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## 1<sup>st</sup> Prize

### **The Case for Divestment: Rockefellers' Fortune?**

### **Inspection Copy**

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# **The Case for Divestment: Rockefellers' Fortune?<sup>a</sup>**

## **Abstract**

Founded in 1940, the Rockefeller Brothers Fund (RBF) is a private charitable foundation endowed with John D. Rockefeller's heritage made in the fossil fuel sector from so called "Big Oil" companies. While it is RBF's mission to advance social change and to contribute to a more just, sustainable, and peaceful world, in 2014 the fund was still invested in fossil fuels - implying a disconnect between the fund's investment strategy and the commitment to tackling climate change. Due to this disconnection and the recent emergence of the fossil fuel divestment movement in society, RBF considered withdrawing all funds from fossil fuel investments.

Today, Stephen Heintz, president of RBF, set up a board meeting with all officers and trustees of RBF to discuss and decide whether the fund should fully divest from the fossil fuel industry. Given the (historic) importance of fossil fuel to the Rockefeller fortune, he was faced with a symbolic as well as fateful decision for RBF. This decision process represented a complex and multifaceted challenge: RBF's moral obligation of preventing climate change and the economic duty as an institutional investor to preserve and increase endowment required balance. Stephen Heintz knew that in order to make a decision he would have to not only use solid financial calculations but also engage in extensive dialogue with all RBF relevant stakeholders.

Working on this case, students will be challenged to analyze investment performance from a financial as well as sustainability perspective, bring together arguments for and against divestment, and align conflicting interests through stakeholder dialogue.

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<sup>a</sup> The factual information presented in this teaching case is entirely based on publicly available documents and sources as referenced. The case is narrated as if it were recollected by the character of Stephen Heintz, president of Rockefeller Brothers Fund.

## **The Case for Divestment: Rockefellers' Fortune?**

*"Heintz gets the irony that a foundation endowed from the oil business focuses on efforts to curtail use of fossil fuels."*

*- The Nonprofit Times in their statement naming Stephen Heintz as one of the 50 most influential leaders of the non-profit sector in 2014.*

It was a warm summer evening in 2014. Lost in thought, Stephen Heintz stared at an old portrait on his desk of John Davison Rockefeller, Sr. He always respected and admired the legend of the industrial revolution. In his opinion, the old Rockefeller is a role model for how a business man can fulfill his responsibility to society – even nowadays. In his function as president of the Rockefeller Brothers Fund (RBF), Stephen Heintz was sitting at his desk preparing for a decisive board meeting that could change RBF's future. The board meeting took place at Pocantico Hills, New York, in June 2014. All officers and trustees of RBF joined, of which half were direct descendants of John D. Rockefeller. They all met to discuss if RBF should withdraw all funds from fossil fuel investments. Given the history of the Rockefeller family, one could imagine the magnitude of such a decision's impact on John D. Rockefeller's legacy, which was made in so called Big Oil.

Stephen Heintz nervously took off his glasses while reflecting on all the conversations, discussions, and calculations from over the past months. As a private charitable foundation, RBF has been working to support social change and to build a more just, sustainable, and peaceful world. Therefore, it would be only logical for RBF to align its endowed assets with its sustainable development mission. However, as a former top manager in both the nonprofit and public sector, Heintz knew that moral arguments do not always equate with economic ones. For example, opponents of divestment could argue that this strategy creates endowment shortfalls due to a lack of investment diversification and other costs. Stephen Heintz speculated what the old Rockefeller would advise him to do. There was one famous quote by John D. Rockefeller that gave Heintz no peace of mind: *"If you want to succeed you should strike out on new paths, rather than travel the worn paths of accepted success."*<sup>i</sup> Yet, how should he balance the moral and economic dimension of RBF's investment strategy?

## **Rockefeller family and the Rockefeller Brothers Fund**

John D. Rockefeller (1839-1937) grew up in poor circumstances. As a 16-year old bookkeeper in Cleveland, Ohio, he had the ambition to earn \$100,000 and live to be 100, of course he had no idea that 25 years later he would become the wealthiest man of his time, and arguably the wealthiest in history.<sup>ii</sup> Starting their own small business as commission merchants, John D. Rockefeller and a friend sensed an opportunity in the oil business and opened their first refinery in 1863.<sup>iii</sup> Only two years later, John D. Rockefeller bought his friend out of the business and brought his brother William into the partnership. They expanded and built a new refinery called Standard Oil and opened a new office in New York City to handle the export business.<sup>iv</sup> By 1870, they formed the public company Standard Oil, which became the largest oil refinery of its time until the United States Supreme Court ruled that Standard was an illegal monopoly. In 1911, Standard Oil was dissolved into different companies, which turned into parts of firms such as Exxon Mobile, Chevron, or BP.

