

Team Marine Perspective

On the matter of divestment by CalSTRS from fossil fuels

A comprehensive report by

Team Marine

Introduction

Team Marine, among many others, is calling for CALSTRS' fossil fuel divestment. After extended research, Team Marine has concluded that divestment is essential, not only for reasons of a constrained climate's implications, but for economic and social reasons as well. By directly responding to the CALSTRS' "*Perspective on Fossil Fuel Divestment*" we hope to outline a different outlook on divestment and the entirety of the fossil fuel industry itself, and its current trajectory.

To secure a sustainable future, it must be recognized that fossil fuels play an essential role in its very jeopardization, and therefore, investors in their actual action, not word, do as well. Team Marine seeks to hold investors, among many other parties, accountable for their statements and promises.

Diversification

Diversification is an important principle in long-term investing to reduce risk and maximize returns by allocating investments among various financial instruments, industries, regions and sectors. Divestment, from a whole industry or sector, can detract from the ability of a diversification strategy to succeed, and could negatively impact the health of the fund. By diversifying our Investment Portfolio, the fund can better mitigate risk as diverse sectors react differently to economic, social and political events. The energy sector is historically less correlated with other industries, which can provide protection in recessionary markets. Furthermore, divestment from an entire sector fails to distinguish that there are significant differences in individual company strategies, even within the same sector and sub-sector.

In order to maximize return and minimize risk in the long-term, a portfolio must be distributed among various industries, sectors, regions.... Divestment, from a whole industry or sector, which is then recuperated within the very same sector, once again, re-diversifies one's fund and could impact the entirety of the modified investment in a whole industry or sector beneficially. By diversifying, namely, rethinking specific investments and possible divestments in any given investment portfolio, a fund can better mitigate identified risk within a portion of a specific sector of investment, for example reactions to political, economic, and social events. Historically, the energy sector, in its entirety, has its own forces at play, meaning has little association with other industries, though even if the volatility of the industry is offset by renewables or an increasing worldwide demand for energy, there is enough complication within the sector itself to be cognizant about, exemplified by the impact of COVID-19. Furthermore, though divestment doesn't always account for the intricacies of individual companies and their strategies, it can, and in doing so, divestment may further diversify and secure an investment portfolio among sectors and sub-sectors.

Climate change affects all sectors of the global economy

While the burning of coal, natural gas, and oil for electricity and heat is the largest single source of global greenhouse gas emissions, representing 25%, another 24% comes from agriculture, forestry and other land uses. We believe it's essential to take a comprehensive view of how climate change is impacting multiple sectors. A narrow focus on the fossil fuel industry only captures a portion of the much larger carbon emissions challenge and detracts from developing a broader understanding of how the low-carbon transition affects the global economy and the fund's investment universe.

The fossil fuel industry represents a much larger role in greenhouse gas emissions than pie charts may imply. A comprehensive observation and evaluation of the impact of climate change through every sector's performance and future is undoubtedly essential for a broader understanding of a low-carbon transition and a fund's investment status. However, a comprehensive observation of carbon emissions and *all of their sources* is too, extremely important, to understand the correlation between how the fossil fuel industry and the broad neglect towards a low-carbon transition could affect the fund's health and reputation. Though electricity and heat and coal and oil and natural gas account for only 25% of GHG emissions, transportation, industry (who primarily involves fossil fuel use), *other* energy (fuel refining and processing), and buildings (burning fuels for heat in housing and on-site energy generation) account for another 51%. The fossil fuel industry's involvement within all sectors is, as shown, utterly tremendous, and therefore their climate impact is too. Ignoring their complete role across all sectors because of this misconceiving percentage would be undermining the big part they play in our society.

Global fossil fuel demand

As the world population increases and countries continue to industrialize the global reliance on fossil fuels will inevitably increase. But, this global demand for fossil fuels is far from sustainable and despite the increase in demand the global supply is going to keep diminishing. Renewable energy, when compared to fossil fuels, has seen a far greater increase in demand that will continue to grow over time; and unlike fossil fuels these sources will not run out. From the years 2000 to 2018 the American renewable energy usage has increased by 100 percent (C2ES). And according to the BP Statistical Review of World Energy 2016 at current levels of production and consumption we have around 50 years of oil reserves left; when considering that demand is only increasing it is clear that our world oil supply is going to be depleted soon. Furthermore, the IPCC has warned that fossil fuel emissions must be halved within the next 11

years in order to stay under the 1.5 degrees celsius global warming cap. And while it is obvious that the world's energy demand cannot be fulfilled completely by renewable sources, it is vital that major steps are taken to move away from fossil fuels. As seen in the recent Paris Agreement, countries, whether developed or developing, have committed to reduce greenhouse gas emissions. Already four years ago, as IPCC reports become more radical and the effects of climate change are more intimately felt, policy will override profit, despite in implausibility of renewables or not. And It is not plausible to meet growing energy needs with increased production in fossil fuels, with great global GHG policy constraints becoming a reality within the next ten years, and nor is it completely for renewable technologies either. However, the latter is much more profitable, and it is important for long-term investors, such as CALSTRS, to pressure fossil fuel industries to live up their renewable and low-carbon approach, so that other sectors such as utilities and transportation to be nonvolatile and viable in the long-term.

Case in point, global energy demand is rapidly increasing and will continue to rapidly increase. It is inevitable that fossil fuel demand is going to rise with it; but it is clear that fossil fuels, being a finite source of energy, are not going to be able to meet this demand. This is compounded by the fact that the fossil fuel industry, and the burning of fossil fuels in general, has continued to pollute and destroy our planet. And while the demand is increasing, it is important that we make any shifts we can, including divestment form the industry, towards cleaner energy in order to mitigate the effects of climate change and overall lessen the energy sector's environmental footprint.

