Why Divest?

Nick Stubler

Compiled on November 21, 2015

Fossil Fuel Divestment as a Strategy for Combatting Climate Change

Fossil fuel divestment as a strategy for combatting climate change has grown rapidly since its inception in the early months of 2012. Proponents of the divestment campaign argue that it is one of the most effective strategies available for preventing global warming in excess of two degrees Celsius; opponents argue that the strategy is misguided, ineffective, and even detrimental to the goal of combatting climate change. This paper seeks to explore the merits of fossil fuel divestment as a strategy to combat climate change, with a particular focus on the arguments used to support and attack fossil fuel divestment by universities. In its support for divestment, this paper largely ignores the moral imperative and financial incentives for divestment, and rather focuses on clearly delineating and articulating the purpose of divestment and its efficacy in preventing global warming in excess of two degrees Celsius.

The following page begins a brief introduction to climate change and why it matters. Page 5 begins the explanation for why the divestment campaign targets the fossil fuel industry in particular. The argument in support of divestment as a tool for combatting climate change begins on page 8, and and exploration and analysis of the dominant arguments against divestment follow on page 13. An expose of the progress of the divestment movement, as well as the reaction of the fossil fuel industry to this progress begins on page 27, and the paper concludes on page 32.

Why Climate Change?

Climate change is real, it is anthropogenically driven, and it poses an existential threat to the future of humanity. Deserts are growing while the world's ice caps are melting. Our oceans are acidifying, and pollution visibly chokes our greatest cities. Record-breaking heat, droughts, and storms threaten millions of people. Experts agree that global warming caused by the combustion of fossil fuels will continue to hasten and intensify these tragic climate disasters. These undeniable consequences of climate change are accelerating and threaten the economic and social stability of the United States and the world.

There is increasing evidence that the global climate is entering a state never before experienced by the human species. In March 2015, the carbon dioxide concentration in the atmosphere remained above 400 parts per million for a full month, a threshold last surpassed over a million years ago at a time when modern humans had yet to evolve (Vaughan, 2015). The past 360 consecutive months have been warmer than the 20th century global average, meaning that no one under the age of thirty has ever experienced a month with below average temperatures (Holthaus, 2015). This 30-year streak has a particularly acute significance: because climatology defines "normalcy" for a given location by a continuous 30-year stretch of data, this streak effectively allows climate scientists to understand global warming as the new global normal (Holthaus, 2015). The year 2014 was the hottest on record (with 2015 on track to surpass this mark), and the 10 hottest years on record have all occurred since 1998 (Kahn, 2015) (NOAA National Centers for Environmental Information, 2015). Left unchanged, our society will quickly surpass the critical warming threshold of two degrees Celsius, a limit internationally agreed upon at the United Nations Framework Convention on Climate Change Copenhagen Conference delineating a 'safe' increase in average global temperature. Any temperature increase in excess of this limit will severely impact the planet in ways that are irreversible.

Climate change is aptly understood as being a threat multiplier, a power that will complicate and adversely promulgate many of the most significant threats already being faced by humanity: poverty, food scarcity, displacement, and war. On March 30th, 2014, the Intergovernmental Panel on Climate Change stated: "Throughout the 21st century, climate-change impacts are projected to slow down economic growth, make poverty more difficult, further erode food security, and prolong existing and create new poverty traps, the latter particularly in urban areas and emerging hotspots of hunger" (Intergovernmental Panel on Climate Change, 2014). On November 8, 2015, the World Bank quantified this prediction for the immediate future, explaining that without immediate and far reaching action, climate change has the power to push more than 100 million people back into poverty in the next 15 years, with the poorest regions of the world being hit the hardest (World Bank 2015). Two degrees of warming would displace an estimated 150 million people worldwide with rising sea levels. The displacement of populations, disease, droughts, and the instability of agricultural industries will disrupt the societal structures around the globe and may lead to massive conflict. In fact, the recent political uprising and conflict in Syria has been linked to a massive drought that ravaged the Middle East from 2006-2009. This drought was shown to be exacerbated by climate change, demonstrating that climate change is already intensifying pre-existing conflicts (Fountain, 2015).

World leaders are becoming increasingly cognizant and concerned with the growing threat of climate change. Unfortunately, predicted effects of climate change are presenting themselves much earlier than expected. On May 6th, 2014, the White House released a climate report stating, "climate change, once considered an issue for a distant future, has moved firmly into the present," and that "there is mounting evidence that harm to the nation will increase substantially in the future unless global emissions of heat-trapping gases are greatly reduced" (Gillis, 2014). UN Secretary-General Ban Ki Moon affirms that "Climate change is the single greatest threat to sustainable development" (United Nations Regional Information Center, 2013)

Not only is climate change already impacting the way mankind lives on earth, but it is also having dramatic impacts on our natural world in virtually every ecosystem. The biodiversity that supports the complex systems upon which all life depends are in grave danger. Conservative reports from The Nature Conservancy predict that 25% of earth's species may face extinction by 2050 due to the effects of climate change if immediate action is not taken (The Nature Conservancy, 2015). The significance of this trend cannot be understated. Scientists continue to discover new interconnections between human activity and the biodiversity that supports our livelihood. The more biodiversity we compromise by altering the climate it is perfectly adapted to, the higher the risk we pose to human society by diminishing necessary ecosystem services. Furthermore, the longer we wait to act on our changing climate, the more we stand to lose in terms of health, stability, and prosperity.

And while the impacts of climate change are already being felt, it is important to recognize the longevity of this threat, and the significance of our action or inaction. The greenhouse gasses emitted today will continue to warm the planet for the next millennium, meaning that the combustion of fossil fuels today will negatively impact the next 1,000 years of life on Earth (Environmental Protection Agency, 2015). Future generations have an indefeasible right to live on a planet with a safe and hospitable climate, and as informed human beings with agency we have a duty to act on climate and prevent catastrophic climate change from being the norm for the next 1,000 years. We are at a historical precipice, one where both our decisions as well as our indecisions will directly affect the future of the human species as well as the survival of our planet. History books will mark climate change as the defining issue of our time, and quite frankly humanity's existence to date, and our personal legacy's will be defined by future generations based on our actions on climate change.

Why Target the Fossil Fuel Industry?

The international campaign calling for divestment from fossil fuels has become one of the most prominent strategies to effectively combat the imminent threat of climate change. The foundation of the divestment movement and its focus on the fossil fuel industry can be summed up with a quote from James Hansen: “What has become clear from the science is that we cannot burn all of the fossil fuels without creating a very different planet.” The campaign is rooted in the foundational understanding of the discrepancy between the amount of carbon we can safely combust and the amount of carbon the fossil fuel industry plans to extract. This understanding was first articulated by the Carbon Tracker Initiative’s 2011 report, “Unburnable Carbon - Are the world’s financial markets carrying a carbon bubble?”, and later popularized in Bill McKibben’s 2012 Rolling Stone’s Article, “Global Warming's Terrifying New Math” (Carbon Tracker Initiative, 2011) (McKibben, 2012).

The Carbon Tracker Initiatives’ report, and the foundation of the divestment movement, can be explained with three numbers: The first number is two degrees Celsius. As mentioned above, one of the few issues of climate change that the international community has agreed upon is that any warming greater than two degrees Celsius in global temperatures will have catastrophic consequences. It is important to note that this agreement is by its very nature conservative, as it had to garner international support from states such as Saudi Arabia, Russia, and the United States. The second number is 565 gigatons of carbon emissions. In 2011, at the time of this report’s publication, this was the amount of carbon humanity could emit before passing the two-degree threshold. It can be understood as the ‘safe’ number of global carbon emissions, a carbon budget for a sustainable biosphere. The third and most ominous number is 2,795 gigatons, which describes the amount of carbon already accounted for in the proven fossil fuel reserves owned by the coal, oil, and gas industry in 2011. In layman’s terms, this quantity can be understood as the amount of fossil fuels that have a 90% certainty of being extracted; their emissions are estimated to be 65% attributable to coal, 22% to oil, and 13% to gas.

Thus, the fossil fuel industry owns nearly five times the amount of carbon that humanity can safely burn. It is this premonitory understanding upon which divestment is rooted. The scientific consensus is clear and overwhelming; we cannot safely burn even a fourth of global fossil-fuel reserves without dangerously warming the planet for several thousands of years. Consequently, the fossil fuel industry must be required to leave 80% of the world's proven reserves in the ground if we are to ensure a safe and hospitable planet for future generations to enjoy. As such, the fossil fuel industry will have to forgo the profits of burning these reserves, something accountants refer to as 'stranded assets.'

