President's Advisory Committee on Fossil Fuels Divestment

Report to the President

October 2017

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Mr. Roger Couldrey
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President's Advisory Committee on Fossil Fuel Divestment (PACFFD)

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MANDATE

In the fall of 2015, President and Vice-Chancellor Patrick Deane received two petitions containing requests that McMaster University divest from fossil fuels. Both petitions, one signed primarily by students and members of the community and the other signed by faculty members, proposed that McMaster divest from direct investment in fossil fuels companies within five years. In response to these the petitions, the President established an Advisory Committee on Fossil Fuels Divestment (PACFFD).

The mandate of the Committee was to undertake a detailed review of the requests set out in the petitions and to make recommendations to the President for review by the Finance Committee and the Investment Pool Committee of the Board of Governors. Specifically, the Committee was asked to:

- Undertake a detailed review of the divestment request, including considering the ethical, scientific, financial and governance implications of divestment.
- Consult broadly with interested members of the University community, including inviting submissions, and providing updates to the community from time to time on the progress of the Advisory Committee's work.
- Review similar requests for divestment received by other Canadian universities and the conclusions reached and actions taken by those institutions.
- Complete an analysis of McMaster's current endowment holdings to identify those funds affected by the divestment request and consider the feasibility and overall impact and effect on McMaster's endowment funds of divestment from such funds.
- Consider the availability of alternative funds or options for investment.
- Provide recommendations for possible options and approaches that the University might take in response to the request for divestment.
- Review the *Social Responsibility and McMaster's Investment Policy* and make recommendations, as deemed appropriate, regarding revisions to the policy.

Membership of the Committee was comprised of the Provost and Vice-President (Academic), who served as Chair, the Vice-President (Administration), two faculty members, two representatives from the Board of Governors, and two students (one undergraduate student and one graduate student). The Assistant Vice-President (Administration) and Chief Financial Officer was named as a consultant to the Committee and administrative support was provided by the Office of the University Secretariat.

The final composition of the Committee included:

Dr. David Wilkinson (Chair)	Provost and Vice-President (Academic)
Mr. Roger Couldrey	Vice-President (Administration)
Dr. Brian Baetz	Faculty member, Professor and Chair of the Department of Civil Engineering
Dr. John Siam	Faculty Member, Associate Professor and Director of the Trading Centres, DeGroote School of Business
Mr. Emechete Onuoha	Member of the Board of Governors
Mr. Charles Keizer	Member of the Board of Governors
Mr. Jason Sharpe	Graduate Student, Ph.D., Faculty of Engineering
Ms Hana Dampf	Undergraduate Student, B.Sc., Faculty of Science
Ms Deidre Henne (Consultant)	Assistant Vice-President and Chief Financial Officer
Ms Tamara Bates (Secretary)	Governance Advisor and Assistant University Secretary

INTRODUCTION

In the fall of 2015, the President received two petitions requesting that McMaster divest from fossil fuels within five years. The student petition (Appendix A) specifically asked the university "to immediately freeze any new investment in fossil-fuel companies, and to divest within five years from direct ownership and from any commingled funds that include fossil-fuel public equities and corporate bonds." This petition had close to 900, primarily student, signatories.

The second petition, signed by 116 faculty members, included more detail about the purpose and nature of the divestment mandate (Appendix B). The faculty petition also asked that McMaster divest its holdings in the top 200 fossil fuels companies within five years, but specifically targeted the endowment funds. The petitioners suggested that divesting would send a "strong statement" to fossil fuel companies about the harm to the environment from both fossil fuel production and consumption. The faculty petitioners proposed that the act of divestment would "exert pressure on [fossil fuel companies] to act responsibly, as well as increasing the social and economic costs so that they may not continue acting with impunity." Furthermore, divestment was viewed as "a symbolic effort that isolates fossil fuel companies for their negative actions and pushes them to become green energy companies." Moreover, the faculty petitioners asked that McMaster adopt "a leading moral role by divesting from fossil fuels setting an example for others to follow."[1]

Globally, fossil fuel divestment campaigns have largely focused on demanding divestment from the top 200 fossil fuels companies in the world. The list, also called the Carbon Underground 200, is generated and updated annually by *gofossilfree.org* and is comprised of the top 100 publicly traded coal companies and the top 100 publicly traded oil and gas companies across the globe. These companies are ranked based on the total potential emissions content of their reported reserves. Generally speaking, in the context of divestment 'fossil fuel companies' refers specifically to the 200 companies on this list.

COMMITTEE PROCESS

The Committee began its work by attempting to understand the range of issues that needed to be addressed and the way in which these had been approached elsewhere. In particular, the Committee set about understanding the concerns that had led to the development of these petitions and considered their content carefully. In order to have a clearer understanding of the issues and options, the Committee reviewed the status of divestment campaigns around the world with particular attention paid to those at Canadian universities along with their respective responses. Members of the Committee considered McMaster's current investment holdings and the extent of fossil fuel investment within them. Significant attention was given to what divestment might involve for McMaster, as well as the various alternatives to divestment. An intern, Catherine Moez, was hired to develop a report, entitled *Fossil Fuels Divestment: Review and Analysis of Options for McMaster University* (Appendix C), which has informed the Committee's deliberations and from which this report is heavily drawn. The Moez report, along with a video and related information on the question of divestment from fossil fuels at McMaster, was released to the public (Appendices D and E). The purpose of this was to provide the community with summative information on the issues in order to support an informed dialogue. The University hosted a Town Hall meeting to provide members of the McMaster and broader communities with an opportunity to submit feedback directly to the Committee. An online survey, designed to gather information on the community's views concerning divestment and alternative approaches, was also released. A list of additional materials consulted by the Committee can be found in Appendix F.

THE ARGUMENT FOR DIVESTMENT

The argument for fossil fuels divestment put forward in divestment campaigns, at McMaster and elsewhere, is primarily morality based. Since carbon dioxide emissions from the use of fossil fuels contribute to global warming, fossil fuel extraction and the companies who profit from it are considered unethical. Both global

[1] For the full text of the petitions, see Appendices A and B.

climate change and localised pollution from the extraction and burning of fossil fuels cause human health and environmental harms. International commitments have been made to keep global warming within 2°C of the pre-industrial baseline to prevent or mitigate the dangerous effects of climate change. To maintain this 2°C limit, global emissions must be kept within a carbon budget of 565 gigatons of carbon dioxide. The argument against fossil fuel companies in this context is that their business model is based on continuously extracting coal, oil and gas at levels that are inconsistent with the 2°C limit. As of 2012, world-wide reserves, if burnt, would yield five times the level of hydrocarbons allotted within the world's 565 gigaton carbon budget.

Similar arguments have been used to promote other major divestment campaigns around the world, such as those related to tobacco and the apartheid regime of South Africa. Fossil fuel divestment does differ from these campaigns however in one important aspect: even organizations that choose to divest from fossil fuels must still use the products produced by these companies and this will continue to be the case for some time to come. This leads to a moral dilemma of sorts since the profitability of fossil fuel companies are much more closely tied to product sales than to investment.

DIVESTMENT CAMPAIGNS AT CANADIAN UNIVERSITIES

With the exception of Laval University, Canadian universities that have been petitioned to fully divest have opted not to do so. Institutions have generally agreed that climate change is a major threat to human societies; however, they have chosen not to adopt a policy of full divestment. Some have reached this decision based on financial grounds or fiduciary duty, others because of speculation about the effectiveness of divestment on the actions of fossil fuel companies. There are a wide variety of arguments against divestment that have been raised to support these decisions.

Some Universities have argued against making political statements with their investments. Investments are a financial resource that support the university's academic mission through endowments for student scholarships, research chairs and the like. Some universities argue that the use of these funds is too important to limit the options of managers to optimize investment income. Some have also argued that fossil fuels are widely used and that there is a social benefit to that use that outweighs the harms. Certainly, large institutions are reliant on the use of fossil fuels and this will continue to be the case for decades to come. Concerns have also been expressed that developing countries would bear the brunt of divestment or other measures, such as increased carbon pricing, given the high proportion of coal and other non-renewable energy sources in their energy mix. Moreover, some have defended continued investment in fossil fuel companies, because shareholder activism has a greater potential to effect change than divestment.

Some institutional reports have suggested that it is better to shift the onus of responsibility from the supply side and have instead focused on demand, asserting that this is the real problem. Reduction of the reliance on and demand for fossil fuels on the part of individuals and organisations would have a much greater influence on fossil fuels companies because these companies derive their financial strength much more from sales than from investments. Moreover, as long as there is (high) demand for fossil fuels, any impact from divestment from the 200 would be negated by investor demand elsewhere to purchase shares. In addition, the vast majority of fossil fuel reserves are not in the hands of these publicly traded companies at all, but rather in privately held, mostly government based, entities, which would be completely unaffected by divestment. (For example, the Saudi Arabian Oil Co. holds 260B barrels of oil in reserve, as compared 7.6B barrels held by ExxonMobil.) Indeed, the reserves held by the top 200 companies represent roughly only 20% of all known fossil fuel reserves. Finally, these arguments are often coupled with the notion that it would be hypocritical for universities to divest from fossil fuel companies when they continue to use their products. (For further information, see Appendices C and E)

MCMASTER'S HOLDINGS, INVESTMENT POLICIES AND STRATEGIES

McMaster's Endowment Fund holdings are handled through a number of funds each with its own investment strategy and manager. Some of these funds are invested in real estate and infrastructure and so contain no

fossil fuels investments. There are however eight funds held by McMaster which invest in a wide range of corporations and that are relevant to the divestment campaign.

As at December 31, 2015, McMaster's Endowment Fund held $558.1M out of $836.2M in pooled funds. Within those pools, direct exposure to companies listed on the top 200 is approximately $36.2M, or 4.3% of the total. McMaster's direct investment in fossil fuels is very small compared to its total Endowment Fund holdings. This is in keeping with McMaster's overall investment strategies, which limit the University's exposure to any one corporation. However, because many of these holdings are within pooled funds, if McMaster wanted to divest from specific companies, it would have to exit the pool and purchase a segregated portfolio that does not include holdings on the top 200 list. Some current fund managers may not be able to run a segregated fund based on excluding the top 200 fossil fuels companies. On the other hand, some fund managers may enable McMaster to exit the current pool and then purchase investments in a different pooled fund that does not include these companies.

Since 2011, McMaster's Investment Pool Committee has been making changes to its practices that include specific environmental, social, governance, and public policy (ESG) considerations upon hiring new investment managers and/or adopting new investment strategies. Further, the Investment Pool Committee has required increased disclosure on holdings, in particular any holdings on the top 200 list, and proxy-voting reports quarterly. Most recently the Investment Pool Committee and the Board of Governors have approved a policy change to measure the Endowment Fund's carbon footprint every five years. These initiatives are designed to ensure that McMaster is investing in best-in-class companies across the board and that the measurement of what it means to be best-in-class is consistent across this and other industries and sectors.

If McMaster were to decide to exit all pooled funds containing fossil fuel investments there would be a one-time cost, associated with moving these assets estimated to be approximately $4.7M, as at January 31, 2016. This cost is based on both upfront search, transition costs, gain and/or loss triggering upon exit, and in many cases additional annual costs associated with specialized segregated accounts.

An additional option is to identify a new pooled or segregated fund that is fossil-fuel free, that uses a widely available benchmark established for fossil-free strategies, and that meets McMaster`s other investment manager screening criteria, including ensuring reasonable liquidity and having reasonable fund and/or investment manager history. Fossil-free options may not be available in all jurisdictions required for geographic diversification. It should be kept in mind however that the petitions requested divestment within a timeline of five years, during which time broader investment alternatives may be developed.

ALTERNATIVES TO DIVESTMENT

If McMaster were to decide not to divest from fossil fuels, the Committee considered what alternative approaches might be followed. The Committee discussed several alternatives to full divestment including partial divestment and portfolio tilting; adopting a screening approach based on environmental, social and corporate governance (ESG) factors; adopting the Montreal Carbon Pledge; establishing a "green" investment portfolio; as well as options that are not specifically related to investment.

Partial divestment strategies are employed to enable organisations to undertake a gradual shift of their portfolio towards less carbon-intensive holdings (portfolio tilting). Some institutions, nationally and internationally, have adopted versions of these types of strategies. Such strategies involve diminishing fossil fuels holdings by a certain percentage of the total; often this is between 1 and 10% of the total holdings. Although it may not fully satisfy those seeking a commitment to fully divest, this is generally considered to be a form of divestment. Another partial divestment option includes divesting only from certain groups of fossil fuels companies, most notably those involved in coal and/or oil sands, as these fuels create higher carbon emissions than conventional oil and gas. Globally, some institutions have opted to take this approach. Similarly,

some specific fossil fuels companies may instead be targeted for divestment because they are viewed as outliers in their practices or because they promote misinformation about climate change.

Yet another option is parallel investment, which would entail moving a portion of the endowment funds into a fossil-free fund. This would enable the University to offer a fossil-free option for donors. It would also provide an in-house opportunity to compare performance. A more assertive version of this approach involves establishing a fund that specifically invests in companies that will help the world reduce its reliance on fossil fuels. Some universities have made commitments to invest in alternative energy and green technology companies with a targeted minimum investment level. While there are risks associated with such investments, these might in fact be lower than those associated with the impact of stranded assets on fossil fuel investments.

Positive screening and best-in-class performance involves monitoring the environmental, social and corporate governance (ESG) performance of all holdings and is often combined with shareholder engagement and positive screening of the portfolio by selecting the better ESG performers (those that are best-in-class in their sector or are improving on their ESG scores). Some organisations have adopted the use of ESG criteria to assess their portfolios with an eye toward ensuring responsible investment.

Some organisations (universities among them) have accepted the monitoring of ESG performance as a suitable replacement for, or addition to, divestment. Measuring ESG performance has an advantage over divestment from fossil fuels companies in it that applies to all investment holdings on a continual basis and therefore leads to an examination of the entire investment portfolio. In addition, ESG reporting has grown rapidly since its introduction in 2006 as part of the United Nations Principles for Responsible Investment (UN PRI). ESG screening is supported by many large institutional investors because it contains both ethical and social responsibility components, and at the same time is primarily designed as a tool to maximize financial performance over the long term. The assumption is that poor ESG performance eventually leads to worse financial performance as companies face reputational risk, regulatory risk and direct costs through fines and lawsuits.

The factors assessed under ESG considerations are varied and to some extent can change and develop over time. However, the broad principles, as set out in the United Nations Principles for Responsible Investment, are:

> Environmental: climate change, greenhouse gas emissions, resource depletion (including water), waste and pollution, deforestation.
>
> Social: working conditions (including slavery and child labour), local communities (including indigenous communities), conflict, health and safety, employee relations and diversity.
>
> Governance: executive pay, bribery and corruption, political lobbying and donations, board diversity and structure, tax strategy, public policy.

In principle, ESG, which is a positive screening measure, has a number of advantages over divestment, which constitutes a negative screening approach. Adopting ESG considerations is a more subtle and sophisticated approach than industry divestment. ESG can allow the identification of best-in-class companies, as well as those that are improving their ESG performance, within an industry. ESG screening also has the advantage of being a more selective screening tool through which poor ESG performers can be removed from the portfolio without eliminating an entire sector. This approach also enables portfolio diversification to be maintained. Positive screening using ESG considerations is a comprehensive and an ongoing process. ESG evaluation applies to all holdings within the portfolio and is applied continuously when monitoring the actions of the corporations held in the portfolio. This differs from divestment, which represents an issue-specific decision that is made at a particular point in time. Information gathered on the companies is first hand, that is, companies must report on their own performance and those reports can be verified by third parties. Another

advantage of ESG is that it is increasingly mainstream and so there are opportunities for minority shareholders to coordinate on passing shareholder resolutions. Therefore, shareholder engagement can be maximised and can be used as a tool to shape the company's actions and behaviours.

There are some potential downsides to positive screening and some of the attributes noted above can also be cast in a negative light. Sometimes the entire industry is the problem. In such cases, identifying the best performers within that sector may not be sufficient. Such is seen to be the case with industries such as tobacco and fossil fuels. ESG considerations are difficult to apply consistently. There is evidence that suggests some ESG signatories claim but do not practice systematic ESG evaluation. In some cases, investors may be tempted to overlook ESG factors in favour of a better-performing portfolio over the short term. Because the information measured using ESG considerations is self-reported, the information provided by a company will likely be presented in the best possible light. Lawsuits, unethical practices and regulatory risks may be under-reported. Fossil fuel companies in particular have been criticized for misrepresenting their conduct and their compliance with local laws and regulations. However, these risks can be mitigated by ensuring that ESG reporting is verified by a third-party.

As defined in the UN PRI, ESG screening is primarily a calculation of financial risk, whereas the option to divest from a particular sector is often chosen for strictly ethical reasons. The UN PRI initiative is premised on the idea that all investors should evaluate ESG because it affects their financial risk: "Crucially, however, while these approaches seek to combine financial return with a moral or ethical return, responsible investment can and should be pursued even by the investor whose sole purpose is financial return, because it argues that to ignore ESG factors is to ignore risks and opportunities that have a material effect on the returns delivered to clients and beneficiaries."[2] Furthermore, ESG considerations should be incorporated "where consistent with our fiduciary duties."[3] The UN PRI consist primarily of monitoring ESG factors and engaging with companies to encourage them to address problematic behaviours and decisions. There is an ongoing debate over whether this approach is effective. When applied systematically, however, ESG screening can be effective in monitoring the non-financial attributes of companies.

Related to ESG screening, the Montreal Carbon Pledge is a commitment from investors to monitor the carbon emissions of all investment holdings, to report annually on the findings, and, ideally, to gradually reduce the carbon intensity of their portfolios over time. The University of Ottawa has adopted this approach in addition to ESG. For ardent supporters of divestment, monitoring is seen as a weak action when they feel that there is already sufficient information to conclude that certain industries are heavier polluters and contributors to climate change than others. While monitoring can be informative, divestment supporters argue that much of the information on emissions is already available, and tracking emissions does not solve the problem. Although fossil fuel extractors are only the suppliers of fuels and other industries (transportation, energy generation, manufacturing, etc.) are the primary users, some find it most appropriate to address the supply side of the emissions problem.

In arguments against divestment, the benefits of shareholder activism or engagement in promoting ethical business activity are often raised. For example, ESG screening as set out in the UN PRI promotes the effectiveness of shareholder engagement. However, a number of counter-arguments have been raised against the efficacy of shareholder engagement as a solution to climate change. It is possible that many investors are not interested in activist resolutions. Even if investors are attempting to apply ESG factors, it is difficult to challenge a profitable company. By virtue of their role, fund managers are primarily concerned with returns and have a fiduciary duty to maximize them. However, many institutional investors (universities, state-owned pension funds, religious organizations) are increasingly concerned with ESG factors and in recent years climate-related shareholder resolutions have approached majority support. Many companies are resistant to changing their business model in response to shareholder engagement and activism. Companies have

[2] What is Responsible Investment? https://www.unpri.org/about/what-is-responsible-investment
[3] The Six Principles https://www.unpri.org/about/the-six-principles

legally fought resolutions such as those that call for more information on how they would react to stricter carbon regulations. Encouraging companies to transform their fundamental business model (from fossil fuels to clean energy) would be a much more significant challenge. Past forms of investor engagement with company management have been slow and modest in scope. This is problematic when the issue of climate change is widely considered to require rapid and effective action from shareholders. Even at its most effective, shareholder activism reaches a limit at publicly traded companies, because many fossil fuels companies are privately held. The same problem is encountered in divestment decisions, but it is important to remember that divestment is aimed at changing regulation for all fossil fuel companies, not at separately changing each one.

There are competing arguments about the effectiveness of divestment and about appropriate steps for institutional investors such as universities to take in response to climate change. Many claims made in the divestment debate are disputed, and many rest on predictions of future activity (regulation, technology change, and so on) that are uncertain. The fundamental lesson from this review of arguments is that there are many assumptions underpinning expert statements on future financial performance, the effectiveness of ESG, and other claims made about divestment. Awareness of the source of information and counter arguments is important in having an informed debate about divestment and alternative options.

In addition to considerations surrounding divestment, there are other options available to universities. Several universities, for example, have committed to reduce campus greenhouse gas emissions, to promote awareness of existing climate-related research and academic programs, and to increase research funding in renewable energy and climate science areas. Some may also attempt to lobby governments or to provide policy support to governments in order to encourage changes to carbon policy, or to encourage financial institutions to develop more low-carbon or fossil-free fund options for investment. [4]

COMMUNITY CONSULTATION AND FEEDBACK

In October 2016, the President's Advisory Committee on Fossil Fuels Divestment publicly released a review of some options for fossil fuel divestment and related strategies for McMaster University (Appendix C); a video summarising the options and other informational material were also released at that time (Appendices D and E). A Town Hall to present the findings of the report and to gather feedback from the community was held. A survey was made available to members of the McMaster and broader communities. The short survey asked a number of simple questions designed to gauge the communities' appetite for divestment and to identify which other options might be considered more or as effective.

At the Town Hall, members of the Committee presented information about the history of the fossil-free movement and the campaign at McMaster; about McMaster's Endowment Fund holdings, the options for divestment and its alternatives, and the implications of both; as well as about the fundamental questions and concerns related to fossil fuels, climate change, divestment, and how McMaster should respond these issues. Members of the Committee also responded to questions and comments from the audience, the majority of whom had an opportunity to actively participate in the discussion.

Although most members of the audience who spoke expressed support for divestment in some form, not all were in agreement that this is the first step McMaster should take as a response to the problem of climate change. Most participants said they were not aware of the practice of ESG screening or that McMaster is already engaged in these activities with its fund managers. In fact, a significant number of questions from the audience sought clarification of what McMaster's current ESG screening practices entail and how they might be further developed with adoption of the UN PRI. Members of the audience also spoke about the need to support the development of alternative energies and green technologies in advance of or while also divesting from fossil fuels companies. Without the development of viable alternatives, it is impossible to change habits associated with demand for fossil fuels. Most audience members seemed to agree that divestment, investment in alternatives, and reducing or eliminating demand are key factors in helping to

[4] For a fuller analysis of divestment alternatives, see Appendix C.

reduce the effects of climate change, and that McMaster should take part in activities that would address all three facets of the problem. It was pointed out that a number of the top 200 fossil fuels companies that McMaster holds in its pooled funds are actively involved in the development of green technologies and alternative energies, and that this is one of the ways ESG screening can be more effective than full divestment. The audience concluded that it is important that any ESG screening includes specific statements or considerations related to climate change, and, further, that McMaster's investment policies should also contain specific language about climate change in order to effectively respond to the issue.

It was clarified for the audience that the divestment campaign was targeted specifically at the Endowment Fund and that there would be no changes made to the Pension Funds. The Endowment Fund must be maintained at a certain rate of return in order to ensure the sustainability and growth of the investment pool so that it can continue to make funds available for endowed research chairs, scholarships and bursaries. For this reason, the risk assumed through investments is a key factor in these decisions. Although investing in renewable energies may be important, if McMaster were to actively invest in renewables, a separate portfolio would likely have to be created and, as these are new industries, it would also be necessary to verify that they are sound, long term investments. There is a tension between investing in new technologies, which have greater risks associated because they are still in development, and the idea of sustaining the fund so that it can grow.

One clear theme that came through at the Town Hall was the audience's desire to see McMaster take a leadership role on the issue of climate change. It was suggested that this could be done by taking a strong and active stand against climate change. Some thought this could best be done by making a strong statement through divestment. Others thought that McMaster should make the decision based on what was best for the University and not based on how other universities have responded to divestment campaigns. Still others acknowledged that, since any recommendation to divest would not affect the Pension Fund, and since the divestment campaigns were focused on the 200 and not on other companies that are involved in the fossil-fuels industry (such as those involved in the underpinning infrastructure), McMaster could at best only partially divest from fossil fuels and advocated for a partial divestment strategy that could still send a strong message. It was suggested that a strong ESG screening process could effectively meet both of those mandates.

An analysis of the completed survey responses echoed the sentiment expressed at the Town Hall and indicated that, although complete divestment is important to respondents, investment in alternatives and other approaches should also be considered. 598 completed surveys were received. Of these, 28% identified themselves as faculty members. Undergraduate students and graduate or post-graduate students made up 24% and 13%, respectively. The remaining respondents were members of the community (13%), alumni (13%), and staff (8%).

When asked which form of divestment they prefer if the University chooses to divest, 48% of respondents said they prefer complete divestment (all direct and indirect investments in the fossil fuel industries are sold off and replaced with investments in other industries and funds). Although this is by far the popular choice, the majority of respondents did not select this option and were divided across the other suggested options. Respondents selected, in order of frequency: positive screening and best-in-class performance (ESG involves monitoring the environmental, social and corporate governance performance of all holdings, possibly combined with shareholder engagement and positive screening of the portfolio by selecting better ESG performers) (17%); portfolio tilting (moving investment towards lower-carbon companies and industries over time) (11%); targeted divestment (targeting only aggressive extractors who blatantly disregard safe extraction limits or only companies that promote climate misinformation) (9%); parallel investment (divesting a small portion of endowment funds into a fossil free fund to compare performance and to offer a fossil free option for donors) (8%); partial divestment (divestment from coal and oil sands only, recognizing the higher carbon emissions these fuels create compared to conventional oil and natural gas) (7%); and reduction to x% of a portfolio's holdings, x% of an investment pool, etc. (often 1%, 5%, 10%) (1%). Although, as

noted, the most popular choice was full divestment, the responses to this and other questions indicated that respondents also believe there are other ways that McMaster might be strategic in its investment policies.

