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Climate Change and the Case for Fossil Fuel Divestment

An information brief submitted to the Carleton University Pension Committee by
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Introduction

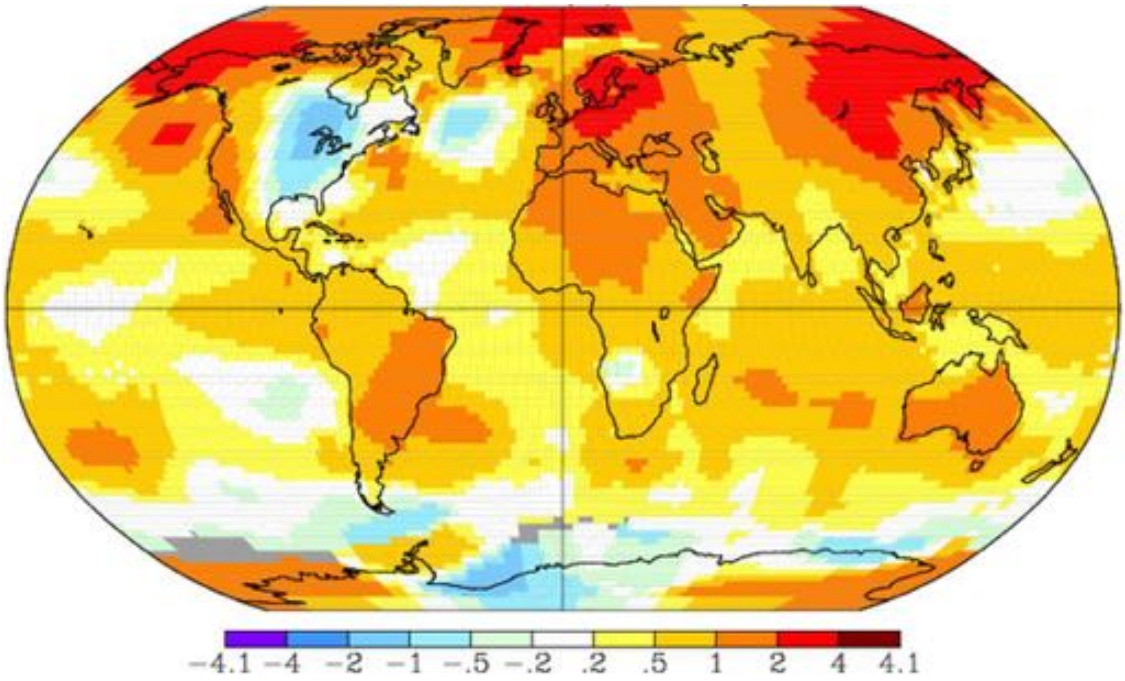
Author and environmental activist Bill McKibben calls climate change "the most significant problem humanity has ever confronted." The World Bank warns that "if we do not confront climate change, we will not end poverty", and Archbishop Desmond Tutu calls climate change "the human rights challenge of our time." Although most of us are increasingly aware of the reality of climate change, many would find these quotes extreme. They are not. On our current path, within a few decades a planet able to support over 7 billion people will become a planet able to support less than half that number, a shift that will entail human suffering on a scale never seen before. All of this because we have failed to wean ourselves off of fossil fuels. There is still a window of opportunity to avoid the worst, but past inaction means that the timeline is now extremely tight. Global carbon emissions need to start declining within the next 5 years, and drop to zero within a few decades. As stated by Marc Carney, governor of the Bank of England, "the vast majority of fossil fuels cannot be burned" if we are to avoid catastrophic climate change. Divestment from fossil fuels makes the case to governments and industry for ending fossil fuel dependency, more clearly and emphatically than any other action.

Climate Change Impacts

Misinformation on climate change is widespread, but fortunately there is a body within the UN where reliable information can be found. The Intergovernmental Panel on Climate Change (IPCC) summarizes the scientific work on climate change, every 5 to 6 years. This work involves thousands of scientists, who analyze hundreds of thousands of data - measurements taken on land, in the atmosphere, and in the oceans. The data are summarized in the IPCC reports, and 195 nations sign off on these reports. The most recent IPCC report, which came out in 2014, documents the following key impacts of climate change:

1) Global warming: Globally, 2014 was the hottest year ever recorded.
The map below, produced by NASA, shows the average temperature everywhere on earth, in 2014, compared to the average temperature during 30 benchmark years, 1951-1980.

