Investor Guide

FOSSIL FUEL FREE INVESTING

Owning stocks with oil, coal, and natural gas on their balance sheets is reckless & irresponsible.

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Investing Sustainably

WHAT DOES FOSSIL FUEL FREE MEAN?

- Carbon pollution and climate change are immediate threats.
- Divesting from coal, oil, and natural gas is a valid portfolio strategy.
- No, you don’t have to be a renegade hippy to divest from fossil fuels.

Carbon pollution and climate change are often falsely assumed as distant, abstract issues. What we’re witnessing is a sea level 5 to 8 inches higher than it was in 1900[1], extreme weather events that are more frequent and intense[2], and average global temperatures that are accelerating upward influenced by human-generated greenhouse gas emissions[3].

With over 97% of the world’s scientific community agreeing on that last fact[4], you might ask yourself what you can do on a personal level to combat carbon pollution. Embracing the transition to a low carbon economy through a personal fossil fuel divestment campaign is a valid portfolio strategy all concerned investors should investigate and consider adopting.

Designing a fossil fuel free investment portfolio typically means that we’re purposely excluding corporations with the highest direct impacts on carbon pollution. These would be the publicly traded corporations found in the energy sector. We are talking about companies such as Peabody Energy, ExxonMobil, and Chevron as well as international giants like Coal India, China Shenhua Energy, Royal Dutch Shell, and British Petroleum.

Divesting from coal, oil, and natural gas means that you care about keeping the oceans blue and the planet green. It means you’re upset over the exploitation of indigenous lands and 3rd world countries over the exploration, harvest, transportation, and burning of fossil fuels. It means you’re against the destructive outcomes on health, clean air, and water as a result of extraction techniques such as natural gas fracking.

If you’re considering divesting, recognize that it doesn’t mean you’re alone in your portfolio journey or that you’re weird. Being a Birkenstock-wearing Mother Earth-loving hippy is not a requirement (although it’s fine if you are). Last, divesting certainly doesn’t mean that your portfolio is destined for extreme risk with little hope of a competitive return. Quite the opposite!

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DIFFERENT DEFINITIONS

- Historically, *fossil fuel free* meant divesting from companies with coal, oil, & natural gas reserves.
- Some asset managers extend the definition to include companies on the periphery of the energy sector, even utilities.
- Understand the potential impacts of divestment, such as the loss of diversification, before settling on your personal definition.

The definition of fossil fuel free differs depending who you ask. Years ago, fossil fuel free meant that you avoided investment in corporations with coal, oil, and natural gas reserves. If a company listed ownership of a fossil fuel on its balance sheet as an asset, either already extracted or still underground, this company was removed from the portfolio.

While there's validity in this definition, what about the corporations that are also involved in the extraction, transport, refining, distribution, and marketing of fossil fuels? These companies might not list fossil fuel reserves on their balance sheets, but they're certainly enablers due to a direct association with the companies most responsible for carbon pollution.

Should we also divest from utilities that burn fossil fuels?

For example, how should we treat a utility company like Excel Energy that's committed to "100% carbon free by 2050 and 80% less carbon by 2030"? Is this corporate claim credible or is it just part of a public greenwashing campaign? Depends on who you ask, and more importantly, how you feel.

Divesting from utilities as energy-adjacent companies is understandable from an ideology standpoint. But, at what point do we draw the line to say we're now far away enough from companies with fossil fuel reserves? There isn't an easy answer since every publicly company contributes to carbon pollution at one point or another in their production, distribution, or consumption chains.

Your definition of fossil fuel free is the only one that matters. There is no right or wrong as the definition is highly subjective.

We believe that fossil fuel free investing should be defined by educating yourself first. Fact: the more you divest, the less diversified your portfolio becomes, and the more you should expect your portfolio to deviate from the market's return.

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IDEOLOGY & PRAGMATIC RATIONALES

- Investors divest based on ideology; it's wrong to profit from entities destructive to the environment.
- Other investors divest because they see competition from renewable energy as threats disrupting a fossil fuel stock's valuation.
- Fossil fuels may become "stranded assets" on a corporate balance sheet, and one day could become worthless.

Investors who divest from fossil fuels typically do so for one of two main reasons, if not both.

The first rationale is based on ideology. These investors divest because they believe it is wrong to invest in and profit from companies who are directly responsible from human accelerated climate change.

