Pension Funds and the Energy Transition:
A Case Study of US Pension Funds

Anne Elizabeth Politsch
Human Geography MSc Thesis
26 August 2019
Pension Funds and the Energy Transition:
A Case Study of US Pension Funds

Master’s Thesis

Author: Anne Elizabeth Politsch
Burgemeester Hogguerstraat 501 1064CV Amsterdam, Netherlands
Student number: 10583874
E-mail: annepolitsch@gmail.com

University of Amsterdam
Graduate School of Social Sciences
Master Human Geography
Track: Environmental Geography
First Supervisor: Mw. Prof. Dr. J. (Joyeeta) Gupta
Second Supervisor: drs. C.L. (Courtney) Vegelin
Date of MSc Thesis Submission: 26 August 2019
Date of MSc Thesis Defense: 3 September 2019
Word Count: approximately 21,800
Abstract

The 2015 Paris Agreement calls for a global energy transition from fossil energy to renewable energy. Fossil fuels firms are among the largest public companies in the world. Institutional investors, such as pension funds, finance fossil fuel companies through investments in stock and buying of bonds. Institutional investors are a key player in the energy transition. This research studies the role of pension funds in leaving fossil fuels underground, using a case study of US pension funds, to answer the research question: What actions can pension funds take to leave fossil fuels underground, and under what conditions can these actions be successful?

Pension funds, some of the world’s largest institutional investors, present a unique dilemma in relation to the energy transition, as they are not merely financiers of fossil fuel companies, but they are retirement savings for everyday people. Pension fund asset managers are fiduciaries; thus, they have a legal obligation to act in the best interest of their beneficiaries, pensioners. People need income-replacement when they retire, but can pension funds also help ensure that pensioners have a livable environment in which to retire?

The majority of the countries in the world have signed the Paris Agreement, committing to climate action and significantly reducing CO2 emissions through the use of environmental and GHG regulations. Meeting the 2°C target through increasingly stringent environmental regulations restricting CO2 emissions, around 80% of fossil fuel reserves will become stranded assets. Among other arguments, this carbon asset risk has many institutional investors (i.e. pension funds) Divesting from their fossil fuel assets. However, the UN’s preferred global strategy is for institutional investors to Engage with fossil fuel companies and facilitate a transition of their business model from fossil energy to renewable energy. In theory, this strategy can prevent the collapse of the fossil fuel industry, which could lead to a global economic collapse.

The US has the world’s largest GDP and is one of the world’s largest producers and consumers of fossil fuels. In 2016, the US elected a President that is a climate change denier and fossil fuel enthusiast. Months after the President’s inauguration, he withdrew the US from the Paris Agreement. The politicization of climate change and fossil fuels in the US presents significant and unique challenges for pension funds to enhance the energy transition. This has created major barriers for US pension funds to address the energy transition, such as the federal government’s failure to mandate climate-related risk disclosure, blocking of climate-related shareholder resolutions, the ambiguity of fiduciary duty, suppression and denial of climate change research and the rolling back of environmental regulations. Under these conditions, US pension funds are unlikely to enhance the energy transition.

Through a review of relevant academic and grey literature, interviews with key actors and content analysis of relevant federal, state and pension fund policy documents, this thesis studies the barriers, opportunities and arguments of Divestment and Engagement, as potential actions pension funds can take to leave fossil fuels underground.

Key terms:
Institutional Investors | Pension Funds | Climate Change | Energy Transition | Green Finance | Social Movements Theory | ESG | Fossil Fuels | Carbon Asset Risk | Carbon Bubble | Stranded Assets | Paris Agreement | Fiduciary Duty | Universal Investors | Engagement | Shareholder Resolutions | Divestment | Neutral Investors | A Just Transition | SEC
Table of Contents

ABSTRACT .............................................................................................................................. 2
KEY TERMS: ............................................................................................................................ 2

TABLES ................................................................................................................................. 5
FIGURES .................................................................................................................................. 5
ABBREVIATIONS ..................................................................................................................... 6

1. INTRODUCTION .................................................................................................................. 7
  1.1 INTRODUCING ESG AND PENSION FUNDS ................................................................. 8
  1.2 GAP IN KNOWLEDGE ..................................................................................................... 10
  1.3 FOCUS AND LIMITS ....................................................................................................... 10
  1.4 THEORETICAL FRAMEWORK ...................................................................................... 11
      1.4.1 Green Finance ........................................................................................................ 12
      1.4.2 Social Movement Theory ..................................................................................... 12
  1.5 RESEARCH METHODS AND METHODOLOGY ......................................................... 13
      1.5.1 Research Questions .............................................................................................. 13
      1.5.2 Operationalization ............................................................................................... 13
      1.5.3 Research design .................................................................................................... 13
      1.5.4 Data Collection ..................................................................................................... 14
      1.5.5 Sampling ................................................................................................................ 16
      1.5.6 Ethical and practical considerations .................................................................... 16

2. LITERATURE REVIEW ....................................................................................................... 18
  2.1 PENSION FUNDS ........................................................................................................... 18
  2.2 ESG: ENVIRONMENTAL, SOCIAL, AND GOVERNANCE ........................................... 18
  2.3 DIVESTMENT ................................................................................................................ 19
      2.3.1 Arguments in Favor of Divestment ...................................................................... 20
          2.3.1.1 Carbon Asset Risk ....................................................................................... 20
          2.3.1.2 Fiduciary Duty ............................................................................................ 20
          2.3.1.3 Impact on Public Discourse and Climate Change Policy ................................. 20
      2.3.2 Arguments Against Divestment ............................................................................ 21
          2.3.2.1 Threat of Neutral Investors ........................................................................ 21
          2.3.2.1 Costs of Divestment ..................................................................................... 21
  2.6 ENGAGEMENT ............................................................................................................... 21
      2.6.2 Arguments for Engagement ................................................................................... 23
          2.6.2.1 Prevention of a Global Financial Collapse ..................................................... 23
          2.6.2.2 Universal Owners ........................................................................................... 24
          2.6.2.3 A ‘Just Transition’ .......................................................................................... 24
      2.6.3 Arguments Against Engagement ........................................................................... 25
          2.6.3.1 A Lengthy Process ......................................................................................... 25
          2.6.3.2 Engagement and Fiduciary Duty ................................................................. 27

3. EXPLORING THE UNITED STATES “MOLECULES OF U.S. FREEDOM” .................... 28
  3.1 THE POLITICS OF FOSSIL FUELS IN THE UNITED STATES ....................................... 28
  3.2 MAKING FOSSIL FUELS GREAT AGAIN AND THE DISMANTLING OF ENVIRONMENTAL PROTECTION .......................................................... 29
  3.3 INVESTING AND CLIMATE RISK DISCLOSURE ...................................................... 31
  3.4 EXTERNAL ASSET MANAGERS .................................................................................. 34
  3.5 WHAT ABOUT LABOR UNIONS? .................................................................................. 35
  3.5 SAMPLES OF US PENSION FUNDS .............................................................................. 37
      3.5.1 New York City Pension Funds ............................................................................. 38
          3.5.1.1 Background ................................................................................................. 38
Pension Funds and the Energy Transition: A Case Study of US Pension Funds

3.5.1.3 Governance .................................................................................................................. 38
3.5.1.3 ESG Arguments .......................................................................................................... 38
3.5.2 California Public Employees’ Retirement System (CalPERS) ........................................... 40
  3.5.2.1 Background ............................................................................................................... 40
  3.5.2.2 Governance .............................................................................................................. 42
  3.5.2.3 ESG Arguments ....................................................................................................... 42
3.5.3 Colorado Public Employees’ Retirement Association (PERA) .............................................. 44
  3.5.3.1 Background ............................................................................................................. 44
  3.5.3.2 Governance .............................................................................................................. 44
  3.5.3.3 ESG Arguments ....................................................................................................... 44

4. DISCUSSION OF FINDINGS ........................................................................................................ 49
  4.1 US Politicization of Fossil Fuels ......................................................................................... 49
  4.2 US Securities and Exchange Commission .......................................................................... 49
  4.3 External Asset Managers .................................................................................................. 50
  4.4 Labor Unions ...................................................................................................................... 50
  4.5 US Pension Funds: NYCPFS, CalPERS and PERA ............................................................. 50

5. CONCLUSION .......................................................................................................................... 53
  5.1 Divestment ......................................................................................................................... 53
    5.1.1 Arguments for Divestment ......................................................................................... 53
    5.1.2 Arguments Against Divestment ................................................................................. 53
  5.2 Engagement ....................................................................................................................... 54
    5.2.1 Arguments for Engagement ....................................................................................... 54
    5.2.2 Arguments Against Engagement ............................................................................. 54
  5.3 Social Movement Theory ................................................................................................. 54
  5.4 Green Finance ................................................................................................................... 55
  5.4 Recommendations ............................................................................................................. 55

REFERENCES .................................................................................................................................. 57

APPENDICES .................................................................................................................................. 70
  Appendix 1: ............................................................................................................................... 70
  Appendix 2: ............................................................................................................................... 71
Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>An excerpt from Forbes 2019 ranking of the world’s largest public companies (Forbes, 2019)</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Table of interviewees</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>US federal and state agencies and pension funds whereby policy documents were acquired</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>Introduction of US pension fund samples</td>
<td>16</td>
</tr>
<tr>
<td>6</td>
<td>Asset owner investor coalition. * = a partner of CA100+; Climate Majority Project has an informal partnership with CA100+ and CERES; † = investors overlap. (Climate Majority Project, 2019) (Climate Action 100+, 2019) (CERES, 2018) (IIGCC, 2019) (IIGCC, 2019) (AIGCC, 2019)</td>
<td>22</td>
</tr>
<tr>
<td>7</td>
<td>Justice perspectives of a ‘just transition’ (Heffron &amp; Mccalley, 2018, p. 74).</td>
<td>25</td>
</tr>
<tr>
<td>8</td>
<td>Examples of US labor unions in support of pension fund divestment from fossil fuels</td>
<td>37</td>
</tr>
<tr>
<td>9</td>
<td>NYCPFS “Principles of Good Governance” (NYC Comptroller, 2019).</td>
<td>39</td>
</tr>
<tr>
<td>10</td>
<td>NYCPFS “Proxy Voting and Engagement” (NYC Comptroller, 2019).</td>
<td>39</td>
</tr>
<tr>
<td>11</td>
<td>NYCPFS Proxy Voting Guidelines, Section 6: Environmental and Social Issues (6.1-6.26). Table above has excluded irrelevant proxy issues. (The Office of the New York City Comptroller, 2017)</td>
<td>39</td>
</tr>
<tr>
<td>13</td>
<td>Fossil fuel production and CO2 emissions for New York, California and Colorado (U.S. EIA, 2019)</td>
<td>48</td>
</tr>
<tr>
<td>14</td>
<td>Arguments in favor of and against engagement and divestment</td>
<td>56</td>
</tr>
</tbody>
</table>

Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Top 5 oil and gas assets managed by 12 global pension funds. Assets are in millions of Euros.</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>Top 5 coal assets managed by 12 global pension funds. Assets are in millions of Euros.</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Conceptual framework of focus and limits of MSC thesis</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td>Conceptual model: Analyzing ESG strategies of engagement and divestment used by pension funds in order to leave fossil fuels underground. The theoretical framework of Green Finance is used to understand engagement, while Social Movement Theory is used to understand divestment.</td>
<td>13</td>
</tr>
<tr>
<td>5</td>
<td>Data collection and analysis research phases</td>
<td>14</td>
</tr>
<tr>
<td>6</td>
<td>Fossil fuel divestment commitments as of June 2019. (Fossil Free, 2019)</td>
<td>19</td>
</tr>
<tr>
<td>7</td>
<td>The Shareholder Resolution Process (Clark &amp; Crawford, 2012).</td>
<td>23</td>
</tr>
<tr>
<td>8</td>
<td>Visualization of needed change in fossil fuel industry’s business models in order to transition to a low-carbon economy.</td>
<td>24</td>
</tr>
<tr>
<td>9</td>
<td>The ‘SANE BP’ 2001 shareholder proposal. Original source (<a href="http://www.sanebp.com">www.sanebp.com</a>) cited in O’Rourke’s research is no longer available online.</td>
<td>26</td>
</tr>
<tr>
<td>10</td>
<td>Top 5 oil and gas giants spending on climate lobbying in 2018 (Influence Map, 2019).</td>
<td>26</td>
</tr>
<tr>
<td>11</td>
<td>2019 ExxonMobil shareholder resolution, lead filer: New York State common retirement fund</td>
<td>33</td>
</tr>
<tr>
<td>12</td>
<td>Taken from December 2018 report by Influence Map entitled “Who own the world’s fossil fuels? A forensic look at the operators and shareholders of fossil fuel companies.” The first column from the left is BlackRock, the second is Vanguard (Influence Map, 2018).</td>
<td>34</td>
</tr>
<tr>
<td>13</td>
<td>The first logo of Chevron, originally named, “Pacific Coast Oil Co.” (Chevron, 2019).</td>
<td>41</td>
</tr>
<tr>
<td>14</td>
<td>“Climate-related financial risk” as defined by the State of California’s Senate Bill No. 964, approved by California Governor on September 23, 2018 (State of California Office of Legislative Council, 2018).</td>
<td>43</td>
</tr>
<tr>
<td>15</td>
<td>2019 Proposed House Bill, PERA Public Employees’ Retirement Association Board Assess Climate-related Financial Risks (HB19-1270), requirements of “unbiased and independent third-party” organization, selected by PERA Board of Trustees (Colorado General Assembly, 2019).</td>
<td>46</td>
</tr>
</tbody>
</table>
### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUM</td>
<td>Assets Under Management</td>
</tr>
<tr>
<td>CA100+</td>
<td>Climate Action 100+</td>
</tr>
<tr>
<td>CalPERS</td>
<td>California Public Employees’ Retirement System</td>
</tr>
<tr>
<td>CO2</td>
<td>Carbon Dioxide</td>
</tr>
<tr>
<td>DOL</td>
<td>United States Department of Labor</td>
</tr>
<tr>
<td>EPA</td>
<td>United States Environmental Protection Agency</td>
</tr>
<tr>
<td>ESG</td>
<td>Environmental, Social, and Governance</td>
</tr>
<tr>
<td>FF</td>
<td>Fossil Fuel(s)</td>
</tr>
<tr>
<td>FFDM</td>
<td>Fossil Fuel Divestment Movement</td>
</tr>
<tr>
<td>GAO</td>
<td>United States Government Accountability Office</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GHG</td>
<td>Greenhouse Gas(es)</td>
</tr>
<tr>
<td>NYC PFs</td>
<td>New York City Pension Funds: (1) New York City Employees’ Retirement System, (2) New York City Board of Education Retirement System, (3) New York City Teachers’ Retirement System, (4) New York City Police Pension Fund, and (5) New York City Fire Department Pension Fund</td>
</tr>
<tr>
<td>PERA</td>
<td>Colorado Public Employees' Retirement Association</td>
</tr>
<tr>
<td>PRI</td>
<td>Principles for Responsible Investment (United Nations)</td>
</tr>
<tr>
<td>SADM</td>
<td>South Africa Divestment Movement</td>
</tr>
<tr>
<td>SEC</td>
<td>United States Securities and Exchange Commission</td>
</tr>
<tr>
<td>UPIA</td>
<td>The Uniform Prudent Investor Act</td>
</tr>
<tr>
<td>US</td>
<td>United States of America</td>
</tr>
</tbody>
</table>
1. Introduction

“Climate change presents an environmental, social and economic challenge on a scale humanity has not previously faced” (Feit, 2016). A post-industrial global crisis, anthropogenic climate change is a result of net emissions of greenhouse gases (GHG), such as carbon dioxide (CO2). To “ensure that climate change does not become ‘dangerous’ to humans, then GHG concentrations need to be stabilized in the atmosphere,” which “implies significantly reducing GHG emissions,” thus, mitigation (Gupta, 2014, p. 14). As the majority of CO2 emissions are the result of the use of fossil fuels, reducing and restricting the use of fossil fuels must be prioritized in order to seriously address climate change (Henriques & Sadorsky, 2018).

A 2017 Carbon Disclosure Project (CDP) report, Carbon Majors, shows that “100 active fossil fuel producers are linked to 71% of global industrial greenhouse gases (GHGs) since 1988, the year in which human-induced climate change was officially recognized through the establishment of the Intergovernmental Panel on Climate Change (IPCC)” (Griffin, 2017) (CDP, 2017).

CDP notes that by 2030, USD 4 trillion “worth of assets will be at risk from climate change” (CDP, 2019). The increasing global attention to the climate change crisis and sense of urgency to minimize its impacts has generated potential financial risks for both the fossil fuel industry and its investors (Henriques & Sadorsky, 2018). This carbon asset risk, known as a carbon bubble, a term coined by Carbon Tracker Initiative in 2011, is the accumulation of stranded assets (Leaton, 2011). The carbon budget is the total amount of CO2 that can be emitted before global temperatures exceed the Paris Agreement’s 2°C target, or more ambitious 1.5°C. “Global net anthropogenic CO2 emissions,” need to reach net zero by 2050 in order to achieve 1.5°C “with no or limited overshoot” (IPCC, 2018, p. 12).

The CO2 emissions embedded in known fossil fuel reserves are only a fraction of the remaining carbon budget and around 80% of these reserves need to remain in the ground to achieve the Paris Agreement’s maximum 2°C target, thus, the CO2 exceeding the carbon budget is a stranded asset and will remain “undeveloped and unsold” (UNFCCC, 2018) (Feit, 2016, p. 6).

Current investments can have a major impact on future CO2 emissions and enable a “business-as-usual” scenario, causing anthropogenic global warming to surpass 1.5°C above preindustrial levels in the next 20 years (Millar, Hepburn, Beddington, & Allen, 2018).

Government regulations on greenhouse gas (GHG) emissions are expected to become increasingly stringent, which could also lead to stranded assets (Feit, 2016).