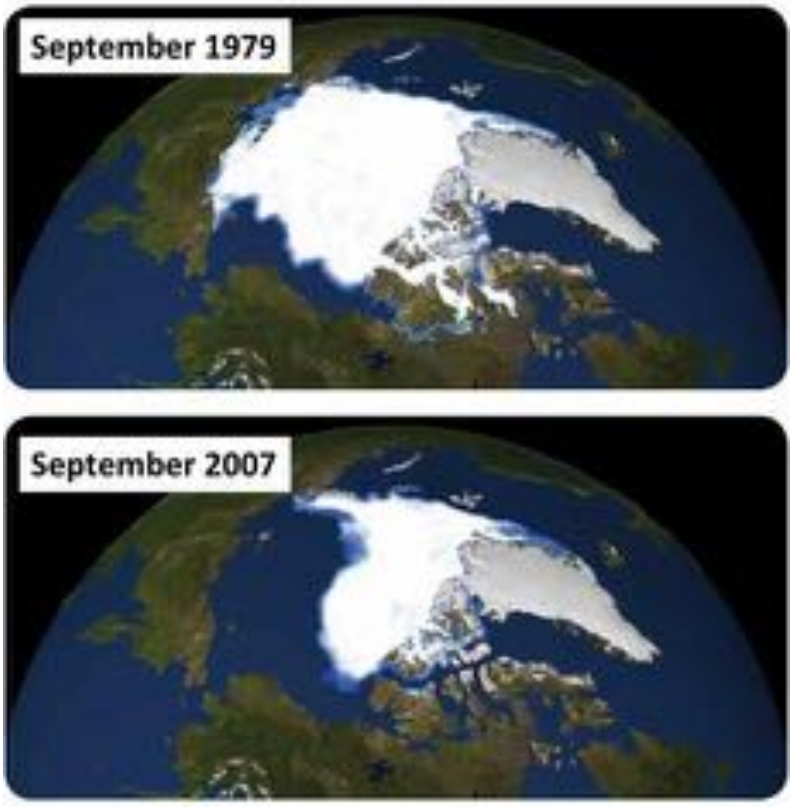
If the world were getting colder, the map would be mostly blue/violet. The dominance of yellow/orange/red indicates the opposite. It is also significant that our particular region of east-central North America was an exception in 2014. While our small area of the world experienced cooler temperatures than the historical average, as a whole the world continued on its warming trend.



2) Nearly everything frozen on earth is melting: As a result of the global warming trend, mountain glaciers, the polar ice cap, permafrost, and the earth's great ice sheets on Greenland and Antarctica, are all melting away.

Muir Glacier, Alaska, 1941 to 2004

Satellite view of the polar ice cap, 1979 to 2007 (NASA)



3) Extreme weather events are becoming more common and more extreme:

- **Hurricanes** are becoming more powerful. For example, super typhoon Haiyan in Nov 2013 was the most powerful hurricane ever recorded.

- **Extreme flooding** events are become more common and more severe. Included among the many places recently suffering record-breaking precipitation events are Canada (e.g., Alberta and Toronto), Eastern Europe, Britain, and Pakistan. Last year Pensacola Florida received an amount of rainfall equivalent to over 7 metres of snow in just 24 hours. Huge snowfall events are also becoming more common, such as in Buffalo in Dec. 2014.

- **Severe drought:** Perhaps the most worrying of all of the impacts of climate change is the increasing frequency and severity of droughts around the world. For example, California's current decade-long drought is the worst on record. California is the US's leading food producer, including the nation's top dairy producer, and the only producer of many fruits and nuts. The ongoing drought in California is hugely problematic for food security.

Depletion of a major California aquifer.

But it's not only California. On our current path, the following parts of the world will be experiencing *permanent*, intense drought within the next few decades:

Central and Western USA, Mexico, and Central America,
Northern and Western South America,
Southern Europe and the Middle East,
Northern, Western, and Southern Africa,
China and Southeast Asia, and
Southeastern and Western Australia.

