Divestment of Fossil Fuels

FISCAL AND ETHICAL RESPONSIBILITY

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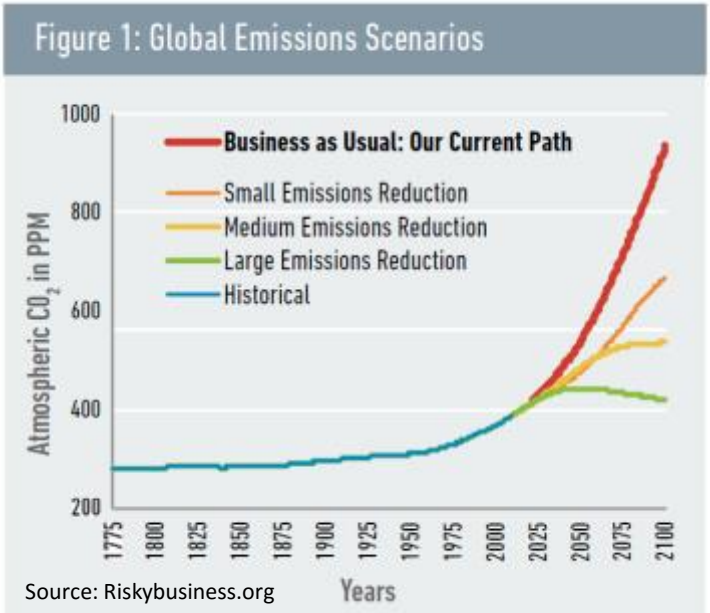
The fossil fuel divestment movement has grown rapidly from $50 billion of committed assets in 2014 to $5.46 Trillion in 2017. 706 institutions and 58,000 individuals have committed to divesting their portfolios of fossil fuel extraction investments. There are a number of reasons a portfolio fiduciary should consider divesting.

We are experiencing a changing climate. Our CO2 production from the combustion of fossil fuels is the driving factor of rising temperatures that are melting ice caps and drying out vast areas of land. Weather patterns are changing toward more extreme events: larger forest fires, stronger hurricanes, bigger snow storms and torrential rains. All of which have large economic impacts from the damage that is caused, the resources that are lost, and the people who are affected.



Source: Riskybusiness.org

We have gone from 280 CO2 ppm to 400 CO2 ppm in 135 years which happens to coincide with the industrial revolution and the introduction coal and oil as fuel. According to NASA, in the same 135 years the average global temperature has increased by 1.1° C.

The Paris Agreement in 2015 calls for limiting the averge temperature rise to 2° C above pre-industrial levels in order to prevent climate catastrophe. That gives us a global budget of 565 gigatons of burnable carbon. The conflict lies in the 3200 gigatons of carbon fuel reserves that extraction companies plan to exploit for profit. Should we allow buisiness to proceed as usual?

There is plenty of fossil fuel, but according to the scientific understanding of our biosphere, in order to keep the planet habitable, 80% of it must stay where it is. If humanity is serious about preserving itself, the fossil fuel industry will be significantly reduced. This means that fuel deposits will eventually become "stranded assets" and stripped of their value. When that value is removed from a company's books, the value of the company itself will be significantly reduced creating significant losses for investors. The announcement in 2015 of divestiture by the Rockefeller Brothers Fund, the family heirs to the mother of all oil companies Standard Oil, is an Indicator that investors are taking this risk seriously.

Given the possibility of stranded assets, the industry is foolishly spending over $600 billion a year on exploration of new reserves. This use of shareholder money does nothing, but increase the share value based on what could become stranded assets adding to the risk to shareholders.

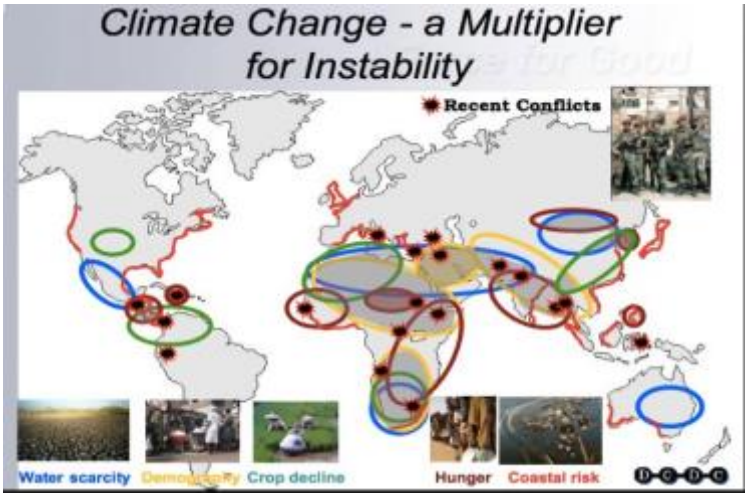
Additionally, the industry spends a great deal of shareholder value influencing policy for profit. The oil and gas industry spends over $140 million a year lobbying our legislators to support their cause in reducing regulation, increasing production, and protecting their interests through public misinformation. For example, hydraulic fracturing is exempt from the Safe Drinking Water Act due to industry lobbying

