Proposal Concerning the Divestment of Wesleyan University's Endowment from Coal

Presented to the Wesleyan Investment Committee by the Committee for Investor Responsibility

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I. Executive Summary

Background

The Committee for Investor Responsibility (CIR), created with the intent to "represent and empower the Wesleyan community in fulfilling Wesleyan's shareholder responsibility,"[1] hereby presents this proposal to Wesleyan's Investment Committee and Board of Trustees concerning coal divestment. In the following proposal, the CIR provides recommendations concerning both direct and externally-managed holdings. The CIR presents this proposal based on the belief that the following recommendations are aligned with the responsibilities of this committee as well as with those of the Board of Trustees.

Key Findings

Science and Social Injury

- Social injury is defined in this document as "the injurious impact which the activities of a company are found to have on consumers, employees, or other persons, particularly including...deprivation of health, safety, or basic freedoms"[2]
- There is substantial and scientifically accepted data documenting climate change and the resulting environmental disturbances
- The contributions of coal to climate change are significant
- The social injury resulting from the effects of climate change is substantial enough to warrant investigation into divestment from coal
- The detrimental effects of coal mining and burning on the health and well-being of nearby communities provides further evidence of social injury
- In both national and global contexts, affected communities overwhelmingly tend to be those already marginalized

Economic Benefits

- Coal divestment is consistent with the financial goals of Wesleyan's endowment
- Given that similar actions have been taken by Stanford University and other institutions of comparable or greater financial resources, it appears possible for Wesleyan University to divest from coal
- The actions taken by Wesleyan's investment managers reflect a trend towards coal divestment

Government Action

- Past government policies have eroded the profitability and stability of the coal industry
- The implementation of these regulations and their effects will likely increase in the future

Community Support

- Following significant data collection, the CIR has found that there is widespread support of coal divestment among the student body
- There is also significant faculty support of coal divestment
- The CIR also takes into account the Wesleyan Student Assembly resolution that passed in favor of such a divestment action

Recommendations

Based on the findings above, the CIR presents the following recommendations:

1) Divest from any current direct holdings in coal and abstain from any future direct holdings in coal
2) Formulate a general investment policy which incorporates social and environmental considerations. In this policy, include a commitment to prioritizing fund managers that invest in socially responsible funds
3) Formulate a public statement of investment responsibility that reflects the policy above
4) Establish a directive to external managers which reflects any and all divestment measures taken by the University with regards to its direct holdings
5) Include in that directive a preference for external fund managers to adopt the principles outlined in the aforementioned general investment policy
6) Commit to future conversations with the CIR about the progress of such changes

II. Introduction

One of the CIR's responsibilities is to consider issues of ethical, moral, and social responsibility regarding the investment decisions made by Wesleyan University. The CIR believes that divestment from a company may be undertaken when a company's activities or policies cause substantial social, ethical, or economic injury. For the purposes of this document, social injury is defined as "the injurious impact which the activities of a company are found to have on consumers, employees, or other persons, particularly including...deprivation of health, safety, or basic freedoms."[3] The CIR believes that the divestment from a particular asset should occur when there is either a) unacceptable financial risk, or b) continued social and unethical injury to a third party. Divestment entails the elimination of financial support from specific firms in an effort to promote certain behaviors or objectives. The CIR believes that the social, ethical and economic injury from coal is significant enough to warrant the Board of Trustee's consideration of divestment. Although the CIR understands that the functioning of Wesleyan University relies upon fossil fuels, this Committee believes that current use and demand for coal is independent of the decision to financially support coal companies. In the following proposal, the CIR will explore and expand upon a variety of scientific, moral, economic, and strategic reasons why the Committee believes that divestment from coal is in the best interest of Wesleyan University.

The CIR bases this proposal on evidence and consensus from the scientific community that anthropogenic climate change, stemming from the emission of greenhouse gases, detrimentally impacts human and natural systems. Due to the already present impact of climate change and the increased severity of impacts on people and ecosystems in the future, the CIR believes that it is vital to consider how climate change may present ethical, moral, and social risks. The significant contribution to climate change from the extraction and burning of coal has led the CIR to conclude that Wesleyan ought to mitigate such destruction by limiting the University's contributions to the coal industry.

Finally, although the CIR strongly supports and engages in shareholder activism, this Committee believes that such steps may not be the most effective investment strategy in all situations. The CIR acknowledges that divestment from a firm relinquishes an investor's right to participate in decisions relating to the firm. Nonetheless, divestment may be especially appropriate in the case of coal, as it is unrealistic to expect that shareholder engagement efforts will motivate coal manufacturers to alter their behavior.

It is the CIR's belief that the social, moral, and economic consequences of climate change provide a strong argument for divestment from coal. At this time, the CIR recommends that the University divest from coal manufacturing companies while maintaining investments in oil and natural gas, with the acknowledgment that investments in both oil and gas should also be reevaluated in the future. In doing so, the CIR posits that oil and natural gas contribute to substantial social, ethical, and economic injury, but acknowledges the limited financial

feasibility of divesting from such companies at this time. As such, the CIR recommends that the Board commit to a future conversation about oil and natural gas companies while focusing on divestment from coal in the short term.

III. Science of Climate Change

A. Introduction to Climate Change

According to the latest assessment from the Intergovernmental Panel on Climate Change, "climate change refers to a change in the state of the climate that can be identified by using statistical tests…that persists for an extended period, typically decades or longer."[4] These changes, particularly the warming of the Earth's temperatures, have been observed and documented for more than fifty years by scientists. Rising temperatures are primarily due to the buildup of greenhouse gases in the atmosphere. Greenhouse gases are gases that trap heat in the atmosphere that would normally escape. The most common greenhouse gas is carbon dioxide (accounting for more than eighty percent of greenhouse gas emissions), although the term greenhouse gases encompasses other gasses such as methane and nitrous oxide. Since the Industrial Revolution, the concentration of greenhouse gases in the atmosphere has been steadily rising. This increasing concentration directly corresponds with the warming of the planet.[5]

Carbon dioxide emissions are the greatest contributor to greenhouse gas emissions. This heat-trapping gas is released through many human activities, including deforestation and the burning of fossil fuels (including coal). The current concentration of carbon dioxide in Earth's atmosphere is 399.73 parts-per-million. Although the carbon dioxide concentration has fluctuated historically, the concentration has not gone above 300 parts-per-million in at least the last 400,000 years. In addition, the concentration has increased by approximately 120 parts-per-million within the last sixty-five years alone.[6]

According to NASA, average global temperatures have risen by almost 1.5 degrees during the 20th century alone. Even more significant, two-thirds of this warming has occurred since 1975. According to NASA, ten of the warmest years on record have occurred within the last twelve years. Moreover, 2014 temperatures ranked as the warmest in recorded human history.[7]

Figure 1: Atmospheric Carbon Dioxide Concentration Change (1880-2011) (ppm)[8]

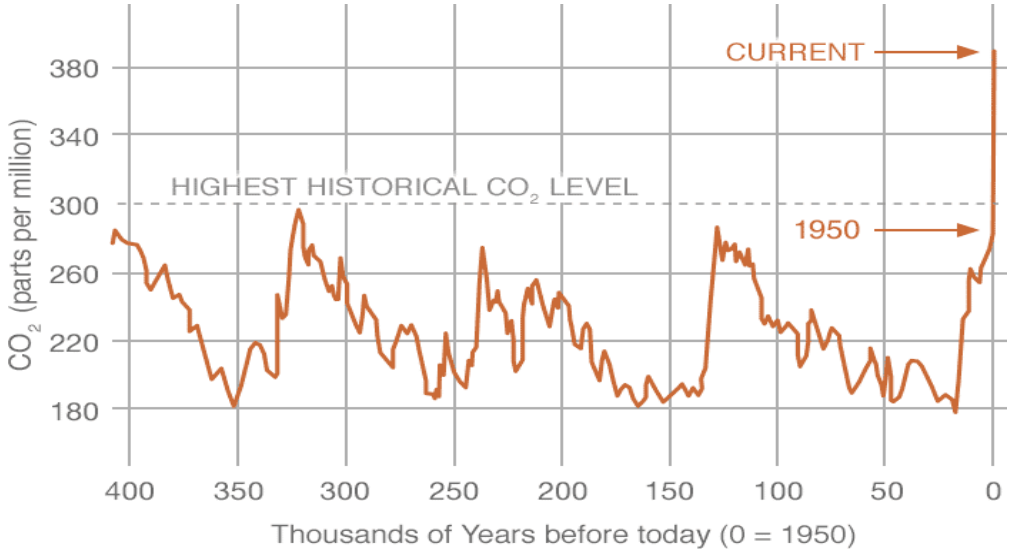


Figure Legend: This graph demonstrates the rising concentration of carbon dioxide in the atmosphere over long timescales. The depth of the timescale serves as evidence that the current carbon dioxide levels are outside the normal atmospheric fluctuations of this gas. Additionally, the graph demonstrates the extremely rapid increase of the current rise in carbon dioxide levels in comparison to past increases. The current atmospheric concentration is nearly 400 parts-per-million: almost 100 parts-per-million higher than any other time period displayed.

Figure 2: Global Temperature Change (1880-2011)[9]

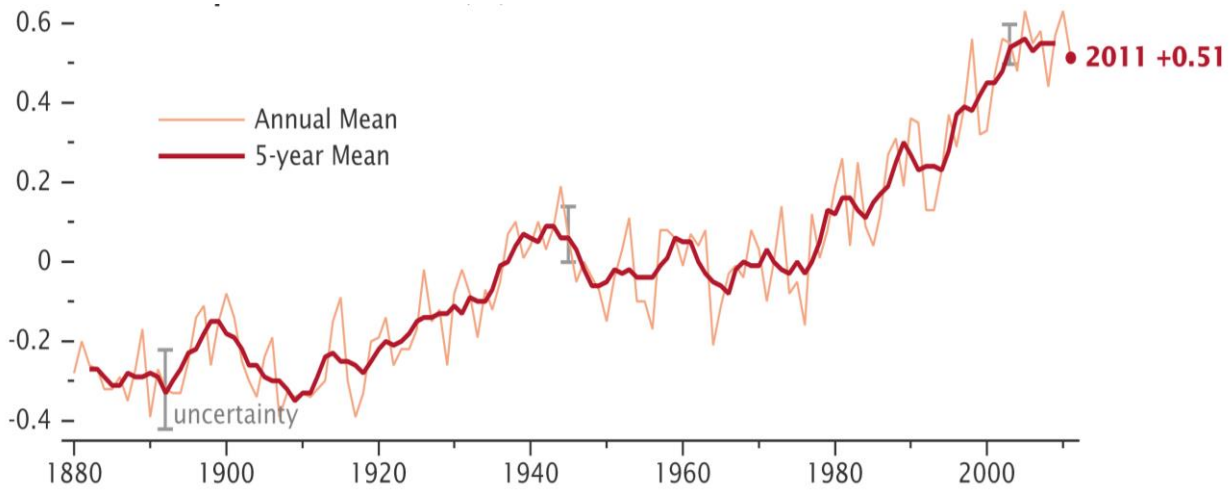


Figure Legend: This graph depicts the annual change in global temperature (in Celsius) over a 131 year period from 1880-2011. Although changes year to year fluctuated significantly, overall the yearly changes in temperature have increased overtime. In 2011, the global temperature increased by 0.51 degrees Celsius according to NASA data.

