BlackRock

Investment and Fiduciary Analysis for Potential Fossil Fuel Divestment

Phase 1

Survey of Divestments of Fossil Fuel Reserve Owners and Identification of Securities Issued by Fossil Fuel Reserve Owners

Report DRAFT

Prepared for the Comptroller of the City of New York
As Custodian of the Funds of
The Teachers' Retirement System of the City of New York

By BlackRock Sustainable Investing

Contents

Executive Summary

- This report seeks to provide:

  1. Understanding of the overall fossil fuel divestment landscape across regions and investor types,

  2. Insight into peer institutions that have undertaken fossil fuel divestment research and implemented divestment strategies, and

  3. An overview of the Teachers' Retirement System's exposure to fossil fuel reserve owners as a starting point for future risk assessments and recommendations.

- Global investor commitments to fossil fuel divestment have increased substantially since systematic capture of the data began in 2013. As of March 2020, more than 1,100 public commitments had been made by institutions representing over USD $12 trillion in total assets under management — a 9-fold increase since 2013.

  - Initial divestment commitments were driven predominately by faith-based and non-profit organizations. However, commitments made by educational endowments and private pension plans have comprised the bulk of recent growth. Public and government pension commitments have grown steadily throughout this period.

  - The majority of recorded divestment has targeted fossil fuels broadly; that is, divestment strategies across coal-, oil- and gas-related exposures. However, a smaller segment of institutions has focused divestment specifically to thermal coal and tar sands.

- Amongst surveyed peer institutions, materiality and risk-avoidance have been the driving consideration behind divestment research and implementation. Divestment was typically one part of an overarching climate-related investment strategy and policy. The broader climate risk approaches included direct shareholder engagement, low-carbon and clean technology investments.

- Peers cited different approaches to measuring fossil fuels for divestment. This ranged from full GICS Energy Sector divestment, to coal revenue thresholds, to applying the Carbon Underground 200, and to custom approaches. These approaches were driven, in part, by considerations of active versus passive management, external versus internal management, and allocations to equity versus debt.

- Of investors explicitly measuring the impact of fossil fuel divestment on financial performance (4 of 13 respondents), no investors found significant negative performance from divestment, but rather, have reported neutral to positive results.

- The Teachers' Retirement System (TRS) has exposure to [redacted] securities, representing [redacted] of total assets and approximately [redacted] of the plan's total equity and [redacted] of corporate debt, to issuers that own proved and probable fossil fuel reserves, as of portfolio date 3/31/2020.

- [redacted]

- Of all fossil fuel reserve securities, exposure is primarily within the TRS' equity allocation [redacted] versus fixed income [redacted], and concentrated within the Energy sector followed [redacted]

- This sub-set is defined as the total eligible fossil fuel reserve owner universe and is a recommended starting point for future risk analysis. In Phase 2, a set of analytical tools and approaches, as well as an assessment of the total eligible universe will be applied.

