GIVE OUR CHILDREN A FUTURE:

THE MORAL AND LEGAL OBLIGATION OF THE GOVERNMENT OF CANADA TO ACT ON CLIMATE CHANGE

A detailed plan to help Prime Minister Trudeau achieve his goal of protecting Canadian children from future climate change impacts.

"And if I may speak from a personal point of view, Mr. Speaker, I myself have three motivations. Their names are Xavier, Ella-Grace and Hadrien."

- Prime Minister Justin Trudeau announcing the national carbon price in the House of Commons, October 3, 2016.

Give our children a future:
The moral and legal obligation of the Government of Canada to act on climate change

February 1, 2017

UTEA students who generated this report:
Shervin Shojaei Bahgini; Raphael Sang-Kyun Bong; Julia Chen; Clement Cheng; Jared Connoy; Amil Davis; Keerat Dhami; Kelly Emblem; Keegan Goodman; Shane Kennedy; Jason Ko; Jhonatan Lopez; Alissa Saieva; Joseph Silburt; Yalda Mehran; Zach Morgenstern; Melissa Murara; James Nadolny; Nataliya Pekar; Ponthea Pouramin; Jennifer Reilly; Keven Roy; Alissa Saieva; Micaela Tam; Zahireen Tarefdar; Emma Vredenburg; Michelle Woodhouse; Frank Xu; Nancy Xue

For more information contact:

Julia Chen, Co-President UTEA
juliay.chen@mail.utoronto.ca

Nancy Xue, Co-President UTEA
nancy.xue@mail.utoronto.ca

Douglas Macdonald, Faculty advisor UTEA
douglas.macdonald@utoronto.ca

U of T Environmental Action http://utea.sa.utoronto.ca/
utea.utoronto@gmail.com

Cover design: Suhanija Arullsothy

About the David Asper Centre for Constitutional Rights and Environment and Children's Rights Working Group

The David Asper Centre for Constitutional Rights, established by a generous gift from David Asper (LLM '07), is a centre within the University of Toronto, Faculty of Law devoted to advocacy, research and education in the area of constitutional rights in Canada. The Centre houses a unique legal clinic that brings together students, faculty and members of the legal profession to work on significant constitutional cases. The Centre aims to play an active role in constitutional debates of the day and in articulating Canada's constitutional vision to the broader world.

The Asper Centre's **Environment and Children's Rights 2016/2017 student working group** comprise a number of law students at the University of Toronto Faculty of Law united by their interest in intergenerational justice for Canadian children and youth in the climate change context. The working group drafted the legal arguments for the within report, building upon work done by the previous year's Asper Centre student working group, which researched and developed the *Charter* arguments targeted at government actions or inactions that exacerbate the problem of climate change.

2016/7 Group:
Zachary Biech; Daniel Biggs; Michael Cleveland; Stephanie D'Amico; Rita De Fazio; Simon Fraser; Susan Fridlyand*; Hayley Goldfarb; Carly Hicks; Mike Jaworski; Katrina Kairys; Rebecca Meredith*; Gillian Olsen*; Patrick Sobchak; Louell Taye; Mike Van der Meer; Marco Wai

2015/6 Group:
Adam Babiak; Ashley Bowron; Scott Dallen; Madeleine Dusseault; James Elcombe*; Liam Faught; Susan Fridlyand; Graham Henry*; Raeya Jackiw; Stefan Jovic; Chantal Ma; Jessica Mank; Alexandria Matic; Alan McCallum; Ryan McNamara; Rebecca Meredith; Amanda Nash; Gillian Olsen; Lauren Pinder; Amani Rauff; Max Rudakov; Alissa Saieva*; Holly Sherlock*; Micheline Singh; Chantelle van Wiltenburg

*working group leaders

Table of Contents

Executive Summary

The Government of Canada climate policy illegally discriminates against Canadian children
It is clear that Prime Minister Trudeau is committed to protecting our children against future climate change impacts. His government is to be congratulated on steps taken to date. However, it has not yet done enough and its failure to do so means it is discriminating against children, contrary to its international commitments and obligations under the Charter of Rights and Freedoms. We provide here recommendations in three categories:

- Actions the Trudeau government can take with the provinces;
- Actions it can take by itself, within federal jurisdiction;
- Ways in which it can stop making the problem worse by facilitating emissions.

The temporal aspect of climate change differs from other environmental issues
Due to the nature of the global atmospheric system, the damage that is felt today from climate change was caused by greenhouse gases (GHGs) emitted in the past. Such gases emitted today will cause problems far into the future. Other environmental problems such as toxic pollution or habitat destruction have immediate or short-term consequences. In those cases, because the impact is felt not long after the activity causing it, those affected can take political or other action to bring about reduction of the activity causing them harm. However, for climate change, that option is not available because those most affected are either children or are not yet born.

Climate change is an intergenerational equity issue
A sixteen-year old Canadian child today will be nearly fifty years old in the year 2050. If current trends continue, that Canadian will suffer much greater financial and health-related impacts of climate change in 2050 than are being experienced today. In addition, the cost of reducing emissions will be much higher in 2050 than it would be today, as will be the cost of adaptation to reduce impacts. That sixteen-year old today cannot vote nor participate in many public or private decision making opportunities respecting climate change mitigation. Nevertheless, throughout her life she will be paying a much higher price, in terms of both impacts and reduction costs, than she would if effective action were taken today. Children and youth are being asked to pay a price throughout their future lives because the older generation is unwilling to pay a much smaller price today. That is not fair. Climate change is an intergenerational equity issue, and this is the main focus the document uses to decry climate change.

The Government of Canada is legally obliged to protect children
In addition to Canada's responsibility to children and youth being a moral imperative, grounded in the principle of intergenerational justice, the government has a legal obligation to protect this group from present and future harms caused by climate change. The *Canadian Charter of Rights and Freedoms* and a variety of international commitments create a legal duty on the Canadian government to undertake a child rights approach to climate change policy and do more to uphold the rights of children and youth at present time. Specifically, Sections 15 and 7 of the *Charter* impose legal obligations on the government in terms of age discrimination and security of the person.

The Government of Canada working with the provinces
In Canada, both the provinces and federal government have jurisdiction over climate change mitigation. Both levels of government must use law, tax or other instruments to bring about reductions of greenhouse gas emissions. Developing co-ordinated action is a major challenge and the Trudeau government is to be congratulated for its leadership in working with most provinces to put in place the December 9, 2016 Pan Canada Framework Agreement on Clean Growth and Climate Change. However, further effort is needed to ensure that 2030 target is indeed met and to also put in place federal-provincial programs to meet a more stringent target.

The Government of Canada working alone to reduce emissions
The federal government has exclusive jurisdictional authority in some areas, such as oil and gas outside provincial boundaries in the north and off-shore and oil and gas exports. An example of such exclusive action in the decision by the Trudeau government announced in December, 2016 to restrict future off-shore Arctic oil drilling. More of this kind of unilateral federal action is needed.

The Government of Canada must also stop facilitating emissions
The federal government is currently making the problem worse by such things as subsidies to greenhouse gas emitting industries. Those subsidies increase the capacity of the industry and so increase its emissions. The examples we give here are subsidy to the oil and gas and airplane manufacturing industries. The federal government must also do more to reduce emissions from its own vehicles and buildings. It seems likely it will miss its 2020 target. The December 9 Pan Canadian document, however, obfuscates that fact by referring only to a 2030 target. Effort must be made to meet the 2020 target. Finally, the federal government should encourage the Canada Pension Plan to divest its fossil fuel investments.

Summary
In comparison to its predecessor, the Trudeau government has taken significant steps. Now it must explicitly focus on the injustice of passing on a much greater future problem to today's children. It must work with the provinces, which takes time. There are other things, however, it can do by itself, today. It is legally obligated to take this action. We call upon Prime Minister Trudeau to do what is necessary.

Recommendations

1. Further to the recently announced moratorium on new oil and gas leasing in the Arctic, the Government of Canada should use its regulatory approvals powers to put a cap on total annual extraction of oil and gas in the north where it holds exclusive jurisdiction, followed in subsequent years by percentage reductions in that total.