On the subject of how McMaster should handle its current investment in fossil-fuels companies, respondents were asked to rank four options: full divestment; not divesting but channelling more resources into climate science and renewable energy research; ESG screening; or partial divestment from coal and oil coupled with investment in a new renewable energy fund, increasing direct investment in research, and other non-investment initiatives. While complete divestment was preferred by 43% of respondents, the majority (57%) of first choice preferences were spread almost evenly across each of the other three options (19%; 18%, and 19%, respectively). This again suggests that there is strong support for divestment, but still larger support for alternatives to full divestment. Almost a third of respondents (31%) placed complete divestment as their last choice. Interestingly, while students preferred divestment – full (46%) or partial (24%) – over increased research funding or ESG screening as their first choices, the first preferences of faculty members were more evenly spread across all the options. Although full divestment was the most often selected (32%) first choice of faculty respondents, the option of not divesting but channelling more resources toward climate science and renewable energy research was a very close second (29%) as the first preference. Not far behind was ESG screening (21%) and partial divestment from coal and oil (17%). The percentage of faculty members that selected full divestment as their first preference (32%) was lower than that of any other constituency.

Survey respondents were presented with a number of statements about investment in fossil fuels and were asked to indicate, on a sliding scale, whether they agreed or disagreed with the statements. A large majority of respondents (74%) said they strongly disagreed or disagreed with the statement that universities should not make political or ethical statements with their investments. A similar percentage (75%) strongly disagreed or disagreed with the statement that fossil fuels are currently widely used and therefore they provide social benefits that outweigh their harms. When asked if they agree or disagree with the statement that divesting from the supply side is unjustified when the real problem is demand, 63% strongly disagreed or disagreed. 64% also strongly disagreed or disagreed with the statement that divestment distracts from real climate change solutions that may be found through research or pushing governments to enact more binding regulations. Many respondents also strongly disagreed or disagreed (59%) with the statement that divesting is hypocritical when universities still use fossil fuels while 26% agreed or strongly agreed with this statement. Respondents were divided on the subject of the effectiveness of shareholder activism: 42% strongly disagreed or disagreed that shareholder activism is a better solution, shareholder engagement could push fossil fuels companies to ‘transform’ into renewable energy providers; 27% were neutral; and 31% agreed or strongly agreed with this statement.

The survey also provided respondents with an opportunity to provide comments on the issue. 172 respondents entered a comment. Although the majority of commenters were in favour of divestment from fossil fuels companies, many argued that full divestment (from this or any sector) was not the answer. A number of commenters remarked that divestment from extraction companies would be hypocritical if McMaster is not also going to divest from industries that are heavily reliant on fossil fuels, such as oil and gas infrastructure and the automotive industry. Others noted that not all fossil fuels companies are equal and some are working on renewable alternatives and other green technologies and so should be supported. Echoing this, still others stressed the need for supporting research and development related to alternatives, as well as for providing education about sustainable solutions and environmental literacy, and setting targets to reduce consumption. Several commenters also spoke out against divestment. Some noted that divestment from an entire industry is hypocritical and will not solve the problem that is climate change because it does nothing to reduce the demand for or reliance on fossil fuels. Others suggested that, if McMaster chose to divest from fossil fuels, it would have no impact on the industry given its relatively minimal exposure. It was also posited that it is the University’s duty to grow the Endowment Fund, not to make political statements with its investments. Still others remarked on the ethics of selecting one industry to target for divestment when other industries

or companies may have policies or practices that are also detrimental to the environment or to specific populations.

While this diversity of responses suggest that members of the McMaster and broader communities appear to be divided on the subject of divestment from fossil fuels companies, two sentiments were perhaps clear: one, that the community would like to see a more thoughtful and nuanced response from the University on how to address the issue of climate change in general and its investments in particular; and two, that the community would like to see McMaster take a broader leadership role on these issues.

WHAT MCMASTER IS DOING NOW

Since 2013, McMaster has asked its investment managers and potential investment managers about their practices when assessing environmental, social and governance (ESG) considerations and has taken their responses into account during the review and selection of investment managers. In 2014 and 2015, McMaster added language related to ESG considerations to its investment policies for its Investment Pool, its Hourly Pension, and its Salaried Pension plans.

The Investment Pool Committee is also actively engaged in research related to UN PRI signatory responsibilities, peer sector changes, investment industry changes involving the establishment of new funds and strategies specifically focused on climate change or the top 200 list. The Committee, informed by a carbon footprint measurement, currently plans to evaluate reduction target strategies over time. Further, the Chief Financial Officer and Treasurer plan to host an Investment Pool town hall to share the carbon measurement report finding and to communicate a reduction target strategy over time.

The President's Advisory Committee also requested information on non-investment activities related to climate change and fossil fuels being undertaken across campus. Information was provided on research activities in several Faculties and on initiatives within Facility Services related to sustainability and to reducing the demand for and reliance on fossil fuels across campus, as well as on academic programming and other initiatives focused on sustainability.

The Committee learned that there many research projects related to climate change and fossil fuels are currently underway with a diverse focus. As might be expected, there is a lot of research being conducted in the Faculty of Engineering, primarily in the Departments of Chemical Engineering, Computer and Electrical Engineering, Engineering Physics, and Mechanical Engineering, and in the Faculty of Science, particularly in the School of Geography and Earth Sciences and in the Department of Biology. To a lesser extent, but still significant, researchers in the Faculty of Humanities, particularly in the Departments of English and Cultural Studies, History and Philosophy also reported research related to climate change and fossil fuels.

In the Faculty of Humanities, the work being carried out is primarily related to environmental history, which is largely informed by climate change debates; on ethics and governance, science and policy, sustainable futures and climate change; and on social and ecological resilience.

Research being undertaken in the Faculty of Science is varied, although most projects focus on ecosystems and greenhouse gas emissions in a multiplicity of contexts. In some cases the research is directly funded by fossil-fuels companies, some of which are on the top 200 list. While many of these projects are related to the negative effects of greenhouse gas emissions and temperature changes on ecosystems, some research is related to mitigation of the effects of greenhouse gas emissions or carbon sequestration on ecosystems and how to reclaim these ecosystems from those effects.

Faculty members in the Faculty of Engineering are engaged in a broad range of research related to climate change and fossil fuels. Many are studying ways to reduce greenhouse gas emissions, whether through the development of alternatives to fossil fuels, reducing reliance on fossil fuels, or green engineering existing technologies. The University operates the McMaster Nuclear Reactor, a medium flux reactor and the most

powerful research reactor at a Canadian university. Faculty members in Engineering conduct significant research work on nuclear energy as a carbon-free energy source.

McMaster has supported academic programming in sustainability for some time. Many programs offer courses with a sustainability component and, since the 2014-2015 academic year, students have been able to study toward an Interdisciplinary Minor in Sustainability. This minor enables students to take courses from a broad selection in all six Faculties and the Arts and Science Program. Students can also take electives from a suite of courses focusing on sustainability. Upper-level sustainability courses include an experiential learning component and involve research into a variety of topics, many of which are related to reducing the demand for fossil fuels by supporting sustainable transportation (such as cycling infrastructure) and alternative forms of energy (such as hydrogen energy).

The President's Advisory Committee on Natural Lands has been working on a number of ongoing projects related to the preservation, restoration and stewardship of the natural lands owned by or adjacent to McMaster campus. Some projects have been carried out with the assistance of the Department of Biology, the Ontario Public Interest Research Group (OPIRG) at McMaster, the McMaster Residence Life Office, the Royal Botanical Gardens and others. Many of the programs and initiatives build educational opportunities and all have as their goal the reduction of McMaster's environmental footprint.

In 2003 Natural Resources Canada conducted a study of the energy intensities of various institutions, including universities, colleges and hospitals, across Canada. The energy intensity of Ontario facilities was 2.19 GJ/m^2. Although McMaster's energy intensity, at 2.14 GJ/m^2, was already lower than the provincial average, the University took steps to further reduce its energy consumption and greenhouse gas emissions. By 2009, McMaster's energy intensity had dropped to 1.7 GJ/m^2. Continued efforts since 2014 to reduce the University's greenhouse gas emissions have driven a number of ongoing initiatives involving heating, ventilation and air-conditioning automation, mechanical equipment upgrades, demand control ventilation in laboratories and fume hoods retrofit; reducing electrical demand during peak summer periods; lighting retrofits; water conservation; waste diversion, e-waste recycling, measures to reduce the use of disposable plastic water bottles on campus and initiatives to lower the number of open unused sashes in labs; and electric vehicle charging stations. Together these initiatives have avoided an estimated 7,269 metric tonnes of CO^2 equivalent.

The University plans to maintain its leadership role in reducing consumption by continuing these and other programs that will increase energy efficiency and the sustainability measures on campus. Projects in areas such as energy efficiency, water conservation and energy reduction; sustainability; transportation; power generation; and behaviour-based approaches are planned for implementation. Moreover, the University has set energy consumption reduction targets of 4% in electricity, 7% in water and 4% in gas over the next five years.

PACFFD CONSENSUS

The President's Advisory Committee on Fossil Fuels Divestment examined the effectiveness of divestment from fossil-fuels companies and weighed this against alternative approaches that might be considered. The Committee recognizes that there is a symbolic meaning to the notion of fossil fuel divestment as it attaches the University to a global movement. There are over 100 universities around the world which have committed to this approach, mostly in Europe with the UK (accounting for roughly half of all university divestment commitments worldwide[5]). However, the Committee kept returning to the question of impact. Through extensive discussion the Committee was persuaded by many of the arguments elucidated above that led other Canadian universities to reject fossil fuel divestment as a strategy. The Committee also considered additional concerns not mentioned previously. One relates to where divested funds might be invested. Particularly in a Canadian context many alternative investments would involve industries that profit indirectly from fossil fuel extraction. This includes a wide variety of sectors, from banking and finance to mining,

[5] University fossil fuel divestment total tips GBP80 billion globally, www.timeshighereducation.com (2017/08/17)

materials and equipment. It was also clear that a number of the companies on the top 200 list are active in developing alternatives to fossil fuels and are seeking ways to reduce not only the impact of fossil fuels on the environment, but also to reduce the demand for and reliance on fossil fuels. Divesting from these companies would seem to be at cross purposes with the intention of the fossil-free campaigns. The list of the top 200 fossil fuels companies was generated and is annually updated by *gofossilfree.org*, an organization closely linked to *350.org*. The Committee had concerns that as this list is updated by a third party, it effectively puts decisions about McMaster's Endowment Fund, or a portion of it, into the hands of an organisation with which the University has no association. The annual fluctuation of the Carbon Underground 200 means that, were McMaster to divest from the companies on this list, the segregated portfolio (or pooled fund if one were made available) would have to be checked regularly against the revised list and investments would have to be sold accordingly. While the divestment timeline proposed in the two petitions provide the opportunity for optimising the timing of any divestment decisions based on the market, the continued revision of the list of the 200 potentially does not allow the kind of flexibility necessary to take advantage of fluctuations in the market.

The Committee was most strongly persuaded by the concern that divestment is unlikely to have any measurable impact, either on the fossil fuel industry or on the public at large. A secondary discussion was related to the considerable disruption associated with divestment. It was felt that this would be very difficult to justify without such impact. The Committee therefore determined that the University should focus on strategies through which McMaster could take a more pro-active approach that would address our real concern for the impact of fossil fuel use on climate change and that would provide greater opportunities for lasting and measurable impact.

The Committee therefore makes the following recommendations.

RECOMMENDATIONS:[6]
The President's Advisory Committee on Fossil Fuel Divestment recommends that:

Recommendation I

McMaster should not commit to a full divestment from the 200 listed fossil fuel companies, but should rather pursue a number of measures as outlined below.

McMaster can make its greatest impact on mitigating and reducing the effects of climate change through strategies related to improving investment policies, promoting research, increasing awareness and reducing consumption. Such strategies build on McMaster's strengths and current practices and foster a climate for change within the McMaster community and beyond.

Recommendation II

McMaster University should commit to measuring the carbon-footprint of the Investment Pool on an annual basis.

This measurement should be undertaken by a third party, using a measurement approach supported by the United Nations Principles on Responsible Investing (UN PRI) and the United Nations Environment Programme Finance Initiative. It is further suggested that this measurement should be taken as of April 30 to correspond with year-end. Note: the Investment Pool Committee has already initiated its first measurement as at April 30, 2017 with the intent to re-measure at least every five years; this strategy would be amended to require an annual measurement of the Investment Pool's carbon footprint if this recommendation is adopted.

[6] Note that Recommendations II through VII have already been adopted.

Recommendation III
The carbon footprint measurement of the Investment Pool should be disclosed to the University and broader communities. Further, the report should set reasonable annual reduction strategies or targets, which will be made available to the McMaster community and beyond.

As part of the University's accountability surrounding climate change, the carbon footprint report should be transparent to students, faculty and staff, as well as to the broader community. The carbon footprint report and reduction strategies and targets will be made available on the Financial Affairs website and could eventually become part of a larger University-wide carbon footprint report, which would include a broader focus on all greenhouse gas emissions, campus consumption and reduction-oriented activities, which would be prepared annually by Facility Services.

Recommendation IV
The Investment Pool Committee should implement its proposed plan for becoming a signatory to the United Nations Principles for Responsible Investment (UN PRI).

The Investment Pool Committee has reviewed the six principles for responsible investing set out in the United Nations Principles for Responsible Investment (UN PRI), including the concepts and activities that support these principles. The Investment Pool Committee already practices some of these activities and it has explored a multi-year plan toward adopting more of them. In addition, the President's Advisory Committee on Fossil Fuels Divestment recommends that the Investment Pool Committee provides annual progress reports to the Planning and Resources Committee.

Recommendation V
The Chief Financial Officer and Treasurer should organize an annual Investment Pool Town Hall on campus.

A Town Hall would be hosted to share the carbon footprint report, the rationale behind its reduction strategies and targets, and to solicit feedback from the broader McMaster community. Like the carbon footprint report itself, a Town Hall could be focused on the Investment Pool or could be a more University-wide carbon disclosure initiative involving Facility Services that includes all aspects of carbon use and demand, as well as reduction targets and progress toward them.

Recommendation VI
The Investment Pool Committee should review and work to adopt policy changes consistent with environmental, social and corporate governance (ESG) considerations that embed the concepts of increased transparency, proxy voting disclosure, and carbon footprint measurement.

Recommendation VII
The Investment Pool Committee should commit to making a substantial investment in companies focused on commercializing carbon-free sources of energy and climate change mitigation technologies.

This should be established as a separate pooled investment fund with a minimum investment of $5 million within two years.

Recommendation VIII
The University Secretariat should review and bring forward updates to the McMaster policy entitled Social Responsibility and McMaster's Investment Policy *to extend its basis from the Human Rights Code to include the United Nations Principles for Responsible Investment.*

The United Nations Principles for Responsible Investment not only encompass Human Rights, but also address broader concerns involving environmental, societal, governance, public policy, and disclosure considerations.

Recommendation IX
McMaster University should promote and recognise research currently being undertaken in fields related to alternative energies, clean technologies, climate change, and other associated fields.

Many researchers at McMaster are working in areas closely associated with alternative energy, clean technologies, climate change, public policy, sustainability, and so on. While conducting a survey of research being done at McMaster related to fossil fuels, it became clear that there are currently dozens of projects underway at McMaster that cover a wide variety of subjects and across virtually all Faculties.

Recommendation X
McMaster University should support the creation of a research institute focussed on alternatives to fossil fuels, involving clean technologies, climate change mitigation strategies, public policy and sustainability research and related fields.

Primary responsibility for establishing this research institute will rest with the Vice President Research.

Recommendation XI
The Office of the President should support a lecture series and community engagement events focussed on climate change.

McMaster is well placed to make a commitment to strategies that promote awareness of and encourage open discussion about issues related to climate change.

Recommendation XII
With respect to consumption, McMaster University should establish a benchmark against which to measure its greenhouse gas emissions, pending which it should establish a target of an annual reduction of 4% per annum in consumption and report performance against this target, to be reviewed in five years.

In taking such a step, McMaster will be able to build on its strong history of reducing its consumption in a more effective manner. As members of the McMaster community adopt reduction practices and build sustainable habits, the effects of these strategies will reach well beyond campus.

Appendix A: Student Petition (received October 2015)

To: President Dr. Patrick Deane

Because it is unconscionable to pay for our education with investments that will condemn the planet to climate disaster, we call on McMaster University to immediately freeze any new investment in fossil-fuel companies, and to divest within five years from direct ownership and from any commingled funds that include fossil-fuel public equities and corporate bonds.

Signed by 897 people:

Name	Postcode	Affiliation
Hadi Behdad		
Amandeep Bolina		
Murtaza Barighzai		
Geetika Malhotra		
Tamika Jarvis		
Waleed Dogar		
Anum Nasir		
Arissa Hossain		
Kadeem Bandali		
Priti Khullar		
Sabrina Jobanputra		
Elysia Petrone		
Sagana Atputhaselvaraja h		
Calvin Beauchesne		
Kathie Clark		
Lisbie Rae		
Siegfried Kleinau		
Christine Brown		
Gordon McNulty		
Peter Ormond		
mGottlieb O.Mittelstädt		
Ben Barrett-Forrest		

Appendix B: Faculty Petition

Written: 8 August 2014

Delivered: 5 October 2015

Dear President Patrick Deane:

Re: Divestment from Fossil Fuel Corporations

We write with an urgent request to have McMaster University divest its endowment funds from fossil fuel companies over the next five years. As of 2013, McMaster University had invested $47 million (12%) of its endowment in the top 200 companies that own the world's largest fossil fuel reserves (McMaster documents obtained through a "Fossil-Free McMaster" Freedom of Information request). This divestment would serve as a strong statement on the harm that fossil fuel production and consumption are causing our global environment and humanity. We see this as an act of ethical responsibility, a protest against current practices that cannot be altered as quickly or effectively by other means. This request is consistent with the McMaster Social Responsibility and Investment Policy (http://www.mcmaster.ca/policy/General/Financial/SocialResponsibilityandInvestmentPolicy.pdf)

It is widely recognised that the extraction and burning of fossil fuels contributes atmospheric carbon. We also recognise its contribution to ongoing global warming and that without reducing emissions we are headed for warming of about 4.5°C or more by 2100 (Report by American Association for the Advancement of Science, 2014: http://whatweknow.aaas.org/get-the-facts). Human deaths due to climate change are as high as 150,000 in a single year, according to the World Health Organisation (http://www.who.int/globalchange/news/fsclimandhealth/en/) and climate change is implicated as one of the main reasons we are entering the sixth great extinction period (Maclean and Wilson 2009, PNAS). If we conclude that destroying the climate in which humanity evolved by promoting fossil fuel emissions is wrong, then surely profiting through investments in fossil fuel companies is also wrong.

Divesting our endowment funds will not prevent fossil fuel companies from continuing to promote fossil fuel consumption. It will, however, exert pressure on them to act responsibly as well as increasing the social and economic costs so that they may not continue acting with impunity. Divestment from apartheid South Africa did not cause the collapse of the South African regime but exposed the destructive and negative consequences of apartheid that led to its end. We see divestment as a symbolic effort that isolates fossil fuel companies for their negative actions and pushes them to become green energy companies.

Universities, particularly Canadian universities like McMaster, should play a leading moral role by divesting from fossil fuels setting an example for others to follow. Students at McMaster have initiated this effort through Fossil Free McMaster, one of a large and growing number of student groups involved in fossil fuel divestment campaigns. To date, 13 universities including Stanford and San Francisco State University, 30 cities/counties, 52 religious institutions, the World Council of Churches, and 20 foundations are on record, pledging divestment (http://gofossilfree.org/commitments/). Students are now more aware of these issues and may consider a university's investment choices when applying.

Currently, fossil fuel companies have five times more reserves than the world can afford to burn with a chance of staying under a 2°C level of global warming (see Do the Math by Bill McKibbon (Trailer: http://act.350.org/signup/math-movie/; Full movie: http://vimeo.com/66066932) . The 2°C limit in global warming was agreed to by 114 countries at the Copenhagen Climate Change Conference, suggesting that 4/5 of the reserves should be considered "stranded assets".

Ongoing efforts to expand Canadian tar sands production, supported strongly by our federal government, are particularly harmful because of elevated carbon emissions and the dangers of shipping bitumen. The federal

support is justified and predicated on a flawed premise that portrays these companies as star companies with stellar contribution to the Canadian economy and Canadian jobs. The facts are otherwise. Direct tar sands employment is estimated at just over 0.5 per cent of employment (100,000 jobs employed directly or 175,000 and around 1 per cent counting indirect jobs). Over 70 per cent of tar sands profits flow to foreign investors and the government has managed to collect around 6 per cent of the total value generated by the tar sands (or an average 9 per cent of the industry's economic rent; Michal Rozworski, 2014).

Furthermore, there is no evidence to show that that planned divestment would damage the financial returns to McMaster's portfolio. A number of studies, including one by S&P Capital IQ, demonstrate that over the last ten years an endowment reflecting the S&P 500 without targeted fossil fuel companies would have outpaced one with them. The S&P index based portfolio has out-performed tar sands based ones by a long shot. Besides it is possible for the University to consider re-directing investment to renewable energy alternatives with higher returns and lower risks (Atif Ansar, Ben Caldecott, James Tilbury, "Stranded assets and the fossil fuel divestment campaign: what does divestment mean for the valuation of fossil fuel assets?" Smith School of Enterprise and the Environment, Oxford University, 2013, pp. 71-72).

The University has a choice. It either invests in fossil fuel corporations sustaining this industry's harmful damage to the environment, or it divests, exerting pressure on the industry to promote green sources of energy. If the University regards divestment as "political," then its continued investment is a similarly political act, one that finances present harmful corporate activities and calculates profit from them.

We the undersigned are faculty and officers of the University, many with knowledge and research in climate science, energy, business management, ethics, and the effects of climate change on health, prosperity, and biodiversity. Many are alumni and donors. We appeal to you, as representatives of the University, and to our colleagues, fellow alumni, and donors to join us in signing this statement as an act of conscience and fiscal responsibility and to help bring the University to divest its holdings in fossil fuel corporations as soon as possible,. Divestment would truly move McMaster forward with integrity.

Sincerely,

James S. Quinn, Ph.D., Professor, Biology Department, McMaster University

Atif Kubursi, Ph.D., Professor Emeritus, Economics Department, McMaster University.

David Hitchcock, Ph.D., Professor Emeritus, Department of Philosophy, McMaster University

Altaf Arain, Ph.D., Professor, School of Geography and Earth Sciences, McMaster University

Art Heidebrecht, Ph.D, P.Eng., Director W.G. Booth School of Engineering Practice, McMaster University

Graeme MacQueen, Ph.D., Retired Associate Professor, Department of Religious Studies, McMaster University.

Alan Mendelson, Ph.D., Professor Emeritus, Department of Religious Studies, McMaster University

Martin Daly, Ph.D., FRSC, Professor Emeritus, Department of Psychology, Neuroscience & Behaviour, McMaster University

Don Wells, Ph.D., Professor, School of Labour Studies & Department of Political Science, McMaster University

Brian W. Baetz, Ph.D., Professor, Department of Civil Engineering, McMaster University.

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Ben Bolker, Ph.D., Professor, Department of Mathematics and Statistics and Department of Biology, McMaster University

Michael Egan, Ph.D., Associate Professor & University Teaching Fellow, Department of History, McMaster University

Gary Purdy, Ph.D., D.H.C., D.Sc., F.C,I.M, F.A.S.M., F.T.M.S., N.A.E., F.R.S.C., P.Eng, University Professor, Materials Science and Engineering, McMaster University.

Susan Dudley, Ph.D., Professor, Department of Biology, McMaster University.

Ben Evans, Ph.D., Associate Professor, Department of Biology, McMaster University.

Rama S. Singh, Ph.D., Professor, Department of Biology and Centre for Peace Studies, McMaster University.

Christopher M. Wood, Ph.D., CRC Tier I Chair in Environment and Health, Distinguished University Professor, Professor, Department of Biology, McMaster University.

Paul Andrews, Ph.D., Assistant Professor, Department of Psychology, Neuroscience, and Behaviour, McMaster University.

Robert Korol, Ph.D., Professor Emeritus, Civil Engineering Department, McMaster University.

Nancy Doubleday, Ph.D., Director, Peace Studies, and Associate Professor, Department of Philosophy, McMaster University

Daniel Coleman, Ph.D., Professor, Department of English and Cultural Studies, McMaster University.

Ana R. Campos, Ph.D., Professor, Department of Biology, McMaster University

Xu-Dong Zhu, Ph.D., Associate Professor, Department of Biology, McMaster University

Lofti Belkhir, Ph.D., Associate Professor and Class of 1962 Mechanical Engineering Endowed Chair in Eco-Entrepreneurship, McMaster University.

Barry Allen, Ph.D., Professor, Department of Philosophy, McMaster University.

André Bedard, Ph.D., Professor, Department of Biology, McMaster University.

Jurek Kolasa, Ph.D., Professor, Department of Biology, McMaster University.

David Feinberg, Ph.D., Associate Professor, Department of Psychology, Neuroscience, and Behaviour, McMaster University.

Graham Scott, Ph.D., Assistant Professor, Department of Biology, McMaster University.