Large institutional investors (i.e. banks, insurance companies, endowment funds, mutual funds, hedge funds and pension funds) play a huge role in transition to a low-carbon economy, as they essentially are the financial backbone of the fossil fuel industry through their investments in fossil fuel equity and buying of bonds, which fund fossil fuel infrastructure (Bergman, 2018). A result of the global climate change crisis and associated financial risks, asset owners and investment managers are receiving increasing pressure from NGOs, policy makers, government officials, academics, citizens and beneficiaries to act, and to act with urgency (Ambrose, 2019) (Fossil Free California, 2019) (Fossil Free PERA Colorado, 2019) (Climate Action 100+, 2019) (Mooney, 2017). In 2015, Mike Carney, governor of the Bank of England, warned, “The challenges currently posed by climate change pale in significance compared with what might
come. Once climate change becomes a defining issue for financial stability, it may already be too late” (Clark P., 2015).

This thesis focuses on pension funds and their role, as large institutional investors, in the energy transition. The objective of this thesis is to highlight the pressure and analyze the strategic opportunities and barriers for pension funds to enhance the energy transition.

1.1 Introducing ESG and Pension Funds
The term ESG, which stands for Environmental, Social and Governance, was first coined in 2005, ten years before the Paris Agreement, in a breakthrough study entitled Who Cares Wins: Connecting Financial Markets to a Changing World (Kell, The Remarkable Rise Of ESG, 2018). In January 2004, former UN Secretary General, Kofi Annan, “wrote to over 50 CEOs of major financial institutions, inviting them to participate in a joint initiative under the auspices of the UN Global Compact and with the support of the International Finance Corporation (IFC) and the Swiss Government” (Kell, 2018). Many financial institutions, such as AXA Group, BNP Paribas, Deutsche Bank, Goldman Sachs and World Bank Group, obliged and endorsed the study (Knoepfel, 2005). Who Cares Wins argues that embedding ESG factors into “capital markets makes good business sense and leads to more sustainable markets and better outcomes for societies” (Kell, 2018). This argument has been the subject of academic research, which concludes that ESG investment strategies can be financially sustainable (Friede, Busch, & Bassen, 2015). Accompanying Who Cares Wins is the Fleshfield Report, published in October 2005 by the UNEP Finance Initiative, entitled “A legal framework for the integration of environmental, social and governance issues into institutional investment” (UNEP FI, 2005). These two reports have functioned as the foundation for the UN-backed global initiative Principles of Responsible Investment (PRI) (Kell, 2018). In 2018, PRI had over 1,600 members (asset owners, service providers and investment managers) with over USD 70 trillion in representative assets under management (AUM) (Kell, 2018). Many of these PRI members are pension fund asset managers.

Pension funds, the subject of this research, represent some of the world’s largest institutional investors. Pension funds are savings accounts, set up by corporations, government institutions and employee groups, established to assist employees with their retirement (Hinz et al., 2010). Thus, their importance is not merely their financial influence on a national and global scale; pension funds enable everyday people, pension fund beneficiaries, to be financially taken care of when they retire. Asset managers have a fiduciary duty to their beneficiaries, which essentially says that asset managers, fiduciaries, have a legal obligation to act in the best interest of their beneficiaries (Schanzenbach & Sitkoff, 2019). Ambiguous and open to interpretation, this has historically been understood as the acting in the best financial interest of their beneficiaries. However, the global climate change crisis poses the dilemma of maximizing retirement funds at the expense of environmental degradation. For many, it’s not just a matter of having more money with which to retire, but also retiring in a world capable of sustaining life.

There are two main ESG strategies that are being used by institutional investors to address the need for an energy transition: (1) Engagement and (2) Divestment. When an asset owner has equity in a publicly traded company, meaning they owns shares of that company, they are able to attend shareholder meetings and present shareholder resolutions, thus, they are able to engage with the company about its strategies and business models. Divestment, the opposite
of investment, is when the asset owner sells shares of a certain company or industry (i.e. fossil fuel companies/industry).

A June 2019 pension fund action includes Norway’s sovereign-wealth fund, The Government Pension Fund Global (GPF), one of the world’s largest sovereign-wealth funds with USD 1 trillion in AUM and a PRI signatory since 2006 (Holger, 2019) (PRI, 2019). This example illustrates themes relevant to this thesis. Norway advanced its social wealth fund in 1990 with profits from extracting fossil fuels from the North Sea oil fields (Holger, 2019). In June 2019, GPF, as instructed by Norway’s parliament, announced plans to divest more than USD 13 billion from oil, gas and coal extracting companies and invest up to USD 20 billion into renewable-energy projects and companies, representing around 2% of the fund (Holger, 2019). Currently, 6% of the fund (USD 60 billion) is invested in fossil fuels, which means after the divestment, GPF will have USD 47 billion invested in fossil fuels (Holger, 2019). Currently, 31% of GPF fossil fuel holdings are in US companies (Holger, 2019). GPF will not divest from oil and gas giants (Table 1) such as Royal Dutch Shell and Exxon Mobil, both of which have investments in renewable energy, but will divest from smaller oil, gas and coal companies (Holger, 2019). Divestment supporters have called this an “empty gesture;” GFG will still be invested in the fossil fuel companies in CDP’s Carbon Majors report (Holger, 2019) (CDP, 2017). Figure 1 and Figure 2 are used to show the top five oil and gas and coal assets managed by 12 global pension funds, one being GPF. Table 1 shows where the top five oil and gas companies rank in the world’s largest public companies (Forbes, 2019).

![Figure 1: Top 5 Oil and Gas Assets Managed by 12 Global Pension Funds. Assets are in millions of Euros. (Rempel, Top 5 Oil and Gas Assets Managed by 12 Global Pension Funds, 2019).](image-url)
Figure 2: Top 5 Coal Assets Managed by 12 Global Pension Funds. Assets are in millions of Euros. (Rempel, 2019).

<table>
<thead>
<tr>
<th>Company</th>
<th>2019 Rank</th>
<th>Country</th>
<th>Assets (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Royal Dutch Shell</td>
<td>9</td>
<td>Netherlands</td>
<td>$399.2 billion</td>
</tr>
<tr>
<td>ExxonMobil</td>
<td>11</td>
<td>United States</td>
<td>$346.2 billion</td>
</tr>
<tr>
<td>Chevron</td>
<td>19</td>
<td>United States</td>
<td>$253.9 billion</td>
</tr>
<tr>
<td>BP</td>
<td>24</td>
<td>UK</td>
<td>$282.8 billion</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>France</td>
<td>$256.8 billion</td>
</tr>
</tbody>
</table>

Table 1. An excerpt from Forbes 2019 Ranking of the World’s Largest Public Companies (Forbes, 2019)

1.2 Gap in Knowledge
Since 2002, there have been an increasing number of academic articles discussing issues of ESG, fiduciary duty, Engagement, Divestment, institutional investors, socially responsible investing; however, literature on pension funds addressing fossil fuels assets remains limited (Ansar et al., 2013) (Bergman, 2018) (Friede, Busch, & Bassen, 2015) (Ghahramani, 2014) (Hawley & Williams, 2002) (Henriques & Sadorsky, 2018) (Hyde & Vachon, 2018) (Lydenberg, 2007) (Mattison, et al., 2011) (O’Rourke, 2003) (Reid & Toffel, 2009) (Schanzenbach & Sitkoff, 2019) (Stevis & Felli, 2015). This research specifically explores US pension fund and there are no case studies published on US pension funds and their role in the energy transition, although there is a forthcoming article out of Harvard Law School, to be published in 2020 on ESG and fiduciary duty (Schanzenbach & Sitkoff, 2019).

1.3 Focus and Limits
The focus of this research is on pension funds and the actions they can take to address the energy transition and leave fossil fuels underground. This research includes a case study on US
pension funds, thus, will take on a national perspective. The case study will integrate three samples of different US pension funds with the purpose of exploring opportunities and barriers for addressing the energy transition. This research focuses on the equity market (shares/stocks) in relation to fossil fuels, as opposed to the debt (bonds) market, which is a significant distinction, as this is also limits the research (Figure 3). The debt market is equally, if not more important, than the equity market. The debt market funds fossil fuel infrastructure. The debt market is often overlooked, as it is more complex and less transparent than that equity market and the risk involved in buying of stocks and bonds differs (Bessembinder & Maxwell, 2008) (Morah, 2019). Further research needs to be done on the debt market in relation to institutional investors, such as pension funds, and fossil fuels.

Another limitation for this study is that the researcher was unable to obtain interviews with any pension funds, as interview requests were either declined or there was no response. In order to overcome this limitation, pension fund information, statements, investment portfolios and policy documents found on the pension funds’ websites were analyzed.

Lastly, this research is limited by the fact that it is an exploratory study and a master’s thesis, in which the researcher was constrained by time. Although this study offers solid insight and guidance into the study of pension funds and the energy transition, further research is needed.

1.4 Theoretical Framework
The theoretical framework for this research is comprised of two theories: green finance and social movement theory. The theories will be used to analyze and conceptualize the ESG strategies of Engagement and Divestment. Green finance will be used to understand Engagement and the weaknesses of Divestment and social movement theory will be used to understand Divestment as a social movement.

![Figure 3: Conceptual Framework of Focus and Limits of MSc Thesis](image-url)
1.4.1 Green Finance

Within the green economy is the concept of green finance, which will be used as a theoretical framework for this thesis, as it is primarily concerned with financial markets. Green finance can be defined as simply the intersection of the world of business and finance with “environmentally friendly behavior” (Zhi & Wang, 2016, p. 311). Motivation for green finance can differ depending on the actor; the main incentive may be financial, environmental or a combination of the two (Zhi & Wang, 2016). A green finance market, “market-oriented mechanisms and financial products,” in theory, has the ability to control GHG emissions and represent a market that emphasizes ecological benefits and environmental protection (Zhi & Wang, 2016, p. 312) (Sekreter, 2017).

A strength of green finance is its ability to conceptualize the relationship between financial markets and its impact on the environment. A human geography thesis, this theoretical framework captures the essence of the academic discipline, looking at the human concept of the economy and how it relates to the physical environment (Jones, 2012). A weakness of this theory is its ambiguity and broadness. However, for the purposes of this research, this theory will suffice and provide a lens for which to view the ESG strategy of Engagement (Figure 4), as it takes on a perspective of the global economy as a whole.

1.4.2 Social Movement Theory

The second theoretical perspective utilized for this thesis is social movement theory (SMT), a theoretical perspective with roots in sociology and political science (King & Leitzinger, 2018). SMT has traditionally examined how various stakeholders collectively mobilize with the “goal of influencing legislation, regulation, and judicial interpretations to institutionalize new sets of norms, defining the state as the target of social activists” (Reid & Toffel, 2009, p. 1158). Central to SMT is the role of the state and political environment; SMT research includes how political opportunities have increased or decreased the likeliness of mobilization (King & Leitzinger, 2018). Organizational scholars have used SMT to understand and explain changes in corporate behavior (King & Leitzinger, 2018). Research by Reid and Toffel shows how “government action on social movement issues,” such as new legislation and increasingly stringent environmental regulations (i.e. GHG regulations), are “likely to prompt companies to initiate new practices regarding carbon disclosure” and be more receptive to Engagement strategies (i.e. shareholder resolutions) (2009, pp. 1172, 1174).

The strength of the SMT is understanding and explaining the relationship between social movements, the state and corporate behavior. A weakness of SMT is that its perspective is limited and often needs other theories (i.e. organizational theory, stakeholder theory, non-market theory, etc.) to enrich understanding (King & Leitzinger, 2018). However, for the purposes of this research, SMT, in addition to green finance, will be a sufficient lens. SMT will be operationalized (Figure 4) by analyzing the ESG strategy of Divestment, as a social movement, and studying the relationship with the state (i.e. legislation and environmental regulations) and corporations (i.e. fossil fuel companies).
1.5 Research Methods and Methodology
This chapter will present the research design and methods used for this thesis. First, this chapter will introduce the research questions to be answered in this study. Next, an operationalization will be stated. Following will be a description of the research methods used: research design, sampling, data collection and analysis and ethical and practical considerations.

1.5.1 Research Questions
This thesis answers the over-arching research question:

*What actions can pension funds take to leave fossil fuels underground, and under what conditions can these actions be successful?*

Sub-research questions:

⇒ *What are the barriers, opportunities and arguments for pension funds using Divestment strategies?*
⇒ *What are the barriers, opportunities and arguments for pension funds using Engagement strategies?*

1.5.2 Operationalization
Appendix 1 shows how the key concepts for this thesis were operationalized. The organizational table shows how the actions pension funds are taking to leave fossils underground can be measured.

1.5.3 Research design
This is a qualitative study which uses an exploratory sequential research design to study the actions pension funds can take to leave fossil fuels underground. Exploratory research is used when there is none or limited research done on the topic of interest (Bryman A., 2012). In this case, Bryman states that qualitative research may best serve the researchers’ needs (2012). Furthermore, the “sequential” labeling of the study’s research design is because the research was done in phases; however, by definition, sequential research is mixed methods, and although
numerical data is used in this study, the research remains primarily qualitative (Ivankova, Creswell, & Stick, 2006). This study utilizes different phases (Figure 1) to triangulate information gathered from interviews (primarily with environmental NGOs) with relevant policy documents in order to fact-check and prevent a one-sided argument.

This research includes a case study of US pension funds. Case study research “is concerned with the complexity and particular nature of the case in question” (Bryman A., 2012, p. 66). The US was chosen as a case study because of the country’s global economic position (largest GDP in world) and relation to fossil fuels (historically, one of the world’s largest producers and consumers of fossil fuels) (The World Bank, 2017) (Roser & Ritchie, 2019).

1.5.4 Data Collection

The first phase of this research started in November 2018 with a preliminary literature review. The initial collection and reading of literature relevant to the topic resulted in a literature review submitted on February 18, 2019. From this literature review, key concepts were extracted, which led to interview questions. From April to July 2019, the researcher emailed key stakeholders and conducted thirteen semi-structured interviews with environmental NGOs, researchers, asset managers and policy makers (Table 2). All but one interview was conducted via Skype or by phone, as most of the interviewees were in the US. By luck, one US interviewee was in Amsterdam and an in-person interview was possible. Securing interviews with relevant policy makers and pension fund asset managers proved challenging and all but one declined or ignored multiple interview requests. Again, this is the reason for including multiple phases (Figure 5) to the research design, as to not be one-sided.
Questions for interviewees were tailored to their organization, but all were centered around the themes of, arguments in favor of and against, and barriers and opportunities for: Pension funds, fiduciary duty, ESG, Divestment and Engagement. After the majority of the interviews were conducted, key themes were added: the role of the SEC, universal ownership principle, a ‘just transition,’ and the significance of investor coalitions. The interviewees offered key insights into the barriers and opportunities for both Divestment and Engagement specific to the US. This information in particular was then fact-checked and triangulated in the final data collection and analysis research phases, where more academic literature was also analyzed. This data collection included publicly available US state, federal and pension fund policy documents and press releases (Table 3).
### Table 3: US Federal and State agencies and pension funds whereby policy documents were acquired

<table>
<thead>
<tr>
<th>Federal</th>
<th>State and Pension Fund</th>
</tr>
</thead>
<tbody>
<tr>
<td>The White House</td>
<td>California State Senate</td>
</tr>
<tr>
<td>US Commodity Futures Trading Commission (CFTC)</td>
<td>CalPERS</td>
</tr>
<tr>
<td>US Department of Labor (DOL)</td>
<td>Colorado General Assembly</td>
</tr>
<tr>
<td>US Energy Information Administration (EIA)</td>
<td>Colorado PERA</td>
</tr>
<tr>
<td>US Environmental Protection Agency (EPA)</td>
<td>New York State Senate</td>
</tr>
<tr>
<td>US House of Representatives</td>
<td>New York City Comptroller</td>
</tr>
<tr>
<td>US National Oceanic and Atmospheric Administration (NOAA)</td>
<td></td>
</tr>
<tr>
<td>US Securities and Exchange Commission (SEC)</td>
<td></td>
</tr>
<tr>
<td>US Supreme Court</td>
<td></td>
</tr>
</tbody>
</table>

#### Table 4: Introduction of US Pension Fund Samples

<table>
<thead>
<tr>
<th>US Pension Fund</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>California Public Employees’ Retirement System (CalPERS)</td>
<td>California</td>
</tr>
<tr>
<td>Colorado Public Employees’ Retirement Association (PERA)</td>
<td>Colorado</td>
</tr>
<tr>
<td>New York City Pension Funds (NYCPFs)</td>
<td>New York</td>
</tr>
<tr>
<td>1. New York City Employees’ Retirement System,</td>
<td></td>
</tr>
<tr>
<td>2. New York City Board of Education Retirement System</td>
<td></td>
</tr>
<tr>
<td>3. New York City Teachers’ Retirement System</td>
<td></td>
</tr>
<tr>
<td>4. New York City Police Pension Fund</td>
<td></td>
</tr>
<tr>
<td>5. New York City Fire Department Pension Fund</td>
<td></td>
</tr>
</tbody>
</table>

#### 1.5.5 Sampling

All the data sampling for this research was both purposeful and snowball, including the selection of interviewees, policy documents and US pension fund samples. An initial handful of interviewees were selected, based on preliminary research, and after each interview, were asked for recommendations of other respondents or organizations useful for this study. In some cases, the interviewees personally made the connection via email. As for US pension fund sampling, NYCPFs and CalPERS were chosen based on preliminary research, while Colorado PERA was added based commentary from the Interviewee 5 (Table 4). As pension fund representatives declined or ignored interview requests, a criterion for US pension fund samples was a well-organized website and ample publicly available information relating to the subject matter.

#### 1.5.6 Ethical and practical considerations

All interviews began with oral informed consent (Bryman A. , 2012). The interviewees were asked to consent to the interviews being recorded, transcribed and used in this research. All interviewees gave permission; however, for reasons of compliance approval and concern of sensitive subject matter, many interviewees stated, “off the record,” asked to approve quotations before use, or requested a copy be sent to be approved by compliance before publishing. In all regards, the researcher has respected these requests.