Many of the leading fossil fuel companies have been very outspoken in their refusal to accept the prospect of stranded assets following the publication of the Carbon Tracker Initiative's 2011 report. As ExxonMobil explain in their official statement on the report, "We are confident that none of our hydrocarbon reserves are now or will become 'stranded.'" Two months later, Shell published a similar letter, stating that "the world will continue to need oil and gas for many decades to come, supporting both demand, and oil and gas prices. As such, we do not believe that any of our proven reserves will become stranded." Hungarian company MOL reaffirmed these positions in more candid terms, explaining, "We think that the 'carbon budget' approach is misleading. While climate change is certainly real, we are facing large uncertainties regarding its parameters, so we should be talking about probabilities and not absolute limits. In this vein, given the limits on our technologies and political realities, we expect that global carbon emission will exceed the level that is currently estimated to give a fifty percent chance of staying below two degrees warming" (Carbon Brief Staff, 2014).

Even more problematic than the fossil fuel industry's commitment to burning the already proven reserves is their active investment in exploiting new fossil fuel reserves. Although the world's current fossil fuel reserves are already sufficient to warm our planet by an estimated six degrees Celsius, these companies continue to use their vast financial capital to secure new reserves. The oil industry has poured $341 billion into the development of new tar sands resources (Wells, 2012). ExxonMobil alone plans to invest $190 billion in the exploration and development of new oil and gas resources over the next five years (Fowler, 2013). The fossil fuel industry's continued investments in expanding fossil fuel reserves clearly demonstrates the paucity of their interest in preventing catastrophic climate change.

The understanding that burning more than 20% of fossil fuel reserves will have irreversible climatic impacts, coupled with the fossil fuel industry's outspoken commitment to burn the entirety of their reserves, is the reason divestment targets the fossil fuel industry in particular. Clearly, the fossil fuel industry has no intention of limiting their profits in order to combat climate change; as a result, the fossil fuel industry must be forced to leave 80% of their reserves in the ground. Strict legislative regulations will be required to do so, and divestment has emerged as a leading strategy to enable the necessary public policies to be enacted.

Why Divest?

The overwhelming threat of climate change, as well as the blatantly irreconcilable business plan of the fossil fuel industry in preventing catastrophic climate change, are undeniable. The world cannot endure an increase of over two degrees Celsius without suffering irreparable climate destruction, and as such the fossil fuel industry cannot be allowed to burn 80% of the proven reserves they have explicitly committed to burning. The only question that remains is how to effectively prevent the fossil fuel industry from maintaining their status quo. Divestment has emerged as one of the most prominent and dominant strategies for achieving this goal.

The ultimate purpose of the fossil fuel divestment campaign is to shift the social discourse to a point where the regulations necessary to combat climate change become politically demanded by society. It is a methodology inspired by the proven efficacy of the anti-Apartheid movement decades ago. In the 1970s and 1980s, many US and European institutions divested from all companies doing business with the Apartheid regime with the purpose of morally stigmatizing the Apartheid regime. The campaign proved immensely successful, with Nelson Mandela crediting it as one of the most significant factors that led to the fall of Apartheid (Mandela,1990). The political effectiveness of the campaign has also been endorsed by many non-political institutions; Barclays, for example, credited divestment for their decision to terminate business operations within the Apartheid regime, with Sir Timothy Bevan, the chairman of Barclays, explaining that ''World opinion counts. It affects commerce. And world opinion has changed quite a lot this year'' (Lohr, 1986).

The merits of fossil free divestment have more recently been championed by Archbishop Desmond Tutu, who saw the power and success of divestment firsthand when fighting the Apartheid regime and has endorsed the fossil fuel divestment movement as one of the most important strategies for combatting climate change. In his own words: “People of conscience need to break their ties with corporations financing the injustice of climate change.” Tutu goes on to explain, “We cannot necessarily bankrupt the fossil fuel industry. But we can take steps to reduce its political clout, and hold those who rake in the profits accountable for cleaning up the mess. And the good news is that we don't have to start from scratch. Young people across the world have already begun to do something about it. The fossil fuel divestment campaign is the fastest growing corporate campaign of its kind in history" (Carrington, 2014).

To be clear, just as it was for the Anti-Apartheid movement, so too does the power of fossil fuel divestment lie in moral stigmatization, not financial leverage. The campaign fully acknowledges that the financial impact of fossil fuel divestment will have limited impacts relative to the massive wealth of this industry. Rather, divestment from fossil fuels is first and foremost a moral stand. The campaign is meant to politically bankrupt the fossil fuel industry, and encourage a paradigmatic shift in the way society views the fossil fuel industry. Political donations from the fossil fuel industry must come to be seen in the same light as political funding from the tobacco industry; the politicians who are charged with regulating the fossil fuel industry must face political consequences for accepting donations from these companies if effective regulations are to be implemented. The importance and role of divestment is clearly articulated by Ben Caldecott, Director of the Stranded Assets Programme at the University of Oxford's Smith School of Enterprise and the Environment: "The outcome of the stigmatization process, which the fossil fuel divestment campaign has now triggered, poses the most far-reaching threat to fossil fuel companies and the vast energy value chain. Any direct impacts pale in comparison."

Universities must play a particularly prominent role in this movement. Universities are presented with an incredible opportunity, and responsibility, to lead society forward. As centers of knowledge and ethics, universities have immense power to shape societal norms and discourse, to be role models in our community. Furthermore, higher education is intimately linked with the future. As a result, it is the duty of these institutions to integrate morality into their investments, ensuring that their money is being allocated to industries helping to build a more just and sustainable future. Universities have long held reputations for being institutions of radical social progress, and it is imperative that they lead the charge in changing the societal discourse through the stigmatization of the fossil fuel industry. University of Denver Chancellor Coombe affirmed this understanding when explaining his decision to commit the University of Denver to carbon neutrality by 2050, saying that "universities are agents of change, and when it comes to an appropriate response to climate change and sustainability, we should be on the leading edge". He went on to state that universities are good at change and because of that, they are able to move vigorously on issues of sustainability (Staff, 2008).

To emphasize, divestment is not an end it itself. Neither the immediate moral or financial impacts of divestment are believed to be an effective outcome for targeting climate change. Rather, it is a vehicle for promoting the implementation of public policy solutions with the power to effectively combat climate change by preventing 80% of the world's proven fossil fuel reserves from being combusted.

To clarify, we already have the capacity to transfer to a carbon neutral society given current technology. In a study published earlier this year, Stanford laid out a road map for every state in the country to convert their all-purpose energy systems (electricity, heating/cooling, transportation, industry) to ones entirely powered by renewables (wind, water, sunlight) to 80-85% by 2030 and 100% by 2050 solely using technologies present today. (Jacobson et al., 2015). Furthermore, renewables, according to the International Energy Agency, are becoming increasingly cost competitive with fossil fuels, making this transition not only technologically possible but economically feasible (Patel, 2015). In fact, solar energy is set to replace fossil fuels and uranium as the most profitable source of energy in Japan by the end of 2015 (Agnihotri, 2015).

In light of the technological feasibility of transferring to a carbon free energy system, all that is missing is the political will to do so. The role of grassroots activism in providing the political environment necessary for political action is well understood. In a meeting with social justice activists following his election in 1932, Franklin Delano Roosevelt famously remarked: “I agree with you, I want to do it, now make me do it.” Citizens must come to demand immediate action on climate change from our politicians, and divestment is a key strategy for providing the political encouragement to stand up to the fossil fuel industry and mandate that we rapidly transition away from our fossil fueled economy. When renowned institutions such as Syracuse University and the Rockefeller Brothers Fund divest from fossil fuels, they send a clear message to society that the business model of the fossil fuel industry is inherently unsustainable and unethical, and encourages the greater public to begin internalizing this same understanding. These institutions act as social thought leaders, and their moral condemnation is the most rapid way towards reshaping the social zeitgeist around the issue to the point where political action not only becomes viable but inevitable.