2. The Government of Canada should initiate discussions with the provinces of Newfoundland and Labrador and Nova Scotia, with a view to jointly putting a cap on total annual extraction of oil and gas in the areas in which they hold shared jurisdiction, followed in subsequent years by percentage reductions in that total.

3. The Government of Canada should use its regulatory approval power over fossil fuel exports to place a cap on the total of such exports, followed in subsequent years by percentage reductions in that total.

4. The Government of Canada should reverse or slow down its plans to expand the LNG sector.

5. The Government of Canada should not issue any new regulatory approvals for interprovincial oil or gas pipeline construction.

6. The Government of Canada should work with the provinces to develop plans for meeting a more ambitious target than the Harper government target of 30% below 2005 levels by 2030.

7. As part of that effort, the Government of Canada should work with the provinces to increase the federal benchmark carbon price for all Canadian jurisdictions from $50 in 2022 to $200 by 2030.

8. The Government of Canada should end all subsidies to the airplane manufacturing industry other than those intended to increase efficiency and thus reduce emissions, within its current mandate, that is before 2019.

9. The Government of Canada should immediately implement the 2015 Liberal Party election platform commitment to phase out subsidies for the fossil fuel industry "over the medium-term" - that is within its mandate, before 2019. This includes subsides to the liquid natural gas (LNG) sector.

10. The Government of Canada should accelerate plans to reduce its own emissions from its buildings and motor vehicles, in order to achieve its goal of reducing to 17% below 2005 levels by 2020 and reducing to 40% below 2005 levels by 2025.

11. The Government of Canada should urge the Canada Pensions Plan Investment Board to divest its fossil fuel investments.

12. In recognition of its moral and legal obligations, the Government of Canada should take these and all other steps necessary to protect Canadian children from future climate change impacts.

1. Introduction

The failure of this generation to take effective action on climate change is imposing a massive injustice on Canadian children. We all have an obligation to act to protect our children from future climate change harms and the Government of Canada has a particular obligation. That includes an obligation to both act to reduce Canadian emissions and to also stop its own actions which contribute to emissions.

The climate change debate is centred on actions governments should take to reduce emissions of greenhouse gases (GHGs). This report addresses that but also something else – ways in which the Government of Canada is *contributing to* Canadian GHG emissions. For the past twenty-odd years, successive federal governments have taken almost no regulatory action to require sources to reduce their emissions. This is a problem, but at least it is recognized as such and the current Trudeau government has started to take significant action. That government must do more on that front, but also must do more to ensure it is not making the problem worse.

As set out below, because it is an intergenerational equity issue, the current generation of decision makers, including the Trudeau government, has a strong moral obligation to act on climate change. Also as discussed below, it may be that the Government of Canada also has a legal obligation to refrain from contributing to the climate change problem. The purpose of this report is to provide data on the ways in which the Government of Canada is contributing to Canadian emissions; the argument it has a moral obligation to reduce that activity; and legal analysis suggesting the Government of Canada's actions contributing to climate change emissions are in violation of international law and the *Canadian Charter of Rights and Freedoms*.

Environmental issues such as release of toxic substances to air and water, or habitat destruction through land development, have immediate consequences for both wildlife and humans. Climate change, however, is fundamentally different. Release of GHGs, primarily from combustion of fossil fuels brings about impacts upon both humans and nonhumans extending well into the future. Impacts such as more severe-weather events, rising sea levels, changes in in-land water levels, changes in agriculture and geographic movement of vector-borne diseases occur long after a particular GHG release. We are experiencing climate change impacts today associated with GHGs emitted some forty years ago. The GHGs we are emitting today will have impacts some forty years in the future. Unlike other environmental issues, which cause problems for those who cause them, our climate change actions are causing for our children and grandchildren, more than for us.

After twenty years of policy making, Canada has not yet put in place effective climate change policy. It does not have in place programs which will meet its relatively modest goal for reducing emissions by 2020 and 2030, let alone what scientists say countries must do to keep within the two degree warming limit, cutting emissions by 50% to 70% by 2050. As a result, this generation is ducking its responsibility and passing the problem on to the next generation.

However, it is not as though this generation were passing along the *same* problem to future generations. Instead, it is passing on:

- a much higher cost of mitigation, in constant dollars, than is the cost of action today;
- a much higher cost, financial and health-related, of future impacts which would be much less if effective action were taken today;
- a higher cost of adaptation than if effective action were taken today.

These higher costs are now well documented. In the next two sections we give examples of these higher costs. We then set out the Government of Canada actions in the four areas listed above which are contributing to the problem. That is followed by a summary of the moral obligation of the government, based on both academic writing on intergenerational justice and statements on climate justice for youth being made around the world today. The report then sets out our reasons for believing that the Government of Canada is in violation of its legal international obligations and more importantly with Sections 7 and 15 of the *Charter*. Finally, we make recommendations for steps the Government of Canada can take to reduce its contribution to the problem.

The starting point for analysis is the picture given by Environment Canada of the main sources of Canadian emissions, as follows.[1]

Canada's 2013 Emissions Breakdown by Economic Sector, Mt CO2 equivalent

Oil and Gas:	179 Mt	or 25%;
Electricity:	85 Mt	or 12%;
Transportation:	170 Mt	or 23%;
Emissions-Intensive & Trade-Exposed (EITE) industries:	76 Mt	or 11%;
Buildings:	86 Mt	or 12%;
Agriculture:	75 Mt	or 10%,
Waste and others:	54 Mt	or 7%.
TOTAL	726 Mt	

Although always difficult in Canada to distinguish federal and provincial jurisdiction, a number of these sources are primarily provincial and so outside the scope of this report. In particular, electricity is both generated and regulated by provincial utilities and governments and building codes, a major instrument for increasing energy efficiency of buildings, are provincial. Regulation of oil and gas extraction, industry and waste is also mostly provincial. Most transportation, in terms of providing infrastructure and regulation is provincial, with one exception - aviation, which is almost completely federal. These emission-producing activities, which are primarily provincial responsibilities, pose particular challenges for the federal government. It must meet those challenges, but also use its own jurisdictional authority. It has started to do so by ensuring that carbon will be priced in all Canadian jurisdictions. Now is the time to take the next steps.

[1] Environment Canada. (2016). *Canada's Second Biennial Report on Climate Change*. Retrieved from https://www.ec.gc.ca/GES-GHG/default.asp?lang=En&n=02D095CB-1.

2. Why today's greenhouse gas emissions cause future problems for our children

The current and future impacts described above are the result of changes in the Earth's climate system brought about, in large part, by human-related emissions of greenhouse gases. The purpose of this section is to briefly set out the scientific understanding behind this statement and to show the way in which climate change issue is inherently a temporal and therefore intergenerational issue. The section concludes with a brief discussion of the relationship between the relatively small contribution that Canadian emissions make to the global total and the moral and legal responsibility of the Government of Canada. The argument is made that the fact of a relatively small portion does not remove such responsibility.

2.1 Global climate change

The notion that anthropogenic emissions could have an impact on the energy balance of the planet dates from the end of the 19th century, when the theoretical work of the Swedish chemist Svante Arrhenius provided the first estimate of the sensitivity of the climate to human-sourced increases in atmospheric concentrations of gases that absorb and emit radiation in the thermal region of the electromagnetic radiation.[2] These gases are known today as greenhouse gases, due to the imperfect analogy to the glass panels of a greenhouse that "trap" solar energy inside its walls. This notion remained dormant for many years until the 1950s, when improved observational data and the rapid development of computing capabilities enabled its revisit. Evidence accumulated significantly over the 1960s and 1970s[3], and got the attention of the scientific community and various political leaders. In 1988, the Intergovernmental Panel on Climate Change (IPCC) was mandated by two United Nations organizations, the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP), to "assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation."[4] This organization does not conduct scientific research of its own, but is tasked with reviewing the substantial extent of literature relating to climate change and writing Assessment Reports, published every six or seven years, that summarize these aspects.[5] Their reports, the most recent of which is the 2013 Fifth Assessment Report (AR5), represent an accurate state of climate science, of the attribution of observed present-day climate change, and of its present and future impacts.

