

Financial Risks of Oil and Gas Assets

Stephen Greenslade, an analyst with ARO Working Group, recently sent the following letter to Keith Yamanaka, who represents Tony Thurmond on the CalSTRS Investment Committee.

September 13, 2019

Dear Mr. Yamanaka,

This is Stephen Greenslade. I spoke with you on the phone recently along with Cynthia Kaufman and Vanessa Warheit of Fossil Free California, and Farralon Udom of RBC Wealth Management. I am providing a bit of background research for your consideration regarding some of the financial and fiduciary concerns relevant to pension funds considering divestment from oil and gas assets.

From a financial perspective, the primary argument in favor of divestment is that the fossil fuel sector cannot seem to extricate itself from a cycle of underperformance, indicating that the industry is in secular decline. Diminishing energy return on investment (EROI), rapidly innovating competitors, changing policy, and challenging macroeconomic dynamics (e.g. diminishing demand growth and perennial oversupply), among other pressures, have perceptibly weighed on the industry over the last decade, evidenced by the fossil fuel sector declining as a percentage of major market indexes **for the last ten years**. It should be noted that Exxon has just dropped off the top 10 list of the S&P 500 for the **first time ever**.

But industrial decline does not always proceed at a slow and predictable creep. There are tipping points, like the arrival of **peak oil demand**, that **even BP** has noted will result in an abundance of supply and permanently depressed prices. Unfortunately for most North American oil companies, **breakeven costs** are too high for operators to sustain production much lower than today's prices. In fact, the fastest growing sector of the US oil economy, shale fracking, **has lost money** consistently, **even when oil was \$100 a barrel**.

When a viable price band can no longer be supported due to the cost of production rising above a level that is both **competitive with alternatives** and palatable with consumers (a demand-killing scenario that **may already be playing out**), competition within the industry becomes cannibalistic, leaving behind only the most efficient operators after **waves of consolidation**. Over time, the last ones standing will either transition their business models, or fail. While the dynamics of secular decline have been observed in other industries, the fact remains that the timing of tipping points is subject to a high degree of uncertainty, increasing risk in investment decisions for pensions and other long-horizon investors.

In light of the declining performance and rising risks in the sector, **the decision should be relatively clear** for pension trustees who have a duty to “achieve the desired rate of return at a prudent level of risk,” according to the CalSTRS **general investment objectives**. Additionally, pension trustees have a **fiduciary duty to maintain the health of the portfolio in perpetuity** in alignment with the duty of impartiality between present and future beneficiaries (note that number one on the list of CalSTRS general investment objectives is to “Provide for Present and Future Benefit Payments”). Given that the asset value of fossil fuel companies is largely a function of proven reserve volumes, and given that the overwhelming body of evidence indicates that the majority of these reserves must remain unburned by 2050 if the world is to successfully avoid 2°C of warming or greater^{[1],[2],[3],[4],[5]}, the unavoidable conclusion is that *the present value of oil and gas investments is inflated by the assumption that the world will fail to limit warming to below 2°C*, an outcome that will result in **severe risk to pensions and other investors**. Is there a breach of fiduciary duty implied by ongoing investment in companies whose present value and future profitability are contingent upon the failure to limit warming to a safe level, which will result in unmanageable risk to the portfolio for future beneficiaries? The board should endeavor to answer that question.

Pension fiduciaries have an additional duty to inquire into the relevant risks that could reasonably be expected to affect portfolio performance, in alignment with the CalSTRS standard of care. The preponderance of evidence indicating the materiality of climate-related financial risks (some of

which I am sending along with this report) strongly suggests that this should be an area of acute inquiry for the CalSTRS board. At a recent meeting, I asked Treasurer Ma if the board had ever been briefed by the CalSTRS executives on climate-related financial risks and risk management strategies, and she was not aware of such a briefing having occurred. Very much to the Treasurer's credit, her responses to our questions were candid and kind, and she expressed a genuine interest in learning more. In the year 2019, as the climate crisis bears down on society and presidential candidates line up behind the idea of a Green New Deal, it is imperative that the CalSTRS board and executives engage in a conversation about climate-related financial risks and opportunities. The board is now on notice. This is an issue that a group of the most powerful financial institutions in the world are [taking very seriously](#). It is an issue that must be addressed with appropriate diligence, and with cognizance of the particular duties of pension trustees.

I will move on to discuss some climate-related financial risks that are likely material concerns for pensions.