B. Ecological Implications of Climate Change

Climate change through greenhouse gas emissions has strongly impacted Earth's ecological systems. Some of these major impacts are changing weather patterns, ocean conditions, and the melting of glaciers and sea ice. Changing weather conditions include increased frequency and severity of droughts, heavy rains, and storms. The primary changes in ocean conditions include the rise in ocean temperatures, which impact sea levels and currents. Other effects include land erosion caused by rising sea levels and increasing ocean acidity, posing a threat to ocean life. Lastly, sea ice and glaciers have been shrinking since the 1960s, further contributing to rising sea levels.[10]

These impacts, along with others, have significantly affected the stability of world ecosystems. Ecosystems are highly interconnected; the functioning of ecosystems can be drastically altered by changes in factors such as air quality, rainfall, and animal migration. Climate change has altered ecosystems through changing the timing of natural processes, altering habitats and animal behavior, and impacting the water cycle. Climate change-induced impacts on ecosystems pose a threat to many species to the point of extinction in some cases.[11]

C. Scientific Consensus

Climate change has been thoroughly studied and documented by scientists worldwide for over a century. Going back in scientific history, the suggestion that changing concentrations of atmospheric gases can induce climate change was first publicized in 1896 by physicist John Tyndall. Data showing a warming climate first appeared in the 1930s, and data confirming the rising concentrations of carbon dioxide emerged in the 1950s.[12] Since that time, scientists have provided a significant and compelling collection of data and evidence for the climate changes already discussed.

Through numerous studies, scientists have provided compelling and irrefutable evidence that the Earth's climate is changing at a rapid rate with huge implications for ecological systems. Climate change is accepted as an occurring fact by 97 percent of the scientific community.[13] In a field based on questioning, data, and evidence, this type of consensus is impossible to ignore. The scientific consensus with regard to climate change has been summarized in the reports of the Intergovernmental Panel on Climate Change, a group first conceived in 1988. According to their 2014 assessment, "scientific evidence for warming of the climate system is unequivocal".[14]

D. Coal and Climate Change

Coal is one of the primary contributors to global greenhouse gas emissions. According to the U.S Energy Information Administration, coal has a higher carbon content than all other fossil fuels. At the high end of the range, anthracite coal has the highest carbon content, emitting 228.6

pounds of carbon dioxide for every million BTUs of energy produced. In comparison, gasoline emits 157.2 pounds of carbon dioxide when producing the same amount of energy.[15] Coal-fired power plants are the single largest source of carbon emissions in the United States today. In 2012, coal combustion accounted for nearly one-quarter of all greenhouse gas emissions in the US[16] and 77 percent of all emissions from electricity generation.[17] On average, every coal plant generates 3.5 million tons of carbon dioxide annually.[18] U.S. Energy Administration data from 2013 determined that coal-powered electricity accounted for 1.5 billion tons of carbon dioxide pollution that year.[19] On a global scale, research using 2011 data concluded that in that year alone coal burning was responsible for the release of 14.4 billion tons of carbon dioxide. In addition, the U.S. Energy Information Administration calculated that current coal plants will commit another 300 billion tons of CO_2 to the atmosphere if they remain operational. It is estimated that these levels of emissions alone will contribute an additional 20 parts-per-million to the global atmospheric concentration.[20] As these statistics demonstrate, the burning of coal is irrefutably a major contributor to climate change.

IV. Social Costs

As a committee that considers issues of social responsibility, the CIR believes that Wesleyan University has an obligation to consider the social implications of investments in coal companies. The CIR recommends divestment from coal companies based on the belief that investment within this sector ties Wesleyan to an industry that perpetuates significant social injury. In its assessment of this injury, the CIR includes both the injury caused directly by the mining and burning of coal, as well as the injury caused by coal's significant contribution to climate change. Based on this, the CIR believes that there are significant ethical reasons to consider divestment from coal.

A. Mining Risks and Impacts:

Mining has historically been an extremely dangerous and taxing occupation for mine workers. The Mine Safety and Health Administration compiles official statistics concerning coal mine safety in the United States. According to this data, from 2009 to 2012 an average of 35 miners died annually from mining related accidents.[21] Although this represents a marked improvement over historic fatalities, coal mining is by no means a safe occupation. In 2010, an explosion at a coal mine in West Virginia killed 29 workers. This particular mine, owned by Massey Energy, was later found to be just one of many Massey-owned mines with serious health and safety risks posed to workers.[22]

In addition to potential fatality, miners also risk serious and lifelong health problems as a direct result of their work. According to a 2011 report from the Centers for Disease Control and the National Institute for Occupational Safety and Health, exposure to coal mine dust brings about a variety of serious respiratory diseases, including what is commonly known as "Black Lung," the results of which can cause disability and premature death. This report also found that the prevalence of respiratory disease is rising and affecting miners at younger ages.[23]

B. Production and Consumption Impacts:

The social costs of coal production include widespread impacts on human health and well-being. Coal contributes to thousands of deaths and hospitalizations annually in the United States and globally. In 2012, British medical journal, *The Lancet,* classified coal as "the biggest health threat of the 21st century".[24]

Coal is known to release many noxious pollutants into the atmosphere during combustion. These pollutants, including ash, mercury, sulfur dioxide, nitrous oxides and other potent chemicals[25], contribute to four out of the five leading causes of death in the United States (heart disease, cancer, respiratory disease, and stroke).[26] Hundreds of thousands of asthma attacks, hospitalizations, and heart attacks each year are attributed to particulate matter released from

coal combustion.[27] The populations most vulnerable to these pollutants are infants, children, and the elderly. The International Energy Agency found that in 2010, worldwide the health impact from coal pollution totaled 210,000 deaths and two million cases of serious illness.[28]

Figure 3: Annual Death and Illness Rates Resulting from Coal in the United States (as of 2010)[29]

Condition	Number of People Affected
Premature Death	13,000
Emergency Room Visits	12,000
Heart Attacks	20,000
Asthma Attacks	200,000

Due to the significant impacts of coal on the surrounding communities, coal plants are predominantly located near and within marginalized communities. For example, according to an NAACP report released in 2012, 39 percent of the six million Americans who live within a three mile radius of coal burning plants are people of color (disproportionate to the 36 percent of all Americans who are people of color).[30] Additionally as of 2012, the six million Americans living near coal plants have an average income of $18,400, compared with $21,857 nationwide.[31] As a result of these prevailing trends, low-income communities and communities of color are disproportionately exposed to toxins emitted by coal plants and are at greater risk of developing potentially fatal health problems.

1. Case Study: Bridgeport, CT

Although Wesleyan University does not have an investment relationship with the Bridgeport Harbor Power Station, the CIR has conducted a case study of the Bridgeport Harbor Power Station. The CIR believes that our current investment relationship with coal companies insinuates the University's long-term interest in the success of these companies and therefore the success of the commodity that they produce. However, there is evidence that the continued use of this commodity has explicit social costs imposed on communities.

The Bridgeport Harbor Power Station is the last operational coal-fired power plant in the state of Connecticut. The power station is ranked as the tenth worst "environmental justice offender" nationwide out of 378 coal-fired power plants surveyed.[32] Emissions from the combustion of coal in Bridgeport have greatly impacted the health of residents located near the power plant. A report published by the Connecticut Department of Public Health found that residents in Bridgeport experience higher rates of respiratory and cardiopulmonary ailments than residents

of other communities statewide.[33] Additionally, Bridgeport's rate of morbidity, mortality, and costs from asthma are three times higher than the rest of Connecticut.[34]

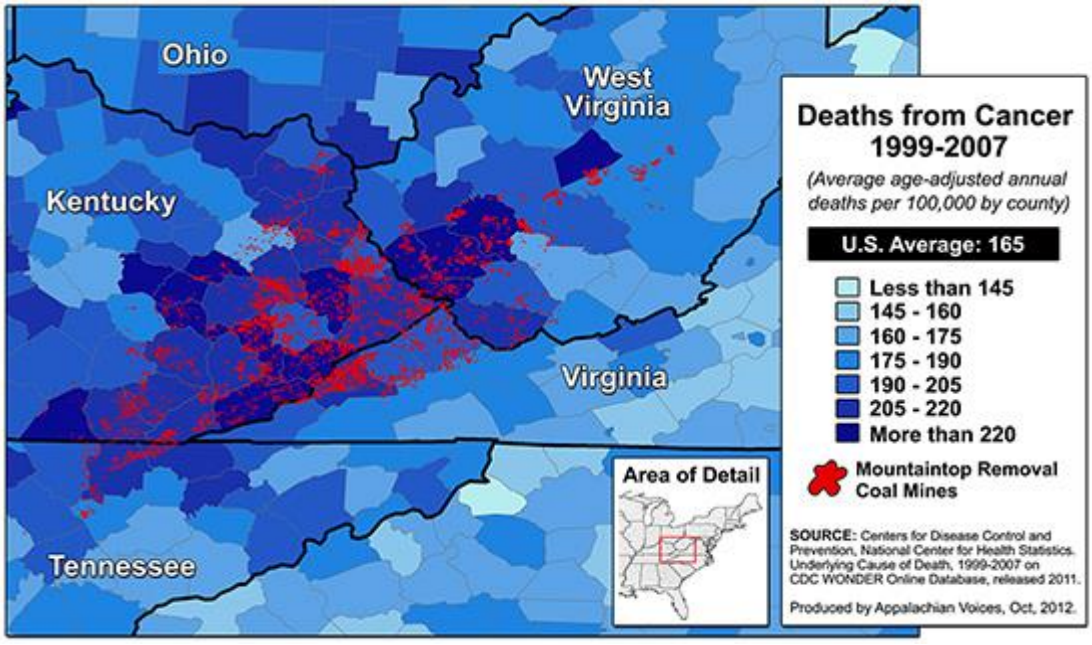
The population of Bridgeport is almost 87 percent people of color, three times greater than the percentage of people of color in the state as a whole. Bridgeport is also the second poorest city in Connecticut, and the power station is situated closest to the most impoverished neighborhoods in the city.[35] As a result, poor residents and people of color in Bridgeport bear a disproportionate amount of the social costs of coal production. Mirroring national and international trends, Connecticut exemplifies the unequal distribution of coal-induced social-burdens.

2. Case Study: Appalachian Mountaintop Removal

Mountaintop removal (also known as strip mining) is the most destructive form of coal mining, consisting of the physical removal of mountaintops in order to gain access to coal beds below. Mountaintop removal strategies are used most frequently in Appalachia, including the states of Kentucky, West Virginia, Virginia, and Tennessee. A recent study reported that as of 2009, 1.2 million acres had been strip mined over 500 mountains.[36] This method of coal removal has significantly impacted the residents of Appalachia.

