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# Investing in a Sustainable Future

*We, as an Institution, should do better.*

In January of 2018, New York City moved to freeze all new fossil fuel investments and begin the process of divesting their public employees' pension funds. This action sent shockwaves throughout the world, bringing further attention to a worldwide divestment movement that has been slowly building momentum for seven years. Upon declaring the city's new direction with its pension, valued at \$5 billion, Mayor Bill de Blasio stated, "we're bringing the fight against climate change straight to the fossil fuel companies that knew about its effects and intentionally misled the public to protect their profits".<sup>1</sup>

As the dangers and impacts of climate change become increasingly clear, the call to transition away from fossil fuels becomes stronger. Whether it be from the millions of people around the world participating in climate strikes, investment banks refusing to back fossil fuel projects, or in the laboratories of institutions of higher education around the world where research on mitigation strategies is being undertaken.

It is no secret that the fossil fuel industry is a significant contributor to climate change through the extraction, transportation, and supplying of fossil fuels. We must acknowledge that business as usual production is not compatible with our climate change mitigation targets, and that we need to transition to a low carbon economy as quickly as possible to avoid the worst impacts of climate change. With this knowledge of climate change and the transition we must undertake, we believe that it is not in Queen's best interests to continue being invested in the fossil fuel industry.

In addition to the clear moral imperative, divestment also provides protection from the carbon bubble and overvaluation. Divestment has shown to cause no negative financial impacts, as seen through the performance of the 1000s of other divested funds across the world. This discredits the previous claim by Queen's that divestment would result in reduced financial returns. Therefore, QBACC is calling on Queen's to:

- 1. Freeze fossil fuel investment immediately**
- 2. Create a separate fully divested, opt-in endowment fund.**
- 3. Divest the Queen's Investment Fund by 2025.**

The QBACC divestment asks are the product of limitations regarding the Pension Fund and Endowment Fund; and the nature and principles of the Pension Law and Trust Law, both of which severely limit the ability to adapt those funds into a divested fund. However, the creation of a separate, fully divested, opt-in endowment fund would allow donors to make an autonomous decision for the future of their donation.

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<sup>1</sup> (Milman 2018)

## INVESTING IN A SUSTAINABLE FUTURE

That coupled with the regulatory flexibility of the Queen's Investment Fund allows us to provide the best options for future donors and investors moving forwards.

The following provides information on what divestment is, updated information regarding divestment, its implications, why Queen's should divest, and how you can help. This booklet is fully cited, and we invite you to read the materials we have cited. We have also left our contact information at the end of the book, and we encourage your correspondence if anything is unclear.

Divestment sends the message that we, the Queen's community, expect Canada to honor its Paris Climate Accord commitments to restrict warming to less than 2°C, by preparing ourselves to mitigate the effect an emission reduction policy, which would be paired with a commitment to keep fossil fuels in the ground, will have on fossil fuel companies values, and thus our investment funds.

The scale and manner to which fossil fuel companies operate is incompatible with the Paris commitments and, as the industry shows no sign of changing, we must divest. Divestment's intention is not necessarily to isolate the oil and gas industry, but to push for sustainable development, where environmental concerns are integrated into economic development. We want to pressure companies to act in a sustainable manner, divestment is the enforcement mechanism. Fossil Fuel companies are unable to truly act in a sustainable way as their very product is causing climate change, any meaningful action must be focused on reducing the current levels of fossil fuel emissions. These companies are operating in ways which are incompatible with a world where we keep below 2 degrees warming. Divestment is intended to put pressure on federal and provincial government agencies to create sustainable development programs now so we can move away from fossil fuels and mitigate the negative impacts of an economic shift, including structural unemployment.

### What is Divestment?

Divestment is the opposite of investment, it means to sell off your stake (stocks) in a specific company for financial, social or any number of reasons. when cigarettes were found to cause cancer many doctors' pension funds rid themselves of their holdings. Divestment is a continuation that how a person earns their money is an extension of themselves, and that by earning money from an unethical source, the person is acting unethically.

Using investment funds for symbolic political action has a long history, apartheid South Africa, tobacco, Pinochet Chile, and many more have been the subjects of successful campaigns. The idea behind divestment is the same idea behind embargos and sanctions, by refusing to lend a company money (buying their stock) due to their amoral behavior, you publicly shame them and force them to confront this criticism. In many ways, it is an extension of non-participation protest made famous by Mahatma Gandhi. Although Queen's may be viewed as an insignificant investor and our divesting from fossil fuels may not

have a financial impact on the company and by extension the environment, the refusal to participate as they act in a manner in which we do not approve of is extremely effective and significant. By removing money from stocks, bonds, or investment funds that do not align with the investor's values, the ethical integrity of their fund can be secured.

The fossil fuel divestment movement began in 2011 when environmental journalist Bill McKibben's organization 350.org made a call for universities to divest from the fossil fuel industry. In the years since, the divestment movement has spread internationally. Over 848 funds from 76 different countries have made a partial or complete pledge to divest, accounting for more than \$7.93 trillion in value for divested funds as of January 2019.<sup>2</sup>

At the end of this document is a brief list of organizations and funds that have divested with references, as well as a sample of companies from whom we are calling on the university to divest. If Queen's divested, it would be joining some of the largest and most notable institutions in the world, including the University of California, the Rockefeller Brother Fund, the Country of Ireland, and the London School of Economics.<sup>3</sup>

## Climate Change, the Greatest Threat of Our Time

Scientists around the world agree that in order to prevent the environment from dramatically changing and eventually bringing about a sixth mass extinction, the global average temperature must not exceed 2°C from pre-industrial levels.<sup>4</sup> Agreements like the Paris Climate Accords set targets with this goal in mind. However, meeting this requirement requires 80% of the world's current fossil fuel reserves to stay in the ground. This raises serious concerns as fossil fuel

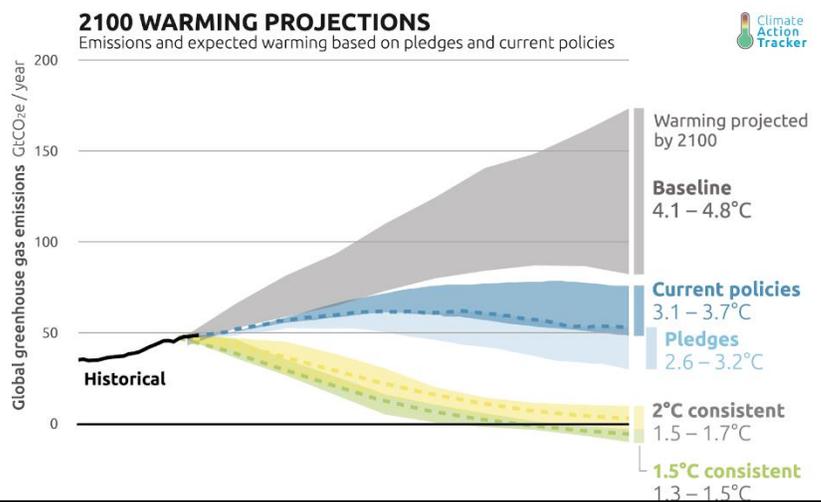


Fig 1.6 As seen here current policies are incompatible with keeping carbon limits to 2 degrees<sup>33</sup>

companies are set to extract over five times the carbon budget.<sup>5</sup> Additionally, Canada's use of fossil fuels

<sup>2</sup> (Divestment Commitments. n.d.)

<sup>3</sup> (Carrington, Fossil fuel divestment soars in UK universities 2016)

<sup>4</sup> (Ripple, et al. 2017)

<sup>5</sup> (McKibben 2016)

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makes us one of the top ten global emitters of CO<sub>2</sub>.<sup>6,7</sup> The evidence and proof of anthropogenic climate change are irrefutable.<sup>8,9</sup> From the exponential warming of the Andes, to the changing geography of the lakes and rivers all around the world, to the many drought and wildfire crises on the western edge of North America, climate change is becoming more immediately visible in the northern hemisphere.<sup>10</sup> Rising sea levels and increases in extreme weather events pose a growing threat as global atmospheric and oceanic temperatures rise. This puts a particular stress on island nations and coastal populations.<sup>11,12</sup> Warming oceans, in turn, lead to ocean acidification that severely disturbs marine life, especially coral reefs.<sup>13</sup> Warming temperatures and pollution lead to more instances of disease, infections and heat-related deaths. Areas that will experience the most impact from climate sensitive diseases are also the areas with the least resources available to adapt to them.<sup>14</sup>

To divest is to acknowledge the role that financial backers have played in cultivating and entrenching society's dependence on nonrenewable energy. Public commitment to sustainability and environmental protection is inconsequential without equal financial commitment to the same principles. The role that oil and gas has played in climate change and environmental degradation is known; divestment recognizes this and takes away the financial backing for these companies.