I have already presented evidence that the oil and gas sector has a history of poor performance that indicates secular decline, i.e. a long-term downward trend that is unlikely to ever meaningfully reverse. Additionally, resources I have footnoted on carbon budgets describe the stranded asset risk that looms over the industry. Another particularly salient and little-understood risk is the acceleration of [Asset Retirement Obligations \(AROs\)](#). AROs are legal decommissioning obligations reported as debts in the oil and gas industry, and they represent an enormous late-life cost (potentially hundreds of billions of dollars in the United States alone – see attached Oil and Gas topic outline) for which there is no savings account or sinking fund. Poor industry performance, market pressures, enhanced corporate disclosure requirements, state oil and gas regulatory updates, litigation, and global action to combat climate change, among other things, *all may individually and collectively contribute to the acceleration of AROs.*

The oil and gas asset write-downs that can be reasonably expected within the first half of the 21st century (in some places, they may already be [happening](#)) are likely to feed into the acceleration of decommissioning obligations if oil

wells are forced into retirement before the previously estimated end of their useful lives. Accelerated AROs pressure liquidity and raise corporate operating expense because AROs are settled out of operating cash flows rather than from a dedicated savings account. This effectively raises the breakeven commodity price for oil and gas companies, potentially pushing *even more assets below the threshold of profitability, which further accelerates asset retirement*. This impairment-retirement cycle, once it gains steam, could rapidly turn the fossil fuel industry's incumbency advantage into a liability, wiping out investors.

It is important to note that the industry maintains a rolling inventory of AROs that generally extends 80-100 years into the future, and which has been steadily growing in order to keep up with growing demand. This means that the oil and gas industry expects to spend *increasingly more money on AROs for the next 80-100 years*, and that is if they stop drilling new wells tomorrow. Recalling that peak demand is on the horizon, it becomes incredible to imagine that the oil industry will be pulling in ever-increasing revenues for the next century. Compressing these AROs into 20 or 30 years would likely be catastrophic for even the largest oil and gas producers. Add on **steep decline curves**, underwhelming ultimate hydrocarbon recovery, and the need for ongoing **capital expenditures just to keep production flowing** in the shale plays (again, the primary source of US production growth), and American oil increasingly **looks like** a legal **Ponzi scheme**. As the 'sweet spots' are drilled to oblivion, is it reasonable to expect that operators who have thus far failed to show any significant profit will be flush with cash for decommissioning in 50+ years? And what of the majors that buy up depleting fields and their corresponding AROs from smaller independents?

You may be wondering, if this is such a big deal, **why isn't anyone talking about AROs** in discussions around transition risk? The premise is simple: for 150 years the oil and gas industry has been expanding. Inextricably linked with that expansion has been the growth in routine environmental damages (e.g. drilled wells, excavations, pipeline installations, etc.) that governments now require industry to pay for in order to **internalize the most obvious social costs** associated with resource extraction. So long as general expectations

are that the industry will continue to expand, AROs remain an obscure item buried deep in SEC filings. Furthermore, opaque financial reporting practices and high discount rates **make AROs look erroneously like insignificant future costs**, when in fact they are very large and can appear suddenly—for example, through fair-valuation in bankruptcy or a change in surety bonding requirements.

It is important to recognize that states, including California, are already starting to take action to **manage large idle and orphan well inventories**, and to increase financial assurance in order to protect the public from taking on the costs of retiring the industry. Thus, both sides of the impairment-retirement cycle *are already in motion*, but they aren't yet significantly feeding off one another. Any number of market, regulatory, policy, judicial, or macroeconomic pressures could get the ball rolling, and the effects could manifest in the near- or medium-term as a potentially severe negative pressure on oil and gas cash flows and equity values. But don't take my word for it. The monumental effects associated with a reversal in fossil fuel demand trajectory have been demonstrated quite recently; the collapse of coal in 2015-16 is **a fitting case study** for what will likely happen at a much greater scale in the oil and gas industry.

As a final note, there is reason to be concerned that oil and gas companies may be **overstating their financial position**, raising further red flags on potentially unacknowledged risk in oil and gas investments that could manifest as write-downs, dealing a major blow to equity holders and potentially exacerbating the previously discussed financial risks.

To recap:

- The oil and gas industry has been declining for a decade, with the major oil companies **destroying billions in shareholder value**.
- The industry is bound up with an enormous pile of decommissioning obligations that will appear seemingly out of nowhere, feeding into a cycle of asset write-downs and accelerated retirements that could place severe strain on industry finances within relevant near- and medium-term investment horizons.

- Other financial red flags are appearing that could trigger or exacerbate the effects of the previously mentioned risks.
- The majority of oil and gas reserves *must stay in the ground* or the global financial system will likely **suffer shocks** that cannot be described as anything but catastrophic as a result of global warming greater than 2°C.
- The present value of oil and gas companies is buttressed by the assumption that the world will fail to limit warming to below 2°C, raising the question: why are pensions investing in companies whose present and future interests run directly counter to the interests of the longevity of the pension for future beneficiaries, including those who are currently paying into the system?