Appalachian communities have cancer rates that are nearly double the national average. A report released in 2011 found that up to 60,000 cancer cases can be attributed to mountaintop removal.[37] Increased cancer rates are most often linked to contamination of drinking water from chemicals used in the mining process. The health impacts from mountaintop removal are severe enough that coal producing counties in this region have consistently been ranked among the lowest in the United States for life expectancy.[38]

Figure 4: Deaths from cancer in Areas of Mountaintop Removal[39]



C. Climate Impacts:

Social impacts from coal production and consumption extend beyond the health and social justice concerns discussed previously. Coal is the largest contributor to increasing carbon emissions, responsible for changing climate conditions known as global climate change. Current scientific consensus accepts that climate change perpetuates land loss, the spread of disease, drought, ocean acidification, and extreme weather, among other effects. These effects threaten food, health, land, and geopolitical security, jeopardizing the safety and wellbeing of people worldwide. Much like the social justice implications of coal plants discussed above, marginalized communities locally and globally are the most at risk from the negative impacts of climate change.[40]

For example, the latest IPCC report predicts that climate change will negatively impact global crop yields, as population and demand continue to increase.[41] Thirty-nine percent of the world currently relies on agriculture as their primary source of income. As such, climate change directly threatens the financial security of 3.5 billion people. The social costs of climate change have the potential to be devastating. In one assessment, the World Health Organization predicted that between 2030 and 2050, climate change will be responsible for approximately 250,000 additional deaths per year.[42]

Figure 5: Global Frequency of Extreme Environmental Disturbances[43]

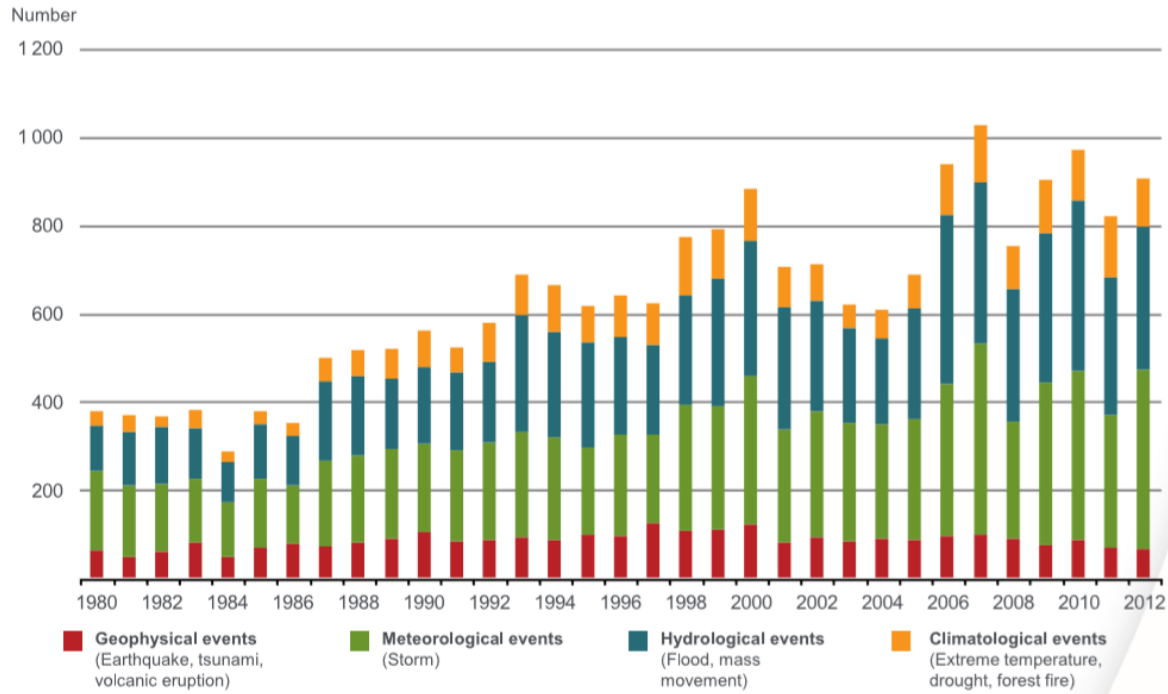


Figure Legend: This graph displays the frequency of major environmental disturbances on an annual basis from 1980 to 2012. These extreme events include geophysical events (earthquake, tsunami, volcanic eruption), meteorological events (storm), hydrological events (flood, mass movement), and climatological events (extreme temperature, drought, forest fire). The frequency of meteorological, hydrological, and climatological events have all increased over this time period. In conjunction, the overall sum of extreme environmental disturbances has increased over this 32 year period from less than 400 events worldwide in 1980 to approximately 900 events globally in 2012 alone.

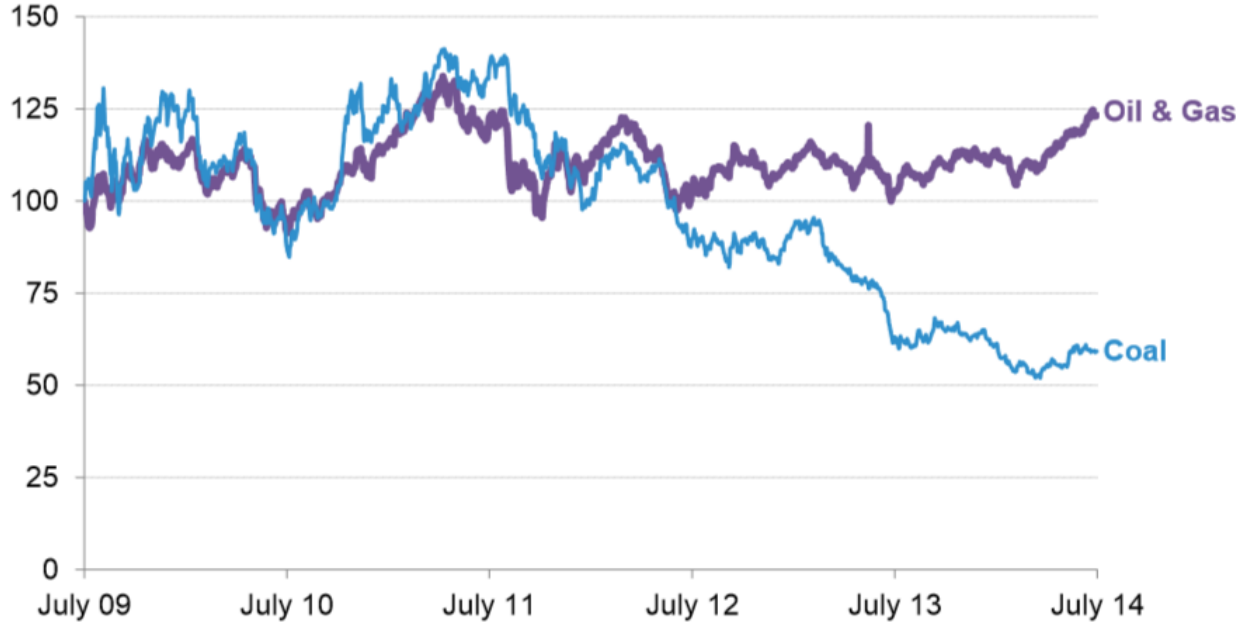
V. Financial Risk

A. International Markets

The CIR believes that there is significant financial risk associated with the continued investment in fossil fuel companies. The CIR acknowledges that fossil fuels will continue to have a presence in the global energy portfolio for years to come. However, the CIR also believes that continued investment in fossil fuel companies shows continued support of a business model that this Committee considers unsustainable. The CIR understands that Wesleyan University maintains long-term investment strategies, and short-term market fluctuations do not justify divestment from any particular company. However, given the lack of growth of coal stocks over the past six years and an international pressure to transition towards a low-carbon economy, the CIR believes that coal companies hold an unacceptable level of risk, while continuing to contribute to broader social injury.

Coal companies have been very profitable in the past when prices and forecasting remained high, but since 2011 coal prices have suffered. In 2011, thermal coal prices peaked at over $136 per ton on the Central Appalachian Coal Index (New York Mercantile Exchange)[44], and have since fallen to $47 per ton (as of market close on January 28, 2015).[45] In 2013, when coal fell to a price of $77 per ton, analysts estimated that 30 percent of the world's coal production was unprofitable.[46] The CIR is in agreement with numerous international organizations and analysts who believe that the valuations of coal companies are at a greater risk due to new government regulations and market pressures such as increasing competition from other sources and increasing social pressures. An analyst for Nomura Holdings found that recent emissions regulations passed by the US Environmental Protection Agency may have depressed domestic thermal coal demand by eight percent after the regulations took effect.[47] The emergence of new hydraulic fracking technology, as well as increased cost competitiveness from alternative energies, has decreased demand for coal at the international level, depressing prices even further.

Figure 6: Coal, Oil, and Gas Trends (2009-2014)[48]



***Source**: Bloomberg*

***Note**: Bloomberg World Oil & Gas Index and Bloomberg World Coal Index, rebased to 100 on 1 July 2009.*

Although the CIR believes that from a social and moral perspective there is sufficient justification for the exclusion of all companies involved with coal mining and production, the CIR understands that the Wesleyan Investment Office may wish to investigate exclusion on a case-by-case basis. If this is the case, the CIR recommends investigating from both a social and economic perspective. The CIR recommends excluding companies that have committed and continue to commit the most social injury, as well as those companies that present the most financial risk. The CIR recommends that companies involved exclusively with coal mining extraction and production be considered prior to companies involved with additional mining interests such as mineral extraction. Companies that are more diversified among their mining interests pose a lesser risk than those exclusively involved with coal mining, as the latter may not be able to divert capital to more profitable projects when coal prospects remain low.

If the Wesleyan Investment Office does consider investigating coal mining companies on a case-by-case basis, then the CIR also recommends investigating companies for exclusion based on the quality of coal mined. Companies that mine thermal coal or coal with high ash or sulfur content pose a greater risk than companies that mine metallurgical coal or coal with low ash and sulfur content. Thermal coal is used almost exclusively to create electricity, and metallurgical coal is used in steel production. The CIR believes that additional risk arises from companies producing thermal coal because increased government regulation drives up costs to process thermal coal, making it less desirable as an input for energy production. In contrast, metallurgical coal has few substitutes in steel production, making it a more resilient

commodity. However, metallurgical coal producers also face risk from slowing growth in developing nations such as China, where they source a large portion of their demand. The CIR acknowledges that the world may continue to use coal as it moves towards a more diverse energy portfolio, but recent market prices and investment returns have raised the Committee's concerns.