Party-State	Name Source: Oil Change International	113th Congress Received from Coal, Oil, and Gas Lobby
R-OH	J Boehner	$1,398,587
R-TX	J Cornyn	$1,118,906
R-KY	M McConnell	$1,117,058
D-LA	M Landrieu	$998,794
R-CO	C Gardner	$837,119
R-LA	B Cassidy	$664,603
R –WV	S Capito	$631,266
R-AR	T Cotton	$549,257
R-MT	S Daines	$532,062
R-OK	J Lankford	$511,565

efforts. Funding the manipulation of the legislative and public conversation about public safety and the reality of climate change comes from company capital which is in part owned by shareholders. A prudent shareholder would ask if this kind of company spending actually creates long term return on investment value. A humanitarian shareholder would ask themselves if they felt comfortable funding legislation that favored corporate exploitation over human health, public lands, environment, and increasing the global average temperature.

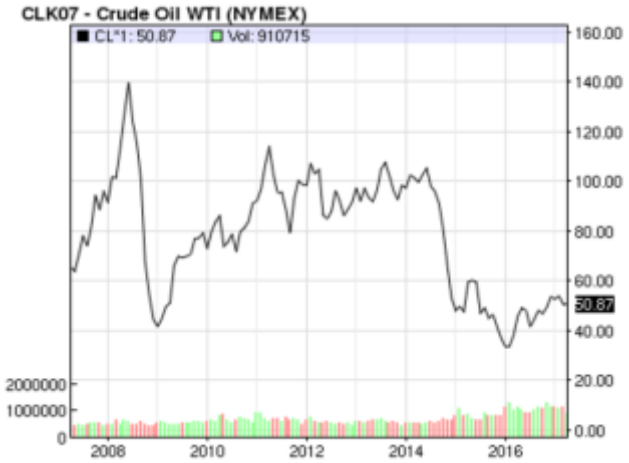
As the climate changes, people are forced to respond to the loss of land and resources. We are experiencing this now in mass migrations that start from a lack of food and water and then transform into migrations to escape the violence resulting from the power struggles over the remaining resources.

In Syria for example, the government subsidization of extensive water use drained a 117 million acre aquafer in 6 years sending over 2 million starving farmers into cities that no longer had food sources. Water scarcity in Mexico has driven over 700,000 people North into the US looking for work. 42 million are on the move in Asia after being displaced from rising seas, coastal storms and hurricanes.



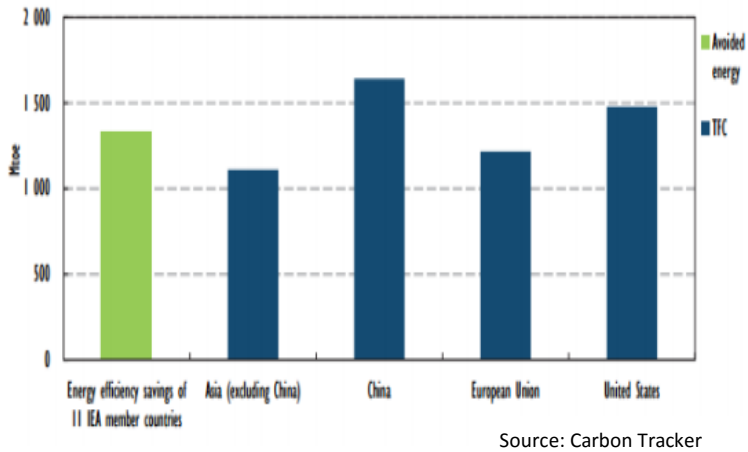
There are other costs that we are bearing the industry is not being held accountable for. The social cost of carbon, as determined by the EPA, comes from climate change damages, such as loss of agricultural productivity, human health, property damages from increased flood risk, and increased energy costs. This amounts to about $334 billion a year. Add to that the $35 billion of subsidies to the industry that is given the form of tax forgiveness and the resulting costs of the industry to the public is about $369 billion a year. As US citizens, the social, environmental, and political price of fossil fuels is costing each of us over $1100 a year.

Market risk has recently been experienced in the falling price of oil. Supply has outpaced demand driving the crude oil barrel price down by 65% from its peak in 2008 (WTI (NYMEX)). The average break even cost for getting oil out of the ground is $77 per barrel. As long as the price per barrel hovers between $40 and $60 per barrel as it has for the last two years, most drillers are operating at a loss. As long as there is pressure to get fossil fuels out of the ground as cheaply as possible, there will be accidents that damage communities, workers, and the environment that cost taxpayers as well as shareholders.



Until 2007 US oil consumption and GDP were linked, now GDP continues to rise and oil consumption continues to fall. US GDP is up 12%, energy consumption has dropped 3.6% since 2007. The US is consuming the least oil per dollar of gross domestic product in more than 40 years (Bloomberg). For example, newer energy efficient cars and appliances are reducing fuel consumption as well as behavior of large populations; Baby Boomers are driving less and Millennials are using public transportation more than previous generations. Additionally, the US production of alternative energy is increasing at an average of 5% per year and currently accounts for about 12% of our total energy consumption (US Energy Information Administration).