They approach the portfolio decision to divest based on morality.

Some investors divest for pragmatic reasons. These investors acknowledge that cheaper energy alternatives threaten the values of fossil fuel stock prices. The decision to divest is relegated to the risk of holding fossil fuel stocks in the portfolio. They believe that holding stocks with fossil fuels represent "stranded assets", and these assets that will eventually decline in value and one day, become worthless. They want to take preemptive action now. Think of it as playing portfolio defense.

Investing in coal is the most serious risk of all the fossil fuels. Natural gas is cheap, the demand for power is slowing, policy support for renewable energy is strong, and government environmental regulations threaten the viability of coal as utilities shift towards natural gas and renewables for energy production[5].

Coal cannot overcome these immediate hurdles, and neither can oil and natural gas over the long term. With only one main outlier, global developed economies are already transitioned away from coal as a result of the four demand killers mentioned in the previous paragraph.

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CARBON INTENSITY

- Carbon intensity measures both Scope 1 (direct) and Scope 2 (indirect) emissions.
- Carbon Intensity = metric tons of CO^2/$1M in Revenue.
- Adopting a fossil fuel free portfolio can lower the carbon intensity by 80%+.

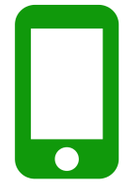
Carbon intensity is measured by combining scope 1 & 2 emissions (direct and indirect) and dividing by units of revenue. For example, carbon intensity = metric tons of CO^2/$1M in revenue. Simply said, the higher a company's carbon intensity, the more it contributes to carbon pollution.

U.S. publicly traded stocks generate 174 metric tons of CO^2 for every $1M in revenue generated[6]. In 2018, United States corporations generated **$17.322T** in revenue[7]. That's **3,014,028** metric tons of CO^2 being pumped into the atmosphere.

Imagine for a moment if we all lived in low carbon economy and the average carbon intensity of U.S. stocks was 80% lower. If we all invested in that same basket of U.S. stocks the reduction in portfolio carbon intensity would be the annual equivalent of[8]:

339,150,219
gallons of gas saved

7,369,261,614
fewer miles driven



384,325,697,717
fewer cell phones charged

The good news is that an 80%+ reduction in carbon intensity is possible in a portfolio. As fossil fuel free investing adoption grows, the carbon equivalencies above materialize. The more investors reject carbon intense corporations within the energy sector, the faster our society transitions to a low carbon economy.

Not all fossil fuel free investments are created equal.
Some funds may only divest from companies with fossil fuel reserves, such as the SPDR S&P 500 Fossil Fuel Reserve Fund ETF (SPYX). This fund still includes energy companies, utilities, as well as carbon intense companies in non energy sectors like technology and financials. The fund's carbon intensity score is only **13%** lower than its category average[9]. Know what you're investing in!

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DIVESTMENT IMPACTS

- Investors who divest must accept deviations from expected risk & return.
- If divestment includes utilities, 9.5% is removed from the global portfolio.
- Should investors reallocate that 9.5% to renewable energy?

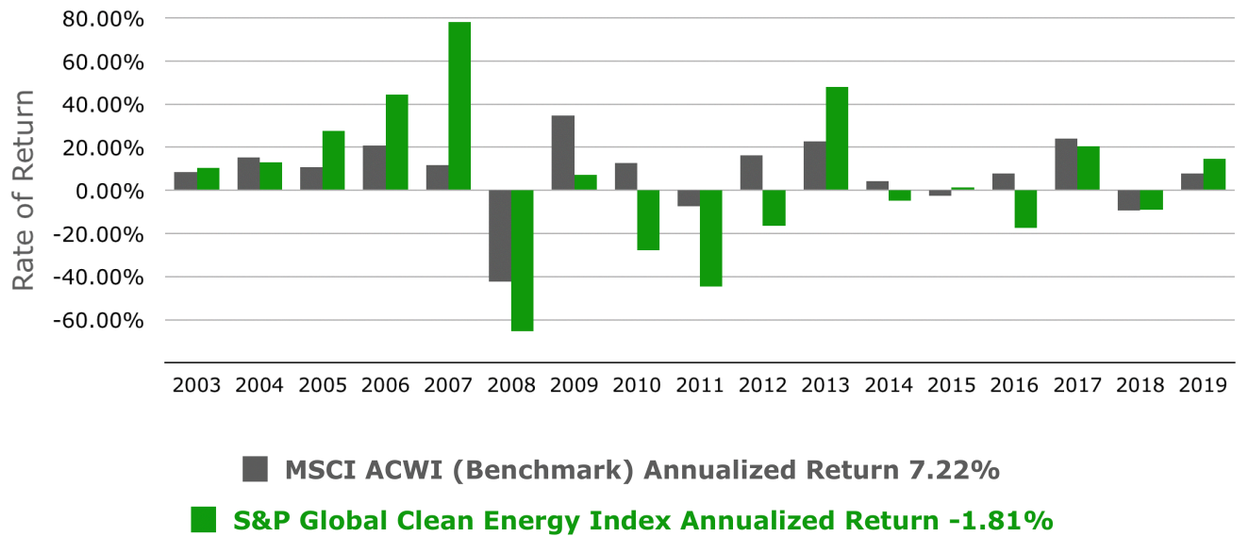
The energy sector comprises 4% of publicly traded stocks in the United States. Within a global portfolio, energy makes up just over **5%** when you consider U.S., developed international, and emerging market stocks[10].