The movement is already well established. Last January the Irish government passed a law forbidding public investment in fossil fuels, fully divesting the €8bn Irish Strategic Investment Fund.<sup>15</sup> Deputy Thomas Pringle, who first proposed the bill was quoted as saying:

*“We cannot accept their actions while millions of poor people in underdeveloped nations bear the brunt of climate change forces as they experience famine, mass emigration, and civil unrest as a result.”*

As land close to the equator becomes dryer and unlivable and the islands of the Pacific succumb to rising ocean levels and declining fish stock, their residents will be forced to migrate. As these millions are forced to leave their homes, conflict is likely to arise. This can be seen during the Arab Spring uprisings of 2013, where a prolonged droughts impact on the cost of food, particularly wheat, created pressure which, when combined with the other sociopolitical and economic strains, resulted in the uprisings.<sup>16</sup> A joint study between the Center for American Progress, the Center for Climate and Security and the Stimson Centre

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<sup>6</sup> (Statista 2017)

<sup>7</sup> (Environment and Climate Change Canada 2017)

<sup>8</sup> (Earth Science Communications Team 2017)

<sup>9</sup> (G. Hansen 2016)

<sup>10</sup> (Michelutti, et al. 2015)

<sup>11</sup> (UN-Habitat 2017)

<sup>12</sup> (Patz, Campbell-Lendrum, et al., Impact of regional climate change on human health 2005)

<sup>13</sup> (Welch 2017)

<sup>14</sup> (Patz, Campbell-Lendrum, et al., Impact of regional climate change on human health 2005)

<sup>15</sup> (Osborne 2017)

<sup>16</sup> (Perez 2013)

stated that “The Arab Spring would likely have come one way or another, but the context in which it did is not inconsequential. Global warming may not have caused the Arab Spring, but it may have made it come earlier.”<sup>17</sup> Climate change will continue to exacerbate existing issues, again showing that we need decisive and effective action in all sectors.

As well, the increases in diseases, decreased food production, and a decline in living conditions due to climate change have led to an onset of climate refugees from these underdeveloped nations.<sup>18</sup> The actions of the developed world have consequences which are disproportionately affecting the developing world. Canada is viewed by many as an environmental wonderland, populated by citizen-stewards who love and care for nature. It is time this fantasy becomes a reality. Canada must become a climate leader, as a member of the G8 and the 10th largest economy, our actions are closely watched around the world. If we take the necessary actions that are needed to halt this environmental crisis, we can show that this issue deserves our top priority and that the decisions we make today will shape the future.

We must start with what we have in our control; states have always been changed by the ideas born and nourished in institutions of higher education. Queen’s impact by choosing to divest would send shockwaves across the country and affirmatively show that this forward-thinking institution is joining the thousands of others in accepting total climate action is imperative, and that our financial systems cannot not be exempt. Queen’s must be the change we wish to see in this country to make Canada the change we wish to see in this world.

## Why Divestment?

Divestment is the right choice for Queen’s to make because it shows that we are taking sustainability seriously. Remaining invested in fossil fuels indicates that Queen’s does not expect regulation to come in to place to keep us below 2 degrees, that we will fail in our Paris Commitments and we will allow climate change. Engagement with the companies has failed and now there is no other choice but to divest. We have identified 4 main reasons why divestment is the appropriate action to be taken.

1. Climate change is an existential crisis and there is a moral obligation to act. To not act using our resources and knowledge in our greatest capacity is to participate willingly in the destruction of the natural environment.
2. Divestment means better financial returns and protection from the risks posed by fossil fuel investments.
3. Queen’s could position itself as a global leader by listening to its researchers and respecting science, while remaining dedicated to preserving the future for its students.

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<sup>17</sup> (Perez 2013)

<sup>18</sup> (Taylor 2017)

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4. Divestment is a necessary extension of Queen's commitment to positive environmental action. Divesting allows us to claim to do this in good faith and to invest with integrity.

The goals of our divestment campaign are: a) to press for significant government action to create policy which integrates environmental concerns into all facets of development and thus prevent further exploitation of fossil fuel reserves, b) to pressure industry and business to willingly implement best practices, and c) to pressure governments to create programs to minimize the impact of the downturn of the oil industry. Divestment causes stigmatization of the industry, removing its social license, and forcing investors to consider the wider social and environmental effects of their investments. What Queen's does impacts everyone.

### Queen's and divestment

QBACC had previously requested divestment in 2014, resulting in the creation of an advisory committee made up of professors and board of trustee members.\* They recommended that Queen's not divest arguing that "a) the case for divestment on the basis of 'social injury' advanced by the petitioners is



not compelling, and b) that, leaving a) aside, the committee does not believe divestment to be an effective tool in mitigating the risks of climate change." In former Principal Woolf's letter to the University he also cited an additional reason, "the harm to the University produced by divestment (both in potential reduction to investment returns and in the negative signals sent to alumni and donors involved in the fossil fuel industries) vastly outweighs the positive benefit, if any, of divesting".<sup>19</sup>

This response contains several inaccuracies and sets a concerning precedent. Firstly, to the claim of divestment not being an effective response to climate change, we believe continuing to fund and support an industry that's product is driving climate change and actively undermining efforts to transition away, is a far poorer response to the risks of climate change. Secondly, the claim of reduced returns has been debunked as seen through (a) the data provided by the "decarbonizer", an investment tool that measures the potential gains funds could have earned had they divested, (b) the forthcoming risks of the carbon bubble, (c) divested funds around the world and (d) the continued investor flight from the oil industry. Thirdly, Queen's has a fiduciary duty to make financial decisions independent of its funding. Sentiments

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<sup>19</sup> (Woolf 2015)

iterated by the former Principal above clearly indicates that this was not the case in the previous decision against divestment. As the Association of Governing Boards says “*Fiduciary responsibility entails three particular duties to the institution, commonly known as the fiduciary duties of care, loyalty, and obedience. Taken together, they require board members to make careful, good-faith decisions in the best interest of the institution consistent with its public or charitable mission, independent of undue influence from any party or from financial interests*”<sup>20</sup>. It is clear that Queen’s did not act in a way independent of third-party influence during the last divestment campaign.

## Financial Impact

### The Carbon Bubble and Carbon Budgets

Fossil fuels investment values across the globe are falling, and risks of declining fossil fuel demand compounded with the adoption of cleaner energy production processes continues to drive down fossil

fuel stock prices.<sup>21</sup> Although, these demand shocks are insignificant compared to the risk of the Carbon Bubble. Fossil fuel companies are currently vastly overvalued because fossil fuel companies operate under the assumption that most of their proven reserves will be exploited.<sup>22</sup> The Carbon Bubble, or stranded asset problem, becomes painfully obvious when the current reserves of fossil fuel companies are compared to the “carbon budget”, the amount of fossil fuels that can be burned to keep humanity below catastrophic levels of warming.<sup>23</sup> The most common benchmarks are 1.5C and 2C levels of warming from pre industrial levels. The Paris Climate Accord agreed to keep emissions “well below” the 2C level, leading to the creation of a 1.5C carbon budget. This measure gained more traction with the release of a report from the United Nations Intergovernmental Panel on Climate Change (IPCC) showing the damage the additional 0.5C increase would cause.<sup>24</sup>

Carbon budgets are made by using the *likelihood of warming percentage* corresponding to that level of CO<sub>2</sub>. As existing emissions saturate the planet’s ability to absorb new carbon, there is significant debate among scientists about what the carbon budget should be and how to factor in external emissions

Comparison of the global 1.5°C carbon budget with fossil fuel reserves CO<sub>2</sub> emissions potential.