Unfortunately, these regulations are needed if we are to transition to a sustainable energy system before it is too late. Believing that the fossil fuel industry will make this shift on their own is as naive as it is ignorant. In the words of Gus Speth, the former dean of the Yale School of Forestry and Environmental Studies, “A reliably green company is one that is required to be green by law.” This belief is clearly affirmed by a recent study conducted by PwC, which found that less than half (46%) of the chief executives of the world’s largest corporations say that even a binding agreement on climate change at the UN’s climate summit in Paris would not push them to prioritize the issue of climate change and adjust their business practices in accordance (Balch, 2015). In the words of John Browne, then CEO of BP and now chairman of the gas giant Cuadrilla, the fossil fuel industry is not and could not be influenced by climate change, instead explaining that “corporations have to be responsive to price signals. We are not public service.”

This viewpoint is understandable; “why would notoriously ruthless for-profit companies accept a business model that relies on them not competing with large parts of the energy sector (wind and solar), requires that they submit to a huge range of costly regulation, all with the eventual goal of putting themselves out of business?” (Klein, 2014). The bottom line is simple: the fossil fuel industry will not forgo the profits of 80% of their proven reserves of their own volition. The converse is equally true: the fossil fuel industry must be forced to leave 80% of their proven reserves in the ground if we are to maintain a safe and hospitable climate, and effective regulations are necessary for this to happen. Unfortunately, while these necessary regulations currently are not politically feasible, the fossil fuel divestment campaign shows promise as one of the key strategies for creating the social environment where effective action on climate change becomes feasible and inevitable.

Why Not Divestment?

Hundreds of individuals have attacked and condemned the strategy of divestment since its birth. To date, all the main arguments made against divestment can be categorized into three headings outlined below: that it is not the role of institutions to divest, that divestment is ineffective at combatting climate change, and that divestment impairs effective action on climate change. Given the focus of this paper, the language of each has been tailored to reflect the arguments against university divestment, in particular. However, these same three arguments are employed when denigrating fossil fuel divestment regardless of institutional affiliation. While it is important to understand and engage with these arguments, after significant research and analysis I do not believe they bear much credence, each containing incongruities that I will sequentially address.

<u>It Is Not the Role of Universities to Divest</u>

Arguments within this framework seek to demonstrate that it is not the role nor responsibility of universities to divest. The first line of thought argues that divestment is incompatible with the mission of universities, and as such, that divestment is beyond the jurisdiction of universities; opponents go on to tie the purpose of the endowment to the purpose of the universities, further arguing that the endowment cannot be used as a tool for social change. The second train of thought argues that it is impossible for any institution to engage in 100% ethical investments, and as such does not believe it is the responsibility of universities to make value judgments when weighing the benefits and negatives of each investment. The final argument within this category argues that divestment from fossil fuels is inherently hypocritical, and consequently that divesting would be intellectually inconsistent.

First and foremost, opponents argue that as institutions charged with education, universities have a duty to remain unbiased and to refrain from aligning themselves with singular sides of certain issues to prevent telling their students what they should think and believe. Instead, these opponents argue that the true role of universities is to educate, encourage thoughtful debate, and provide research so that policy makers can make informed decisions, and go on to argue that divestment is incompatible with these missions (discussed in detail in the third subheading of this section). Some critics further develop this line of thinking, arguing that because it is not the purpose of universities to combat climate change, that endowments should not be employed as a tool for social change. Instead, they argue that the sole focus of this funding should be to empower the institution to provide the best education possible, and as such universities have no right or purpose of politicizing their investments (Telemacque, 2015). Consequently, the argument follows that individuals charged with managing endowments have the sole responsibility of growing the endowment, not leveraging its power to make moral statements. This rhetoric was first championed and popularized by Harvard in their negative response to divestment, where President Faust argued that "the endowment is a resource, not an instrument to impel social or political change" (Faust, 2013). President Faust, an individual that has largely shaped the negative response to divestment, goes on to fully articulate Harvard's opposition to divestment: "Harvard is an academic institution. It exists to serve an academic mission — to carry out the best possible programs of education and research. We hold our endowment funds in trust to advance that mission, which is the university's distinctive way of serving society. The funds in the endowment have been given to us by generous benefactors over many years to advance academic aims, not to serve other purposes, however worthy. As such, we maintain a strong presumption against divesting investment assets for reasons unrelated to the endowment's financial strength and its ability to advance our academic goals" (Faust, 2013).

However, the argument that combatting climate change is inconsistent with the mission and purpose of higher education is misguided. At its core, the purpose of higher education is to prepare students for successful futures, and refusing to take a moral stand on climate change undermines their very opportunity to have a decent future. A critical component of providing students the opportunity to pursue successful futures is to ensure that our education system contributes to a truly sustainable society and economy, an imperative that is irreconcilable with funding the industry driving climate change. While refraining from taking a position on partisan issues such as tax plans is understandable, climate change can not be understood as a partisan issue. Rather, climate change is a generational issue, and as institutions committed to the service of future generations, universities have a duty to do everything in their power to combat climate change. Furthermore, education should not be limited to hard sciences, but should also seek to develop the moral and ethical values of its students. This responsibility can only be effectively carried out when the institution leads by example, demonstrating to its student body and greater community that it is practicing what it preaches. Realigning institutional investment practices in accordance with the institutionally purported mission and vision is a critical step towards being a more effective teacher of ethical values.

The second argument that falls within this category is more nuanced, and posits that because it is impossible to employ 100% just and ethical investment practices, that it doesn't make sense to begin eliminating some investments because they are unethical. These opponents reason that because every investment is guaranteed to have its positives and negatives, ethically speaking, that demanding "no unethical investments" is empty rhetoric when really tested (Sharif, 2014). Furthermore, advocates of this perspective develop this viewpoint to argue that because every investment will have positives and negatives, it is not the role of universities to weigh these against one another and make value statements based on what positives they arbitrarily believe to outweigh other negatives.

This argument lacks merit for a number reasons. First, assuming that it really is impossible to employ a 100% ethical investment strategy, this should not preclude institutions from actively working to maximize the ethics of their portfolios. A similar thought pattern could lead one to condemning the work of surgeons, because they are unable to save 100% of their patients. Second, the fossil fuel divestment campaign is not asking institutions to make value based judgments on every investment;

rather, the campaign specifically asks institutions to divest from a clearly articulated list of 200 fossil fuel companies, eliminating the ‘impossibility’ of effectively weighting positives against negatives. Finally, and perhaps most importantly, it is not unreasonable to claim that is entirely possible to employ 100% sustainable investments. More and more tools such as the MSCI ESG Manager enable conscientious investors to evaluate the ethical standards of each investment to ensure their investment practices line up with their values, enabling institutions to easily employ ethical and sustainable investment strategies (MSCI, 2015).

The final framework within this category argues that divesting from fossil fuels is hypocritical, and as such it is not the duty of any university that employs the use of fossil fuels to go forth and divest from fossil fuels. This framework was first popularized by Harvard President Faust (Faust, 2013), but has since been expanded by others, many of whom write for the financial industries (Epstein, 2013) (Wall Street Journal, 2014) (Navarro-Genie, 2014) (Pioneer Press, 2014) (Saunders, 2015). These individuals begin with the argument that because our society is dependent upon the production and combustion of fossil fuels, it is illogical to make such a strong value statement against the industry providing this service. Many progress this reasoning further, arguing that the utilization of fossil fuels is not a “necessary evil” but rather posit that there is a moral imperative to make use of the most productive energy sources available to us at any point in time. They argue that because there are not currently sufficient replacements for transitioning to a fossil free economy tomorrow, transferring to a fossil free portfolio tomorrow is intellectually inconsistent. Finally, they conclude this argument by criticizing fossil fuel divestment for unjustly stigmatizing the fossil fuel industry, instead arguing that these institutions should be educating their students on the social benefits historically produced by this industry.