I. Landscape Overview

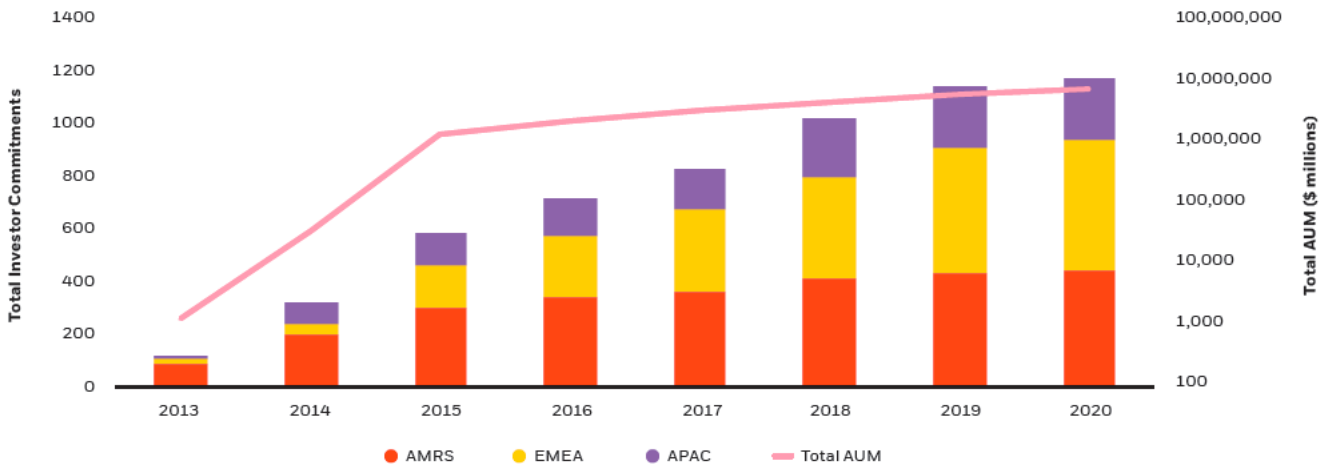
Key Findings

- There has been substantial growth of investor commitments to divest of fossil fuels.
- While driven initially by non-profits and faith-based institutions, endowments and private pensions have represented the largest increase in recent divestment commitments.
- Public pensions have steadily increased divestment commitments, growing 33% annually since 2013.
- Investors in Europe represent the largest share of commitments, followed by the Americas and Asia Pacific.
- Investors with assets totaling USD $12 trillion have committed to divestment, an estimated USD $50 billion in divested assets.

Over the last decade, commitments to divest from fossil fuels have steadily increased across investor types and regions. By the end of the first quarter in 2020, more than 1,100 institutions have made a public commitment to divest from fossil fuels — representing a 9-fold increase since 2013.[1] Today, these institutions represent over USD $12 trillion in total assets and include mostly endowments, public and private pension funds, religious organizations, and non-profits.[2] Based on a set of asset allocation assumptions, and assumptions of percentage of fossil fuel assets varying from 1–3% of total assets for full fossil fuel divestment, and 0–1% for thermal coal divestment commitments, we estimate that approximately USD $50 billion has been committed for divestment.[3]

Institutions based in the EMEA region make up the largest share of total commitments (43%), followed by the Americas (37%) and Asia Pacific (20%). While Americas-based institutions were first movers, with 3x the initial commitments of EMEA, European institutions have since outpaced and surpassed the number of divesting institutions in the US and Canada.

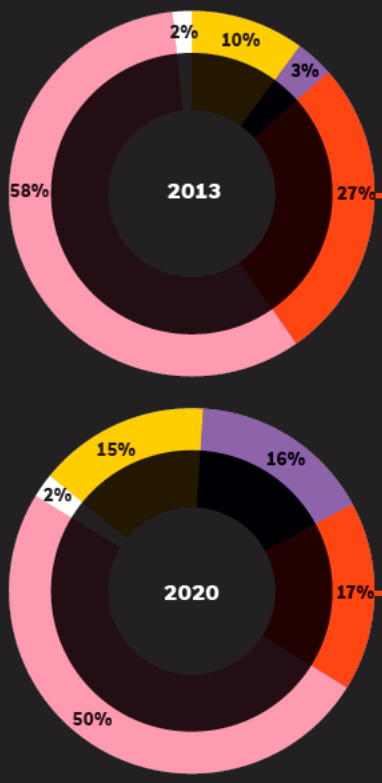
Institutional Fossil Fuel Divestment Commitments, 2013–2020



Source: 350.org, as of March 31, 2020. Notes: The above chart shows the growth in public institutional commitments for fossil fuel divestment from 2013 to Q1 2020. The chart further breaks out commitments by region: Americas (AMRS); Europe, Middle East, and Africa (EMEA); and Asia-Pacific (APAC).