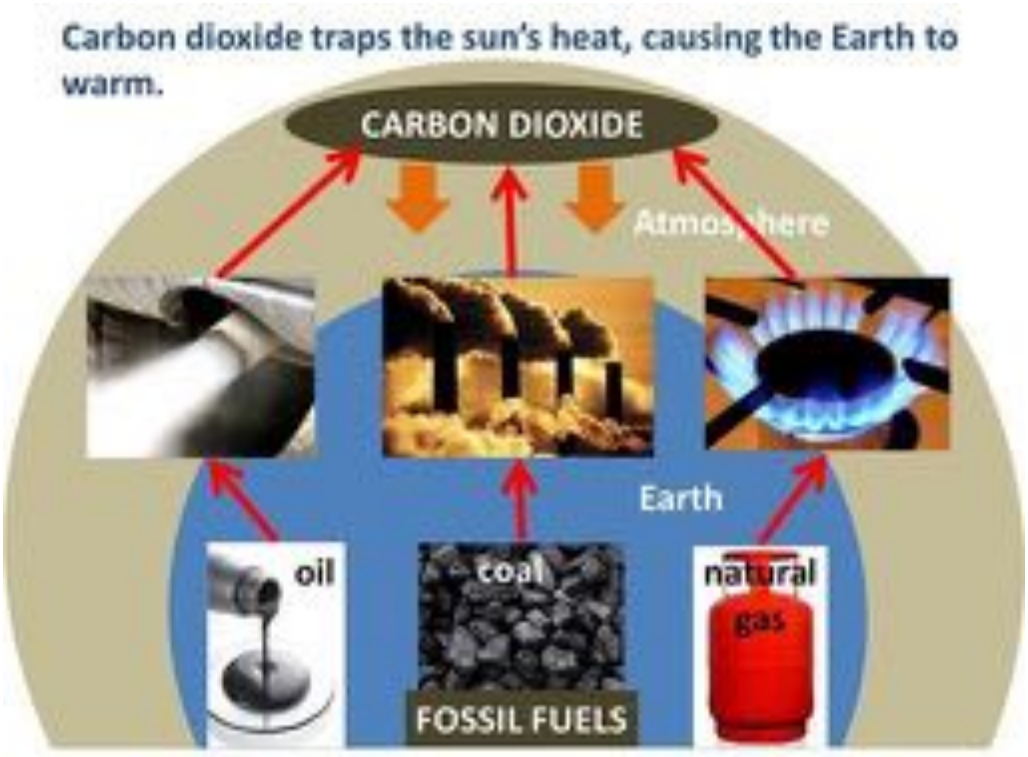
Within the past 4-5 years *all* of these locations have experienced record-breaking or near-record-breaking droughts. Drastic cuts to fossil fuel emissions are needed within a very

short time, or within the next few decades the earth will become unable to feed well over half its people.

Why the climate is changing

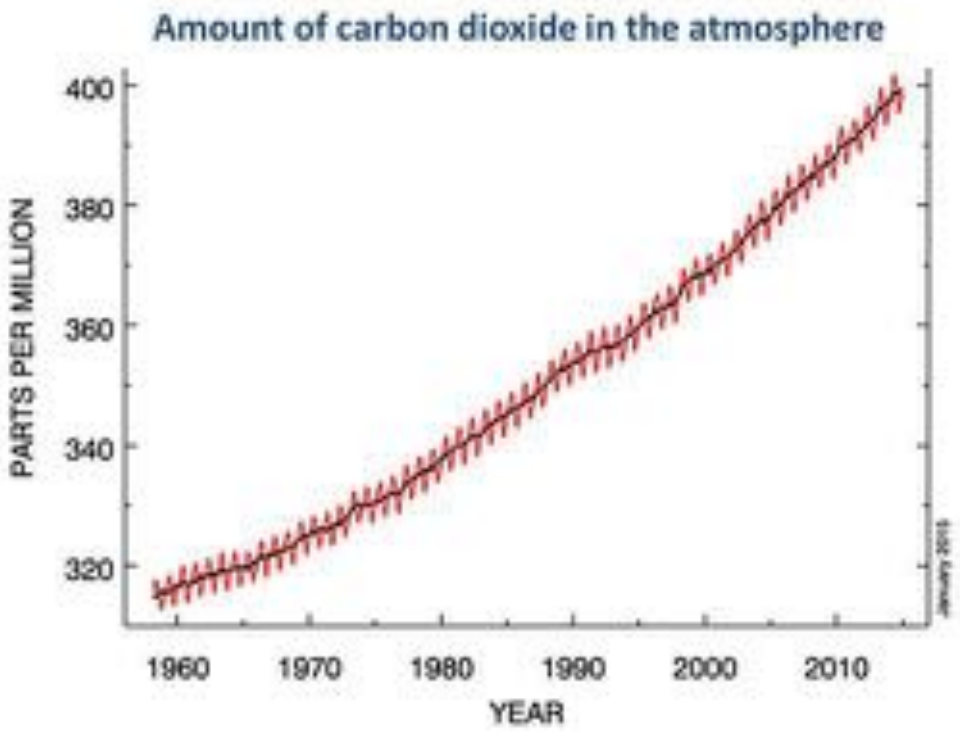
The main reason the climate is changing is the burning of fossil fuels. Fossil fuels - oil, coal, and natural gas - contain carbon that had been stored underground for millions of years. About 85% of human activities are currently powered by the burning of fossil fuels. We have to wean ourselves off fossil fuels, to avoid further escalation of climate change impacts.