Pursuing philanthropic goals, John D. Rockefeller founded the University of Chicago as well as the Rockefeller foundation in the 19<sup>th</sup> century. Since 1913 the Rockefeller foundation's mission has been to promote the well-being of humanity throughout the world. Through its initiatives the foundation tries to create systemic change to benefit those less fortunate and vulnerable. Another substantial part of the Rockefeller's family endowment is located in the Rockefeller Brothers Fund. The RBF was founded in 1940 as a vehicle, by which the Rockefeller Brothers could share advice and research on charitable activities and better coordinate their philanthropic efforts. The fund's president, trustees, officers, and staff, including family of the Rockefeller brothers as well as external members, ensure that the RBF remains dedicated to the philanthropic ideals of the Rockefeller family. RBF is a not-for-profit, charitable corporation, existing under the New York State not-for-profit corporation law and is classified as a private foundation as defined in the Internal Revenue Code. RBF's mission is to advance social change that contributes to a more just, sustainable, and peaceful world.<sup>v</sup>

The fund is governed by a board of 16 trustees and one advisory trustee. The variety of professional backgrounds, including the arts, education, finance, international relations, law, and social work, enhances the board's ability to set fund management and governance policies, investment practices and grant-making activities. At the annual board meetings in March, June, and November, decisions on strategic directions or grant approvals are taken.<sup>vi</sup>

**Rockefellers' climate change story: From oil empire to green energy**

In the 1980s, RBF supported alternative energies for the first time, but without enjoying great success. RBF invested \$2 million directly in renewable energy, but the market was not yet established. Throughout this period, RBF regularly awarded grants to counteract climate change. Later, in the 1990s, the fund made a crucial positional shift towards climate change. RBF became one of the first funds to organize meetings on combating climate change. Between 1984 and 1992, RBF funded multiple projects worth a total of \$1 million. Six years later, in 1998, the fund worked with governors and mayors to develop a climate change policy model. During the six years that followed (1998-2004), RBF provided \$10 million for climate-related work. Particularly in recent years (2005-2010), RBF moved a large part of the fund's sustainable development resources towards fighting climate change. The overall spending in the field of sustainable development between these years amounted to \$43.6 million.<sup>vii</sup>

In the early 2000s, the Rockefeller family demanded from ExxonMobil, an oil and gas company founded by the family, to take action against climate change. However, they soon realized that the company was not willing to change.<sup>viii</sup> Furthermore, there is a strong connection between RBF and the Wallace Global Fund (WGF), which is an important organizer of divestment campaigns. WGF completely changed its investment structure in 2009 and subsequently withdrew all investments from fossil fuels. WGF attempted to push RBF into divesting from fossil fuels as well.<sup>ix</sup> Especially in the last few years, investment in fossil fuels has become a far more critical issue and an intensely discussed topic. Within RBF, there was an obvious disconnection between the investments in fossil fuels and the mission to fight climate change. The fund therefore developed investment policies (RBF's Proxy Voting Guidelines) to address the long-term strategy and financial objectives of the fund. To align the fund's endowment with its mission, in 2010 Mr. Heintz recommended that the fund should invest 10% of its total value of endowed assets in alternative energies.<sup>x</sup> The pool of investments was focused on advancing clean energy technologies and strategies that support energy efficiency.<sup>xi</sup>

**The controversial debate on divestment**

As the opposite of an investment, divestment refers to the process of selling an asset (e.g. stocks, funds, bonds) based on motives that can take many different forms including moral, political, or financial reasons. One of the earliest and largest divestment campaigns evolved on university campuses in the late 1970s and advocated divestment from South Africa-related

securities to target the apartheid regime.<sup>xii</sup> In the recent past, a new divestment movement emerged, taking a stand for fossil fuel divestment to combat climate change. Like apartheid, climate change constitutes severe human rights challenges: while the adverse effects of climate change (e.g. rising sea levels, increase of extreme weather events) are global in nature, the world's poorest and most vulnerable people are expected to be hit hardest.<sup>xiii</sup> However, international research and expert concurrence suggests that limiting a global temperature rise to 2 degrees Celsius above pre-industrial levels will help prevent many of the worst projected climate impacts.<sup>xiv</sup> Against this backdrop, the fossil fuel divestment campaign espouses for the removal of investment from fossil fuel extraction companies. Similar to the anti-apartheid divestment movement, fossil fuel divestment evolved on university grounds but quickly gained more widespread support and momentum. Since its inception, the movement has received endorsements from numerous leaders and key decision-makers of today, including: Ban Ki-moon, Al Gore, Barack Obama, Paul Krugman, and Jim Yong Kim.<sup>xv</sup> In 2014, 181 institutions (e.g. faith-based groups, foundations, pension funds, governmental organizations, and universities) and 656 individuals have made divestment commitments representing \$50 billion in assets.<sup>xvi</sup>

In practice as well as academia many different conclusions are being drawn regarding the effectiveness of divestment. At first sight, it seems to be about financial return. For example, BlackRock Inc., one of the world's largest investment management corporations, and the FTSE Group, a British provider of stock market indices, designed the FTSE Developed ex Fossil Fuel index. The index excludes companies that have certain revenue and/or reserve exposure to fossil fuels. A study shows that, for a given period, the historical returns of the FTSE Developed ex Fossil Fuel index and its benchmark (the FTSE Developed index) are very close to each other.<sup>xvii</sup> However, another analysis indicates that the financial contribution of energy company investments to 34 major US public employee pension plans is greater than any other sector during a five year period (on average 15.7%).<sup>xviii</sup> Moreover, some argue that divesting increases portfolio management costs significantly, and in turn reduces total portfolio return. In this context, three types of costs are mentioned:

- 1) trading costs due to selling fossil fuel securities and purchasing new compliant stocks,
- 2) costs as restricting or eliminating fossil fuels from investments will likely reduce the average return,
- 3) and costs through continued compliance activities.<sup>xix</sup>

However, financial return represents only one part of portfolio performance while a second one, i.e. portfolio risk, is also likely to be affected by divestment. As the market for oil products has been more volatile than markets for most goods and services, divestment could decrease portfolio risk.<sup>xx</sup> This is even more significant as the financialization of the oil market, fundamental structural changes to the oil market, and other forces have led to increased volatility.<sup>xxi</sup> Yet, there are also arguments why divestment may increase portfolio risk. Financial economic principles suggest that excluding asset classes from an investment portfolio will always limit diversification and hence the risk reduction potential relative to a portfolio without these exclusions – particularly when major asset classes are omitted.<sup>xxii</sup> Fossil fuels are an enormous asset class given that the current value of listed oil and gas firms amounts to \$4.65trn.<sup>xxiii</sup>

A further key issue within the controversial debate on fossil fuel divestment is subsumed under the term “stranded assets”. According to the International Energy Agency (IEA), stranded assets refer to “those investments which have already been made but which, at some time prior to the end of their economic life (as assumed at the investment decision point), are no longer able to earn an economic return, as a result of changes in the market and regulatory environment brought about by climate policy”.<sup>xxiv</sup> As previously outlined, there is international consensus that the global temperature rise must be limited to no more than 2 degrees above pre-industrial levels in order to prevent devastating consequences. To reach this target, scientific estimates suggest that around 565 additional gigatons of carbon dioxide (CO<sub>2</sub>) can be released into the atmosphere, however the reserves of fossil fuel corporations amount to 2,795 CO<sub>2</sub> gigatons.<sup>xxv</sup> In other words, fossil fuel corporations hold 5 times more reserves than can be burned according to climate science estimates. Thus, if governments take action to reach the two degrees target, approximately 80% of these reserves become effectively unburnable. This in turn implies that a large fraction of fossil fuel companies’ assets are at risk of suffering dramatic value losses and becoming stranded once policies for climate change stabilization are implemented. Recent studies highlight the substantial nature of potential impacts. For example, according to the IEA, carbon emission cuts for meeting the 2 degrees target are associated with \$300 billion in stranded fossil-fuel investments by 2035.<sup>xxvi</sup> Similarly, research by HSBC concludes that the potential value at risk among major European fossil fuel companies (e.g. BP, Royal Dutch Shell, and Norway’s Statoil) could increase to 40-60% of market capitalization in a carbon-constrained world.<sup>xxvii</sup>

Beside these economic arguments for and against divestment, a moral dimension affects the evaluation of divestment efforts, as Bill McKibben, founder of the Go Fossil Free: Divest from



Fossil Fuels movement, stated: *"If it is wrong to wreck the climate, then it is wrong to profit from the wreckage. [...]"*.<sup>xxviii</sup> In order to account for this harm imposed on society through the use of fossil fuels, a broader perspective on economic externalities can be applied. A UNEP study estimates external costs due to escalating GHG emissions and climate change impacts of US\$ 21 trillion by 2050.<sup>xxix</sup> This exceeds the estimated overall value of oil, coal, and gas companies by more than four times.<sup>xxx</sup> Beyond this, there are significant non-climate-related damages, such as health impacts, land disturbance, and hazardous waste generation.<sup>xxxi</sup> However, in light of the maximum possible capital that might be divested, opponents argue that divestment will most likely only have a relatively small impact on the multi-trillion-dollar fossil fuel industry, since it will not have any material effect on the cost of capital of the divested companies or any other relevant outcome. The direct financial impact of divestment might further be seen as limited, as divested shares are likely to be acquired by unconcerned investors. Some investors may even actively use the opportunity to increase their fossil fuel holdings, especially if the securities entail a short-term discount.<sup>xxxii</sup>

For RBF, the decision process on divestment becomes even more complex because the fund operates as fiduciary – just like universities or communities. Thus, it is necessary to address the legal context in which RBF operates. According to American law, fiduciaries have to fulfill their exercises by reasonable care, skill, and caution. The portfolio as a part of an overall investment strategy should incorporate risk and return objectives reasonably suitable to the purposes of the endowment. Thereby, lessons should be derived from modern experience and research, without either endorsing or excluding any particular theories of economics or investment.<sup>xxxiii</sup> Jim Yong Kim, World Bank president, claims that the so-called "long-term investors" must recognize their fiduciary responsibility to future pension holders who will be affected by decisions made today. Corporate leaders should not wait to act until market signals are right and national investment policies are in place.<sup>xxxiv</sup> Following this line of reasoning regarding the interpretation of fiduciary duty, students at Harvard University filed a lawsuit against the president and fellows of Harvard College for what they call "mismanagement of charitable funds" due to the institution's refusal to divest its endowment from fossil fuels.