Gail Krantzberg, Ph.D., Professor and Director of the Centre for Engineering and Public Policy in the School of Engineering Practice, McMaster University

Diane Enns, Ph.D., Associate Professor, Department of Philosophy, McMaster University

Reuven Dukas, Ph.D., Professor, Department of Psychology, Neuroscience & Behaviour, McMaster University

Jonathan Dushoff, Ph.D., Associate Professor, Department of Biology, McMaster University

Lovaye Kajiura, Ph.D., Assistant Professor (Teaching), Department of Biology, McMaster University

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Stephen M. Streeter, Ph.D., Associate Professor, Department of History, McMaster University

Ruth Frager, Ph.D., Associate Professor, Department of History, McMaster University

Robin Cameron, Ph.D., Associate Professor, Department of Biology, McMaster University

Paul A Faure, Ph.D., Associate Professor, Department of Psychology, Neuroscience & Behaviour, McMaster University

Joanna Wilson, Ph.D., Associate Professor, Department of Biology, McMaster University

Herb Jenkins, Ph.D., .Professor Emeritus, Department of Psychology, McMaster University

Pavlos Kanaroglou, Ph.D., Professor, School of Geography and Earth Sciences, McMaster University

Mark Sproule-Jones, Ph.D., Professor Emeritus, Department of Political Science, McMaster University

Robert O'Brien, Ph.D., Professor of Political Science, McMaster University

James Johnson, Ph.D., Professor Emeritus of Economics, McMaster University

David Goodings, Ph.D., Professor Emeritus of Physics and Astronomy, McMaster University

Mary Sealey, Hons BSc - 1970; MBA 1982, McMaster University

Andrew J. Rainbow, Ph.D., Professor Emeritus, Department of Biology, McMaster University.

Neil McLaughlin, Ph.D., Associate Professor, Sociology Department, McMaster University

Catherine Beattie, Ph.D., Retired Associate Professor, Department of Philosophy, McMaster University.

Gary Warner, D de l'U., Retired Associate Professor of French, McMaster University.

Pauline Prowse, McMaster University Alumni, Chair of the Board of Directors of the Hamilton Association for Renewable Energy

Alvin A. Lee, Ph.D., President Emeritus & Professor of English Emeritus, McMaster University

George Sorger, Ph.D. Emeritus Professor, Department of Biology, McMaster University.

Dr. Pat Chow-Fraser, Ph.D., Professor of Biology, Director of Life Science Program, McMaster University.

Matthew Cooper, Ph.D., Professor Emeritus, Department of Anthropology, McMaster University

Bruce Milliken, Ph.D., Professor, Department of Psychology, Neuroscience & Behaviour, McMaster University

Deda Gillespie, Ph.D., Professor, Department of Psychology, Neuroscience & Behaviour, McMaster University

Joseph A. Kim, PhD, Associate Professor, Department of Psychology, Neuroscience & Behaviour, McMaster University

Judy Major-Girardin, M.F.A., Associate Professor, School of the Arts, McMaster University

Sally McKay, Assistant Professor, School of the Arts, McMaster University

Sue Becker, Ph.D., Professor, Department of Psychology Neuroscience & Behaviour, McMaster University

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Joshua Weresch, MA of Divinity, BA Music and Religious Studies from McMaster University

Graham Petrie, Ph.d., Emeritus Professor, English and Film Studies, McMaster University

Jennifer J. Heisz, Ph.D., Assistant Professor, Department of Kinesiology, McMaster University

Jean Wilson, Ph.D., Associate Professor and Director, Arts & Science Program, McMaster University

Carmel Mothersill DSc. Professor and CRC Chair, Dept. Medical Physics and Applied Radiation Sciences, McMaster University

Beth Marquis, Ph.D., Assistant Professor, Arts & Science Program, McMaster University

Henry A. Giroux, Professor and McMaster University Chair for Scholarship in the Public Interest

Michael Mikulak, Ph.D., Adjunct Faculty, Sustainable Futures Program, McMaster University.

Lisbie Rae, PhD., sessional lecturer in Drama (retired), McMaster University

G. Brian Golding, Professor, CRC Tier I chair, Department of Biology, McMaster University

Jennifer Bonnell, Assistant Professor, Department of History, McMaster University

Patrick Byrne, MSc., Sessional Faculty and Program Coordinator, Arts & Science Program, McMaster University

Richard Arthur, Ph.D., Professor, Department of Philosophy, McMaster University

Bradd Hart, Ph.D., Professor, Department of Mathematics and Statistics, McMaster University

Nicholas Kevlahan, Ph.D., Professor, Department of Mathematics and Statistics, McMaster University

Colin Seymour, PhD., Professor, Department of Medical Physics and Applied Radiation Sciences, McMaster University

Gregory Wohl, PhD, PEng, Associate Professor, Department of Mechanical Engineering, McMaster University

Krista Madsen Baker, Assistant Professor, Department of Kinesiology, McMaster University

Sara Bannerman, PhD, Assistant Professor, Department of Communication Studies and Multimedia, McMaster University

Laura Parker, Ph.D., Associate Professor, Department of Physics and Astronomy, McMaster University

Kari Dalnoki-Veress, Ph.D., Professor, Department of Physics and Astronomy, McMaster University.

John Vickers, Ph.D., Professor Emeritus, Faculty of Health Sciences, McMaster University

Karen Balcom, Ph.D., Associate Professor, Department of History, McMaster University

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Cheryl Quenneville, Ph.D. P.Eng, Assistant Professor, Department of Mechanical Engineering, McMaster University

Amber Dean, Ph.D., Assistant Professor, English and Cultural Studies, McMaster University

Sarah Brophy, PhD, Professor, English and Cultural Studies, McMaster University

Susie O'Brien, Ph.D., Associate Professor, English and Cultural Studies, McMaster University

Lorraine York, Ph.D., Professor, English and Cultural Studies, McMaster University

Elisabeth Gedge, Associate Professor, Department of Philosophy, McMaster University

Grace Kehler, Ph.D., Associate Professor, English and Cultural Studies, McMaster University

Suzanne Mills, PhD, Associate Professor, School of Labour Studies and Geography and Earth Sciences, McMaster University

Maroussia Ahmed, PhD, Professor Emerita, Department of French, McMaster University

Susan Fast, PhD, Professor, English and Cultural Studies, Director, Graduate Program in Gender Studies and Feminist Research

Stephen Heathorn, PhD, Professor, Department of History, McMaster University

Isik Zeytinoglu, PhD, Professor, DeGroote School of Business, McMaster University

Adam Hitchcock, PhD, Professor, Department of Chemistry & Chemical Biology, McMaster University

Christine Quail, PhD, Associate Professor, Department of Communication Studies and Multimedia, McMaster University

Jane Aronson, Professor, School of Social Work, McMaster University

Stuart Mestelman, Professor Emeritus, Department of Economics, McMaster University

Michael Kliffer, Associate Professor, Department of French, McMaster University

Sean Corner, Associate Professor, Department of Classics, McMaster University

Bill Prestwich, Professor Emeritus, Department of Medical Physics and Radiation Science, McMaster University

Andrew Gilbert, Assistant Professor, Department of Anthropology, McMaster University

Gerald Chapple, Retired Associate Professor of German, (former) Dept.of Languages and Linguistics

Michelle Dion, Associate Professor, Department of Political Science, McMaster University

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Cecile Fradin, Associate Professor, Department of Physics & Astronomy, McMaster University

Anne Savage, PhD, Associate Professor, Department of English & Cultural Studies, McMaster University

Joseph B. Rose, Professor, DeGroote School of Business Mcmaster University

Walter Smyrniw, Professor Emeritus, Department of Linguistics & Languages

John E. Greedan, Professor Emeritus, Department of Chemistry and Chemical Biology, McMaster University

Marek Niewczas Ph.D., P.Eng., Professor, Department of Materials Science and Engineering, McMaster University

Harvey A. Feit, Ph.D. Professor Emeritus, Department of Anthropology, McMaster University

Karin R. Humphreys, Ph.D. Associate Professor, Department of Psychology, Neuroscience & Behaviour, McMaster University

Tina Moffat, Ph.D. Associate Professor, Department of Anthropology, McMaster University

Marie Elliot, Ph.D. Associate Professor, Department of Biology, McMaster University

Nancy B. Bouchier, Ph.D., Associate Professor, Department of History, McMaster University

FOSSIL FUEL DIVESTMENT:

Review and Analysis of Options for McMaster University

President's Advisory Committee on Fossil Fuels Divestment
October 6, 2016

Fossil Fuel Divestment: Review and Analysis of Options for McMaster University

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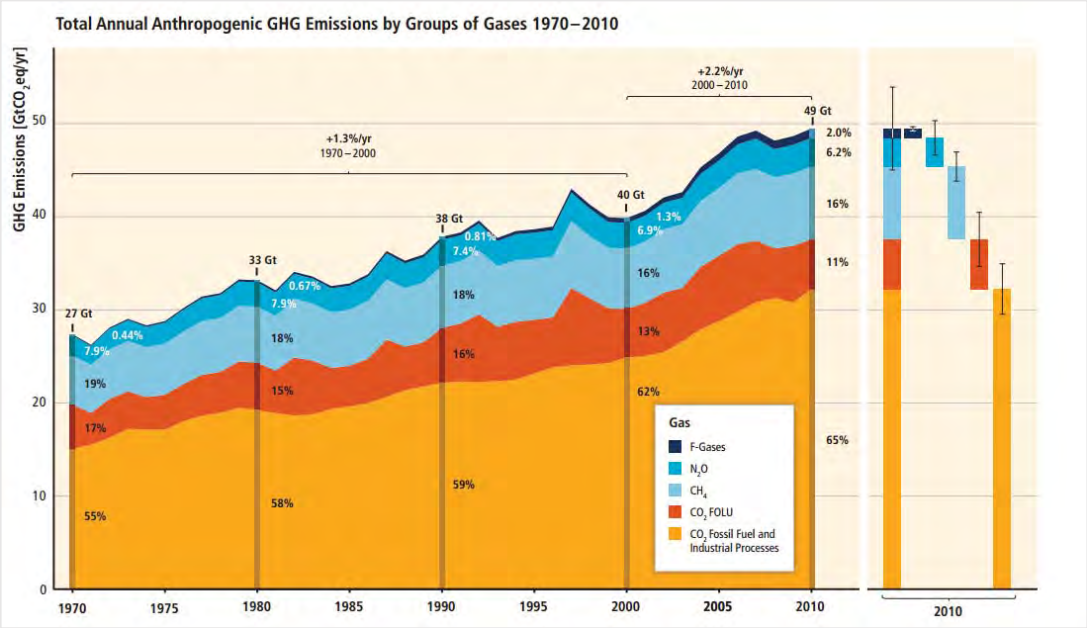
October 6, 2016
Catherine Moez
Office of the Provost, McMaster University

Significant and valuable input has been received from:
Provost and Vice-President (Academic) Dr. David Wilkinson
Assistant Vice-President (Administration) & Chief Financial Officer Deidre (Dee) Henne, CPA, CA
And members of the President's Advisory Committee on Fossil Fuels Divestment

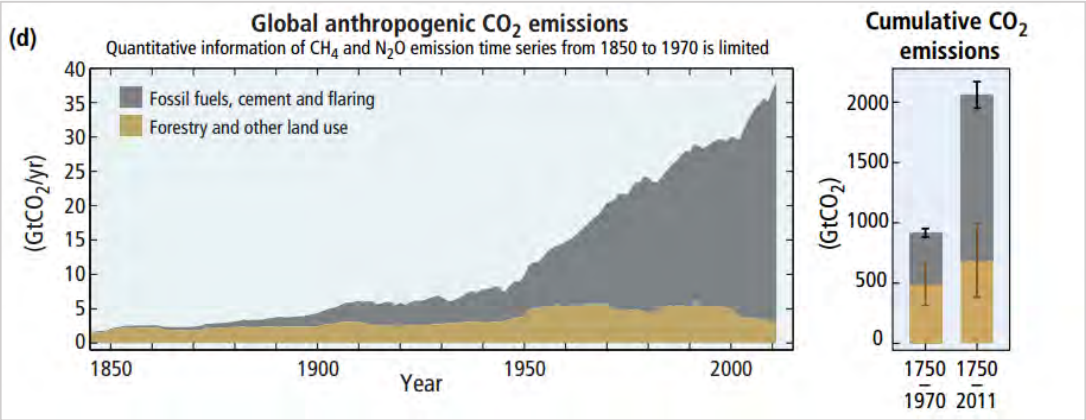
Executive Summary

What is divestment and why divest?

McMaster University and hundreds of other universities, local governments, professional associations and non-profit organizations around the world are facing the question of whether to sell (divest) their investments in fossil fuel companies. Students and faculty have been at the forefront of the global fossil free movement, urging large institutional investors to align their investment practices with their values. The motivation for divestment is primarily ethical: there is significant harm to human health and the environment caused by the extraction and use of the fossil fuel industry's products. Coal, gas and oil produce the majority of climate-warming carbon dioxide emissions.



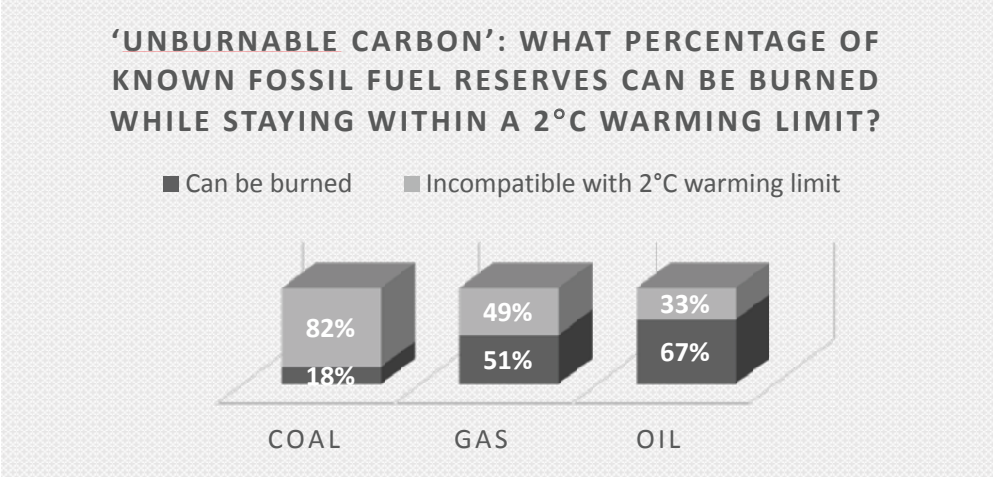
Greenhouse gas emissions by source, 1970-2010 (IPCC 2014, 5)



Carbon dioxide emissions by source, 1850-2011 (IPCC 2014, 3)

The harms of climate change are well documented in academic journals and Intergovernmental Panel on Climate Change (IPCC) publications; the most recent report names species extinctions, increasingly severe droughts and storms, increased health risks from heat extremes and changing disease vectors, and risks to water availability and food production (IPCC 2014, 10-16) as projected effects of climate change.

Apart from their role in supplying the fuels that are driving anthropogenic climate change, fossil fuel companies have also been criticized for polluting local environments in the extraction process, promoting climate misinformation, and continuing to pursue new extraction projects without regard for the environmental damage caused. Although keeping global warming within two degrees Celsius of pre-industrial levels (the 2°C international target) would mean that a large proportion of currently known fossil fuel reserves could not be burned, fossil fuel extraction companies continue to explore for more resources.



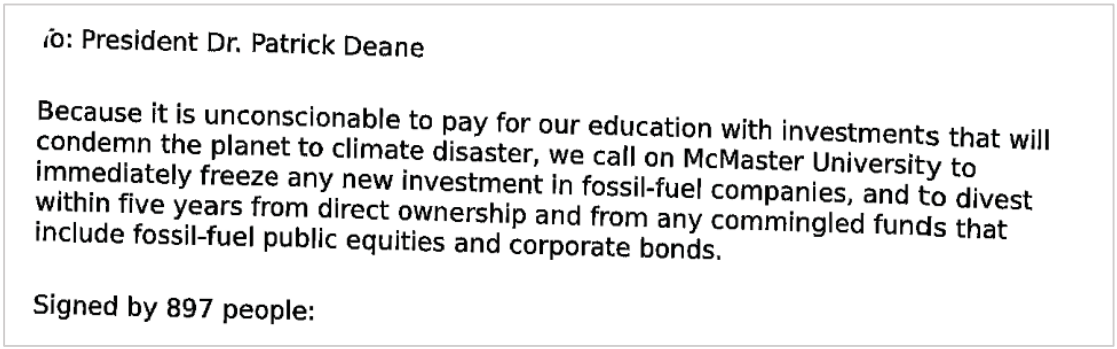
(Image based on data from McGlade and Ekins 2015, 189)

Financial risks of continuing to invest in the industry are sometimes also cited as a reason to divest: governments may re-regulate the industry (or remove subsidies, or raise the price on carbon emissions), demand for fossil fuels may decrease as other energy sources become more competitive, and reserves cannot last forever.

The response to this campaign has generally not challenged the existence of these harms. Instead, opponents argue that *demand* for fossil fuels should be targeted, not the supply side, or that the harms produced by fossil fuel use are outweighed by the social benefits of having an energy source to power transportation and other needs. Some also point out that there is a high bar for establishing agreement to divest on ethical grounds, since views vary within the university community.

Many universities, including McMaster (see Appendix A), have social responsibility and investment policies that permit divestment from certain industries, companies or governments for ethical reasons. To date, no Canadian universities have chosen to divest from fossil fuels. Hundreds of institutions have done so globally, but the definition of divestment varies and some have chosen to divest only direct holdings, not indirectly held funds. Many others have chosen to hold direct investments in order to engage in discussions with senior leaders regarding the environmental issues. McMaster's investments are virtually all indirect, and its total level of exposure is approximately 4.3% of the $836.2 million endowment fund pool.

As an alternative to divestment, a number of Canadian universities have chosen to implement ESG considerations when conducting investment manager selections and when reviewing quarterly investment manager reports. This practice involves the ongoing monitoring of the environmental, social and corporate governance performance of all investment holdings. This report also explores ESG considerations as an option – noting McMaster has been applying this practice since 2013 – but common standards regarding ESG considerations are still evolving and practices among investment managers vary widely. ESG considerations can be combined with divestment, wherein all investments are screened but special restrictions are placed on certain companies or industries. Additional actions could include partial divestment (from coal and oil sands, the most polluting fossil fuels), creating a new investment fund focused on renewable energy, increasing research funding in energy and climate science areas directly, or other non-investment-related actions. The degree to which screening factors are applied inevitably affect the degree to which an investment manager's performance can be tracked to standard investment benchmarks. This can lead to difficulty assessing the performance of investment manager, as there may be no relative benchmark to use as a comparison.


To: President Dr. Patrick Deane

Because it is unconscionable to pay for our education with investments that will condemn the planet to climate disaster, we call on McMaster University to immediately freeze any new investment in fossil-fuel companies, and to divest within five years from direct ownership and from any commingled funds that include fossil-fuel public equities and corporate bonds.

Signed by 897 people:

Text of student petition

Written: 8 August 2014

Delivered: 5 October 2015

Dear President Patrick Deane:

Re: Divestment from Fossil Fuel Corporations

We write with an urgent request to have McMaster University divest its endowment funds from fossil fuel companies over the next five years. As of 2013, McMaster University had invested $47 million (12%) of its endowment in the top 200 companies that own the world's largest fossil fuel reserves (McMaster documents obtained through a "Fossil-Free McMaster" Freedom of Information request). This divestment would serve as a strong statement on the harm that fossil fuel production and consumption are causing our global environment and humanity. We see this as an act of ethical responsibility, a protest against current practices that cannot be altered as quickly or effectively by other means. This request is consistent with the McMaster Social Responsibility and Investment Policy (http://www.mcmaster.ca/policy/General/Financial/SocialResponsibilityandInvestmentPolicy.pdf)

It is widely recognised that the extraction and burning of fossil fuels contributes atmospheric carbon. We also recognise its contribution to ongoing global warming and that without reducing emissions we are headed for warming of about 4.5◦C or more by 2100 (Report by American Association for the Advancement of Science, 2014: http://whatweknow.aaas.org/get-the-facts). Human deaths due to climate change are as high as 150,000 in a single year, according to the World Health Organisation (http://www.who.int/globalchange/news/fsclimandhealth/en/) and climate change is implicated as one of the main reasons we are entering the sixth great extinction period (Maclean and Wilson 2009, PNAS). If we conclude that destroying the climate in which humanity evolved by promoting fossil fuel emissions is wrong, then surely profiting through investments in fossil fuel companies is also wrong.

Text of faculty petition (partial; see Appendix B for full text)

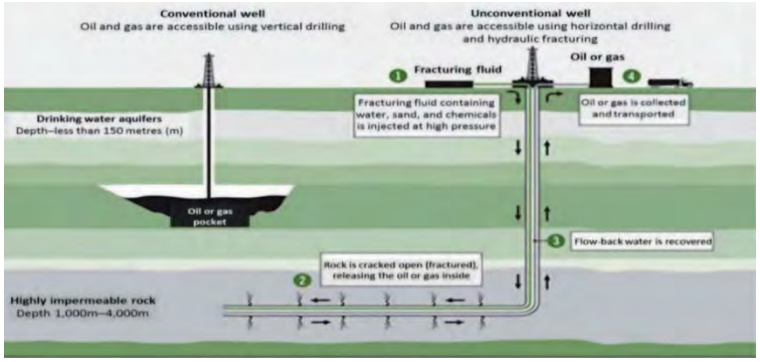
Section 1: Arguments about Divestment

The ethical argument

The argument for fossil fuels divestment is primarily a moral argument: "If it's wrong to wreck the climate, then it's wrong to profit from that wreckage" (McKibben and Naidoo 2013). Fossil fuel extraction companies are targeted as unethical because using their products results in carbon dioxide emissions, which contribute to global warming. Both global climate change and local pollution from the extraction and burning of fossil fuels cause human health harms and environmental damage.

The threshold for a dangerous level of global warming is disputed (Knutti et al. 2016), but international commitments have been made to keep warming within 2°C of the pre-industrial baseline, with some experts favouring a 1.5°C target. The planet is already at about 0.8°C above this pre-industrial level (IPCC 2014) and the vast majority of climate scientists agree that this warming is caused by human activity in addition to natural cycles (Crowley 2000; Cook et al. 2015). The dangers of climate change at higher levels such as 4° or 6°C by 2100 are well documented and include species extinctions, sea level rise and glacier melting (forcing human resettlement), changing disease vectors, changing hydrological cycles, disruption of food production, and increased severity of storms, heatwaves and droughts (IPCC 2014; World Health Organization 2014; Knutti et al. 2016).

The ethical argument against fossil fuels companies is that their business model rests on continuously extracting coal, gas and oil at levels that are incompatible with a 2°C warming limit. They currently hold approximately five times the level of hydrocarbons that, if burned, would be compatible with this target. The world's remaining 'carbon budget' has been estimated at 565 gigatons of carbon dioxide and as of 2012 the top 200 publicly traded fossil fuel companies and national fuel companies held reserves that would yield five times as much: 2795 gigatons (McKibben 2012[1]). Broken down by fuel type, an estimated 82% of coal, 49% of gas and 33% of oil would need to remain unburned in order to remain within the 2°C warming limit (McGlade and Ekins 2015, 189). Despite the fact that burning currently known reserves would likely lead to dangerous levels of warming, fossil fuel companies are continuing to explore, when market prices of oil and gas (usually exceeding $50USD/barrel) allow exploration, and develop new reserves. This is seen as unethical behaviour, regardless of whether those exploration and extraction companies are also investing in research and development associated with cleaner extraction practices and/or renewable energy alternatives. Some exploration and extraction is seen as contravening local laws or causing health harms through localized pollution (such as water contamination) and emissions during the extraction process and are also cited as socially harmful actions by divestment campaigners.



Conventional oil extraction compared to hydraulic fracturing (Ward et al. 2016, 58).