Burning fossil fuels releases carbon dioxide into the atmosphere. Carbon dioxide traps heat, which causes the climate to warm and results in the climate change impacts described above - stronger hurricanes, more intense and frequent precipitation events, and intense, persistent drought.



Scientists have known about the relationship between carbon dioxide and global warming for over 100 years. In the mid-1950's they became concerned enough to start measuring the amount of carbon dioxide in the atmosphere, shown below in a graph produced by the U.S. National Oceanic and Atmospheric Administration.

Carbon dioxide concentrations have risen by 40% since the beginning of the industrial revolution, and are now higher that they have been for 800,000 years.



The accumulated carbon dioxide in the atmosphere is not going to disappear anytime soon. This means that climate change is a one-way street. The climate change that has already happened is here to stay for at least this century. In fact there is about a 30-year time-lag in the relationship between carbon dioxide concentration in the atmosphere and the climate, which means that, even if we were to stop burning fossil fuels today, the climate would keep changing for about 30 years, as the climate catches up to today's level of carbon dioxide.

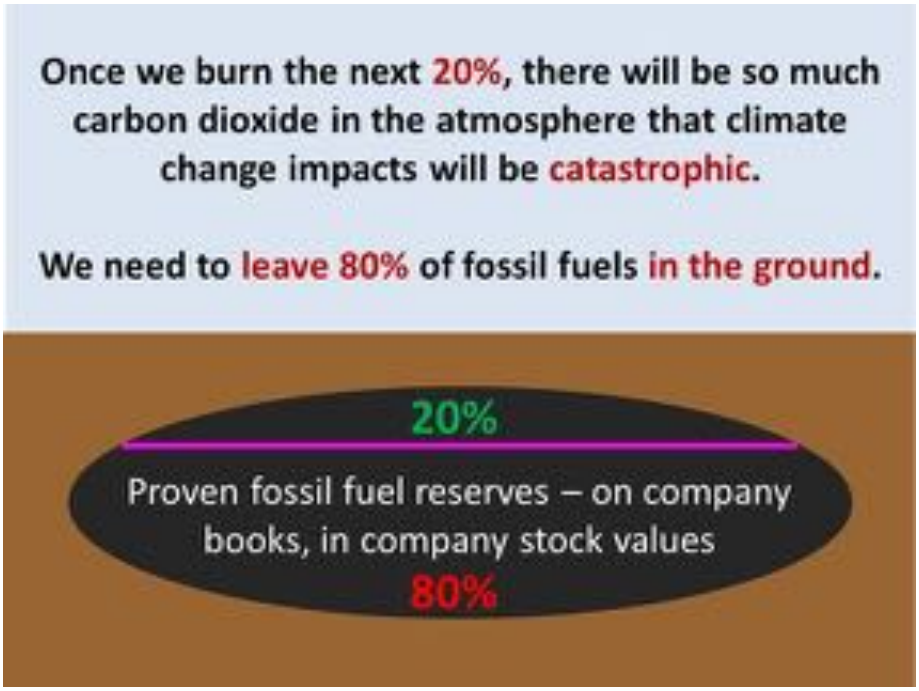
Challenges and Solutions

1) We need to leave 80% of fossil fuel reserves in the ground

In 2009 the world's leaders agreed that the average, global, annual temperature must not increase more than +2°C above pre-industrial levels, if we are to "prevent dangerous anthropogenic interference with the climate system." Human consumption of fossil fuels has already caused an average global temperature increase of nearly +1°C, and climate change impacts will continue to escalate as we increase from +1°C to +2°C. If we do not take large-scale, immediate action to reduce and then eliminate carbon emissions, the temperature increase will go beyond +2°C. This would be catastrophic for people and nature.