1. Divestment data is sourced from 350.org, a non-profit organization that regularly tracks and compiles public divestment commitments. All data is as of March 31, 2020.
2. These organizations represent a diverse range of institutional investors. The IMF estimates that institutional assets under management is north of USD $100 trillion, suggesting that divesting institutions comprise roughly 10% of the overall institutional market.
3. Given a portion of institutions without easily accessible data on assets under management, this is likely an underestimate, and can be thought of as a lower bound.

Diversification of Organization Type



- Educational Endowment
- Private Pension / For-Profit Corporation
- Public Pension / Government Organization
- Non-Profit / Faith-Based Organization
- Other

Public Pensions and Government Organizations

Q1 2020 total: **199**

- 1-yr growth rate: **13%**
- 5-yr annualized growth rate: **33.4%**

Number of countries: **16**

- EMEA: **55.3%**
- APAC: **19.1%**
- AMRS: **25.6%**

Divestment type:

- Across Fossil Fuels: **77.4%**
- Coal only: **6.0%**
- Coal and tar sands: **2.5%**
- Other: **14.1%**

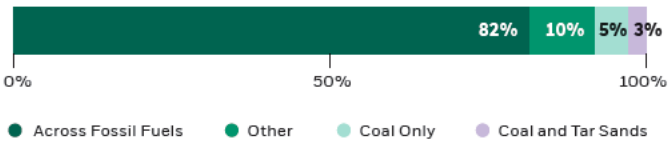
Source: 350.org, as of March 31, 2020. Notes: The above chart shows the changing breakdown in organization type from 2013 to 2020. The "Other" category includes healthcare and cultural institutions.

From an organizational perspective, non-profits and faith-based institutions initially comprised the largest share of commitments with 58%. However, by 2020, their share has decreased to 50% of total commitments, while the proportion of commitments made by endowments, private and corporate pensions grew to 31%, from 13% in 2013. As larger investors made divestment commitments, the overall average institutional asset size increased from USD $0.5 billion to USD $8.8 billion.

The scope of divestment varies across institutions. An overwhelming majority of public announcements capture the broad category of fossil fuels (82%). However, several institutions have targeted coal only (4.8%) or coal and tar sands (3.3%) instead.

Among public pension funds and government organizations, 199 institutions from across 16 countries have committed to divest from fossil fuels. Commitments have grown 33.4% over the past 5 years on an annualized basis and reflect a similar breakdown across fossil fuels as the broader population. More than half of these commitments have been made by governments in EMEA.

Scope of Public Divestment: Percent Total Commitments



Source: 350.org, as of March 31, 2020. 350.org captures fossil fuel divestment commitments in real time, based on publicly available information. Notes: The above chart shows the breakdown in divestment type by percent of total commitments. The "Other" category includes blended/partial versions of divestment as well as institutions whose divestment scope is unknown.

These industry-wide statistics show a clear trend in commitments toward divestment and divestment spanning fossil fuel types. The next section reviews interviews with more than one dozen peer institutions for deeper insight into underlying motivations, methodologies and considerations.

II. Survey Deep Dive

Key Findings

- Peer institutions predominately cited risk-mitigation and materiality as the underlying motivation informing their divestment decisions.
- Divestment is typically part of broader climate-related investment policy and overarching strategy. This includes direct shareholder engagement, low-carbon and clean technology investments.
- Specific divestment methodologies range from broad energy sector exclusions to coal revenue exposure, based on institution's investment process, including internal versus external management, commingled versus separate account exposure, active versus and passive exposure, and equity versus debt exposures.
- Of investors measuring the impact of fossil fuel divestment (4 of 13 respondents), no investors found negative performance from divestment; rather, neutral to slightly positive results.