Figure 3.3: Energy efficiency in 11 countries saved a continent's worth of energy

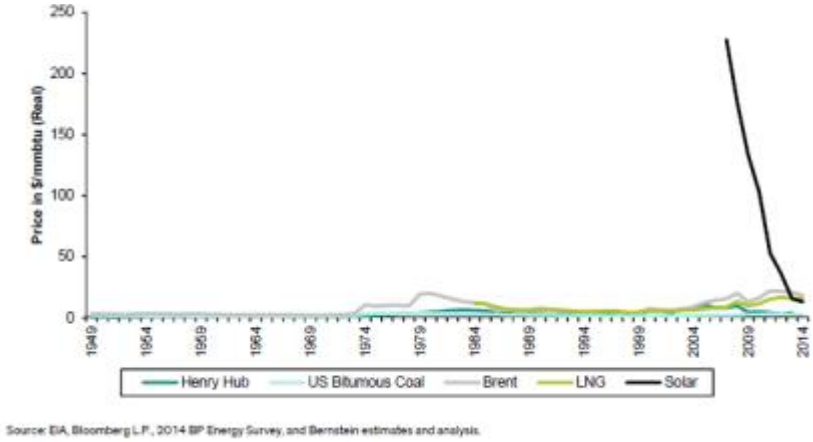


Source: Carbon Tracker

Energy efficiency is making the biggest impact on decreasing energy demand. Consumers and businesses are motivated by the cost savings to replace light bulbs, refrigerators, tools, and appliances with more efficient models. In 2014, 11 countries avoided consuming almost as much energy as the US uses in a year. It is evident that consumers want to move toward consuming less gasoline in the demand for Tesla's scaled down Model 3. A week after the launch of preorders, there were 325,000 orders placed. Most people of the world understand the need to move to a carbon free economy and those who can afford it are willing to invest in energy efficiency. Our global consumption of fossil fuel will continue to decline, increasing the risk and decreasing the productive value as an investment.

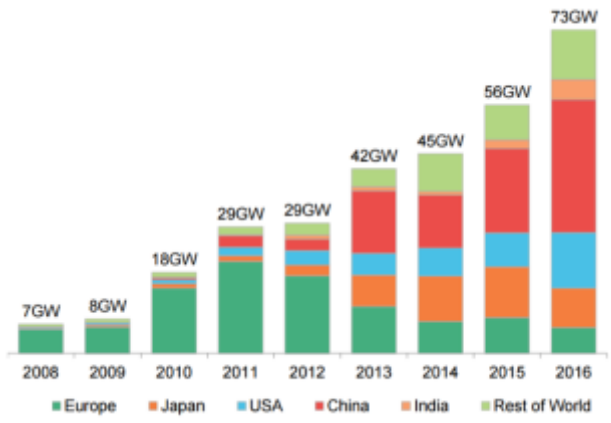
Companies dedicated to reducing fossil fuel consumption, such as renewable energy producers and manufacturers of energy efficient products, require capital investment for research, development, and production. Investing in these companies finances innovation and implementation of a cleaner and conflict free energy economy sooner. Replacing fossil fuel holdings with alternative energy and energy efficiency holdings increases a portfolio's diversification within the energy sector and reduces risk by

removing a potentially volatile industry. Investing in the renewable and energy efficiency sectors is an investment in infrastructure, durable goods and manufacturing. Oil and coal, after all, are consumable commodities that depend on market demand.



Source: EIA, Bloomberg L.P., 2014 BP Energy Survey, and Bernstein estimates and analysis.

As solar has increased in production and scale over the past several years, it has become price competitive with fossil fuels. In the last five years, the cost of large scale solar installations has fallen by 57%. According to the Bloomberg New Energy Finance Report, 2016 represents the second year in which renewables were 70% of the new energy capacity constructed in the US. Since 2005 the US power sector has reduced its carbon foot print by 24% due to the retirement of 49 GW of coal fired plants, the installation of 109 GW of gas powered plants and 117 GW of renewable powered plants. The US has reduced its carbon foot print 11.6% since 2005 levels. This is significant since 2005 levels are what the Paris Accord is measured against. The US is nearly half way to its reduction of 26-28% reduction of 2005 levels by 2025.



Globally, 2016 set another record year for solar capacity installation with 73GW. This is a 30% increase over 2015. China lead with 30GW followed by the US with 12.5GW. Japan was not far behind.

Regardless of government policy, markets determine pricing and ultimately the direction of new technology. For the long term investor, as investing is inherently long term, divestment of fossil fuels removes the risk of unknown short-term consequences while acknowledging the long term obsolescence of an industry. While divesting is fiscally responsible, the ethical considerations must be considered when considering fossil fuels as an investment.