You requested that I bring in anticipated counterarguments to divestment and rebut them. While I believe much of the research I have provided speaks for itself, I will address a few commonly cited points:

- It has often been said that a broad spectrum of energy investments is simply a routine and healthy aspect of a properly diversified portfolio. However, pension portfolio diversification does not require investment in businesses that are failing, that are becoming obsolete, that are extremely risky or provide returns incommensurate with known risks, or that diminish the capacity of the portfolio to provide for its beneficiaries in the future. This is self-evident, as the inclusion of such requirements would be patently illogical and contrary to the stated goals and duties of the retirement system.
- It has also been said that no matter how quickly society acts, oil and gas will still be burned for at least the next 20-30 years in order to maintain energy security through the transition, and those 20-30 years could be important for meeting investment goals. Firstly, the fact that fossil fuels may continue to be burned for another few decades is not in itself a logical argument for a pension's continued investment. CalSTRS owes no duty to ensure that a given company has the money to fund its drilling operations, nor is it within the purview of the CalSTRS investment strategy to manage global oil supplies. Secondly, industries

in decline are not known for offering stellar long-term returns, and for numerous reasons detailed in the research I have provided, these investments can be safely excluded from pension portfolios without significant risk of missed opportunities.

In closing, I would like to address the most hackneyed argument against divesting: engagement. A few days ago I read [an article](#) by California journalist, Amy Westervelt, and it struck a chord. Amy is the mother of two young children. She has reported extensively on how the fossil fuel industry has pursued [an aggressive campaign to subvert climate action](#), kicking their efforts into high gear almost exactly [30 years ago](#). I also am a parent of two young children, and like Amy, I occasionally think hard thoughts about what sort of world my kids will be inheriting. On top of that, I am thirty years old. I was in the womb when distinguished climate scientist, Dr. James Hansen, gave [his 1988 report to Congress](#) stating that human-caused warming was already changing the Earth's climate. The year I was born, Exxon began its infamous disinformation campaign in an effort to sow doubt about the scientific certainty linking rising CO2 levels from fossil fuel combustion with atmospheric warming. In the article linked at the top of this paragraph, Westervelt displays a memo to President Carter by Dr. Frank Press of the Office of Science and Technology Policy from 1977. The subject line reads, "Release of Fossil CO2 and the Possibility of a Catastrophic Climate Change."

Since the day of my birth, the world has [emitted more CO2](#) than had been emitted from the dawn of the industrial revolution *up until my birth*. The time for engagement might have been back in 1977 when Dr. Press informed the highest official in the US government that energy transition takes time, and a failure to act early could result in unmanageable crises once the effects of climate change started kicking in. The time for engagement might have been in 1988, when a summer heatwave loomed over Washington as Dr. Hansen stated with 99% certainty that "the greenhouse effect has been detected, and it is changing our climate now."

Fast forward to 2018. The IPCC released a [special report](#) stating that dramatic reductions in carbon emissions are necessary by 2030 to avoid the catastrophic effects of 1.5°C or greater of warming. The time for engagement

has passed. The oil industry is [not aligned with Paris](#), and they continue unabated in their campaign to [water down](#) and [delay effective action](#). Investing in fossil fuels is sanction for their blatant efforts to undermine the interests of future life on our planet Earth, including the future beneficiaries to whom you owe a duty of loyalty and care.

I am an analyst. I do my best to weave coherent arguments that interface with the dispassionate logic of finance based upon the best available information. I have laid out a buffet of research. I have outlined a reasonable defense for the decision to divest based simply on financial performance, climate-related financial risk, and CalSTRS' own guiding documents. The choice left for you is straightforward enough. Will you continue to bet on the industry responsible for irrevocably damaging the global climate, against the will and interests of your retirement plan beneficiaries? Or will you not?

Yours truly,

Stephen Greenslade

Below is a collection of papers on various issues relating to divestment and climate-related financial risks. Many of them are also linked above.

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Divestment-from-Fossil-Fuels_The-Financial-Case_July-2018.pdf
1.6 MB

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Open Letter on Climate-Related Financial Risks.pdf
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Part 2 – ARO Report Card.pdf

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Oil and Gas Topic Outline UPDATED.docx

218 KB

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[1]https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf

[2]

https://www.carbontracker.org/wp-content/uploads/2018/02/Carbon-Budgets_Explained_02022018.pdf

[3]<https://www.globalcarbonproject.org/carbonbudget/>

[4]

<https://www.carbonbrief.org/analysis-only-five-years-left-before-one-point-five-c-budget-is-blown>

[5] <http://priceofoil.org/2016/09/22/the-skys-limit-report/>