board of Trustees v. City of Baltimore,* 562 A. 2d 720 (Ct. App. Md. 1989) ("Nevertheless, we do not believe that a trustee necessarily violates the duty of loyalty by considering the social consequences of investment decisions. If, as in this case, the costs of considering such consequences are *de minimis,* the trustee ordinarily will not have transgressed that duty.").

61 *See* Interpretive Bulletin 94-1, 29 C.F.R. § 2509.94-1, 59 Fed. Reg. 32,606 (1994); 29 C.F.R. § 2509.08-1, 73 Fed. Reg. 61,734 (2008); 29 C.F.R. § 2509.2015-01, 80 Fed. Reg. 65,135 (Oct. 26, 2015).

62 *See* U.N. Environment Programme Finance Initiative, Fiduciary Responsibility: Legal and Practical Aspects of Integrating Environmental, Social and Governance Issues into Institutional Investment 9 (July 2009).

63 U.N. Global Compact, U.N. Environmental Programme Finance Initiative, Principles for Responsible Investment & Generation Foundation, Fiduciary Duty in the 21st Century 10 (Sept. 2015).

64 Interpretive Bulletin Relating to the Fiduciary Standard under ERISA in Considering Economically Targeted Investments, IB 2015-01 (Oct. 22, 2015).

65 *See* CalPERS, Global Governance Principles, Appendix G, *available at* https://www.calpers.ca.gov/docs/forms-publications/global-principles-corporate-governance.pdf.

66 *See id.* at Appendix H.

67 *See* Restatement (Third) of Trusts § 76(1) (2007) ("The trustee has a duty to administer the trust, diligently and in good faith, in accordance with the terms of the trust and applicable law.").

68 Restatement (Third) of Trusts § 76 cmt. b (2007).

69 Restatement (Third) of Trusts § 76 cmt. b(1) (2007).

70 *Bd. of Trs.* 562 A.2d at 737 ("Thus, if . . . social investment yields economically competitive returns at a comparable level of risk, the investment should not be deemed imprudent.").

71 *See* Paris Agreement, supra note 8 at art. 21; *Paris Agreement – Status of Ratification*, UNFCCC, http://unfccc.int/paris_agreement/items/9444.php (last visited Oct. 5, 2016).

72 *The T.J. Hooper v. N. Barge Corp.,* 60 F.2d 737, 740 (2d Cir. 1932).

73 *See* 2 Degrees Investing Initiative, *All Swans are Grey in the Dark* (forthcoming Nov. 2016).

74 Kathy Mulvey et al. *The Climate Accountability Scorecard: Ranking Major Fossil Fuel Companies on Climate Deception, Disclosure and Action,* (Union of Concerned Scientists, October 2016) at 16 (Table 5). *Available at* http://www.ucsusa.org/sites/default/files/attach/2016/10/climate-accountability-scorecard-full-report.pdf.

75 *See* Mercer, *supra* note 11.

76 *See* Mercer, *supra* note 10, at 11.

77 BlackRock, *supra* note 29, at BlackRock also notes that "[c]limate-aware investing is possible without compromising on traditional goals of maximizing investment returns," and concludes "all investors should

incorporate climate change awareness into their investment processes." *Id.* at 2.

78 Judgment on Motion to Dismiss, *Juliana v. United States*, No. 6:15–cv–1517–TC (D. Or. Apr. 8, 2016).

79 Amended Complaint at ¶ 16-97, *Juliana*, No. 6:15–cv–1517–TC (D. Or. Sept. 10, 2015).

80 *Id.* at ¶ 263–76, 307–10.

81 Judgment on Motion to Dismiss at 23, *Juliana,* No. 6:15–cv–1517–TC (D. Or. Apr. 8, 2016).

82 *See* Shannon Hall, *Exxon Knew about Climate Change almost 40 years ago*, SCIENTIFIC AMERICAN, Oct. 26, 2015, http://www.scientificamerican.com/article/exxon-knew-about-climate-change-almost-40-years-ago.

83 Suzanne Goldenberg, *Exxon knew about climate change in 1981, email says—but it funded deniers for 27 more years,* THE GUARDIAN, July 8, 2015, https://www.theguardian.com/environment/2015/jul/08/exxon-climate-change-1981-climate-denier-funding.

84 *See* Civil Action Demand to ExxonMobil Corporation, Commonwealth of Massachusetts, 2016-EPD-36 (April 19, 2016); Justin Gillis & Clifford Krauss, *Exxon Mobil Investigated for Possible Climate Change Lies by New York Attorney General,* N.Y. TIMES, NOV. 5, 2015, http://www.nytimes.com/2015/11/06/science/exxon-mobil-under-investigation-in-new-york-over-climate-statements.html.

85 Press Release, New York State Attorney General Eric T. Schneiderman, A.G. Schneiderman Secures Unprecedented Agreement With Peabody Energy to End Misleading Statements and Disclose Risks Arising from Climate Change (Nov. 9, 2015).