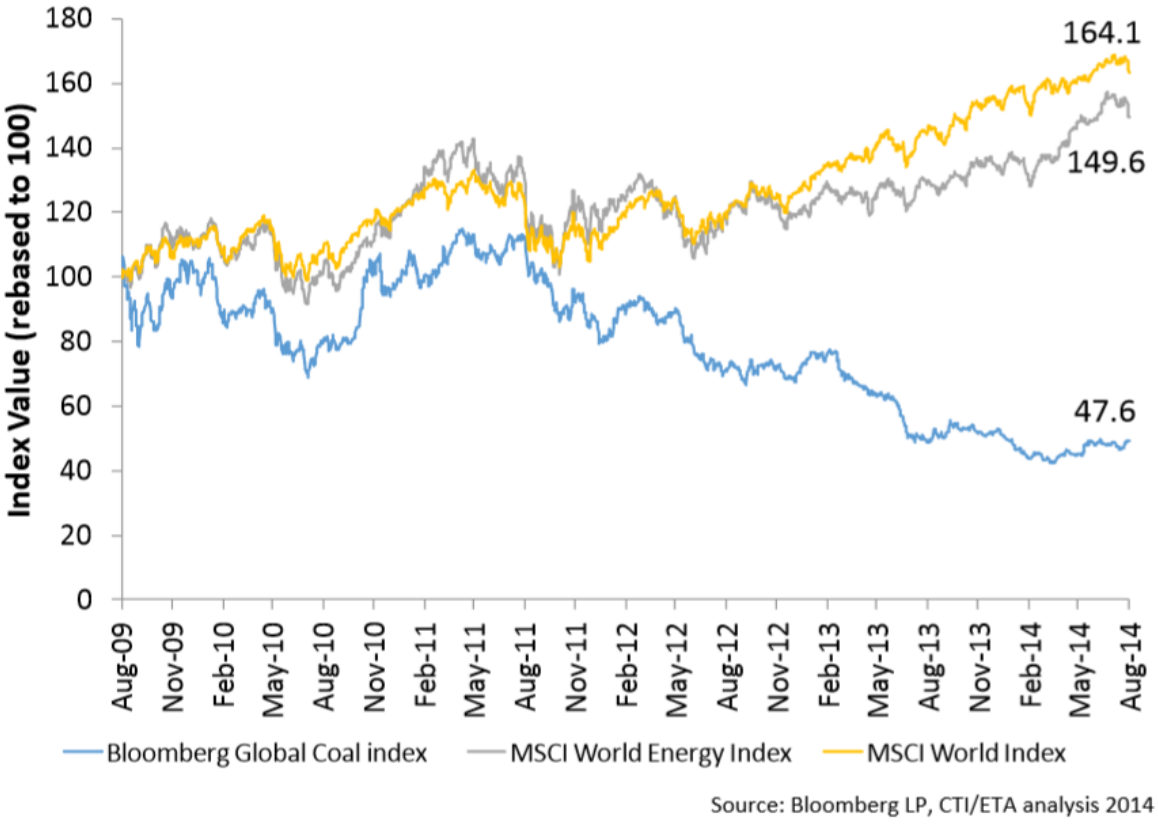
Coal companies also present themselves as riskier investments as a result of their recent actions and decisions. The CIR has found that the lack of coal price stability, internationally and domestically, has forced some unexpected changes among coal mining companies. Many coal mining and diversified mining companies have begun to divest their coal assets that they consider unnecessary.[49] Even larger companies that are better positioned in the marketplace have even started to offload some of their larger, more profitable mines, as coal assets continue to become riskier investments. The CEO of BHP, one of the world's largest mining companies, announced in August 2013 that BHP was likely to stop investing in coal for some time, and would be refocusing on developing its other mining assets. Investors have started to question BHP's commitment to coal, even though coal represents one of the largest industries in Australia.[50] Other companies have stalled production of unprofitable mines, such as Glencore Xstrata, which stalled its $7 billion coal project and $1 billion coal terminal.[51] Like Glencore, Peabody Energy, one of the United States' largest miners, closed one of its Australian mines in 2012 due to unprofitability. In May 2014, Vale, a Brazilian coal mining company, announced the closure its Integra coal mine in New South Wales, which it currently considers economically unfeasible.[52] The CIR believes that company actions such as closing or selling mines reasonably predict the current and future conditions of the coal market.

The past few years have seen a number of large coal miners selling 'non-core mining assets,' beginning with Rio Tinto's huge sale of its investment in the Clermont mine at the end of 2013. The Clermont mine is the third largest coal mine in Australia and one of Rio Tinto's largest coal operations.[53] One of the largest corporate divestments from coal occurred around the same time as Rio Tinto's sale of the Clermont mine; CONSOL Energy announced at the end of 2013 that it would sell half of its coal mining business to focus on gas sales.[54] Sherritt International Corporation, the largest thermal coal producer in Canada, announced at the end of December 2013, that it would be selling its coal mining business.[55] The year of 2014 saw a similar number of coal divestitures as the end of 2013.

Abbot Point, a new coal terminal proposed for development in Queensland, saw a large number of international investors withdraw funds as the profitability of the international markets diminished. Anglo American, Rio Tinto, BHP Billiton, Glencore Xstrata, and a large number of international banks all pulled funding from Abbot Point due to decreased coal demand.[56] In March 2014, SunCoke Energy, a United States company, announced a strategic plan to exit the coal mining business.[57] Total Coal SA announced its decision to sell two coal mines in South Africa's Mpumalanga province in early to 2014.[58] CONSOL announced in July further

divestment plans as it looks for a buyer of its Illinois Basin coal reserves.[59] Rio Tinto also made further divestitures in July when it sold its Mozambique coal assets to Indian-based International Coal Ventures. The Mozambique coal assets were originally purchased for $3.9 billion, but sold for only $53 million.[60] These are just a few examples of the large number of coal divestitures that have taken place over the past few years. The CIR believes that these actions by the companies themselves, combined with increased competition from gas and alternative energies, increased government regulation, and increased social pressures, make coal a quantifiably risky financial investment.

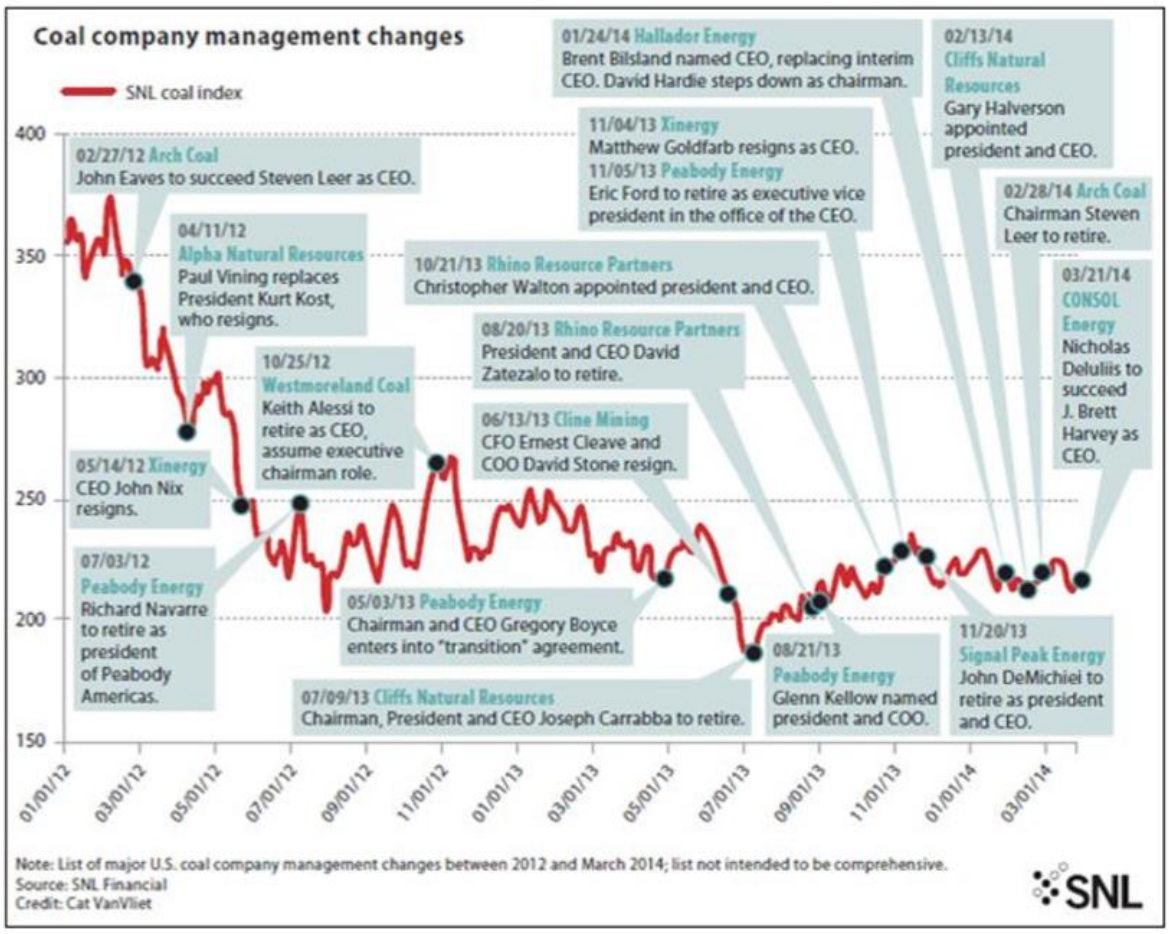
Figure 7: Bloomberg Global Coal Index and the MSCI World Index (2009-2014)[61]



B. Domestic Coal Market

The low worldwide price of coal has also contributed to a number of domestic bankruptcies -- twelve since 2012 -- as well as a high turnover of executives.[62]

Figure 8: Coal Company Management Changes[63]



Source: SNL Financial

The following case studies detail two coal-related assets which the University previously held in its direct holdings. Although the University does not remain invested in these securities to the CIR's knowledge, their financial trends provide valuable insight into the current state of the domestic coal market. Furthermore, the fact that the University has informally divested itself of these holdings indicates that the University's fund managers may already view coal assets as unattractive investments and therefore consistent with the recommendations detailed in this proposal.

1. Case Study: CONSOL Energy

CONSOL is one of the oldest mining companies and the largest miner of bituminous coal in the United States. CONSOL is not a diversified mining company, and it generated 80% of its revenue from coal assets in 2013.[64]

CONSOL, once the face of the United States coal mining industry, announced in October 2013 that it would sell more than half of its coal operations, valued at $3.5 billion. The company announced that it would replace its coal assets with natural gas, noting that coal operations are not as certain due to current market prices and impending government regulation.[65]

Following a trend set by the international coal market, CONSOL also announced in July 2014 that it was looking to sell coal from its Illinois Basin reserves in an effort to increase shareholder value by selling non-core assets.[66]

Figure 9: CONSOL Energy Inc. Stock Trends[67]

2. Case Study: Arch Coal

Arch Coal, like many other coal mining companies, has lost significant value since coal commodity prices dropped in 2011. As of December 2013, Arch Coal had lost 73 percent of its market value compared to two years prior.[68] Although Arch Coal is one of the largest coal mining companies in the United States, it has struggled through a period of low commodity prices. Unlike diversified mining companies that can divert capital into other projects when

certain commodities are unprofitable, Arch Coal is a pure coal company, making it a riskier investment in the current market conditions.