Scientists predict that to have a good chance of staying below a +2°C increase, about *80% of all known fossil fuel reserves must be left undeveloped and in the ground, forever*. In other words, to avoid catastrophic climate change, *fossil fuel companies will have to stop extracting and producing fossil fuels*. While many in Canada still argue that weaning off fossil fuels is unrealistic and will hurt the economy, CBC news reported in Dec. 2014 that total employment in

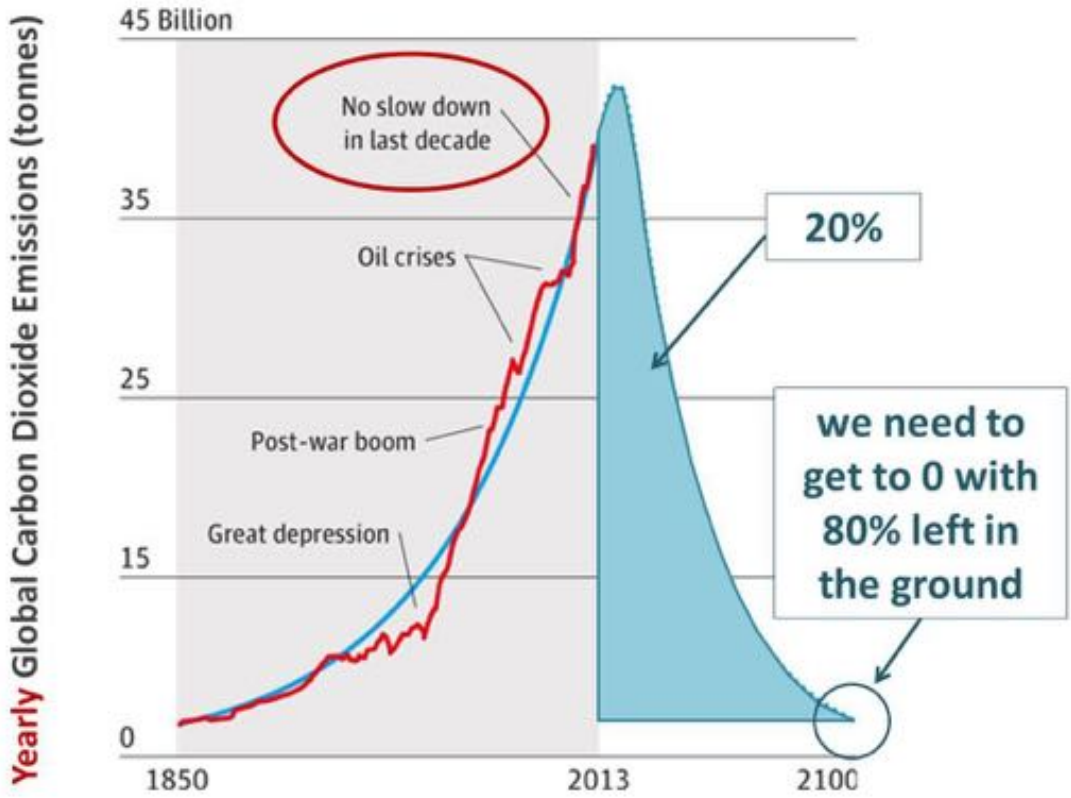
the clean energy sector – hydro, wind, solar, biomass, and thermal power – is actually higher than total employment in the oil sands. And the clean energy sector is growing fast.



2) We need to decrease carbon emissions *very* quickly

Governor Jay Inslee of Washington State correctly summarized the situation when he said, "We are the first generation to feel the effects of climate change, and the last generation that can do something about it."