An increase in the energy demand is inevitable, and so is the use of fossil fuels for many years to come, especially in emerging economies. However, as seen in the recent Paris Agreement, countries, whether developed or developing, have committed to reduce greenhouse gas emissions. Already four years ago, as IPCC reports become more radical and the effects of

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Scaling of Emerging Technologies

Biofuels, hydrogen use, nuclear, energy storage capabilities, and carbon capture and removal are among some of the emerging technologies that a low-carbon future depends on. As consumer preferences and demand shifts, fossil fuel companies must adapt by continuing to develop these emerging technologies until they are scalable and economically viable.

Significant infrastructure improvements are required to enable and support these emerging technologies. Investors recognize that companies must change course in order to sustain their businesses and remain resilient over the long term. As such, investors are engaging fossil fuel companies to use their technical expertise, personnel, existing infrastructure, capital and scale to support the realization and adoption of these essential technologies.

A low-carbon future depends on the immediate scaling of emerging and renewable, energy-producing technologies. With the current global movement towards climate being economical, political, socially oriented, moving closer toward a tangible scaling of emerging technologies, and resultantly, a rethinking of the old, is depending more and more on the time limit of climate change. Investors who fail to acknowledge the companies who are not changing

their course quickly enough will be losing a great deal of money, as global and local policy will, in the long term, constrain production and therefore profit, making fossil fuel companies not living up to a low-carbon expectation, scalably and economically unviable.

As such, investors must be overly cognizant toward the commitment and action of fossil fuel companies, rather than investing capital to where it could mean new infrastructure, expertise, and most of all, sustainable profitability that is sound from a changing climate in a changing economy and unnecessary work.

Geopolitics and the role of state-owned oil and gas companies

The Organization of the Petroleum Exporting Countries (OPEC) is an intergovernmental organization that includes members from some of the world's most oil-rich countries. When talking about divesting from 'big oil', understand that the majority of the world's oil supply is produced by state-owned enterprises, which are predominantly owned by countries rather than institutional investors. However, well-known, publicly traded companies, such as BP, Shell, Chevron and Total, have traditionally developed new technologies and practices that influence the entire industry, including state-owned oil producers. This makes it vital for investors to continue to engage publicly traded energy companies in order to influence change across the entire industry.

The dynamic between state-owned enterprises and largely known, publicly traded companies has for long been extremely volatile and interconnected, a recent example being the Saudi Price War. No doubt companies like BP, Shell and Chevron have play in the market, and partial influence over organizations like OPEC, however, investors who are passively invested, namely CALSTRS, aren't going to influence change across an entire industry.

Climate Change Affects all Sectors of the Global Economy

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Though reducing carbon emissions as a whole does involve providing alternatives to the multiple other unsustainable practices that are the cause of the detriments to our environment, it is imperative that we address the most prominent of all emissions first. According to the United States Environmental Protection Agency (EPA), 22% of greenhouse gas emissions in the United States came from industries and 27% came from electricity production in 2018. Both of these sectors involve the burning of fossil fuels for energy supply, which in turn results in approximately 49% of all emissions. In comparison to the greenhouse gas outputs from other sectors of the global economy - which is 10% agriculture, 12% commercial and residence, and 28% transportation as of 2018 - targeting fossil fuels would make the most impact overall. Given these statistics, by divesting away from fossil fuels we would not only cut out the most prominent cause of greenhouse gas emissions, giving us more time before the consequences of climate change become inevitable, but this step would essentially be providing more momentum towards focusing on creating a greener economy including all the other sectors also contributing to climate change. And, as was previously mentioned in the paragraphs above, divesting to green energy sources would prove to be a profitable, long-term decision.

Final Reflections

While it is true that there are many contributors to climate change, fossil fuels are by far the largest. The CO₂ produced from fossil fuels alone contributes to 65% of all greenhouse gases affecting climate, according to the United States Environmental Protection Agency (EPA). Divesting from fossil fuels does fail to address the other contributors, but it is a huge step in the right direction. This would also give us more time to address the other contributors before the effects of climate change are irreversible. According to Greenpeace.org, if we don't reduce the amount of fossil fuels being used, we have only 11 years to solve our climate crisis. While taking a holistic approach may be a good idea in the long run, it is not what we need right now, which is to slow the advancement of climate change. Divesting from fossil fuels like many other major companies already have will

To cling onto this fossil fuel investment, which is a mere 2% portion of an passive energy investment portfolio, which has proved majorly unprofitable in comparison to other sub-sectors within energy, which is currently proving especially volatile during the fluxes of the COVID-19 pandemic and the future, which holds the constraints of a severely changing climate with exponentially changing global awareness and policy, is simply irresponsible.

For Report:

Diversification is a given when investing and a portfolio of this size has the luxury of being able to invest in every segment and every market on Earth, regulations permitting. Fossil fuels are a massive industrial sector in the United States, making up 8% of the annual GDP (American Petroleum Institute), meaning that, on the surface, in the name of diversification, it makes economic sense to own some of the highly lucrative capital that fuels this industry. But in a portfolio worth over \$238 billion, there is no reason to desperately grasp onto a miniscule amount of this portfolio, just a little over 2.5% of all holdings (Reference), in the name of diversification when the use of fossil fuels have been desecrating our planet for the past two and a half centuries and will continue to do so long into the future so long as we support their use.