These attacks assume that the fossil fuel divestment campaign is entirely ignorant of society’s dependence on oil. On the contrary, it is the understanding of society’s deep reliance upon this fuel source that drives the strategy of divestment. Activists fully realize that it is not possible to simply flip a switch to become fully renewable, and acknowledge our dependence upon the fossil fuel industry for the time being. Rather, divestment is one of the strategies that has been developed to solve this problem. To reiterate, divestment is meant to produce the political environment necessary for effective policies and regulations with the power to spur a transition to a renewable economy to be activated. Furthermore, the argument that we cannot make a positive value statement now because it is inconsistent with our past dependence on fossil fuels is ludicrous, largely because society was not previously aware of the adverse climate impacts produced by burning fossil fuels. This faulty reasoning is perhaps best articulated by the Rockefeller Brothers Fund's decision to divest from fossil fuels, despite the fact that the fund's very origins lie in the fossil fuel industry. Stephen Heintz, president of the Rockefeller Brothers Fund, explained their decision to divest, stating that "for a fund that is so devoted to fighting climate change and helping to prevent climate catastrophe, to continue to be invested in fossil fuels that are actually causing climate change just was morally hypocritical and unacceptable. It felt hypocritical. It felt like we were compromising ourselves" (Rockefeller Brothers Fund, 2015).

To be clear, many of these critics do believe Universities have an integral role to play in the movement to combat climate change. However, they simply argue that this role lies in education, research, fostering clamorous unbiased debates, and lobbying governments to increase funding to develop clean energy alternatives, not politically driven divestments. These opponents argue that schools must focus on reducing their own carbon footprint first while empowering others to do the same with investments in cleaner technologies, not divestment from dirty ones. They argue that it is better for universities to end their reliance on fossil fuels on campus and instead act as role models in building carbon neutral campuses, rendering fossil fuel investment unprofitable and forcing divestment that way.

While all of these steps are very important and must be wholeheartedly pursued, it is an inaccurate presumption that fossil fuel divestment is incompatible with these roles (a reality that is more deeply explored in the third subheading of this section). Furthermore, it is dually inaccurate to presume that these limited actions are adequate in combatting climate change. While institutionally specific measures are immensely important, the steps needed to combat climate change will not manifest without political regulations. Divestment provides institutions an opportunity to leverage their power to create the environment needed for effective political and legislative action.

Divestment by Universities is Ineffective at Combatting Climate Change

The second main group of arguments against divestment seek to demonstrate that divestment by universities is ineffective at combatting climate change. Many of the individuals who adhere to this reasoning acknowledge that universities have a duty to do their utmost to combat climate change, but simply argue that divestment is not an effective strategy for doing so. The first line of thought within this framework argues that divestment will not have a significant financial impact on the fossil fuel industry, and as such will not be effective in combatting climate change. The second line of thought argues that divestment will not directly decrease carbon emissions, and is consequently not an effective method for combatting climate change. The third dimension of this argument contends that divestment is ineffective because it focuses on the private, rather than state-held, sector of the fossil fuel industry. The final train of thought argues that divestment is an ineffective strategy for combatting climate change because it polarizes the issue, making effective political action more difficult.

The first argument claims that divestment will not have a significant financial impact on the fossil fuel industry, an outcome they argue precludes divestment from being an effective strategy. They argue that divestment does not have the power to undermine investor confidence in the fossil fuel industry, and because there is plenty of demand for stocks in fossil fuel companies others will simply purchase the stocks divested, negating their financial impact. They go on to argue that even if new investors didn't rapidly gobble up the shares sold by divesting institutions, the net impact of divestment by universities would still be marginal. Fossil fuels make up between 1.4% and 5% of most university endowments (Willson, 2013). Last year, the aggregate of all university endowments totaled nearly $450 billion, meaning that university divestment from fossil fuels would only cost the industry at most $22 billion, roughly 5% of the aggregate total (Domonell, 2013). While still a significant figure, these opponents rightly argue that $22 billion is insignificant when compared to the $4.65 trillion industry (Evans, 2014).

Opponents substantiate this claim by arguing that past divestment movements have also been financially ineffective. In their 1999 study, economists Welc and Wazzan argued that South African divestment had little financial impact, stating that "despite the prominence and publicity of the boycott and the multitude of divesting companies, the financial markets' valuations of targeted companies or even the South African financial markets themselves were not easily visibly affected" (Hendey, 2015). They go on to claim that divestment by universities and state pension funds "had no discernible financial effect on the valuation of companies that were being divested, either short-term or long-term" (Hendey, 2015). This perspective is frequently reiterated by the media, almost always citing the 1999 study in the process; for example: "Individual divestments, either as economic or symbolic pressure, have never succeeded in getting companies or countries to change" (Pioneer Press, 2014).

These arguments tend to fall on deaf ears, as they inherently miss the entire point and purpose of divestment. Divestment as a strategy for social change never was, and still is not, a financially driven strategy. Advocates of divestment have never argued the efficacy of financial attacks in driving social change. Rather, proponents of divestment have consistently maintained that the power of the strategy lies in moral stigmatization. Thus, critiques of divestment citing its insignificant financial impact betray their author's ignorance of divestment used as a strategy for social change.

The second argument purports that stigmatizing the fossil fuel industry will not decrease carbon emissions. They argue that divestment will not directly change an institution's carbon footprint, and does not change the fact that our society is dependent upon fossil fuels. They go on to argue that "no degree of pressure not culminating in actual legislation will dissuade the industry from extractive activities that have proven so tremendously profitable" (Willson, 2013). As such, these individuals argue that private action will never be enough, and that effective action will require major changes to national policy as well as international coordination of such policy changes.

Interestingly enough, proponents of divestment as a tool for social change wholeheartedly agree! Political and legislative action are mandatory to effectively combat climate change. Thus, the fault of this critique on divestment is simply a matter of scale; this line of thought critiques fossil fuel divestment because it does not have immediate carbon reduction benefits, failing to understand that divestment is a key strategy being employed to manifest the necessary political action. Clearly, divestment's immediate impacts are small; the true power of divestment lies in transforming the societal narrative to a point where political action becomes viable.

The third attack on divestment's ability to effectively combat climate change is that fossil fuel divestment is targeting the wrong sector of the fossil fuel industry. Divestment is focused on publicly traded securities such as stocks and bonds of the top 200 publicly traded fossil fuel companies as measured by their fossil fuel reserves. However, most fossil fuels are owned by state-controlled companies, not the publicly traded companies targeted by divestment (Cunningham-Cook, 2014). This discrepancy matters, as the International Energy Agency estimates that 74% of all coal, oil and gas reserves are owned by state-controlled companies (Carrington, 2015). As a result, opponents to divestment argue that truly effective climate action must impact the state-controlled fossil fuel companies.

While valid, this critique falls short for a number of reasons. First and foremost, divestment's ultimate goal of inspiring political action that limits fossil fuel consumption would impact the entire fossil fuel industry, regardless of whether or not they are publicly traded. Because the targeted fossil fuel companies have immense influence, undermining their power is meant to embolden politicians in leading nations to deliver ambitious international climate action. On a more nuanced and less important level, many of the largest state-controlled fossil fuel companies contract the publicly traded companies to help extract their reserves and many do publicly sell some of their stock. Furthermore, the state-controlled fossil fuel reserves tend to be the easiest and cheapest to extract, and are therefore logically the most reasonable reserves to exploit when filling up the last of the atmosphere's 'carbon budget.' The converse to this point is equally true; the most expensive and extreme carbon reserves that truly must stay in the ground such as tar sands, ultra deep water and Arctic reserves, are almost exclusively controlled by the private companies being targeted by the divestment campaign (Carrington, 2015).

The final dimension of this argument claiming that fossil fuel divestment is ineffective at combatting climate change argues that divestment is politically polarizing which serves to impede effective political action. These opponents argue that climate change is fundamentally a scientific, economic and political challenge, and that viewing it as a moral crusade will only serve to exacerbate the political polarization and ideological divide that continues to paralyze Washington and prevent effective climate policies from taking root. They go on to argue that whatever value statement divestment might make isn't worth further hamstringing the United States' already decrepit climate-policy process.

This final line of thought makes a very valid point while still misunderstanding the threat of climate change. First and foremost, it acknowledges the need for effective political action in order to combat climate change, the same understanding within which the foundation of divestment is rooted. However, they fundamentally misunderstand the threat of climate change by claiming it is devoid of a moral dimension. On the contrary, climate change should first and foremost be understood as a moral issue. Generationally, climate change poses a direct threat of civil liberties by violating the indefeasible rights of all future generations to live on a safe and hospitable planet. In the immediate future, climate change is sure to most severely afflict the already marginalized and disenfranchised communities of the world, communities that have had very little role in promulgating climate change. Refusing to view climate change as a moral issue precludes policy makers from truly understanding the implications of climate change and consequently limits their ability to develop and implement the necessary policy solutions with the urgency required.