The concluding statement put forward by the specialists conducting the scientific review of the available literature for the most recent AR5 assessment is that:

---

[2]Arrhenius, S. (1896). On the Influence of Carbonic Acid in the Air upon the Temperature of the Ground. *London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science,* 41, 237–275.

[3] For an overview of the history of climate science, see Weart, S.R (2008). *The Discovery of Global Warming*. Cambridge, MA: Harvard University Press.

[4]Intergovernmental Panel on Climate Change (*IPCC).* (2014). "*Principles Governing IPCC Work.*" Retrieved from: http://www.ipcc.ch/pdf/ipcc-principles/ipcc-principles.pdf.

[5]Intergovernmental Panel on Climate Change (*IPCC).* (2014). "Organization." Retrieved from: http://www.ipcc.ch/organization/organizations.html.

> *"Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased."*[6]

This statement is based on the warming observed in numerous datasets covering the entire climate system, most notably the lower atmosphere[7], the world oceans[8] and the cryosphere[9], for the recent past. These observations are put into the context of longer time series of climate variability that come from numerous indirect (*proxy*) measurements that capture certain aspects of past climate change (for example, 300kyr and 800kyr records of atmospheric composition and near-surface temperature from ice cores in Greenland and Antarctica, respectively). The modern-era changes in temperature in various parts of the climate system have now been processed, after substantial analysis, into a total heat content change for the planet.[10] This characterization has greatly benefited from careful measurements of the oceanic system, which is by far the main depository of heat in the climate system.[11] The attribution of the causes behind the trend in heat content relies on a combination of carefully calibrated observational data and numerical models of climate system components, and benefits from direct measurements of the outgoing long-wave radiation emitted by the planet[12], which indicate that the changes in which have been mostly linked to changes in the chemical composition of the planet's atmosphere (primarily the increase in greenhouse gas concentrations):

> *"Total radiative forcing* [note: energy (heat) balance of the climate system] *is positive, and has led to an uptake of energy by the climate system. The largest contribution to total radiative forcing is caused by the increase in the atmospheric concentration of* CO_2 [carbon dioxide] *since 1750."*[13]

The strong anthropogenic signature of the increase in carbon dioxide concentrations has been established by emission budget considerations[14], in which estimates of total anthropogenic emissions of carbon dioxide are compared to the changes in the known reservoirs of carbon

---

[6] Intergovernmental Panel on Climate Change (IPCC). (2013). *Climate Change 2013: The Physical Science Basis*, 4. Retrieved from https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_SummaryVolume_FINAL.pdf.
[7]Hansen, J., R. Ruedy, M. Sato, and K. Lo (2010). Global surface temperature change. *Reviews of Geophysics*, 48.
[8]Levitus, S., et al. (2012).World ocean heat content and thermosteric sea level change (0–2000 m), 1955–2010. *Geophysical Research Letters,* 39.
[9]Dyurgerov, M. B. (2010), Reanalysis of Glacier Changes: From the IGY to the IPY, 1960-2008. *Data of Glaciological Studies,* 108, 1-116.
[10]Myhre, G., et al. (2013). Anthropogenic and Natural Radiative Forcing. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F. et al. (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
[11]Abraham, J. P., et al. (2013). A review of global ocean temperature observations: Implications for ocean heat content estimates and climate change. *Reviews of Geophysics* 51, 450–483.
[12]Murphy, D. M. et al. (2009). An observationally based energy balance for the Earth since 1950, *Journal of Geophysical Research: Atmospheres*,114.
[13] Intergovernmental Panel on Climate Change (IPCC). (2013). *Climate Change 2013: The Physical Science Basis*, 13. Retrieved from https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_SummaryVolume_FINAL.pdf.
[14] Le Quéré, C. et al. (2013). The global carbon budget 1959–2011, *Earth System Science Data* 5, 165-185.

dioxide, which include the oceans (primary reservoir), the atmosphere, and to a lesser extent, the biosphere. Further, isotopic measurements of carbon in the oceans and in corals enable the distinction between the different types of carbon accumulating in the climate system, and indicate that the rise in carbon dioxide in the climate system is of fossil fuel origin.[15] Also, concurrent observations of the acidification of the top layers of the world oceans provide further evidence of the anthropogenic signature of the rise in carbon dioxide, since its absorption and dissolution in the top layers of the ocean (in contact with the atmosphere) significantly increase their acidity (pH reduction).[16] Thus, the recent energy budget changes observed in the climate system are mainly linked to increased levels of greenhouse gases in the atmosphere, most of which are of anthropogenic origin:

> *"Human influence has been detected in warming of the atmosphere and the ocean, in changes in the global water cycle, in reductions in snow and ice, in global mean sea level rise, and in changes in some climate extremes* [...] *It is extremely likely* [> 95% probability – an extremely strong level of scientific causal attribution[17]] *that human influence has been the dominant cause of the observed warming since the mid-20th century."*[18]

In summary, the scientific community is clear in its message. Warming of the climate is unequivocal, and the majority of the warming observed for the past many decades has been linked to anthropogenic emissions of greenhouse gases.

2.2 The temporal aspect of climate change

Using a suite of the most recent global climate models available, the IPCC has summarized the extent of the climate perturbations expected for the 21st century:

> *Global surface temperature change for the end of the 21st century is likely to exceed 1.5°C relative to 1850 to 1900 for all RCP scenarios except RCP2.6. It is likely to exceed 2°C for RCP6.0 and RCP8.5, and more likely than not to exceed 2°C for RCP4.5. Warming will continue* [throughout the 21st century and] *beyond 2100 under all RCP scenarios except RCP2.6. Warming will continue to exhibit interannual-to-decadal variability and will not be regionally uniform.*[19]

---

[15] Stuiver, M. et al. (1984). 13C/12C ratios and the transfer of biospheric carbon to the atmosphere. *Journal of Geophyical Research* 89, 11,731-11,748.

[16] Doney, S.C., et al. (2009). Ocean acidification: The other CO2 problem. *Annual Review of Marine Science*, 1, 169-192.

[17] More information about the uncertainty descriptors used by the IPCC can be found in the Uncertainties Guidance Note for Lead Authors of the IPCC Fifth Assessment Report on Consistent Treatment of Uncertainties, which can be found online at http://www.ipcc.ch/pdf/supporting-material/uncertainty-guidance-note.pdf.

[18] Intergovernmental Panel on Climate Change (IPCC). (2013). *Climate Change 2013: The Physical Science Basis*, Retrieved from https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_SummaryVolume_FINAL.pdf.

[19] Ibid, 20.

In all models, the Arctic region is disproportionately affected by climate perturbations.[20] Further impacts of climate impacts include accentuated ocean acidification, an increased contrast between wet and dry regions, amplified weather extremes, and continued melting of the cryosphere.[21] Furthermore, conservative estimates of global mean sea level rise over the 21st century indicate that increases ranging from 0.26-0.55 meters in RCP2.6, all the way to 0.52-0.98 meters in RCP8.5[22], although these estimates do not yet include the dynamic response of the large ice sheets of Greenland and Antarctica (in particular, its western part) because of remaining uncertainties regarding the processes driving ice sheet melting. Studies suggest that the onset of self-reinforcing positive feedbacks could increase the stated estimates of global average sea level rise by up to a factor of two over the 21st century.[23] Under such circumstances, a substantial amount of further, irreversible sea level rise would also be locked in for the following centuries, although much uncertainty remains in quantifying the new equilibrium position reached by the climate system under such circumstances.[24] Geological evidence from past time periods during which CO_2 concentrations were similar to today's values suggest that sea levels might have been on average at least 6 meters above current heights at those times, which indicates that feedback loops leading to significant melting of large ice sheets have probably operated during previous warm intervals.[25]

The existence of other potentially critical feedback loops in the climate system, which could lead to abrupt climate change and which are known to have exhibited nonlinear changes in the past, has been recognized.[26] These include phenomena such as large greenhouse gas emission episodes from rapid permafrost melting and methane hydrate sublimation, changes in the Atlantic Overturning Circulation (AMOC) and significant changes in monsoonal circulation.