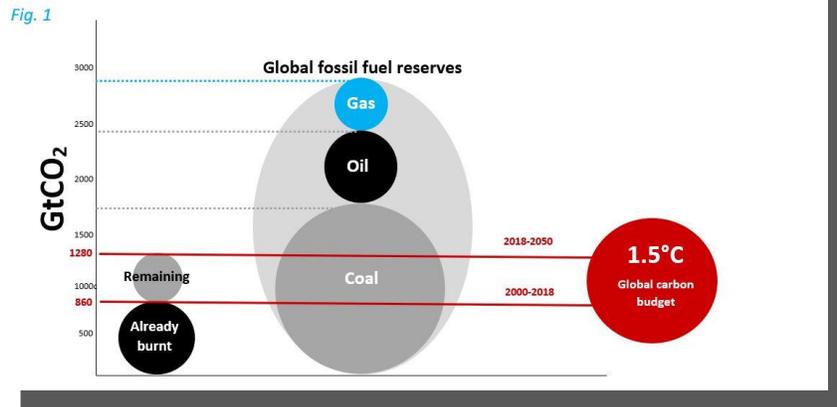


Fig 1.2 The Carbon Budget

<sup>20</sup> (Fiduciary Duties n.d.)  
<sup>21</sup> (Randall 2016)  
<sup>22</sup> (Leaton, et al. 2013)  
<sup>23</sup> (Genus Capital 2018)  
<sup>24</sup> (Climate Change n.d.)

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(volcanos, land use changes, aerosols, etc.). It also involves comparing the *emissions to temperature change relationship*, the relationship Co2 emissions have on the temperature. This is difficult to calculate as there was little tracking in the early part of the 20th century and there is no way we can know of all the emissions emitted in any year since the industrial revolution, when emissions first began to rise significantly.<sup>25</sup> Depending on the source and method evaluation we have between 118 and 570 Gt CO<sub>2</sub> left in our 1.5C budget (>66% likelihood of avoiding warming).<sup>26</sup> Among the 5 major sources we chose to use the budget of 420Gts, the global surface area temperate measure, the 2nd largest carbon budget. Despite these difficulties in calculating the exact impact it is clear that reserves vastly outweigh allowable emissions.<sup>26</sup> It is not a question of *if* allowed emissions are above reserves, it is a question of *how much*.

We can now see in Fig 1.2 that between 2000 and now we have used 860Gt of Co<sub>2</sub>, leaving us 420Gt left. This means that in the past 18 years we have used approx. 2/3 of our carbon budget of approx. 1280 Gt. Last year emissions were 32.5Gt,<sup>27</sup> up 32.1Gts from 2016.<sup>28</sup> If we continue on this path, we only have about 13 years before the budget is exhausted. For more about carbon budgets and how they are constructed follow [this](#) link or go to Carbon Brief.org to read the article *Why the IPCC 1.5C report expanded the Carbon Budget* by Zeke Hausfather.

It was also estimated by the IPCC that global fossil fuel reserves are somewhere between 2,734 and 5,385Gt<sup>29</sup>. The fact that fossil fuel companies continue to invest significant amounts of money on expanding exploration is a clear indication that the fossil fuel industry is not anticipating drastic government action to curb future consumption to a level that would allow us to meet our climate obligations.

The *catch-22* or lose-lose situation created here is simple; either our investments in fossil fuel companies will be successful in extracting and selling their proven reserves, therefore exceeding the carbon budget and pushing earth's climate to unsustainable levels, but allowing us recognize the current valuation of these stocks, or the carbon bubble will "pop" and we will lose significant value from our investments due to the new requirements that oil, coal, and gas reserves be left in the ground.

### Fossil Fuel Companies Response to the Carbon Bubble

Following the publication of the first Carbon Bubble research by The *Carbon Tracker Initiative*, Shell and ExxonMobil, companies Queen's is invested in, released letter to their investors. They accepted that climate change is real but denied that their reserves would be impacted, essentially denying the conclusions of the report. With Shell reporting "we do not believe that any of our proven reserves will

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<sup>25</sup> (Corporate Knights 2015)

<sup>26</sup> (Hausfather 2018)

<sup>27</sup> (Reuteurs 2018)

<sup>28</sup> (International Energy Agency n.d.)

<sup>29</sup> (Mattauch 2016)

become stranded.” and Exxon Mobil claiming “we are confident that none of our hydrocarbon reserves are now or will become stranded<sup>30</sup>. These companies have shown a willingness to ignore research which is incompatible with their financial performance and continue on with business as usual operations, despite the risk to investors and the planet.

### Emissions Targets and Environmental Action

Compounding this stranded asset problem is the new onset of national and international pollution reduction commitments stemming from the Paris Climate Accords limit to 2°. These new carbon limits will reduce the amount of fossil fuels allowed to be burned, decrease demand and further leave reserves stranded. For example, Canada has signed on to reduce its emissions to 30% of 2005 levels by 2030.<sup>31</sup>

However, the previous benchmark of 2C is beginning to fall out of favor as an acceptable limit. As mentioned on the previous page the IPCC released a study in 2018 which showed that many of the drastic changes of 2C warmth come at 1.5C.<sup>32</sup> The study recommended a 45% reduction in emissions from 2010 levels by 2030 in order to achieve the 2050 carbon neutral target. This has significant implications for the oil industry, with scientists at the University College of London saying that 85% of Canada’s tar sands reserves will have to remain unextracted to meet emissions targets of 2C<sup>33</sup>, leading to more concerns that a limit of 1.5C would further increase the percentage which must remain unextracted.

### The Impacts of Supply and Demand on Fossil Fuel Prices

Thierry Lepercq, head of research at French energy company Engie has said that within the next 10 years the growth of renewable energy could force oil down to \$10 a barrel<sup>34</sup>. As a comparison, Suncor, a company Queen’s has CAD \$6,674,659.98 invested in across all funds, currently operates at a breakeven price of \$40 a barrel.<sup>35</sup> With renewables showing no signs of slowing, and sectors previously reliant on fossil fuel, like transportation and heating, moving to low

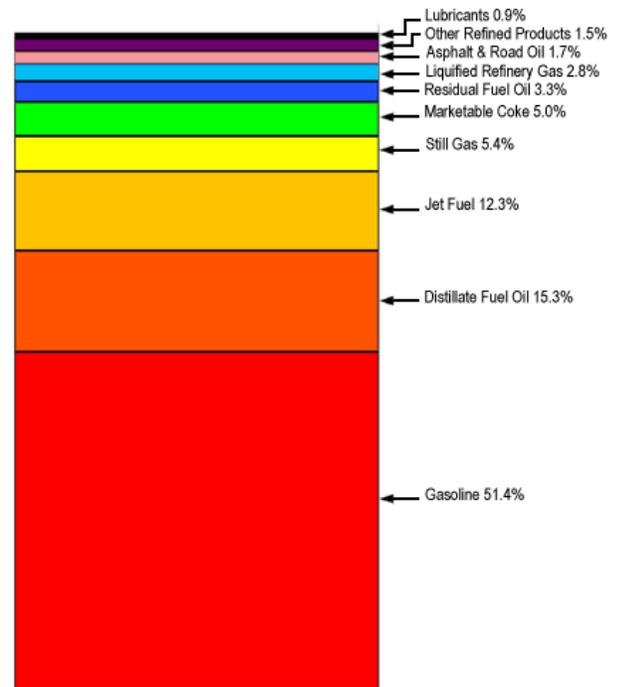


Fig 1.3 Breakdown of what oil is used for. As you can see, gasoline is produced far more than anything else.

<sup>30</sup> (Hope 2014)  
<sup>31</sup> (Climate Change n.d.)  
<sup>32</sup> (Canada’s National Reports to the United Nations Framework Convention on Climate Change (2017) 2019)  
<sup>33</sup> (McGlade and Ekins 2015)  
<sup>34</sup> (Johnston 2017)  
<sup>35</sup> (Orland 2017)

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/ no carbon sources, the loss of demand would be catastrophic for these companies and subsequently Queen's holdings. These demand shocks will change the landscape of the fossil fuel industry and force major cost cutting changes until they are no longer viable.