Similar to U.S. mining conglomerate CONSOL Energy, Arch Coal has recently started to expand its portfolio to include gas assets. In order to lower the debts it acquired during the coal bull market in the 2000s, Arch Coal has lowered dividends and sold of some of its non-core assets.[69]

Figure 10: Arch Coal Inc. Stock Trends[70]

C. Diversification

The CIR understands that our recommendation of divestment from coal mining companies will result in small loss of diversification, which helps hedge against fluctuations in the market, within the Wesleyan endowment fund. However, the CIR believes coal stocks constitute only a small portion of the Wesleyan endowment.

VI. Actions of Other Institutions

Discourse and action surrounding responsible investment strategies with respect to fossil fuels has accelerated at other educational institutions in recent years, making it the preeminent student strategy to address global climate change. According to an assessment from the University of Oxford, fossil fuel divestment has grown faster than the divestment movements from apartheid or tobacco.[71] Thus far, over seventeen American colleges and universities have committed to divestment from coal, and academic action is being taken at an increasing pace.[72] Wesleyan's proposed divestment would be the first among its NESCAC peers and among elite Northeast universities.

A. Educational and Non-Governmental Entities

Divestment initiatives have expanded from small colleges (such as Hampshire College, Unity College, and the College of the Atlantic) to peer schools with similar liberal arts values. In addition, Yale University's investment office has directed its money managers to consider avoiding companies that fail to take "steps to reduce greenhouse gas emissions."[73]

The proposal outlined here, however, most similarly reflects the notable recent actions taken by Stanford University's Board of Trustees. Attracting considerable media attention, Stanford announced in 2014 that they would divest from approximately one hundred corporations that engage in coal extraction as their "primary business," urging their external investment managers to do the same.[74] In announcing their decision, Stanford's Trustees emphasized that the targeted proposal would confront social injury without encountering the hypocrisy of divesting from a resource they depended on, given that the state of California gets very little energy from coal-powered generation.[75] Likewise, Connecticut uses almost no energy from coal, and a proposal of this nature would avoid confronting the social injury of oil and natural gas generation – which Wesleyan still relies on through the Cogen plant – until a later date.

Non-educational institutions have committed to coal divestment alongside colleges and universities.[76] Cities such as Seattle, Washington; San Francisco, California; Portland, Oregon; Madison, Wisconsin; Cambridge, Massachusetts; Amherst, Massachusetts and others have divested either general city coffers or municipal pension plans from various coal entities.[77] Hesta, an Australian retirement fund for healthcare industry professionals with assets totaling $26 billion, moved last year to divest its holdings from coal-mining operations.[78] Perhaps most notably, the Rockefeller Foundation, whose assets are inherited from the fortunes of Standard Oil, announced last year it would completely divest its multi-billion dollar endowment of all fossil fuel holdings. The Foundation had previously divested from holdings in tar sands and coal. Pledges by local governments, universities, churches, and other NGOs more than doubled in the year 2014 alone, reaching 181 major pledges by September 2014 .[79] As of that same date,

combined assets worth more than $50 billion have been divested from fossil fuels among 873 institutions, 38 percent of which came from academic coffers.[80]

Divestment commitments from larger institutions have received considerable media attention. Announcements by Stanford and the Rockefeller Foundation both resulted in front-page treatment by the New York Times and other media outlets nationwide. As a university of significant social and cultural standing, Wesleyan too has the opportunity to draw national attention to its efforts while highlighting the cost of coal in the climate crisis. This attention has the potential to be beneficial to the University by reaching a wider audience of potential applicants and donors. In divesting from coal, Wesleyan would continue to serve as a model and leader in higher education, setting itself apart among peer institutions. In addition, through media attention Wesleyan can further demonstrate the viability of coal divestment and contribute to the growing success of the burgeoning coal divestment movement.

B. Alternative Indices

The launch of the FTSE Developed ex Fossil Fuels Index Series represents a major divestment initiative. In April 2014, FTSE partnered with BlackRock, the world's largest fund manager, to provide an index that excludes coal, oil, and natural gas companies. Specifically, Developed ex Fossil Fuels Index Series excludes companies that explore, own, and directly extract carbon reserves. FTSE maintains that historical five-year performance of its Developed ex Fossil Fuels Index Series tracks the performance of its Developed Index[81]. While historical performance is not a complete predictor of future performance, these findings suggest that investors in the FTSE Developed ex Fossil Fuels Index may be able to achieve comparable returns in a socially responsible manner.

Figure 11: Performance of Fossil Free Indices (2004-2014)[82]

VII. Government Action

Government regulations of the coal industry should draw concern to the stability of maintaining relevant investments in Wesleyan's portfolio. There are three main points the CIR wishes to highlight in this section. Firstly, there are already substantial government regulations in place from municipal to federal levels which address the extraction and consumption of fossil fuels; these regulations have only been increasing in number and stringency over time. Second, the aforementioned regulations have had an impact on the profitability of the coal industry and can serve as indicators of limitations on future profitability. Thirdly, recent regulations signal the beginning of a shift in American and international policies against the coal industry. It's likely that government regulations will continue to affect the industry and threaten the long-term stability of coal assets.

A. International Initiatives and Regulations

The two most common types of direct carbon regulation are a carbon tax and a cap-and-trade emissions system. There are thirty-five different carbon pricing systems already in effect around the globe, from small regional systems in California, British Columbia, and Quebec, to larger national systems in Canada, Denmark, Switzerland, and Australia.[83] Emissions trading systems are appearing in developing nations like Costa Rica, Mexico, and China, as well as in the US, United Kingdom, and the European Union.[84]

Figure 12: International Trends Concerning Carbon Reduction and Clean Energy (1990-2010)[85]

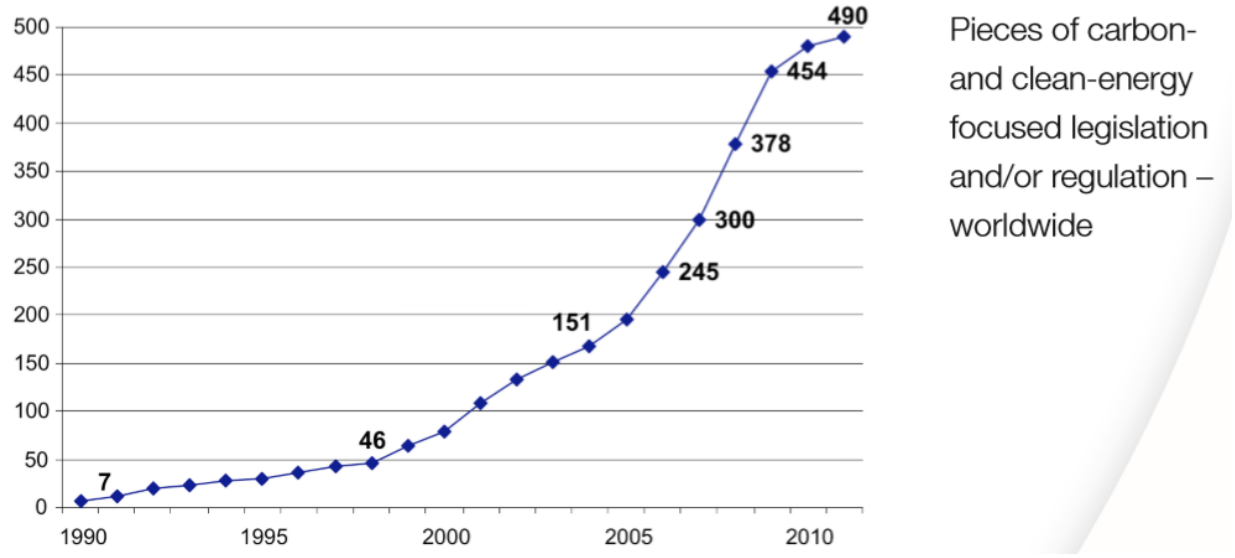


Figure Legend: This graph documents annual international legislative activity concerning carbon reduction and clean-energy. As the data collected through the United Nations demonstrates, such legislation has been increasing in quantity at a rapid pace over the last twenty years.

B. Federal Initiatives and Regulations

On a Federal level, the last few years have born witness to an increasingly firm stance on climate change and fossil fuel regulation. President Obama has repeatedly indicated a desire to pursue emissions reductions during the past six years of his presidency. Under President Obama's administration, the United States has nearly doubled its clean energy generation while committing to a 28 percent reduction in federal government emissions by 2020.[86] These reductions indicate not only a perilous regulatory environment for the coal industry today, but also a resolve to further tighten restrictions in the years to come. In addition, in November 2014 President Obama announced a bilateral climate agreement with Chinese President Xi Jinping wherein the United States pledged to reduce national emissions by 26-28 percent by 2025.[87]

The EPA has recently issued increasingly stringent regulations on coal-fired power plants. In April 2014, the Supreme Court upheld the EPA's Cross-State Air Pollution Rule, requiring additional air emission controls to be installed on several Midwestern power plants.[88] Despite pressures from mining companies to expand the scope of waste dumping sites, the EPA has maintained waste limitations blocking such expansion.[89] In December 2014, the EPA instituted the first federal regulations of waste products produced by coal burning, which is anticipated to significantly affect existing plant operations.[90] In sum, the future ability of the coal-mining industry to expand and sustain profits in the United States is at risk.

C. Proposed Regulations

The Obama Administration's proposed policies and regulations strengthen its firm stance on climate change and the coal industry, resulting in widespread uncertainty on the future of coal in the United States. In June 2014, the EPA released a proposal designed to cut CO_2 emissions from existing coal plants by as much as 30 percent by 2030.[91] The EPA is also developing new limitations on water discharges from coal-fired power plants.[92] The US Bureau of Land Management is considering imposing regulations on methane emissions from underground coal mines on federal lands; if implemented, this regulation could significantly raise costs for mining companies.[93] Finally, the Pentagon recently released a report which classified climate change as a "national security threat".[94] This classification indicates that the Federal government, with the backing of the Pentagon, is likely to take increasingly harsh steps against the coal industry.

D. Uncertainty and Risk

Current and proposed regulations have had tangible effects on the coal industry, generating risk and uncertainty from investors and industry insiders alike. Since 2002, 170 coal plants have been closed and another 180 proposals for new plants have been blocked country-wide.[95] The Associated Press reports that in 2015 more than thirty-two coal-fired plants will close and another thirty-six plants could be forced to shut down.[96] More than half of these plants are

located in coal production hubs such as West Virginia, Kentucky, and Illinois. The Institute for Energy Research (IER), a fossil fuel industry think tank, estimates that EPA regulations have been a driving force behind the closures of coal plants across 37 states, together accounting for greater than one fifth of coal-produced energy in the United States. The IER group states that this list will "continue to grow in the future as new EPA regulations continue to be released".[97] In reaction to the June 2014 regulations, Edison Electric Institute president Tom Kuhn said that the ruling "creates additional uncertainty for electric utilities."[98] The results of these impacts can be seen in coal's sharply declining value.