Past, present and future releases of greenhouse gases in the atmosphere are expected to impact the climate system over a significant time period following their emission, because of the long, multi-century lifetime of CO_2 in the atmosphere and its complex interaction with the ocean system. It is hard to provide a single value for the lifetime of CO_2 in the atmosphere because of its complex interactions with the solid Earth, the oceans, and the biosphere.[27] However, modeling studies suggest that although most of the CO_2 emitted by human activity will be

---

[20] Holland, M.M. and Bitz, C.M. (2003). Polar amplification of climate change in coupled models, *Climate Dynamics*, 21(3-4), 221-232.
[21] Intergovernmental Panel on Climate Change (IPCC). (2013). *Climate Change 2013: The Physical Science Basis*, 24. Retrieved from https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_SummaryVolume_FINAL.pdf.
[22] Ibid, 25.
[23] Pfeffer, W.T. et al. (2008). Kinematic constraints on glacier contributions to 21st-century sea-level rise, *Science*, 321(5894), 1340-1343.
[24] Hansen J., et al. (2013). Assessing "Dangerous Climate Change": Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature. *PLoS ONE* 8(12): e81648.
[25] Dutton, A., et al. (2015). Sea-level rise due to polar ice-sheet mass loass during past warm periods, *Science*, 349(6244).
[26] Collins, M.R. et al. (2013). Long-term Climate Change: Projections, Commitments and Irreversibility. *Climate Change 2013: The Physical Science Basis.* Retrieved from http://www.climatechange2013.org/images/report/WG1AR5_Chapter12_FINAL.pdf.
[27] Ciais, P. et al. (2013). Carbon and other biogeochemical cycles. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F. et al. (eds.)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

absorbed by the oceans over a period of a millennium (consequently driving an significant acidification of the oceans), it is assessed that 15 to 40% of CO_2 emitted during the 21st century will remain in the atmosphere for longer than 1000 years[28], potentially driving the mean lifetime of CO_2 in the atmosphere to tens of thousands of years given the slow rate of the silicate weathering driving its drawback over geological timescales.[29]

Given its slow drawback, long-term (including the late 21st century and beyond) warming estimates are directly linked to cumulative emissions of CO_2.[30] Moreover, due to the inherent nonlinearities present in the climate system and the thermal inertia of the oceans, repercussions from greenhouse gases emissions (especially with regards to ice sheet melting and sea level) can take a significant amount of time to reach equilibrium after a perturbation in the energy balance of the planet:

> *Cumulative emissions of CO_2 largely determine global mean surface warming by the late 21st century and beyond [...]. Most aspects of climate change will persist for many centuries even if emissions of CO_2 are stopped. This represents a substantial multi-century climate change commitment created by past, present and future emissions of CO_2.*[31]

Given that CO_2 emissions have sharply increased during the 20th century (~50% of the total anthropogenic emissions since 1750 have occurred in the past 40 years), a significant portion of the climate change response locked in from the current concentration of CO_2 in the atmosphere is linked to recent emissions.

All climate modeling and forecasting efforts are subject to different sources of uncertainty.[32] Efforts to control and describe these uncertainty sources suggest that, on short timescales (decadal or shorter), most of the variability observed in climate projections lies in the natural variability of the climate system itself and in its chaotic nature. For timescales longer than a few decades, the main factor impacting climate change projections is the amount and nature of anthropogenic emissions.

---

[28] Ibid, 472.
[29] Archer, D. et al. (2009). Atmospheric lifetime of fossil fuel carbon dioxide. *Annual Review of Earth and Planetary Sciences,* 37, 117-134.
[30] Collins, M.R. et al. (2013). Long-term Climate Change: Projections, Commitments and Irreversibility. *Climate Change 2013: The Physical Science Basis.* Retrieved from http://www.climatechange2013.org/images/report/WG1AR5_Chapter12_FINAL.pdf.
[31] Intergovernmental Panel on Climate Change (IPCC). (2013). *Climate Change 2013: The Physical Science Basis*, 27. Retrieved from https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_SummaryVolume_FINAL.pdf.
[32] Hawkins, E., and Sutton, R. (2009). The Potential to Narrow Uncertainty in Regional Climate Predictions, *Bull. Amer. Meteor. Soc.*, 90, 1095–1107.

3. Current climate change impacts in Canada

In this section, we set out current impacts of climate change, in terms of financial costs, human health, and impacts on wildlife.

3.1 Financial impacts

The insurance and tourism industries are particularly susceptible to the effects of climate change. Insurance companies, specifically those dealing with property insurance, may not be able to afford providing coverage for claims arising from extreme weather damages.[33] Hotter temperatures and decreased amounts of snow will reduce revenue for winter tourism, which is a competitive industry due to the vast number of available of destinations and highly elastic consumer preferences.[34]

With $116.6 billion (2011) in income, the finance and insurance industry is the ninth largest industry in Canada.[35] Climate and weather damage has recently emerged as the largest expense for property insurance companies.[36] Damage due to intense rainfall, hurricanes, tornadoes, wildfires, and other extreme weather associated with climate change has surpassed fire and theft, amounting to a record $1.7 billion in 2011. The 2013 flooding in southern Alberta resulted in $1.7 billion in insured losses alone. Similarly, the 2013 Toronto ice storm caused $850 million in insurance claims.[37] The largest contributor to the insurance claim increases is basement flooding, which due to heavy rainfall and sewer backups, has increased from 20% to 50% of total insurance claims over a 9 year span.[38] It should be noted that socio-economic factors, such as aging infrastructure and an overall increase in wealth which has resulted in an increase in the amount of high value properties also contributes significantly to this number.[39]

Canada's agricultural and fishing industry have also been devastated by climate change. The 2001 prairie drought cost the Canadian economy over $5 billion in agricultural losses. Extreme droughts like these are linked to the changing climate. Rising ocean temperatures on the West Coast have weakened salmon and reduced their spawn survival rate.[40] The loss of these Canadian food sources weakens both the export market and available food quality for Canadians.

Climate change is associated with infrastructure damage in national and provincial parks, which are important current and future tourist attractions in Canada. In 2011, extreme weather caused about $14 million in damage in these unique, cherished areas. Climate change has especially negatively affected popular winter tourism activities. Notable damages have been outlined for

---

[33] Natural Resources Canada. (2014). *Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation*, 140. Retrieved from http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/earthsciences/pdf/assess/2014/pdf/Full-Report_Eng.pdf.
[34] Ibid, 141.
[35] Ibid, 138.
[36] Ibid, 139.
[37] Ibid, 142.
[38] Ibid, 149.
[39] Ibid, 143.
[40] David Suzuki Foundation. (2014). *Economic Impacts*. Retrieved from http://www.davidsuzuki.org/issues/climate-change/science/impacts/economic-impacts/.

Canada's large ski and snowmobile industries. Between 2000 and 2010, ski resorts have experienced a 10-15% reduction in visitation. Snowmobiling is even more susceptible with an estimated 60% reduction in tourism. This is largely due to the impracticality of widespread artificial snow production.[41]

The mining industry, which employs roughly 400 000 people and contributes $60 billion to the GDP (2012), has been severely impacted by climate change in the form of extreme weather events.[42] Current infrastructure, most of which is unable to withstand the effects of extreme weather, will have to be upgraded.[43] Warmer winters have shortened the operating seasons of winter roads. The Tibbitt to Contwoyto winter road, the longest winter road in Canada, is the main supply road for the Ekati, Diavik, Jericho and Snap Lake diamond mines and the Lupin gold mines is notably vulnerable. Reduced ice thickness lowers the load volume that can be safely transported reducing total revenue. This requires mines to find other methods to transport fuel to the sites.[44] Furthermore, mines are typically located in areas that are susceptible to climate change. Heavy rainfall, flooding and forest fires lower the operational capacity of mines, which in the end, lower revenue for the industry.[45]

Climate change has impacted Canadian forests, particularly through forest fires and pest outbreaks. Climate change is expected to increase forest fire frequency and intensity in a majority of Canadian forests. Pests and forest insects are a major disturbance affecting millions of hectares of Canadian forests. The survival and spread of these pests is influenced by the climate, with warmer temperatures increasing their numbers and a lack of cold winter temperatures reducing annual die-off. The resulting decline in timber supply will reduce revenue for the forest industry and the communities that heavily rely on forests for goods, services, jobs and income will also suffer with diminishing resources and higher costs.[46]

Often cited as a reason to ignore climate action, the Canadian economy will in fact be deeply affected by climate change and these likely outcomes threaten the livelihood of all current and future Canadians.