The lack awareness of a researcher’s positionality and situatedness within a study’s subject matter can be problematic for critical thought, thus, the following will describe potential biases (Lewis-Beck, Bryman, & Liao, 2003). The research is a human geographer, focusing on environmental geography, and has an extensive background in sociology. Thus, the lens through
which the topic is studied is a combination of the academic disciplines. For several years, the researcher has volunteered at Greenpeace, an environmental NGO, and from February 2019 to the completion of this thesis, has interned at Both ENDS, a human rights and environmental NGO in Amsterdam. At Both ENDS, she helps facilitate a group of European pension fund fossil fuel divestment campaigners. Nevertheless, the acceptance of the internship was a means of research and learning, not taking a side in the debate of Divestment or Engagement. Additionally, the researcher is a US citizen and has a political bias. She is a registered Democrat and financial supporter of Bernie Sanders, a democratic socialist and Democratic 2020 US presidential candidate. The researcher has made every effort to remain completely objective; however, given her background, she is emotionally invested in the subject matter of the US and fossil fuels and is, to put it lightly, disappointed by the federal government’s current stance on climate change.
2. Literature Review

2.1 Pension Funds

The objective of pension funds is to provide income substitution in retirement; thus, pension fund investments are based on long-term gain and sustainability (Hinz et al., 2010). As different countries have distinctive social structures, economies, and contexts (historical, political and cultural), it is difficult to compare countries’ pension systems (Daamen, 2017). “There is no single [pension] system that could be transplanted from one country and applied, without change, to another” (Knox, 2016). Nevertheless, the Melbourne Mercer Global Pension Index has identified general indicators that are likely to lead to “improved financial benefits,” system sustainability and “greater level of community confidence and trust” (Knox, 2016, p. 6). These indictors, used to measure and compare pension systems, are categorized into three sub-indexes, representing a percentage of the score: adequacy (40%), sustainability (35%) and integrity (25%) (Knox, 2016). Danish and Dutch systems scored highest of the pension systems studied, receiving an “A,” indicating a “first class and robust retirement income system that delivers good benefits, is sustainable and has a high level on integrity” (Knox, 2016, p. 7). US pension systems received a “C,” alongside Germany, France, Malaysia, Brazil, Austria and Poland, indicating a “system that has some good features, but also has major risks and/or short comings that should be addressed. Without these improvements, its efficacy and/or long-term sustainability can be questioned” (Knox, 2016, p. 7).

2.2 ESG: Environmental, Social, and Governance

“ESG investing resists precise definition, but roughly speaking it is an umbrella term that refers to an investment strategy that emphasizes a firm’s governance structure and the social and environmental impacts of the firm’s products or practices” (Schanzenbach & Sitkoff, 2019). ESG factors can have positive impact on investment portfolio performance: “ESG outperformance opportunities exist in many areas of the market,” including the North American market (Friede, Busch, & Bassen, 2015). ESG factors are countless and can change; some examples are: (1) environmental: climate change, scarcity and exhaustion of natural resources, and GHG emissions; (2) social: working conditions, exploitation and local communities; and (3) governance: tax evasion, bribery and corruption (PRI, 2018). It is argued that the recognition and consideration of ESG factors is within the duty of fiduciaries: “to ignore ESG is to ignore risk factors,” which can negatively affect the returns for beneficiaries and put fiduciaries in breach of their duties (PRI, 2018).

Both Divestment and Engagement can be viewed as ESG investment strategies and will be discussed in more detail in the following chapters (Schanzenbach & Sitkoff, 2019). Although there is evidence and theory in support of risk-return ESG, meaning that ESG investing is financially beneficial, “this support is far from uniform, is often contextual, and in all events is subject to change” (Schanzenbach & Sitkoff, 2019). Additionally, a potential obstacle for ESG being an effective way of enhancing the energy transition is that the “E” (Environment) of the investment strategy may not always be included in the investment decisions. This is the reason behind the assertion that ESG can be a form of greenwashing (Evans R., 2018). ESG investment strategies are becoming more uniform, but barriers to the effectiveness in enhancing the energy transition still exist.
2.3 Divestment
Divestment is the selling of assets associated with specific companies and/or industry sectors with the objective of reaching social, financial and/or political goals (Finley-Brook & Holloman, 2016). A notable example is the 1980s South Africa divestment movement (SADM), which took place during apartheid and targeted companies that were doing business in South Africa (Millar et al., 2018). The SADM is perceived to be successful in pressuring the South African government to end apartheid (Ansar et al., 2013). In contrast to the SADM, the FFDM is targeting the massive and powerful fossil fuel industry “whose products are viewed as both a critical component of the functioning of an economy and the lead contributor to climate change” (Henriques & Sadorsky, 2018, p. 31). Divestment is seen as a tool to address the climate crisis; however, there is little agreement among scholars as to whether this strategy can be successful (Finley-Brook & Holloman, 2016).

The FFDM is a response to the urgent need to transition to a fossil fuel free economy in order to achieve the Paris Agreement’s climate target (Millar et al., 2018). Since its conception, the FFDM has become global. A vast number of NGOs have joined the crusade and currently run major divestment campaigns targeting large institutional investors (Tollefson, 2015) (Alexander et al., 2014). FFDM campaigns have three asks: (1) “immediately freeze any new investment in fossil fuel companies,” (2) “divest from direct ownership and any commingled funds that include fossil fuel public equities and corporate bonds within 5 years,” and (3) “end their fossil fuels sponsorship” (Fossil Free, 2019). As of late June 2019, USD 8.77 trillion of institutions’ assets under management are committed to either full, partial and/or coal and tar sands divestment; and 14% (144) of the 1,070 institutions committed to divesting are pension funds (Figure 6) (Fossil Free, 2019).

Types of Institutions Committed to Divesting from Fossil Fuels

![Types of Institutions Committed to Divesting from Fossil Fuels](image)

Figure 6: Fossil Fuel Divestment Commitments as of June 2019. (Fossil Free, 2019)
2.5.1 Arguments in Favor of Divestment

The argument for fossil fuel divestment takes on two dimensions: (1) moral/ethical and (2) financial/legal. The moral/ethical argument is the most straightforward: its morally wrong to profit from investing in companies that are causing the climate change crisis (Grady-Benson & Sarathy, 2016). More complex, the financial/legal argument is most effective. There are two main components of the financial/legal argument: (1) the carbon bubble and stranded assets: investing in fossil fuels could be a risky investment and (2) fiduciary duty: expanding on the carbon budget and stranded assets, if fiduciaries do not take the financial risks seriously, they could be subject to liability.

2.5.1.1 Carbon Asset Risk

Previously mentioned in the introduction, the carbon asset risk, known as the carbon bubble, is associated with the increasing global agreement that a vast reduction in fossil fuel use is necessary to stay below 2°C and prevent irreversible climate change (Daamen, 2017) (Leaton, 2011). The carbon bubble will inevitably lead to financially stranded assets, as most known fossil fuel reserves must remain underground to achieve 2°C (Leaton, 2011). This is the key financial argument made by the FFDM (Apfel, 2015). A 2016 study shows that “over 75% of global missions are subject to an economy-wide emissions-reduction or climate policy scheme,” with momentum added by the Paris Agreement and other climate conferences (Mercure, et al., 2018, p. 588). Increasing GHG emission regulations will likely lead to stranded assets.

2.5.1.2 Fiduciary Duty

Fiduciary duty is the legal and moral obligation of an asset manager to act in the interest of its beneficiaries (Sarang, 2015). As countries have differing laws, the legal regulation of fiduciary duties varies. For example, whereas in the US, fiduciary duty plays an important role in the discussion on Divestment, in the Netherlands, fiduciary duty is not regulated to the same extent (Daamen, 2017). This thesis will focus on the US, thus, the literature on fiduciaries will be aligned as such.

US public pension funds operate under the guidance of their respective common law fiduciary duties (Ghahramani, 2011). Fiduciaries have a number of duties, with one overarching duty of prudence: (1) duty to diversify; (2) duty of loyalty; (3) duty of impartiality; (4) duty of inquiry; (5) duty to monitor; and (6) duty to act in accordance with plan documents (Feit, 2016)(Rahaim, 2005) (U.S. Department of Labor, 2019). The purpose of the duty to diversify is to reduce risk; portfolios must be diverse in both companies and industries (Sarang, 2015). Duty of loyalty is a legal obligation to act exclusively in the interest of the beneficiaries and “not to be influenced by the interest of any third person or by motives other than the accomplishment of the purposes of the trust” (Sarang, 2015, p. 309). Duty of impartiality refers to balancing a portfolio that reflects the interest of all beneficiaries (Feit, 2016). Duty of inquiry is the obligation to investigate and scrutinize investment decisions (Feit, 2016). Duty to monitor refers to the ongoing scrutinization of investment decisions (Rahaim, 2005). Fiduciaries have legal obligations to address the challenges presented by climate change, such as the carbon bubble and risk of stranded assets, through researching, monitoring and stress testing (Ansar et al., 2013).

2.5.1.3 Impact on Public Discourse and Climate Change Policy

While the FFDM has been criticized as being naïve, even supporters of the movement have called it “symbolic,” it has had an impact on public discourse around the topic of fossil fuels and
through its stigmatization of fossil fuels, can have meaningful impact on climate change policy and legislation (Tollefson, 2015) (Bergman, 2018) (Ansar et al., 2013). This is where the FFDM “is likely to be most influential” (Ansar et al., 2013, p. 67) (Bergman, 2018).

2.5.2 Arguments Against Divestment

There are two main arguments against the FFDM: (1) it is unlikely to have a direct financial impact on the fossil fuel industry and (2) Divestment is costly.

2.5.2.1 Threat of Neutral Investors

From a financial standpoint, the FFDM is unlikely to have an impact on fossil fuel markets (Bergman, 2018) (Ansar et al., 2013). Nevertheless, unlike oil and gas, coal might already feel the direct impact of Divestment and perceived financial risks and be suffering as a result (Bergman, 2018). As oil and gas stocks are some of the most liquid public equities in the world, meaning they are bought and sold easily, it is likely that divested holdings will be bought up by neutral investors (Ansar et al., 2013). Ansar et al. warns that “larger sovereign wealth funds” may use Divestment as an opportunity to increase their own holdings in fossil fuel shares, especially if the price of the shares have decreased (2013). Neutral investors are unlikely to pressure the management of the fossil fuel companies in order to change corporate decision-making; Ansar et al. recommends that Engagement strategies be used before Divestments (2013).

2.5.2.1 Costs of Divestment

Divestment is costly, and two major factors that contribute to the expenses are (1) lower earnings, and (2) monitoring and compliance costs (Ghahramani, 2014). For example, during the SADM, California legislature’s requirement for CalPERS to divest from companies that did business in South Africa may have led to around a USD 500 million loss for the fund’s beneficiaries (Ghahramani, 2014). Similarly, CalPERS’ self-initiated (as opposed to state-mandated) divestment from all tobacco holdings may have cost the fund’s beneficiaries a USD 650 million loss between 2000-2006 (Ghahramani, 2014). Regarding monitoring and compliance costs, many US public pension funds lack “in-house resources and expertise to actively monitor from which companies they must divest,” thus they must spend money to “hire outside consulting firms and investment management companies in order to remain compliant” (Ghahramani, 2014, p. 31).

2.6 Engagement

“As institutional investors and consistent with our fiduciary duty to our beneficiaries, we will work with the companies in which we invest to ensure that they are minimizing and disclosing the risks and maximizing the opportunities presented by climate change and climate policy” (Climate Action 100+, 2019).

In 1932, distinguished scholars, Adolph Berle and Gardiner Means, wrote about the powerlessness of shareholders, owners of equity (shares/stock) in a company, to have any kind of control of the companies in which they invest; however, at the time, most shareholders were individuals (Anabtawi & Stout, 2008). This radically changed with the rise of the institutional investor. In 1950, institutional investors held 8 percent of the shares of the total market for public equities; this proportion grew to nearly 67 percent by 2008 (Anabtawi & Stout, 2008). In comparison to individual investors, institutional investors, today’s dominate shareholders, are in
Pension Funds and the Energy Transition: A Case Study of US Pension Funds

a more advantageous position “to play an activist role in corporate governance” (Anabtawi & Stout, 2008, p. 1276).

Although many institutional investors, such as pension funds, “rely on relatively passive stock-picking strategies, especially when they hold highly diversified portfolios,” there are a number of influential institutional investors, such as CalPERS, that “have emerged as activist investors willing to mount public relation campaigns, initiate litigation, and launch proxy battles to pressure corporate officers and directors into following their preferred business strategy” (Anabtawi & Stout, 2008, p. 1276). In the US in 1992, the U.S. Securities and Exchange Commission (SEC) relaxed rules that had previously created barriers for shareholders to communicate with each other regarding matters related to shareholder votes (Goranova & Ryan, 2014). This 1992 amendment freed shareholders to make public statements and made it possible for shareholders, such as institutional investors, to form coalitions with other shareholders (Goranova & Ryan, 2014) (Anabtawi & Stout, 2008).

The development of shareholder advisory firms (i.e. Institutional Shareholder Services Inc. (ISS), founded in 1985 and as of 2019 have approximately 2,000 institutional investor clients (ISS, 2019)), which concentrate on guiding institutional investors on “how to vote the proxies of the shares held in their investment portfolios,” and help lead a synchronized effort of institutional investors into a larger voting block, has also enhanced institutional investors’ ability to create change in a company (Anabtawi & Stout, 2008, p. 1277). In 2019, there exist a number of investor coalitions, many of which are partners of the PRI’s Climate Action 100+ (Table 5).

<table>
<thead>
<tr>
<th>Name of Investor Coalition</th>
<th>Acronym</th>
<th>Region</th>
<th>Number of Investors*</th>
<th>AUM (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate Action 100+</td>
<td>CA100+</td>
<td>Global</td>
<td>342</td>
<td>$33.6 trillion</td>
</tr>
<tr>
<td>Coalition for Environmentally Responsible Economies Investor Network</td>
<td>CERES</td>
<td>North America</td>
<td>160</td>
<td>$26 trillion</td>
</tr>
<tr>
<td>Institutional Investors Group on Climate Change</td>
<td>IIGCC</td>
<td>Europe</td>
<td>170+</td>
<td>$26 trillion</td>
</tr>
<tr>
<td>Climate Majority Project (50/50 Climate Project)</td>
<td>CMP</td>
<td>USA</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Investor Group on Climate Change</td>
<td>IGCC</td>
<td>Australia and New Zealand</td>
<td>71</td>
<td>Over $2 trillion</td>
</tr>
<tr>
<td>Asia Investor Group on Climate Change</td>
<td>AIGCC</td>
<td>Asia</td>
<td>31</td>
<td>$4 trillion</td>
</tr>
</tbody>
</table>

Table 5: Asset Owner Investor Coalition. 0 = a partner of CA100+; Climate Majority Project has an informal partnership with CA100+ and CERES; * = investors overlap. (Climate Majority Project, 2019) (Climate Action 100+, 2019) (CERES, 2018) (IIGCC, 2019) (IGCC, 2019) (AIGCC, 2019).

Proven to be a successful tool to gain the attention of corporate officers and directors, the proposal of shareholder resolutions is the main Engagement strategy used by activist asset owners to pressure corporations to change their business strategies (Lee & Lounsbury, 2011). The submission of shareholder resolutions is based on SEC Rule 14a-8 (Figure 7), “which defines the rights and obligations of corporate managers and shareholders concerning inclusion of shareholder resolutions in management proxy statement for shareholders’ annual meetings” (Lee & Lounsbury, 2011, p. 161). It is important to note that under SEC ruling, shareholders must own at least USD 2,000 in market value, or one percent, of the company’s equities for a
minimum of one year in order to propose a shareholder resolution (another advantage for institutional investors, in comparison to individual investors) (O’Rourke, 2003).

When a shareholder resolution is submitted, the party who filed the proposal must “present the issue to other shareholders and the board” at the annual general meeting (AGM) (O’Rourke, 2003, p. 233). Usually, environmental and social shareholder resolutions receive a relatively small number of votes, often less than ten percent (O’Rourke, 2003). This occurs for three main reasons: (1) company board members and founders typically control vast portions of the company’s total shares, (2) frequently, institutional investors “automatically cast their ballots with management,” and (3) often there is a “general lack of shareholder interest,” which results in abstentions and gives company management a “stronger voice” (O’Rourke, 2003, p. 233). In order for re-submission of shareholder resolutions, the proposals must receive 3 percent of votes the first year, 6 percent the second year, and ten percent following that (O’Rourke, 2003).

In relation to climate change, research has shown that firms in “environmentally sensitive industries” are more likely to be receptive to Engagement when a threat of increasing environmental regulations exists (Goranova & Ryan, 2014, p. 1251) (Reid & Toffel, 2009).

![Figure 7: The Shareholder Resolution Process (Clark & Crawford, 2012).](image)

2.6.2 Arguments for Engagement
There are three main arguments for Engagement: (1) in theory, Engagement can prevent global economic collapse, (2) Engagement is aligned with the universal ownership principle and (3) Engagement is aligned with the Paris Agreement’s imperative of a ‘just transition’.

2.6.2.1 Prevention of a Global Financial Collapse
An indirect argument for Engagement is the prevention of the collapse of the fossil fuel industry. As has been shown, fossil fuel companies are some of the largest in the world and fossil fuels have been a critical element of the functioning of the global economy since the industrial revolution (Forbes, 2019) (Henriques & Sadorsky, 2018). While the costs of renewable energy “seem to be falling at exponential rates,” the costs of fossil fuels remains stagnant (Verleger, 2017, p. 29). Verleger describes the collapse of the fossil fuel industry as a “global economic Armageddon,” which will “make destitute many nations and millions of individuals” (Verleger,
2017, pp. 29, 28). Engagement’s goal is to transform Big Fossil Fuels to Big (renewable) Energy by pressuring the industry via firms to alter business models (Figure 8). If successful, in theory, this will prevent a global economic collapse.