86 *See* Ivan Penn, *California to investigate whether Exxon Mobil lied about climate change risks*, L.A. TIMES, Jan. 20, 2016, http://www.latimes.com/business/la-fi-exxon-global-warming-20160120-story.html; David Hasemyer, *Maryland Attorney General Suggests His Office May Investigate Exxon, Too*, INSIDE CLIMATE NEWS, Feb. 24, 2016, http://insideclimatenews.org/news/23022016/maryland-attorney-general-investigate-exxon-climate-change.

87 Clifford Krauss, *Exxon Concedes It May Need to Declare Lower Value for Oil in Ground,* NY TIMES (Oct. 28, 2016), http://www.nytimes.com/2016/10/29/business/energy-environment/exxon-concedes-it-may-need-to-declare-lower-value-for-oil-in-ground.html?_r=1.

88 *Id*; Press Release, Robbins Geller Rudman & Dowd, Robbins Geller Rudman & Dowd LLP Files Class Action Suit Against Exxon Mobil Corporation (Nov. 7, 2016), http://www.rgrdlaw.com/cases-exxon.html.

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100 *See In Re Enron Corp. Sec., Derivative & ERISA Litig.*, 284 F. Supp. 2d 511 (S.D. Tex. 2003).

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102 *See* Employee Benefits Sec. Admin., Dep't of Lab., *Meeting Your Fiduciary Responsibilities* (May 2004), *available at* https://www.dol.gov/ebsa/publications/fiduciaryresponsibility.html.

103 *See Credit Managers Assoc. v. Kennesaw Life & Accident Insurance,* 809 F.2d 617, 625-26 (9th Cir. 1987).

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106 29 U.S.C. 1102(a).

107 19 U.S.C. 1002(38).

108 *See* Preamble to Department of Labor Regulation § 2550, 404c-1 at 57; Fed. Reg. 46922 (Oct. 13, 1992). 29 C.F.R. § 2550 *et. seq.*

109 Note, however, that ERISA preempts negligent supervision claims against fiduciaries of private funds. *See* Craig C. Martin et. al., ERISA LITIGATION HANDBOOK 193 (Jenner & Block 2010), *available at* https://jenner.com/system/assets/assets/6849/original/ERISA_20Litigation_20Handbook_205th_20Ed_20FINAL.pdf

110 Restatement (Third) of Agency, § 7.05(1) Principal's Negligence in Conducting Activity Through Agent; Principal's Special Relationship with Another Person.

111 *Scardelletti v. Bobo*, 897 F. Supp. 913, 919 (D. Md. 1995) (citing as examples *Roth v. Sawyer-Cleator Lumber Co.,* 16 F.3d 915 (8th Cir.1994); *Donovan v. Cunningham*, 716 F.2d 1455, 1474 (5th Cir.1983)).

112 *Scardelletti,* 897 F. Supp. 913 at 919.

113 *Whitfield v. Cohen*, 682 F. Supp. 188, 196 (S.D.N.Y. 1989) ("If a fiduciary is negligent in selecting, instructing, or supervising an agent, he will be held liable to the trust beneficiary for any resulting loss.").

114 *Whitfield,* 682 F. Supp. at 196.

115 *Leigh v. Engle,* 727 F.2d 113, 125-26 (citing *Donovan v. Bierwirth,* 538 F. Supp. 463, 470 (E.D.N.Y. 1981)).

116 In *Woolsey v. Marion Labs, Inc.*, 934 F.2d 1452, 1458 (10th Cir. 1991), in determining whether an administrator's decision to deny a former employee's request to receive half of his pension benefits in employer's stock rather than in cash was proper on the basis that it may have a detrimental effect on the value of the stock, the Court noted that "ERISA requires that the Plan be administered with an eye solely to the best interests of *all* beneficiaries." *Woolsley*, 934 F.2d at 1458 (emphasis added). It was therefore held that the administrators' consideration of "the effect payment of his benefits in stock would have on . . . the remaining beneficiaries, and their determination that such payment would be to the detriment of future beneficiaries," was allowable. *Id.*

117 *See Cent. States, Se. & Sw. Areas Pension Fund,* 472 U.S. at 572 ("One of the fundamental common-law duties of a trustee is to preserve and maintain trust assets.") (citing George G. Bogert, et al, The Law of Trusts and Trustees, § 582 (rev. 2d ed. 1980)).

118 George G. Bogert, et al, The Law of Trusts and Trustees, § 582 (rev. 2d ed. 1980).

119 *See Tibble,* 135 S. Ct. 1193 (2015).

120 *See First Ala. Bank v. Martin,* 425 So. 2d 415 (Ala. 1982) (determining the trustee was held liable for the management of a well-diversified common trust fund because the fund included the bonds of several real-estate investment trusts and some publicly traded stocks that the court concluded, on a security-by-security basis, were too risky).

121 29 U.S.C. § 1132(a)(2).

122 *See Merriam v. Demoulas,* 2013 U.S. Dist. LEXIS 77600, at 10 (D. Mass. June 3, 2013).

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124 *See Pepper,* 663 F.3d at 221. *Plasterers' Local Union No 96. Pension Plan v. Pepper*, 663 F.3d 210, 221 (4th Cir. 2011).

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126 29 U.S.C. § 1132(a)(3).

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