3.2 Health impacts

Climate change is broadly causing damage to Canadian's health as a result of pollution, an increased threat of infection and disease, and extreme weather.

In 2008, air pollution was responsible for the deaths of an estimated 21,000 Canadians.[47] In particular, ozone (O_3) and fine particulate matter ($PM_{2.5}$) are key concerns. While the degree to which ground O_3 levels in Canada are attributed to climate change is uncertain, Canada saw an

[41] Natural Resources Canada. (2014). *Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation*, 147. Retrieved from http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/earthsciences/pdf/assess/2014/pdf/Full-Report_Eng.pdf.
[42] Ibid, 76.
[43] Ibid, 78.
[44] Ibid, 79.
[45] Ibid, 80.
[46] Ibid, 71-73.
[47] Ibid, 197.

increase of 10% between 1990 and 2010. Chronic exposure to O_3 is associated with cardiac problems, long-term respiratory impacts, and death. Fine particulate matter ($PM_{2.5}$), which is produced by vehicles, forest fires, and waste burning, can cause a variety of respiratory and cardiac problems. This includes bronchitis and lung cancer, which has resulted in an increase in hospital admissions, and loss of life.[48] While a national trend for $PM_{2.5}$ distribution remains unclear, local geographic increases are associated with regions surrounding factories, and other producers.

Climate change is also associated with an increase in allergens, and a variety of human pathogens. As a result of warming temperatures, Canada has experienced progressively earlier summers. This invariably has led to an increase in pollen, corresponding respiratory problems, and invariably, hospital visits. Ragweed season, responsible for nearly 75% of allergy symptoms, has increased by an average of 26 days in Saskatchewan and Winnipeg. Furthermore, increases in human pathogens are being reported nationwide. For example, Cryptococcus gattii, a fungus that can cause cryptococcosis, pneumonia and meningitis, is natively found in tropical and sub-tropical regions yet in 1999, *C. gattii* spread to Victoria Island, and has since been spreading throughout British Columbia. Additionally, in Canada, increasing temperatures, and highly variant rainfall patterns have been linked to an increase in food and water-borne illness outbreaks.[49] Species such as cyanobacteria have increased in Ontario over the last 15 years and can be linked to disease, and water contamination problems.[50] While Canada has yet to experience an outbreak of exotic vector-borne diseases, the appearance of Dengue fever in Florida, and chikungunya in Italy exemplify the risk Canada too faces.[51] Furthermore, cases of increasing zoonotic vector-borne diseases have also been documented. The Canadian climate has become increasing permissive for animal carriers of Lyme disease, allowing for increased migration. Incidence of Lyme disease increased from 30 cases to 315 in 2012, and continues to increase yearly.[52]

As the planet continues to warm, the incidence of severe weather events such as heavy rain events, heat waves, storms, wildfires, droughts, and floods have also increased. Research continues to link extreme weather, especially heat waves and extreme precipitation events, to climate change.[53] Floods, storms and precipitation can transport chemical contaminants, like pesticides into water sources, leading to a variety of health problems. Wildfires and droughts can directly lead to loss of life, and can furthermore lead to increases in secondary health risks, such as pollution and water-borne pathogens, as outlined above. Extreme heat can cause dehydration, exhaustion, and heat stroke can further exacerbate pre-existing cardiovascular, cerebrovascular, neurological, and respiratory conditions. Extreme heat can even result in sudden mortality. Heat waves in British Columbia and Quebec in 2009 and 2010 were associated with 436 deaths.[54]

---

[48] Ibid, 198.
[49] Ibid, 198-200.
[50] Ibid, 201.
[51] Ibid, 203.
[52] Ibid, 201.
[53] Coumou, D., & Rahmstorf, S. (2012). A decade of weather extremes. *Nature Climate Change*, 2(7), 491–496.
[54] Natural Resources Canada. (2014). *Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation*, 206. Retrieved from http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/earthsciences/pdf/assess/2014/pdf/Full-Report_Eng.pdf.

Natural disasters and climate change can furthermore impact the psychological health of Canadians. Exposure to stressful situations, such as wildfire and droughts, can lead to increase in post-traumatic stress disorder. Stress can be rooted in displacement, loss of property, and associative loss of place and belonging as a result of climate change effects. This is best exemplified by a 2011 flood in Manitoba, which led to the displacement of 1932 people for over 18 months. This displacement was associated with increases in stress, violence, substance abuse, and other psychosocial issues.[55]

Canadian citizens health and well-being are at significant risk from climate change and rely on action against climate change to maintain our status as a world leader in quality of life.

3.3 Natural environment impacts

Climate change will affect Canadian wildlife in many ways, several of which will take place in years to come. Climate change exacerbates damages toward both stable species and species already classified as at risk. The current damages to the environment and a range of catastrophes including increased incidents of forest fires and invasive species disrupt crucial habitats. By the year 2100, the area burned in Canada is expected to increase by 75-120%.[56]

As a species habitat changes forcing migration, novel interaction with similar species can lead to hybridization. This process can cause extinction if the population is already small. High elevation populations will be significantly impacted as migration is less feasible than in low elevation areas.[57] Invasive aquatic organisms will increase in Canadian waters as marine species move north due to warming temperatures, displacing native species. Each decade, aquatic organisms` expansion range north may increase by 30-130 km. Polar bears, who rely on ice for mating and hunting, will be particularly affected by climate change. As ice breaks up into fragments, polar bears will have further difficulty in feeding and finding potential mates. This will lead to the loss of the species expected in the next half-century.[58] Climate change also motivates the invasive expansion of tree species into new habitats. Old growth forests, which cannot expand into new areas quickly enough, will be displaced.[59]

These possible and probable outcomes are just a few of the detrimental effects climate change poses on Canadian lands, effects that threaten to make Canadian wilderness unrecognizable.

[55] Ibid, 209.
[56] Ibid., p 169
[57] Ibid., p 167
[58] Ibid., p 168
[59] Ibid., p 174

4. Anticipated climate change impacts in Canada in 2050

Here we set out a summary of the current understanding of possible future climate change impacts if significant changes to combat climate change are not taken. We have chosen to focus on the year 2050 because the date is far enough that a child born in 2017 (a person who has played no role in contributing to climate change so far) will be middle-aged and invested in society. We hope to showcase that the anticipated climate change impacts are even more staggering than the current impacts, and to illustrate that it is unfair that this may be the future this child will inherit. Furthermore, this inequity is not an agentless inequity, but one maintained and reinforced by the current generations with power and a voice.

4.1 Financial costs

If climate change continues at the current rapid pace, a number of changes will have to be made in industry, infrastructure, and even individual citizen habits. The adaptations necessary will be broad and costly to the Canadian government and people. Adaptations in agricultural, urban planning, tourism, fisheries, natural resource extraction and many, many more are necessary for continued economic success all will be incredibly costly if ignored.[60] These costs increase exponentially as climate change does and is expected to cost approximately $5 billion per year in 2020 rising to $21-43 billion per year in 2050.[61] If catastrophic climate change occurs, the cost equates to a potential loss of between 5% and 25% of the Canadian GDP.[62]

4.2 Health impacts

Mortality rates are projected to be higher by 2050 directly as a result of extreme weather events including heat waves, storms, floods, and droughts. Infectious diseases will be provoked by polluted increasingly contaminated air and water supplies.[63] High heat can be particularly dangerous in concert with high humidity, as this combination can keep humans from maintaining a skin temperature below 95 degrees Fahrenheit, resulting in deadly heat strokes.[64]

Extreme heat events are estimated to be more frequent, intense and longer lasting which will exacerbate cardiovascular illnesses, respiratory illnesses, diabetes, and strokes. Children and the elderly particularly vulnerable to high heat effects due to lowered resilience. Additionally, extreme heat will acutely affect urban areas of Canada, as heat is more extreme than in rural areas, disallowing outdoor activities.[65]