![Figure 8: Visualization of needed change in fossil fuel industry’s business models in order to transition to a low-carbon economy.](image)

2.6.2.2 Universal Owners

“In theory, Universal Owners recognise that they own a share of the economy and therefore adapt their actions to promote a prosperous, sustainable future” (Mattison, et al., 2011).

A universal investor is an “investor of such a size that their investments are diversified across all asset classes and across all investment opportunities within those asset classes, and therefore can be said to be invested in the economy as a whole” (Lydenberg, 2007, p. 467). Thus, performance of universal investors’ portfolios depends on the overall performance of the economy (Hawley & Williams, 2002). As fossil fuels companies are some of the largest in the world and CO2 emissions are closely linked to global gross domestic product (GDP) growth, fossil fuel assets are of increasing interest and concern to universal investors (Forbes, 2019) (UN/DESA, 2019). Fiduciary duty is at the core of universal ownership, specifically the duties of loyalty and care (Drew, 2009). In general, US pension funds are universal investors, as they mainly focused on “local economic development and invest in regions in which their participants are concentrated” (Lydenberg, 2007, p. 473). California Public Employees’ Retirement System (CalPERS), an institutional leader in corporate governance, is a prime example of a universal investor (Lydenberg, 2007) (Hawley & Williams, 2002). Universal investors take into account more than just market price in pursuing investment returns and use investment practices such as: (1) engagement with companies in which they invest and (2) “the setting of social and environmental standards in selecting investments,” which can include divestment strategies (Lydenberg, 2007, p. 467).

2.6.2.3 A ‘Just Transition’

“The transition towards inclusive and low-carbon economies must be just and fair, maximizing opportunities for economic prosperity, social justice, rights and social protection for all, leaving no one behind. For this reason, the Paris Agreement stated the imperative of just transition as essential elements of climate action” (UNFCCC, 2016).
One argument for Engagement is the concept of a ‘just transition.’ The “justice” of a ‘just transition,’ can be considered from three main perspectives: climate justice, energy justice and environmental justice (Table 6) (Heffron & McCauley, 2018).

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Simple definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate Justice</td>
<td>“concerns sharing the benefits and burdens of climate change from a human rights perspective”</td>
</tr>
<tr>
<td>Energy Justice</td>
<td>“refers to the application of human rights across the energy life-cycle (from cradle to grave)”</td>
</tr>
<tr>
<td>Environmental Justice</td>
<td>“aims to treat all citizens equally and to involve them in the development, implementation and enforcement of environmental laws, regulations and policies”</td>
</tr>
</tbody>
</table>

Table 6: Justice perspectives of a ‘just transition’ (Heffron & McCauley, 2018, p. 74).

The concept of a ‘just transition’ originated in the US in the 1970s (Stevis & Felli, 2015). In the 1980s, a ‘just transition’ was used by the US trade union movement “in response to new regulations to prevent air and water pollution,” which eventually resulted “in the closure of offending industries” (Newell & Mulvaney, 2013, p. 133). ‘Just transition’ strategies are used to take into account and to “address the grievances of communities and workers that may be laid-off as a result of environmental reforms” (Velut, 2011, p. 69). The ‘just transition’ is an essential element of the energy transition, especially when discussing the energy transition in relation to pension funds, as labor union workers constitute a substantial amount of pension fund beneficiaries, especially in the US, where 401(k) retirement plans have become increasingly popular among non-union workers.

2.4.2 Arguments Against Engagement

The main argument against Engagement is that it is a lengthy process, and as the climate change is global crisis, time matters. A second side-argument against Engagement is whether or not it is within a fiduciary’s duty.

2.4.2.1 A Lengthy Process

The main argument against Engagement is that it is lengthy process. In 2000, a mixture of stakeholders (Greenpeace, SRI funds, public interest associations and a number of individual investors) submitted a shareholder resolution with BP asking the fossil fuel company to “halt the development of the Northslope field in Alaska and redistribute the investment to the BP Solarex (solar energy) division” (O'Rourke, 2003, p. 234). The proposal was voted on by the BP’s shareholders on April 13, 2000 at the AGM, where 13.5 percent of shareholders, representing roughly 1.5 trillion shares, voted ‘yes’ in support of the proposal (O'Rourke, 2003). After the 2000 AGM, Greenpeace stated that BP had in fact acknowledged the global climate change crisis and the fossil fuel company’s role; however, there remained concern over the fact that BP has not disclosed to shareholders how fossil fuel company would make the transition to renewables, as, at the time, 99.9 percent of BP’s investments were in gas and oil (O'Rourke, 2003). Thus, in 2001, another shareholder resolution was submitted (Figure 9), however it was excluded by BP “based on a legal technicality” (O'Rourke, 2003, p. 235).
Despite its claims to be moving "beyond petroleum", BP remains firmly wedded to fossil fuels. Oil and gas make up 99.9% of its investments. This is inconsistent with the company’s public call for precautionary action on climate change – and takes no account of the effects of future climate protection measures, which are likely to restrict the production and sale of fossil fuels. Greenpeace has therefore submitted a resolution to BP’s AGM, calling on the Board to publish a report, by the end of 2001, outlining how it will make the transition from fossil fuels to renewable energy.

Figure 9: The 'SANE BP' 2001 shareholder proposal. [Original source (www.sanebp.com) cited in O'Rourke's research is no longer available online.] (O'Rourke, 2003).

In 2002, WWF led another campaign targeting BP’s climate change policy, and subsequently submitted another shareholder resolution in collaboration with other NGOs, SRI and a large institutional investor collective, asking for climate risk analysis and climate disclosure (O'Rourke, 2003). BP asked for the proposal to be withdrawn, stating that the fossil fuel company had performed climate risk assessments. Although WWF was not satisfied with BP’s level of disclosure or quality of the risk assessment, the 11 percent support the proposal received was seen to be a success, as Robert Napier, former Chief Executive of WWF-UK explained, "That’s a significant vote in our favour, and the dialogue with BP will continue" (O'Rourke, 2003) (WWF, 2002).

This early 2000s example is significant in the discussion on engagement strategies with fossil fuel companies because in 2019, nineteen years after the original shareholder resolution, BP investors are still demanding greater climate disclosure, demonstrating the lengthiness of engagement strategies (Raval & Walker, 2019) (Gilblom, 2019).

It is worth noting, nearly two decades later, fossil fuel companies, such as BP, spend large amounts of money lobbying against climate change. According to a study by Influence Map, in 2018, BP spent USD 53 million on climate lobbying (Figure 10) (Influence Map, 2019). This further exemplifies the lengthiness of the Engagement process, as there is still much work to be done in order to change the business models of fossil fuel companies.

Figure 10: Top 5 oil and gas giants spending on climate lobbying in 2018 (Influence Map, 2019).
2.4.2.2 Engagement and Fiduciary Duty
As fiduciary duty is vague and open to interpretation, it is unclear whether or not Engagement is within a fiduciary’s duty (Tilba & Reisberg, 2019). Forthcoming research by Schanzenbach & Sitkoff, shows that under the prudent investor rule, “A trustee’s duty to be cost sensitive pertains to both picking and choosing investments as well as proxy voting or other engagement with management” (2019, p. 72). However, it is also argued that Engagement is “not generally considered within the scope” of fiduciary duty and that asset managers are “not generally endowed with the skill set to create or change business models” (Williams, et al., 2019, p. 24). Engagement that seeks changes that “materially affect management’s compensation or power, or the core of the corporation’s business” does not have a strong success record (Williams, et al., 2019, p. 24).

“With the U.S. in another year of record-setting natural gas production, I am pleased that the Department of Energy is doing what it can to promote an efficient regulatory system that allows for molecules of U.S. freedom to be exported to the world.”
– Steve Winberg, Assistant Secretary for Department of Fossil Energy (US Department of Energy, 2019)

With a GDP value of nearly USD 19.5 trillion in 2017, the US has the largest GDP in the world, accounting for nearly a quarter of the global GDP (The World Bank, 2017) (Partington, 2019). The US has historically been one of the world’s largest producers and consumers of fossil fuels (Roser & Ritchie, 2019). As of 2014, the US was the world’s largest single producer of both oil and natural gas, and in both cases accounting for roughly one-fifth of global production (Roser & Ritchie, 2019). As of 2016, the US was the single largest consumer of both oil and natural gas (Roser & Ritchie, 2019). An International Monetary Fund (IMF) study shows that in 2015 the US spent USD 649 billion (3.6% of US GDP) on fossil fuel subsidies, ten times the amount spent on education (Coady et al., 2019) (Ellsmoor, 2019). The US is a very wealthy and very fossil fuel dependent country.

3.1 The Politics of Fossil Fuels in the United States

The fossil fuel industry has a large influence on US politics. On January 21, 2010, the US Supreme Court case, Citizens United v. Federal Election Commission, ruled that under the US First Amendment principle, “Congress shall make no law...abridging the freedom of speech,” corporations have the right to be treated as individuals and contribute as much money as they want to politicians, citing: “The Court has thus rejected the argument that political speech of corporations or other associations should be treated differently under the First Amendment simply because such associations are not “natural persons”” (Citizens United v. Federal Election Commission, 2010, pp. 20, 26). Thus, “Corporations and unions may establish a political action committee (PAC) for express advocacy or electioneering communications purposes” (Citizens United v. Federal Election Commission, 2010, p. 1). During the 2016 US presidential election, then Republican candidate, Donald Trump, received more than USD 1 million in contributions from oil and gas PACs, while then Democratic candidate, Hilary Clinton, received nearly USD 1 million (Center for Responsive Politics, 2019). In 2018, members of the US House of Representatives received a total of USD 17.5 million in contributions from oil and gas PACs, while members of the US Senate received USD 5.3 million. Republicans, in comparison to Democrats, in both Chambers of Congress received the vast majority of the oil and gas PAC contributions (Center for Responsive Politics, 2019).

It is worth nothing that Citizens United v. Federal Election Commission was not the first US Supreme Court case of its kind, however, it is the most recent. “The fountainhead of modern U.S. campaign finance jurisprudence is the Supreme Court’s opinion in Buckley v. Valeo” (Hasen, 2011, p. 585). On January 30, 1976, the US Supreme Court, in the case of Buckley v. Valeo, ruled that the Federal Election Campaign Act of 1971, which strictly limited campaign financing, was unconstitutional and conflicted with the First Amendment, the freedom of speech (Buckley v. Valeo, 1976).
On September 3, 2016, the 44th President of the United States, President Barak Obama, signed the Paris Agreement stating, “Over the past seven and a half years, we’ve transformed the United States into a global leader in the fight against climate change” (Somanader, 2016). However, the Paris Agreement, signed by nearly 200 countries, was signed without a supermajority vote of two-thirds of the US Senate to concur, in other words, the treaty was not ratified (Bang, 2011). Consequently, President Obama’s successor, US President Donald Trump, announced plans to withdraw the US from the climate commitment months after he was inaugurated in 2017, stating that the Paris Agreement was disadvantageous for the US and was “for the exclusive benefit of other countries” (Worland, 2016) (UNFCCC, 2017) (BBC, 2017). As President Trump said in this 2017 inauguration speech, “From this day forward, its going to be only America first” (Trump, 2017).

On February 1, 2017, Rex Tillerson, former CEO of ExxonMobil, was confirmed by the US Senate (in a record opposition, 56-to-43, vote) as the 69th US Secretary of State (Harris, 2017). Tillerson was later fired by President Trump a year later and replaced by Mike Pompeo, long time beneficiary of the Koch brothers and climate change skeptic (Gaouette, Collins, & Merica, 2018) (Shane, 2018).

Former Texas governor and current US Energy Secretary (appointed by President Trump), Rick Perry, who received USD 1.65 million in oil and gas PACs in 2016, explained in an 2018 interview, “The United States is not just exporting energy, we’re exporting freedom” (Center for Responsive Politics, 2019) (FOX Business, 2018). As quoted at the beginning of this section, in a May 28, 2019 press release from the US Department of Fossil Energy, announcing the authorization of additional LNG exports, Steven Winberg, Assistant Secretary for Department of Fossil Energy, called natural gas, “molecules of U.S. freedom” (US Department of Energy, 2019).

Many media sources reported on this, calling it a rebranding of fossil fuels by the Trump Administration (Ellsmoor, 2019) (Rueb, 2019). US politicians have long used the concept of “freedom” to make a political point and resonate with the American people; as George Lakoff writes, “Perhaps no idea has mattered more in American history than the idea of freedom” (2006, p. 3).

3.2 Making Fossil Fuels Great Again and the Dismantling of Environmental Protection

In 2016, then US republican presidential candidate, Donald Trump, pledged to revive the declining coal industry: “The shale energy revolution will unleash massive wealth for America...we will end the war on coal and the war on miners” (Davenport, 2016). On February 28, 2019, Andrew Wheeler, a former coal lobbyist, was confirmed by the US Senate as the 15th Administrator of the United States Environmental Protection Agency (EPA) (US EPA, 2019). He replaced former head of the EPA and Trump appointee, Scott Pruitt, former Oklahoma Attorney General with very close ties to Oklahoma oil and gas company, Devon Energy (Lipton, 2014). The EPA was established on December 2, 1970 “to consolidate in one agency a variety of federal research, monitoring, standard-setting and enforcement activities to ensure environmental protection...working for a cleaner, healthier environment for the American people” (US EPA, 2019).

In April 2019, President Trump scrutinized retirement plans using ESG strategies and issued an Executive Order for the Department of Labor (DOL) “to complete a review of energy investment trends and the fiduciary responsibilities tied to proxy voting” in 180 days (Konish,
2019) (The White House, 2019). The Trump Administration’s stance of ESG differs largely from the Obama Administration’s, which mostly supported the ESG (Konish, 2019).

In May 2019, the Trump Administration proposed a 31 percent EPA budget cut for the fiscal year 2020 budget for the US government (Foran, 2019). Of the US federal departments, this EPA budget cut was the largest, and only equal to the percentage decrease of the budget for Army Corps of Engineers civil works program, responsible for water-related restoration, protection and infrastructure, and to help communities “respond to and recover from floods and other natural-disasters” (Trump Administration, 2019)(Appendix 2). These budget cuts are compared to a 5 percent (USD 33 billion) increase for the US Department of Defense and a 7.8 percent (USD 3.7 billion) increase for the US Department of Homeland Security (Trump Administration, 2019). Nevertheless, the “Democrat-led” House Appropriations Committee “totally” rejected the EPA budget cut and instead increased the EPA budget in the House funding bill from roughly USD 8.8 billion in 2019 to USD 9.25 billion for 2020 (Foran, 2019).

“Our Interior-Environment funding bill totally rejects the pro-pollution, anti-public lands, anti-environmental protection budget proposal submitted to Congress by President Trump.”
- Betty McCollum, Chair of House Appropriations Subcommittee on Interior, Environment, and Related Agencies (House Committee on Appropriations, 2019)

On June 5, 2019, Dr. Rod Schoonover, a senior analyst in the United States Office of the Geographer and Global Issues at the State Department’s Bureau of Intelligence and Research (State INR) testified in an open hearing before the Committee on behalf of State INR about the national security implications of climate change. As reported on by the New York Times, The Washington Post and in a press release by the House of Representatives, the Executive Office of the President sought to suppress this information for political reasons (Friedman, 2019) (Eilperin, 2019) (U.S. House of Representatives, 2019).

The Trump Administration’s stance on fossil fuels is, to put it lightly, misaligned with the Paris Agreement. As reported on by The New York Times, based on research done by Harvard Law School, Columbia Law School and other sources, in two and a half years, from the January 20, 2017 inauguration of President Trump to June 7, 2019, 83 environmental rules have been rolled back under the Trump administration, 49 have been completed and 34 are in progress (Popovich et al., 2019). A few completed environmental rollbacks include (Popovich et al., 2019):

- Withdrawing the requirement for oil and gas companies to “provide information on equipment and emissions at existing oil and gas operations” (US EPA, 2017).
- Repealed the Stream Protection Rule, designed to prevent coal companies from “dumping mining debris into local streams” (Tabuchi, 2017)(Popovich et al., 2019).
- Amended the Petroleum Refinery Sector Rule, which governs “how refineries monitor pollution in surrounding communities” (Vizcarra & Bloomer, 2018)(Popovich et al., 2019).
- “Permitted the use of seismic air guns for gas and oil exploration in the Atlantic Ocean,” which was previously blocked under the Obama administration, as the “practice can kill marine life and disrupt fisheries” (Popovich et al., 2019).
Furthermore, on June 19, 2019, the EPA issued a press release declaring that the Obama-era Clean Power Plan (CPP), which required states to execute plans to reduce CO2 emissions, will be replaced with the Trump Administration’s Affordable Clean Energy (ACE), which has no limit on CO2 emissions (Friedman, 2019). Wheeler stated, “Today, we are delivering on one of President Trump’s core priorities: ensuring the American public has access to affordable, reliable energy in a manner that continues our nation’s environmental progress” (US EPA, 2019). Although the EPA explained that the ACE adheres to the Clean Air Act, it “gives individual states wide discretion in deciding whether to require limited efficiency upgrades at individual coal-fired plants” (US EPA, 2019) (CBS, 2019). Following the EPA’s announcement to repeal CPP, more than 29 US states and cities, led by New York and California state governments, are suing the Trump Administration “in what could be a landmark case deciding what the federal government’s responsibility is for fighting global warming” (Puko, 2019).