On the other hand, fund managers aim to maximize financial returns for shareholders and superannuation fund clients. There are thus concerns that divestment from such a large component of the U.S. economy may be considered a breach of fiduciary duties.<sup>xxxv</sup> This interpretation tends to lead to the argument that it would be unethical and perhaps illegal to advocate for investment decisions to be made on the basis of other principles – such as

concern about the climate change implications of fossil fuel emissions.<sup>xxxvi</sup> Then again one may argue that the duty is not to maximize the return of individual investments, but instead to implement an overall investment strategy that is rational and appropriate for the fund.<sup>xxxvii</sup> The fund managers' responsibilities thereby include the financial risks arising from carbon bubble stranded assets as well as the broader economic risks arising from climate change trends and impacts. An additional line of argument might be to convince investors and fund managers of the potential financial gains of switching investment towards "green economy" priorities and opportunities.<sup>xxxviii</sup>

Another emerging discussion is concerned with where investors draw the line in their divestment decisions. This practical challenge emerges as many companies and sectors draw on highly complex supply chains. Just divesting from the fossil fuel industry would exempt other entities that support the fossil fuel industry such as banks that loan to them.

Since many divestment activists raise the argument that the goal is building a climate action movement for rapid transition to a low carbon economy, alternatives to divestment need to be discussed. Firstly, it can be argued that, from the perspective of economic externalities, the problem of climate change can be solved by reflecting the full social costs of burning hydrocarbons, including the harm from climate change, in prices of carbon-based fuels. Assuming that the appropriate price, internalizing full social costs, is much higher than the market price, many economists call for a tax on burning carbon. This "Pigouvian tax" is intended to correct an inefficient market outcome in regards to negative externalities by integrating the social costs of these externalities. A second alternative to divestment may be investor engagement, i.e. to remain invested but attempt to change corporate practices through the role of a shareholder. President Drew Faust, Harvard University, remarked in her statement against divestment: *"Generally, as shareholders, I believe we should favor engagement over withdrawal. In the case of fossil fuel companies, we should think about how we might use our voice not to ostracize such companies but to encourage them to be a positive force both in meeting society's long-term energy needs while addressing pressing environmental imperatives."*<sup>xxxix</sup> This strategy might be regarded as a promising approach to induce a true dialogue about the most effective way of ensuring that "unburnable carbon" reserves are indeed kept unburned and are not simply sold to less responsible companies.

## Rockefellers' challenge

As mentioned previously, Stephen Heintz faced the problem of balancing the moral and economic dimension in RBF's investment strategy. RBF 2013 Annual Review's abstract clearly focuses on efforts reducing global emissions and tackling climate change: *"The 2013 feature essay by Priscilla Lewis details the cross-programmatic efforts to reduce global emissions undertaken by the Fund's Sustainable Development, Democratic Practice–Global Governance, Southern China, New York City, and Western Balkans grantees. It explores the urgency with which the world must tackle climate change, as well as a new sense of possibility that lasting progress can be made."*<sup>xl</sup> Heintz was proud of RBF's almost 75 years of engaged philanthropy. Aligning its endowed assets with the current sustainable development mission would not only honor but also ensure the continuation of these efforts.

But is the moral thing to do also the financially smart thing to do? Heintz knew that RBF had to manage Rockefeller's fortune wisely to (financially) sustain the programs and grants. According to RBF's investment policy statement, the fund's long-term investment objective is to preserve the real value of the endowment. The portfolio returns are compared on an annual basis with two benchmarks: first, 70% MSCI All Country World Index and 30% Barclays Global Aggregate Bond; second, a peer group mean.<sup>xli</sup> The portfolio is deployed in a manner that seeks to have a relatively low standard deviation. Under normal circumstances, at least 30% of the investment portfolio's net assets are held in vehicles utilizing lockups of 12 months or shorter.<sup>2</sup> The long-term horizon of the investment portfolio allows for a large allocation to equity-oriented strategies where the potential for long-term capital appreciation exists. Other investment strategies, including but not limited to hedging, derivative, or diversification strategies, are also used to reduce risk and overall portfolio volatility. The investment portfolio will be diversified across asset classes.

By the end of 2013, RBF's endowment value was about \$844 million (see **Appendix A**). The fund was invested in different asset classes: the largest portions were private equity funds of \$212 million, equity long/short hedge funds of \$168 million, as well as cash and cash equivalents of \$282 million (see **Appendix B**). RBF's equity portfolio was allocated to various industry sectors, following the sector allocation of MSCI All Country World Index thoroughly (see **Appendix C**). Detailed financials as of 12/31, balance sheet, investment performance and rate of spending included, are shown in **Appendix D**.