---

[60] National Round Table on the Environment and the Economy (NRTEE). (2012a). *Facing the Elements: Building Business Resilience in a Changing Climate (cast studies*), 35. Retrieved from http://publications.gc.ca/collections/collection_2012/trnee-nrtee/En133-40-5-2-2012-eng.pdf.
[61] Ibid, 40.
[62] Ibid, 38.
[63] Ford, L., B. (2009). Climate Change and Health in Canada. *McGill Journal of Medicine*, 12(1), 78-84
[64] Gordon, K. (2014). Risky Business: A Climate Risk Assessment for the United States. *RiskyBusiness*,13. Retrieved from: http://riskybusiness.org/uploads/files/RiskyBusiness_Report_WEB_09_08_14.pdf.
[65] Hansen, J. et al. "Assessing Dangerous Climate Change": Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature." *PLoS ONE* 8, no. 12 (2013): p. 8

By 2050 climate change will make Canada more vulnerable to vector borne diseases, as vector hosts will benefit from increased warmth. By 2020, Canadian tick abundance is estimated to increase by 30-100% leading to amplified spread of Lyme disease. This increase is likely to continue to 2050 and far beyond.[66] The range of West Nile Virus may also expand, and "exotic", diseases such as malaria may resurface in Canada.[67]

Climate change will affect air quality since higher temperature will accelerate the chemical reactions that generate air contaminants. These contaminants pollute the air with ground-level ozone and smog. Poor air quality is known to provoke asthma, chronic respiratory disease, and cardiovascular disease.[68] The Ontario Medical Association estimates around 17,000 hospital admissions and 60,000 emergency room visits per year in Ontario due to the cause of air pollution. This trend will only climb with further climate change.

The American Psychological Association warns of a multitude of threats that climate change presents to mental health.[69] The mental and physical harms of climate change can interact as they accumulate, and people alive in 2050 will inevitably suffer from a greater range of climate-related mental health problems than those alive today. The future health of Canadian citizens relies on preventative action against climate change today.

4.3 Natural environment impacts

Climate change poses a threat not only to the Canadian people but also to the unique and diverse species that also call Canada home. Currently, 521 Canadian species are listed at risk of extinction under the Species at Risk Act.[70] Climate change will exasperate a majority of the dangers facing Canadian species today such as habitat loss, pollution, and lack of resources. The Canadian Wildlife Federation sites possible effects of climate change on wildlife to include:[71]

- Droughts
- Wild Fires
- Warmer Ocean Temperatures
- Ocean Salinity Change
- Increased Extreme Weather Events
- Glacier Melt
- Arctic Sea Ice Melt
- Changing Growing Season

---

[66] Dhiman, R. (N.d.). Climate Change and Vector Born Diseases." *Environmental Epidemiology National Institution of Malaria Research*. Retrieved from http://www.cseindia.org/userfiles/RCDhiman.pdf.
[67] Ford, J. (2010). "Vulnerability of Aboriginal Health Systems in Canada to Climate Change." *Global Environmental Change,* 80.
[68] Ibid, 80.
[69] Swim, C. et al. (2009) Psychology & Global climate change: addressing a multifaceted phenomenon and set of challenges. *American Psychological Association.* Retrieved from: http://www.apa.org/science/about/publications/climate-change.pdf.
[70] Environment and Climate Change Canada. (2016, May 20). *Species at Risk*. Retrieved from https://www.ec.gc.ca/nature/default.asp?lang=En&n=FB5A4CA8-1.
[71] Canadian Wildlife Federation. (2016). *How will Climate Change Impact Canada?* Retrieved from http://cwf-fcf.org/en/about-cwf/contact-us/faq/faqs/how-will-climate-change.html.

- Susceptibility to Invasive Species
- Forced Migration
- Coastal Erosion
- Air Pollution
- Algal Blooms

The World Wildlife fund estimates that "seven Canadian provinces/territories – Yukon, Newfoundland and Labrador, Ontario, British Columbia, Quebec, Alberta and Manitoba - have more than half their territory at risk."[72] As a northern country, Canadian flora and fauna will be particularly vulnerable to climate change as the effects in the polar Arctic regions are magnified. The increased rate of change in the Arctic will require species to migrate or evolve far faster than ever see in history. The WWF estimates that "over 30 per cent of the land surface of Canada will require unrealistically high migration rates to keep up with the projected warming."[73] Species simply cannot adapt fast enough to survive. Below are the Canadian provinces and territories ranked according to percent loss of existing habitat.[74]

- Yukon: 64.1
- Newfoundland and Labrador: 63.6
- Ontario: 61.4
- British Columbia: 60.4
- Quebec: 59.5
- Alberta: 56.4
- Manitoba: 52.9
- New Brunswick: 44.7
- Saskatchewan: 36.2
- Nova Scotia: 34.2
- Northwest Territories: 33.0

Alternatively, some species may thrive under climate change conditions. Species like the pine beetle are no longer experiencing a winter die-off and are massacring pine forests across Western Canada. This is similar in a number of aggressive native and invasive species that threaten native flora and agriculture. The milder winters invite a host of destructive species that could further impede native Canadian species' success.[75]

Climate change presents a rapid and dramatic challenge most Canadian species will not be able to match. The loss of these species will be detrimental to ecosystems nationwide and action must be taken to mitigate climate change and save these species before they are lost forever.

---

[72] Malcolm, Jay R. and Markham, Adam. (2000, July). Global Warmining and Terrestrial Biodiversity Decline: a Modelling Approach. *A Report Prepared fro World Wildlife Fund*, 4. Retrieved from http://www.wwf.se/source.php/1117008/figures.pdf.
[73] Ibid, 3.
[74] Ibid, 36.
[75] Canadian Geographic. (2014). *Theme: Climate Change.* Retrieved from http://www.canadiangeographic.com/wildlife-nature/?path=english/themes/climate-change.

5. The Government of Canada's Obligations to Protect Canadian Children from Future Climate Change Impacts

It is UTEA's position that the federal government has a legal obligation to reduce Canada's share of global carbon emissions contributing to the cumulative effects of climate change. As discussed below, sections 15 and 7 of the *Canadian Charter of Rights and Freedoms* and a variety of international legal instruments create a legal duty on the Canadian government to undertake a child rights approach to climate change policy. Canada's responsibility to amend current climate change regulation is also a moral imperative, grounded in the principle of intergenerational justice and recognition of the limitations of the ability to achieve intergenerational justice through electoral pressure alone.

5.1 Overview of Canada's Commitment to Intergenerational Equality

Intergenerational justice, or intergenerational equality, is the principle that present generations have clear duties towards future generations, in particular to ensure that government policy facilitates the equal distribution of resources between generations and that the rights of generations are equal over time.[76] Despite a stated commitment to intergenerational equality[77], Canada's current climate change efforts fail to embody this principle. Present action, undertaken by present generations, reflects a desire to maximize the advantages of pollution through economic gains. Present generations, though, suffer minimally from the environmental degradation this pollution causes. These disadvantages of pollution will be experienced by future generations more acutely given the cumulative effects of climate change. In this way, present-day federal government policy fails to adequately realize its duty to future generations in formulating climate change policy; it disproportionately benefits current generations and disproportionately harms future generations. Section 15 and section 7 of the *Charter* enshrine the spirit of intergenerational equality, and render the federal government's current approach to climate change unconstitutional.

An equality-based understanding of democracy also mandates a shift in the government's approach to climate policy. Today's climate policy, as outlined, benefits Canadians today at the expense of young Canadians and those still to be born. Without access to the ballot box, future generations of Canadians lack an efficient mechanism to express their discontent with the policy choices of current administration. There is a generational gap between those with a vote and those facing the bulk of the consequences of the resulting damage to our natural environment. This gap produces the intergenerational inequalities described above that the electoral system alone is not equipped to remedy. Achieving intergenerational equality is unlikely to be spurred

[76] Schuppert, F. (2011). Climate change mitigation and intergenerational justice. Environmental Politics, 20, 303-321. See also Institute of Development Studies. (2009). *Climate Change, Child Rights, and Intergenerational Justice.* Retrieved from https://www.ids.ac.uk/files/dmfile/IF13.2.pdf.