### ***Oil Productions Break-Even Price***

The tar sands operations are capital heavy, meaning that they require more energy and money to extract the oil out of the ground and refine it compared to their counterparts elsewhere. Following the steep decline of oil prices in 2014, the viability of these investments was called in to question, with many major fossil fuel companies selling off their stakes in projects.<sup>36</sup> Canadian oil has one of the highest break even prices in the world, leading to the companies themselves deeming these investments unsafe.

### ***The Falling Costs of Renewables***

Another factor compounding on the overall decrease in the security of fossil-fuel companies' investments are the renewables siphoning off their demand. As of January 2018, the average cost of onshore wind energy is \$0.06 per kilowatt hour (kWh), while the costs of solar PV average at about \$0.10 (kWh). This is present data and doesn't consider the predictions of further falling prices. For reference, the average cost of fossil fuel energy is between \$0.05 and \$0.17. These demand shocks and production cost variances will be a double hit to the fossil fuel industry.<sup>37</sup>

## The Performance of Divested Funds

The New Zealand Superannuation fund is fully divested and posts a 10.4% after costs return, one of the highest returns for a super fund. Valued at \$36.4 billion NZD (32 billion CAD) it is one of the largest fully divested funds in the world.<sup>38</sup> All investments are vetted for social, environmental and corporate governance concerns, showing that money can be made while adhering to the principles of corporate social responsibility. The reasons many pension funds have opted to divest are that emission regulations are anticipated to increase and hurt the fossil fuel industry. In October 2017 Canada's second largest pension fund, Caisse, announced plans to cut their portfolios carbon footprint by 25% by 2025 due to the global marketplaces transition to an increasingly low-carbon economy. Michael Sabia, the CEO of Caisse stated "*There are going to be stranded assets associated with climate change, we don't want to get caught in those stranded assets ... We're looking for opportunities because we think it's good risk management to, over time, exit those*".<sup>39</sup> It is increasing clear that the smart money is leaving fossil fuels, risk averse funds like Queen's investment and endowment should be ensuring that the money is protected from external

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<sup>36</sup> (The Canadian Press 2017)

<sup>37</sup> (Dudley 2018)

<sup>38</sup> (Bradley 2016)

<sup>39</sup> (Nelson, Praet and McCarthy 2017)

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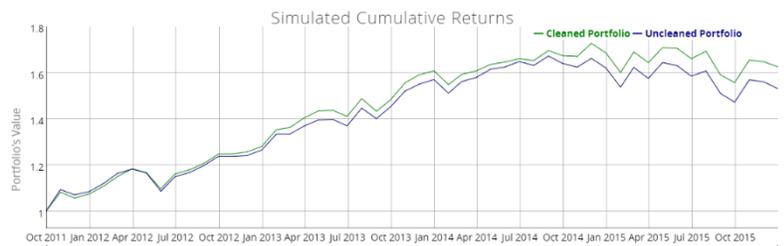
risk. Additionally, Genus Capital Management has found that those who have divested from fossil fuels have not received smaller returns. In fact, over a five year period (May 31<sup>st</sup> 2013 to July 31<sup>st</sup>, 2018), a Genus Fossil Free Equity Fund outperformed a benchmark fund by approximately 2 percent annually.<sup>40</sup>

### ***How much money Queen’s could have earned and the methodology of the decarbonizer investment calculator***

Queen’s investment exposure to the fossil fuel industry is high with approximately 5.1% of the pension fund, 4% of the endowment fund and 5.7% of the investment fund consisting of fossil fuel companies. Queen’s could have earned an additional USD~104 million (137.5M CAD), \$75M USD (\$100.275M CAD) from the pension fund (an extra \$16,265 CAD for its members)\*, \$4.7M USD (\$6M CAD) from the investment fund and \$24.9M USD (\$32.6 M CAD) from the endowment fund at the end of 2015, more in returns on their investment had divestment of equities occurred in 2012. The numbers were found using

the Decarbonizer Investment Calculator. To compute this, the funds’ historical data, provided by Queen’s, was used. The fund’s total in terms of USD at the time of investment in 2012 was calculated. The stocks that were considered high polluting were then removed and reinvested fairly back into the remaining stocks within the fund, creating a theoretical “green fund.” This did not include bonds or mutual

funds, only explicit equities. No new stocks were added. The values were then compounded over monthly periods for three years. In 2015 the value of the green fund was compared against the value of the original fund, with the results showing that there was a substantial increase in value when the money was invested in the green fund.<sup>41</sup>



(Fig 1.4) Highlights the differences in returns between a hypothetical “green” Queen’s pension fund and the existing pension fund.

<sup>40</sup> (Genus Capital 2018)

\* Based on 3,868 active members and 2,297 pensioners & beneficiaries, data retrieved from Queen’s Investment Office and due to the exchange rates these values would of been \$100.275M for the pension fund, \$6M for the investment fund and \$32.6M for the endowment fund had the money been converted to CAD immediately upon the end of the evaluation.

<sup>41</sup> (Corporate Knights 2015)

## Misconceptions About Divestment

There are a variety of arguments which have emerged in response to divestment campaigns, this section will seek to provide direct rebuttals to them.

### There are no good alternative investments

Environmental responsibility does not need to be sacrificed to create exceptional returns. As socially responsible funds around the world have continued to show. As stated earlier, the money found in the decarbonizer was used to simply increase the investments in other stocks within the fund. Divestment does not require Queen's to search for new stocks to invest in, it simply involves removing the fossil fuel stocks. Furthermore, a Harvard School of

*"Investors with long-term horizons should avoid oil stocks on investment grounds. They face sustained headwind...Ethical arguments for divestments are simply not necessary. They are a pure bonus."*

- Jeremy Grantham, CEO of Grantham, Mayo, & van Otterloo (GMO). One of the largest asset management firms in the world.

Business study found that companies which invested in sustainable material issues enjoyed 4.50% raw return on investments for a year, while companies that neglected sustainable material issues experienced a -2.60% loss on raw return, meaning that companies that invested into ways to be sustainable in their fields experienced a better rate of return compared to companies that did not.<sup>42</sup> Simply put, if the company cares about the wider impacts of its actions, the data suggests it performs better.

### Canadian Oil is the Cleanest Oil in the World / We Have the Best Regulation

The oil and gas industry have long claimed that Canadian Oil is among the cleanest in the world, and that any reduction to Canadian producers' ability to produce would force the consumption of oil to be less environmentally friendly through the import of oil from countries with less stringent environmental standards. To clarify, extraction, transportation, and refining of crude oil accounts for approximately 20-30% of the total lifecycle GHG emissions for petroleum, the most commonly produced product.

This is what is known as a "Well to Wheels" evaluation. A 2014 study of the lifecycle of various oil producers by the United States Congressional Research Service concluded in various primary research findings that Canadian oil "emit(s) an estimated 17% more GHGs on a life-cycle basis than the average barrel of crude oil refined in the United States; compared to selected imports, Well-to-Wheels GHG emissions for Canadian oil sands crudes range from 9% to 19% more emission-intensive than Middle

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<sup>42</sup> (Khan, Serafeim and Yoon 2015)

Eastern Sour, 5% to 13% more emission-intensive than Mexican Maya, and 2% to 18% more emission-intensive than various Venezuelan crudes".<sup>43</sup> This is due to the lower quality of the Canadian oil. As the oil is heavy, meaning it has a higher concentration of carbon, and high in sulphur, it is more complex to refine and uses more energy and water than conventional oil refining, thereby also incurring more cost.<sup>44</sup>

While some Canadian oil producers point to Canada's strict flaring regulations or higher initial carbon intensity as an indicator of a high environmental standard, this is more than offset by the increased emissions of extraction and production.<sup>45</sup> Additionally, there has been recent controversy surrounding the underreporting of methane, the other gas produced in the extraction of oil<sup>46</sup> although this has been claimed to be a problem worldwide.<sup>47</sup> Extraction emissions are also likely to worsen as more oil in easily reachable areas is extracted. Oil is extracted in 2 ways: mining, where the land is excavated and processed or In Situ, where water is "injected as steam into an oil sands reservoir to heat—and thus decrease the viscosity of—the bitumen, enabling it to flow out of the reservoir to collection wells".<sup>48</sup> In Situ is more energy intensive as steam takes energy to create. This creates an issue as over 80% of the reserves are below the maximum mining levels, meaning that the emissions of the oil sands will likely increase over time.<sup>49</sup>

Regardless of these findings, all of this oil contributes to climate change and must be left in the ground. We included this section to further illustrate the misconceptions the fossil fuel industry is spreading. As many fossil fuel companies are keen to point out, the manufacturing takes between 20-30% of total emissions from burning. But this means that despite their best efforts at most it could be a 20-30% reduction in emissions, which is not nearly enough. The resource needs to stay in the ground because it is unavoidably polluting.