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<sup>2</sup> Lockup is defined as an expected period until all or substantially all of the value from an investment vehicle can be received in cash in the portfolio.

Heintz needed to “do the math” in order to get a clear picture of the consequences RBF would face when divesting from fossil fuels. He decided to first analyze RBF’s current equity portfolio regarding its potential environmental impact (see **Appendix E**) as well as its financial performance, based on risk-return analysis (see **Appendix F**). All required RBF portfolio figures were provided by the investment committee: sector-specific investments, risk and return, as well as carbon performance.

Then there was the question of what a reallocation of the portfolio in line with fossil fuel divestment could look like. The fund had different options, each of which came with its own set of trade-offs. RBF could eliminate all equity endowments in the fossil fuel sector or could consider other high carbon emission sectors for RBF’s divestment strategy. Moreover, one could also consider a multistage divestment process. In this context, Heintz wondered how this portfolio decision might impact RBF’s financials. In case RBF defined a new divestment strategy, would this portfolio reallocation financially harm the fund’s fortune?

The final question on Heintz’s mind was related to the decision process itself. How could he align different stakeholder interests and establish a broad consensus across staff, investment advisors, and the RBF board of trustees (see **Appendix G**)? Moreover, as a private family foundation, RBF has always been under the strong influence of members of the Rockefeller family – with or without a position at RBF. Stephen Heintz believed that many would express their support, but he also knew that support would not be unanimous. There may be some family members who are first and foremost interested in making money. Moreover, others may argue that, given the scale of RBF’s endowment, which stands at \$851 million to date, the divestment decision would have little impact on the multi-trillion-dollar fossil fuel industry and thus is not worth the hassle of divesting. Also, some could remark that climate change is only one aspect of RBF’s sustainable development mission and could ask for much broader considerations of sustainability aspects, including social and governance issues.

### **Moving towards the final decision**

Stephen Heintz was aware of the difficulties that the upcoming decision about divesting from fossil fuels would entail. He intended to decide with great care after solid calculations and thorough discussions with all relevant stakeholders: staff, investment advisors, and RBF’s board of trustees. Thereby, the decision should be based on twin imperatives: the moral obligation of doing everything possible to help prevent climate change and an economic necessity of looking at the long term as an institutional investor.<sup>xlii</sup>

More specifically, he had to answer the following questions before making this critical decision:

- 1) “Doing the math”: Is the moral thing to do also the financially smart thing to do?
  - Are there premises or restrictions to consider when deciding on a new investment strategy?
  - How does RBF’s current equity portfolio perform regarding its potential environmental impact as well as its financial outcome?
  - What could a reallocation of the portfolio in line with fossil fuel divestment look like?
  - In case RBF defined a new divestment strategy, would this portfolio reallocation financially harm the fund’s fortune?
- 2) How can different stakeholder interests be aligned?
  - What are the main arguments for and against divestment in the on-going debate?
  - How could Heintz establish a broad consensus across the Rockefeller family as well as stakeholders outside the family?

## Appendices

### Appendix A: RBF endowment value development

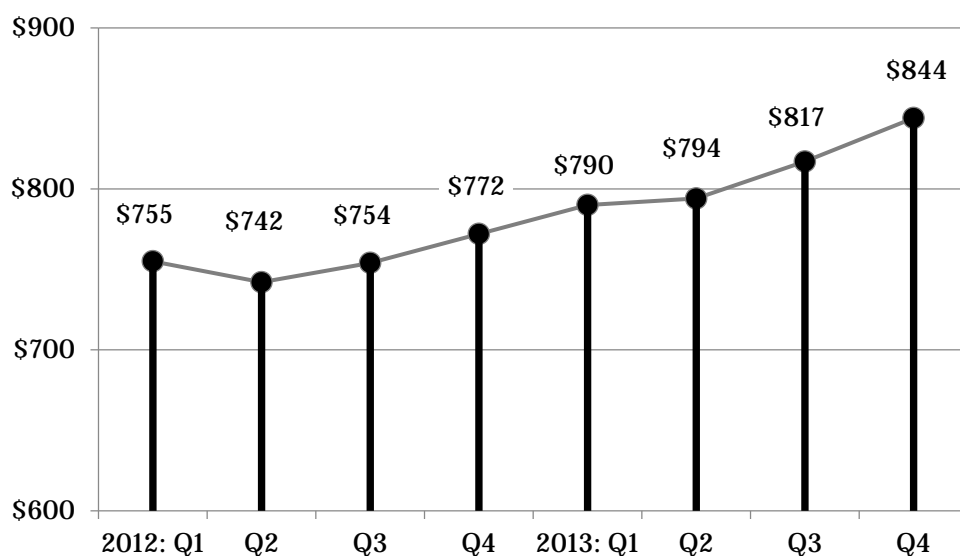


Figure 1: RBF endowment value development in million USD.<sup>xliii</sup>

### Appendix B: RBF portfolio by asset class

Table 1: RBF portfolio by asset class in USD.<sup>xliiv</sup>

Asset allocation by asset class (fair value 2013 in USD)	
Fixed income hedge funds	\$25,000,000
Equity long/short hedge funds	\$168,000,000
Multistrategy hedge funds	\$4,000,000
Private equity funds	\$212,000,000
Real estate	\$15,000,000
U.S. Equities	\$97,000,000
U.S. Treasuries	\$37,000,000
Futures	-
Cash and cash equivalents	\$282,000,000