Despite efforts from the Trump Administration to influence climate-change discourse, a decade long study by researchers at Yale and George Mason University indicate that in 2018 the majority of Americans believe climate change is real (Leiserowitz, et al., 2018):

- 73% of Americans believe global warming is happening
- 62% of Americans believe global warming is “mostly human-caused”
- 65% of Americans believe “global warming is affecting weather in the United States”

### 3.3 Investing and Climate Risk Disclosure

Rostin Behnam, one of the five members of the US Commodity Futures Trading Commission (CFTC), a federal agency overseeing major financial markets, was appointed by President Trump, as, by law, a Democrat must fill a seat (Davenport, 2019). Behnam has been outspoken about climate change and its financial risks, explaining in a June 12, 2019 speech to the Market Risk Advisory Committee (U.S. CFTC, 2019):

> “Risk exposures to insurance providers, asset managers, pension funds, commercial and retail banks— all users of derivatives markets—to price and shift risk, cannot be understated... Assessing climate-related market risk must be a priority – and it must start now”

The CFTC and US Securities and Exchange Commission (SEC) are two federal financial regulatory agencies with separate roles, that occasionally intersect; however, as this research has found, not yet on the topic of climate change. The CFTC is in charge of regulating future commodity markets, such as crude oil and natural gas (U.S. CFTC, 2019). The SEC, established in 1934 after the stock market crash, which lead to the Great Depression, has three main roles: (1) “protect investors,” (2) “maintain fair, orderly, and efficient markets,” and (3) “facilitate capital formation” (U.S. SEC, 2019). Former SEC commissioner, Luis A. Aguilar, argued that although capital formation (undefined by the SEC) had become synonymous with “capital raising,” “true capital formation is about helping investors and other capital providers to make informed

---

1 President Trump questioned the reliability of renewables in an August 2019 speech at Shell Pennsylvania Petrochemicals Complex in Monaca, Pennsylvania: “And your wives and husbands say, “Darling, I want to watch Donald Trump on television tonight. But the wind stopped blowing and I can’t watch. There’s no electricity in the house, darling.” No, we love natural gas and we love a lot of other things, too” (The White House, 2019).
decisions,” thus, it is about providing disclosure (Aguilar, 2011). Disclosure, specifically ESG-related disclosure, has been a topic of discussion in the SEC for over a decade. The following paragraphs will chronologically highlight significant events within the discussion.

On September 20, 2002, an ESG-related petition (File No. 4-463) was filed (by The Rose Foundation) with the SEC entitled: “Request for Rulemaking for Clarification of Material Disclosures With Respect to Financially Significant Environmental Liabilities and Compliance with Existing Material Financial Disclosures” (U.S. SEC, 2002). This petition was filed in light of the 2001 Enron scandal, in which the (former giant) energy company’s “leadership fooled regulators with fake holdings and off-the-books accounting practices,” and eventually filed for bankruptcy (the largest in US history), which consequentially had major financial losses for shareholders and employees, who were also shareholders, as encouraged by company executives (U.S. SEC, 2002) (Oppel, Jr. & Sorkin, 2001) (Segal, 2019). This petition was more concerned with the Governance aspect of ESG, but the example is noteworthy, nonetheless.

On September 17, 2007, another ESG-related petition (File No. 4-547) was filed with the SEC by an extensive coalition of some of the largest US institutional investors, asset managers and environmental NGOs, urging the law enforcement agency to clarify that corporate climate change disclosure is mandatory:

“Climate risk has simply become too important to corporate performance to be left out of mandatory disclosures under the securities laws and the Commission’s rules...We respectfully urge the Commission to clarify that corporations should assess their climate risk, analyze whether that risk is likely to have a material impact on them, and if so, disclose it to the public as required under the Commission’s rules” (CalPERS, et al., 2007).

This petition was followed up by two supplemental petitions in 2008 and 2009; all of which received many comments in support of the original petition (U.S. SEC, 2019). In 2008, to take effect in 2010, the SEC updated its disclosure guidance for oil and gas companies (U.S. SEC, 2013). On January 27, 2010, the SEC voted to “provide public companies with interpretive guidance on existing SEC disclosure requirements as they apply to business or legal developments relating to the issue of climate change” (U.S. SEC, 2010). The areas highlighted by the SEC that might prompt climate change disclosure are: (1) “impact of legislation and regulation,” (2) “impact of international accords,” (3) “indirect consequences of regulation or business trends,” and (4) “physical impacts of climate change” (U.S. SEC, 2010).

However, a weakness of the 2010 SEC guidance is that it did not explain how companies should disclose their climate-related risks, leading to varying interpretations and limited effectiveness (Wilder et al., 2017). In a 2016 Concept Release, the SEC asked for public comment on disclosure issues, including “eight questions focused on sustainability and climate risk disclosure” (Wilder et al., 2017). Nonetheless, since the 2010 vote, the SEC has not further urged companies regarding climate-related disclosure, instead the SEC has prioritized cybersecurity regulation, reflecting the Trump administration’s priorities (Meagher, 2019). In a 2013 speech, former SEC Chair, Mary Jo White, raised the question of “information overload” concerning disclosure for investors, citing the difficulties of providing the right amount of information (U.S. SEC, 2013). When questioned about the SEC and disclosure, Interviewee 13 explained:
“The SEC has failed utterly in issuing comprehensive disclosure rules concerning the effects of climate change on public companies and also, in enforcing the weak rules it issued some years ago...Many shareholders of companies affected in important ways by climate change will be caught unawares and badly hurt. The SEC could have helped to lessen the pain. To date, it hasn’t come close to meeting its main job of protecting the investing public. Unnecessary. And as Trump would say, “Sad!”” (Interviewee 13, 2019).

In response to the SEC’s lack of adequately mandating ESG-related disclosure, US Senator from Massachusetts and contender for 2020 Democratic presidential nomination, Elizabeth Warren, proposed a bill titled “Climate Risk Disclosure Act of 2018” (PRI, 2018). If passed, the bill would require the SEC to mandate that companies disclose climate-related risks, including those written in the 2010 SEC guidelines, with addition of the disclosure of: direct and indirect GHG emissions and fossil fuel-related assets owned and managed (PRI, 2018).

The need for adequate climate-related disclosure has led US institutional investors, such as pension funds, to request such disclosure from fossil fuel companies via Engagement strategies and shareholder resolutions. However, the SEC has created barriers for institutional investors in their pursuit, such as blocking shareholder resolutions.

As of July 2019, the SEC blocked seven 2019 climate change-related shareholder resolutions, compared to two in 2018, one in 2017, and zero between 2010-2016 (As You Sow, 2019). Of the seven blocked shareholder resolutions in 2019, five were with fossil fuel companies (Chevron, Devon, ExxonMobil and Hess) (As You Sow, 2019). The SEC blocked shareholder resolutions were consequentially not included on the companies’ proxy ballots, voted on by shareholders in the month of May.

The case of ExxonMobil, one of the largest fossil fuel companies in the world, received the greatest amount of media attention (Crooks, 2019) (Egan, 2019) (Mufson, 2018). Lead filer of the ExxonMobil shareholder resolution (Figure 11) was New York State Common Retirement Fund (NYSCRF), the third largest public pension fund in the US with USD 210.2 billion in AUM (As You Sow, 2019) (Office of New York State Comptroller, 2019).

BE IT RESOLVED: Shareholders request that the Board of Directors, in annual reporting from 2020, include disclosure of short-, medium- and long-term greenhouse gas targets aligned with the greenhouse gas reduction goals established by the Paris Climate Agreement to keep the increase in global average temperature to well below 2°C and to pursue efforts to limit the increase to 1.5°C. This reporting should cover both the corporation’s operations and products, omit proprietary information, and be prepared at reasonable cost.

Figure 11: 2019 ExxonMobil Shareholder Resolution, lead filer: New York State Common Retirement Fund (As You Sow, 2019).

ExxonMobil persuaded the SEC that this non-binding shareholder resolution, supported by investors representing USD 9.5 trillion in AUM, was “vague,” “indefinite,” and trying to “micromanage the company” (Egan, 2019). ExxonMobil cited its 2018 Energy & Carbon Summary as evidence that the company is doing its part and is “committed” to addressing climate change (ExxonMobil, 2018, p. 1) (Egan, 2019). The SEC supported ExxonMobil and blocked the resolution, citing “micromanagement” (Egan, 2019). Egan explains that US oil giants differ from
their European counterparts (i.e. Shell and BP), who have agreed to or are in the process of setting GHG emission goals (2019).

3.4 External Asset Managers

Many institutional investors use external asset managers (i.e. BlackRock, Vanguard, State Street, J.P. Morgan, etc.) to manage a sleeve of their portfolio. A reason for the use of external asset managers, according to interviewees, is often because many US pension funds have a lack of resources.

As of June 2018, the 15 largest asset management firms in the world have a collective USD 40 trillion in AUM, accounting for more than 20 percent of all global capital market assets (Influence Map, 2018). The largest of these are BlackRock and Vanguard, two giant US asset management firms, with a combined USD 11 trillion in AUM (Influence Map, 2018). Of the asset management firms, BlackRock and Vanguard have the vast majority of fossil fuel holdings (Figure 12). Their combine holdings in “companies controlling thermal coal reserves” represent the potential for “over 8 gigatons (Gt) of CO2 emissions,” representing close to 2 percent of the remaining carbon budget (Influence Map, 2018).

Data collected by Pensions&Investments shows: of BlackRock’s nearly USD 6 trillion in AUM, almost 10 percent is from US pension funds; of Vanguard’s nearly USD 5 trillion in AUM, 0.5 percent is from US pension funds (almost 20 percent is from individual US retirement plans (i.e. 401(k)s)) (Pensions and Investments, 2019). The use of external asset managers is seen as a barrier for pension funds to enhance the energy transition in two key ways, as described by
interviewees: (1) the use of external asset managers “washes the capital,” thus, reducing the amount of criticism on pension funds for investing in fossil fuels (Interviewee 6, 2019), and (2) external asset management firms, such as BlackRock and Vanguard, tend to vote with management on shareholder resolutions (Interviewee 12, 2019). Nevertheless, BlackRock has “committed to engaging with climate risk exposed companies” and is now offering their investor clients opportunities to “index using a fossil-fuel screen” (Influence Map, 2018, p. 22) (Williams et al., 2019, p. 23).

A 2019 study on Engagement and fiduciary duty points out that Engagement could extend not only to invested firms, but to external asset managers (Tilba & Reisberg, 2019).

3.5 What about labor unions?

Labor unions are significant in the discussion of US pension funds, as union members are more likely than non-union members to be covered by a pension plan (Dorsey & Turner, 1990). One reason for this is the creation of 401(k) retirement plans. US Congress passed the Revenue Act of 1978, effective January 1, 1980, “which includes a provision that allows employees to avoid being taxed on a portion of income that they decide to receive as deferred compensation, rather than direct pay,” thus allowing for 401(k) plans (Anderson, 2013). In 1980 only a few large companies offered employees 401(k) plans; in 2013, 94 percent of private companies offered 401(k) plans (Anderson, 2013). In 2013, 401(k) plan AUM accounted for 18 percent of the USD 19.4 trillion US retirement market, resulting in US pension plan decline from 38 percent in 1980 to 20 percent in 2008 (Anderson, 2013).

As interviewees have expressed that mobilization of pensioners is an obstacle for US pension funds to address the energy transition, labor unions, a coalition of pensioners, is of interest for this research. The following sections will discuss the background of unions in relation to the environment and social issues, federal legislation and the voice of unions in the Divestment strategies.

Historically, labor unions have a relationship with environmental performance, which can be typified into three perspectives: (1) “unions can be viewed as particularistic, self-interested organizations that have pursued the creation and protection of jobs for their members at all costs, including environmental degradation,” (2) “unions can be viewed as champions of working-class issues that overlap with a sustainable environment,” and (3) “unions can be understood to operate differently with regard to the environment depending upon their institutional context” (Hyde & Vachon, 2018, p. 2). All three perspectives can be illustrated by the discourse around the construction of North America’s Keystone XL pipeline. As the Keystone XL pipeline vowed to generate thousands of unionized jobs, a federation of 14 US and Canadian construction unions, known as North America’s Building Trades Unions, which gained 70,000 new members in 2018 alone, supported the oil industry in its endeavor (Hyde & Vachon, 2018) (NABTU, 2019). However, other unions, such as the nurses and transportation workers, stood in solidarity with climate activists opposing the pipeline’s construction, as it would increase GHG emissions (Hyde & Vachon, 2018).

Before World War II, union pension funds were virtually nonexistent (McCarthy, 2014). By the end of 1957, 58% of the approximate 17 million US pensioners were members of unions (McCarthy, 2014). Unions have for long attempted to control the investments of their respective pension funds, however, the Taft-Hartley Act of 1947 and the newer ERISA of 1974 have created legal barriers for unions to impact investment decisions (McCarthy, 2014). McCarthy writes that
if unions were to have “greater control, it’s plausible that a much larger portion of American finance would have been put into socially responsible investments” (2014, p. 480). Since the mid-1990s, unions have strategically used their pension funds as potential instruments of social change (McCarthy, 2014). For example, after the December 2012 Sandy Hook school shooting, the United Federation of Teachers pressured their USD 46.6 billion pension fund to divest from gun and ammunition companies (McCarthy, 2014). Additionally, unions have been active in engagement strategies; between 2011 and 2012, unions proposed 36 percent of shareholder resolutions (McCarthy, 2014) (Copland et al., 2012).

On June 27, 2018, the US Supreme Court case, Janus v. American Federation of State, County, and Municipal Employees Council (AFSCMEC), overruled Abood v. Detroit Board of Education, which permitted “an "agency shop" arrangement, whereby every employee represented by a union, even though not a union member, must pay to the union, as a condition of employment, a service charge equal in amount to union dues” (2018) (1977). This overruling of Abood was seen as a “major blow” to organized labor, as it means that non-union government workers are no longer are obligated to help pay for collective bargaining, thus, US public-sector unions “could lose tens of millions of dollars and see their effectiveness diminished” (Liptak, 2018). About a month before the Janus v. AFSCMEC Supreme Court Ruling, on May 25, 2018 President Trump issued three executive orders: (1) a stark cut to “official time,” which allows unions to represent all members of a bargaining unit, regardless of union membership, “grievances and matters of broad interest to the workforce,” (2) reprimand collective bargaining contracts, and (3) enhance the ease of firing federal employees (Davidson, Trump’s orders show unwavering attack on federal unions, employees, 2018) (The White House, 2018). U.S. District Court Judge Ketanji Brown Jackson has essentially blocked these executive orders, which the Trump administration is appealing (Davidson, 2019). These legal tactics by the Trump Administration are viewed as a strategy to lessen the power of labor unions (Scheiber, 2018).

“The Trump administration has shown an outrageous pattern of trampling on federal employees’ rights and ignoring the law to dismantle decades of prior agreements between our union and previous administrations...This attack on worker rights is especially egregious at the EPA, where engineers and scientists fight every day to protect the air we breathe and the water we drink.”

- American Federation of Government Employees (AFGE) President, J. David Cox Sr.

(Davidson, 2019)

Nevertheless, union presidents have explained that these threats are being used as an opportunity for unions to engage with their members “like never before,” focusing on mobilizing current members, actively recruiting new members, and working to elect pro-labor politicians (Scheiber, 2018).

Data collected by 350.org shows that there are a number of US unions, representing almost 400,000 members, in support of fossil fuel Divestment (350.org, 2019). Table 7 presents a few examples from the data. Additionally, many unions have also endorsed the Green New Deal (Labor Network for Sustainability, 2019). The Green New Deal is an economic stimulus package proposed by New York Representative Alexandria Ocasio-Cortez and Massachusetts Senator Edward Markey that “calls on the federal government to wean the United States from fossil fuels
and curb planet-warming greenhouse gas emissions across the economy. It also aims to guarantee new high-paying jobs in clean energy industries” (Friedman, 2019).

<table>
<thead>
<tr>
<th>Labor Union</th>
<th>State</th>
<th>Approx. Number of Members</th>
<th>Details of Divestment Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>California Federation of Teachers (CFT)</td>
<td>California</td>
<td>120,000</td>
<td>In 2016, CTF passed Resolution 29 and became the first US union to adopt a Climate Justice Agenda, “committing the union to educating members about climate change, pushing for green legislation and moving toward divestment in fossil fuels” (California Federation of Teachers, 2019).</td>
</tr>
<tr>
<td>New York State Nurses Association (NYSNA)</td>
<td>New York</td>
<td>42,000</td>
<td>NYSNA supported NYC fossil fuel divestment: “The over 40,000 members of the New York State Nurses Association joined this profession to help people and make this world a better place- that’s why we applaud the Mayor, the Comptroller and the pension trustees for making these bold moves. It’s the right thing to do for the environment and for our children” - Jill Furillo, RN, NYSNA Executive Director (City of New York, 2018).</td>
</tr>
<tr>
<td>Massachusetts Union for Human Services Workers and Educators (SEIU LOCAL 509)</td>
<td>Massachusetts</td>
<td>20,000</td>
<td>SEIU Local 509 “wholeheartedly” endorsed the Green New Deal and has joined the MassDivest Coalition, an alliance of unions, other groups and individuals in support of Massachusetts’ pension fund divestment from fossil fuels (Labor Network for Sustainability, 2019) (MassDivest, 2017).</td>
</tr>
<tr>
<td>Northern California’s Service Employees International Union (SEIU 1021)</td>
<td>California</td>
<td>60,000</td>
<td>SEIU 1021 successfully persuaded the San Francisco Employees Retirement System (SFERS) Board of Trustees to begin divesting from fossil fuel assets (SEIU 1021, 2019). In 2018, SFERS began divesting from five fossil fuel companies and has committed to Engaging with larger fossil fuel firms (i.e. ExxonMobil and Chevron), which are on its “watch-list” (Kozlowski, 2018).</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>242,000</td>
<td></td>
</tr>
</tbody>
</table>

Table 7: Examples of US labor unions in support of pension fund divestment from fossil fuels.

3.5 Samples of US Pension Funds
Now that background information about fossil fuels, environmental protection and pension funds in the US has been established, the following sections will examine three US pension funds in New York, California and Colorado. There are over 6,000 public pension funds in the US, according to the US Census Bureau, and the largest 75 pension funds make up more than 80 percent of all participants and AUM (NASRA, 2019). The New York, California and Colorado pension funds have been chosen for this research because of their size and use ESG investment strategies. For each pension fund, first background information will be explored, followed by governance and ESG arguments.
3.5.1 New York City Pension Funds

3.5.1.1 Background

New York City Pension Funds (NYCPFs) is the fourth largest retirement system in the US and is comprised of five pension funds (Table 4) that collectively have USD 199 billion in AUM as of May 2019 (Table 12)(NYC Comptroller, 2019). As of 2019, the state of New York has the third largest economy in the nation (8 percent of US GDP), with a GDP comparable to Canada and South Korea (U.S. BEA, 2019) (McCamy, 2019). In 2013, New York had the highest percentage of union members in the nation - almost a quarter of the state’s workers (Calio, Frohlich, & Hess, 2014).