Responses to ethical arguments

Institutions that have chosen not to divest have generally agreed that climate change is a major threat to human societies. However, many universities have rejected outright divestment. Some have done so on financial grounds or because of doubts about the effectiveness of divestment. From an ethical perspective, some universities have argued:

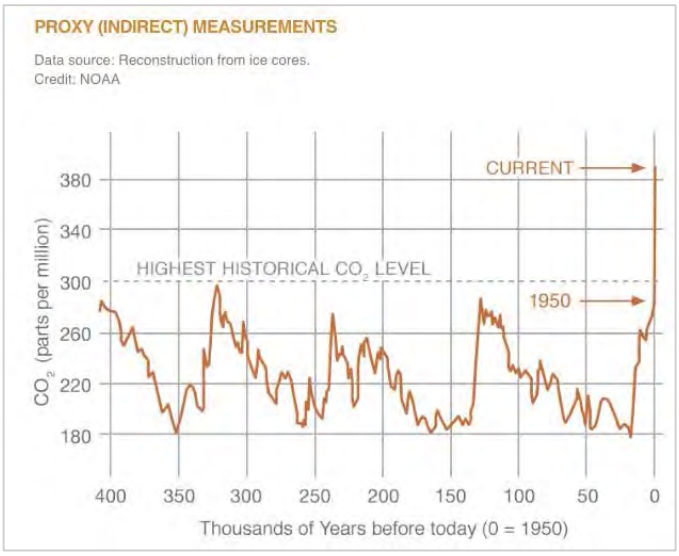
- *Universities should not make political or ethical statements with their investments*, because they are a financial resource and because opinions vary within the university community (Harvard decision, Faust 2013). However, the existence of social responsibility and investment policies at most universities implies that, in some cases, divestment on ethical grounds may be justified. Proof of a high level of social injury caused by the firms in question and a high level of community support for divestment are often the criteria used (Simons et al. 1972).
- *Fossil fuels are currently widely used and therefore they provide social benefits that outweigh their harms* (McGill decision, 2016). Developing countries in particular would especially suffer from any bans or higher pricing of carbon, as coal and other non-renewable fuels make up a large part of the

[1] The Top 200 list of fossil fuel companies is available publicly at http://fossilfreeindexes.com/ research/the-carbon-underground/

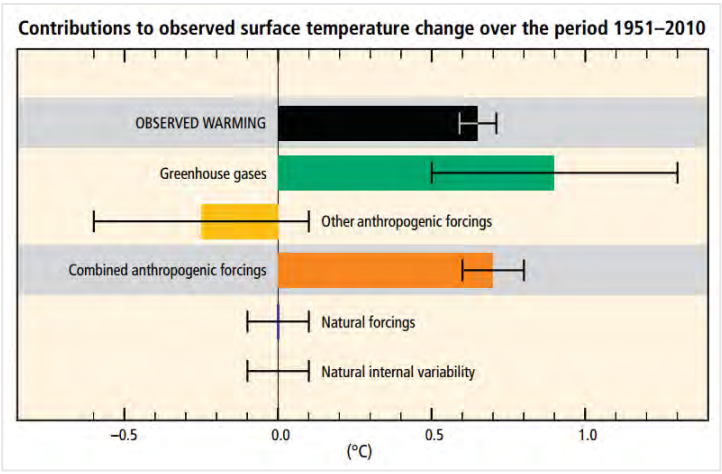
energy mixes of poorer countries. In response, some have pointed out that climate change effects would also disproportionately harm developing countries.

- *Divesting from the supply side of fossil fuels is unjustified when the real problem is demand* (Derochers and Shimizu 2016; McGill decision). In this view, individuals and organizations should reduce their own demand for fossil fuel products, which would have a greater effect. (Divestment has virtually no financial impact because the companies rely primarily on product sales, not investment). However, others see targeting the supply side of the emissions problem as more appropriate than reducing demand across all sectors (McKibben 2012). In this view, a total transformation of the energy system is needed, not piecemeal efficiency improvements. Others point to additional unethical actions perpetrated by fossil fuel extractors, such as misinformation campaigns, breaking local laws and safety regulations or causing local ecosystem damage and health harms (oil spills, chemical pollution of aquifers, air pollution) during the extraction process.
- *Shareholder activism is a better solution*. Replacing responsible investors with irresponsible ones undermines the possibility of changing company actions through shareholder engagement. Shareholder engagement is often named as an alternative to divestment, although it has its critics as well (see Section 2 for more discussion).
- *Divesting is hypocritical when universities still use fossil fuels*. Divesting without reducing campus carbon emissions and fossil fuel use is seen as hypocritical by some administrations.
- *Divestment distracts from real climate change solutions* (MacAskill 2015), making people feel as if the emissions problem has been addressed when simply moving funds does not resolve it. This may be true, but supporters think the movement can increase public awareness and concern (McKibben 2013) and that reinvesting in different industries could have an impact.
- *Application of broader ESG considerations is more meaningful than fossil fuel divestment.* Advocates of this approach argue that incorporating ESG considerations in investment manager hiring decisions and quarterly performance reviews of managers, including how proxy votes are made, allows for a deeper understanding of why investments in fossil fuel extraction companies are made and how proxies are voted (and whether those decisions have a relationship to ESG factors). This practice, while not divestment, enables oversight committees to hold investment managers accountable to standard industry benchmarks, while also enhancing information to carry out oversight accountabilities and fiduciary duty to preserve capital (McMaster 2013). There is a growing recognition that ESG issues are in fact financially material to a portfolio (Reynolds 2016).

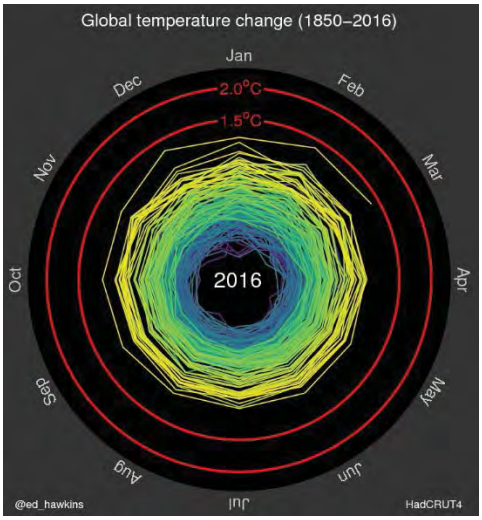
In a comparison of the fossil free movement to previous divestment campaigns (against the apartheid regime in South Africa, tobacco, and more – see Appendix C), fossil fuels have been considered to be most similar to tobacco, in that there is scientific evidence of the harms caused by the industry's product. There are measurable human health and environmental harms involved – unlike more politically focused campaigns (country boycotts) where views of egregious human rights offenses are more subjective and varied. Fossil fuels may even be worse than tobacco because of the global and intergenerational impacts. Fossil fuels, however, are considered to have more social benefits than tobacco because they currently fulfil a societal need for energy, transportation and goods. A transition to different energy sources is possible but would take time and significant change.



Carbon dioxide levels in the atmosphere have now exceeded historical peaks (World Economic Forum 2016)



Global average temperatures have already increased (IPCC 2014, 6)



Recent years have broken temperature records (Hawkins 2016)

Effectiveness of divestment

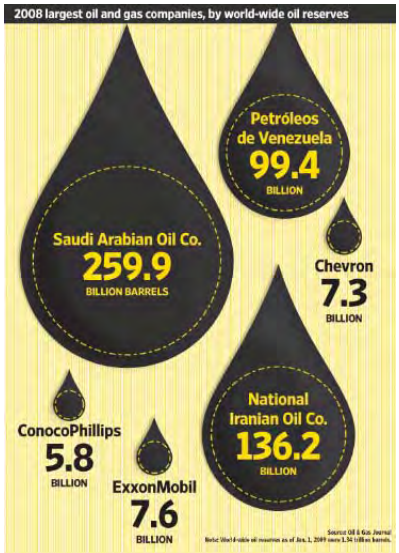
Divestment campaigners acknowledge that universities selling off their holdings will *not* affect fossil fuel companies' finances directly, since other investors will likely buy the shares and because the industry relies mainly on product sales, not investment. Direct financial harm is not the objective of the campaign: divestment is effective primarily as a symbolic action. Campaigns suggest universities taking a public moral stand against a harmful industry can change public opinion, making it more 'stigmatized' and pressuring governments to change their laws on the issue in question. For fossil fuels, the real objective is pushing governments to enact more binding regulation of carbon emissions, either through higher carbon pricing or other forms of policy. In this view, divestment is "symbolic but not trivial" (University of Toronto Divestment Brief 2015, 161). The question of whether divestment can be effective in this way is debatable.

Divest-Invest: Effects of Redirecting Investment

Although it is widely agreed that institutional investors removing their funds would not directly harm fossil fuel companies, there could be a direct financial impact on the sectors where funds are reinvested. Renewable energy and other clean tech companies are widely recognized as under-capitalized (University of Toronto Report of the President's Advisory Committee 2015, 9), meaning that greater investment in this area could directly contribute to developing replacements for fossil fuels in energy generation, transportation and manufacturing.

Would divestment encourage policy change and a low-carbon energy transition? Considerations:

- *Policy change is unlikely, and climate change commitments have been broken before*. As divestment campaign founder Bill McKibben points out (2012), it is common for national governments to publicly comment on the threats of climate change and to make promises about reducing carbon emissions, while continuing to approve more oil exploration and drilling. To date, economic and energy security needs appear to have prevailed over concerns about climate change in shaping national government action.
- *The industry is already stigmatized, and change has not happened* (Parenti 2013). Public opinion of the fossil fuels industry is already low and a majority of people in several countries favour stricter regulation of fossil fuels and carbon emissions (revealed in public polling in the US, Canada and Australia; Gallup 2014; The Guardian 2016; Abacus Data 2016), but governments have not yet responded to public disapproval of the industry.
- *Divestment will not hurt nationally owned oil and gas companies,* who hold much larger reserves than private companies (MacAskill 2015; Ritchie and Dowtalabadi 2015). Because the divestment campaign is largely aimed at pushing for government action, this fact does raise a problem. Convincing governments to weaken their connections to the industry is perhaps unlikely, but in some cases privatization is happening. Governments may act strategically to reduce their exposure to a non-renewable resource that is projected to run out within a few decades. This concern applies only to countries with oil resources (Saudi



National oil company reserves compared to the reserves of the largest publicly traded companies, Wall Street Journal 2010

Arabia, Venezuela and Canada being the top three largest), since oil-importing countries would likely be more supportive of decreasing their expenses and increasing energy security by moving away from imported fossil fuels.

- *Policy change may not be possible.* Domestic veto points have hindered or overturned environmental legislation in the past (for example, the US federal government is being sued by some states over its attempt to reduce coal use). International trade regulation can block environmental protections, and legal challenges under investor-state dispute mechanisms in trade agreements have overturned domestic environmental policy in the past.
- *A government-mandated cap and trade policy may do little to affect emissions.* Cap and trade is a government-mandated, market-based approach to controlled pollution by creating economic incentives to reduce emissions. Entities unable to quickly or easily reduce emissions will need to trade (buy) on the open market the unused emissions cap of other entities in order to comply with policy, thereby creating a new cost of business with little overall effect on emissions reduction.

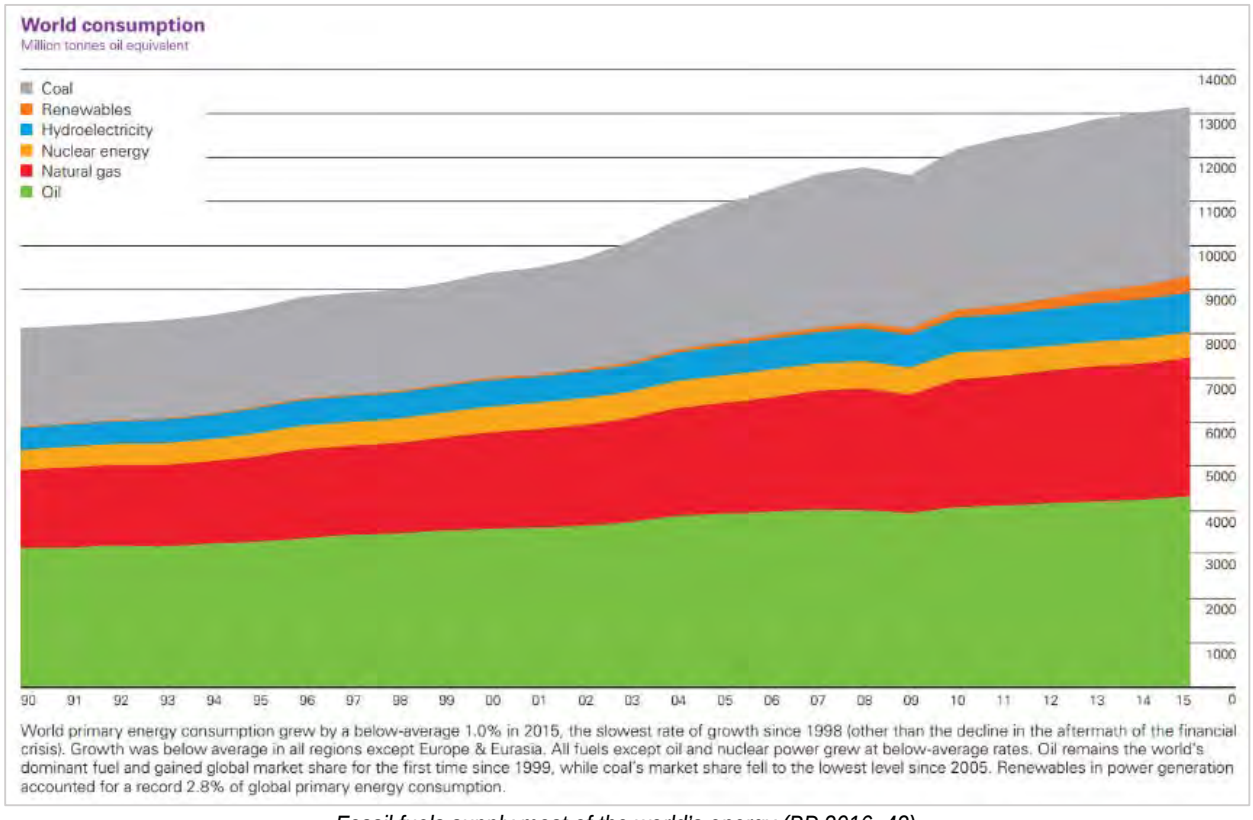
The points above suggest policy change is less likely or possibly ineffective. However:

- *Divestment campaigns have led to policy change.* Studies found that the anti-apartheid divestment campaign did not financially harm the companies involved– but growing international pressure was later cited by South African political leaders (F. W. de Klerk, Desmond Tutu) as a major factor that contributed to an eventual regime change. University divestment drew public attention to the issue and preceded government sanctions. One recent study found that in "almost every divestment campaign we reviewed… divestment campaigns were successful in lobbying for restrictive legislation affecting stigmatised firms" (Ansar, Caldecott and Tilbury 2013, 14).
- *Policy action may become more likely as climate change becomes more visible and salient.* At 0.8°C of average global temperature warming currently, some effects, such as more severe droughts and storms, are already being felt. As climate change effects become more of a real experience, not a hypothetical future problem, governments may become more motivated to take stronger steps to counter it than they have in the past.
- *Policy action may not matter.* Changes in energy sourcing are already happening and countries are beginning to invest more heavily in renewable energy sources. Even some states that are heavily dependent on fossil fuels are indicating their plans to move away from oil (Saudi Arabia) and coal (China) use in electricity generation. As renewable alternatives become more reliable and cost-effective, and can reduce energy dependence on fuel imports from other countries, governments may act strategically to reduce their consumption of fossil fuels. Additionally, fossil fuels cannot last forever: BP estimates oil reserves will last only 50.7 years at current reserves-to-production rates (2016, 6), and McKinsey and Company estimate 53 years of production remaining from known oil reserves (2015). Other geoscientists estimate oil will be depleted by 2100, natural gas by 2200 and coal within a few centuries (Greene and Kammen 2014). Forward-thinking governments may therefore reduce their exposure to fossil fuels over the coming decades, even if they are heavily reliant on oil revenues now. For strategic and economic reasons, there may be a reduction in demand for fossil fuels, even without stricter carbon regulation.

On balance, the argument that more public pressure can push governments away from a resource on which they currently depend (for energy and economic needs) is questionable. Increasing public disapproval of the industry may accelerate an energy transition that will need to occur eventually, but there are many unknowable factors in assessing how divestment will contribute to any government actions. Strategic interests (having domestic energy production), economics (having cost-effective energy sources) and geophysical realities

(reserves running out or becoming harder and costlier to access) could be more significant motivators of government action than public disapproval.

Weaker arguments about the (in)effectiveness of divestment
Divestment will not hurt fossil fuel company finances (MacAskill 2015; Hebb 2015; Faust 2013). This is true but it is widely acknowledged by divestment campaigners, that they are ultimately seeking a change in public opinion (revoking the industry's 'social license'), which will lead to policy change. Furthermore, reinvestment of money in low-carbon or clean technology areas can have a direct impact on advancing alternative energy sources.
Divestment will be most effective by depriving fossil fuel companies of labour (MacAskill 2015). In reality many people work in stigmatized industries, either out of economic need or because they are not concerned about the industry's reputation.
Divestment will distract people from real solutions, leaving "less time" to focus on other climate change actions (MacAskill 2015). Public attention is not as limited as this suggests, and divestment campaigns have an educational role (McKibben 2013) that could motivate more people to act.
Divestment is a "blunt and ineffective" tool because the investor then loses their ability to influence the company through shareholder engagement (Hebb 2015, 2). Shareholder engagement, however, has been questioned in terms of both feasibility and impact (see Section 2).



Fossil fuels supply most of the world's energy (BP 2016, 42)

Financial implications

One of the most common past arguments against divestment is that it was not compatible with fiduciary duty (acting in the best interest of the beneficiaries) because it would reduce financial returns. In response, some question the assumptions made about future profitability in the industry, or argue for a broader interpretation of fiduciary duty beyond short-term financial returns. The financial arguments for continuing to invest in fossil fuels are that:

- *Diversification* is generally better for financial returns, and the energy sector, which is dominated by fossil fuels, is a large part of the global market. Modern portfolio theory recommends broad sectoral and geographic diversification to reduce risk. Divestment supporters do not challenge this theory but instead argue that there is a particular risk in heavily carbon-based sectors.
- *Past trends of industry profitability will continue* (e.g. Cornell 2015), even if there are downturns such as the fall in oil prices since mid-2014 or the ongoing decline of coal prices since 2008. Stricter regulation of emissions may not happen, and demand for the product could remain high. Reserves cannot last forever but advancing technology can continue to 'unlock' more sources of unconventional oil (offshore, deep water, Arctic, shale, oil sands).

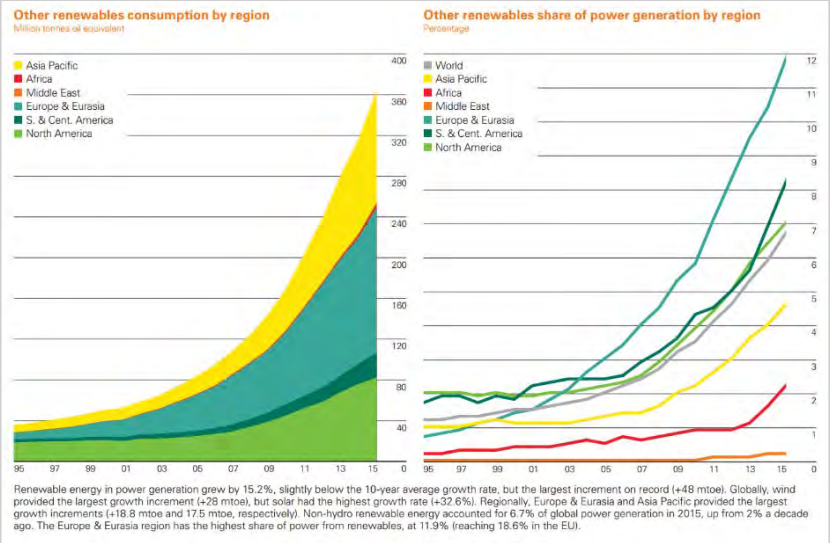
The energy sector generally accounts for 20-25% of the Toronto Stock Exchange (TSX), and petroleum refining companies are 6 of the top 10 largest companies in the world (Fortune Global 500)

- *'Sin stocks'* (of stigmatized industries such as alcohol, gambling and tobacco) generally outperform non-sin stocks (MacAskill 2015, citing Hong and Kacperczyk 2009). This claim has been disputed in economics literature, with findings depending on the years chosen, the 'sin industries' chosen (some include defense, which is arguably more socially acceptable) and the weighting of stocks – Hong and Kacperczyk used a hypothetical selection of stocks, not a real fund, meaning the findings could be skewed by different weightings (Hoepner and Zeume 2014). Other studies have found no significant difference in performance (Humphrey and Tan 2013). The largest meta-study finds either no difference or slightly better performance for socially responsible stocks in 90% of over 2200 empirical studies conducted (Friede et al. 2015).
- *Transaction costs, compliance costs and higher management fees* related to divestment are potentially prohibitive. A growing number of fossil free or ESG measured funds have emerged over recent years, meaning that management fees and compliance costs would not necessarily increase. Fossil free and ESG related benchmarks are materializing, suggesting that custom benchmarks, which are expensive to produce and maintain, may not be required. Transaction costs, which are approximately 1% of the market value of assets sold, and vary widely, based on what holdings – one holding or a whole pooled fund - is exited; these transition costs are not considered a major barrier, but do require careful planning to minimize capital losses during transitions. Therefore, a three to five year transition period would not be uncommon or unreasonable and would be a component of fiduciary duty (pers. comm., D. Henne, 29 June 2016).

- *Inability to fully divest*. Financial institutions and 'downstream' industries (pipelines, manufacturing, automotive firms) are also 'exposed' to carbon regulation risks (Ritchie and Dowtalabadi 2015, 12). It is true that a decline in fossil fuel company values would harm the overall Canadian or global economy – but so would 'dangerous' levels of climate change.

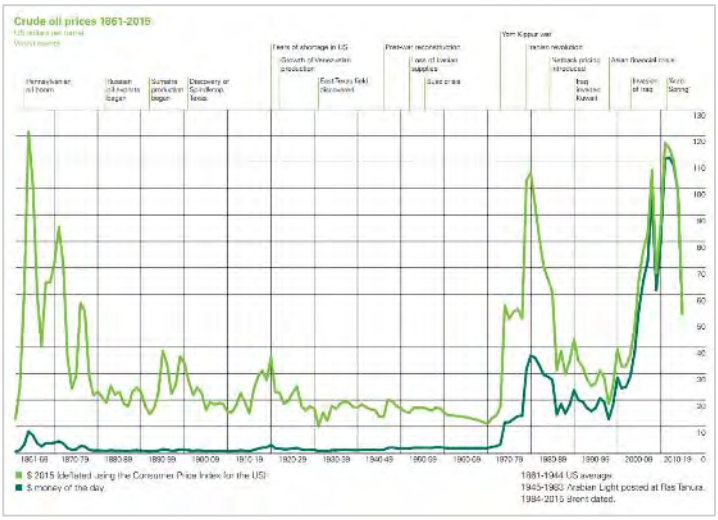
Some economists and investors take the opposing view, emphasizing that business as usual regulation and the past profitability of fossil fuels may not continue in the future (Leaton et al. 2013; Carney 2015):

- *Potential of stranded assets.* Fossil fuel companies facing higher carbon pricing, removal of subsidies, stricter regulation, or other policy changes would become less valuable. Direct subsidies on fossil fuels amounted to US$493 billion in 2014 (IEA 2016) and if the total costs of social, health and environmental externalities are included, the fossil fuels industry is effectively subsidized by US$5.3 trillion per year (IMF 2015). Carbon pricing or stricter regulation, if it happened, would therefore cut severely into fossil fuel company valuations and profits. One study found that internalizing the costs of damage caused by carbon emissions would outweigh profits for virtually all companies in virtually all years (Hope, Gilding and Alvarez 2015). Coal and unconventional oil are most vulnerable to regulatory risk because of their higher emissions relative to other fuels.
- *Potential of an energy transition without regulatory change.* An energy transition to clean energy sources (renewable, low-carbon) will need to occur at some point, and may occur sooner than expected as renewable energy sources become more reliable and less costly. Over half of new electricity generation put on line in 2015 was renewable, for the first time (Bloomberg 2016). Investment in renewables is growing in wealthy and developing countries alike. Alternative renewables such as geothermal, wind, solar and small-scale hydropower are becoming cheaper to build than coal or gas-powered electricity plants or capital-intensive nuclear power plants and large hydropower projects. Storage and transmission technology is advancing, operation costs are often cheaper, and distributed generation can be more cost-effective and resilient than building large-scale electricity grids. Alternative renewables are still only a small fraction of the global energy mix (IEA) but are increasing more quickly than projected (Nyquist 2015).



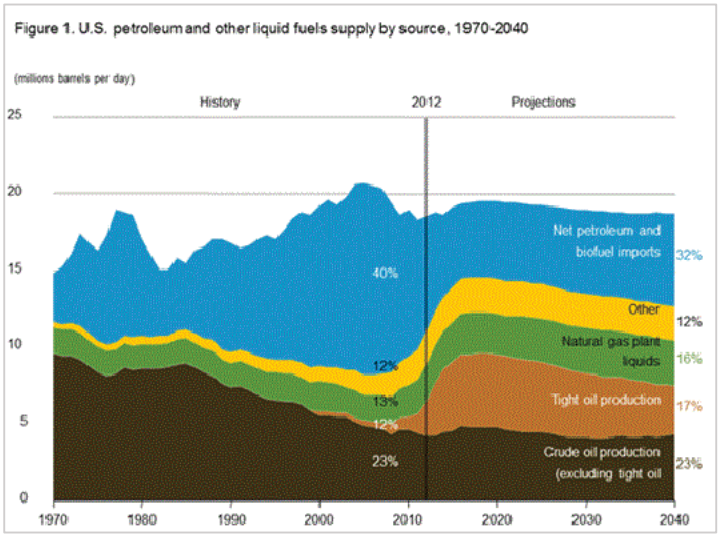
Renewable energy production (other than hydroelectric and nuclear power) is increasing rapidly (BP 2016, 37).

- *Volatility and permanent decline*. Oil and gas prices are volatile, but coal may be in a permanent downturn and its shares are less liquid, meaning divestment may have a larger financial impact on the industry. Coal use has plateaued in China after growing rapidly from 2000 to 2010, and many of the largest coal companies are facing financial trouble and even bankruptcy. Canadian and US growth in oil and gas production in recent years has largely been a result of expanding unconventional drilling such as hydraulic fracturing, which is more expensive and more polluting than conventional drilling.