## Appendix C: RBF equity portfolio by industry sector

Table 2: RBF equity portfolio by industry sector.<sup>3</sup>

Asset allocation by industry sector					
Sector	Investment in \$million	Investment in %	Return (annual)	Volatility (st. dev.)	Beta
Consumer Discretionaries	62.82	13.06	6.07%	24%	0.78
Consumer Staples	48.53	10.09	5.16%	22%	0.88
Energy					
- Green energy	3.37	0.7	12.83%	38%	1.38
- Fossil fuel	29.39	6.11	14.23%	42%	1.76
Financials	102.65	21.34	10.62%	16%	1.18
Healthcare	58.30	12.12	14.19%	15%	1.02
Industrials	49.93	10.38	13.47%	32%	1.29
Materials	22.94	4.77	5.68%	33%	1.51
Technology	87.88	18.27	16.64%	39%	1.20
Utilities	15.20	3.16	12.26%	24%	0.65

## Appendix D: RBF financials

Table 3: RBF financial statement 2013.<sup>xlv</sup>

Statements of financial position as of 12/31 in USD			
Assets	2013	2012	Change
Cash and cash equivalents	1,275,018	1,407,084	-9.39%
Accounts receivable	770,427	1,100,782	-30.01%
Contributions receivable	17,589,094	19,186,294	-8.32%
Investments	844,099,041	772,010,770	9.34%
Program-related investments – real estate	510,000	510,000	0.00%
Prepaid expenses	11,573	18,000	-35.71%
Fixed assets, net	6,317,065	6,724,013	-6.05%
Interfund	-	-	-
<b>Total assets</b>	<b>870,572,218</b>	<b>800,956,943</b>	<b>8.69%</b>
<b>Liabilities and net assets</b>			
Accounts payable and accrued liabilities	6,755,875	9,700,336	-30.35%
Grants payable	8,505,549	8,299,428	2.48%
Taxes payable	5,940,750	4,283,825	38.68%
<b>Total liabilities</b>	<b>21,202,174</b>	<b>22,283,589</b>	<b>-4.85%</b>
Unrestricted net assets	821,763,951	752,321,912	9.23%
Temporarily restricted net assets	17,642,750	16,447,075	7.27%
Permanently restricted net assets	9,963,343	9,904,367	0.60%
<b>Total net assets</b>	<b>849,370,044</b>	<b>778,673,354</b>	<b>9.08%</b>
<b>Total liabilities and net assets</b>	<b>870,572,218</b>	<b>800,956,943</b>	<b>8.69%</b>

<sup>3</sup> Since this data is not publicly available this information is fictional, based on MSCI All Country World Index's investment allocation and market data.



Table 4: RBF investment performance and rate of spending.<sup>xlvi</sup>

<b>Investment performance and rate of spending (in USD and %)</b>		
	<b>2012</b>	<b>2013</b>
Investment Portfolio (12/13)	\$772,011,000	\$844,099,000
Average Market Value of Portfolio	\$748,314,000	\$804,135,000
Investment Performance (net of fees)	12.03%	15.00%
Total Spending*	\$42,029,000	\$40,522,000
Total Spending as a % of Average Market Value of Portfolio	5.62%	5.04%
<i>*Exclusive of investment-related expenditures and excise taxes</i>		

Table 5: RBF spending.<sup>xlvi</sup>

<b>RBF spending (in USD and %)</b>		
	<b>2012</b>	<b>2013</b>
Grants Paid*	\$29,097,000	\$27,399,000
Program-Related Expenditures	\$148,000	\$625,000
Conferences & Events	\$361,000	\$407,000
Administration**	\$8,582,000	\$8,170,000
Subtotal, Spending	\$38,188,000	\$36,601,000
Core Pocantico Operations	\$3,841,000	\$3,921,000
Grand Total, Spending	\$42,029,000	\$40,522,000
<i>*Includes grant payments and employee matching gifts</i>		
<i>**Includes direct charitable activity and program-related administrative costs; excludes investment-related expenses</i>		

## Appendix E: Shadow impact calculation<sup>xlvi</sup>

Research recently developed a Shadow Impact Calculator (SIC) by adapting economic input-output life cycle assessment logic (EIO-LCA). The purpose of this calculation is to examine potential environmental impacts of investment allocation decisions, focusing on greenhouse gas emissions. The portfolio's shadow impacts represent the environmental effects underlying the portfolio selection decision while acknowledging sector-specific carbon performance of the portfolio's assets.