In 2012, New York was devastated by Hurricane Sandy, the forth costliest hurricane in US history, accruing USD 71 billion in damages (an estimated USD 19 billion for NYC alone) and killing 150 Americans (NOAA, 2019) (Gibbens, 2019). “Though [Hurricane] Sandy is often described as an anomaly, for many it was a call to action” (Gibbens, 2019). Since the destructive hurricane, New York implemented Clean Energy Standard in 2016, revised in 2019, requiring 70 percent of the state’s energy be renewable by 2030, and in 2018, NYC Mayor Bill de Balsio announced a decision to file a lawsuit against five major fossil fuel companies (NYSERDA, 2019) (Neuman, 2018). As of 2018, New York “generates about one-third of its electricity nuclear power plants” and is the nation’s third largest producer of hydro-electricity (U.S. EIA, 2019). New York is the fifth largest consumer of petroleum in the nation, but per capita, consumes the least, as 30 percent of its residents use public transport (U.S. EIA, 2019).

3.5.1.2 Governance

Each of the five pension funds has its own Board of Trustees made up of “elected and appointed officials and union representatives” (NYC Comptroller, 2019). By law, the City’s comptroller is responsible for the five NYC pension funds, serving as the trustee for four of the five and is the delegated investment advisor for all five pension fund Boards (NYC Comptroller, 2019). The Comptroller’s Bureau of Asset Management oversees the pension funds’ portfolios and “advises the Boards on all investment-related topics, including investment policy and strategy, asset allocation, manager structure, manager selection and financial and economic developments that may affect the systems” (NYC Comptroller, 2019). Nonetheless, “the systems’ portfolios are managed predominantly by external investment managers” (NYC Comptroller, 2019).

3.5.1.3 ESG Arguments

As outlined on NYC Comptroller’s website, NYCPFs are committed to corporate governance and responsible investment “consistent with fiduciary obligations” and promote the following “Principles of Good Governance” (Table 8) at the companies in which NYCPFs invest (NYC Comptroller, 2019).

- **Accountability**: Portfolio companies should adopt policies and practices by which the board of directors is accountable to shareowners.

- **Investor Rights**: Shareowners should have strong investor rights and protections.

- **Aligned Interests**: Directors and executives should have incentives that align their interests with those of shareowners.

- **Transparency**: Financial markets work more efficiently when companies provide shareowners with accurate, thorough, and timely information on material matters.
Sustainability: Companies should effectively manage financial, governance, social, environmental, and other material risks to long-term performance and advance policies and practices that create sustainable shareowner value.

Table 8: NYCPFs “Principles of Good Governance” (NYC Comptroller, 2019).

Aligned with investor rights, NYCPFs use Engagement and proxy voting (Table 9) to “actively exercise their rights as investors to advance principles of good governance” (NYC Comptroller, 2019). Outlined in a 46-page report, prepared by the NYC Comptroller, are proxy voting guidelines, indicating how NYCPFs vote on their shareholder proxies (The Office of the New York City Comptroller, 2017). Section 6 of the report is dedicated to “Environmental and Social Issues,” illustrating that NYCPFs utilize their power as asset owners to vote for sustainable corporate practices (Table 10).

Proxy Voting: Responsibly voting proxies and advocating sound corporate governance in line with Corporate Governance Principles and Proxy Voting Policies, as adopted by the Funds’ trustees.

Company Engagement: Actively monitoring and engaging companies on their environmental, social and governance policies, practices and disclosures, including by filing shareowner proposals.

Regulatory Advocacy: Advocating for regulatory and policy reforms to strengthen shareowner rights, improve corporate disclosure, and improve the integrity and sustainability of financial markets and the economy.

Active Collaboration: Collaborating with other long-term investors, both formally as active members of numerous institutional investor associations, and informally, to advance sound governance and sustainable business practices at individual companies and across the market.

Legal Action: Exercising the right to pursue legal action to recover losses on behalf of the Fund’s beneficiaries and other affected investors in select cases of egregious fraud, misconduct, or corporate malfeasance.

Table 9: NYCPFs “Proxy Voting and Engagement” (NYC Comptroller, 2019).

<table>
<thead>
<tr>
<th>No.</th>
<th>Proxy Issue</th>
<th>Vote</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Public Reporting of Environmental Risks and Management</td>
<td>For</td>
</tr>
<tr>
<td>6.2</td>
<td>Climate Risk Mitigation and Greenhouse Gas Emission Reductions</td>
<td>For</td>
</tr>
<tr>
<td>6.3</td>
<td>Water Risk and Stewardship</td>
<td>For</td>
</tr>
<tr>
<td>6.4</td>
<td>Cease or Discontinue Business Lines or Operations Due to Environmental Risk</td>
<td>Against</td>
</tr>
<tr>
<td>6.5</td>
<td>Energy Efficiency and Conservation</td>
<td>For</td>
</tr>
<tr>
<td>6.6</td>
<td>Renewables</td>
<td>For</td>
</tr>
<tr>
<td>6.7</td>
<td>Proper Use and Handling of Toxics and Hazardous Materials</td>
<td>For</td>
</tr>
<tr>
<td>6.8</td>
<td>Product Recycling</td>
<td>For</td>
</tr>
<tr>
<td>6.15</td>
<td>Occupational Safety and Health</td>
<td>For</td>
</tr>
<tr>
<td>6.22</td>
<td>Political Contributions and Lobbying Disclosure</td>
<td>For</td>
</tr>
</tbody>
</table>

Table 10: NYCPFs Proxy Voting Guidelines, Section 6: Environmental and Social Issues (6.1-6.26). Table above has excluded irrelevant proxy issues. (The Office of the New York City Comptroller, 2017).
New York has been one of the most progressive states in addressing the issue of pension funds in relation to the global climate change crisis and urgent need to transition to a low carbon economy. NYCPFs continue to use Engagement to address climate change issues, however, a January 2018 announcement by New York City’s Mayor, Bill de Blasio, showed a shift in strategy to address fossil fuel assets: Divestment (Puglia, 2018). Mayor de Blasio explained, “safeguarding the retirement of our city’s police officers, teachers, firefighters and city workers is our top priority, and we believe that their financial future is linked to the sustainability of the planet” (UNFCCC, 2018) (Puglia, 2018). NYCPFs have nearly USD 5 billion invested in over 190 fossil fuel companies and intend to divest from all fossil fuel holdings within five years and to invest in renewable energy and other climate solutions (UNFCCC, 2018).

The year following the Divestment commitment, on February 28, 2019, the office of NYC Comptroller Scott M. Stringer put out a press release stating that Comptroller Stringer is a lead signatory of Climate Majority Project (CMP), an institutional investor coalition focused on engagement strategies, informally working with PRI’s Climate Action 100+ (Maier, 2019) (Climate Majority Project, 2019). NYCPFs are still committed to divesting from their fossil fuel assets, but are working with CMP to address other assets in companies with large carbon-footprints (i.e. high tech companies, automobile companies, Amazon, etc.), which Divestment is “not necessarily focused on” (Murphy, 2019). In addition to CMP, NYCPFs work with other investor coalitions: Council of Institutional Investors, CERES and UNPRI (NYC Comptroller, 2019).

On January 22, 2019, a bill, S.2126, was proposed to the New York State Senate known as the “Fossil Fuel Divestment Act” (2019). As of July 2019, the status of the proposed bill was In Senate Committee. Bevis Longstreth, retired lawyer and law professor, former SEC Commissioner and current member of New York’s Decarbonization Advisory Panel, who has written and spoken in favor of Divestment since 2015, testified before the NY State Senate in April opposing “the mandatory approach taken in the proposed Bill” (Longstreth, 2019). Longsteth stated:

“I urge you to not mandate divestment. It is clear that fiduciary duty, as understood by fiduciaries and interpreted by courts, poses no obstacle to the decarbonization of trust fund investments...As a policy matter, it is far better to encourage fiduciaries to decarbonize because fiduciary duty permits, and even compels, them to do so, than to be forced to do so by legislation” (Longstreth, Testimony of Bevis Longstreth before the New York State Senate Committee on Finance, 2019).

Longstreth further explains that, if passed, this mandatory approach could have a “perverse effect,” in that, “divestment without legal compulsion” could “appear inconsistent with fiduciary duty” (Longstreth, 2019).

3.5.2 California Public Employees’ Retirement System (CalPERS)

3.5.2.1 Background

California Public Employees’ Retirement System (CalPERS) was founded in 1932 as “State Employees’ Retirement System,” when the US was in the grips of the Great Depression (CalPERS, 2019). As of July 30, 2019, CalPERS is the largest pension fund in the US with USD 377.3 billion in AUM (Table 12)(CalPERS, 2019). CalPERS “was one of the first public pension systems to tie its
investments to social activism” and in 2019 is still an institutional investor leader in ESG investment strategies (Gillers, 2019).

California is the most populated state is the US with the largest economy and if it were its own nation, it would be the fifth largest economy in the world (U.S. EIA, 2019) (Evans, 2019). California is the 7th largest producer of crude oil in the US and 15th largest producer of natural gas (Table 12) (U.S. EIA, 2019). California is home to fossil fuel giant, Chevron, the 19th largest public company in the world (Table 1) (Chevron, 2019) (Forbes, 2019). Chevron, originally called Pacific Coast Oil, Co., was established in 1879 in San Francisco, CA (Figure 13) (Chevron, 2019). Although California has an abundant supply of fossil fuel resources, the state is typically the nation’s leader “in electricity generation from solar, geothermal, and biomass resources” (U.S. EIA, 2019).

California, home to four of the most polluted cities in the US, faces climate-change-related disasters such as coastal flooding and wildfires (Bendix, 2019) (Serna, 2019). In 2018, California experienced the deadliest and most destructive wildfires in the state’s history, killing 44 people and destroying more than 7,100 structures, most of them being homes (Nicas & Fuller, 2018). While the state was ablaze, President Trump infamously blamed the deadly wildfires on poor forest management: “There is no reason for these massive, deadly and costly forest fires in California except that forest management is so poor” (Pierre-Louis, 2018). The 2018 wildfires were so costly, an estimated USD 13 billion for insurance companies, that one insurance company, Merced Property & Casualty Company, went bankrupt and later faced
liquidation, as the loss was so vast, there was no hope for the company’s recovery (Ralph, 2018) (Yan & Boyette, 2018).

Despite the US withdrawal from the Paris Agreement, the climate vulnerable state of California has stepped forward as an environmental leader. In July 2017, California Governor, Jerry Brown, came together with former New York Governor, Michael Bloomberg, to launch “America’s Pledge,” an initiative for US states and cities to curb GHG emissions, consistent with the Paris Agreement, without help of the federal government (Bloomberg Philanthropies Support LLC, 2019). Additionally, on September 13-14, 2018, Brown hosted Global Action Climate Summit (GACS) in San Francisco, where environmental leaders from countries, states, cities and companies came together to promote actions and commitments to reduce GHG emissions (Shukla, 2018).

3.5.2.2 Governance

CalPERS’ Board of Administration is responsible for and has exclusive control of the fund’s administration and investments and, under the California Constitution, has a fiduciary duty “to act in the best interests of its members and employers” (CalPERS, 2019). The composition of CalPERS’ Board of Administration is “mandated by law and can only be changed by a majority of the registered voters in the state” (CalPERS, 2019). The board consists of 13 members: six elected, three appointed, and four are ex officio members (CalPERS, 2019). “To review specific programs, projects, or issues and make recommendations to the Board,” member of the board serve on six committees (CalPERS, 2019):

- Board Governance (6 members)
- Finance & Administration (7 members)
- Investment (12 members)
- Pension & Health Benefits (9 members)
- Performance, Compensation & Talent Management (6 members)
- Risk & Audit (6 members)

3.5.2.3 ESG Arguments

CalPERS was an “early adopter of divestment,” including participating in the 1980s SADM to end apartheid and in 2001 CalPERS began divesting its tobacco assets; “at the time, CalPERS had more than enough assets on hand to pay for future obligations, according to the fund” (Gillers, 2019). Nonetheless, CalPERS’ tobacco divestment has resulted in a USD 3.6 billion loss for the pension fund (Gillers, 2019).

As of March 2017, CalPERS’ Board of Administration views Divestment as conflicting with fiduciary duty obligations as defined by the California Constitution, which requires the pension fund Board to act “solely in the interest of, and for the exclusive purpose of providing benefits to, participants and their beneficiaries, minimizing employer contributions, and defraying reasonable expenses of administering the system” (CalPERS, 2017).

Although fiduciary duty is a major argument for Divestment, it is also an argument against Divestment. For example, in a 2010 survey done by the US Government Accountability Office (GAO) regarding Sudan-related divestments, 59 percent of US public pension fund managers surveyed agreed “it would be difficult to divest while ensuring that fiduciary trust requirements were not breached and my office/state was not made vulnerable to law suits” (GAO, 2010).
CalPERS’ Board has described the ways in which Divestment conflicts with fiduciary obligations:

1. **Divestment increases risk:** “divestment limits investment opportunities, decreasing diversification, limiting returns, and increasing risk in our investment portfolio” (CalPERS, 2017).

2. **Divestment is a loss of shareholder voice:** “when we divestment, we give up our “seat at the table” as a shareowner, thereby losing our best avenue for influencing a company to act in line with our core values and principles. CalPERS believes engagement is the first call to action, and results show that engagement is the most effective form of communicating concerns with the companies we own” (CalPERS, 2017).

3. **Divestment is costly:** “As of June 30, 2016, CalPERS-related divestment initiatives, including forgone performance in transaction fees, are estimated to have cost the System nearly [USD] 8 billion” (CalPERS, 2017).

Following the Board’s explanation of the fiduciary duty conflict with Divestment, the Board describes the benefits of keeping its “seat at the table” through examples of successful Engagement strategies (CalPERS, 2017). One example is CalPERS’ partnership with the “Aiming for A” campaign, a coalition of asset owners, which, in 2015, led to a shareholder proposal on climate risk reporting for BP and Shell that received more than 96 percent support, including support by management (CalPERS, 2017). The Board explains that CalPERS has a “long and successful history” of engaging with companies in which they invest on ESG topics, including climate change, natural resource accessibility and human rights issues (CalPERS, 2017). As Engagement is “critical” to CalPERS investment strategy, CalPERS belongs to several investor networks, serving on the board of the Council of Institutional Investors (representing USD 20 trillion in AUM) and CERES (representing USD 14 trillion in AUM within the Investor Network on Climate Risk) (CalPERS, 2017).

On September 23, 2018, California State Senate passed Senate Bill No. 964, which legally requires the Boards of CalPERS and CalSTRS (California State Teachers’ Retirement System), the two largest pension funds in the US, to access climate-related financial risk in their portfolios and to align the pension fund portfolios with the Paris Agreement, California climate policy and “the exposure of the fund to long-term risks” (State of California Office of Legislative Council, 2018) (IEEFA, 2019). This is the first bill in the US to define “climate-related financial risk” (Figure 14) and to legally require pension fund boards to disclose climate-related financial risk (IEEFA, 2019).

Section 2: (2) “Climate-related financial risk” means risk that may include material financial risk posed to the fund by the effects of changing climate, such as intense storms, rising sea levels, higher global temperatures, economic damages from carbon emissions, and other financial and transition risks due to public policies to address climate change, shifting consumer attitudes, changing economics of traditional carbon-intense industries.

![Figure 14](image-url)"Climate-related financial risk" as defined by the state of California’s Senate Bill No. 964, approved by California Governor on September 23, 2018 (State of California Office of Legislative Council, 2018).

In addition to climate-related financial risk disclosure, pension fund boards are required to report “the methods and results of the board’s engagement related to climate-related financial risk with publicly traded companies that are the most carbon intense, such as utilities,
oil, and gas producers, within the fund,” which includes a description of actions taken, actions planned to be taken, including “a list of proxy votes and shareholder proposals initiated by the board” (State of California Office of Legislative Council, 2018).

The first comprehensive report by the pension fund boards on climate-related financial risk is due on January 1, 2020, and every three years thereafter, until January 31, 2035 (State of California Office of Legislative Council, 2018). The bill “does not require the board to take action unless the board determines in good faith that the action is consistent with its fiduciary duty” (State of California Office of Legislative Council, 2018).

3.5.3 Colorado Public Employees’ Retirement Association (PERA)

3.5.3.1 Background

Colorado Public Employees’ Retirement Association (PERA), established in 1931, is the 44th largest pension fund in the US with nearly USD 53 billion in AUM (Influence Map, 2019). PERA manages its assets on behalf of more than 550,000 members (Colorado PERA, 2018).

As of 2019, Colorado’s economy, 17th in the US and second fastest growing in 2018, accounts for 1.8 percent of the nation’s GDP (Wobbekind, 2018) (U.S. BEA, 2019). Colorado is one of the top fossil fuel producing states in the nation (Table 12) (U.S. EIA, 2019). In 2019, Colorado is the fifth largest producer of crude oil in the US; in 2017, the sixth largest producer of natural gas and the tenth largest producer of coal (U.S. EIA, 2019). As of 2018, in terms of GDP, natural resources and mining was one of the top three fastest growing industries in the state, making up 16.1 percent of Colorado’s GDP (Wobbekind, 2018). Colorado is home to 11 of the 100 biggest natural gas fields in the nation and almost a quarter of the “economically recoverable” coal reserves in the US (U.S. EIA, 2019). In 2017, a quarter of Colorado’s energy was generated from renewables, most of which was from wind turbines (U.S. EIA, 2019).