To gain a deeper understanding of the rationale, process, and experience of fossil fuel divestment, interviews were conducted with 13 institutions globally, from direct peer public city plans, to state and national plans and insurance and endowments. Below is a summary of survey respondents:

Client Type	**Clients Interviewed**
Public Pension	10
Endowment	2
Insurance	1
Region	
United States	8
Europe	4
Asia Pacific	1
Total	**13**

For almost all respondents, active ownership and engagement played a critical role in managing climate risk in conjunction with divestment. Whereas divestment was reserved for companies posing the greatest investment risk, climate-related engagement was used to construct positive change in those companies where they remained invested. Several interviewed institutions targeted engagement for companies "on the cusp" of meeting the portfolio's divestment criteria. Furthermore, one respondent contacted each company they divested from to explain their rationale and to outline how they could be re-included in their investable universe. Many chose to join coalitions like Climate Action 100+ and the Transition Pathway Initiative (TPI) to further amplify their influence, in attempt to accelerate the alignment of businesses across industries to the Paris Climate Agreement.

As an extension of this risk-based view, a majority of respondents approached divestment through a materiality-driven framework, emphasizing the fiduciary nature of their decisions. Questions of materiality informed subsequent details of methodology — from revenue-based thresholds to fuel type. Two respondents relied heavily on various back-tests to assess the impact of different exclusions on their portfolios. Another respondent implemented a quantitative, rules-based approach, where they isolated companies falling in the bottom quartile of a series of seven variables, including cost-basis of reserves, lobbying efforts, scope 1 and 2 emissions, as well as financial health; however, no weight was placed on short-term valuations. Others leveraged qualitative analysis as well such as by using guidance from UN IPCC reports on fossil fuel phase-out.

Around half of interviewees used scenario analysis to identify, measure, and mitigate physical and transition risk. One approach was to measure the percent of capital expenditure through 2025 that would become stranded under an NPS scenario

(business-as-usual) versus a below 2-degree scenario. Another public pension focused its analysis on transition risk by assessing the impact of different carbon pricing regimes on its portfolio.

However, there were some cases where materiality was not the primary driver of divestment. In the view of one public pension fund, the decision to divest is inherently political, and therefore falls to the responsibility of the state legislature. This is in part a derivative of the diverse opinions wielded by their stakeholders as well as the historic role of oil and gas in supporting their region's economy. Although conversations of stranded asset risk were beginning to take center stage in their analysis, the public pension fund still decided that, for the time being, it was not in their long-term fiduciary interest to limit their investable universe.

Another fund was similarly driven by legislators; however, in their case, there was an ambitious proclivity for divestment. As a result, a lengthy back-and-forth took place between the government and the pension fund on drafting the final legislation. The pension fund supplied research and attempted to reign in elements that were inconsistent with their fiduciary duty. Across institutions interviewed (and in review of the broader landscape) there is no dominant or universally accepted methodology employed to execute divestments.

Ultimately, for those choosing divestment, each arrived at slight variations for their final list of issuers. One respondent landed on the Carbon Underground 200 list, while another expressed concern over the transparency and validity of that list, opting instead for GICS categorization of upstream, fossil fuel reserve owners. All divesting respondents, except one, limited their scope to reserve owners (the one exception included thermal coal power generation). Six respondents divested across fossil fuels, three focused on thermal coal, and one divested across fossil fuels but exempting natural gas. Those narrowing their list with revenue-based targets (80%) employed thresholds ranging from 10–50%, often varying for each fuel type. A major source of variation was the differing nature in each institution's total portfolio structure. We observed varying dependence on commingled funds, varying allocations to external managers, varying allocations to passive mandates, and varying exposure to private markets. All factored into the finalized scope and stages of divestment.

Overall, most of those interviewed gave comparatively less attention to post-divestment considerations than pre-divestment. Specifically, 45% gave little to no guidance on reallocation strategy, while 64% didn't track subsequent performance. For those that did offer guidance on reallocation, a majority chose to do so proportionally across their investment universe. However, two public pension funds chose to concurrently increase allocation for "transition ready" and "green" investments. For those that either tracked the ex-post performance of their divestment strategy or analyzed the ex-ante back-test, four out of four found either a neutral or negligible impact or a slightly positive impact to their risk-adjusted returns. One institution's ex-post analysis assessed the risk and return profile of a custom benchmark it created to account for its exclusions list. Notably, there was no evidence of a significant negative impact on investment performance. These results, however, should be interpreted within the limited time-frame of live results (generally with 5 years or less of realized data).