Oil price volatility over time (BP 2016, 14)

- *Credit downgrades*. Oil and gas companies are expected to recover from an ongoing dip in prices since 2014, but many had accumulated major debt from exploration projects before the current downturn. If credit ratings begin to take ESG factors into account, as the UN Principles of Responsible Investment (UN PRI) initiative urges, company valuations could be damaged.



US hydrocarbon supply by source, McBride 2015.

- *Climate risk: Climate change threatens value in all sectors*. Climate change threatens the economic functioning of all sectors (Covington and Thamotheram 2014) through a variety of factors such as disrupted food production, storm damage to buildings and transportation networks, health risks, human resettlement and conflict risks, loss of functioning ecosystems, and more. Investing in the continued profitability of fossil fuels companies can be seen as "sacrificing the health of 92% of your portfolio for the 8% in energy" in this view (Covington and Thamotheram 2015, 3).
- *Replacement funds would need to meet existing financial criteria (risk, liquidity)*. For McMaster University specifically, any fossil free funds or ESG measured funds chosen would need to pass a thorough financial review of historical performance, management and investment philosophy (including ESG considerations) and an assessment of future returns. While future returns are not guaranteed by past performance, McMaster holds an investment reserve to protect endowment spending in the event of up to two years of two-standard-deviations of losses (pers. comm., D. Henne, 29 June 2016). This means that bursaries and other payments from the endowment fund are unlikely to be affected by a decision to divest given existing selection processes and continued investment reserve

management. It should be noted that any recommendation for change should allow flexibility to transition over time (three to five years) in an effort to minimize transition costs.

Will fossil fuel companies transform into clean energy companies?

The question of divestment is complicated by the fact that major fossil fuel companies often have some operations in renewable energy. Some observers also argue that *shareholder engagement* could push fossil fuel companies to transform into renewable energy providers. However, renewable energy makes up a small fraction of operations (peaking at 6% according to University of Toronto Divestment Brief 2015, 143) and there is currently no indication that a transformation will be likely. Oil reserves are still being explored despite the fact that in most cases further development is incompatible with safe climate change limits. At this point in time (and likely until it becomes more profitable to change their main business model) there are few signs of such a transformation. Historically, those firms and industries that have not been able to evolve quickly enough to transform their fundamental business tend to become obsolete and are then replaced by new companies. Some energy companies, such as Suncor in Canada, however, have diversified into renewable energy by more than a token amount.

Fiduciary duty

Some universities have rejected fossil fuel divestment on the grounds that it would be a breach of fiduciary duty (such as UBC[2]). This view assumes that fossil fuels will continue to be profitable (ignoring regulatory and demand-related risks) and does not consider any broader impacts of climate change on all financial investments. However, views of fiduciary duty are shifting to take a wider set of concerns into account. Analyzing non-financial aspects of investments such as environmental, social and corporate governance (ESG) performance is becoming more common, for financial reasons as well as ethical ones. A multinational legal review, that included Canada, found that considering ESG "is clearly permissible and is arguably required" in all jurisdictions studied (UNEP 2005). Stronger ESG performance is also associated with better (or equivalent) financial performance in 90% of empirical studies (Friede et al. 2015).

Future financial performance is essentially unknown, as many factors including regulation, carbon pricing and the availability of alternative energy sources would affect future demand for fossil fuels. Some experts see the risk of regulation as too great of a financial risk to continue investing in the industry. Additionally, climate change risk is a threat to all investment returns, and so for long-term investors, fiduciary duty could be interpreted as taking all steps possible to limit climate change, whether through divestment, shareholder engagement, or other methods.

Section 2: Alternative Options

Non-investment-related options

In addition to decisions made about divestment, many universities have committed to additional actions such as:

- Reducing campus carbon emissions (University of Ottawa; University of Toronto; etc.).
- Promoting awareness of existing climate-related research and academic programs (University of Toronto; McGill; UBC).
- Increasing research funding in renewable energy and climate science areas (McGill).

[2] See http://www.citopbroker.com/news/risk-ubc-finance-committee-votes-against-fossil-fuel-divestment-9783

- Encouraging financial institutions to develop more low-carbon or fossil free fund options for investment (London School of Economics).
- Engaging with governments to encourage changes to carbon policy (suggested by Ritchie and Dowtalabadi 2015).

These can be combined with divestment or chosen as alternative responses. Backlash from the university community has been strong where universities have chosen to focus *only* on reducing campus emissions and promoting their existing research and academic programs – it appears this action is not considered to be an adequate response to the climate change problem.

Partial divestment and portfolio tilting

Many universities have opted for partial divestment, or a gradual shift of their portfolio towards less carbon-intensive holdings (portfolio tilting). These options can take a number of forms:

- *Partial divestment*. Divestment from coal and oil sands only, recognizing the higher carbon emissions these fuels create compared to conventional oil and natural gas. Many universities have chosen to divest only from coal and/or oil sands, often citing financial risk as a reason (Yale, Oxford, LSE, University of California, Stanford, Georgetown).
- *Diminishment* to x% (often 1%, 5%, 10%) of a portfolio's holdings, x% of an investment pool, etc. This is generally considered to be divestment, although it may be criticized as ineffective if the cap is too high.
- *Targeted divestment*. Targeting only aggressive extractors who "blatantly disregard" safe extraction limits (University of Toronto Advisory Committee Report) or only companies that promote climate misinformation (the focus of the MIT campaign, Leber 2015). This is similar to the ESG approach in targeting individual companies rather than entire sectors.
- *Portfolio tilting* towards lower-carbon companies and industries over time (uOttawa).
- *Parallel investment.* Divesting a small portion of endowment funds into a fossil free fund to compare performance and to offer a fossil free option for donors (UBC, Concordia).
- *Positive screening and best-in-class performance*. ESG involves monitoring the environmental, social and corporate governance performance of all holdings, and is often combined with shareholder engagement (to change company actions) and positive screening of the portfolio by selecting better ESG performers (those that are best-in-class in their sector, or improving on ESG scores) (University of Toronto; UBC; Oxford; LSE; etc.).

From a feasibility perspective, larger universities that have divested are sometimes selling only their *direct holdings* in fossil fuel companies, not indirect holdings. For example were McMaster to divest, it would reallocate funds across other existing holdings, which predominantly include banks, which in turn indirectly loan funds to fossil fuel companies. There is rarely an announcement of what happens to investment in pooled funds, but sometimes a percentage cap (1%, 10%) is set as a maximum limit for restricted holdings in an investment pool. It should be noted that McMaster (with about 4.3% exposure to fossil fuels across all endowment funds) *may already have less exposure* than a university pledging to divest only direct holdings, or pledging to cap fossil fuels at 10% of an investment pool.

Comparing the ESG approach with divestment

Some universities have identified the monitoring of ESG (environmental, social and corporate governance) performance as a suitable replacement for (or addition to) divestment. ESG has the advantage of applying to *all investment holdings on a continual basis,* and ESG reporting has grown rapidly since its introduction as part of the UN Principles of Responsible Investment (UN PRI) in 2006.

Examples of ESG indicators (UN PRI, https://www.unpri.org/about/what-is-responsible-investment)

ESG is supported by many large institutional investors because it contains social responsibility components while also being primarily designed as a tool to maximize financial performance over the long-term. The assumption (supported by Friede et al. 2015) is that poor ESG performance eventually leads to worse financial performance as companies face reputational risk, regulatory risk and direct costs through fines and lawsuits.

In principle, the ESG approach has a number of advantages over 'negative screening' (divestment):

- *Less blunt than industry divestment*. ESG can allow for best-in-class companies within an industry to be identified, or those that are improving their governance performance. The advantage of more selective screening is that a portfolio can remove worse ESG performers without eliminating a sector entirely. This allows diversification to be maintained.
- *Comprehensive and an ongoing process*. ESG evaluation applies to all holdings and is applied continuously in monitoring their actions, rather than divestment which is an issue-specific decision made at a particular point in time.
- *First-hand information*. Companies must report on their own performance and increasingly include ESG considerations and research and development strategies in annual financial reports, reports that are reviewed by investors and often verified by third parties.
- *Shareholder engagement*. Shareholder activism can be used as a tool to shape company actions. The advantage of ESG is that it is increasingly mainstream and so there are opportunities for minority shareholders to coordinate on passing shareholder resolutions.

However, these same attributes could also be seen as negative:

- *Sometimes the entire industry is the problem*. Identifying the best performers within a sector may not be worthwhile if the entire sector is causing significant damage by supplying its products, as is the case with contested industries such as tobacco and fossil fuels.

- *Difficult to apply consistently.* Among UN PRI signatories, some fund managers or investors claim to apply a systematic ESG evaluation, although they may not do so in practice. There are no specific requirements for companies or fund managers to fulfil, and investors may be tempted to overlook ESG performance where there are strong investment returns.
- *Misleading information* (Scholtens 2014). Information provided by a company itself will likely present it in the best light possible. Lawsuits, unethical practices and regulatory risks may be under-reported to investors. Fossil fuel companies in particular have been criticized for misrepresenting their conduct and their compliance with local laws and regulation. However, there can be third-party verification of ESG reporting, which can reduce this risk.
- *Limited effectiveness of shareholder engagement.* Institutional investors are rarely majority owners and have relatively little voice. Coordination is possible but many shareholders may not support ESG-related resolutions that undermine short-term financial performance.

ESG can be combined with divestment (e.g. London School of Economics), or can be practiced on its own (e.g. University of Ottawa). Divestment is generally seen as a bolder symbolic action that gains more public and policymaker attention (but is "blunt and ineffective" to critics, e.g. Hebb 2015), while ESG is a quieter approach to filtering investments. ESG is more comprehensive in theory, but often falls short in implementation. McMaster has introduced specific requirements for fund managers to report on their ESG philosophy, proxy voting results, and provide explanations of *why* holdings in fossil fuel companies have been bought, given the regulatory risks. This approach could be used to ensure fund managers are addressing other investor concerns.

As defined by the UN Principles for Responsible Investment (UN PRI), ESG is also primarily a calculation of financial risk, whereas divestment is often chosen for strictly ethical reasons. The UN PRI initiative is predicated on the idea that all investors should evaluate ESG because it affects their finances. "Crucially, however, while these approaches seek to combine financial return with a moral or ethical return, responsible investment can and should be pursued even by the investor whose sole purpose is financial return, because it argues that to ignore ESG factors is to ignore risks and opportunities that have a material effect on the returns delivered to clients and beneficiaries" (UN PRI, https://www.unpri.org/about/what-is-responsible-investment). Furthermore, ESG considerations should be incorporated "where consistent with our fiduciary duties" (UN PRI, https://www.unpri.org/about/the-six-principles), which suggests that financial metrics are still the primary consideration, over any ethical concerns about the holdings. UN PRI centres on monitoring ESG factors, engaging with companies as a shareholder, and collaborating with other investors to exchange information.

Is shareholder engagement a solution?

In arguments against divestment, the benefits of shareholder activism or shareholder engagement in promoting ethical business activity are often praised. Supporters of the idea that shareholder engagement is effective in changing company practices include the UN PRI initiative; University of Ottawa; the Canada Pension Plan; University of Toronto divestment decision (Gertler 2016); McGill University; and Hebb 2015.

In contrast, a number of counter-arguments have been raised:

- *Practical limitations.* Many investors, even large institutions, own only a small fraction of shares and therefore have virtually no direct influence over a company. However, efforts to coordinate on shareholder resolutions are growing and are encouraged in UN PRI. Universities can also request fund managers to engage on their behalf. In recent years climate-related shareholder resolutions have reached nearly 50% support (CBC 2016; The Economist 2016).

- *Amoral investors*. Still, many investors are not interested in activist resolutions. Fund managers may also face a principal-agent dilemma in seeking to maximize financial returns while also maintaining ESG standards; some fund managers may not challenge profitable companies about their ESG performance.
- *Misleading information* (Scholtens 2014). Where companies do respond to shareholder concerns about how business would be modified in a low-carbon regulatory scenario, the output is often "50 pages of glossy documents" rather than a realistic statement of actions (The Economist 2016). Fossil fuel companies have made questionable claims when forecasting their financial risks for upcoming decades (e.g. Ritchie and Dowtalabadi 2015, 11), often assuming that demand will remain high and that carbon capture and storage (CCS) technology will advance dramatically to alleviate any need to reduce emissions.
- *Fundamental change to a company's business model is unlikely through this method* (McKibben 2012; University of Toronto Divestment Brief 2015, 134; Leaton et al. 2013, 35). Companies have legally fought even relatively trivial shareholder resolutions such as those that call for more information on how companies would react to stricter carbon regulations. Even informational requests from shareholders are met with resistance – and pushing companies to transform their fundamental business model (from fossil fuels to clean energy) is a much larger request. Surveys of ESG professionals find that 98% think investors are "doing too little" about climate risk (risk to financial value) and even some supporters of investor engagement have questioned its ability to transform companies (Covington and Thamotheram 2014).
- *Too gradual*. Past forms of investor engagement with company management have been slow and minor in scope, when the problem requires rapid and effective action (forceful stewardship) from shareholders (Covington and Thamotheram 2015).
- *Limited scope*. This approach would require shareholders to take over and change each publicly traded company individually – when many are not publicly traded. Divestment encounters the same problem, but divestment is aimed at changing regulation for all fossil fuel companies, not changing each one separately.

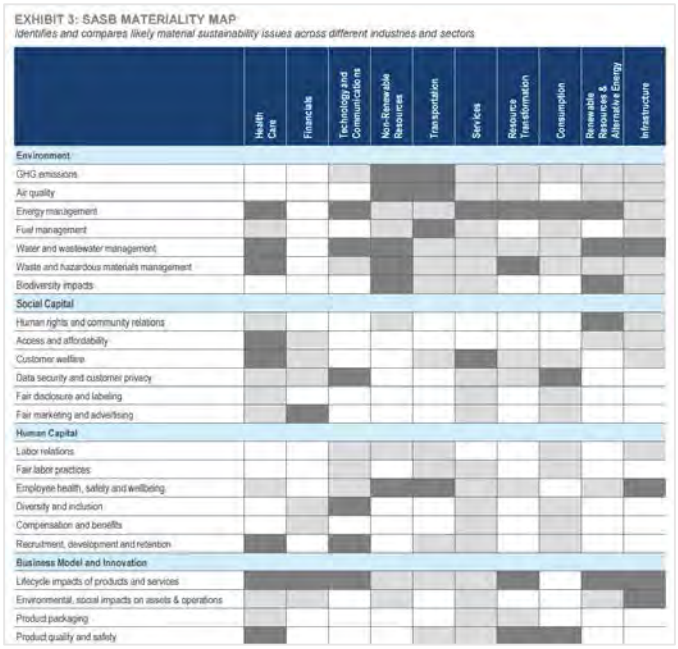
In the McMaster University context, because of the endowment fund's structure and size, McMaster does not have the ability to effectively engage with companies directly. Direct engagement between large fund managers and companies exists and the traditional focus on corporate governance factors have, in recent years, been increasingly broadened toward more environmental and societal impacts. McMaster does have the ability to encourage its fund managers to engage in such discussions and to disclose how delegated proxy voting responsibilities have been carried out (pers. comm., D. Henne, 29 June 2016).

ESG in practice

- McMaster is at the forefront of developing specific requirements for ESG evaluation. Since 2013, reporting requirements on ESG have been phased in for McMaster's fund managers, and managers are assessed (before hiring and thereafter on an ongoing basis) based on their performance, including ESG considerations affecting the portfolio. McMaster has recently strengthened its approach, where fund managers are now required to explain their rationale as to *why* they have any investments in Top 200 fossil fuel companies. This has progressed from verbal explanations to written quarterly reports.
- Out of other Canadian universities, University of Ottawa has progressed the furthest in implementing UN PRI, and now publishes annual reports on the carbon footprint of its investments. University of

Victoria and Simon Fraser University are now also UN PRI signatories, but have not yet published further documentation such as annual reports.

- Province of Ontario: Pension fund managers are now required to report on whether they use ESG analysis and if so, how. No public summaries of this data are available yet, but some may be published by late 2016 (pers. comm., Financial Services Commission of Ontario, 8 June 2016)
- Blackrock and other organizations have published reports on what indicators are material to ESG reporting. Companies are not necessarily analyzed in all areas. For example, community relations and human rights are not listed as relevant to the resource transformation sector.



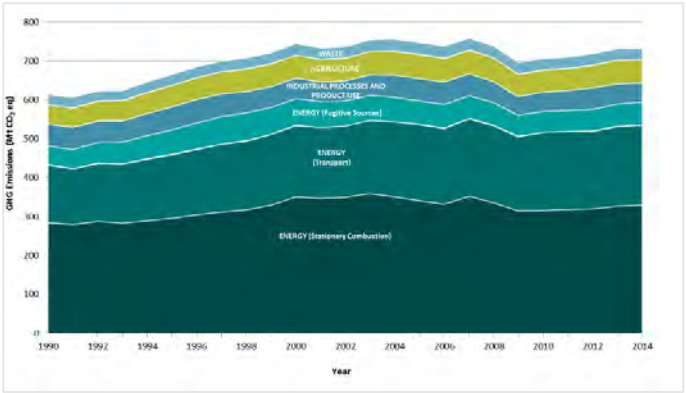
A partial list of ESG indicators (Blackrock 2016, 6).

When applied systematically, ESG can be effective in monitoring the non-financial attributes of companies. However, for the reasons above, and because it may not be fully or consistently applied in practice, some observers view it as less effective than taking a public stand on divestment. Shareholder activism does appear to be growing regarding climate change issues (The Economist 2016), although some find this approach unlikely to ever be effective in transforming companies. Views vary, however, and ESG and divestment can be combined to send a moral message on particular issues while at the same time continuously monitoring all investments.

Montreal Carbon Pledge

Related to ESG monitoring, the Montreal Carbon Pledge is a commitment for investors to monitor the carbon emissions of all investment holdings, to report annually on the findings, and to gradually reduce the carbon intensity of the portfolio over time. University of Ottawa has adopted this approach in addition to ESG.

For divestment campaign supporters, monitoring is a weak action when there is already sufficient information on emissions from each sector. “Investors are still focused on promoting transparency and on refining their thoughts, when urgent action is needed to reduce the risk of value destruction” (Covington and Thamotheram 2014, 46). Monitoring adds more detail, but information already exists on emissions by sector, and tracking emissions does not solve the problem. Although fossil fuel extractors are only the suppliers of fuels and other industries are the primary users (transportation, energy generation, manufacturing, etc.), divestment campaigners find it most appropriate to address the supply side of the emissions problem.



Sources of Canada’s GHG emissions by sector (Government of Canada 2016).

Conclusions

There are competing arguments about the effectiveness of divestment and about appropriate steps for institutional investors such as universities to take in response to climate change. Many claims made in the divestment debate are disputed, and many rest on predictions of future activity (regulation, technology change, and so on) that are uncertain. The fundamental lesson from this review of arguments is that there are many assumptions underpinning expert statements on future financial performance, the effectiveness of ESG, and other effects of divestment. Awareness of the source of information (for example, a UN PRI creator's report that favours an ESG approach is perhaps not neutral) and opposing arguments is important in having an informed debate about divestment and alternative options.

Section 3: Context and Options for McMaster

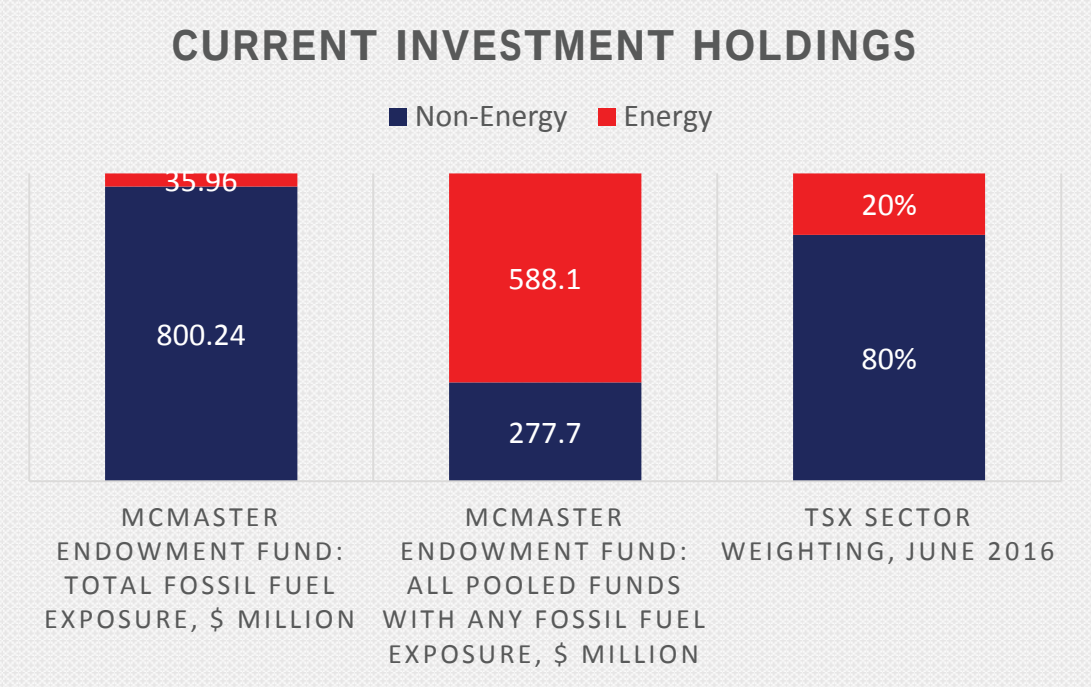
The previous sections have reviewed different options from a general or theoretical standpoint. McMaster's unique circumstances may affect which options are appropriate or feasible. Key considerations for McMaster University specifically are:

Research implications

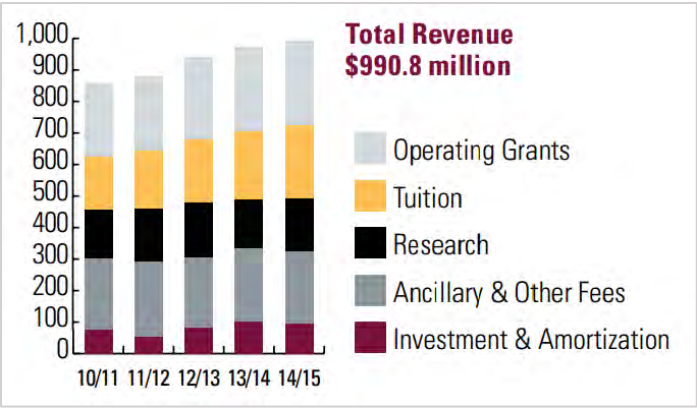
McMaster receives research funding from one company on the Carbon Underground Top 200 fossil fuel company list. McMaster has holdings in segregated or pooled funds involving 20 of the top 200 (but not the company noted above that provides research funding), as well as some smaller fossil fuel companies that do not appear on the list. It is possible this funding could be rescinded if McMaster chose to divest. Community relations with steel producers or the automotive industry could also be affected. McMaster's *Policy on Social Responsibility and McMaster's Investment Policy* does not require research funding or relations with the industry to be considered, except to state that receiving funds from an organization the University has divested from would be morally inconsistent (see Appendix A for the Policy).

Practical implications: Key facts about McMaster's investments

- As of June 2016, the total endowment fund investment pool was worth (CAD) $836.2 million. $36.2 million, or about 4.3% of this total amount, is invested in fossil fuel companies (using the Carbon Underground Top 200 list of companies).
- Some universities are promising to divest only direct holdings, not indirect investments. In contrast, McMaster's holdings are *virtually all indirect*. The endowment fund is divided between twelve externally managed funds, eleven pooled funds and one segregated fund; six of these twelve funds have some exposure to fossil fuel holdings.
- Divesting completely would therefore require replacing six out of twelve funds. In the image below, the left column represents the actual value of holdings in fossil fuel companies (in red), whereas the middle column represents the value of all of the pooled funds that contain *any* fossil fuel holdings. In a pooled fund approach all of the pooled fund would need to be sold in order to divest. Finding existing funds specifically designed to be fossil free may keep management fees from rising, compared to the more expensive option of creating McMaster-specific segregated funds.



- Reducing fossil fuel holdings to 5% (or some small percentage) of any investment pool would also be possible. The six exposed funds have 19.7%, 9.2%, 5.6%, 4.2%, 1.9% and 0.46% of their holdings in fossil fuels, with the first two both in Canadian equities. At 4.3% overall exposure to fossil fuels, McMaster is already less invested in fossil fuels than many other Canadian universities.
- In general, across all holdings, McMaster's policy is not to invest more than 10% of its money in any one industry or company.
- Divestment does not necessarily mean losing money. Every new fund, including any fossil free or socially responsible fund found, must go through rigorous screening relating to financial performance and risk. Many fossil free funds are recent creations, with limited history, meaning that some may be considered if they are offered by established fund managers but others would have to build up several years of performance history first. Future financial performance cannot be guaranteed, but thorough financial screening reduces the risk of poor performance. Additionally, an insurance fund is held as an investment reserve so that McMaster can withstand two-standard-deviation of losses before any payments from the endowment would be affected.
- ESG is already being applied. Since 2013, all new fund managers have been assessed based on their application of ESG, and existing fund managers are reviewed quarterly. McMaster is already at the forefront of developing clear and meaningful ESG related reporting requirements for fund managers. Currently, holdings in fossil fuel companies are not prohibited, but fund managers must explain and justify them to McMaster



Investment returns are a relatively small part of revenue (McMaster University 2016, 22).

in the light of stranded asset risk. Some fund managers claim to apply ESG screening but are still holding notoriously unethical companies. This reveals that the process for evaluating ESG has not yet been defined or standardized, but it is a field that is quickly evolving.