3.5.3.2 Governance

PERA operates under the authority of the Colorado General Assembly (Colorado PERA, 2019). PERA’s Board of Trustees have exclusive control over the fund’s management and investment, per Colorado state law (Colorado PERA, 2019). The Board of Trustees is comprised of 16 members (Colorado PERA, 2019):

- 3 appointed by the Colorado Governor and confirmed by the Colorado State Senate
- 4 from the school division
- 3 from the state division
- 1 from the local government division
- 1 judicial member
- 2 PERA retirees
- 1 non-voting representative from the Department of Public Safety (DPS)
- the Colorado state treasurer, as an ex officio voting member

3.5.3.3 ESG Arguments

Released in June 2018 by PERA’s investment team, the Colorado PERA Stewardship Report discusses “environmental, social, and governance considerations for investors, as well as PERA’s approach to seeking financial sustainability through investment stewardship” (Colorado PERA, 2018, p. 5). The report discusses ESG, sustainable investing, sustainability disclosure, engagement and proxy voting.
Pension Funds and the Energy Transition: A Case Study of US Pension Funds

PERA claims to be “actively engaged,” believing that PERA “can increase accountability through [their] engagement” (Colorado PERA, 2018, p. 4). Through active engagement strategies, PERA encourages “strong corporate governance,” believing that companies that use these practices will be “more likely to provide sustainable financial returns to shareholders” (Colorado PERA, 2018, p. 9). The report explains that PERA “will generally support proposals requesting increased disclosure on how companies are planning to mitigate the risks associated with climate change and related regulations,” citing the support of 65 shareholder proposals over the past two years requesting the disclosure of climate related risks and environmental sustainability (Colorado PERA, 2018, p. 12). Regarding investor coalitions, PERA works with Council of Institutional Investors, Institutional Shareholder Services Inc., Financial Recovery Technologies, Glass, Lewis & Co., and International Corporate Governance Network, but is not a PRI signatory, and does not work with CA100+, CERES or Climate Majority Project (Colorado PERA, 2019).

According to Fossil Free PERA Colorado (FFPC), “a growing coalition of PERA members, beneficiaries and Colorado taxpayers who are calling on PERA and the Colorado General Assembly to responsibly address climate-related financial risk and take action to minimize the impacts of climate change on [the] state and pension fund,” PERA has more than USD 1.5 billion invested in “over 300 oil, gas and coal companies” (Fossil Free PERA Colorado, 2019).

FFPC calls on the public pension fund and the Colorado General Assembly to divest from its fossil fuel holdings, citing financial, moral/ethical and legal concerns, consistent with the FFDM. In addition to the FFDM arguments, FFPC’s arguments include:

⇒ PERA continues to invest in Extraction LLC, a Colorado-based oil and gas company that lost USD 500 million in 2016. Extraction LLC is proposing controversial projects in the state, such as fracking nearby a middle school in Boulder, CO (children ages 9-14), less than 1,000 feet from the school’s playground and on “Boulder County Open Space” lands (Fossil Free PERA Colorado, 2019).

⇒ PERA continues to invest in coal, despite the industry’s enormous upsurge in bankruptcies (Fossil Free PERA Colorado, 2019)

⇒ PERA continues to invest in Exxon Mobil Corp. despite the past five years of declining stocks and despite the oil and gas company being under investigation for decades of purposefully misleading the public, government and shareholders over climate change science and climate risk in order to protect fossil fuel company’s profits (Fossil Free PERA Colorado, 2019).

“And [PERA] did hear a lot of cries for divestment, there was a big petition, a couple thousand signatures that was turned in, and the pension board held a closed door private meeting off notes with some of their consultants, and they have a law firm that consults them on fiduciary duty, and that law firm is primarily an oil and gas lobbying firm” (Interviewee 5, 2018).

In response to FFPC’s request to PERA and the Colorado General Assembly to divest from fossil fuel holdings, PERA’s Board of Trustees declined and released a Statement on Divestment, which stated, “PERA will implement the divestment mandates passed by the Colorado General Assembly but would recommend that legislature thoughtfully consider such proposals with caution and fiduciary care” (Colorado PERA, 2019). It is important to note that in the board’s
Statement on Divestment there is no mention of “climate change,” “fossil fuels,” or “environment(al)” (Colorado PERA, 2019). PERA’s Board of Trustees recommends the General Assembly “be cognizant of the following” (quoted and paraphrased from Statement on Divestment) (Colorado PERA, 2019):

(1) Divestment and fiduciary duty:
   - Divestment “adversely affects diversification by limiting the investible universe”
(2) Divestment is costly:
   - Transaction costs
   - Costs of researching and conducting due diligence for replacement funds
   - Opportunity cost
   - Potential cost of reduced investment return
   - Cost of creating investment strategies that exclude [fossil fuel] entities
(3) Money is not public or of the state, but belonging to the beneficiaries
(4) Divestment unlikely to impact the targeted company or industry

In March 2019, two Democrats, Representative Emily Sirota and Representative Chris Hansen, proposed a House Bill to the Colorado General Assembly titled PERA Public Employees’ Retirement Association Board Assess Climate-related Financial Risks (HB19-1270) (Colorado General Assembly, 2019). The proposed bill, if enacted, would require PERA’s board of trustees “to retain an organization with experience in public sector pension plans to conduct a study to analyze any climate-related financial risk to the total assets of PERA (fund)” (Colorado General Assembly, 2019). If enacted, the bill would mandate the “unbiased and independent third-party” organization to include a summary of PERA’s portfolio’s exposure to climate-related financial risks (Figure 15) (Colorado General Assembly, 2019). Following the organization’s study and summary, the bill would require PERA’s Board of Trustees “to deliver a report to the [Colorado] general assembly detailing the findings of the organization’s analysis” no later than July 15, 2020 (Colorado General Assembly, 2019).

- A comprehensive analysis of the climate-related financial risk of PERA’s portfolio and the exposure of the fund to long-term risks;
- A summary of climate-related financial risk-related engagement activities undertaken; and
- A description of additional action that should be taken, or planned to be taken, by the board to address climate-related financial risk, including a list of proxy votes and shareholder proposals initiated by the board.

On April 1, 2019, Colorado General Assembly’s Legislative Council Staff published a fiscal note stating:
“The bill increases PERA’s costs by up to $200,000 to retain an organization to conduct the study required under the bill. The bill will also increase PERA’s workload to administer the competitive solicitation and facilitate the study. These costs will be borne by the divisional trust funds of PERA” (Legislative Council Staff, 2019).

On April 8, 2019, the Colorado General Assembly House Committee on Finance hosted an initial hearing on the proposed bill, where policy makers, financial companies, citizens, PERA members and NGO representatives (including Interviewee 5 from 350.org) testified in support of the bill (Colorado General Assembly, 2019). In a 1-10 vote (yes-no), the House Committee on Finance (7 Democrats; 4 Republicans) failed to enact the proposed bill, and in a 9-2 vote, passed a motion to “Postpone House Bill 19-1270 indefinitely” (Colorado General Assembly, 2019). From the publicly available information, it is unclear why the House Committee on Finance voted as they did.

Only two independent media outlets in Colorado, Westword and The Colorado Independent, mentioned the Committee’s failure to enact proposed House Bill 19-1270 (Woodruff, 2019) (Burness, 2019). Woodruff quoted Deborah McNamara, a climate activist with the Colorado Coalition for a Livable Climate, who testified at the hearing in support of House Bill 19-1270 (2019):

"I talk to PERA members who say, 'I'm going to retire in the year 2035,,' or 2050, and these are the key benchmark years when it comes to what the IPCC has been telling us about climate change. So they want to make sure PERA is doing something now, so that by the time they are retiring, they're not dealing with the fallout from the climate crisis, and the potential fallout from stranded assets" (Woodruff, 2019).

<table>
<thead>
<tr>
<th>US Pension Fund</th>
<th>NYCPFs</th>
<th>CalPERS</th>
<th>PERA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State</strong></td>
<td>New York</td>
<td>California</td>
<td>Colorado</td>
</tr>
<tr>
<td><strong>Year Established</strong></td>
<td>1857-1921</td>
<td>1932</td>
<td>1931</td>
</tr>
<tr>
<td><strong>Approx. Number of Members</strong></td>
<td>&gt; 635 thousand</td>
<td>1.9 million</td>
<td>600 thousand</td>
</tr>
<tr>
<td><strong>Total AUM (April 2019)</strong></td>
<td>USD 194.426 billion</td>
<td>USD 374.025 billion</td>
<td>USD 52.968 billion</td>
</tr>
<tr>
<td><strong>US Pension Fund Rank (April 2019)</strong></td>
<td>4</td>
<td>1</td>
<td>44</td>
</tr>
<tr>
<td><strong>Total FF Assets (2018, 2016, 2016)</strong></td>
<td>5 billion</td>
<td>USD 8.6 billion</td>
<td>USD 1.5 billion</td>
</tr>
<tr>
<td><strong>Estimated FF assets % total AUM</strong></td>
<td>2.5%</td>
<td>2.2%</td>
<td>2.8%</td>
</tr>
<tr>
<td><strong>Number of FF companies invested</strong></td>
<td>&gt;190</td>
<td>142 (of CU200)</td>
<td>&gt;300</td>
</tr>
<tr>
<td><strong>Use of ESG (Yes/No)</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Stance on FF Divestment

<table>
<thead>
<tr>
<th>Investor Coalitions</th>
<th>Full Divestment</th>
<th>Will not Divest</th>
<th>Will not Divest unless mandated by Colorado General Assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Climate Majority Project</td>
<td></td>
<td>Council of Institutional Investors</td>
</tr>
<tr>
<td></td>
<td>Climate Action 100+</td>
<td>Climate Action 100+</td>
<td>Institutional Shareholder Services Inc.</td>
</tr>
<tr>
<td></td>
<td>CERES</td>
<td>CERES</td>
<td>International Corporate Governance Network</td>
</tr>
<tr>
<td></td>
<td>Council of Institutional investors</td>
<td>Council of Institutional Investors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IIGCC</td>
<td>IIGCC</td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>State Production of Fossil Fuels (March 2019)</th>
<th>State</th>
<th>New York</th>
<th>California</th>
<th>Colorado</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude Oil (thousand barrels per day) (2019)</td>
<td></td>
<td>1</td>
<td>452</td>
<td>469</td>
</tr>
<tr>
<td>Natural Gas (million cubic feet per day) (2019)</td>
<td>---</td>
<td>539</td>
<td>5,307</td>
<td></td>
</tr>
<tr>
<td>National Ranking: Crude Oil (2019)</td>
<td>28</td>
<td>7</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>National Ranking: Natural Gas (2017)</td>
<td>22</td>
<td>15</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>National Ranking: Coal (2017)</td>
<td>---</td>
<td>---</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Table 12: Fossil Fuel Production and CO2 Emissions for New York, California and Colorado (U.S. EIA, 2019).
4. Discussion of Findings
Chapter 3 presented the study’s findings of data, news articles and publicly available state, federal and pension fund policy documents relevant to the topic of pension funds and the energy transition. This chapter will discuss the findings.

4.1 US Politicization of Fossil Fuels
The politicization of fossil fuels in the US is a “serious constraint” for the country to address climate change; subsequently, it is also a major barrier for pension funds to enhance the energy transition and leave fossil fuels underground (McAdam, 2017). This is the case for both studied ESG strategies, Engagement and Divestment. This is well-documented in preceding chapters and is highlighted by a quote from an interviewee at ShareAction who had previously conducted in-depth interviews with large institutional investors, including US pension fund asset managers (ShareAction, 2018).

“So, we discussed some of the barriers for US pension funds. They say they can’t talk about climate change, it is too political, we have to talk about low carbon, and then from another conversation I had, we can’t talk about low carbon, that’s too politically charged, we need to talk about resilience” (Interviewee 7, 2019).


The 49 successful environmental roll-backs by the Trump Administration in a mere two and a half years, despite the global call for climate action, as prescribed by the Paris Agreement, from which President Trump withdrew the US, illustrates the federal government’s stance on fossil fuels (Popovich et al., 2019). Although President Trump promised to put “America first,” these environmental roll-backs directly benefit fossil fuel producers in the short-term, allowing them to freely emit GHGs and pollute local water supplies (Trump, 2017) (Popovich et al., 2019).

4.2 US Securities and Exchange Commission
While the SEC is supposed to be a neutral government legislative agency, its lack of mandating climate-related risk disclosure and then blocking institutional investors from submitting shareholder resolutions requesting climate-related risk disclosure from fossil fuel companies shows that its priorities are misaligned with the Paris Agreement (U.S. SEC, 2019) (As You Sow, 2019). The SEC is not adequately doing its job of protecting investors by mandating climate-related risk disclosure, despite various pleas from institutional investors, policy makers and NGOs, instead, whether or not intentional, is successfully protecting fossil fuel companies (U.S.
SEC, 2002) (U.S. SEC, 2019). As the number of blocked climate-related shareholder resolutions by the SEC is directly correlated with the era of the Trump Administration, it is likely that the SEC is politically influenced, rather than neutral (As You Sow, 2019). Nevertheless, the SEC creates an additional barrier for pension funds to enhance the energy transition via Engagement strategies.

4.3 External Asset Managers
From the publicly available policy documents, grey literature and interviews, external asset managers present a barrier for US pension funds to properly address the energy transition. While the sampled US pension funds Engage with firms, there is no evidence that there is Engagement with external asset managers, such as BlackRock. Regarding asset managers, BlackRock’s investments represent the majority of CO2 emissions (Figure 12) and ten percent of BlackRock’s assets managed are US pension funds (Pensions and Investments, 2019). As Tilba and Reisberg point out, pension fund asset managers, within fiduciary duty, could be Engaging with external asset managers regarding climate change and fossil fuels (2019). This could be significant.

4.4 Labor Unions
US labor unions play a role in the discussion of pension fund addressing the need for an energy transition. The preceding chapters have shown the significance of labor unions in the history of US pension funds, Engagement, Divestment and the ‘just transition.’ Although the 2018 Supreme Court case, Janus v. AFSEMEC, delivered a “blow” to US labor unions, this research shows that the coalition of pensioners has the potential to act as a needed mobilized group to continue to pressure their representative pension funds and state legislature for climate action and the energy transition (Janus v. American Federation of State, County, and Municipal Employees Council, 2018) (Liptak, 2018).

4.5 US Pension Funds: NYCPFs, CalPERS and PERA
Of the sampled pension funds, all three, NYCPFs, CalPERS and PERA, use Engagement; however, NYCPFs is using Engagement for indirect emitters of GHGs, rather than the direct fossil fuel companies. NYCPFs is committed to selling all fossil fuel assets by 2023, five years from the Divestment announcement (UNFCCC, 2018) (Puglia, 2018).

There are to key differences between the pension funds for Divestment (NYCPFs) and against Divestment (CalPERS and PERA): (1) pension fund governance and (2) state fossil fuel production.

Regarding pension fund governance, while all three retirement systems have pension fund boards, in the case of NYCPFs, the city’s Comptroller is solely responsible for the five retirement systems, compared to CalPERS and PERA, which have boards responsible for management and investments (NYC Comptroller, 2019) (CalPERS, 2019) (Colorado PERA, 2019).

Second, compared to New York, California and Colorado are significant producers of fossil fuels in the US (Table 12). In terms of a ‘just transition’ for its state’s fossil fuel workers, this makes sense. However, in comparison, CalPERS and the California State Senate are seemingly more committed to enhancing the energy transition than PERA and the Colorado General Assembly. While California’s State Senate passed a bill to mandate CalPERS board to access climate-related financial risk, the Colorado General Assembly’s House Committee on Finance failed to pass a similar bill (State of California Office of Legislative Council, 2018) (Colorado General Assembly, 2019). A key difference in the bill, however, is that Colorado’s proposed
House Bill 19-1270 mandated that PERA’s Board of Trustees hire an independent organization, while California’s Senate Bill No. 964 mandated that CalPERS’ Board of Administration access the fund’s portfolio’s climate-related financial risk (and defined what that entailed) (State of California Office of Legislative Council, 2018) (Colorado General Assembly, 2019). It is possible that the extra costs of hiring an independent organization, which would be paid by the fund, is what led to the failure of House Bill 19-1270 (Legislative Council Staff, 2019). It could be possible that the argument for Divestment is strengthened in the US by the fact that the federal government has attempted to suppress climate change research, is rolling back environmental regulations and the SEC is blocking shareholder resolutions. Engagement, the ESG strategy prescribed by the UN and in an effort to prevent a global economic collapse, has major barriers in the US. Previous research shows that increasingly stringent environmental regulations, or even merely the threat, makes fossil fuel companies more likely to be receptive to Engagement; thus, the rolling back of environmental regulations could make fossil fuel companies less likely to be receptive, as there is little (or no) threat from the federal government legally mandating, for example, the reduction of CO2 emissions (Goranova & Ryan, 2014). The barriers in the US for Engagement is highlighted by this quote from an interviewee representing a US Engagement-based NGO questioned about Divestment:

“I think—and it’s hard to say if I’m speaking for myself or my organization— that multiple approaches are necessary. I think that we need to see systemic shifts in the way our society functions and to make sure we are not relying on fossil fuels anymore and we’re not relying on high-carbon ways of running our society. So, I think it is increasingly making sense for divestment to be a consideration in terms of fiduciary duty” (Interviewee 8, 2019).

Although fiduciary duty is a main argument by the FFDM to Divest, this research shows that, in its ambiguity, it is both an argument for and against Divestment. In the case of CalPERS, a pension fund that is legally mandated by the California State Senate to publicly disclose climate-related financial risk in its portfolio, the pension fund’s board, in charge of pension fund assets, is not required to take action “unless the board determines in good faith that the action is consistent with its fiduciary duty” (State of California Office of Legislative Council, 2018). Thus, the decision of what is within a fiduciary’s duty is up to the interpretation of said fiduciary. The complexity of legalities of fiduciary duty is further highlighted by New York’s proposed Fossil Fuel Divestment Bill. If Divestment was legally mandated, it could be interpreted as Divestment is only within a fiduciary’s duty when legally mandated; however, on the flip side, PERA’s board explained that it would only Divest if legally mandated by the Colorado General Assembly (Colorado PERA, 2019).