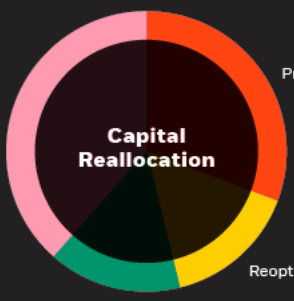
Although reallocation and performance tracking were less integral to most divestment strategies, it did not reflect an impetuous process. Rather, divestment was frequently a multi-stage process that was deliberated and implemented over the course of months and years. Instead, less attention post-divestment was often a reflection of the fact that many respondents were constrained by limited resources, typically lacking a dedicated ESG team to manage all aspects of divestment.

For some respondents, climate risk has been a core part of the investment process for years, while others were beginning their journey. In the case of one public pension plan, discussions of climate change reached a peak in late 2017 as its board reached the conclusion that climate risk is real investment risk. What followed for the fund was a four-part climate action plan: 1) establish a low-carbon mandate; 2) create an ESG director role; 3) ramp up active ownership (partially through joining Climate Action 100+); and 4) remove exposure to the "riskiest" investments.

Survey Results Summary
Total Respondents: 13

- All respondents started from a baseline agreement that climate risk is investment risk, each with or developing an overarching climate policy.
- More than two-thirds of respondents stated engagement and active ownership were inextricable components of a strong climate policy.
- While a majority of divestment decisions were materiality-based, most respondents were only at an early stage in scenario analysis capabilities.
- Ex-post performance analysis was often difficult to track or a low priority.
- Few respondents supplemented divestment with a low carbon or renewable energy re-investment strategy committed to divestment.