Investors who choose to divest from this sector of the economy must accept that they are altering the expected risk and return profiles compared to the broader market. A **4% - 5%** sector deviation from a conventional portfolio isn't much, but it's something worth considering.

If fossil fuel divestment includes utility companies, the portfolio loses **8.8%** of the stocks found in a global portfolio[10]. Investors might notice this difference.

Assuming a completely fossil fuel free portfolio, how should investors manage the **8.8%** of the stock portion of the portfolio they're no longer investing in? There are two popular options; adjust the percentage weights of the remaining market sectors upwards or redistribute some or all of the **8.8%** into renewable energy.

Environmentally conscious investors love the idea of investing in renewable energy companies, but renewable energy's track record exhibits almost **2x** the volatility of global stocks. We have data going back to 2003 tracking the returns of a clean energy index compared to a global stock benchmark[11].



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DIVESTMENT IMPACTS CONTINUED...

- Ironically, divesting from utilities and reinvesting in clean energy may result in actually owning utilities.
- Fossil fuel free investing results in only small changes in dividend rates.
- Consider a fossil fuel free strategy across bond holdings as well as stocks.

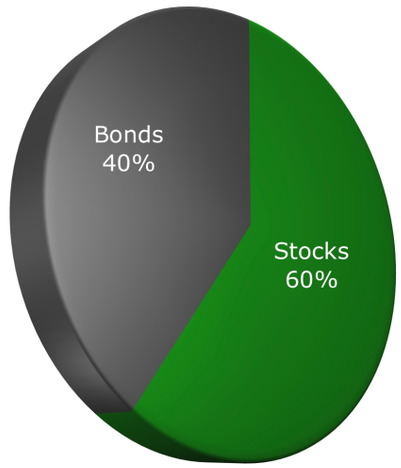
Investing the 8.8% divested from energy and utilities into renewable energy can create unintended asset allocation challenges. **45%** of the stocks in the S&P Global Clean Energy Index live in the *Technology* and *Industrials* sectors of the economy.

The remaining **55%** of renewable energy stocks in the MSCI S&P Global Clean Energy Index are actually found in the utilities sector[12]. Although the index represents stocks that derive revenues from the renewable energy industry, **24%** of the index is still tied up in "fossil fuel involvement", according to Morningstar[13].

The potential irony here is that investors wishing to divest from utilities while simultaneously investing in renewable energy need to evaluate and select their clean energy investments very carefully to avoid reinvestment into the very sector they were trying to avoid in the first place!

Volatility and returns aren't the only considerations fossil fuel free investors should pay attention to. There are two components of total return, share price appreciation and yields, the latter usually paid in the form of a dividend. When the energy and utilities sectors are removed, a **4.04%** dividend is lost from 8.8% of the portfolio[14].

Although 4.04% may seem like a lot, this loss only casts influence on 8.8% of the overall portfolio yield. Based on the math, divesting reduces the current yield of all global stocks from **2.61%**[15] to **2.47%**.



What about bonds within a fossil fuel free portfolio? Shouldn't the same divestment logic for stocks also hold true for bonds? A "balanced" portfolio is 60% stocks/40% bonds. Imagine applying a fossil fuel free philosophy to only 60% of the portfolio. Hypocritical? Definitely.