- Regarding shareholder engagement, fund managers with tens of billions of dollars of assets under management do have a large influence on companies. They do meet with company leadership and discuss a broad spectrum of management and strategic directions of the company. McMaster itself does not have the same opportunity to interact directly, but can encourage its fund managers to engage on certain issues.
- Monitoring carbon emissions from all investments is possible, but would not start immediately because a competent, affordable measurement service with a widely acceptable measurement approach would need to be found first.
- McMaster is allowed one free search (for fund managers) per year, and the transaction cost of moving assets is generally 1% of their market value. Funds are periodically replaced for financial or non-financial reasons, and so transaction costs over time are considered a normal cost of doing business, not a major obstacle to change over a reasonable period of time.

Appendix A: McMaster University *Policy on Social Responsibility and McMaster's Investment Policy*

McMaster's investment policy relating to social responsibility *Policy on Social Responsibility and McMaster's Investment Policy* can be found at http://www.mcmaster.ca/policy/General/Financial/SocialResponsibilityandInvestmentPolicy.pdf.

McMaster University

Policies, Procedures and Guidelines

Complete Policy Title: Social Responsibility and McMaster's Investment Policy	Policy Number (if applicable): N/A
Approved by: Board of Governors	Date of Most Recent Approval: September 17, 1980 Date of Most Recent Review: September 2, 2008
Date of Original Approval(s):	Supersedes/Amends Policy dated:
Responsible Executive: Secretary of the Board of Governors	Enquiries: University Secretariat
DISCLAIMER: *If there is a Discrepancy between this electronic policy and the written copy held by the policy owner, the written copy prevails*	

Introduction

In recent years we have witnessed a growing concern in our society over corporate social responsibility and the responsibility of investors (both individual and institutional) to act within their powers to ensure that the issuers of securities do not cause social harm by violating basic human rights.

As individual members of society and of the University community, we recognize the need to engage in affirmative action for social improvement. McMaster University, in its role as an institutional investor, has a prima facie obligation to avoid condoning social injury resulting from the activities of any corporation, government, or government agency whose securities it holds.

1. The Social Responsibility of the University

The primary social responsibility of the University is to fulfill its role as a centre of learning and free inquiry. Any discussion of the University as an institutional investor is subordinate to the preservation of a climate in which teaching, scholarly inquiry, freedom of dissent, social comment and criticism may flourish.

2. The University as Investor

As an investor the University's primary objective is to maximize financial returns over the long run. Affirmation of the primacy of this objective, however, does not absolve the Finance Committee from a periodic review of investments to ensure that there are no compelling moral or social considerations that might warrant disinvestment. It is possible that the position of the University as a shareholder or a lender in relation to certain corporations, industries, or governments may be inappropriate no matter how attractive the financial return.

Until recently the investment policy of McMaster University has been geared solely to maximizing return on investments. The agenda of a shareholders' meeting usually deals with routine matters like approval of financial reports, election of the board of directors and the appointment of auditors. As long as the company exhibits financial responsibility, it is customary for the University to vote proxies on routine issues according to the management's recommendations.

3. Considerations for Policy Making

Any attempt to devise an investment policy for McMaster which is sufficiently sensitive to, and effective in addressing, the social implications of a particular corporation's or government's conduct must consider the following questions:

a. What are the facts?

b. By what criteria do we decide whether or not the social behaviour of a corporation, industry, or government is morally acceptable?

c. What is the most effective means to voice concerns when a corporation, industry, or government is considered to be morally praiseworthy or blameworthy?

d. Who speaks for the University on social issues?

e. Who makes decisions on the University's investment policy?

Each of these questions will be briefly considered in turn.

a. The facts.

In any specific case it will be essential to make careful investigation of all available information bearing on the activities of the corporation or government and the effect of these activities on the employees and other nations of the country, as well as the probably effect of discontinuance of the activities.

b. The criteria.

The Declaration of Human Rights proclaimed by the United Nations Organization, together with the associated International Covenants, suggest guidelines which may provide a basis for assessing social performance. A copy of the Declaration may be obtained from the Board of Governors office.

c. Voicing the concerns.

If after investigation of the policy of a corporation, industry, or government appears to be incompatible with the Declaration, the following avenues are open to the investor:

i) Communicate the Finance Committee's concerns to the security issuer in question requesting clarification of its policy;
ii) Raise questions at shareholders' meetings;
iii) Introduce resolutions at shareholders' meetings;
iv) Where feasible, vote for the appointment of concerned individuals to the Board of Directors;
v) Disinvestment.

d. "Who speaks for the University on social issues?"

This is a difficult question to answer. The following excerpt from the Kalven Committee report to the Ford Foundation is relevant here:

> "There is no mechanism by which the University can reach a collective position without inhibiting the full freedom of dissent on which it thrives. . . . This creates a heavy presumption against the University taking collective action or expressing opinions on social and political issues of the day, or modifying its corporate activities to foster social or political values, however compelling and appealing they might be." [1]

Acknowledgement of the problem should not obscure the fact that the University is concerned with the goals of society. "It should be a forum for analysis, debate and the search for truth."[2] In the pursuit of these activities it is imperative that faculty members, administrators, members of the supports staff and students be allowed free expression of opinion with impunity. Furthermore, it would be invidious to presume that any single group could speak for all members of the University community.

Such considerations militate against the establishment of inflexible guidelines for defining social policy as they relate to the investment decisions of the Finance Committee of the University.

[1] Reported in *Corporate Social Responsibility and the Institutional Investor*, a report to the Ford Foundation. B. Longstreth, H.D. Rosenbloom. Praeger Publishers. Quoted in "Social Responsibility and Queen's Investment Policy", pp. 5-6.

[2] "The Social Responsibility Dimension of Investing the Smith College Endowment: Some Objectives and Policies", p. III - C-1.

e. Making the decision.

Since these difficulties exist, the Finance Committee must continue to assume final responsibility for the investment policy of the University. It will be clear that goodwill will be required of the various constituencies of the University when the Finance committee makes decisions about which there are internal disagreements. The Finance Committee, however, does have a serious obligation to consider matters of social responsibility that may arise in connection with its investment decisions. The disagreements referred to may be mitigated to the extent that the Finance Committee's decisions reflect the full range of concerns that exist on campus and among the University's alumni.

4. Recommended Policy

1. That the Board of Governors go on record as supporting the Declaration of Human Rights of the United Nations Organization as it bears on investment policy.

2. That the Finance Committee indicate its readiness to consider documented submissions relating to specific investments from its own members or from any other member of the University community.

3. When, after due investigations, the Finance Committee considers that the activities of the issuers or securities held by the University are morally reprehensible, then the following steps should be taken:

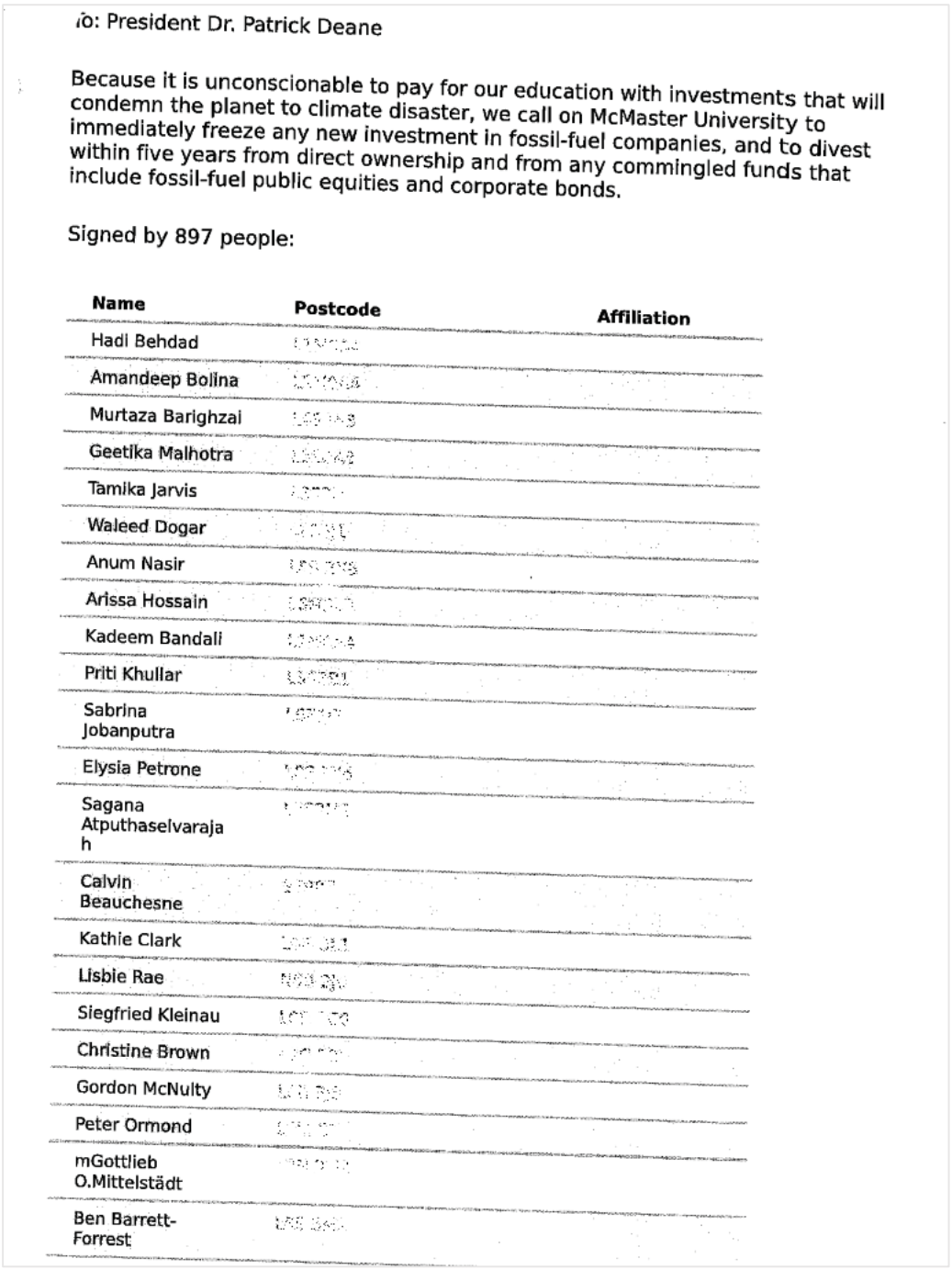
    a. Communicate this concern to the corporation or government requesting a clarification of its policy either by letter or by personal interview;
    b. If the corporation or government is still considered to be culpable, the Finance Committee should then seriously consider disinvestment, recognizing the following constraints:
        i. Disinvestment must take place in an orderly and responsible manner. In responding to its felt social obligations at home and abroad, the Finance Committee may not rashly embark on a programme of disinvestment detrimental to the University's financial resources or the position of the University Pension Plan.
        ii. Consistency demands that if the University decides it cannot in good conscience invest in the securities of a corporation, it must also decline financial support form the same corporation.

4. In the matter of voting proxies

    a. Where no contentious issue is involved, the University administration will vote by proxy on routine matters.
    b. Where a contentious issue is involved, or a special issue arises, the University administration will refer the request for a proxy vote to the Finance Committee for a decision.
    c. In any event, the University will not delegate its vote.

Appendix B: Student and Faculty Petitions Received by McMaster

The first page of the student petition and the full text of the faculty petition for divestment appear below. The postal codes of the signatories have been removed from the text of the student petition. Both petitions were reviewed by the President's Advisory Committee on Fossil Fuels Divestment on February 12, 2016.



To: President Dr. Patrick Deane

Because it is unconscionable to pay for our education with investments that will condemn the planet to climate disaster, we call on McMaster University to immediately freeze any new investment in fossil-fuel companies, and to divest within five years from direct ownership and from any commingled funds that include fossil-fuel public equities and corporate bonds.

Signed by 897 people:

Name	Postcode	Affiliation
Hadi Behdad		
Amandeep Bolina		
Murtaza Barighzai		
Geetika Malhotra		
Tamika Jarvis		
Waleed Dogar		
Anum Nasir		
Arissa Hossain		
Kadeem Bandali		
Priti Khullar		
Sabrina Jobanputra		
Elysia Petrone		
Sagana Atputhaselvaraja h		
Calvin Beauchesne		
Kathie Clark		
Lisbie Rae		
Siegfried Kleinau		
Christine Brown		
Gordon McNulty		
Peter Ormond		
mGottlieb O.Mittelstädt		
Ben Barrett-Forrest		

Written: 8 August 2014

Delivered: 5 October 2015

Dear President Patrick Deane:

Re: Divestment from Fossil Fuel Corporations

We write with an urgent request to have McMaster University divest its endowment funds from fossil fuel companies over the next five years. As of 2013, McMaster University had invested $47 million (12%) of its endowment in the top 200 companies that own the world's largest fossil fuel reserves (McMaster documents obtained through a "Fossil-Free McMaster" Freedom of Information request). This divestment would serve as a strong statement on the harm that fossil fuel production and consumption are causing our global environment and humanity. We see this as an act of ethical responsibility, a protest against current practices that cannot be altered as quickly or effectively by other means. This request is consistent with the McMaster Social Responsibility and Investment Policy (http://www.mcmaster.ca/policy/General/Financial/SocialResponsibilityandInvestmentPolicy.pdf)

It is widely recognised that the extraction and burning of fossil fuels contributes atmospheric carbon. We also recognise its contribution to ongoing global warming and that without reducing emissions we are headed for warming of about 4.5°C or more by 2100 (Report by American Association for the Advancement of Science, 2014: http://whatweknow.aaas.org/get-the-facts). Human deaths due to climate change are as high as 150,000 in a single year, according to the World Health Organisation (http://www.who.int/globalchange/news/fsclimandhealth/en/) and climate change is implicated as one of the main reasons we are entering the sixth great extinction period (Maclean and Wilson 2009, PNAS). If we conclude that destroying the climate in which humanity evolved by promoting fossil fuel emissions is wrong, then surely profiting through investments in fossil fuel companies is also wrong.

Divesting our endowment funds will not prevent fossil fuel companies from continuing to promote fossil fuel consumption. It will, however, exert pressure on them to act responsibly as well as increasing the social and economic costs so that they may not continue acting with impunity. Divestment from apartheid South Africa did not cause the collapse of the South African regime but exposed the destructive and negative consequences of apartheid that led to its end. We see divestment as a symbolic effort that isolates fossil fuel companies for their negative actions and pushes them to become green energy companies.

Universities, particularly Canadian universities like McMaster, should play a leading moral role by divesting from fossil fuels setting an example for others to follow. Students at McMaster have initiated this effort through Fossil Free McMaster, one of a large and growing number of student groups involved in fossil fuel divestment campaigns. To date, 13 universities including Stanford and San Francisco State University, 30 cities/counties, 52 religious institutions, the World Council of Churches, and 20 foundations are on record, pledging divestment (http://gofossilfree.org/commitments/). Students are now more aware of these issues and may consider a university's investment choices when applying.

Currently, fossil fuel companies have five times more reserves than the world can afford to burn with a chance of staying under a 2°C level of global warming (see Do the Math by Bill McKibbon (Trailer: http://act.350.org/signup/math-movie/; Full movie: http://vimeo.com/66066932) . The 2°C limit in global warming was agreed to by 114 countries at the Copenhagen Climate Change Conference, suggesting that 4/5 of the reserves should be considered "stranded assets".

Ongoing efforts to expand Canadian tar sands production, supported strongly by our federal government, are particularly harmful because of elevated carbon emissions and the dangers of shipping bitumen. The federal

support is justified and predicated on a flawed premise that portrays these companies as star companies with stellar contribution to the Canadian economy and Canadian jobs. The facts are otherwise. Direct tar sands employment is estimated at just over 0.5 per cent of employment (100,000 jobs employed directly or 175,000 and around 1 per cent counting indirect jobs). Over 70 per cent of tar sands profits flow to foreign investors and the government has managed to collect around 6 per cent of the total value generated by the tar sands (or an average 9 per cent of the industry's economic rent; Michal Rozworski, 2014).

Furthermore, there is no evidence to show that that planned divestment would damage the financial returns to McMaster's portfolio. A number of studies, including one by S&P Capital IQ, demonstrate that over the last ten years an endowment reflecting the S&P 500 without targeted fossil fuel companies would have outpaced one with them. The S&P index based portfolio has out-performed tar sands based ones by a long shot. Besides it is possible for the University to consider re-directing investment to renewable energy alternatives with higher returns and lower risks (Atif Ansar, Ben Caldecott, James Tilbury, "Stranded assets and the fossil fuel divestment campaign: what does divestment mean for the valuation of fossil fuel assets?" Smith School of Enterprise and the Environment, Oxford University, 2013, pp. 71-72).

The University has a choice. It either invests in fossil fuel corporations sustaining this industry's harmful damage to the environment, or it divests, exerting pressure on the industry to promote green sources of energy. If the University regards divestment as "political," then its continued investment is a similarly political act, one that finances present harmful corporate activities and calculates profit from them.

We the undersigned are faculty and officers of the University, many with knowledge and research in climate science, energy, business management, ethics, and the effects of climate change on health, prosperity, and biodiversity. Many are alumni and donors. We appeal to you, as representatives of the University, and to our colleagues, fellow alumni, and donors to join us in signing this statement as an act of conscience and fiscal responsibility and to help bring the University to divest its holdings in fossil fuel corporations as soon as possible,. Divestment would truly move McMaster forward with integrity.

Sincerely,

James S. Quinn, Ph.D., Professor, Biology Department, McMaster University

Atif Kubursi, Ph.D., Professor Emeritus, Economics Department, McMaster University.

David Hitchcock, Ph.D., Professor Emeritus, Department of Philosophy, McMaster University

Altaf Arain, Ph.D., Professor, School of Geography and Earth Sciences, McMaster University

Art Heidebrecht, Ph.D, P.Eng., Director W.G. Booth School of Engineering Practice, McMaster University

Graeme MacQueen, Ph.D., Retired Associate Professor, Department of Religious Studies, McMaster University.

Alan Mendelson, Ph.D., Professor Emeritus, Department of Religious Studies, McMaster University

Martin Daly, Ph.D., FRSC, Professor Emeritus, Department of Psychology, Neuroscience & Behaviour, McMaster University

Don Wells, Ph.D., Professor, School of Labour Studies & Department of Political Science, McMaster University

Brian W. Baetz, Ph.D., Professor, Department of Civil Engineering, McMaster University.

Ben Bolker, Ph.D., Professor, Department of Mathematics and Statistics and Department of Biology, McMaster University

Michael Egan, Ph.D., Associate Professor & University Teaching Fellow, Department of History, McMaster University

Gary Purdy, Ph.D., D.H.C., D.Sc., F.C,I.M, F.A.S.M., F.T.M.S., N.A.E., F.R.S.C., P.Eng, University Professor, Materials Science and Engineering, McMaster University.

Susan Dudley, Ph.D., Professor, Department of Biology, McMaster University.

Ben Evans, Ph.D., Associate Professor, Department of Biology, McMaster University.

Rama S. Singh, Ph.D., Professor, Department of Biology and Centre for Peace Studies, McMaster University.

Christopher M. Wood, Ph.D., CRC Tier I Chair in Environment and Health, Distinguished University Professor, Professor, Department of Biology, McMaster University.

Paul Andrews, Ph.D., Assistant Professor, Department of Psychology, Neuroscience, and Behaviour, McMaster University.

Robert Korol, Ph.D., Professor Emeritus, Civil Engineering Department, McMaster University.

Nancy Doubleday, Ph.D., Director, Peace Studies, and Associate Professor, Department of Philosophy, McMaster University

Daniel Coleman, Ph.D., Professor, Department of English and Cultural Studies, McMaster University.

Ana R. Campos, Ph.D., Professor, Department of Biology, McMaster University

Xu-Dong Zhu, Ph.D., Associate Professor, Department of Biology, McMaster University

Lofti Belkhir, Ph.D., Associate Professor and Class of 1962 Mechanical Engineering Endowed Chair in Eco-Entrepreneurship, McMaster University.

Barry Allen, Ph.D., Professor, Department of Philosophy, McMaster University.

André Bedard, Ph.D., Professor, Department of Biology, McMaster University.

Jurek Kolasa, Ph.D., Professor, Department of Biology, McMaster University.

David Feinberg, Ph.D., Associate Professor, Department of Psychology, Neuroscience, and Behaviour, McMaster University.

Graham Scott, Ph.D., Assistant Professor, Department of Biology, McMaster University.

Gail Krantzberg, Ph.D., Professor and Director of the Centre for Engineering and Public Policy in the School of Engineering Practice, McMaster University

Diane Enns, Ph.D., Associate Professor, Department of Philosophy, McMaster University

Reuven Dukas, Ph.D., Professor, Department of Psychology, Neuroscience & Behaviour, McMaster University

Jonathan Dushoff, Ph.D., Associate Professor, Department of Biology, McMaster University

Lovaye Kajiura, Ph.D., Assistant Professor (Teaching), Department of Biology, McMaster University

Stephen M. Streeter, Ph.D., Associate Professor, Department of History, McMaster University

Ruth Frager, Ph.D., Associate Professor, Department of History, McMaster University

Robin Cameron, Ph.D., Associate Professor, Department of Biology, McMaster University

Paul A Faure, Ph.D., Associate Professor, Department of Psychology, Neuroscience & Behaviour, McMaster University

Joanna Wilson, Ph.D., Associate Professor, Department of Biology, McMaster University

Herb Jenkins, Ph.D., .Professor Emeritus, Department of Psychology, McMaster University

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Robert O'Brien, Ph.D., Professor of Political Science, McMaster University

James Johnson, Ph.D., Professor Emeritus of Economics, McMaster University

David Goodings, Ph.D., Professor Emeritus of Physics and Astronomy, McMaster University

Mary Sealey, Hons BSc - 1970; MBA 1982, McMaster University

Andrew J. Rainbow, Ph.D., Professor Emeritus, Department of Biology, McMaster University.

Neil McLaughlin, Ph.D., Associate Professor, Sociology Department, McMaster University

Catherine Beattie, Ph.D., Retired Associate Professor, Department of Philosophy, McMaster University.

Gary Warner, D de l'U., Retired Associate Professor of French, McMaster University.

Pauline Prowse, McMaster University Alumni, Chair of the Board of Directors of the Hamilton Association for Renewable Energy

Alvin A. Lee, Ph.D., President Emeritus & Professor of English Emeritus, McMaster University

George Sorger, Ph.D. Emeritus Professor, Department of Biology, McMaster University.

Dr. Pat Chow-Fraser, Ph.D., Professor of Biology, Director of Life Science Program, McMaster University.

Matthew Cooper, Ph.D., Professor Emeritus, Department of Anthropology, McMaster University

Bruce Milliken, Ph.D., Professor, Department of Psychology, Neuroscience & Behaviour, McMaster University

Deda Gillespie, Ph.D., Professor, Department of Psychology, Neuroscience & Behaviour, McMaster University

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Sally McKay, Assistant Professor, School of the Arts, McMaster University

Sue Becker, Ph.D., Professor, Department of Psychology Neuroscience & Behaviour, McMaster University

Joshua Weresch, MA of Divinity, BA Music and Religious Studies from McMaster University

Graham Petrie, Ph.d., Emeritus Professor, English and Film Studies, McMaster University

Jennifer J. Heisz, Ph.D., Assistant Professor, Department of Kinesiology, McMaster University

Jean Wilson, Ph.D., Associate Professor and Director, Arts & Science Program, McMaster University

Carmel Mothersill DSc. Professor and CRC Chair, Dept. Medical Physics and Applied Radiation Sciences, McMaster University

Beth Marquis, Ph.D., Assistant Professor, Arts & Science Program, McMaster University

Henry A. Giroux, Professor and McMaster University Chair for Scholarship in the Public Interest

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Lisbie Rae, PhD., sessional lecturer in Drama (retired), McMaster University

G. Brian Golding, Professor, CRC Tier I chair, Department of Biology, McMaster University

Jennifer Bonnell, Assistant Professor, Department of History, McMaster University

Patrick Byrne, MSc., Sessional Faculty and Program Coordinator, Arts & Science Program, McMaster University

Richard Arthur, Ph.D., Professor, Department of Philosophy, McMaster University

Bradd Hart, Ph.D., Professor, Department of Mathematics and Statistics, McMaster University

Nicholas Kevlahan, Ph.D., Professor, Department of Mathematics and Statistics, McMaster University

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Laura Parker, Ph.D., Associate Professor, Department of Physics and Astronomy, McMaster University

Kari Dalnoki-Veress, Ph.D., Professor, Department of Physics and Astronomy, McMaster University.