VIII. University Support

Coal divestment has received significant support from Wesleyan students, faculty, and alumni. The CIR has engaged in a number of steps to assess the magnitude of support among the Wesleyan community. The primary sources of evidence for such support are the results from a student-wide survey, as well as signatures of support from students, faculty and alumni.

A. Wesleyan Student Assembly Resolution

In 2013, the Wesleyan Student Assembly (WSA) passed and adopted a resolution in support of coal divestment. The resolution passed with 20 members voting in support, 6 voting against and an additional 5 abstaining.

B. Student-Wide Survey

From November 18, 2014 to February 1, 2015, the CIR conducted a survey of the Wesleyan undergraduate student body with the help of the Wesleyan Student Assembly. The survey was intended to gauge students' opinions on the subject of divestment. The survey was designed under the supervision of Daniel Long, Assistant Professor of Sociology, to avoid potential bias.

904 students responded to the survey, representing one-third of Wesleyan's undergraduate student body. When asked to respond to the statement, "Fossil fuel divestment is an important issue to me," 72 percent of respondents agreed. Sixty-seven percent of respondents agreed with the statement that "Fossil fuel divestment is an important issue to the student body at large." The survey attracted responses from a broad array of undergraduates, resulting in a racially diverse group of respondents and a roughly equal proportion of men and women. The survey's respondents were also politically diverse: a full 88 percent of respondents did not identify themselves as being involved in environmental activism. Nonetheless, 90 percent of respondents noted that the University has a "moral obligation to address issues of climate change."

In response to the survey's final question, "given that Wesleyan currently invests in fossil fuels companies, the University should…" 73 percent of respondents said that the Wesleyan should commit to divesting from fossil fuels in a responsible manner. Only 8 percent of students said that the school should maintain its current investments. 16 percent of students said that they did not know enough about the issue, and only 2 percent of students said that they did not care. Visual representations of this survey data are provided in Appendix A.

The additional comments provided by survey respondents (detailed in Appendix B) also reflect the Wesleyan community's concern for responsible divestment. Given the clear opinions of the student body, the CIR feels that this proposal balances its two roles as a spokesperson for the

Wesleyan undergraduate community and as a cautious defender of Wesleyan's endowment resources.

C. Faculty Support

Faculty play a vital role in the Wesleyan community, and as such, faculty support of fossil fuel divestment has been important factor of consideration for the CIR. Wes, Divest!, a student group on campus supporting divestment from carbon entities, provided the CIR with a faculty petition that was circulated supporting fossil fuel divestment. Over 40 faculty members ranging in departmental affiliation have signed this petition in support of fossil fuel divestment. The list of supporting faculty along with the text of the petition can be found in Appendices C and D.

IX. Conclusion and Recommendations

After thorough research, the CIR has found significant scientific, social, and financial support for Wesleyan to take action in the form of coal divestment. The impacts of coal are great, both through immediate health and safety impacts and through climatic change. Existing evidence indicates that coal accounts for significant social and environmental injury both locally and globally. These impacts are severe, and the CIR believes that they oppose the values of the University.

There are many signs that point to beneficial results of coal divestment. Market trends clearly show the decreasing value and increasing risk of coal investments. The available information on Wesleyan's own recent investment shifts reflects an acknowledgement of such risk. The divestment actions of other universities and institutions showcase a similar financial perspective and feasibility towards divestment. Lastly, past government actions have significantly impacted the stability of the coal industry and indicate a political shift away from coal that will continue into the future.

The benefits of coal divestment are more than merely financial. Adopting this proposal will be greeted with strong support by the Wesleyan community. The survey conducted by the CIR demonstrates that a majority of the student body supports coal divestment. Additionally, significant portion of Wesleyan's faculty signed a petition in support of coal divestment. Action taken by the Board of Trustees will generate a public reaction extending beyond the Wesleyan campus. As previous divestment announcements at other institutions demonstrate, Wesleyan's adoption of this proposal would receive significant media attention, boosting the national visibility of the University.

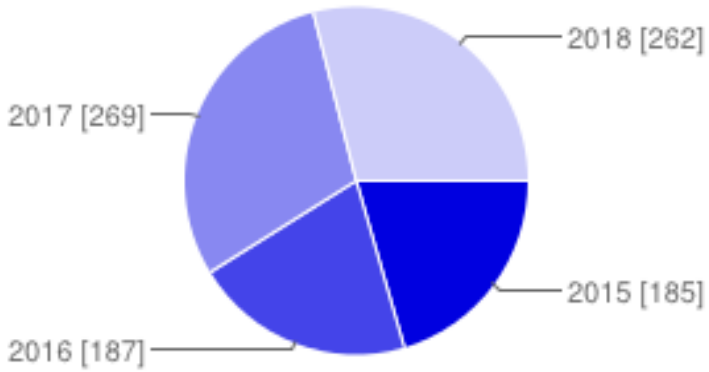
In sum, the CIR finds the evidence significantly compelling as to recommend divesting the Wesleyan endowment from coal investments. The CIR has several specific recommendations, which are the following:

1. Divest from any current direct holdings in coal and abstain from any future direct holdings in coal
2. Formulate a general investment policy which incorporates social and environmental considerations. In this policy, include a commitment to prioritizing fund managers that invest in socially responsible funds
3. Formulate a public statement of investment responsibility that reflects the policy above
4. Establish a directive to external managers which reflects any and all divestment measures taken by the University with regards to its direct holdings
5. Include in that directive a preference for external fund managers to adopt the principles outlined in the aforementioned general investment policy
6. Commit to future conversations with the CIR about the progress of such changes

X. Appendices

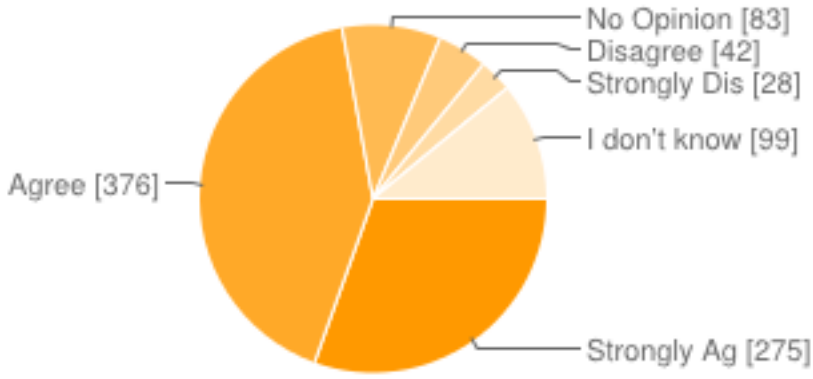
A. Survey Results

Figure 13: Respondents by Class Year



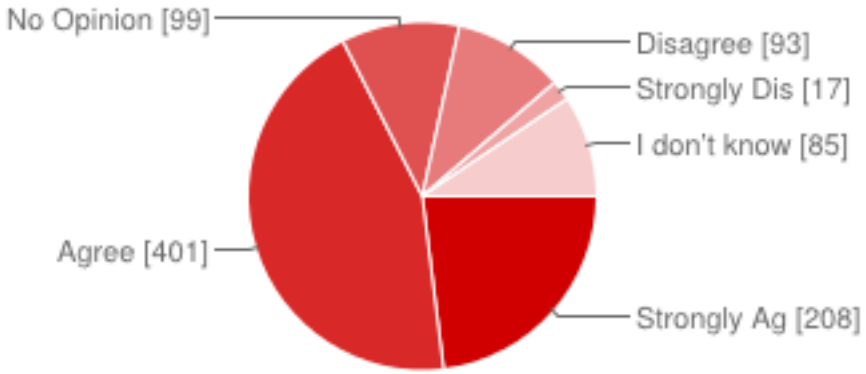
Year	Responses	Percentage
2015	185	20%
2016	187	21%
2017	269	30%
2018	262	29%

Figure 14: Responses to Statement "Fossil fuel divestment an important issue to me"



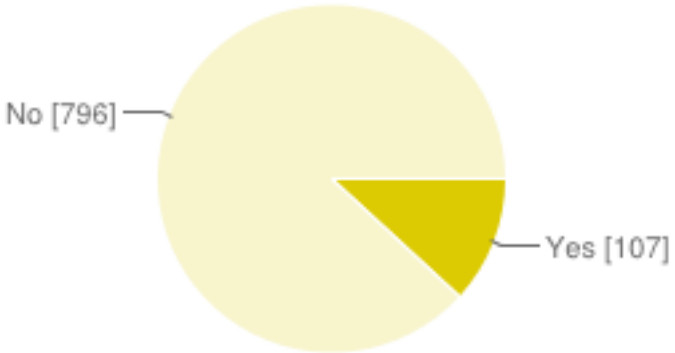
Answer	Responses	Percentage
Strongly Agree	275	30%
Agree	376	42%
Neutral	83	9%
Disagree	42	5%
Strongly Disagree	28	3%
Don't know enough to answer this question	99	11%

Figure 15: Response to Statement "Fossil fuel divestment is an important issue among the student body at large"



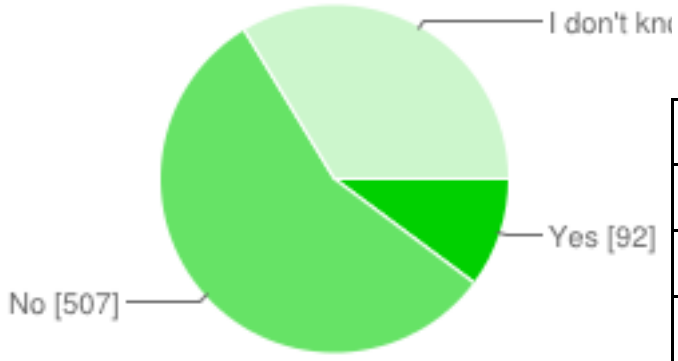
Answer	Responses	Percentage
Strongly Agree	208	23%
Agree	401	44%
Neutral	99	11%
Disagree	93	10%
Strongly Disagree	17	2%
Don't know enough to answer this question	85	9%

Figure 16: Response to Statement "Are you involved in on-campus activism regarding the fossil-fuel divestment issue"



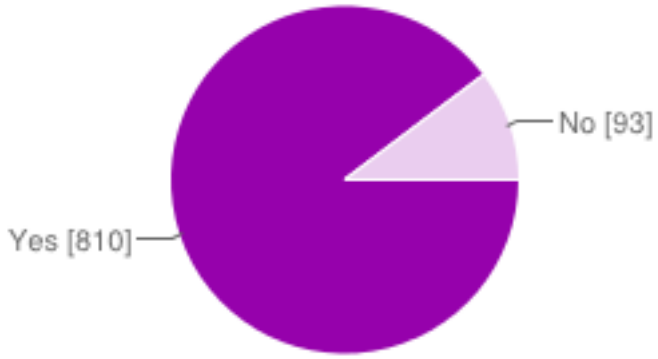
Answer	Responses	Percentage
Yes	107	12%
No	796	88%