Part of overarching climate risk approach **100%**

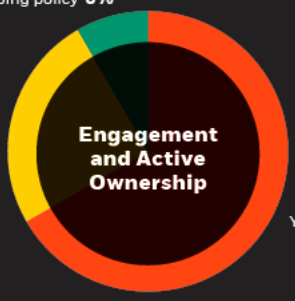


Proportional **31%**

No guidance / unknown **39%**

Reoptimization **15%**

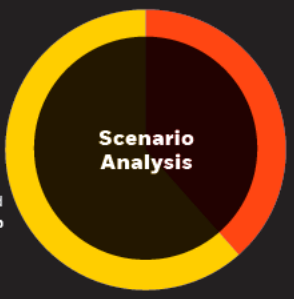
Low carbon / "green" tilt **15%**



Revamping policy **8%**

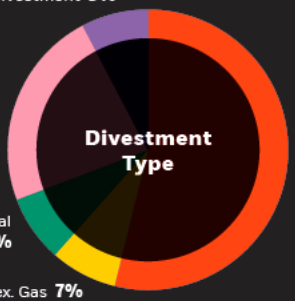
No **25%**

Yes **67%**



Yes **38%**

Not Incorporated **62%**



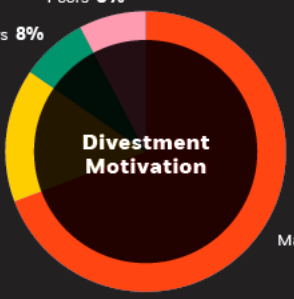
No Divestment **8%**

Thermal Coal Only **23%**

Fossil Fuel Reserves **54%**

Thermal Coal and Tar Sands **8%**

Fossil Fuel Reserves ex. Gas **7%**

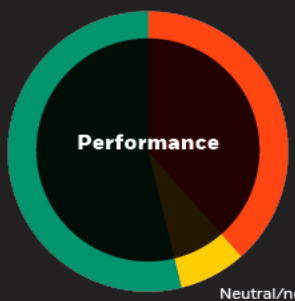


Peers **8%**

Stakeholders **8%**

Regulators **15%**

Materiality **69%**



Not tracking / unknown **54%**

Slightly positive **38%**

Neutral/negligible **8%**

III. Fossil Fuel Reserve Definitions and Exposure

Key Findings

- NYC TRS has exposure to securities, from issuers, in the portfolio representing USD of total AUM.
- Of fossil fuel reserve securities, exposure is primarily within NYC TRS' equity allocation versus fixed income
- Fossil fuel reserve securities are primarily within the Energy Sector,
- is the largest issuer of fossil fuel reserves-linked securities, followed by representing % and of the total portfolio assets respectively.
- Fossil fuel reserve companies are split geographically across countries, although they are predominately located within the US.
- These securities are recommended as the initial eligible universe and starting point for future risk analysis in Phase 2.

To identify the universe of securities associated with fossil fuel reserve owners, the MSCI indicator Fossil Fuel Reserves is used. This is a binary indicator of ownership of any fossil fuel related assets and represents the broadest possible universe of reserve owners. Of the broadly available fossil fuel related data and measurement approaches, this indicator focuses specifically on fossil fuel reserve ownership as consistent with NYC TRS' focus.

Provider: MSCI

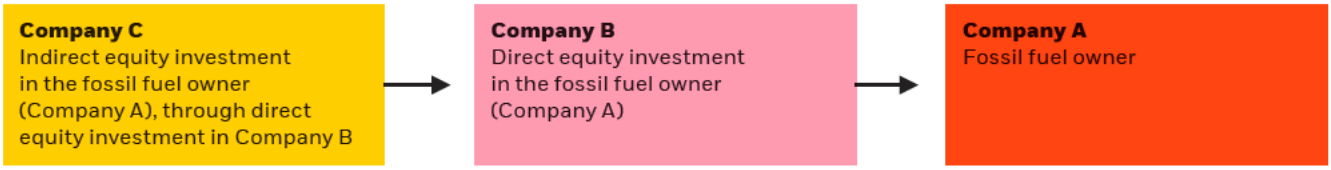
Field Name: Fossil_Fuel_Reserves

Definition: This field identifies companies with evidence of owning fossil fuel reserves regardless of their industries, including companies that own less than 50% of a reserves field. Fossil reserves are defined as proved and probable reserves (i.e. 1P and 2P) for coal and proved reserves (i.e. 1P) for oil and natural gas. Evidence of owning reserves includes companies providing the exact volume of reserves, and companies making a statement about their ownership of reserves.

For example, a company may have exposure to fossil fuels reserves through its direct ownership or indirect ownership (for example its subsidiary relationship) in companies owning fossil fuel reserves. MSCI uses the following logic to identify ownership and fossil fuel reserves:

- A company (Company B) with direct equity investment in another company owning fossil fuel reserves (Company A) is allocated fossil fuel reserves proportionate to its equity ownership in the latter.
- A company (Company C) with indirect equity investment in another company owning fossil fuel reserves (Company A) is flagged for fossil fuel reserve evidence subject to following two thresholds:[1]
  - Fossil fuel owner (Company A) accounts for more than 10% of its total assets OR
  - It has a more than a 20% interest in the fossil fuel owner (Company A)

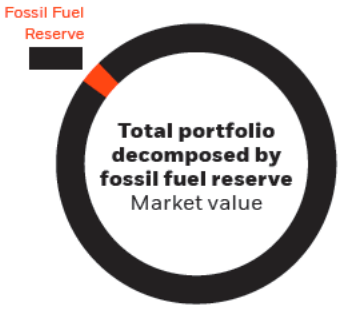
This definition therefore captures both companies that own fossil fuel reserves, or indirectly own through subsidiary or equity investments.



1. Thresholds of 10% and 20% are based on MSCI's criteria

Portfolio Exposure

Within the TRS portfolio, there are [redacted] securities from [redacted] ultimate issuers — comprising [redacted] of total AUM, approximately [redacted] — that meet the definition of fossil fuels.[1]



[redacted] is the largest exposure to reserve owners in the portfolio with [redacted] of total portfolio. [redacted] is the second largest exposure, comprising [redacted] The Top 10 largest issuers comprise [redacted] of total portfolio assets.