John Vickers, Ph.D., Professor Emeritus, Faculty of Health Sciences, McMaster University

Karen Balcom, Ph.D., Associate Professor, Department of History, McMaster University

Cheryl Quenneville, Ph.D. P.Eng, Assistant Professor, Department of Mechanical Engineering, McMaster University

Amber Dean, Ph.D., Assistant Professor, English and Cultural Studies, McMaster University

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Susie O'Brien, Ph.D., Associate Professor, English and Cultural Studies, McMaster University

Lorraine York, Ph.D., Professor, English and Cultural Studies, McMaster University

Elisabeth Gedge, Associate Professor, Department of Philosophy, McMaster University

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Adam Hitchcock, PhD, Professor, Department of Chemistry & Chemical Biology, McMaster University

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Stuart Mestelman, Professor Emeritus, Department of Economics, McMaster University

Michael Kliffer, Associate Professor, Department of French, McMaster University

Sean Corner, Associate Professor, Department of Classics, McMaster University

Bill Prestwich, Professor Emeritus, Department of Medical Physics and Radiation Science, McMaster University

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Cecile Fradin, Associate Professor, Department of Physics & Astronomy, McMaster University

Anne Savage, PhD, Associate Professor, Department of English & Cultural Studies, McMaster University

Joseph B. Rose, Professor, DeGroote School of Business Mcmaster University

Walter Smyrniw, Professor Emeritus, Department of Linguistics & Languages

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Marie Elliot, Ph.D. Associate Professor, Department of Biology, McMaster University

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Appendix C: Comparison of Divestment Movements

1970s-1994: Divestment from Apartheid South Africa

Socially responsible investment gained increased attention with the rise of the social movement against South African apartheid. Universities were pressured by student campaigners to divest from companies operating in South Africa. Many such divestment campaigns were launched following the failure of the Sullivan Principles (a set of anti-discrimination principles corporations operating in South Africa required as a condition for doing business) to force social and legal change. Divestment was seen by its supporters as a necessary and bolder option.

Basis for divestment: Human rights (Racial discrimination).

Success in uptake: Medium. Divestment campaigns were large and active for multiple years at many North American universities. In some cases (Harvard, Yale, University of Toronto), universities took part steps such as continuing to invest in more socially responsible companies in South Africa, resulting in continued student protests in favour of full divestment. Some universities changed their decisions after multiple student campaigns pushed for complete divestment, rather than inaction or part measures.

Success[3] in effects: High. The claim is often made that divestment in South Africa had no impact because it did not financially harm or directly affect the share prices of the companies involved (e.g. Teoh, Welch and Wazzan 1999). It is also difficult to separate the impact of divestment alone from the broader boycott of South African products and of sanctions on the country, both more financially harmful steps that came after years of divestment campaigning. Although some institutions rejected divestment, the size and tenacity of the campaign played a role in promoting public awareness of the injustices. It is possible that divestment had an effect on political change, even if there was no direct financial impact. Qualitatively, prominent South African political figures have named university divestment, signalling international disapproval, as one crucial factor (along with domestic activism) that resulted in regime change.

Shareholder engagement was also commonly proposed as a response to apartheid; shareholders frequently asked companies to completely disengage from South Africa (Broyles and Aflatooni 1999, 17). One notable difference with fossil fuel related engagement is that the main shareholder request is different: ending a company's operations in one location, accounting for typically less than 2% of company sales (anti-apartheid; Broyles and Aflatooni 1999, 25), compared to transforming a company's main line of business (anti-fossil fuels).

1970s-2000s: Anti-Tobacco Divestment

As a growing amount of scientific evidence linked smoking to cancer, universities were pressured to stop investing in an industry where "using the products as intended kills over 50% of long-term users" (Girard 2007). Misinformation campaigns and delay tactics, such as companies continuously arguing that more research was needed, were also named as reasons to divest.

Basis for divestment: Health (Industry product causes health harms).

[3] In all cases, judging the effectiveness of divestment is difficult because there is no counterfactual information about what changes would have happened in the absence of a divestment movement.

Success in uptake: High. Although the anti-tobacco campaign was smaller and less vocal than others, it had widespread success following from minimal campaigning: Harvard and City University of New York divested in 1990, followed by others. Changing norms (and evidence) are seen in some reversals of decisions, for example the University of Toronto rejected tobacco divestment in 1991 but endorsed it in 2007.

Success in effects: Low. Tobacco companies remain large and highly profitable, mostly due to population growth as smoking rates have declined or plateaued in most countries. The industry has lost some social acceptability and laws have become more restrictive (bans on public smoking, graphic warnings on product packaging), but it is unclear if divestment played any role in shaping public disapproval of the industry, as opposed to media information or personal experiences with smoking-related harms.

1990s-2000s: Anti-Sweatshop Campaign

Anti-sweatshop activism has had less of a presence in the divestment debate than other social movements of recent decades. The issue receives media attention periodically and some institutions have changed their procurement policies to discourage sweatshop production, but there has been little change to investments.

Basis for divestment: Human rights (Labour rights and workplace safety).

Success in uptake: Low (among both institutions and individuals in their buying choices).

Success in effects: Low (sweatshop-using apparel and technology companies remain predominant).

2000s: Divestment from Sudan

In the mid-2000s, government-sponsored genocide led some investors in Sudan's oil fields to remove their funds, since oil revenues were supporting the government's actions.

Basis for divestment: Human rights (Genocide).

Success in uptake: High, especially given the short campaign and the resistance of some universities to divestment in most circumstances (Yale, Queen's University).

Success in effects: Low. Less scrupulous investors replaced those that left.

2000s-2010s: Boycott, Divestment, Sanctions (BDS)

Throughout the 2000s, a movement to condemn Israel's actions in occupied Palestinian territories has gained some support on campuses and in student assemblies.

Basis for divestment: Human rights (Political rights and other discrimination). However, critics of BDS see the singular focus on Israel as unjustified and/or anti-Semitic, since other countries accused of committing human rights offenses do not receive the same attention. This divestment movement is unlike others because both sides are claiming the moral high ground.

It is also unique in calling for an academic boycott, on work produced at Israeli universities. This is widely rejected by universities as a contravention of their main social purpose. For example, McMaster's *Policy on Social Responsibility and McMaster's Investment Policy* states that the "primary social responsibility of the

University is to fulfill its role as a centre of learning and free inquiry." Although the movement's most prominent leaders denounce anti-Semitism, there have been many instances of discriminatory comments and actions from supporters of both sides of the campaign, such as scholars of Israeli nationality (not institution) being targeted by the boycott. For these reasons, many people (including McMaster's President in an official statement, 4 April 2014, http://dailynews.mcmaster.ca/worth-mentioning/statement-from-the-president/) find that the movement contributes to an atmosphere of religious and ethnic tensions, phobias and hatred.

Success in uptake: Virtually none. Some student bodies and academic associations have voted in favour of BDS, but the academic boycott component is seen as a basic contravention of academic freedom, and so despite hundreds of campus campaigns globally, only one university has divested (Hampshire College, US).

Success in effects: No clear effect as divestment has not been widely adopted.

2010s: Anti-Private Prisons

An anti-private prison movement has emerged in the US, where incarceration rates have risen sharply since the 1990s.

Basis for divestment: Human rights violations documented in private prisons.

Success in uptake: The movement is still very new and there are few active campaigns. Columbia University has committed to divest.

Success in effects: No clear effect as divestment has not been widely adopted.

2010s: Fossil Fuel Divestment

The fossil free movement is most similar to the anti-tobacco movement because of its scientific evidence base. Political and human rights based campaigns, in contrast, are based on moral views of the world that are more subjective. However, in either case it is difficult to establish where to draw the line of disapproval, given that many industries cause some form of social harm and many governments could be criticized for some form of contravening human rights. Practical guidance on how to draw this line, including considerations of majority support in the university community, is set out in the influential Yale University Press work *The Ethical Investor* (Simons et al. 1972) but there is inevitably some level of subjectivity involved.

Basis for divestment: Health (Human health harms caused by product, both locally and globally, as well as possibly irreversible environmental and ecosystem harm)

Success in uptake: Virtually no success in Canada (only partial diversion of endowment funds at the University of British Columbia and Concordia University), but some support in the US, UK and Australia. Divestment commitments have often been more limited than campaigners have asked for, such as in partial divestment (from coal and oil sands only) or direct holdings only, with indirect investment pools ignored.

Success in effects: No clear effect as divestment has not yet been widely adopted by universities, although a growing number of institutions are divesting holdings (552 as of August 16, 2016, and an up-to-date list is maintained at http://gofossilfree.org/commitments/). Media attention has been paid to university decisions, and fossil fuel company associations are promoting anti-divestment news articles, longer reports and websites (such as divestmentfacts.com or reports from policy institute Compass Lexecon). The existence of these

materials indicates some concern about the power of the campaign. The anti-divestment materials generally focus on the perceived costs of divestment, using assumptions that past profits in fossil fuels will continue and that compliance, management and/or transaction costs will also harm university finances.

Appendix D: Canadian University Divestment Decisions

The following table is based on a review of 33 fossil fuel divestment campaigns at Canadian universities reviewed by the President's Advisory Committee on Fossil Fuel Divestment on March 4, 2016 (and updated as of August 1, 2016). "In progress" indicates that either the administration or the student campaign is still active in regards to divestment; "--" indicates no information was available.

University	Campaign Start Date	Divestment Decision	ESG Decision, Other Actions	Reasoning for Decision and Additional Notes
Queen's University	Nov. 2014	No (Nov. 2015)	ESG consideration has been permitted since 2009, but not required of fund managers.	Reasoning: divestment not effective; could undermine research partnerships and donor relationships; fossil fuels do not cause social injury because of the social benefits they provide and because the industry is not illegal. (This reasoning refers to the Yale definition of social injury [Simons et al. 1972] which has been criticized for being too legalistic. Divesting would do nothing about fossil fuel demand or developing alternative energy sources. http://www.queensu.ca/principal/speeches-writing/statements/divestment-fossil-fuels
University of Ottawa	Oct. 2014	No (Apr. 2016)	The university is a UN PRI signatory and implements ESG.	Based largely on the Hebb (2015) report, divestment is presented as "insufficient on its own" and ineffective compared to shareholder engagement. https://www.uottawa.ca/administration-and-governance/board-of-governors/addressing-global-warming https://www.uottawa.ca/administration-and-governance/sites/www.uottawa.ca.administration-and-governance/files/report_of_the_finance_and_treasury_committee_to_the_board.pdf
University of Waterloo	Jan. 2016	In progress	ESG evaluation is permitted but not required of fund managers in a new investment policy announced in Jan. 2015.	http://m.waterloochronicle.ca/news-story/6271245-divestment-bid-gets-cool-response-at-university-of-waterloo https://uwaterloo.ca/secretariat-general-counsel/sites/ca.secretariat-general-counsel/files/uploads/files/sipp2015-01-01_002.pdf

University	Campaign Start Date	Divestment Decision	ESG Decision, Other Actions	Reasoning for Decision and Additional Notes
University of Toronto	Mar. 2014	No (Mar. 2016)	Will begin using ESG, consider signing UN PRI, the Montreal Carbon Pledge and joining the Carbon Disclosure Project. Additional actions: "- Launching a tri-campus clean-tech challenge to encourage environment and energy-related entrepreneurship - Providing $750,000 to be distributed over three years for climate-change related academic initiatives - Prioritizing climate change-related themes in selected programs and curricula - Increasing the Utilities Reduction Revolving Fund by 50% (from $5 million to $7.5 million) to encourage more extensive implementation of energy-saving retrofits in our buildings - Formally adopting substantially more rigorous energy efficiency standards for capital projects - Pursuing opportunities to use our campuses as 'test beds' for environmental and sustainability research and best practices - Investigating the potential for development of other renewable energy projects - Establishing a U of T committee on the	The president went against the fossil fuel advisory committee recommendation, which was targeted divestment from companies that "blatantly disregard" climate limits. The university has direct holdings as well as indirect investments. The university's "most valuable and effective contirbutions" are through research and education. Advisory committee report: http://www.president.utoronto.ca/secure-content/uploads/2015/12/Report-of-the-Advisory-Committee-on-Divestment-from-Fossil-Fuels-December-2015.pdf President's decision: http://www.president.utoronto.ca/secure-content/uploads/2016/03/Beyond-Divestment-Taking-Decisive-Action-on-Climate-Change.pdf

University	Campaign Start Date	Divestment Decision	ESG Decision, Other Actions	Reasoning for Decision and Additional Notes
			environment, climate change, and sustainability with a mandate to coordinate and advance U of T's environmental research, innovation, education, and energy consumption initiatives."	
McMaster University	Oct. 2015	In progress	Already requiring fund managers to apply ESG (since 2013) and is developing specific requirements for ESG, such as asking fund managers to provide verbal (and now written) explanations for holding any investments in fossil fuels.	--
University of British Columbia	--	No (Feb. 2016)	Implementing ESG within 3 years.	Partial divestment of $10 million (of a $1.45 billion endowment). Investment policy was replaced during the divestment campaign, which drew some criticism. There are now 5 criteria to meet for divestment. Engagement with industry is considered preferable to "symbolic" divestment that may have no beneficial effect. http://treasury.ubc.ca/responsible-investment/ubc-endowment-responsible-investment-policy/ http://www.cbc.ca/news/canada/british-columbia/ubc-board-of-governors-votes-against-divestment-from-fossil-fuel-industry-1.3317816
University of Alberta	--	--	--	--
University of Calgary	--	No	--	http://www.theglobeandmail.com/news/national/canadian-medical-association-divesting-fossil-fuel-holdings/article26115904/
University of	Dec. 2014	--	--	--

University	Campaign Start Date	Divestment Decision	ESG Decision, Other Actions	Reasoning for Decision and Additional Notes
Saskatchewan				
University of Manitoba	Apr. 2015	In progress	--	--
McGill University	Fall 2012 (1st campaign) Oct. 2015 (2nd campaign)	No (May 2013); No (Mar. 2016)	ESG and socially responsible investment will be expanded. Actions include: "- investing in renewable and alternative energy - establishing a socially responsible investment fund option for donors, - developing and implementing environmental, social and governance (ESG) principles and guidelines for endowment investments - supporting and initiating shareholder resolutions to encourage changes in company practices deemed inconsistent with ESG and the United Nations' Principles for Responsible Investment (UNPRI)"	In both campaigns, the existence of social injury according to McGill criteria was not established. Divestment criteria were not met because the majority of carbon emissions come from end uses of the fossil fuel industry's product. Preparing a report on socially responsible investment, target date December 2016. Reviewing all sustainability-related activities in order to develop a "comprehensive climate action plan." http://publications.mcgill.ca/reporter/2016/03/camsr-reports-on-divest-mcgill-submission/ https://www.mcgill.ca/boardofgovernors/files/boardofgovernors/gd15-44_camsr_report.pdf
Dalhousie University	Feb. 2014	No (Nov. 2014)	No sustainable investment actions.	Named shareholder engagement as a reason not to divest (as well as limited impact due to small holdings, higher transaction costs). Ongoing sustainability research and campus emissions reductions. http://www.dal.ca/news/2014/11/26/dal-board-decides-not-to-divest-its-fossil-fuel-endowment-holdin.html
University of Victoria	Jan. 2014	No (Jan. 2016)	The university has become a UN PRI	The investment management foundation is considered separate from the university,

University	Campaign Start Date	Divestment Decision	ESG Decision, Other Actions	Reasoning for Decision and Additional Notes
			signatory and is piloting a $25,000 fossil free fund.	and is developing an approach to responsible investment. https://ring.uvic.ca/news/foundation-creates-fossil-fuel-free-fund
Kwantlen Polytechnic University	Oct. 2013	No (Apr. 2014)	--	Research from HSBC and RBC indicated there would be little financial impact from divestment but the board declined to divest. Some students criticize the potential conflict of interest in having board members employed by oil and gas companies rejecting the divestment motion. http://runnermag.ca/2014/12/kwantlens-board-of-governors-declines-divestment-initiative/
Capilano University	--	In progress	--	--
Simon Fraser University	Fall 2013	No (Jul. 2014)	UN PRI signatory since 2014. Investment managers are "encouraged" to sign UN PRI, engage with companies on ESG factors.	University needs to avoid "inadvertent damage" to energy companies that "may be part of the solution." (Perhaps referring to their natural gas or renewable energy operations). Engagement is considered better than screening. https://www.sfu.ca/university-communications/media-releases/2014/sfu-adopts-investment-policy-grounded-in-united-nations-principles-for-responsible-investment.html
UBC—Okanagan	Oct. 2014	(Same as UBC)	--	--
University of Winnipeg	Jan. 2015	No (June 2016)	University Board of Regents voted to create a responsible investment policy applying ESG criteria in assessing investments. A "100% fossil fuel free" fund aimed at "green	"UWinnipeg has adopted a balanced approach to the divestment issue which is consistent with actions taken by other universities in Canada." The decision was opposed by some students as incompatible with its sustainability and social commitments.

University	Campaign Start Date	Divestment Decision	ESG Decision, Other Actions	Reasoning for Decision and Additional Notes
			innovation" was also requested by the board.	http://www.cbc.ca/news/canada/manitoba/divest-u-winnipeg-disappointing-1.3656084
Lakehead University	Feb. 2014	In progress	--	--
University of Guelph	Apr. 2014	No (Jan. 2015)	Exploring UN PRI practices. A preliminary review found that most other universities are "just beginning to take concrete steps" in responsible investing.	http://www.guelphmercury.com/news-story/5731744-university-of-guelph-explores-responsible-investing-/
Ryerson University	2015	In progress	--	--
York University	Sept. 2014	No (Jan. 2016)	--	York does not have direct holdings, and the Chief Finance Officer says the investment policy "does not recommend" negative screening. http://www.excal.on.ca/all-eyes-on-york-after-major-uoft-divestment-developments/
Trent University	Mar. 2013	No (May 2015)	The Board is seeking to make up to 10% of investments compatible with socially responsible investment principles, based on UN PRI.	Trent prefers "research and engagement" with companies over divestment. The decision was also intended to balance different points of view. http://www.trentu.ca/newsevents/newsDetail_old.php?newsID=9690
Carleton University	Oct. 2014	In progress	In progress	Professor Hebb views divestment as ineffective because university holdings are too small to make a symbolic impact and because there is no financial impact. http://www.charlatan.ca/2016/01/divestment-debate-places-students-against-academics/
Concordia University	Fall 2013	No (Nov. 2014).	No	Partial divestment of $5 million. In Feb. 2016, the university is considering expanding the scope of its sustainable investments. http://www.concordia.ca/cunews/main/stories/2016/02/09/concordias-

University	Campaign Start Date	Divestment Decision	ESG Decision, Other Actions	Reasoning for Decision and Additional Notes
				sustainable-investment-initiative-the-next-stage.html The endowment fund investment pool is worth $155 million as of April 2015. https://www.concordia.ca/content/dam/concordia/aar/docs/foundation/2014-15-Concordia-University-Foundation-Annual-Report.pdf.pdf
Université de Sherbrooke	Feb. 2015	In progress	--	The divestment group is still active. https://www.usherbrooke.ca/developpement-durable/vous-etes/etudiant/implications-etudiantes/
Saint Francis Xavier University	--	In progress	--	--
University of New Brunswick	Oct. 2014	--	--	--
St. Mary's University	June 2014	In progress	--	--
St. Thomas University	--	--	--	--
Mount Allison University	Nov. 2014	In progress	--	--
Memorial University	2013 (1st campaign) Oct. 2015 (2nd campaign)	--	--	The university president names the ethical investment policy as a "good policy" in response to divestment pressures. Critics pointed out that no such investment policy exists. http://theindependent.ca/2015/05/04/mun-faculty-support-divestment-president-defends-big-oil/
University of PEI	Dec. 2015	In progress	--	http://www.cbc.ca/news/canada/prince-edward-island/upei-fossil-fuel-investment-1.3359000

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McMaster University

Should McMaster stop investing in fossil fuel companies?

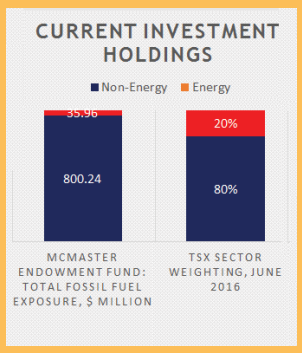
Town Hall: October 17, 3-5pm, Convocation Hall

Divestment report and video available @
http://www.mcmaster.ca/vpacademic/PACFFD/pacffd2.html

Fossil Fuels Divestment

Background

Petitions have been received from students and faculty, calling for McMaster to sell its investment holdings in fossil fuels.



There is $836.2 million in the endowment fund investment pool

Invested by 12 fund managers, who hold 11 pooled funds and 1 segregated fund for McMaster

Fund managers are reviewed periodically

$35.96 million of the total endowment is currently invested in fossil fuel companies

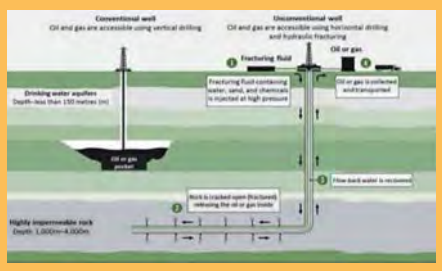
This equals 4.3%

But because of the pooled fund structure, 6 out of 12 funds ($588.1m) would need to be sold to fully divest

Views

Investing in fossil fuel-extracting companies is wrong. Their business model depends on developing resources at levels that aren't compatible with 'safe' climate change limits.

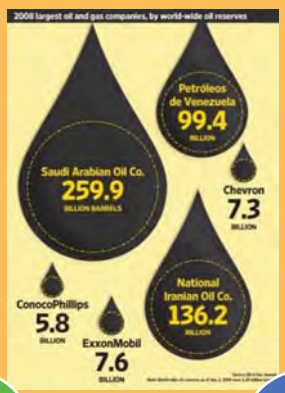
Emissions from the extraction process, localized pollution and climate misinformation campaigns are more reasons to divest.



On the other hand, the problem is **demand.** If fossil fuel companies are at fault, so is everyone who buys and uses their products.

The world currently relies on fossil fuels for transportation and electricity generation. **Divesting may signal disapproval but it doesn't solve the problem** of providing cleaner energy.

The argument is ***not*** that fossil fuel company finances and share prices would be affected directly.



Myth: Divestment means losing money.

Fact: Any replacement investment would need to meet financial screening requirements.

Two years of two-standard-deviation losses would have to happen before any payments from the endowment fund would be affected. Rigorous financial screening of all investments reduces this risk.

Options

Partial divestment — Selling only coal and oil sands holdings, because of their higher carbon intensity

ESG evaluation — Screening all investments based on environmental, social and governance performance.

Impact investment — Investing more in clean energy research

Is ESG a solution?

Many Canadian universities have chosen an ESG approach to investing instead of divestment. However, some question the ability of monitoring and shareholder engagement to lead to change. McMaster already applies ESG and is at the forefront of developing meaningful ESG requirements.

Should McMaster make a public stand in support of divestment? Or are alternative actions more effective?
How is McMaster best placed to advance solutions?

Image sources
Top: Diagram of hydraulic fracturing, Ward et al. 2016, 58. Ward, H., Eykelbosh, A., & Nicol, A. M. (2016). Addressing uncertainty in public health risks due to hydraulic fracturing. *Environmental Health Review*, 59(2), 57-61.

Bottom: Wall Street Journal, (22 May 2010). The Long Shadow of the Visible Hand. http://www.wsj.com/articles/SB10001424052748704852004575258541875590852

Appendix E: The Rise of Divestment Campaigns across Canadian Universities

The Rise of Divestment Campaigns across Canadian Universities
Deidre (Dee) Henne, /April 2016

With as many as 33 publicly disclosed active divestment campaigns across Canadian Universities underway, or completed only to be re-initiated by another phase two campaign, one thing is certain: University approaches to incorporating Environmental, Social and Corporate Governance factors is becoming more transparent all while the practice of ESG factors being incorporated into investment decisions is rapidly evolving.

In Ontario, transparency regarding the extent of ESG considerations was recently prompted across registered pension plan holding Universities by the Financial Services Commission of Ontario (FSCO), which effective January 1, 2016 required pension plan statement of policies and procedures (SIP&P) to disclose whether or not ESG factors are incorporated into investment decisions, and if so, how those factors are incorporated. Further, FSCO requires all pension statements effective July 1, 2016 to include specific statements noting that ESG disclosure can be found within the SIP&P.

Current divestment campaigns go far beyond simply disclosure of whether or not ESG factors are considered in investment decisions and if so, how. Instead, divestment campaigns predominantly focus on the specific elimination of the top 100 public coal companies and the top 100 public oil and gas companies globally. These top 200 companies in total make up The Carbon Underground 200[1], a recommended divestment list updated annually by Fossil Free Indexes, LLC. The standard campaign directed at universities, colleges, and religious organizations globally demand entities to: (1) Immediately freeze any new investment in fossil fuel companies, and (2) Divest from direct ownership and any commingled funds that include fossil fuel public equities and corporate bonds within 5 years. Additional variations exist across Canada, and likely globally, based on the local fossil free campaign participants. For example, some campaigns request the transition period to be no longer than 3 years, and other requests add a third demand such as reinvestment of divested funds into a sustainable investment fund or renewable energy holdings (refer to table 1: Canadian University Summary of Divestment Campaigns).