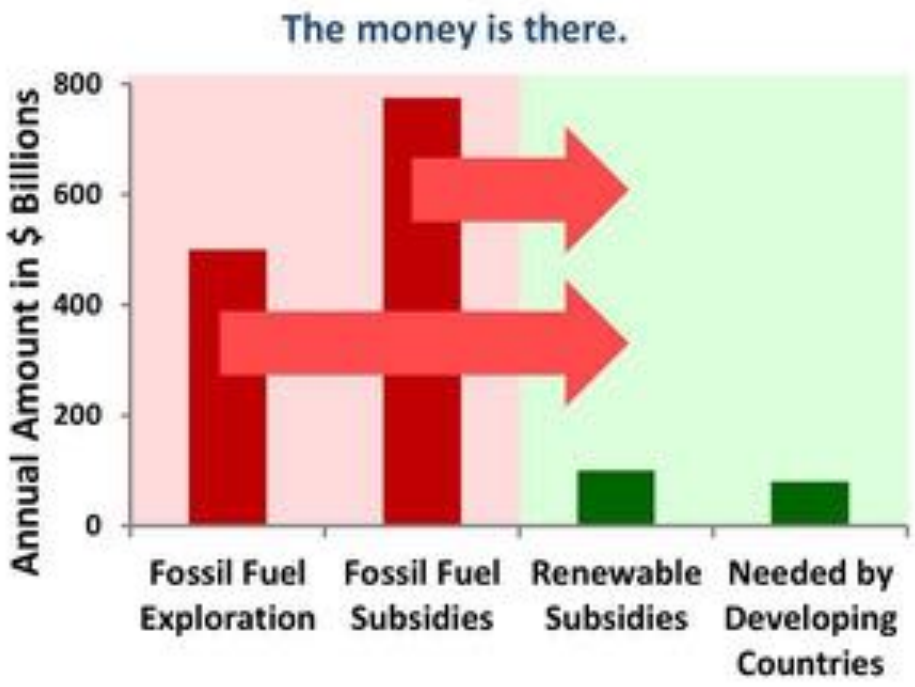
Although we have known for at least 25 years that we need to 'get off' fossil fuels, each year we burn *more* fossil fuels. This means that we are now in a very urgent situation. Reducing our use of fossil fuels fast enough to leave 80% in the ground means we have to stop increasing emissions within the next 5 years. Emissions then need to drop precipitously to 50% of current emissions by mid-century and to zero by the end of the century, as shown below.



3) We need to reprioritize how we spend money

Although the vast majority of fossil fuels cannot be burned if we are to avoid catastrophic climate change, fossil fuel companies currently spend about *$500 billion per year* searching for new reserves of fossil fuels. Additionally, governments around the world are providing fossil fuel companies with about *$775 billion per year* in subsidies.

Compare this to world government subsidies for renewable energy: $100 billion per year. As long as governments continue to actively support the fossil fuel industry with subsidies that far outweigh subsidies to renewable energy, we will not transition off of fossil fuels. The fossil fuel industry needs to stop looking for new fossil fuels and invest in green energy. Governments need to stop subsidizing fossil fuel companies and invest in renewable energy development, and in helping those most vulnerable to climate change impacts. On the current path, fossil fuel companies and the governments that support them are pushing us towards a world of unfathomable human suffering, all for short-term economic gain.



4) Proposing fossil fuel divestment

Fossil fuel divestment says more clearly than any other action, that continuing the fossil fuel economy is *untenable and unethical*.

Fossil fuel divestment is also *necessary* if we are to succeed in shifting off fossil fuels entirely, with 80% of known reserves left in the ground. Here is why:

Given their huge investments in infrastructure for fossil-fuel extraction and transportation - e.g. deep sea oil rigs, pipelines, heavy machinery - fossil fuel companies are unlikely to shift out of fossil fuels on their own. Governments will need to 'push' them out of fossil fuels by (i) ending subsidies to fossil fuel companies, (ii) supporting renewable energy, and (iii) putting a price on carbon emissions. All of this has been known for years, but so far this transition has not started. Politicians have made positive-sounding speeches, but very little real action has ensued.

How can we push governments to push the fossil fuels industry to get out of fossil fuels? We know that money talks, and *publicized divestment* from fossil fuels sends a powerful message that can influence governments. Divestment says, "We are taking our money out of fossil fuels and, as our government, you need to take *our* (tax) money out of fossil fuels too, and start supporting a sustainable future."

As an example of the impact of publicized divestment, Marc Carney, current governor of the Bank of England and former governor of the Bank of Canada, recently stated that "the vast majority of fossil fuels cannot be burned" if we are to avoid catastrophic climate change.

One reason that Carney is speaking out is that, if governments do take the appropriate actions (above) to limit global temperature increase to less than +2°C, then fossil fuel stocks are currently greatly over-valued (the 'carbon bubble'). The 80% of fossil fuels that must be left in the ground will become a 'stranded asset.' So, from a strictly financial perspective, there is good reason to

get out of fossil fuel stocks. This is why Carney has instructed the Bank of England to look into the risks of stranded fossil fuel assets to the UK economy.