The SIC approach begins with gathering sector-specific market value data for the respective portfolio.<sup>4</sup> Then, EIO-LCA calculates the sector-specific greenhouse gas outputs (GHG) resulting from the supply chain of a purchase (as a vector  $\Delta \mathbf{b}_{\text{CO}_2\text{e}}$ ). The vector of GHG outputs is a function of the greenhouse gas emissions released by economic activity per dollar of financial output ( $\mathbf{R}_{\text{CO}_2\text{e}}$ ), which is a matrix of the GHG impact per dollar at each stage of economic activity:

<sup>4</sup> The SIC framework is adapted to available data by the authors.



$$\Delta \mathbf{b}_{\text{CO}_2\text{e}} = \mathbf{R}_{\text{CO}_2\text{e}} (\mathbf{I} - \mathbf{A})^{-1} \mathbf{y}, \quad (1)$$

where  $(\mathbf{I} - \mathbf{A})^{-1}$  indicate the series of the supply chain engaged and  $\mathbf{y}$  is the final sector-specific demand measured with SIC. Hence, the carbon shadow of an investment (portfolio) ( $\mathbf{C}_s$ ) can be calculated as:

$$\mathbf{C}_s = \Delta \mathbf{b}_{\text{CO}_2\text{e}} / \mathbf{P}, \quad (2)$$

where  $\mathbf{P}$  is the price of the asset and  $\mathbf{C}_s$  is expressed in tons  $\text{CO}_2$  equivalent per invested dollar ( $\text{tCO}_2\text{e} / \$\text{inv}$ ). Applying EIO-LCA, annual total  $\text{CO}_2\text{e}$  in tons is presented in Table 6 for various industry sectors.

Table 6:  $\text{CO}_2\text{e}$  by industry sector.<sup>5</sup>

<b>CO<sub>2</sub>e by industry sector</b>	
<b>Sector</b>	<b>Total CO<sub>2</sub>e in t/\$1 million invested</b>
Consumer Discretionaries	1,058.96
Consumer Staples	1,058.96
Energy	
- <i>Green energy</i>	102.48
- <i>Fossil fuel</i>	4,697.00
Financials	41.76
Healthcare	96.59
Industrials	2,135.00
Materials	4,534.74
Technology	234.68
Utilities	3,663.66

<sup>5</sup> Information is based on Ritchie and Dowlatabadi (2014)<sup>48</sup> and adjusted for this case.

**Appendix F: Risk-return analysis based on modern portfolio theory**<sup>xlix, l, li</sup>

Traditional finance theory provides helpful insights into optimizing the allocation of investment portfolios. According to modern portfolio theory, individual investment decisions are characterized by the rational weighing of assets' return and risk by risk averse investors.<sup>lii</sup> Simply put, the objective is to balance between maximizing investor's return and minimizing investor's risk. Portfolio return can be calculated as follows:

$$\mu_P = \sum_{i=1}^N w_i \mu_i , \quad (3)$$

where  $\mu_P$  is expected portfolio return,  $\mu_i$  is expected return of a specific asset  $i$  within the portfolio, and  $w_i$  is the asset's weight as share of the portfolio's market value.

Based on Markowitz's concept of diversification, investors have the opportunity to reduce investment risk while keeping their expected return constant – or to maximize portfolio expected return while keeping investment risk constant: By combining different assets whose returns are not perfectly positively correlated, the total variance of portfolio return, and thus portfolio risk, can be decreased. Hence, the fundamental proposition of modern portfolio theory is that investment allocation decisions should not be made based on specific asset characteristics but on covariances between assets' returns of a potential portfolio. Hence, portfolio risk, in form of its return's variance, is calculated as depicted below:

$$\sigma_P^2 = \sum_i^N \sum_j^N w_i w_j \sigma_{ij} , \quad (4)$$

whereby  $\sigma_{ij}$  is the covariance of two assets  $i$  and  $j$  in the portfolio. The covariance of asset  $i$  and  $j$  is the product of the standard deviations of asset  $i$ , the standard deviation of asset  $j$ , and the correlation coefficient (see correlations between specific industry sectors in Table 7) for the two assets  $i$  and  $j$ :

$$\sigma_{ij} = \sigma_i \sigma_j \rho_{ij} . \quad (5)$$

For portfolio performance analysis, also the standard deviation of a portfolio (or portfolio volatility) is calculated as the square root of portfolio's variance. It allows to a better interpretation of a portfolio's performance swings: Assuming a normal distribution, 68.27%, 95.45% and 99.73% of the portfolio's returns lie within one, two and three standard deviations of the mean.

Building on this notion, modern portfolio theory distinguishes between two types of asset risk, specific risk, and systematic risk. Specific risk is associated with individual assets and can be reduced through diversification within a portfolio. In contrast, systematic risk refers to the risk that applies to all assets in the market and cannot be diversified. Portfolio's variance is a risk measure indicating portfolio's total risk, i.e. specific and systematic risk together. As specific risk can be reduced, and theoretically eliminated, through diversification a portfolio's beta is used as risk measure in practice. The Beta of an asset or portfolio  $i$  ( $\beta_i$ ) captures the systematic risk of  $i$  relative to a theoretical market portfolio:

$$\beta_i = \rho_{iM} \frac{\sigma_i}{\sigma_M}. \quad (6)$$

Thereby,  $\rho_{iM}$  is the correlation between an asset/portfolio  $i$  and the market portfolio  $M$ ,  $\sigma_i$  is the standard deviation of an asset/portfolio  $i$  and  $\sigma_M$  is the standard deviation of the market portfolio  $M$ . For the market portfolio  $M$  a proxy is often used, such as an market index.