### Understanding Canadian Oil:

1. 97% of Canada's reserves are in Alberta and 99% of Alberta's oil reserves are oil sands bitumen, this is the *type of oil*. There are many different types of oil.
2. Oil is extracted through mining or In Situ, 80% of Alberta's oil is only accessible through In Situ.
3. In addition to the energy needed in production, natural gas is produced when oil is extracted.
4. The natural gas is either used or destroyed using flaring, where it is lit on fire creating Co<sub>2</sub>, or venting, where it is released unburned, creating methane emissions.

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<sup>43</sup> (Lattanzio 2014)

<sup>44</sup> (Mayer 2019)

<sup>45</sup> (The Canadian Press 2018)

<sup>46</sup> (Weber 2019)

<sup>47</sup> (The Canadian Press 2018)

<sup>48</sup> (Lattanzio 2014)

<sup>49</sup> (Lattanzio 2014)

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### **Divestment removes influence over a company; keeping investments is the best way to encourage the company to move in a more ethical direction.**

Investor pressure has the potential to encourage action from a company and it is worth noting that due to investor pressure, many fossil fuel companies have released climate action plans and long-term investment plans. However, these reports are often highly theoretical and reliant on unrealistic assumptions about oil demand which demonstrate achievement of their stock price targets, not taking the carbon bubble into consideration. For example, Suncor declared in its Climate Report that it “expects oil use to peak within the next 20-30 years, at a level higher than today.”<sup>50</sup> The reality remains that the primary function of this industry will continue to be the extraction and sale of carbon-based energy. Timely transition to a clean, renewable energy economy is dependent on cutting the use of fossil fuels drastically. Statements like Suncor's show the industry has little intention to genuinely adjust.

### **Divesting alienates and estranges business relations.**

One of the principal concerns of those against divestment is that it will damage the universities' private relations. However, upon being asked if Shell would pull funding from a school which divested, Shell Canada spokesman Cameron Yost stated that Shell would not consider pulling investments from a school that indicated it might divest. He described relationships with universities as long standing saying: “We’ve gone through a lot collectively over that period of time. I wouldn’t say the universities should be worried”<sup>51</sup>.

### **Queen’s University is not a large enough singular investor to make an impact.**

Stakeholder investment in fossil fuel-based companies is a direct financial measure of support for the company and its business practices. Divestment sends a powerful message that Queen’s is no longer willing to support profiting from fossil fuels. While Queen’s is not in a position to spur large changes in company behaviors due to the size of its investments when compared to the size of major fossil fuel market cap (total investments in the company), it does help to spur the movement of other investors. As well, by supporting companies involved in more sustainable practices it will push society toward a more sustainable economy. As mentioned earlier, there are several other benefits to divestment outside of the purely financial.

### **Divesting results in smaller returns.**

There is substantial evidence from a diverse number of researchers that fossil fuel companies underperform in the long run. Corporate Knights, a Toronto based research magazine, calculated that the Canada Pension Plans’ failure to divest in 2012 resulted in a loss of \$7 billion in potential earnings.<sup>52</sup>

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<sup>50</sup> (Suncor Energy Inc. 2017)

<sup>51</sup> (Mandel, How Big Oil seeps into Canadian academia 2016)

<sup>52</sup> (CBC News 2015)

Similarly, the University of Toronto was found to have forfeited \$550 million<sup>53</sup> while the New York State's Pension Fund missed out on \$5.3bn.<sup>54</sup> For the New York State's fund alone, this is an additional \$4,500 for each member. As noted earlier, according to the decarbonizer the Queen's pension fund could have gained \$100.275M CAD, \$16,265CAD extra per member.

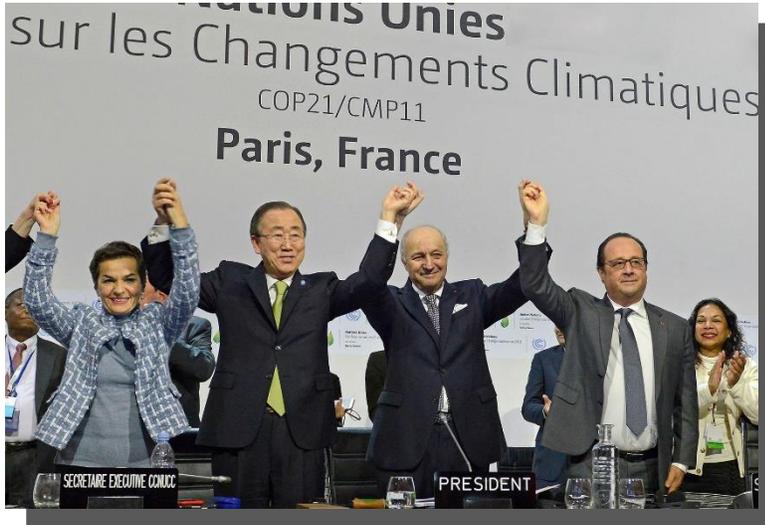


Fig 1.5 Moments after the signing of the Paris Climate Agreement in 2017

trading multiples – e.g., the share price to earnings (P/E) ratio of a target company".<sup>55</sup> To remove one's ability to profit from a company due to their business practices sends a very powerful message, both to the company and other investors. In this way, evolving social norms poses one of the biggest threats to the industry.

### **Someone less socially conscious will simply buy up the stocks and profit.**

Many opponents to divestment argue that another investor will simply fill the divestment gap. This does not matter, let them hold this risk and ignore the data. The purchase of our stocks by another investor is not our concern. According to, Mark Campanale, executive director of the Carbon Tracker Initiative, a think tank that analyses the financial risks of fossil fuel investments "The financial markets are fast losing faith in the investment case for fossil fuels. A technological revolution is underway in the energy and transportation sectors [and] financial market regulators stand ready to move from rhetoric to tough action on climate risk management."<sup>56</sup> As more and more institutions divest due to the financial risk, there are fewer investors willing to fill the gap.

### **Divestment has no impact on fossil fuel extraction or fossil fuel companies**

Divestment causes stigmatization of the industry. A study by the Smith School of Enterprise and Environment at the University of Oxford found that the stigmatization of fossil fuel companies caused by divestment can "materially increase the uncertainty surrounding the future cash flows of fossil-fuel companies." That, in turn, "can lead to a permanent compression in the

<sup>53</sup> (Toronto350 2015)

<sup>54</sup> (Moodie 2016)

<sup>55</sup> (Ansar, Caldecott and Tilbury 2013)

<sup>56</sup> (Carrington, Fossil fuel divestment soars in UK universities 2016)

### The frictional costs are too great and will hurt the fund.

Frictional costs are the fees that are occurred when stocks are changed, for example, the fees a broker charges when a new investment is purchased. One common concern about divesting is that the transactional costs of removing or moving assets will take up a substantial portion of the value of the fund and mitigate any financial gains from divestment. It is true that Queen's would possibly incur some sort of transactional fee to change the financial composition of their investments to become fossil free. However, by transitioning to sustainable investments Queen's would be avoiding the ever-increasing risk tied to stranded asset risk and demand fluctuations funds while maintaining equal or greater returns than those from funds invested in fossil fuel companies. These one-time costs are not significant compared to the long term social and economic gains that stem from divesting from the fossil fuel industry.