Mark Carney: most fossil fuel reserves can't be burned

Others are already divesting. A move by Carleton to divest from fossil fuels would put us in good company. Twenty-five other universities have already committed to divesting from fossil fuels. These are mainly in the US, but they also include universities in the UK, New Zealand, Australia and Sweden. At the University of British Columbia, students and faculty have voted in favour of fossil fuel divestment.

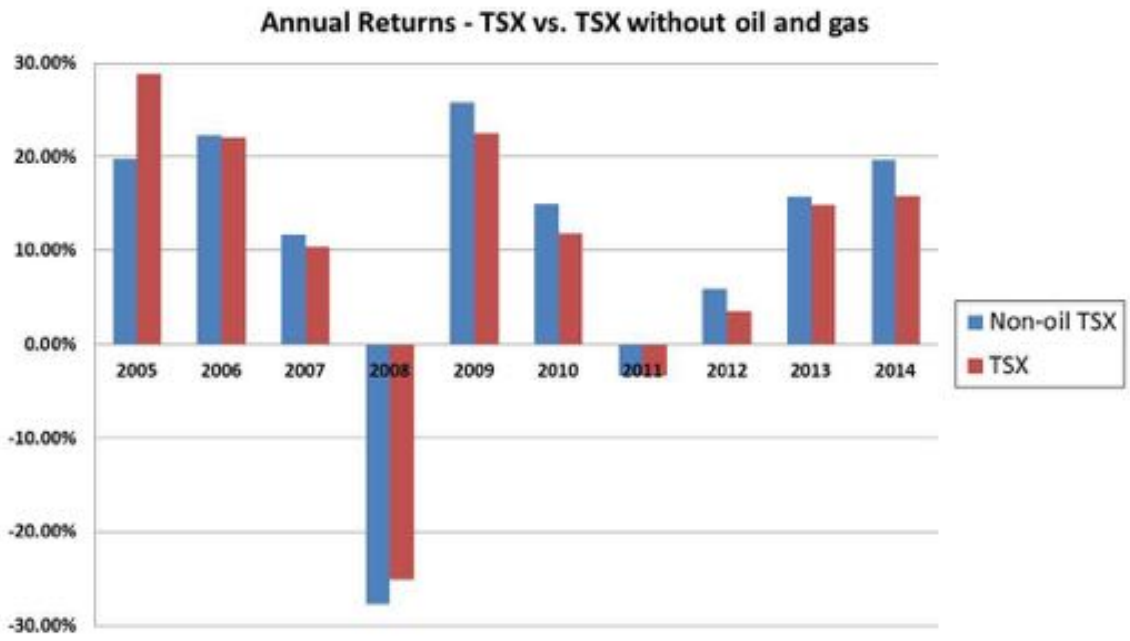
While the fossil fuel divestment 'movement' began in universities, it has quickly spread to other institutions. This includes at least 70 philanthropic organizations; the most publicized of these was the decision in Sept 2014 by the Rockefeller Fund to divest from fossil fuels. In addition, 38 cities have committed to divesting from fossil fuels, mainly in the US, but also in the UK, Australia, the Netherlands and Sweden. Finally, at least 67 churches around the world have divested from fossil fuels, reflecting the strong moral imperative for fossil fuel divestment.

Some practical questions

- **What about shareholder engagement?** Some have suggested that, rather than divesting from fossil fuels, shareholders should use their shareholder rights to become 'engaged' in company decisions to change them from within. In the case of climate change and the fossil fuel industry, shareholder engagement is unlikely to work on its own because to avoid catastrophic climate change, fossil fuel companies need to get out of fossil fuels altogether. Shareholder engagement in this case would mean, for example, demanding that an oil company stop being an oil company. In other words, it is the company product itself that is the problem, not the business practices of the company.

On the other hand, shareholder engagement by some large investors might have an effect if it is paired with ongoing divestment (of others) from the company. In other words, divestment gives teeth to engagement; the shareholder can argue on moral grounds that the company should get out of fossil fuels, and can use ongoing divestment to support that moral imperative. For example, the Church of England, a large shareholder in BP and Shell Oil, has submitted shareholder resolutions to these two companies, calling on them to develop a plan to phase out of fossil fuels. Ongoing divestment from these same two companies supports the church's moral argument that it is wrong for these fossil fuel companies to remain in the fossil fuel business.