<u>Divestment Impairs Effective Action on Climate Change</u>

The final category of arguments against divestment from fossil fuels builds upon the previous, arguing that not only is divestment ineffective at combatting climate change, but that it actually impairs the ability of universities to take legitimate and effective action against climate change. The most prominent argument in this category holds that divestment will hurt institutions financially, and in doing so impair their ability to engage in actions that have the potential to effectively combat climate change. Second, some argue that divestment serves as a distraction from effective action; that it provides divestors with the false impression that they are combatting climate change and in doing so distracts them from engaging in legitimate action. The final argument in this category contends that the only way to truly impact these fossil fuel companies is through shareholder votes, arguing that institutions concerned about climate change should increase their investments in the fossil fuel industry to increase the volume and impact of their concerned voice within the fossil fuel industry.

The most prominent argument within this framework is that divestment will hurt institutions financially, in turn limiting their ability to take other 'more effective' actions to address climate change. These opponents make the argument that a diversified portfolio is a financially viable portfolio, and that constraining investment options risks constraining investment returns (Faust, 2013). In Sharif's critique of divestment, he goes on to stress the importance of a diversified portfolio, explaining that un-diversified portfolios have greater risk of volatility (Sharif, 2014). President Faust helped to champion and legitimize this fear: "The endowment provides more than one-third of the funds we expend on university activities each year. Its strength and growth are crucial to our institutional ambitions — to the support we can offer students and faculty, to the intellectual opportunities we can provide, to the research we can advance. Despite some assertions to the contrary, logic and experience indicate that barring investments in a major, integral sector of the global economy would — especially for a large endowment reliant on sophisticated investment techniques, pooled funds, and broad diversification — come at a substantial economic cost" (Faust, 2013). In the early years of divestment, there were a number of preliminary studies to substantiate this claim; for example, Swarthmore College concluded that divestment would cost their $1.9 billion endowment 11-15 million dollars a year in returns (Burke, 2015).

However, recent studies have found these fears to be overstated and often wholly inaccurate. An increasing number of studies, including those written by Impax Asset Management, Cambridge Associates, Aperio Group, MSCI, and Bloomberg New Energy Finance, have found that divestment from fossil fuels poses no real financial threat to endowment health (Impax Asset Management, 2014) (Cambridge Associates, 2014) (Geddes, 2013) (MSCI ESG Research, 2013) (Bloomberg New Energy Finance, 2014). In fact, more recent analyses have found that many institutions have lost billions of dollars in the past three years from not divesting. More specifically, Corporate Knights developed a financial algorithm that 'decarbonizes' funds by divesting their fossil fuel stocks and reinvesting this money in the institution's preexisting sustainable investments and tracks how the funds would have performed differently had they divested at the beginning of the fossil fuel divestment movement. In their analysis, Corporate Knights found that the Bill and Melinda Gates Foundation would have saved $1.9 billion had they divested when first asked to do so, a trend that is paralleled by nearly every foundation and endowment they investigated (Heaps, 2015). However, it is difficult to make thorough valuations of investment strategies when looking at such a limited time scale as 3 years (though their rationale for using this time scale is clearly logical, as they wanted to demonstrate what the impacts of divestment would have been had institutions jumped on board as soon as the campaign began).

Importantly, a more long term analysis conducted by Fossil Free Indexes came to the same conclusions. Their analysis found that a divested S&P 500 would have earned an extra 1% a year compared to the conventional S&P 500 over the past decade (Cummings, 2015). While earning an extra 1% a year is not significant, it doesn't need to be; rather, the purpose of these analyses were to dispel the faulty conclusions that divestment would reap significantly negative impacts on university endowments.

The second most prominent argument used to claim that divestment impairs institutions from taking effective action on climate change is that it serves as a distraction, and is nothing more than a feel-good measure that won't help the climate and may actually divert attention from actions that could make a difference. As such, opponents argue that divestment serves as an easy way out for universities, enabling institutions to act like they are taking action without providing real solutions to transitioning to a more renewable and less carbon intensive energy system. In the words of Brown University President Christina Paxson: "Divestiture would convey only a nebulous statement — that coal is harmful — without speaking to the technological and policy actions needed to reduce the harm from coal — actions where Brown can make real and important contributions, through teaching and research" (Noguchi, 2014). Others have taken this argument a step further, contending that the symbolic action of divestment often substitute for truly effective actions by allowing us to fool ourselves into thinking we are doing something meaningful about a problem when we are not, more specifically, that divestment "diverts us from what really matters - addressing climate change with enlightened public policies at the international, national and sub-national level" (Wall Street Journal, 2014).

Again, the issue with this reasoning lies in the failure of these critics to look beyond the immediate impacts of divestment and understand the true purpose of divestment. These critics argue that divestment is ineffective because it has no direct impact while giving institutions the false impression that they are making a difference. These critiques fail to realize that divestment is not an end in itself, but rather a means to the ultimate end of enacting effective climate change legislation, an ultimate goal these critics agree with, as demonstrated by the quote from the Wall Street Journal above. Furthermore, as explained earlier, divestment does not prevent institutions from addressing climate change through other mechanisms in parallel. If anything, affirming their institutional commitment to combat climate change through divestment should help to create a culture that empowers the implementation of other sustainability initiatives.

The final argument claiming that divestment impedes institutions from effectively combatting climate change is that divestment renders institutions voiceless in the fossil fuel industry's internal debate. An often cited analogy to describe this relationship follows: "Would the best solution be to put up a 'for sale' sign in front of your house if there are problems in the neighborhood? No, you engage and you try to rectify the situation" (Domonell, 2013). These opponents argue that stockholders are the only ones who can truly engage the company, and that by selling their shares institutions are selling their right to influence the fossil fuel industry through shareholder votes. Furthermore, they argue that if socially responsible institutions divest from the fossil fuel industry, then these stocks will be picked up by investors who don't care about climate change and who will vote to continue business as usual. This belief has been championed by Benjamin Sporton, the acting chief executive of the World Coal Association, who explains that "active and responsible investors play a vital role in encouraging investment in cleaner coal technologies" (Carrington, 2015). Many take this argument a step further, arguing that the only way for Universities to truly shape the business practices of the fossil fuel industry is through increasing their investments in the industry (Domonell, 2013).

This argument is ludicrous. The changes within the fossil fuel industry necessary to combat climate change are irreconcilable with the current extractive business model of the industry. Consequently, to have a truly effective impact, the divestment movement would have to buy controlling shares in all dominant fossil fuel companies; to think that universities with an aggregated endowment worth roughly $450 billion could buy controlling shares of a $4.65 trillion industry is wholly illogical

(Evans, 2014). As such, the best the divestment movement could hope for is influencing other shareholders to make slow and gradual changes to the business model of the fossil fuel industry, a strategy that is unacceptable given the immediate threat posed by climate change.

An Inevitable Movement

What first began as a humble and unlikely movement has developed into one of the most dominant campaigns for keeping global warming below 2 degrees Celsius. According to an Oxford study, fossil fuel divestment has become the fastest growing divestment movement in history (Carrington, 2015). To date, nearly 500 institutions have divested from fossil fuels, committing nearly $2.6 trillion dollars to fossil free funds (Carrington & Howard, 2015). The rapid expansion of the grassroots movement is being reflected in the rapidly transforming societal discourse. According to one financial executive, fossil fuel divestment is "one of the fastest-moving debates I think I've seen in my 30 years in markets" (Bloomberg New Energy Finance, 2014). Consequently, the fossil fuel industry is dedicating increased resources towards combatting the movement for fear of its growing efficacy.