### Fossil Fuel Companies: Spreading Doubt about Climate Change and Stalling the Transition to Cleaner Energy.

Thanks to dedicated research from the Union of Concerned Scientists, we now have staggering documentation spanning over three decades that solidly implicates major fossil fuel companies BP, Chevron, ConocoPhillips, ExxonMobil, coal giant Peabody Energy, and Shell in a massive public relations and research campaign dedicated to preventing the acceptance of anthropogenic climate change as scientific fact by the general public and political decision makers.<sup>57</sup> The corporate leadership of the largest coal, oil, and gas companies on earth have invested hundreds of millions of dollars in lobby groups, "independent" scientists, and nonprofits with the intent of sowing seeds of doubt and inducing political stagnation on the topic of climate change. A study from Yale University found that Fossil Fuel interests had outspent environmental groups 10:1.<sup>58</sup>

*"The science linking human activities to climate change is analogous to the science linking smoking to lung and cardiovascular diseases."*  
*American Association for the Advancement of Science*

Similar to the way that large tobacco companies stalled meaningful smoking regulation, the fossil fuel industry continues to invest heavily in climate misinformation while publicly acknowledging anthropogenic climate change, and from 2003 to 2010, organizations promoting climate misinformation received more than US\$900 million in funding from oil, coal, and gas corporations. We believe that it is morally unconscionable to continue investing in companies that have heavily invested in stalling government action and stalling the transition to a clean energy economy. Recent research also mentioned by the Union of Concerned Scientists' report states that nearly

<sup>57</sup> (Union of Concerned Scientists 2015)

<sup>58</sup> (E360 Digest 2018)

30% of all industrial emissions can be traced to just 20 investor- and state-owned companies, showing an added incentive to spread doubt about climate change.<sup>59</sup>

## Queen's as a Global Leader

If Queen's wants to be a global leader, it must be forward thinking. As an institution that strives to be on the forefront of social and scientific achievement, it is hypocritical to both support research that confirms anthropogenic climate change, while at the same time investing significant amounts of money in the largest contributors to the problem. Queen's recruits based off of mottos such as *"we push the limits of what can be achieved and develop ideas that can make a difference in the world"* and *"we imagine what the future can be, and work together to realize it."* If Queen's wants to uphold these bold statements it must take immediate action to ensure a sustainable investment future. Academic research into causes and recovery strategies paired with campus-wide initiatives only go so far; to ignore the carbon footprint of our investment portfolio undermines our position as a leading global climate science researcher. We know what needs to be done: we just need to do it.

Overall, Canada lags behind global divestment; only 1% of institutions in Canada have pledged to divest. This is inconsequential when compared to 33% in the UK and 14% in New Zealand. Only four academic institutions in Canada have made the commitment; Concordia University and Universite de Montreal in 2019 and Laval University and the Atlantic School of Theology in 2016.<sup>60</sup> The University of Ottawa pledged for partial divestment by reducing its portfolios carbon footprint by a minimum of 30% by 2030.<sup>61</sup> Should Queen's University commit to full divestment, it would become the first university within Ontario to do so, and the largest in Canada. For 175 years Queen's has been one of Canada's leading academic institutions. Divestment would set an example for other institutions that Queen's is a committed leader in sustainability. Divestment by Queen's would not only continue its tradition of leadership but secure the future of its investments and the best interests of its stakeholders.

Divestment is about integrity. It is not a stance against Queen's University, rather a reaffirmation of Queen's commitment to creating a sustainable future and working to solve the problems of today. Divestment is necessary if Queen's is to live up to its core values and mission of ensuring prosperity for all its alumni, students, faculty and staff. We are simply asking that Queen's invest in our future.

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<sup>59</sup> (Cook n.d.)

<sup>60</sup> (Stewart 2017)

<sup>61</sup> (Duval 2016)

### We Need Your Help

Despite considerable student interest in divestment, the support of other pillars of the university community are needed, namely our prominent faculty. If both the students and the faculty push for a change in policy, it will be impossible for Board of Trustees to ignore.

The time for action and change is now. Faculty remain at the university longer than students; thus it is in their best interest to push for the long-term sustainability of their institution. Groups of faculty members are openly pushing for divestment at several Canadian universities including the University of Victoria, the University of British Columbia and the University of Toronto, with McGill University's teacher's union recently divesting its holdings. We are aiming to present our faculty and student petitions during the May board of trustees' session where we will formally request divestment of the endowment and investment funds.

### What You Can Do

Faculty can sign Queen's divestment petition calling for the university to divest or invite QBACC representatives into their meetings and classrooms to rally supporters. Other actions, such as writing a letter of support or attending divestment meetings are effective in showing support. We also have a student petition under Queen's University on [GoFossilFree.org](https://www.gofossilfree.org).

#### *Credits & Acknowledgements*

Authored and edited by the QBACC divestment team / Divest Queen's U: Nicholas Lorroway, Sean Price, Aaron Kuntz, Sam Green, Elyse Johnston-Haynes, Erica Anderson, Alex Cardy, and Samie Duff.

We at QBACC would like to extend thanks to all the editors and contributors who graciously gave their time and expertise for this project. Without their help this would have never been possible.

QBACC wishes to acknowledge that Queen's University sits on traditional Haudenosaunee and Anishinabee territory. For more information on the history of this land, and why it is important to acknowledge this land and its people, please see this link to the [Queen's Encyclopedia page](#).

*Ne Queen's University e'tho no'we nikanónhsote tsi no'we ne Haudenasaunee tánon Anishinaabek tehatihsnónhsahere ne óhontsa.*

*Gimaakwe Gchi-gkinoomaagegamig atemagad Naadowe miinwaa Anishinaabe aking*

Contact us with any questions or concerns at [queensbacc@gmail.com](mailto:queensbacc@gmail.com).

Dedicated to Toni Pickard and all those who have worked tirelessly to make Queen's a better place.

Please think twice before printing this document.

## Appendix

In this appendix we have included additional information to provide reference and context to the rest of the book. This includes a brief section highlighting some of the Climate Change related research Queen's professors have been involved in, a list of notable funds which have divested, information on the behaviour of three of the fossil fuel companies Queen's is invested in and the list of citations.

### Timeline to Transition

In this section we evaluate the companies Queen's is invested in to see if any of them are taking meaningful action to become Energy companies, and to see if that action is in line with the Paris Commitments:

#### ***Blackpearl***

Queen's owned little over half a million dollars (545,000) of Blackpearl Resources Inc. In December of 2019 International Petroleum Corp. (IPC) merged with Blackpearl. Both companies are members of the Lundin group, a massive multinational group of 12 publicly traded companies founded by Adolf Lundin, among these are Lundin Petroleum, Lundin Gold and Africa Oil. Lundin group has assets in Oil, Gas, Gold, Copper, Silver, Uranium, Diamonds, Copper, Zinc, Lead, Nickel and Solar. Combined, the companies have a market cap of \$26.2 Billion. Each operates with some autonomy but has a strong connection to the group. IPC does not appear to be involved in any sort of sustainable research. Although outside of the environmental scope, it is worth noting that the Lundin group, and primarily their top executives, have been indicted for Crimes Against Humanity over their role in the Sundanese civil war, including Lukas H Lundin, a director of IPC. Although the details are unclear, the Lundin group have been accused of instigating the conflict and the human rights abuses that followed by working with the Sundanese government in the development of the oil fields. Lundin built several pieces of infrastructure to service the oil fields, which was predicated by the forced removal of persons who lived in the area and other violent human rights abuses. Although Lundin may not have carried these crimes out themselves it is highly unlikely that they were not aware it was going on. Without the introduction of Lundin, it is unlikely there would have been a civil war. Additionally, the human rights abuses of the government would over be increased with the introduction of oil royalties (Cumming-Bruce 2019). For more information on this please consult the 2010 report, Unpaid Debt by European Coalition on Oil in Sudan (ECOS).