Figure 17: Response to Statement "Do you think that current university initiatives sufficiently address issues of climate change"



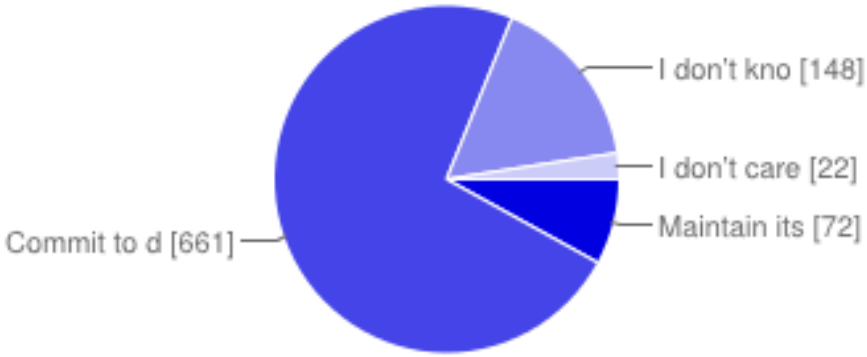
Answer	Responses	Percentage
Yes	92	10%
No	507	56%
I don't know enough about this issue	304	34%

Figure 18: Response to Statement "Do you think that the university has a moral obligation to address issues of climate change"



Answer	Responses	Percentage
Yes	810	90%
No	93	10%

Figure 19: Response to Statement "Given that Wesleyan currently invests in fossil fuels companies, the University should…"



Answer	Responses	Percentage
Maintain its current investments	72	8%
Commit to divesting from fossil fuel companies in a responsible manner	661	73%
I don't know enough about the issue to answer this question	148	16%
I don't care	22	2%

B. Additional Comments Provided by Survey Respondents (selection)

- "As a student on financial aid, I understand that the University looks to protect its endowment in order to maintain affordability. However, I strongly feel that climate change has spiraled to have a profound and undeniable impact on our planet and it is important for Wesleyan - as an institution committed to progressive values and as an institution that hopes to exist in the future - to reduce its emissions as much as possible."

- "Climate change presents an existential threat to humanity, and the time in which to address it in a meaningful way is running out. To pay lip service to stopping climate change while tying Wesleyan's financial health to those of the companies directly responsible for polluting the earth is disingenuous and suicidal. Regardless of efficacy, divestment from fossil fuels is a powerful gesture that is very much in line with Wesleyan's stated institutional commitments to environmental health and peace--one that needn't spell financial insolvency either."

- "Divestment needs to be in line with responsible investing, which not only means ethical investing, but also financially viable investing so that this school can be accessible for low-income and middle-income students. I believe that the two processes can and should coexist."

- "Wesleyan has so many reputations for activism, forward thinking, liberalism, progressivism, and generally positive impacts on the world at large. It's time the administration put its money where its mouth is."

- "By 'responsible manner' in the last question, I believe the University should work towards fully divesting from fossil fuels as soon as possible without incurring overly harmful financial consequences to the endowment. i.e. the University should change its portfolio as quickly as possible without destabilizing its financial situation."

- "While I like the idea of fossil fuel divestment, I think it's important to remember that the investment portfolio has to function first as a way of generating as much endowment as possible. I'm in favor of divestment if the cost of divesting could be regained with cleaner investments."

- "'In a responsible fashion' is the key part. Be realistic about possible costs to the university and the student body--Wesleyan's commitment to providing for its students comes before more general social issues. The focus should be less on "fossil fuels" in general, or taking some absolute stance on environmental responsibility, but rather finding responsible ways to divest from the energy sources most environmentally destructive at minimal cost to the university. For instance, coal (with enormous GHG emissions) should be treated differently from natural gas (with more moderate GHG emissions). Instead of taking a purist stance, Wesleyan should find an optimal balance between its responsibilities to its students and its environmentalist ideals."

C. Faculty Petition Text

By signing this petition, the following faculty member affirms the moral obligation of Wesleyan University to divest from fossil fuel companies. Ze also strongly encourages the Board of Trustees to conduct thorough research to develop a responsible divestment strategy at Wesleyan.

D. Faculty Petition Signatures

Lois Brown, African American Studies
David Swiderski, African American Studies
Laura Grappo, American Studies
Patricia Hill, American Studies
Amy Cynthia Tang, American Studies
Idira Karamcheti, American Studies
J. Kehaulani Kauanui, Anthropology
Anu Sharma, Anthropology

Gina Athena Ulysse, Anthropology
Claire Robbin Grace, Art and Art History
Phillip B. Wagoner, Art and Art History
Chris Chenier, Art Studio
Ann C. Burke, Biology
Barry Chernoff, Biology
Ruth Johnson, Biology
Michael Singer, Biology
Andrea Roberts, Chemistry
Charles Barber, College of Letters
Stacey Bobbit, Dance
Dana Royer, Earth and Environmental Studies
Wendy Rayack, Economics
Clifford Curtis Chase, English
Sean McCann, English
Joseph Smolinski, College of the Environment
Marc Eisner, Government
Justin Peck, Government
Ulrich Plass, German Studies
Jennifer Tucker, History
Laura Ann Twagira, History
Rosemarie Doris, Molecular Biology and Biochemistry
Rich Olsen, Molecular Biology and Biochemistry
B. Balasubrahmaniyan, Music
Elizabeth Jackson, Portuguese
Justine Quijada, Religion
Mary-Jane Rubenstein, Religion
Bernando Gonzalez, Romance Languages and Literature
Maria Ospina, Romance Languages and Literature
Ana Perez-Girones, Romance Languages and Literature
Kerwin Kaye, Sociology
Mary Ann Clawson, Sociology
Rob Rosenthal, Sociology
Claudia Nascimento, Theater
Jennifer Kleindienst, Sustainability Coordinator

Respectfully submitted,

The Wesleyan University Committee for Investor Responsibility

Jessica Hanway, *Chair*
Class of 2015

Joli Holmes
Class of 2017

Mira Klein
Class of 2017

Xiyue (Michelle) Li
Class of 2015

Angus McLean
Class of 2016

Joel Michaels
Class of 2018

Ellen Paik
Class of 2016

XI. References

[1] About the CIR. (n.d.). Retrieved from http://cir.wsa.wesleyan.edu/

[2] John Simon's The Ethical Investor (Yale Univ. Press, 1972))
Simon, J. (1972). The Ethical Investor. New Haven: Yale University Press.

[3] Ibid.

[4] IPCC, 2014: Summary for policymakers. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability.
Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1-32.

[5] Science. (n.d.). Retrieved from http://www.epa.gov/climatechange/science/overview.html

[6] Vital Signs: Carbon Dioxide. (n.d.). Retrieved from http://climate.nasa.gov/vital-signs/carbon-dioxide/

[7] Ibid

[8] Dunbar, B. (2012, January 19). NASA Finds 2011 Ninth-Warmest Year on Record. Retrieved from http://www.nasa.gov/topics/earth/features/2011-temps.html

[9] Vardiman, L. 2008. Does Carbon Dioxide Drive Global Warming? Acts & Facts. 37 (10): 10.

[10] Climate Change Indicators in the United States. (n.d.). Retrieved from http://www.epa.gov/climatechange/science/indicators/index.html

[11] Ibid

[12] The history of climate science. (n.d.). Retrieved from http://nhm.ac.uk/nature-online/environmental-change/what-is-climate-change/history-climate-science/index.html

[13] Global Climate Change: Evidence. (n.d.). Retrieved from http://climate.nasa.gov/evidence/

[14] IPCC, 2014: Summary for policymakers. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability.
Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D.

[15] United States Energy Information Administration. "How much carbon dioxide is produced when different fuels are burned?" Retrieved from http://www.eia.gov/tools/faqs/faq.cfm?id=73&t=11

[16] Center for Energy Solutions. Coal. (n.d.). from http://www.c2es.org/energy/source/coal

[17] United States Energy Information Administration. "How much of U.S. carbon dioxide emissions are associated with electricity generation?" from http://www.eia.gov/tools/faqs/faq.cfm?id=77&t=11

[18] Coal power: Air pollution. (n.d.). Retrieved from http://www.ucsusa.org/clean_energy/coalvswind/c02c.html#.VOTyl8Z_RRF

[19] United States Energy Information Administration. "How much of U.S. carbon dioxide emissions are associated with electricity generation?" Retrieved from http://www.eia.gov/tools/faqs/faq.cfm?id=77&t=11

[20] Magill, B. (2014, August 28). Coal Plants Lock in 300 Billion Tons of CO2 Emissions. Retrieved, from http://www.climatecentral.org/news/coal-plants-lock-in-300-billion-tons-of-co2-emissions-17950

[21] Mine Safety and Health Administration. Injury Trends in Mining. Retrieved from http://www.msha.gov/MSHAINFO/FactSheets/MSHAFCT2.HTM

[22] Mine Safety Questions Linger, One Year After Takeover Of Massey Energy. (2012, June 1). Retrieved from http://www.npr.org/blogs/thetwo-way/2012/06/01/154125148/mine-safety-questions-linger-one-year-after-takeover-of-massey-energy