Within pension fund policy documents, fiduciary duty is discussed mostly in relation to arguments for or against Divestment, as opposed to an argument for or against Engagement (CalPERS, 2017) (Colorado PERA, 2019). Engagement is described by CalPERS and PERA as the preferred ESG strategy because Divestment goes against fiduciary duty, not because Engagement is within fiduciary duty. It has been argued by New York’s Decarbonization Advisory Panel that Engagement is not necessarily within the scope of fiduciary duty (Williams, et al., 2019).
NYCPFs, CalPERS and PERA all work with several Engagement investor coalitions (Table 11). Investor coalitions provide an opportunity for institutional investors to work together, supporting the same shareholder resolutions, presenting the same asks of fossil fuel firms. With a larger voting block and congruent asks, which leads to less confusion from the targeted firm/industry, investor coalitions are an opportunity for Engagement strategies to maximize success.

NYCPFs and CalPERS almost completely overlap in membership of investor coalitions, while PERA has only one membership in common, Council of Institutional Investors (CII), where each pension fund sampled has a representative on CII’s Board of Directors (Council of Institutional Investors, 2019). CII is focused on Engagement for corporate governance and its website has no mention of climate change, environmental issues or fossil fuels (Council of Institutional Investors, 2019). PERA has not joined the 2,500 institutional investors worldwide as a PRI signatory, thus, is not a member of CA100+, nor CERES (PRI, 2019). As PRI’s CA100+ (including its subsidiaries, i.e. CERES) is the largest institutional investor coordinated effort in terms of addressing climate change, it is worth noting that PERA is not a signatory.

When FFPC campaigned to pressure PERA and the Colorado General Assembly to Divest, PERA’s board responded with a statement on why the board will not Divest, citing the argument of fiduciary duty (Fossil Free PERA Colorado, 2019) (Colorado PERA, 2019). As FFPC, as well as Fossil Free and 350.org, is laser focused on Divestment, PERA is not held accountable by FFPC for its Engagement strategies, which could potentially be greenwashed (i.e. its lack of being a PRI signatory) (Fossil Free PERA Colorado, 2019).

The majority of NGO representatives interviewed for this study either sided with Divestment or Engagement, rather than viewing both ESG strategies as necessary. The most significant contribution of Divestment is said to be its impact on public discourse, fossil fuel stigmatization and, consequently, GHG emission policies and regulations (Bergman, 2018)(Anasar et al., 2013). Studies have shown that increasingly stringent environmental regulations can have a positive impact on the success of Engagement (Goranova & Ryan, 2014). Thus, in theory, the FFDM could help Engagement. However, the push for Divestment comes at a cost for Engagement in terms of green finance and a global perspective on institutional investors’ role in the energy transition. The FFDM is a social movement with grassroots beginnings, it takes on a more ‘local,’ protecting the institutional investor (i.e. pension fund) from stranded assets. NGO interviewees in support of Divestment were not concerned with the threat of neutral investors: “pension fund managers are long-term investors, they aren’t traders,” thus, need not be concerned with the buyers of newly sold stock (Longstreth, 2019). Engagement takes on a more ‘global’ perspective of protecting the global economy as a whole, while aiding the energy transition. While Divestment, as it is argued, could protect pension funds from the carbon asset risk, it will not protect its pensioners from the threat of climate change, as climate change is not just a local, but a global issue. This is the significance of the universal investor argument for Engagement and points back to the dilemma presented in the introduction to this research: “it’s not just a matter of having more money with which to retire, but also retiring in a world capable of sustaining life.”
5. Conclusion
This exploratory research has studied the intersection of pension funds and the energy transition, using a case study of the US to examine the arguments, barriers and opportunities for pension funds using the ESG strategies of Engagement and Divestment (Table 13). This thesis answers the over-arching research question: *What actions can pension funds take to leave fossil fuels underground, and under what conditions can these actions be successful?*

5.1 Divestment
FFDM originated on US university campuses as a grassroots movement and has grown into a global social movement. The FFDIM is mainly facilitated by 350.org (Fossil Free), which have numerous local subsidiaries around the globe. From late June 2019 to late August 2019, the amount of representative AUM committed to Divestment has grown by more than USD 1 trillion, adding 46 more institutional commitments, according to Fossil Free (Fossil Free, 2019).

5.1.1 Arguments for Divestment
The main arguments used by the FFDIM are in the context of moral/ethical, legal and financial. The moral/ethical argument states that it is wrong to profit from companies that are clearly contributing to climate change (i.e. fossil fuel companies). In addition, the FFDIM is considered, by supporters, to enhance climate action and the energy transition.

A key argument by the FFDIM is that Divestment is within a fiduciary’s duty; however, this research has shown that it is both an argument for and against Divestment. The FFDIM considers Divestment to be within fiduciary duty because of the carbon asset risk, known as the carbon bubble. This is perceived to be a financial risk because through countries upholding commitments to the Paris Agreement, environmental regulations on GHG emissions will become increasingly stringent, in order to meet the 2°C target, as prescribed by the global accord, thus, assets linked to proven fossil fuel reserves will be left stranded. While some supporters of the Divestment acknowledge that the FFDIM is symbolic and unlikely to have an impact on financial markets, the movement’s greatest strength is the media attention and effect on public discourse.

5.1.2 Arguments Against Divestment
There are many arguments against Divestment. First, as Divestment is costly, thus, conflicting with fiduciary duty. The costs of Divestment include: (1) administrative costs of selling shares and (2) the loss of potential profits. Second, Divestment means the loss of ownership and loss of ability to Engage with fossil fuel companies. This is significant for two reasons: (1) as pension funds are considered universal investors, investing in the global economy, the performance of their portfolio depends on the performance of the global economy and (2) as fossil fuel shares are some of the most liquid public equity, meaning they are bought and sold easily, it is possible that divested shares will end up in the portfolios of neutral investors unconcerned with climate change and unlikely to Engage with fossil fuel companies. Third, unlike Engagement, Divestment does not consider the ‘just transition,’ and the workers and communities that will be impacted by the energy transition. Lastly, if the FFDIM grows larger enough and is able to financially impact the fossil fuel industry, it could lead to a global economic collapse.
5.2 Engagement

Engagement is the preferred ESG strategy by the UN, as it takes on a global perspective. The Engagement-focused investor coalition, CA100+, is supported by 342 asset owners representing almost USD 34 trillion in AUM.

5.2.1 Arguments for Engagement

A few of the key arguments for Engagement align with the arguments against Divestment: universal investor principal, the concept of a ‘just transition,’ and the prevention of a global economic collapse. As universal investors are said to be invested in the economy as a whole, their portfolio's performance depends on the state of the global economy. Through Engagement, pension fund asset owners have the opportunity to guide the energy transition. While the FFDM essentially prescribes divesting from fossil fuels and investing in renewable energy and other climate solutions, Engagement is a means of turning Big Fossil Fuels into Big (renewable) Energy by changing the business models of fossil fuel companies. Doing so, Engagement, in theory, will be able to provide a 'just transition' to fossil fuel workers and communities and to prevent the collapse of the fossil fuel industry. The concept of a ‘just transition’ is aligned with the Paris Agreement. A major opportunity for Engagement is the use and growth of investor coalitions, such as CA100+ and its affiliates.

5.2.2 Arguments Against Engagement

There are several arguments against Engagement. First, Engagement is argued to be a lengthy process, and while Engagement strategies have been successful in the past, it has a poor success rate when seeking to change a firm's core business model. This argument is rooted in a sense of urgency and a disbelief that the fossil fuel industry will change. Second, shareholder proposals are always a suggestion even when the majority of asset owners vote in support. Third, it is debatable as to whether or not Engagement is within fiduciary duty; however, as has been discussed, fiduciary duty is often up to interpretation. Next, without increasingly stringent federal environmental regulations on GHG emissions, fossil fuel companies have little incentive to change. Lastly, in the US, the SEC’s neglect in mandating climate related financial risk disclosure and its blocking of shareholder proposals requesting such disclosure, is also an argument against Engagement.

5.3 Social Movement Theory

Social Movement Theory, albeit implicitly, has been used to contextualize Divestment and the FFDM. Originally a grassroots movement, Divestment has won over global supporters and has had great impact on public discourse. However, though it is a global social movement, its strategy is still locally focused, like its origins. For example, NYCPFs committed to Divestment to protect NYCPFs’ beneficiaries’ money, this is a local focus. The climate change crisis is global. Divestment does not prevent local climate change. Although inspired by the successful SADM, the FFDM is dealing with something completely different, a key component to the functioning of the post-industrial global economy. The FFDM does not take into account this global aspect, so although, as discussed, the FFDM has been of service to Engagement in terms of increasing public discourse around climate change and fossil fuel assets, it is also doing a disservice by lessening the number of activist asset owners of fossil fuels.
5.4 Green Finance
Green Finance has been used to understand Engagement. Engagement, the ESG strategy prescribed by the UN, is a global strategy to leave fossil fuels underground and prevent a global economic collapse. CA100+, a UN PRI initiative, was formed to create a coalition of asset owners to engage with the largest contributors to climate change, (i.e. fossil fuel companies), to enhance the energy transition in a way that is aligned with the Paris Agreement. Engagement, as an approach to green finance, is unlikely to work without federal government support of and commitment to the global climate accord, meaning increasingly stringent environmental regulations. Without which, an increase in urgency is felt, fueling the FFDM.

5.4 Recommendations
The researcher, first and foremost, recommends that more research be conducted on the topic of pension funds and the energy transition. This topic is of increasing importance and relevance. By conducting a case study of US pension funds, the researcher has presented a critical barrier for pension funds to enhance the energy transition: the politicization of climate change and fossil fuels. For pension funds to be successful in facilitating the leaving of fossil fuels underground, federal and state government support is necessary. The researcher recommends the following:

⇒ **US federal government**: stop propping up the fossil fuel industry and rolling back environmental regulations.
⇒ **US citizens**: take the 2020 election seriously and vote for a presidential candidate who does not accept corporate contributions (especially from fossil fuel firms) and has a climate-change agenda;
⇒ **US SEC**: legally mandate climate-related financial risk disclosure from companies and stop blocking climate-related shareholder proposals;
⇒ **State governments**: Commit to Paris Agreement, despite federal withdrawal; define climate-related financial risk and mandate risk analysis of pension fund portfolios;
⇒ **US Pension fund asset managers**: use ESG investment strategies, become PRI signatories, if not already, and join Climate Action 100+, CERES and/or Climate Majority Project; Engage with external asset managers, such as BlackRock, and hold accountable when voting in line with management;
⇒ **Future researchers**: conduct in-depth interviews with US pension fund asset managers; use quantitative research to analyze the strategies of Divestment and Engagement; conduct case study research on additional countries’ pension funds in relation to the energy transition.
<table>
<thead>
<tr>
<th>Pension Fund Action</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Engagement</strong></td>
<td><strong>Arguments for / Opportunities</strong>&lt;br&gt;Prevention of global economic collapse&lt;br&gt;Engagement historically works&lt;br&gt;Universal Investor Principle&lt;br&gt;A Just Transition&lt;br&gt;With increasingly stringent environmental regulations, FF companies more likely to be receptive to Engagement&lt;br&gt;Strong investor/asset owner coalitions focused on using Engagement to address global climate change crisis</td>
</tr>
<tr>
<td><strong>Divestment</strong></td>
<td><strong>Fiduciary Duty</strong>&lt;br&gt;- Duty to Monitor&lt;br&gt;- Duty of Care&lt;br&gt;- Duty of Loyalty</td>
</tr>
<tr>
<td></td>
<td><strong>Impact on public discourse</strong>&lt;br&gt;Loss of ownership&lt;br&gt;- Loss of ability to engage with FF companies</td>
</tr>
<tr>
<td></td>
<td><strong>Morally wrong to profit from companies vastly contributing to climate change</strong>&lt;br&gt;To invest in FF is to bet against the Paris Agreement</td>
</tr>
</tbody>
</table>

*Table 13: Arguments in Favor of and Against Engagement and Divestment*
References


CDP. (2017, July 10). *New report shows just 100 companies are source of over 70% of emissions*. Retrieved from CDP: https://www.cdp.net/en/articles/media/new-report-shows-just-100-companies-are-source-of-over-70-of-emissions


Citizens United v. Federal Election Commission, 08-205 (Supreme Court of the United States January 21, 2010).


Crooks, E. (2019, February 24). *Exxon seeks to block vote on investor proposal on emissions: Shareholders’ group wants oil company to include targets in its annual report*. Retrieved from Financial Times: https://www.ft.com/content/800fb008-3853-11e9-b72b-2c7f526ca5d0


House Committee on Appropriations. (2019, May 14). *Press Release: Appropriations Committee Releases Fiscal Year 2020 Interior-Environment Funding Bill.* Retrieved from House Committee on


Janus v. American Federation of State, County, and Municipal Employees Council, 16-1466 (Supreme Court of the United States June 27, 2018).


Longstreth, B. (2019, April 30). Testimony of Bevis Longstreth before the New York State Senate Committee on Finance. New York, USA.


Mooney, A. (2018, October 8). *Pressure grows on £6.3bn Cambridge university fund to drop fossil fuels: Major academics join campaign group pushing for endowment’s investment shift*. Retrieved August 2019, from Financial Times: https://www.ft.com/content/beeca3ec-aaab-11e7-93c5-648314d2c72c


Ralph, O. (2018, November 19). *California wildfires estimated to cost insurers up to $13bn*. Retrieved from Financial Times: https://www.ft.com/content/cc742e0e-ebf2-11e8-89c8-d36339d835c0


Rempel, A. (2019). Top 5 Coal Assets Managed by 12 Global Pension Funds.

Rempel, A. (2019). Top 5 Oil and Gas Assets Managed by 12 Global Pension Funds.


UNEP FI. (2005). *A legal framework for the integration of environmental, social and governance issues into institutional investment.*


Appendices

Appendix 1:
Conceptual Framework

<table>
<thead>
<tr>
<th>Concept</th>
<th>Sub-Concept</th>
<th>Sub-Items</th>
<th>Indicators</th>
<th>Data Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>US pension funds and ESG strategies</td>
<td>The Energy Transition (Green Finance &amp; Social Movement Theory)</td>
<td>Divestment</td>
<td>- Commitments to exclude fossil fuel investments.</td>
<td>- Semi-structured interviews</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Support of the FFDM</td>
<td>- Literature analysis (academic, media and NGO research)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Content and policy analysis (Federal, state and pension fund policy documents)</td>
</tr>
<tr>
<td>Engagement</td>
<td></td>
<td></td>
<td>- Commitments to engage.</td>
<td>- Semi-structured interviews</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Support via proxy voting</td>
<td>- Literature analysis (academic, media and NGO research)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Submission of shareholder proposals</td>
<td>- Content and policy analysis (Federal, state and pension fund policy documents)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Participation in investor coalitions</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal and state government attitudes towards fossil fuels</td>
<td></td>
<td></td>
<td>- Fossil fuel production and consumption</td>
<td>- Literature analysis (academic, media and NGO research)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Climate Polices</td>
<td>- Content and policy analysis (Federal, state and pension fund policy documents)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Climate Risk Policies</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Measurement of Climate-Risk in PFs</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 2:

**A Budget for A Better America: Fiscal Year 2020 Budget of the U.S. Government**

2020 budget of the US government as proposed to Congress by Trump Administration. Numbers and figures taken directly from budget proposal (Trump Administration, 2019).

<table>
<thead>
<tr>
<th>Federal Department</th>
<th>2020 Budget Request</th>
<th>Change from 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Agriculture</td>
<td>USD 20.8 billion</td>
<td>5% decrease</td>
</tr>
<tr>
<td>Department of Commerce</td>
<td>USD 12.2 billion</td>
<td>9.3% increase</td>
</tr>
<tr>
<td>Department of Defense</td>
<td>USD 718 billion</td>
<td>5% increase</td>
</tr>
<tr>
<td>Department of Education</td>
<td>USD 62 billion</td>
<td>12% decrease</td>
</tr>
<tr>
<td>Department of Energy</td>
<td>USD 31.7 billion</td>
<td>11% decrease</td>
</tr>
<tr>
<td>Department of Health and Human Services</td>
<td>USD 87.1 billion</td>
<td>12% decrease</td>
</tr>
<tr>
<td>Department of Homeland Security</td>
<td>USD 51.7 billion</td>
<td>7.8% increase</td>
</tr>
<tr>
<td>Department of Housing and Urban Development</td>
<td>USD 44.1 billion</td>
<td>16.4% decrease</td>
</tr>
<tr>
<td>Department of the Interior</td>
<td>USD 12.5 billion</td>
<td>14% decrease</td>
</tr>
<tr>
<td>Department of Justice</td>
<td>USD 29.2 billion</td>
<td>2% decrease</td>
</tr>
<tr>
<td>Department of Labor</td>
<td>USD 10.9 billion</td>
<td>9.7% decrease</td>
</tr>
<tr>
<td>Department of State and Other International Programs</td>
<td>USD 40.0 billion</td>
<td>23% decrease</td>
</tr>
<tr>
<td>Department of Transportation</td>
<td>USD 21.4 billion</td>
<td>22% decrease</td>
</tr>
<tr>
<td>Department of the Treasury</td>
<td>USD 12.7 billion</td>
<td>1% decrease</td>
</tr>
<tr>
<td>Department of Veterans Affairs</td>
<td>USD 93.1 billion</td>
<td>7.5% increase</td>
</tr>
<tr>
<td>Corps of Engineers—Civil Works</td>
<td>USD 4.8 billion</td>
<td>31% decrease</td>
</tr>
<tr>
<td>Environmental Protection Agency</td>
<td>USD 6.1 billion</td>
<td>31% decrease</td>
</tr>
<tr>
<td>National Aeronautics and Space Administration</td>
<td>USD 21 billion</td>
<td>1.4% increase</td>
</tr>
<tr>
<td>Small Business Administration</td>
<td>USD 0.82 billion</td>
<td>17% increase</td>
</tr>
</tbody>
</table>