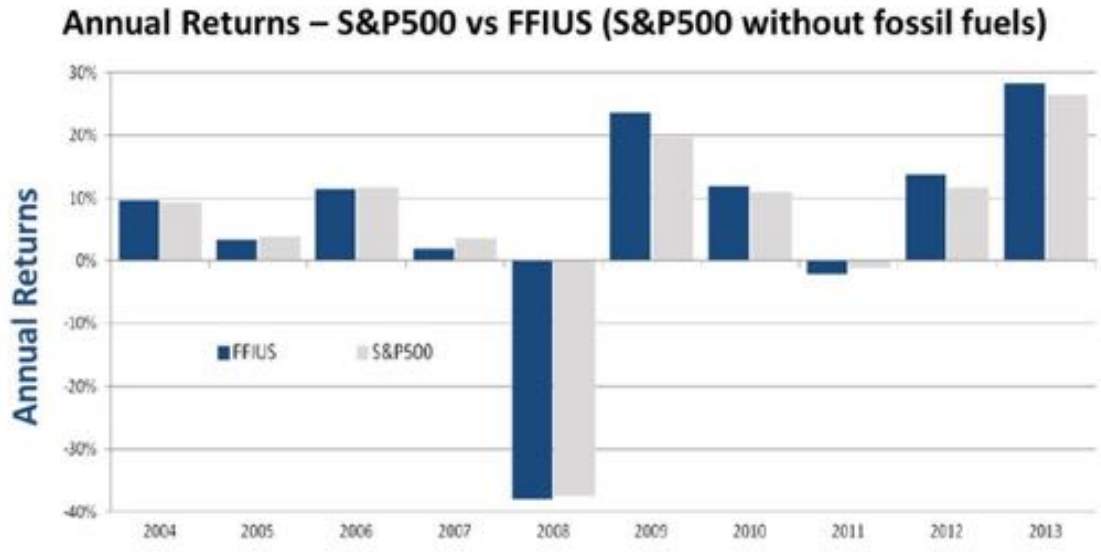
- **How will divestment impact investment returns?** Canadians contemplating fossil fuel divestment often assume that they will not make the same returns on their investments if they exclude fossil fuels. However, data compiled by analysts at Greenchip Financial show this is a false assumption (graph below). *In 7 of the last 10 years, returns on the TSX60 without oil and gas companies are higher than returns with the oil and gas companies included*.



It is also significant that *the non-oil TSX out-performed the TSX in the 5 years preceding 2014*. One reason for this is the increasing costs of fossil fuel extraction (e.g. tar sands, deep-sea drilling), which are reducing the profit margin of the industry. In fact, within the next two years it will become *cheaper to produce electricity with renewables than with fossil fuels*, even with the huge subsidies going to the fossil fuel companies.

Some financial analysts may point out that, averaged over the past 30 years, returns on the TSX are higher than returns on the non-oil TSX. But the world is changing fast. The next 30 years will be nothing like the last 30 years. Looking forward, investment in fossil fuels is not a good bet.

The same pattern is true in the US, as shown below in a comparison of the S&P500 index with and without fossil fuel companies, compiled by Fossil Free Indexes. Since 2009 the S&P500 without fossil fuels has out-performed the S&P500.



Conclusion

Human-caused climate change, due to the burning of fossil fuels, is the greatest challenge humanity has yet faced. To stop climate change before it becomes catastrophic will require a rapid, wholesale transition from the fossil fuel economy to a new economy based on renewable energy and energy conservation. Standing in the way of that transition are the short-term profits of some of the world's largest companies. Individual citizens and non-governmental organizations have tried various ways to reduce fossil fuel consumption and associated carbon emissions, but carbon emissions have continued to rise. Knowingly driving the world towards large-scale calamity, when the solutions for avoiding that calamity are available, is simply wrong. Publicized fossil fuel divestment makes that statement more clearly than any other action can. By divesting from fossil fuels the Carleton Pension Fund would place Carleton on the right side of the defining issue of our time.

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https://openknowledge.worldbank.org/bitstream/handle/10986/12750/702670ESW0P10800EACCSynthesisReport.pdf?sequence=1 While politicians make positive-sounding speeches, very little real action has ensued.