[23] Department of Health and Human Services. Coal Mine Dust Exposures and Associated Health Outcomes. (2011, April). Retrieved from http://www.cdc.gov/niosh/docs/2011-172/pdfs/2011-172.pdf
[24] Markandya A, Wilkinson P. Energy and Health 2: Electricity generation and health. The Lancet 2007 9/15-21.
[25] Existing U.S. Coal Plants. (n.d.). Retrieved from http://www.sourcewatch.org/index.php/Existing_U.S._Coal_Plants
[26] Lockwood, A. Welker-Hood, K. Rauch, M. Gottlieb, B. Coal's Assault on Human Health. (2009, November). Retrieved from http://www.psr.org/assets/pdfs/coals-assault-executive.pdf
[27] Ibid
[28] Burt, E. Orris, P. Buchanan, S. Scientific Evidence of Health Effects from Coal Use in Energy Generation. (2013, April). Chicago: University of Illinois. Retrieved from http://noharm.org/lib/downloads/climate/Coal_Literature_Review_2.pdf
[29]Sierra Club. Beyond Coal. (n.d.) Retrieved from http://content.sierraclub.org/coal/
[30] Ansar, A. Caldecott, B. Tilbury, J. Stranded assets and the fossil fuel divestment campaign: what does divestment mean for the valuation of fossil fuel assets? United Kingdom: Smith School of Enterprise and the Environment. http://www.smithschool.ox.ac.uk/research-programmes/stranded-assets/SAP-divestment-report-final.pdf
[31] Wilson, A. (2012, November 16). Coal Blooded: Putting Profits Before People. Retrieved from http://www.naacp.org/page/-/Climate/CoalBlooded.pdf
[32] Ibid
[33] Sooty Six - Power Plants. (n.d.). Retrieved fromhttp://www.cleanwateraction.org/story/sooty-six-power-plants
[34] NAACP to Announce Campaign to Shutdown Bridgeport Harbor Station. (n.d.). Retrieved from http://content.sierraclub.org/Coal/connecticut/bridgeport-plant
[35] Sooty Six - Power Plants. (n.d.). Retrieved fromhttp://www.cleanwateraction.org/story/sooty-six-power-plants
[36] Reclamation FAIL » iLoveMountains.org. Retrieved February 18, 2015, from http://www.ilovemountains.org/reclamation-fail/details.php#extent_study
[37] Luanpitpong, S., Chen, M., Knuckles, T., Wen, S., Luo, J., Ellis, E., ... Rojanasaku, Y. (2014, October 14). Appalachian Mountaintop Mining Particulate Matter Induces Neoplastic Transformation of Human Bronchial Epithelial Cells and Promotes Tumor Formation. Retrieved February 18, 2015, from http://pubs.acs.org/doi/pdf/10.1021/es504263u
[38] Human Health Impacts. (n.d.). Retrieved February 18, 2015, from http://appvoices.org/end-mountaintop-removal/health-impacts/
[39] Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L.White (eds.) (2014). Climate Change 2014: Impacts, Adaptation and Vulnerability. Intergovernmental Panel on Climate Change - Summary for Policy Makers, 1-32. Retrieved from https://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf
[40] NAACP to Announce Campaign to Shutdown Bridgeport Harbor Station. (n.d.). Retrieved from http://content.sierraclub.org/Coal/connecticut/bridgeport-plant
[41] Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L.White (eds.) (2014). Climate Change 2014: Impacts, Adaptation and Vulnerability. Intergovernmental

Panel on Climate Change - Summary for Policy Makers, 1-32. Retrieved from https://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf

[42] Climate change and health. (2014, August 1). Retrieved from http://www.who.int/mediacentre/factsheets/fs266/en/

[43] UNEP FI Investor Briefing: Portfolio Crbon. (2013, July 1). Retrieved from http://www.unepfi.org/fileadmin/documents/UNEP_FI_Investor_Briefing_Portfolio_Carbon.pdf

[44] New York Mercantile Exchange

[45] Russel, C. (August 14th, 2013). Australian Coal Industry in Final Stage of Grief. The Sydney Morning Herald.

[46] Ibid

[47] Loh, T. (October 1st, 2014). For Sale: Coal Mines for Investors Willing to Buck Trend. Bloomberg.

[48] Fossil Fuel Divestment: A $5 Trillion Challenge. (2014, August 25). Retrieved from http://about.bnef.com/content/uploads/sites/4/2014/08/BNEF_DOC_2014-08-25-Fossil-Fuel-Divestment.pdf

[49] Rowland, M. (August 25th, 2013). Inside Business Sunday 25 August. ABC News.

[50] Ker, P. (August 18th, 2014). BHP Billiton Coal Assets Under Pressure. The Sydney Morning Herald.

[51] Biesheuvel, T. and Riseborough, R. (November 21st, 2013). Coal Seen As New Tobacco Investor Backlash: Commodities. Bloomberg.

[52] (May 16th, 2014). Vale Comments on Integra Coal Mine. Vale.com.

[53] Hoyle, R. and Tan, G. (October 25th, 2013). Rio Sells Clermont Mine for $1 Billion. The Wall Street Journal.

[54] Scheyder. (October 28th, 2013). CONSOL to Sell 5 W. VA Mines as Coal Regulations Increase. Reuters.

[55] Pathe, D. and Chambers, D. (December 24th, 2013). Sherritt to Divest of Coal Assets for $946 Million and Focus on Core Businesses. Reuters.

[56] Behrmann, E. (March 6th, 2014). Anglo's Port Exit Makes Indian Billionaires Last Backers. Bloomberg.

[57] (March 14th, 2014). SunCoke to Divest Domestic Coke Assets, Shares Dip. NASDAQ.

[58] McKay, D. (March 04, 2014). Glencore Would Kick Tyres at Total Coal SA. Mining Mx.

[59] Kusic, S. (July 29th, 2014). Consol Looking to Sell Illinois Basin Coal Reserves. Pittsburgh Business Times.

[60] Ker, P. (July 30th, 2014). Rio Tinto Sells Mozambique Assets for $US50 Million. The Sydney Morning Herald.

[61] Fossil Fuel Divestment: A $5 Trillion Challenge. (2014, August 25). Retrieved from http://about.bnef.com/content/uploads/sites/4/2014/08/BNEF_DOC_2014-08-25-Fossil-Fuel-Divestment.pdf

[62] Capalino, R. and Grant, A. (September 22nd, 2014). ETA Coal Market Trends Research Paper. The Carbon Tracker Initiative.

[63] Fossil Fuel Divestment: A $5 Trillion Challenge. (2014, August 25). Retrieved from http://about.bnef.com/content/uploads/sites/4/2014/08/BNEF_DOC_2014-08-25-Fossil-Fuel-Divestment.pdf

[64] Scheyder. (October 28th, 2013). CONSOL to Sell 5 W. VA Mines as Coal Regulations Increase. Reuters.

[65] Ibid

[66] Kusic, S. (July 29th, 2014). Consol Looking to Sell Illinois Basin Coal Reserves. Pittsburgh Business Times.

[67] CONSOL Energy Inc. (n.d.). Retrieved from http://money.cnn.com/quote/chart/chart.html?symb=CNX

[68] Biesheuvel, T. and Riseborough, R. (December 05, 2013). Glasenberg Raises Glencore's Bet on Coal as BHP Pauses: Energy. Bloomberg.
[69] Brewer, R. (March 26th, 2014). Are Coal Miners Holding a Fire Sale? The Motley Fool.
[70] Arch Coal Inc. (n.d.). Retrieved from http://money.cnn.com/quote/chart/chart.html?symb=ACI
[71] http://www.smithschool.ox.ac.uk/research-programmes/stranded-assets/SAP-divestment-report-final.pdf
[72] Divestment Commitments. (n.d.). Retrieved from http://gofossilfree.org/commitments/
[73] abrikant, G. (2014, September 7). Yale Fund Takes Aim at Climate Change. Retrieved from http://www.nytimes.com/2014/09/08/business/yale-fund-takes-aim-at-climate-change.html?_r=0
[74] Stanford to divest from coal companies. (2014, May 6). Retrieved from http://news.stanford.edu/news/2014/may/divest-coal-trustees-050714.html
[75] Ball, J. (2014, May 22). The Truth About Stanford's Coal Divestment. Retrieved from http://www.newrepublic.com/article/117871/stanfords-coal-divestment-shows-environmental-hurdles-ahead
[76] Schwartz, J. (2014, September 21). Rockefellers, Heirs to an Oil Fortune, Will Divest Charity of Fossil Fuels. Retrieved from http://www.nytimes.com/2014/09/22/us/heirs-to-an-oil-fortune-join-the-divestment-drive.html
[77] Measuring the Global Fossil Fuel Divestment Movement. (2014, September). Retrieved from http://www.arabellaadvisors.com/wp-content/uploads/2014/09/Measuring-the-Global-Divestment-Movement.pdf

[78] Schwartz, J. (2014, September 21). Rockefellers, Heirs to an Oil Fortune, Will Divest Charity of Fossil Fuels. Retrieved from http://www.nytimes.com/2014/09/22/us/heirs-to-an-oil-fortune-join-the-divestment-drive.html

[79] Measuring the Global Fossil Fuel Divestment Movement. (2014, September). Retrieved from http://www.arabellaadvisors.com/wp-content/uploads/2014/09/Measuring-the-Global-Divestment-Movement.pdf
[80] Ibid.
[81] Developed ex Fossil Fuels. (n.d.). Retrieved from http://www.ftse.com/products/indices/dev-ex-fossil-fuels
[82] Fossil Fuel Divestment: A $5 Trillion Challenge. (2014, August 25). Retrieved from http://about.bnef.com/content/uploads/sites/4/2014/08/BNEF_DOC_2014-08-25-Fossil-Fuel-Divestment.pdf
[83] UNEP FI Investor Briefing: Portfolio Crbon. (2013, July 1). Retrieved from http://www.unepfi.org/fileadmin/documents/UNEP_FI_Investor_Briefing_Portfolio_Carbon.pdf
[84] Ibid
[85] UNEP FI Investor Briefing: Portfolio Crbon. (2013, July 1). Retrieved from http://www.unepfi.org/fileadmin/documents/UNEP_FI_Investor_Briefing_Portfolio_Carbon.pdf
[86] The Fossil Fuel Industry and the Case for Divestment. (2014, March). Retrieved from http://peopleandplanet.org/dl/fossil-free/glasgow-divestment-brief.pdf
[87] U.S.-China Joint Announcement on Climate Change. (2014, November 12). Retrieved from http://www.whitehouse.gov/the-press-office/2014/11/11/us-china-joint-announcement-climate-change

[88] Environmental Regulatory Developments Affecting Coal Mining in the United States | The National Law Review. (2014, October 16). Retrieved from http://www.natlawreview.com/article/environmental-regulatory-developments-affecting-coal-mining-united-states

[89] Ibid

[90] 2014 Final Rule: Disposal of Coal Combustion Residuals from Electric Utilities. EPA. (n.d.). Retrieved from http://www2.epa.gov/coalash/coal-ash-rule

[91] Everything you need to know about the EPA's proposed rule on coal plants. (2014, June 2). Retrieved from http://www.washingtonpost.com/national/health-science/epa-will-propose-a-rule-to-cut-emissions-from-existing-coal-plants-by-up-to-30-percent/2014/06/02/f37f0a10-e81d-11e3-afc6-a1dd9407abcf_story.html

[92] Environmental Regulatory Developments Affecting Coal Mining in the United States | The National Law Review. (2014, October 16). Retrieved from http://www.natlawreview.com/article/environmental-regulatory-developments-affecting-coal-mining-united-states

[93] Ibid

[94] Davenport, C. (2014, October 13). Pentagon Signals Security Risks of Climate Change. Retrieved from http://www.nytimes.com/2014/10/14/us/pentagon-says-global-warming-presents-immediate-security-threat.html?_r=0

[95] Toxic Mercury Pollution Map. (n.d.). Retrieved from http://vault.sierraclub.org/coal/map/

[96] (n.d.). Retrieved from http://www.governing.com/gov-data/energy-environment/coal-plants-to-shut-down-from-EPA-regulations.htm

[97] Power Plant Closures - IER. (n.d.). Retrieved from http://instituteforenergyresearch.org/topics/policy/power-plant-closures/

[98] Bastasch, M. (2014, December 22). EPA Hits Coal Industry With A Massive Regulation Right Before Christmas. Retrieved from http://dailycaller.com/2014/12/22/epa-hits-coal-industry-with-a-massive-regulation-right-before-christmas/