Table 7: Correlations between industry sectors.<sup>liii</sup>

Correlations between specific industry sectors										
		MP	CD	CS	E	F	H	I	M	T
SPDR S&P 500 (market proxy)	MP									
Consumer Discretionaries	CD	0.93								
Consumer Staples	CS	0.84	0.78							
Energy	E	0.84	0.73	0.63						
Financials	F	0.92	0.85	0.74	0.75					
Healthcare	H	0.88	0.82	0.79	0.66	0.77				
Industrials	I	0.95	0.89	0.77	0.8	0.88	0.8			
Materials	M	0.91	0.83	0.7	0.85	0.83	0.75	0.89		
Technology	T	0.93	0.86	0.73	0.72	0.81	0.78	0.86	0.82	
Utilities	U	0.63	0.55	0.68	0.5	0.56	0.57	0.58	0.52	0.52

## Appendix G: Stakeholder groups engaged in RBF' divestment decision<sup>6</sup>

### Moderate Stakeholders:

#### a) Stephen Heintz (president of RBF):

Stephen Heintz' agenda is to align the conflicting stakeholder interests. In the end, he has to recommend whether or not to divest from fossil fuels at the board meeting.

- *"The action we're taking is symbolism, but it is important symbolism. We're making a moral case, but also, increasingly, an economic case."*<sup>liv</sup>
- *"Only about 1% of the RBF endowment is now invested in alternative energy, and it could take three to five years to reach its goal of 10%"*<sup>lv</sup>

#### b) Valerie Rockefeller (a great-great-granddaughter of the oil magnate and a foundation trustee):

- *"We wanted to align our grant-making and our investing and this seems obvious now but it is actually a revolutionary idea in the non-profit world for organizations that have endowments."*<sup>lvi</sup>
- *"There is a moral imperative to preserve a healthy planet."*<sup>lvii</sup>

### Stakeholders arguing for divestment:

#### c) Bill McKibben (environmental activist) and Ellen Dorsey (Greenpeace):

- Mc Kibben: *"I think it was one of the most important moments in the whole divestment campaign just because of the symbolism that is attached to the original fossil fuel fortune."*<sup>lviii</sup>
- Mc Kibben: *"It makes a very clear point that engaging with fossil fuel companies to somehow get them to change their ways is unlikely to work if the family of the founder can't get Exxon to shift."*<sup>lix</sup>
- Ellen Dorsey: *"This is a threshold moment. This movement has gone from a small activist band quickly into the mainstream."*

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<sup>6</sup> The italicized text depicts real citations and is used to distinguish the fictional case setting from factual case information.

- Ellen Dorsey: *"It's not O.K. to invest in the fossil-fuel companies who refuse to orchestrate the energy transition—but it's also stupid, because they're not going to be good investments over the long term."*<sup>lx</sup>

d) Staff member:

- I am identifying myself with the work I do here at RBF. Here, we work together as a team and the values of the family play an important role at the work environment.
- On top of the door at the main hall, there is quote by John D. Rockefeller stating *"If you want to succeed you should strike out on new paths, rather than travel the worn paths of accepted success."* I think we should try to strike out the new path.

e) Sustainability Management expert:

- Besides the moral duty RBF may have, the risks of investing in the fossil fuel sector are simply too high. A large fraction of fossil fuel companies' assets are at risk of suffering dramatic value losses and becoming stranded.
- The regulation in this field is hard to anticipate and regulatory changes bear enormous consequences.

**Stakeholders arguing against divestment:**

f) Old-established financial manager of RBF:

- *"Look, fossil fuels are still a very significant part of the global economy for some time to come. If you eliminate your investment options from that part of global economy you narrow down your investment choices. You increase risk and you may reduce return."*
- *"Some may argue that, given the scale of RBF's endowment, which stands at \$851 million, the divestment decision would have little impact on the multi-trillion-dollar fossil fuel industry."*<sup>lxi</sup>

g) Investment advisor from Investment Office Perella Weinberg Partners (RBF's Investment Office):

- Referring to Bloomberg New Energy Finance: *"Fossil fuels are investor favorites for a reason. Few sectors offer the scale, liquidity, growth, and yield of these century-old businesses vital to today's economy."*<sup>lxii</sup>

h) Torben Moger Pedersen (PensionDenmark, pension fund) as an expert

- *“Divestment will itself not contribute to solving the challenges of global climate change, and we believe it is not a very wise way to try and solve the issue. If the returns from a traditional carbon-based power plant and a wind farm were equal, the fund would invest in the wind farm. But, we are not missionaries.”<sup>lxiii</sup>*

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