A number of high-profile events related to fossil fuel divestment have captured media and popular attention in the past year and a half. In May 2014, Stanford University committed to divestment from coal. In September 2014, the Rockefeller Brothers Fund, the philanthropic organization of the family whose forefathers built immense wealth in the oil industry, committed to divesting from all fossil fuels, explaining that it was their "moral obligation" (Rockefeller Brothers Fund, 2015). In March 2015, The United Nations Framework Convention on Climate Change (UNFCCC), the United Nations organization in charge of global climate change negotiations, leveraged their moral authority by publicly endorsing the mission and efficacy of divestment, explaining that they "support divestment as it sends a signal to companies, especially coal companies, that the age of 'burn what you like, when you like' cannot continue," and went on to explain: "We have lent our own moral authority as the UN to those groups or organizations who are divesting. We are saying 'we support your aims and ambitions because they are fairly and squarely our ambition." A recent tweet from the UNFCCC said: "Divestment worked to free [South Africa] of apartheid. Now it can help free us of fossil fuels" (Carrington, 2015). Later that month, Syracuse University, after an 18-day student sit-in, became the largest educational institution to fully divest its endowment (Swann, 2015). In April 2015, the Guardian Media Group's investment fund of over £800 million ($1.2 billion) became the largest yet to divest from fossil fuels (Carrington, 2015). On May 1st, 2015, the Church of England committed to divesting its stocks in coal and tar sands to realign with its moral duty towards combatting climate change (Howard, 2015). On May 14th, the University of Washington Board of Regents voted to prohibit investments in coal companies (Howard, 2015). On May 15th, mathematical economist and leading author of the Nobel Prize winning IPCC report, Graciela Chichilnisky joined students at Edinburgh University sitting in for divestment (Howard, 2015). Following this ten-day occupation of the finance department that also garnered support from Naomi Klein and 300 alumni who pledged to boycott donations to the university, Edinburgh's investment committee voted to divest from three of the biggest fossil fuel producers (Brooks, 2015). On May 18th, U.K.'s second-largest university, Oxford University, banned investments in coal and tar sands. Because the university has rejected full fossil fuel divestment, 70 alumni will be handing back their degrees in protest (Carrington, 2015). On May 21st of 2015, the University of Hawaii state system committed to fossil fuel divestment with arguments rooted in morality and leadership as well as the long-term economic case that fossil fuel companies will be greatly devalued in the future due to their un-burnable reserves (Howard, 2015). In June 2015, Norway committed its $900 billion sovereign wealth fund to coal divestment; it is the largest fossil fuel divestment to date, affecting 122 companies across the world (Carrington, 2015). In July, the Episcopal Church voted to divest from fossil fuels citing the immorality of the fossil fuel industry as a direct threat to "human life itself" (Goldenberg, 2015).

Nearly sixty cities, including Boulder, San Francisco, and Seattle, have committed to fossil fuel divestment. An increasing number of prominent political leaders have come out to publicly endorse divestment as an effective strategy for combatting climate change, some of which include, President Barack Obama, the UN Secretary General Ban Ki-Moon, World Bank President Jim Yong Kim, UN Climate Chief Christiana Figueres, former EU Climate Chief Connie Hedegaard, the United Nations Environmental

Programme Executive Director Achim Steiner, Greenpeace International Executive Director Kumi Naidoo, Former Chair of Shell Mark Moody-Stuart, Desmond Tutu, Al Gore, Paul Krugman, and Noam Chomsky (Go Fossil Free, 2015).

Students on campuses across the world have been coordinating and escalating their campaigns to demand immediate action by their institution. On February 13th, 2015, on the first ever Global Divestment Day, over 450 separate events were held in 60 countries, demonstrating the international solidarity that characterizes today's divestment movement (Wong-Weissman, 2015). Immediately afterwards, many college campuses in the U.S. participated in coordinated escalation of nonviolent protest. Swarthmore College students occupied their administration's building for thirty-two days to demand serious conversation about divestment. Mary Washington University, Bowdoin College, Harvard University, CU Boulder, and others held similar sit-ins and events. Many of these actions proved successful. For example, the Swarthmore Faculty passed a fossil fuel divestment resolution formally calling on the Board of Managers to divest from fossil fuels on the twenty-ninth day of the sit-in: "Resolved: The faculty requests the board of managers announce divestment from the 200 fossil free index companies in separately managed funds, with reinvestment in energy efficiency and renewables" (Fulton, 2015). On November 16, 2015, Stanford University began an indefinite sit-in to protest the institution's investments in fossil fuels. While Stanford did divest from coal a year ago, they continue to hold investments in oil and gas companies (Corbyn, 2015).

Because of the attention that the movement has been receiving, the issue of fossil fuel divestment has even appeared on mainstream news outlets for young adults. MTV News published an article on May 12th with the subtitle, "Here's what you need to know about fossil fuel divestment and how college students are basically trying to save the world" (Paoletta, 2015). The fact that divestment has been gaining a more popular, pre-college audience is very important. For those universities that have already divested, favorable press, targeted at younger audiences, always follows. It is in every university's best interest to pay attention to what their future applicant pool is going to be looking for when they make their choices of which academic institution to attend.

Concerning this growing momentum, American psychiatrist Robert Jay Lifton says, “The divestment movement is gathering strength, and it has to be looked at not just in terms of what it denies the fossil fuel corporations - we’re not about to bankrupt them - but rather what it says in connection with the mounting climate movement, which is taking shape. It’s part of what I call the climate swerve, meaning a whole tendency toward increased awareness of truths about climate threat. And the divestment movement is right at the heart of it, very admirably” (Democracy Now, 2015).

The fossil fuel industry has been giving increasing attention to the issue, following a pattern of opposition eloquently described by Gandhi: “First they ignore you, then they laugh at you, then they fight you, then you win.” The fossil fuel industry stopped ignoring the campaign at the beginning of 2015, when a variety of firms launched campaigns to discredit and subvert the message of fossil fuel divestment. One of the lead public relations firms charged with this task was Berman & Company, who quickly launched the cleverly named Environmental Policy Alliance (or EPA for short) “devoted to uncovering the funding and hidden agendas behind environmental activist groups” (Gerken, 2014). The campaign has been led by Rick Berman, who was once called “Dr. Evil” by CBS’ 60 minutes, and has an extensive history of organizing campaigns on behalf of the food and beverage industry under the tittle of the Center for Consumer Freedom. The Environmental Policy Alliance has largely tried to frame divestment as immoral, hypocritical, and extreme: “We have a moral imperative to make sure that people can refrigerate their food and medicines, grow crops and plants with fertilizer, and keep their homes lit at night and warm during winter. All of this is what divestment activists are asking us to divest from — the bedrock of modern life” (Carrington, 2015).

More recently, the fossil fuel industry has begun attacking the movement directly. For example, the Independent Petroleum Association of America commissioned a report that concludes that U.S.

universities would have lost up to $3.2 billion dollars a year had they divested five decades ago (Carrington, 2015). As addressed earlier in the paper, the validity of these financial attacks are highly questionable. In the words of Ben Caldecott from the University of Oxford's Smith School of Enterprise and the Environment, "it is completely wrong to assume the drivers of stock performance in the last 50 years will be same for the next 50 years" (Carrington, 2015). Rather, this study helps to demonstrate the increased attention and fear the fossil fuel industries feel from the growing power of the fossil fuel divestment campaign and the movement's inevitable path towards victory.

The Future is in Our Hands

If an institution accepts that climate change is real, and accepts the responsibility of their institution to fight climate change, then they have a moral obligation to divest from the fossil fuel industry. This duty is rooted not only in the Truth that profiting from climate change is immoral, but also that divestment from fossil fuels is one of the most important strategies for combatting climate change. Anything less than a full commitment to divestment shirks their moral responsibility to future generations, and subverts any other progress they have made on becoming socially sustainable.

In the words of Terry Tempest Williams: "The eyes of the future are looking back on us, and they are praying for us to see beyond our own time." We no longer have the luxury of undertaking incremental, small-scale action. Climate change will violate the indefeasible rights of all future generations to life on a safe and hospitable planet, and informed institutions with agency have a duty to act on climate change and divest from fossil fuels.

To be clear, it is important for institutions to align their internal activities with the rhetoric of divestment and take far reaching actions to reduce their carbon footprint and lead by example. However, we don't have time to wait for all institutions in our country to follow suit. The only way to adequately address climate change is through mandating the reduction of carbon emissions through law. Thankfully, divestment empowers institutions to help create the political landscape necessary for effective climate action to manifest; morally stigmatizing the extractive business model of the fossil fuel industry through divestment will help to shift the societal zeitgeist and paradigm to the point where the necessary political action becomes politically viable.