Canadian University reaction to these campaigns predominantly to-date occurs following the issuance of a petition signed by a small subset of the student body and in some cases Faculty/Staff members. Petitions from the student body are most commonly supported by Fossil Free Canada, which aids the electronic collection of local campaign signatories. At some of the Canadian Universities reviewed a subset of Faculty initiated a separate campaign from the student led initiative. Finally, in some cases the student and Faculty sub-groups work together, backing each-others campaign and releasing petition letters at the same time. Most common recipients of the petition letters demanding divestment include, in order of prevalence:

- President
- Board of Governors
- Finance Committee
- Investment Committee

Reactions have varied greatly to-date. Most commonly the petitions received by the President has resulted in either delegating further review by an existing Committee or establishing a special review (or ad-hoc) group to consider the request and respond with recommendations to the President, following which are presented to additional governance committees and ultimately the Board of Governors. Petitions received directly by the Board in some cases resulted in immediate Boardroom discussion, with most commonly delegation to management and/or Board sub-committee to further review and recommend response. Finally, petitions directed to Finance or Investment Committees have resulted in direct committee review and response recommendations that ultimately are presented to the Board of Governors.

Overall to-date, all reviews have resulted in similar outcomes most notably all have said no to divestment across Canada. While no has been the common answer related to the campaign demands it does not mean that across Canada pre- and post-review these Universities are not making positive and substantial changes. For example, Ottawa University was an early adopter and Canadian educational sector signatory of the United Nations Principles for Responsible Investing (UN PRI)[2]. The UNPRI identifies six Principles that may better align the objectives of society with the decisions of investors. Each Principle goes further to identify a number of possible actions an organization can undertake to demonstrate its adoption.

The six Principles excerpted from www.unpri.org/about-pri-the-six-principles/

Principle 1: We will incorporate ESG issues into investment analysis and decision-making processes.

Possible actions:

- Address ESG issues in investment policy statements
- Support development of ESG-related tools, metrics, and analyses
- Assess the capabilities of internal investment managers to incorporate ESG issues
- Assess the capabilities of external investment managers to incorporate ESG issues
- Ask investment service providers (such as financial analysts, consultants, brokers, research firms, or rating companies) to integrate ESG factors into evolving research and analysis
- Encourage academic and other research on this theme
- Advocate ESG training for investment professionals

[1] http://gofossilfree.org/top-200/

[2] http://www.unpri.org/

Appendix E: The Rise of Divestment Campaigns across Canadian Universities

Table 1: Canadian University Summary

	University	Campaign Start	Demand 1: Immediately stop investing in fossil fuels	Demand 2: Divest holdings within "#" years	Unique Requests, if any	Decision	Decision Date	Next Steps (at April 2016)
1	Queen's	Nov-14		5	Exit Athabasca Oil Sands Divest Coal, especially in	NO	Oct-15	To review its Socially Responsible Investing Policy (SRI)
2	Ottawa	Oct-14			Divest from the 200 fossil fuel companies	N/A	-	To undertake steps necessary to sign the Montreal Pledge
3	Waterloo	Jan-16			Divest from the 200 fossil fuel companies	WIP	WIP	In process
4	Toronto	Mar-14	✓	5		WIP	WIP	March 2016 a 14-point "Beyond Divestment" plan is adopted.
5	McMaster	Oct-15	✓	5		WIP	WIP	An Advisory Committee struck to review and recommend response
6	UBC	Oct-14	✓	5		NO	Feb-16	To create a $10M sustainable investment fund.
7	~~U. Alberta~~	-	-	-		-	-	Official campaign launch not confirmed.
8	U. Calgary	"Coming Soon"				NO	Feb-15	February 2015 President Cannon commits to a free and open debate.
9	U. Saskatchewan	Dec-14				WIP	WIP	President committed by May 2016 to issue a decisive plan and decision.
10	U. Manitoba	Apr-15		5	Student Union divest too Email students to join	-	-	
11	McGill 1st	Fall/12	✓		Divest from the 200 fossil fuel companies	NO	May-13	Committee reviewing 2nd request
	McGill 2nd	Oct-15	✓			WIP	WIP	
12	Dalhousie	Feb-14	✓		Divest from the 200 fossil fuel companies	NO	Nov-14	Looking to adopt UN PRI
13	U. Victoria	Jan-14	✓	**3**		WIP	WIP	Continued research by the Pacific Institute of Climate Change on Divestment
14	Kwantlen Polytechnic	Oct-13	✓	5	Divest from the 200 fossil fuel companies	NO	Apr-14	To review investment policies
15	Capilano	"Coming Soon"	-	-		WIP	WIP	
16	Simon Fraser	Fall-13	✓	5	Disclose Greenhouse Gas emissions in SFU's	WIP	WIP	Responsible Investment Committee to review and make recommendations
#	UBC – Okanagen	Oct-14	✓	5		NO	Feb-16	
18	U. Winnipeg	Jan-15	✓	**3**		WIP	WIP	To review March survey results, host forums, provide Board recommendation May 2016.
#	Lakehead	Feb-14	✓	5		NO	Mar-16	To undertake public consultations and draft policy by Jun-16
20	U. Guelph	Apr-14	✓	5		NO	Jan-15	Final review report issued July 2015 recommending no to divestment and an approach based on UN PRI
21	Ryerson	2015	✓	5	Est. a Responsible Investment Committee to prioritize investments	WIP	WIP	Management discussions with Board underway.
22	York	Sep-14	✓	before 2018	Divest from the 200 fossil fuel companies	WIP	WIP	
#	Trent	Mar-13	✓	5		NO	May-15	To establish a fund based on UN PRI
24	Carleton	Oct-14	✓	**3**	Divest from the 200 fossil fuel companies	WIP	WIP	
#	Concordia	Fall-13				NO	Nov-14	Agreed partial divestment of $5M from fossil fuels
26	U. Sherbrooke	"Coming Soon"	-	-				
27	Saint Francis Xavier	-	✓		Divest from fossil fuel and ensurean ecological sound approach to finances	WIP	WIP	
#	New Brunswick	Oct-14		5		WIP	WIP	Established a committee to review SRI
#	St. Mary's	Jun-14	✓	5		WIP	WIP	
30	St. Thomas	"Coming Soon"	-	-				
#	Mount Allison	Nov-14			Divest from fossil fuel	WIP	WIP	
32	Memorial 1st	2013		5	Reinvest in renewable- and green- energy	NO	Oct-13	Executive Committee tasks with responding
	Memorial 2nd	Oct-15		5		WIP	WIP	
33	U. PEI	Dec-15	✓	5				Working with consultant on options and decision planned Sping 2016

Principle 2: We will be active owners and incorporate ESG issues into our ownership policies and practices.

Possible actions:

- Develop and disclose an active ownership policy consistent with the Principles
- Exercise voting rights or monitor compliance with voting policy (if outsourced)
- Develop an engagement capability (either directly or through outsourcing)
- Participate in the development of policy, regulation, and standard setting (such as promoting and protecting shareholder rights)
- File shareholder resolutions consistent with long-term ESG considerations
- Engage with companies on ESG issues
- Participate in collaborative engagement initiatives
- Ask investment managers to undertake and report on ESG-related engagement

Principle 3: We will seek appropriate disclosure on ESG issues by the entities in which we invest.

Possible actions:

- Ask for standardised reporting on ESG issues (using tools such as the Global Reporting Initiative)
- Ask for ESG issues to be integrated within annual financial reports
- Ask for information from companies regarding adoption of/adherence to relevant norms, standards, codes of conduct or international initiatives (such as the UN Global Compact)
- Support shareholder initiatives and resolutions promoting ESG disclosure

Principle 4: We will promote acceptance and implementation of the Principles within the investment industry.

Possible actions:

- Include Principles-related requirements in requests for proposals (RFPs)
- Align investment mandates, monitoring procedures, performance indicators and incentive structures accordingly (for example, ensure investment management processes reflect long-term time horizons when appropriate)
- Communicate ESG expectations to investment service providers
- Revisit relationships with service providers that fail to meet ESG expectations
- Support the development of tools for benchmarking ESG integration
- Support regulatory or policy developments that enable implementation of the Principles

Principle 5: We will work together to enhance our effectiveness in implementing the Principles.

Possible actions:

- Support/participate in networks and information platforms to share tools, pool resources, and make use of investor reporting as a source of learning
- Collectively address relevant emerging issues
- Develop or support appropriate collaborative initiatives

Principle 6: We will each report on our activities and progress towards implementing the Principles

Possible actions:

- Disclose how ESG issues are integrated within investment practices
- Disclose active ownership activities (voting, engagement, and/or policy dialogue)
- Disclose what is required from service providers in relation to the Principles
- Communicate with beneficiaries about ESG issues and the Principles
- Report on progress and/or achievements relating to the Principles using a 'Comply or Explain'[1] approach
- Seek to determine the impact of the Principles
- Make use of reporting to raise awareness among a broader group of stakeholders

In addition to the University of Ottawa's adoption of UN PRI the outcome of other campaigns have resulted in other schools either becoming a signatory or identifying signatory objectives. Such as: University of British Columbia, Simon Fraser University, University of Victoria Foundation, and more.

The University of Ottawa is also taking steps necessary to become a signatory of the UN PRI Montreal Pledge. The Montreal Pledge[3] signatories agree to measure the environmental and carbon footprint of portfolio holdings using a mutually agreed service provider. The measurement frequency is recommended annually to monitor changes or progress toward internally set reduction goals.

Campaigns have also resulted in universities taking a broader look at policies and refinements necessary to better deal with today's societal concerns that extend beyond human rights and into environmental (climate change, water withdrawal and water-shed impacts), societal concerns, and governance practices.

A brief summary of policy change themes identified across divestment campaign related universities include:

Socially Responsible Investing Policy:

- Modify the basis for SRI to the United Nations Principles for

[3] http://montrealpledge.org/

Responsible Investing replacing the Declaration of Human Rights most commonly referred to in SRI policies stemming from the 1970s. UN PRI encompasses ESG factors which include Human Rights. Note adopting UN PRI as a SRI basis does not require that the University must become a signatory to UN PRI.

- Clarify, for university divestment, what the SRI policy requires, for example, after investigation [by sub-committee of the Board of Governors] the entity is found culpable, its actions are morally reprehensible, and no substantive changes follow direct engagement with the entity, then divestment is considered justified.
- Where divestment is justified identify SRI policy requirements, specifically the reasonable process for university divestment, for example, immediate, or over a period of time, or aligned to a reasonable plan to not place financial resources at harm.
- Where divestment is supported clarify within the SRI whether for consistency the University must also decline any financial support from the same corporation, whether for operations, capital, research or other purposes.
- Clarify how proxy voting is conducted and whether ESG factors are taken into consideration during proxy voting.
- Where proxy voting is delegated, clarify whether the delegated party's ESG stance and voting approach is aligned to the University.
- Clarify the requirement for annual (or more frequent) proxy voting summaries, including who prepares the summaries and to whom reports are provided for review.

Note: the proxy voting details listed above could also be clarified in the SIP&Ps, at minimum the SRI should identify whether or not proxy voting may be delegated and other details removed from the SRI should then appear in the SIP&P.

Statement of Policies and Procedures (SIP&Ps):

- Include a broad ESG statement, specifically identifying whether or not ESG factors are incorporated into investment decisions, and if so, how. Strongly consider avoiding an enumeration of ESG factors that are incorporated since the practice of ESG methodology is rapidly evolving and listing specific categories increase risk of omissions or approach quickly out-dated.
- Clarify proxy voting approach and reporting if not already covered within a SRI policy.
- Identify the policy review frequency noting that pension plan SIP&Ps must be reviewed annually and for other investment holdings there is no prescribed frequency. Many of the Canadian universities reviewed have non-pension SIP&P review frequencies of one to five years, however strong consideration should be given to annual review given the rapid pace of change related to ESG approaches.
- Identify liquidity requirements for holdings, particularly where sustainable or renewal energy platforms are adopted as traditional liquidity requirements may need refinement.

Broad statements of how ESG factors are incorporated will likely improve through best practice evolution across Universities along with Investment Advisor support. McMaster University's most recent ESG statement adopted related to its salaried pension plan. The most recent McMaster University SIP&P identified the following: *"ESG" refers to the environmental, social and governance factors relevant to an investment that may have a financial impact on that investment. The university has a fiduciary duty to act in the long-term interests of the beneficiaries of the Plans. The Plans investment portfolio managers determine the stock holding of each fund. Where relevant and material to the assessment of investment value and mitigation of investment risk ESG factors should be evaluated alongside other considerations by the Plans investment managers in the exercise of their delegated duties. The university does not impose specific constraints on portfolio investments on the sole basis of ESG factors.*[4]

Where a University is adopting UN PRI principles or taking steps to become a signatory to the Montreal Pledge further SIP&P refinements may be warranted to identify:

- How environmental and carbon footprint is measured.
- Who performs the footprint measurements and whether the service provider is a signatory to the Montreal Pledge.
- How often (annually) footprint measurements are reported and who reviews the reports.

Summary of key strategic actions a University could be undertaking:

- ☐ Identify your University's stance on SRI and incorporation of ESG factors into decision making.
- ☐ Complete SRI and SIP&P reviews to ensure alignment to the University stance.
- ☐ Consider stance in relation to direct investment holdings and co-mingled or pooled holdings.
- ☐ Consider a work plan toward becoming a UN PRI signatory (McMaster example Table 2).
- ☐ Consider taking steps necessary toward becoming a signatory to the Montreal Pledge (evaluate cost, benefit, and capability).
- ☐ Agree on the level of direct or indirect engagement with entities held within investment portfolios (University role or investment manager role, consider resources and effectiveness of engagement).
- ☐ Agree on the degree and frequency of reporting: proxy vote summaries, environmental and carbon footprint measurements. Including frequency of reporting and who/what committee will be responsible to review such reports.
- ☐ Agree on the level of reporting required if divestment is not adopted, for example, finance or investment committees may desire increased ESG analysis related to holdings on 200 list holdings since ESG factors can

4 http://www.mcmaster.ca/policy/General/Financial/McMasterPension-SIPP-Salaried.pdf page 12.

have a material impact on company intrinsic value and market capitalization.

- ☐ Investigate the extent of exposure to The Carbon Underground List residing within portfolios, whether through segregated accounts or within pooled funds (or if list is not available, work with investment managers or consultants to understand portfolio holdings exposure to oil and coal extraction companies).
- ☐ Estimate the transition cost, if divestment is determined, associated with exiting with direct or co-mingled funds. For estimation purposes: approximately one (1%) percent of the holdings market value to equate to transition cost (if within a pool it will be one percent of the entire pools market value), custodial cost implications, administrative cost implications if exited pools are replaced with segregated accounts, investment advisory costs associated with investment manager replacement searches, new benchmark costs if no readily available or already subscribed benchmark exists, and internal costs associated with any ongoing monitoring of The Carbon Underground List, manual benchmark calculations, or any other form or divestment related analysis and justification required.
- ☐ Consider whether additional investment funds should be developed specifically focused on sustainability or renewable energy. This consideration could be for multiple purposes: (1) providing an additional donor option for ESG concerned donors; (2) as an internal performance study relative to other holdings; and (3) as a new asset pool that enables integration of results into student learning curriculum.

Divestment Reviews

Common practice identified across Canadian universities is to establish a special advisory (ad-hoc) committee or delegate to an existing Board sub-committee the task of reviewing the divestment request and preparing response recommendations. Commonalities across special advisory committee's terms of reference were also identified most notably:

1. Undertake a detailed review of the divestment request, including the implications of divestment.
2. Complete a detailed review of existing investment related policies and fiduciary and trust responsibilities.
3. Consult broadly with interested members of the University community.
4. Review similar divestment requests and conclusions reached by other Canadian universities.
5. Conduct analysis of holdings to determine the overall impact of divestment.
6. Review alternative investment approaches to incorporating ESG factors into investment decisions and consider the impact of different models.
7. Provide recommendations to respond to the divestment request.

Consultation Approaches Used by Special Advisory Committees or Board sub-Committees to Review and Respond to Divestment Campaigns

The following divestment related consultation practices were identified during the review of 33 Canadian Universities and select global Universities:

Broad Survey – targeted to students, Faculty, staff, alumni, donors, and community. Surveys cover range of fossil fuel considerations, beyond simply divestment of investment holdings.

On Campus Seminars /Forums – calling upon academic experts and professional practice advisors

Hosting group workshops /focus groups – used to discuss questions e.g. Is divestment an appropriate method to address climate change? What is the University's approach to managing its carbon-footprint and how does divestment fit in with it? If no to investment can funding (donations, research, etc. be accepted from this industry)?

Open Town Hall or Community Drop in Sessions – typically hosted following the issuance of a consultation brief or consultation presentation.

Open letter submission process – using a review committee established email address.

Other Important Consultation Approach Considerations:

1. The consultation process used will need to consider available resources to: (i) review responses, (ii) possibly summarize the consultative process results, and (iii) draw conclusions from the information.
2. The consultation needs to consider the form and type of feedback needed to respond to the divestment question effectively.
3. The consultation process should have a strategy to manage media involvement during the period of consultation.
4. The consultation period should have a defined end date and reporting back strategy from the onset.

Key groups/individuals to consider in-scope to consult with:

- Government Relations (federal reaction to divesting from Canada's key economic resource)
- VP University Advancement
- Select donors – private and corporate, including those from oil, gas, coal industries, if any
- Legal counsel
- Investment Pool Committee members
- Investment Managers
- Investment Advisors
- Senate
- Aboriginal communities and organizations

Key Consultation Issues to consider:

What does divestment mean to:

- Existing research funding from oil, gas, or coal companies
- Donations and pledges from oil, gas, or coal companies or individuals wealth derived from oil, gas, or coal
- Existing partnerships directly related to the oil, gas, or coal companies
- Existing partnerships with indirect demand drivers for the oil, gas, or coal companies – e.g. auto-industry.
- University's own use of oil, gas, and coal in campus operations.

Table 2: McMaster Transition Consultation Document on the Adoption of United Nations Principles for Responsible Investing

Principle*	Now	1 Year	3 Years	5 Years	NA	Cost Implications
1. We will incorporate ESG issues into investment analysis and decision-making processes.						
☐ Address ESG issues in investment policy statements.	X					None.
☐ Support development of ESG-related tools, metrics, and analyses.	X					None. Embedded across existing resource time.
☐ Assess the capabilities of internal investment managers (IMs) to incorporate ESG issues.	X					None. Increased disclosures in quarterly reports and incorporated into IM meetings.
☐ Assess the capabilities of external investment managers (IMs) to incorporate ESG issues.			X			Cost implications if IM changes result. McMaster will consider as defined methodologies evolve.
☐ Ask investment service providers (such as financial analysts, consultants, brokers, research firms, or rating companies) to integrate ESG factors into evolving research and analysis.		X				None. Currently working with broker, investment managers, and IPC to improve disclosures on this, adoption across IMs vary widely.
☐ Encourage academic and other research on this theme.				X		Cost depends on funding (internal or external)
☐ Advocate ESG training for investment professionals					X	None. Unclear how to demonstrate this effectively at this time.
2. We will be active owners and incorporate ESG issues into our ownership policies and practices.						
☐ Develop and disclose an active ownership policy consistent with the Principles.					X	None. Not resourced to undertake this activity directly (currently outsourced to IMs).
☐ Exercise voting rights or monitor compliance with voting policy (if outsourced).		X				None. Proxy reports currently go to the Treasurer, practice will be modified to disclose to committee.
☐ Develop an engagement capability (either directly or through outsourcing).					X	Unclear to commit to this and effectively demonstrate it; approach is outsourced to IMs.
☐ Participate in the development of policy, regulation, and standard setting (such as promoting and protecting shareholder rights).					X	None. Not resourced to undertake this activity.
☐ File shareholder resolutions consistent with long-term ESG					X	None. Not currently in IM mandates but will consider as practices evolve.

considerations.						
☐ Engage with companies on ESG issues.					X	None. McMaster is engaged thru IMs only.
☐ Participate in collaborative engagement initiatives.					X	None. Willing to the extent resources allow.
☐ Ask investment managers to undertake and report on ESG-related engagement.	X					None. In place thru quarterly reporting effective Sept 2016.
3. We will seek appropriate disclosure on ESG issues by the entities in which we invest.						
☐ Ask for standardised reporting on ESG issues (using tools such as the Global Reporting Initiative).					X	None. Not prepared to adopt at this time, until practice and standards are more evolved.
☐ Ask for ESG issues to be integrated within annual financial reports.					X	None. McMaster utilizes IM disclosure reports only.
☐ Ask for information from companies regarding adoption of/adherence to relevant norms, standards, codes of conduct or international initiatives (such as the UN Global Compact).			X			None. Likely will expand ESG reporting to include this.
☐ Support shareholder initiatives and resolutions promoting ESG disclosure.					X	None. Not resourced to undertake this activity.
4. We will promote acceptance and implementation of the Principles within the investment industry.						
☐ Include Principles-related requirements in requests for proposals (RFPs).					X	None. Unclear how to demonstrate effectively, currently require ESG information (not a screen).
☐ Align investment mandates, monitoring procedures, performance indicators and incentive structures accordingly (for example, ensure investment management processes reflect long-term time horizons when appropriate).					X	None. Done with ESG, not UN PRI full set of principles.
☐ Communicate ESG expectations to investment service providers.	X					None. In place thru quarterly reporting effective Sept 2016.
☐ Revisit relationships with service providers that fail to meet					X	None. Not prepared to adopt at this time.

ESG expectations. ☐ Support the development of tools for benchmarking ESG integration.					X	None. Not resourced to undertake this activity.
☐ Support regulatory or policy developments that enable implementation of the Principles.					X	None. Not resourced to undertake this activity.
5. We will work together to enhance our effectiveness in implementing the Principles.						
☐ Support/participate in networks and information platforms to share tools, pool resources, and make use of investor reporting as a source of learning.	X					None. Actively engaged with knowledge sharing and implementing increased IM reporting.
☐ Collectively address relevant emerging issues.					X	None. Note: Actively engaged and responsive using collaborative networks.
☐ Develop or support appropriate collaborative initiatives.					X	None. Note: Actively engaged and responsive using collaborative networks.
6. We will each report on our activities and progress towards implementing the Principles.						
☐ Disclose how ESG issues are integrated within investment practices.		X				None. Will prepare a summary to inform committees during fiscal 2016/17.
☐ Disclose active ownership activities (voting, engagement, and/or policy dialogue).					X	None. Done thru IMs, McMaster not resourced to undertake this activity.
☐ Disclose what is required from service providers in relation to the Principles.	X					None. IMs must disclose and quarterly report on ESG philosophy and actions.
☐ Communicate with beneficiaries about ESG issues and the Principles.					X	None. Not planned in the current time horizon.
☐ Report on progress and/or achievements relating to the Principles using a comply-or-explain approach.			X			None. Will report on progress once practices are more evolved.
☐ Seek to determine the impact of the Principles.					X	None. Further principle evolution should occur before this is undertaken.
☐ Make use of reporting to raise awareness among a broader group of stakeholders.					X	None. Beyond internal reporting and CAUBO not clear how to better demonstrate.

***Excerpted from www.unpri.org/about-pri-the-six-principles/ **Now** indicated McMaster already demonstrates this activity. **1, 3, 5 Years** means willing to transition toward this activity within the defined time period. **NA** means this is an activity that has been reviewed and we do not see adoption/demonstration of this activity possible within the 5 year time horizon, this means the item may be revisited at a future review update.

Appendix E: The Rise of Divestment Campaigns across Canadian Universities

APPENDIX F: A LIST OF MATERIALS REVIEWED BY THE COMMITTEE

In addition to materials presented to and gathered for the Committee on McMaster University's Investment Pool holdings and on divestment campaigns at Canadian universities, the Committee reviewed the following information.

The Beam. (16 March 2017) And introduction to fossil fuel divestment. CleanTechnia. https://cleantechnica.com/2017/03/16/introduction-fossil-fuel-divestment/.

Carney, M. (29 September 2015) Breaking the tragedy of the horizon – climate change and financial stability. Bank of England. http://www.bankofengland.co.uk/publications/Pages/speeches/2015/844.aspx

Fossil Free. Divestment Commitments. https://gofossilfree.org/commitments/ (accessed 12 February 2016)

MacAskill, W. (20 October 2015) Does divestment work? *The New Yorker*. https://www.newyorker.com/business/currency/does-divestment-work

McMaster University. (2008) Social responsibility and McMaster's investment policy.

McMaster University. (2015) Statement of investment policies and objectives – investment pool.

Moez, C. (2016) Does ESG investing answer the fossil fuel divestment question? Unpublished manuscript, McMaster University, Hamilton, Ontario.

Ritchie, J. and Dowtalabadi, H. (20 January 2015). Fossil fuel divestment: reviewing arguments, implications & policy opportunities. Pacific Institute for Climate Solutions. https://pics.uvic.ca/sites/default/files/uploads/publications/Divestment%20WP%20Jan%202015-FINAL.pdf

The Sustainability and Education Policy Network. (2016) The state of fossil fuel divestment in Canadian post-secondary institutions.

Saint Francis Xavier University. (24 November 2016) SFU moves to decrease carbon footprint of its investment portfolio. http://www.sfu.ca/university-communications/media-releases/2016/sfu-moves-to-decrease-carbon-footprint-of-its-investment-portfolio.html?utm_source=Academica+Top+Ten&utm_campaign=9d255eaccd-EMAIL_CAMPAIGN_2016_11_25&utm_medium=email&utm_term=0_b4928536cf-9d255eaccd-47742481