[77] See, for example, the 2010 *Federal Sustainable Development Strategy for Canada*, where the federal government acknowledged that it "understands the importance of protecting nature for current and future generations of Canadians" and that it must protect ecosystems and habitats "in ways that leave them unimpaired for present and future generations". (Environment Canada. "Planning for a Sustainable Future: A Federal Sustainable Development Strategy for Canada." 2010. *Government of Canada*. Web. Accessed: 8 May 2014. https://www.ec.gc.ca/dd-sd/default.asp?lang=En&n=16AF9508-1).

through democratic process; instead, the government must take the lead and engage in concerted, corrective action.

The principles of intergenerational justice and an equality-based understanding of democracy frame the following discussion of Canada's legal duty to act on matters concerning climate change. Sections 15 and 7 of the *Canadian Charter of Rights and Freedoms*, the *UN Convention on the Rights of the Child*, and other international instruments require the Canadian government to take a child rights approach to climate change. This legal duty compounds the government's underlying moral obligation to abide by the principle of intergenerational justice.

5.2 Canadian Climate Policy Contravenes the *Canadian Charter of Rights and Freedoms*

Obligations exist under two sections of the Charter.

5.2.1 Section 15 of the *Charter:* Vulnerability of Children and Youth in the Climate Change Context

The Canadian government has, and continues to, discriminate against children and youth through its prioritization of short-term objective of economic prosperity; benefiting adults at the expense of current and future generations. The *Canadian Charter of Rights and Freedoms*, through section 15, guarantees everyone equal protection and benefit of the law. It is intended to protect those within Canadian society who are vulnerable in some way due to their membership in an identifiable group. This may include, but is not limited to, distinctions made on the grounds of race, religion, ethnic origin or age.

The main consideration is not whether the distinction is made intentionally but the impact on the group concerned. While courts have previously been hesitant to consider "children and youth" as a group warranting section 15 protection, the novel context of climate change and its forecasted effect on this distinct group, should prompt reconsideration.

Children and youth are particularly vulnerable to the effects of climate change due to their inability to participate in the political process and the disproportionate cost that will fall upon them. It must not be overlooked that this is an issue of intergenerational justice. Canadians who are not yet of voting age stand to inherit a degraded environment and a host of related socio-political challenges despite having no part in bringing about these damaging effects of climate change. Children and youth are particularly vulnerable to the effects of climate change due to their inability to participate in the political process and the disproportionate cost that will fall upon them. It must not be overlooked that this is an issue of intergenerational justice. Canadians who are not yet of voting age stand to inherit a degraded environment and a host of related socio-political challenges despite having no part in bringing about these effects of climate change.

The scientific data outlined in this document demonstrates that these effects are more than a mere prediction; they are a concerning reality that we must attend to today to protect future generations. The impact of severe weather events, rising sea levels and changing agriculture, weather patterns and water circulation occur long after GHGs are released into the environment. Presently, we are experiencing climate change impacts from GHG emitted some 40 years ago.

CO_2 emissions have sharply increased in the 20th century with roughly 50% of total emissions having occurred in the last 40 years. At this alarming rate the resulting environmental impacts give significant cause for concern.

In the context of climate change, children and youth have and, if no changes are made, will continue to be discriminated against in comparison to adults. While the objectives of the government to pursue economic growth and guarantee access to energy and electricity are important, they cause a severe and disproportionate impact on the very young. Children and youth are expected to face a large financial burden encompassing the cost of damage from extreme weather events, necessary infrastructure accommodations and increasing health care costs. Adverse health effects are expected to include higher rates of chronic and acute illness, and increased mortality rates. In the future, these negative effects will disproportionately impact the health and wellbeing of today's children and youth, burdening them with undue financial stress to mitigate climate damage.

5.2.2 Section 7 of the *Charter*: Threatened Physical and Psychological Security

Section 7 of the *Canadian Charter* guarantees that everyone has the right to life, liberty and security of the person unless the alleged deprivation is in accordance with the principles of fundamental justice.[78] This means that the Canadian government has an obligation to act in a way that does not increase the risk of death, physical or psychological harm or threaten freedom. In reference to the effect climate change is expected to have on youth, the Canadian government has failed to take into account the interests of future generations. It has failed to do so in regards to climate change as the cumulative effects of GHGs pose an evolving threat to physical and psychological security and life.

The expected increase in the frequency and severity of extreme weather conditions create the opportunity for harm to individuals and their property. Furthermore, stress resulting from such incidents are likely to cause significant psychological strain. This stress can be rooted in potential displacement, loss of property, cleanup costs and the fear of similar events happening again. An example of a natural disaster which leads to significant psychological trauma was the 2011 Manitoba flood. The displacement of 1,932 people was linked to increased stress, substance abuse and psychological issues.

The government's actions outlined in this document result in a significant amount of direct or indirect GHG emissions. Repercussions already experienced in conjunction with anticipated threats to individual physical and psychological security, results in a direct infringement on security of the person under section 7. Other examples of detrimental health impacts linked to climate change include: an increase in allergens as well as long term respiratory damage including incidents of bronchitis and lung cancer. Additionally, increasing temperatures have been linked to fungal outbreaks, increase in food- and waterborne illness and increased rate of Lyme disease.

[78] Principles of fundamental justice are accepted societal interpretations of justice. Although there is no set number of principles that can be applied some which have been accepted include: arbitrariness, vagueness and grossly disproportionate. For examples, arbitrariness is of issue if the effects of the government's action bare no relation to its objective. *Chaoulli v Quebec*, [2005] 1 SCR 79 at para 124, [2005] SCJ No 33 [*Chaoulli*]

More importantly, the government's actions are grossly disproportionate as their harmful effects greatly outweigh the value of their objectives. Ensuring economic sustainability and growth are key functions of the government, but pursuing these efforts in a way that will be destructive to current and future generations cannot justify the short-term benefits. The government must take into consideration not only present but future impacts of their decisions; the harms from today's emissions will further amplify in years to come. Though the actions described within this document cannot be identified as the sole cause of climate change, collectively they are meaningful contributors.

5.2.3 Conclusion on Canada's Constitutional Obligations

The government has a legal responsibility arising from the *Canadian Charter of Rights and Freedoms* to protect future generations of Canadians from severe environmental harm. In failing to adequately consider the long-term effects of their climate change policy, the federal government is unconstitutionally discriminating against youth and future Canadians and is threatening their physical and psychological security. The government must act to amend its climate change policy to remedy these *Charter* breaches.

5.3 Canadian Climate Policy Contravenes Canada's International Legal Obligations

We discuss different international obligations.

5.3.1 Canadian Climate Policy Contravenes the *UN Convention on the Rights of the Child*

Canada signed the *UN Convention on the Rights of the Child* ("CRC") in 1990. First and foremost, the government has an ongoing obligation to implement the provisions of the CRC, and a secondary obligation to report how it does so to the UN Committee on the Rights of the Child ("the Committee").[79] The CRC guarantees a number of rights to children that are negatively impacted by climate change, specifically: the right to non-discrimination (article 2); the right to have the child's best interests considered (article 3); the right to life, survival, and development (article 6); the right of the child to be heard (article 12); and the right to the highest attainable standard of health.[80] Children's rights to life, survival, development, and health guaranteed in the CRC have been impacted in Canada by the Canadian Government's current contribution to climate change. The CRC therefore imposes a responsibility to uphold intergenerational equality by prioritizing the best interests of the child and by listening to children's concerns when creating and implementing policies that contribute to climate change.[81] Children's rights to life, survival, development, and health guaranteed in the CRC have been impacted in Canada by the Canadian Government's current contribution to climate change. The CRC therefore imposes a responsibility to uphold intergenerational equality by prioritizing the

[79] United Nations Human Rights Office of the High Commissioner. (1989). *Article 44 of the Convention on the Rights of the Child*. Retrieved from: http://www.ohchr.org/en/professionalinterest/pages/crc.aspx.
[80] United Nations Human Rights Office of the High Commissioner. (1989). *Convention on the Rights of the Child: Article 44*. Retrieved from: http://www.ohchr.org/en/professionalinterest/pages/crc.aspx.
[81] Ibid.

best interests of the child and by listening to children's concerns when creating and implementing policies that contribute to climate change.