While fossil fuel free bond funds are few and far between, there are some. Other options include using individual bonds, Treasuries, and Munis.

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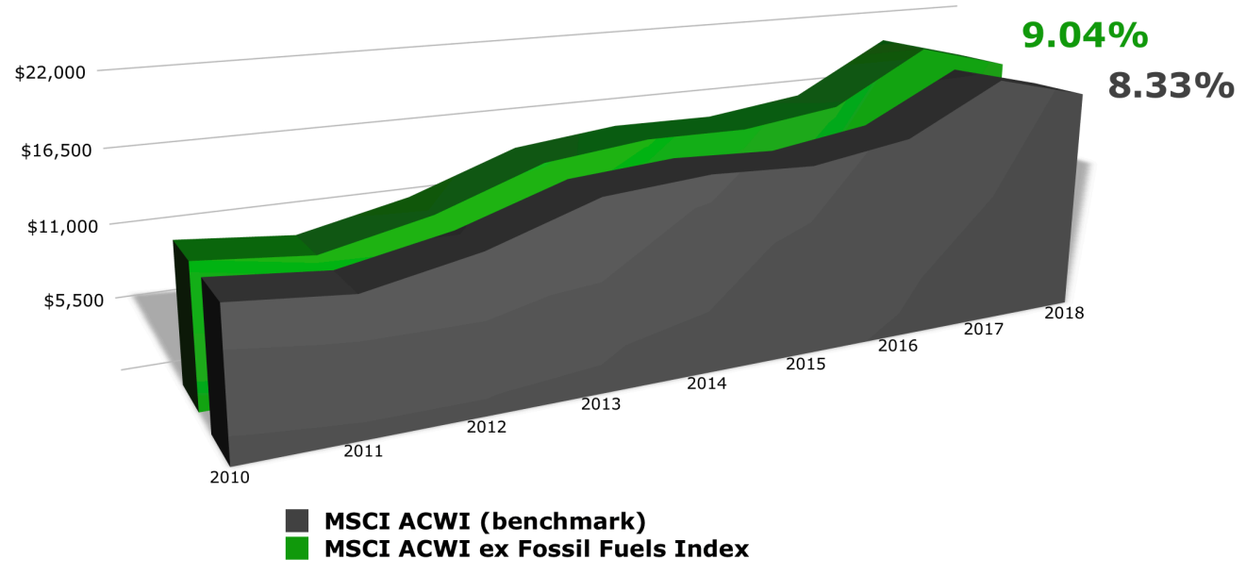
FOSSIL FUEL FREE RETURNS

- Fossil fuel free indices have outperformed their conventional benchmarks.
- Divestment does’t necessarily imply excessive volatility.
- Standardized measurement hasn’t existed for long. We need more time to study divestment.

The idea of fossil fuel free investing has been around for a while, but tracking fossil fuel free returns via a standardized indexing method is relatively new. The MSCI ACWI ex Fossil Fuels Index includes large and mid sized companies from the United States, 23 developed markets, and 24 emerging markets. It represents global diversification while excluding companies owning reserves of coal, oil, and natural gas. Since inception, the index has outperformed its best fit benchmark by **0.71%**[16].



Divestment hasn’t historically correlated with excessive volatility. Standard deviation measures the amount of dispersion of an investment’s return compared to its expected return (mean). Expressed as an absolute percentage, the higher the standard deviation, the more volatile the investment. When compared to it’s benchmark, the MSCI ACWI ex Fossil Fuels Index had a standard deviation of **10.00%** versus the benchmark’s standard deviation of **9.89%**[17].

To put that into perspective, if an investment’s historical mean return is 10% with a standard deviation of 10%, then 95% of the time the returns are expected to fall in between -20% and 30%.

Similar return and volatility metrics can be found by looking at the FTSE All-World ex Fossil Fuel Index, an alternative to the MSCI index.

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FOSSIL FUEL FREE

- What are an investor’s motivations for divesting from fossil fuels?
- We can’t predict when fossil fuels will become “stranded assets”.
- Divesting isn’t nearly as radical as investors first think it might be.