Works Cited

Agnihotri, G. (2015, April 30). Is solar energy ready to compete with oil and other fossil fuels? Retrieved November 16, 2015, from http://oilprice.com/Alternative-Energy/Solar-Energy/Is-Solar-Energy-Ready-To-Compete-With-Oil-And-Other-Fossil-Fuels.html

American College & University Presidents' Climate Commitment. (2015). Signatories of the ACUPCC. Retrieved November 15, 2015, from http://www2.presidentsclimatecommitment.org/html/signatories.php

Balch, O. (2015, September 4). Fewer than 50% of CEOs say Paris deal would make them act on climate change. Retrieved November 16, 2015, from http://www.theguardian.com/sustainable-business/2015/sep/04/paris-climate-summit-deal-fewer-50-ceos-say-act-on-climate-change

Beeler, C. (2015, April 11). Students push college fossil fuel divestment to stigmatize industry. Retrieved November 18, 2015, from http://www.npr.org/2015/04/11/398757780/students-push-college-fossil-fuel-divestment-to-stigmatize-industry

Bloomberg New Energy Finance. (2014). *Fossil fuel divestment: A $5 trillion challenge. (*pp. 1-19).

Brooks, L. (2015, May 26). University of Edinburgh to divest from three major fossil fuel providers. Retrieved November 16, 2015, from http://www.theguardian.com/environment/2015/may/26/university-edinburgh-divest-fossil-fuel-student-protestors

Burke, T. (2015, February 11). Against Divestment. Retrieved November 18, 2015, from http://daily.swarthmore.edu/2015/02/11/against-divestment/

Cambridge Associates. (2014). The fossil fuel divestment discussion (Rep.).

Carapezza, K. (2015, April 20). Harvard students block campus building to push fossil fuel divestment. Retrieved November 18, 2015, from http://www.npr.org/2015/04/13/399414399/harvard-students-block-campus-building-to-push-fossil-fuel-divestment

Carbon Brief Staff. (2014, July 09). What the fossil fuel industry thinks of the 'carbon bubble' Retrieved November 20, 2015, from http://www.carbonbrief.org/what-the-fossil-fuel-industry-thinks-of-the-carbon-bubble

Carbon Tracker Initiative. (2011, November). Unburnable Carbon - Are the world's financial markets carrying a carbon bubble? Retrieved November 15, 2015, from http://www.carbontracker.org/report/carbon-bubble/

Carrington, D. (2014, April 10). Desmond Tutu calls for anti-apartheid style boycott of fossil fuel industry. Retrieved November 16, 2015, from http://www.theguardian.com/environment/2014/apr/10/desmond-tutu-anti-apartheid-style-boycott-fossil-fuel-industry

Carrington, D. (2015, February 11). Fossil fuel lobby goes on the attack against divestment movement. Retrieved November 17, 2015, from http://www.theguardian.com/environment/damian-carrington-blog/2015/feb/11/fossil-fuel-lobby-goes-on-the-attack-against-divestment-movement#img-1

Carrington, D. (2015, March 9). 10 myths about fossil fuel divestment put to the sword. Retrieved November 19, 2015, from http://www.theguardian.com/environment/2015/mar/09/10-myths-about-fossil-fuel-divestment-put-to-the-sword

Carrington, D. (2015, March 15). Climate change: UN backs fossil fuel divestment campaign. Retrieved November 17, 2015, from http://www.theguardian.com/environment/2015/mar/15/climate-change-un-backs-divestment-campaign-paris-summit-fossil-fuels

Carrington, D. (2015, May 18). Oxford University rules out investing in coal and tar sands. Retrieved November 16, 2015, from http://www.theguardian.com/environment/2015/may/18/oxford-university-rules-out-investing-in-coal-and-tar-sands

Carrington, D. (2015, June 5). Norway confirms $900bn sovereign wealth fund's major coal divestment.

Retrieved November 17, 2015, from http://www.theguardian.com/environment/2015/jun/05/norways-pension-fund-to-divest-8bn-from-coal-a-new-analysis-shows

Carrington, D., & Howard, E. (2015, September 22). Institutions worth $2.6 trillion have now pulled investments out of fossil fuels. Retrieved November 17, 2015, from http://www.theguardian.com/environment/2015/sep/22/leonardo-dicaprio-joins-26tn-fossil-fuel-divestment-movement

Corbyn, Z. (2015, November 16). Stanford students begin 'indefinite' sit-in over fossil fuel divestment. Retrieved November 17, 2015, from http://www.theguardian.com/us-news/2015/nov/17/stanford-students-begin-indefinite-sit-in-over-fossil-fuel-divestment

Cummings, J. (2015, November 03). Dropping fossil fuels increases investment returns. Retrieved November 19, 2015, from http://www.resilientinvestor.com/dropping-fossil-fuels-increases-investment-returns/

Cunningham-Cook, M. (2014, July 7). Why the fossil fuel divestment movement is a farce. Retrieved November 18, 2015, from http://america.aljazeera.com/opinions/2014/7/fossil-fuel-divestmentenvironmentpoliticscollegeenergy.html

Democracy Now. (2015, May 7). Robert Jay Lifton on how climate change joins nuclear war in threatening human survival. Retrieved November 20, 2015, from http://www.democracynow.org/2015/5/7/robert_jay_lifton_on_how_climate

Domonell, K. (2013, June). Is fossil fuel divestment a wise move? Retrieved November 18, 2015, from http://www.universitybusiness.com/article/divestment-debate

Environmental Protection Agency. (2015, November 4). Overview of greenhouse gases. Retrieved November 15, 2015, from http://www3.epa.gov/climatechange/ghgemissions/gases.html

Epstein, A. (2013, August 28). Universities Must Reject Environmentalist Calls To Divest From The Fossil

Fuel Industry. Retrieved November 18, 2015, from http://www.forbes.com/sites/alexepstein/2013/08/28/universities-must-reject-environmentalist-calls-to-divest-from-the-fossil-fuel-industry/

Evans, S. (2014, August 27). Why fossil fuel divestment wont be easy - Carbon Brief. Retrieved November 19, 2015, from http://www.carbonbrief.org/why-fossil-fuel-divestment-wont-be-easy

Faust, D. (2013, October 13). Fossil fuel divestment statement. Retrieved November 18, 2015, from http://www.harvard.edu/president/news/2013/fossil-fuel-divestment-statement

Fountain, H. (2015, March 02). Researchers link Syrian conflict to a drought made worse by climate change. Retrieved November 15, 2015, from http://www.nytimes.com/2015/03/03/science/earth/study-links-syria-conflict-to-drought-caused-by-climate-change.html

Fowler, T. (2013, March 6). Exxon to Invest $190 Billion Upstream Over Five Years. Retrieved November 20, 2015, from http://www.wsj.com/articles/SB10001424127887324582804578344214031225252

Fulton, E. (2015, April 21). At Swarthmore College, longest ever divestment sit-in ends on hopeful note. Retrieved November 20, 2015, from http://www.commondreams.org/news/2015/04/21/swarthmore-college-longest-ever-divestment-sit-ends-hopeful-note

Geddes, P. (2013). Do the investment math: Building a carbon-free portfolio (Rep.). Sausalito,, CA: Aperio Group, LLC.

Gillis, J. (2014, May 06). U.S. climate has already changed, study finds, citing heat and floods. Retrieved November 15, 2015, from http://www.nytimes.com/2014/05/07/science/earth/climate-change-report.html

Goldenberg, S. (2015, July 3). Episcopal church votes to divest from fossil fuels: 'This is a moral issue'

Retrieved November 17, 2015, from http://www.theguardian.com/world/2015/jul/03/episcopal-church-fossil-fuel-divestment

Go Fossil Free. (2015). Endorsements. Retrieved November 16, 2015, from http://gofossilfree.org/endorsements/

Gerken, J. (2014, March 3). 'Environmental Policy Alliance,' PR firm front group, targets LEED, green groups and EPA. Retrieved November 17, 2015, from http://www.huffingtonpost.com/2014/03/07/environmental-policy-alliance-berman_n_4913303.html

Heaps, T. (2015, November 16). What kind of world do you want to invest in? Retrieved November 17, 2015, from http://www.corporateknights.com/channels/responsible-investing/fossil-fuel-investments-cost-major-funds-billions-14476536/

Hendey, E. (2015). Does divestment work? Retrieved November 18, 2015, from http://www.iop.harvard.edu/does-divestment-work

Holthaus, E. (2015, March 19). Welcome to Global Warming's Terrifying New Era. Retrieved November 15, 2015, from http://www.slate.com/blogs/future_tense/2015/03/19/thirty_years_of_above_average_temperatures_mean_we_re_entering_a_new_era.html