Top 10 Fossil Fuel Reserve Owner Securities in TRS' Portfolio as of 03-31-2020

[redacted]

Of this total eligible universe of fossil fuel reserve owners, [redacted] are equity securities while the remaining [redacted] are debt.

[redacted]

For all the securities that have fossil fuel reserves, there is a geographic dispersion across [redacted] countries, with the highest market value in the US, totaling [redacted].

Market value by region

For securities that have fossil fuel reserves, [redacted]

[redacted]

By GICS sector, Energy has the highest market value [redacted] of total assets, [redacted] of fossil fuel reserves universe), followed by [redacted]

Market value by GICS Sector

[redacted]

1. MSCI flags [redacted] securities in the investment portfo io out of [redacted] positions. In addition, BlackRock flags another [redacted] companies that were not captured in MSCI's issuer-mapping tree. The bulk of additions are within the Energy Sector and engaged in exploration & production, refining & marketing, and storage & transportation of oil & gas and coal & consumable fuels. BlackRock's final flagging is a union of MSCI's [redacted] flags and BlackRock's [redacted] flags.
2. A full list of fossil fuel reserve owners, including exposure to security type, region, sector and market value are provided within the Appendix titled: List of Fossil Fuel Reserve Owner-Linked Securities

Conclusion

Commitments from global institutional investors to divest of fossil fuels has steadily grown in recent years following increased policy actions, stakeholder engagements, and questions surrounding the long-term viability of fossil fuel related investment performance. This growth has been led by faith-based and non-profit organizations, with steady commitments from public and government pensions.

Surveyed peer institutions cited investment risk and materiality as the driving consideration behind fossil fuel divestment, generally as part of a broader climate risk mitigation strategy. Divestment decisions were often accompanied by direct corporate engagement, particularly with companies close to meeting specified divestment thresholds.

Within the Teachers Retirement System portfolio, [redacted] of market value was invested in securities with fossil fuel reserve ties, as of 3/31/20. [redacted] were comprised of equities ([redacted] and fixed income [redacted] the majority of which come from publicly listed companies. Securities from the [redacted] sectors make up the bulk of the total fossil fuel reserve exposure in the portfolio.

Phase 2 will highlight approaches to risk assessment, and move to analyze potential risks within the universe of fossil fuel reserve securities.

Appendix: Fossil Fuel Reserves Methodology

Securities that have the MSCI Fossil Fuel Reserves tag are highlighted for the purpose of this analysis. The exact field definition is as follows:

The Fossil Fuel Reserves field identifies companies with evidence of owning fossil fuel reserves regardless of their industries, including companies that own less than 50% of a reserves field. Fossil reserves are defined as proved and probable reserves (i.e. 1P and 2P) for coal and proved reserves (i.e. 1P) for oil and natural gas. Evidence of owning reserves includes companies providing the exact volume of reserves, and companies making a statement about their ownership of reserves.

The MSCI data is joined with BlackRock's proprietary issuer mapping in order to ensure that all securities rolling up to parent companies with ties to fossil fuel reserves are flagged. This allows for a "whole house" view of fossil fuel practices extending from parent or holding companies to associated subsidiaries. Securities are flagged for fossil fuel reserves at the ultimate parent level, which considers the fossil fuel practices of all associated companies across the corporate structure. Given that MSCI considers fossil fuel reserves owned by both parent and subsidiary companies in coverage when assigning the flag, ensuring that all securities – regardless of MSCI coverage – rolling up to the same ultimate issuer are treated the same is core to the BlackRock approach.

The BlackRock issuer mapping process tags securities at their ultimate issuer level in order to ensure that any metrics, investment rules, or sanctions applied at the ultimate issuer level flow down to all affiliated securities. For example, a Google stock will be tagged with immediate issuer Google and ultimate issuer Alphabet. This allows for a robust view of company activity across securities and portfolios.

Appendix: List of Fossil Fuel Reserve Owner-Linked Securities