#### ***Advantage Oil and Gas Limited***

LNG and oil company operating out of the Montney region in Northern Alberta / British Columbia. In 2009 Advantage sold off its diverse range of assets to focus exclusively on land holdings in this region. Advantage's production is currently 96% natural gas. Throughout Advantages website there are numerous mentions of continued exploration and development of LNG reserves. The 2018 financial report saw 1627 thousand transferred from exploration and evaluation to property plant and

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equipment, indicating that explored reserves were becoming operational. Advantage's financial statement claimed \$65,994 thousand in Canadian Development Expenses in 2018. In its July Investor Presentation Advantage pointed to building 42 new wells between 2019 and 2021.

Advantage does not appear to be investing in renewable energy at this time, their environmental report points to natural gas being the "fastest way to reduce CO<sub>2</sub> emissions" by "replacing coal". While natural gas can emit 50-60% (when being burned in a new plant) less vs a new coal plant, this does not take into account the "fugitive" methane emissions which are emitted during production. Methane is "34 times stronger than CO<sub>2</sub> at trapping heat over a 100-year period and 86 times stronger over 20 years" (Union of Concerned Scientists nd).

### ***Cenovus Energy Ltd***

Cenovus Energy Inc is a Canadian Oil and Gas company operating in Northern Alberta. Cenovus was formed when Encana Corp split up its assets. Cenovus mentions climate change on its website and emphasizes that it has worked to reduce ghg emissions on its drill sites and is invested in sustainability minded companies and research. One of these projects include the Weyburn - Midale Carbon Capture and Storage project. However, these investments seem to be at odds with the company's conduct. The CEO has referred to climate change as a consumption issue, the company encouraged shareholders to vote against a motion brought forward by Fonds de Solidarite des Travailleurs du Quebec which would require the company to set emissions targets in line with the Paris Climate Agreement, which Canada is a signatory of. Cenovus was also one of the three companies which published. The CEO has also pushed the misinformation that Canadian oil is the cleanest in the world.

While Cenovus claims to be undertaking these sustainable projects and acting in an environmentally friendly way, it is clear through the conduct of its executives, refusal to set targets current with the Paris Climate Agreement and spreading of misinformation that they have no intention to fight climate change in any meaningful way.

### ***Suncor***

Suncor is Canada's largest energy company and the world's largest bitumen producer. They are primarily an oil company, having sold most of its stake in natural gas in 2013. Suncor has diversified its holdings over time, adding cogeneration wind power. Suncor has also been a part of numerous working groups on environmental issues including, the Pan Canadian Framework on Clean Growth and Climate Change, Task Force on Climate Related Financial Disclosures, Ontario Emission performance System and various carbon pricing groups. However, Suncor has also built the world's largest dam to store all of its toxic production waste, the cost of which is estimated by the Auditor General to be 20bn. The Alberta government has given Suncor up to 2100 to develop the technology needed to clean up the waste.

Essentially, while Suncor is making strides to become more sustainable, its goals are still below what is needed to keep global temperature below 2 degrees. They are large enough to withstand any market based policy impact (carbon pricing) and are using their financial position to try and show themselves as environmental leaders. The massive environmental impact of their tailings pond should also not be ignored. They understand that their product is causing global temperature to rise but are still prepared to remain one of the largest producers in the world.

Their view of the future is not one where oil and gas really faces too much of a threat, they clearly don't see the 2 degree goals as feasible and are actively betting against it. They do not see any risk of stranded assets to be potentially affecting them.

### ***PRAIRIESKY ROYALTY LTD***

Prairiesky operates in Western Canada, acquiring and managing royalty lands to lease to third party fossil fuel companies. Relatively low risk and cost for the company as they gain royalty revenues without oil and gas operating costs, meaning no capital costs, no environmental liability or reclamation obligations. Prairiesky's strategy for growth is to encourage fossil fuel companies to actively develop on royalty lands and acquiring additional petroleum and natural gas royalty assets. No clear plan to transition land use away from oil and gas use on lands. (Prairiesky nd)

### ***WESTSHORE TERMINALS INVT CORP***

Westshore is a Canadian coal export terminal on the coast of British Columbia, annually exporting more than 33 million tonnes of coal, making it Canada's busiest coal export terminal.

From the Westshore terminal coal is transported on ships to markets in Asia, Europe and South America. On Westshore Terminals website they advertise that they 'are proud to be Port Metro Vancouver's only dedicated coal terminal and busiest single coal export terminal in all of North America.' In 2019 30% of their exported coal was thermal, used for energy and 70% was metallurgical coal, used for making steel. Westshore is a part of 'Green Marine' which is a voluntary organization committed to reducing emissions and increasing the sustainability of marine operations and facilities. They have taken steps to greatly reduce water consumption, replace LED lighting and improve air quality surrounding operations.

### ***Enbridge***

Enbridge is a Calgary-based energy transportation company which has subsidiaries in the crude oil, natural gas, and utilities industries. As of right now, Enbridge currently owns the largest amount of active pipeline of Crude oil in the entire world, and stands as North America's largest natural gas supplier. Enbridge is currently spearheading more than 20 "Energy Infrastructure Growth" projects throughout North America, the vast majority of which concern expansions of their existing pipelines in oil and gas

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(Only two of these twenty are foreseeably related to the creation of renewable energy). In 2018, Enbridge initiated a self-imposed 3-year strategic plan to make it become the leading energy supply company in North America. Methods for achieving this include “increasing revenue and lowering costs”, “executing growth projects”, and “focusing on self-funding growth and careful capital allocation”.

Though Enbridge predicates itself on the safety and reliability of its transportation systems, research suggests that they in fact have a documented history with workplace disasters. In the last two years alone, Enbridge has experienced pipeline explosions in Kentucky, Ohio, and British Columbia (Kentucky resulting in the death of one Enbridge employee and the hospitalizations of 5 others). Furthermore, in 2018, Greenpeace published a report which stated that the frequency of workplace incidents for Enbridge and its subsidiaries (from 2002-2018) averaged out to exactly one pipeline incident every 20 days.

### ***Helmerich and Payne***

Helmerich and Payne Inc. is a contract drilling corporation that owns and oversees land rigs across North and South America, the Middle-East, Africa, and the Gulf of Mexico. They operate through two distinct corporate branches: HP drilling and HP technologies. HP drilling concerns research and development of drilling equipment, and HP technologies focuses on implementing and advancing the digital components of the technology used on oil rigs. Helmerich and Payne has a long and storied history of issues with worker safety. From 2010 to 2013, they were investigated fifty-three times by the US department of labour for work-related incidents on rigs, and of those fifty-three investigations, eighteen occurred in Texas alone, and twenty-five resulted in legitimate and documented violations. Furthermore, according to the US Occupational Safety and Health Administration, Helmerich and Payne has been responsible for the deaths of five employees in the last decade. These incidents are beginning to show on HP’s balance sheets; in 2016, they settled a negligence lawsuit brought against them by an injured former employee for \$72 Million, and in 2018, another claim was filed against them by an injured former employee, who is seeking \$150 Million in damages. More claims appear to be increasing as HP increases the number of rigs it operates.

### ***Pason Systems***

Pason Systems is a Calgary-based drilling technology company that designs and manufactures oil rig equipment. Their product line ranges from data and analytics tech (concerned with data acquisition, communication, and information management) to actual drilling equipment used on rigs to harvest materials. Pason was founded in 1978, and in its inception, sought solely to manufacture remote drilling chokes. Since then, Pason has been involved in multiple mergers and takeovers from larger parent companies, and this has resulted in a large diversification in their expertise and product design. As of right now, they employ a total of 321 workers in Canada.

In 2019, Pason was one of multiple companies named for a recommendation in the improvement of their safety management and drilling operation regulations after a workplace accident in Oklahoma resulted in the deaths of 5 workers (the rig and workers to which the accident occurred were allegedly

using Pason tech). Pason has also faced multiple litigations in the past over patents; from 2003-2013, three separate suits were brought against Pason by National Oilwell Varco over drilling technology patents Pason supposedly violated. In 2013, Pason settled all three claims out of court, agreeing to pay out \$115.8 Million dollars in restitution.

### ***Northwest Natural Gas Co.***

Northwest Natural Gas is a US-based energy company which builds, maintains, and operates gas distribution systems in Oregon and Washington state. They are a subsidiary of the larger Northwest Natural Holdings, and currently service approximately 750,000 homes and businesses in 140 communities in the aforementioned areas.