Howard, E. (2015, May 1). Church of England latest to join growing divestment movement. Retrieved November 16, 2015, from http://www.theguardian.com/environment/keep-it-in-the-ground-blog/2015/may/01/church-of-england-latest-to-join-growing-divestment-movement

Howard, E. (2015, May 15). University of Washington to divest from coal companies. Retrieved November 16, 2015, from http://www.theguardian.com/environment/keep-it-in-the-ground-blog/2015/may/15/washington-university-to-divest-from-coal-companies

Howard, E. (2015, May 22). University of Hawaii System votes to divest from fossil fuels. Retrieved

November 16, 2015, from http://www.theguardian.com/environment/keep-it-in-the-ground-blog/2015/may/22/university-of-hawaii-system-votes-to-divest-from-fossil-fuels

Howard, E. (2015, October 14). Keep it in the ground Bill Gates calls fossil fuel divestment a 'false solution' Retrieved November 16, 2015, from http://www.theguardian.com/environment/2015/oct/14/bill-gates-calls-fossil-fuel-divestment-a-false-solution

Hulme, M. (2015, April 17). Why fossil fuel divestment is a misguided tactic. Retrieved November 16, 2015, from http://www.theguardian.com/environment/2015/apr/17/why-fossil-fuel-divestment-is-a-misguided-tactic

Impax Asset Management. (2014). Beyond fossil fuels: The investment case for fossil fuel divestment (Rep.).

Intergovernmental Panel on Climate Change. (2014). Climate change 2014: Impacts, adaptation, and vulnerability. Summary for policymakers. Retrieved November 15, 2015, from https://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf

Jacobson, M., Delucchi, M., Bazouin, G., Bauer, Z., Heavey, C., Fisher, E., . . . Yeskoo, T. (2015). 100% clean and renewable wind, water, and sunlight (WWS) all-sector energy roadmaps for the 50 United States†. *Energy & Environmental Science,* (8), 2093-2117. doi:10.1039/c5ee01283j

Jaffe, M. (2015, May 17). Fossil fuel divestment at colleges more about the conversation than the money. Retrieved November 18, 2015, from http://www.denverpost.com/business/ci_28126729/divestment-movement-more-about-conversation-than-money

Kahn, B. (2015, January 5). One for the record books: 2014 officially hottest year. Retrieved November 15, 2015, from http://www.climatecentral.org/news/record-2014-hottest-year-18502

Klein, N. (2014). This changes everything: Capitalism vs. the climate. New York: Simon & Schuster.

Lohr, S. (1986, November 24). Barclays pullout: The pressure grew. Retrieved November 16, 2015, from http://www.nytimes.com/1986/11/25/business/barclays-pullout-the-pressure-grew.html

Mandela, N. (1990, June 30). *We cannot turn back*. Speech presented at Oakland-Alameda County Coliseum Speech, Oakland.

McKibben, B. (2012, July 19). Global warming's terrifying new math. Retrieved November 15, 2015, from http://www.rollingstone.com/politics/news/global-warmings-terrifying-new-math-20120719

MSCI. (2015). ESG Integration. Retrieved November 20, 2015, from https://www.msci.com/esg-integration

MSCI ESG Research. (2013). Responding to the call for fossil-fuel free portfolios (Rep.). MSCI ESG Research.

The Nature Conservancy. (2015). One-fourth of the Earth's species could be headed for extinction by 2050 due to climate change. Retrieved November 15, 2015, from http://www.nature.org/ourinitiatives/urgentissues/global-warming-climate-change/threats-impacts/wildlife-at-risk.xml

Navarro-Genie, M. (2014, Jul 16). University divestment campaigns against energy companies hypocritical. *The Guelph Mercury* Retrieved from http://0-search.proquest.com.bianca.penlib.du.edu/docview/1545168445?accountid=14608

NOAA National Centers for Environmental Information. (2015, September). State of the climate: Global analysis for September 2015. Retrieved November 15, 2015, from http://www.ncdc.noaa.gov/sotc/global/201509

Noguchi, Y. (2014, June 10). When colleges ditch coal investments, it's barely a drop in the bucket. Retrieved November 19, 2015, from http://www.npr.org/2014/05/07/310449120/when-colleges-divest-in-coal-its-barely-a-drop-in-the-bucket

Paoletta, R. (2015, May 12). Have college students discovered the key to avoiding climate change catastrophe? Retrieved November 20, 2015, from http://www.mtv.com/news/2156993/fossil-fuel-divesting-college-campuses/

Patel, T. (2015, August 31). Fossil fuels losing cost advantage over solar, wind, IEA says. Retrieved November 16, 2015, from http://www.bloomberg.com/news/articles/2015-08-31/solar-wind-power-costs-drop-as-fossil-fuels-increase-iea-says

Pioneer Press. (2014, May 30). Other voices: This is what's wrong with university divestment. *Saint Paul Pioneer Press* Retrieved from http://0-search.proquest.com.bianca.penlib.du.edu/docview/1530847546?accountid=14608

Rockefeller Brothers Fund. (2015, June 10). Divestment Statement. Retrieved November 16, 2015, from http://www.rbf.org/about/divestment

Saunders, H. (2015, February 15). If Divestment Won't Work, What's the Alternative? Retrieved November 18, 2015, from http://theenergycollective.com/harry-saunders/2193471/if-divestment-wont-work-whats-alternative

Sharif, S. (2014, Feb 11). Ethical economics: Assessing the effectiveness of university divestment campaigns. *University Wire* Retrieved from http://0-search.proquest.com.bianca.penlib.du.edu/docview/1496971918?accountid=14608

Shogren, E. (2013, May 10). College divestment campaigns creating passionate environmentalists. Retrieved November 18, 2015, from http://www.npr.org/2013/05/10/182599588/college-divestment-campaigns-creating-passionate-environmentalists

Staff. (2008, June 1). Interview: Chancellor Robert Coombe discusses sustainability. *University of Denver Magazine*. Retrieved November 15, 2015, from http://magazine.du.edu/campus-community/interview-chancellor-robert-coombe-discusses-sustainability/

Stewart, A. (2007, November 1). A Call for Divestment in Sudan. Retrieved November 18, 2015, from http://www.npr.org/templates/story/story.php?storyId=15834353

Swann, S. (2015, March 31). Syracuse University announces it will divest from fossil fuels. Retrieved from http://dailyorange.com/2015/03/syracuse-university-announces-it-will-divest-from-fossil-fuels/

Telemacque, P. (2015, April 27). Whether it's apartheid or fossil fuels, divestment is on the right side of history. Retrieved November 18, 2015, from http://www.theguardian.com/commentisfree/2015/apr/27/divestment-fossil-fuels-apartheid-barclays

United Nations Regional Information Center. (2013, October 22). UN Secretary-General: Climate change biggest threat to sustainable development. Retrieved November 15, 2015, from http://www.unric.org/en/latest-un-buzz/28783-un-secretary-general-climate-change-biggest-threat-to-sustainable-development-

Vaughan, A. (2015, May 6). Global carbon dioxide levels break 400ppm milestone. Retrieved November 15, 2015, from http://www.theguardian.com/environment/2015/may/06/global-carbon-dioxide-levels-break-400ppm-milestone

Wall Street Journal. (2014, November 23). Should Endowments Divest Their Holdings in Fossil Fuels? Retrieved November 18, 2015, from http://www.wsj.com/articles/should-endowments-divest-their-holdings-in-fossil-fuels-1416779351

Wells, K. (2012, May 10). Big oil's big in biofuels. Retrieved November 20, 2015, from http://www.bloomberg.com/bw/articles/2012-05-10/big-oils-big-in-biofuels

Willson, H. (2013, Oct 21). Reconsidering divestment. *University Wire* Retrieved from http://0-search.proquest.com.bianca.penlib.du.edu/docview/1443629146?accountid=14608

Wong-Weissman, Z. (2015, February 27). February divest digest: The global divestment day edition. Retrieved November 20, 2015, from http://gofossilfree.org/february-divest-digest-the-global-divestment-day-edition/

World Bank. (2015, November 8). Rapid, climate-informed development needed to keep climate change from pushing more than 100 million people into poverty by 2030. Retrieved November 15, 2015, from http://www.worldbank.org/en/news/feature/2015/11/08/rapid-climate-informed-development-needed-to-keep-climate-change-from-pushing-more-than-100-million-people-into-poverty-by-2030