As an individual, you’re not going to solve the global climate crisis by divesting in your investment portfolio. You’re not even making a direct impact like you do when you recycle, drive a hybrid vehicle, or put solar panels on your roof. But, if everyone invested with an *I don’t care* attitude, would the fossil fuel free message conscious investors are trying to advance disappear? Probably so! For many of us, that’s not acceptable.

To avoid bias, one argument for staying invested in fossil fuel companies is as a shareholder, you enjoy voting rights. Essentially, you get a seat at the table and you maintain a legal right to express you opinion. Of course, the problem here is that you’re dramatically outnumbered even when our collective voices are spoken through large asset managers such as socially responsible mutual funds.

We don’t know when coal, oil, and natural gas will become stranded assets on a corporate balance sheet. It's entirely possible holding fossil fuel stocks will benefit investors over the next decade, or two, or three. We don’t claim to have this crystal ball. No one does. Ask yourself if you’re prepared to risk it by waiting and potentially finding out the hard way?

Is it really so radical divesting from fossil fuels now as a portfolio precaution, as a nod to the planet, or both? Our research suggests the answer is no if we’re specifically talking about divesting from companies owning fossil fuel reserves. If we did this, we’re talking about adjusting our portfolio’s allocation less than **5%** compared to a conventional portfolio. Big deal!!!

If we expand the definition of fossil fuel free, then we can’t truthfully promote 100% of the portfolio results you read about in this guide, especially when it comes to return. We just don’t have a long enough track record of observations or a large enough sample size to make a valid case one way or the other.

Anecdotally, it’s been our experience that full divestment from fossil fuels hasn’t produced a radically different set of returns from a fossil fuel *reserves* free or conventional portfolio. For this reason, we believe we can fulfill our advisory role as a fiduciary while at the same time helping clients invest fossil fuel free.

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1. *Sea Level Rise*, Smithsonian Institution, reviewed by Willis (NASA), Kemp (Tufts University), & Strauss (Climate Central), April 2018.

2. *Climate Change Indicators: Weather and Climate*, United States Environmental Protection Agency.

3. *How Climate Is Changing*, National Aeronautics and Space Administration (NASA).

4. *Consensus on Consensus: a Synthesis of Consensus Estimates on Human-Caused Global Warming*, Cook, Environmental Research Letters Vol. 11 No. 4, April 13th.

   Quantifying the Consensus on Anthropogenic Global Warming in the Scientific Literature, Cook, Environmental Research Letters Vol. 8 No. 2, May 15th 2013.

   Expert Credibility in Climate Change, Anderegg, Proceedings of the National Academy of Sciences, Vol. 107 No. 27, June 21 2010.

   Examining the Scientific Consensus on Climate Change, Doran & Zimmerman, American Geophysical Union Vol. 90 Issue 3, 2009.

   Beyond the Ivory Tower: The Scientific Consensus on Climate Change, Oreskes, Science Vol. 306 No. 5702, December 3rd, 2004.

5. Coal's Ugly Future, Power Generation Will Continue to Shift to Natural Gas and Renewables, Fishman, Miller, & Bischof, Morningstar Magazine, October/November 2018.

6. Source: Morningstar Advisor Workstation 2.0, August, 2019, iShares Russell 3000 ETF (IWV) used as a proxy.

7. Source: Y Charts, US Total Business Sales Historical Data.

8. Source: Greenhouse Gas Equivalencies Calculator, U.S. Environmental Protection Agency, August 2019.

9. & 10. Source: Morningstar Advisor Workstation 2.0, August, 2019.

11. Source: Morningstar Advisor Workstation, S&P Global Clean Energy Index (NR, USD) & MSCI ACWI (NR, USD), 11/21/2003 - 1/31/2019.

12. & 13. Source: Morningstar Advisor Workstation, October, 2019.

14. Source: S&P Global 1200 Energy Index dividend yield of 4.13% & S&P Global Utilities Index dividend yield of 3.88%, S&P Dow Jones Fact Sheets, Jan 2019. 4.04% represents a weighted average.

15. Source: MSCI ACWI Index (USD) Fact Sheet, January 2019.

16. Source: Morningstar, MSCI ACWI ex Fossil Fuels Index (NR, USD), MSCI ACWI (NR, USD), 11/30/2010 - 2/28/2019.

17. Source: MSCI ACWI ex Fossil Fuels Index (USD) Fact Sheet, February 2019 using 5-yr standard deviation.