In fall of 2018, after a pipeline exploded in Southern British Columbia, the long term sustainability of cross-country natural gas pipelines became a subject of public attention. Being one of the larger natural gas companies in the Pacific Northwest, Northwest Natural Gas was cited as one of the companies partly to blame, considering the fact that their distribution systems were dependant on the pipeline system that exploded, and also because they've previously taken action to expand natural gas pipelines further North, but have been repeatedly met with environmentalist opposition.

### ***Ensign***

Ensign is a Canadian oil-services company. Their services include a variety of drilling, well servicing, equipment rentals, wireline servicing and production testing (Ensign Energy nd). Ensign makes claim to a focus on corporate responsibility through reducing engine emissions, fuel consumption and surface impacts and by increasing drilling efficiency (Ensign Energy nd). However, the company is not transparent in the extent of these claims. Additionally, they have no documented research and development expenditure budget (TMX Money 2019). On the other hand, Ensign had a CAD \$102 million expenditure budget for exploration in the 2018 fiscal year. This exploration budget was allocated towards new drilling projects in the Middle East, United States and Canada (Morgan 2019). There is no evidence of a timeline to transition for ensign. Instead they take a damage control approach through the preparation of emergency response plans that address environmental issues (Ensign Energy nd). Ensign is also at current risk of being deleted from the S&P/TSX composite index after their stocks fell alarmingly low during the 2019 summer (Morgan 2019). In the last fiscal year, they had negative gross profit (TMX Money 2019).

### ***Drill-Quip***

Drill-Quip Inc. is a leading manufacturer in drilling and production that specializes in equipment built for offshore drilling and drilling in harsh environments. Drill quip follows QHSE management system and claims commitment to protection of the environment through their policies and regulations. Their claim of action towards sustainability occurs through having energy efficient facilities that are certified with waste reduction plans (Dril-Quip nd). Drill quip has a research and development expenditure budget ranging from USD \$ 39-45 million (TMX Money 2019) (TMX 2019). However, their only focus for development and research is studying how the materials they use react in different conditions (Dril-Quip

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nd). Thus, no timeline to transition in sight. During the 2010 Gulf of Mexico oil spill, Drill Quip faced allegations of responsibility for the spill. Although Drill Quip had equipment on the rig where that the spill was caused by the federal judge on the trial claimed that the company's equipment played no part in the blow out (Houston Business Journal Jan 24, 2012).

### History of QBACC & divestment at Queen's

Queens Backing Action on Climate Change (QBACC) was first formed in 2008 as a place for students to come express their concerns about current university and government policy while working to create change on a large-scale level. Based around the desire to make activism accessible and inclusive, QBACC has been involved in numerous campaigns with the university including 1. pressuring the university to sign the University and College President's Climate Change Statement of Action in 2010, a campaign which included working with the sustainability advisory commission to come up with appropriate targets for emission reduction, 2. being a founding member of the Queen's Solar Coalition, where the feasibility of fitting solar panels on campus buildings was explored and 3. the three divestment campaigns of 2012, 2014 and 2017-2019.



## Queens Research on Climate Change and Fossil Fuels

Much of the research at Queen’s focuses on fossil fuels and their impact on climate change. Below are excerpts from researchers at Queen’s.

<p>“Bioenergy is a renewable and clean energy source that is derived from biomass. It has been attracting great attention these days due to the declining fossil fuel reserves and the ever-increasing greenhouse effects produced through fossil fuel utilization...Fossil fuels are considered to be non-renewable sources of energy considering the rate of their formation (millions of years) and consumption. In addition, burning fossil fuels releases net carbon dioxide (CO<sub>2</sub>) to the atmosphere.” - Dr. Pascale Champagne (2010)</p> <p>Source: L. Zhang, C. Xu and P. Champagne, "Overview of recent advances in thermo-chemical conversion of biomass," <i>Energy Conversion and Management</i>, vol. 51, no. 5, pp. 969-982, May 2010.</p>	<p>“Given the environmental impacts of fossil fuel production and use, increasing reliance on foreign energy supplies, and the depletion of easily accessible fossil and fissile energy resources, there is practical incentive to actively govern a transition to renewable energy (RE) resources including wind, solar, water, biomass and geothermal. This transition is hindered by a number of barriers, however, including established technical and institutional preferences for incumbent energy technologies...” -Dr. Warren Mabee (2013)</p> <p>Source: K. Calvert, J. Pearce and W. Mabee, "Toward renewable energy geo-information infrastructures: Applications of GIScience and remote sensing that build institutional capacity.," <i>Renewable and Sustainable Energy Reviews</i>, pp. 416-429, 2013.</p>
<p>“Some areas of the Canadian High Arctic are already on track to follow predictions that there will be a 4–8 °C increase in average air temperature within this century (IPCC, 2007). Thus, it is not surprising to learn that the permafrost, which comprises a significant proportion of the terrestrial landscape, is warming and thawing, resulting in disturbances and changing soil conditions” Dr. Scott <u>Lamoureux</u>, (2017)</p> <p>Source: C. N. Inglese, C. T. Christiansen, D. Lamhonwah, K. Moniz, S. N. Montross, S. Lamoureux, M. Lafrenière, P. Grogan and V. K. Walker, "Examination of Soil Microbial Communities After Permafrost Thaw Subsequent to an Active Layer Detachment in the High Arctic," <i>Arctic, Antarctic, and Alpine Research</i>, vol. 49, no. 3, pp. 455-472, May 2017.</p>	<p>“The increasing world energy need, the depletion of fossil fuels, and concerns about greenhouse gases emissions demand development of a new energy vector” - Dr. Brant Peppley (2017)</p> <p>Source: F. Karimi and B. Peppley, "Metal Carbide and Oxide Supports for Iridium-Based Oxygen Evolution Reaction Electrocatalysts for Polymer-Electrolyte-Membrane Water Electrolysis," <i>Electrochimica Acta</i>, August 2017.</p>

## Notable Divested Organizations and Funds

The following is a select list of organizations and funds that have committed to partial or full fossil fuel divestment. To date, over 800 institutions worldwide, with a total value exceeding \$7.93 trillion dollars, have committed to fossil fuel divestment. To see other institutions who have divested, please visit [gofossilfree.org/divestment/commitments](http://gofossilfree.org/divestment/commitments).

Organization	Approximate Size of Fund (CAD)
<u>New York City Pension Fund</u>	\$234 Billion
<u>Bill and Melinda Gates Foundation</u>	\$52.4 Billion
<u>New Zealand Superannuation Fund</u>	\$32 Billion
<u>Yale University</u>	\$32.7 Billion
<u>University of California</u>	\$13.4 Billion Endowment, \$70 billion Pension
<u>University College London</u>	£118.0 Million
<u>Concordia University</u>	\$100 Million
<u>Rockefeller Brothers Fund</u>	\$1.1 Billion
<u>Oxford University</u>	\$8.7 Billion
<u>Queen’s University Belfast.</u>	£67.1
<u>Queen’s Alma Mater Society</u>	\$6 Million
<u>Southwark Pension Fund (UK)</u>	\$2 Billion

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<u>City of Oslo</u>	\$11.4 Billion
<u>Washington D.C. Pension Fund</u>	\$8.2 Billion
<u>Irish Strategic Investment Fund</u>	\$11.7 Billion
<u>Syracuse University</u>	\$1.5 Billion
<u>Laval University</u>	\$120.5 Million
<u>Bendigo and Adelaide Bank</u>	\$5.6 Billion
<u>German Catholic Church and Caritas</u>	\$6.7 Billion
<u>University of Maryland</u>	\$1.3 Billion
<u>City of Berlin</u>	\$1.1 Billion
<u>Oregon State University</u>	\$659 Million
<u>Guardian Media Group</u>	\$1.3 Billion
<u>University of Edinburgh</u>	\$590 Million
<u>London School of Economics</u>	\$97.2 Million
<u>Guardian Media Group</u>	£800m
<u>University of Glasgow</u>	\$214 Million
<u>Waltham Forest Pension Fund (UK)</u>	\$1.2 Billion

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