In particular, the CRC imposes a responsibility to protect children's rights in the context of business-related laws and policies. In April 2013, the Committee published General Comment no.16, which outlines a government's commitments to children's rights in its commercial endeavors. For example, the obligation to respect children's rights in the business context requires that "business-related laws/policy [be] transparent, informed, and include full consideration on the rights of the child such that the States do not directly or indirectly facilitate corporate infringements of children's rights."[82] This imposes an obligation on the Federal Government to not "engage in, encourage, assist or condone business-related violations of children's rights" when investing public funds.[83] The Canadian Government actively supports the aviation and oil/gas industries through subsidies and permissive regulations. Under the CRC, the Canadian Government must work with these industries to improve fuel and flight efficiency and limit oil and gas extraction, exportation, and hazardous pipeline construction. Lastly, the Canadian Government must amend the Canada Pension Plan Investment Board Act both to end fossil fuel investments and to ensure 'Upholding Children's Rights' is a necessary criterion for selecting future investments.

The CRC and the responsibilities thereunder operate in Canada as interpretative guides to Canadian law and the *Charter*. The CRC's value is in its ability to inform a court's interpretation of domestic law.[84] The 'best interests of the child' principle, for example, has been recognized as a rule of customary international law[85], meaning that it binds Canadian courts to consider the best interests of the child when interpreting legislation or policies that impact children. Courts should interpret legislation and policies that have the potential to contribute to climate change in a manner that reflects the short-term and long-term best interests of today's children. Furthermore, treaties also impact a court's interpretations of the *Charter.* Courts presume that the *Charter* provides protection at least as comprehensive as the protection afforded in international treaties to which Canada is a signatory.[86] The right to non-discrimination under article 2 of the CRC and the right to life, survival, and development under article 6 of the CRC can therefore be used as interpretive guides to expand the scope of protection under sections 15 and 7 of the *Charter*, respectively.

5.3.2 Canadian Climate Policy Contravenes Canada's other International Commitments

Canada has other international commitments that have implications for the rights of children in the context of climate change. The Federal Government has signed international environmental instruments that support the obligation to protect children from the negative effects of climate change. If the Canadian Government works towards meeting its obligations under the

[82] Unicef. (2015). *Obligations and Actions on Children's Rights and Business.* Retrieved from https://www.unicef.org/csr/files/CSR_GC_OBLIGATIONS_AND_ACTIONS_FINAL_AUGUST05.pdf. 12.
[83] Ibid, 13.
[84] *Baker v Canada (Minister of Citizenship and Immigration)*, [1999] 2 SCR 817 at paras 69-71, 1999 CarswellNat 1124.
[85] Van Bueren, G. (2009). Committee on the Rights of the Child. *Queen Mary University of London, School of Law Legal Studies,* Research Paper No.37, 10-11.
[86] Currie, John H. (2008). *Public International Law* (2nd ed). Toronto: Irwin Law, 246.

international environmental instruments, then it can simultaneously fulfill its responsibilities to uphold rights under the CRC that are impacted by climate change.

The following international instruments influence Canada's commitments to protecting the environment:

- The *Paris Agreement*: Canada ratified the *Paris Agreement* in October 2016. Under the agreement, the Canadian Government committed to reducing greenhouse gas emissions by 30% below 2005 levels by 2030 for the purpose of limiting global temperature rise this century to less than 2 degrees Celsius above pre-industrial levels.[87]

- The *Rio Declaration on Environment and Development*: The *Declaration* is known for applying the precautionary principle[88] to environmental considerations in development policies. The Supreme Court has applied this principle to the interpretation of Canadian legislation, holding that inconclusive science on the environmental impact of a particular measure cannot be invoked as a reason for failing to take adequate precautions to prevent potential environmental harm.[89]

- The World Health Organization (WHO): Canada is a member state of the WHO. Member states commit to pursuing "the highest attainable standard of health" as a fundamental human right.[90] Pursuing this standard requires responding to the health burden climate change imposes on children.[91] The Supreme Court has relied on the WHO's expertise when identifying and defining pressing health concerns.[92]

Canada's international environmental commitments mentioned above protect the rights of children. Reducing greenhouse gas emissions, pre-empting environmental harm absent conclusive proof of the harm, and addressing the health burden caused by climate change all serve to protect the rights granted to children under the CRC. Upholding these commitments serves to reduce the negative impact of climate change, thus respecting children's rights to non-discrimination and life, security, and maximum health guaranteed under the CRC. The Canadian Government can uphold these commitments by controlling subsidies to oil/gas and aviation industries, by investing in CPP responsibly, and by reducing its own emissions. In addition, Canadian courts can use these commitments as a guide to interpreting domestic legislation and

---

[87] Paris Agreement: Essential Elements. (2016). *United Nations Framework Convention on Climate Change.* Retrieved from http://unfccc.int/paris_agreement/items/9485.php.

[88] Principle 15 of the *Declaration* states: "[i]n order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." (*United* Nations Environment Programme. (1992). *Rio Declaration on Environment and Development.* Retrieved from http://www.unep.org/documents.multilingual/default.asp?documentid=78&articleid=1163).

[89] *R v Castonguay Blasting Ltd* 2013 SCC 52 at para 20, [2013] CarswellOnt 14069.

[90] World Health Organization. (1946). *Constitution of the World Health Organization.* Retrieved from http://www.who.int/governance/eb/who_constitution_en.pdf.

[91] World Health Organization. (2010). *Global Plan of Action for Children's Health and the Environment.* Retrieved from http://www.who.int/ceh/cehplanaction10_15.pdf?ua=1.

[92] *R v Malmo-Levine* 2003 SCC 74 at 52, [2003] CarswellBC3133.

Charter rights. Honouring these international environmental commitments support the intergenerational right of children to be protected against the effects of climate change.

5.3.3 Conclusion on Canada's International Legal Obligations

The Canadian Government's legal obligations under international instruments inform the content of its environmental obligations with respect to protecting children's rights. These obligations serve as guides for the courts to interpret the validity of legislation and the scope of *Charter* rights. The Canadian Government's subsidies to the oil/gas and aviation industries, its CPP investments, and its own emissions are inconsistent with its obligations under the CRC and other international instruments. That the government's contributions in these areas are inconsistent with its international obligations further support the conclusion that the government's contributions are inconsistent with its obligations to Canadian children under sections 7 and 15 of the *Charter*. The Canadian Government's current contributions in the enumerated areas violate its international and domestic responsibilities to protect Canada's children now and in the future.

5.4 Conclusion

The *Canadian Charter of Rights and Freedoms* and international law demand the Canadian federal government adopt a child rights approach to climate change policy. This obligation is supported by the value of intergenerational equality. A variety of prominent international figures and organizations have arrived at the same conclusion:

- **Former UN Secretary-General Ban Ki-moon:** "The older generation has not taken care of the planet that the young people will inherit. You will be continuously affected and influenced by what our generation and our previous generations have neglected."[93]

- **U.S. President Barack Obama**, at COP21**: "**[My experience in seeing environmental change in Alaska] was a preview of one possible future — a glimpse of our children's fate if the climate keeps changing faster than our efforts to address it … [l]et that be [our] common purpose … [a] world that is worthy of our children."[94]

- **Chiefs of Ontario** in their Open Letter to President Obama and Prime Minister Trudeau on Climate Change: "Our '*We Are the Land*' declaration states: "Our ancestors were the land, we are the land, and our youth and future generations will be the land.""[95]

- **Our Children's Trust**: "Our mission is to protect earth's atmosphere and natural systems for present and future generations. We lead a game-changing legal campaign seeking systemic, science-based emissions and climate recovery policy at all levels of

[93] UN Secretary General Ban Ki-moon gives talk at McGill (2016, February 15), *McGill Daily*. Retrieved from http://www.mcgilldaily.com/2016/02/un-secretary-general-ban-ki-moon-gives-talk-at-mcgill/.
[94] Remarks by President Obama at the First Session of COP21 (2016, November 20), *The White House, Office of the Press Secretary.* Retrieved from https://www.whitehouse.gov/the-press-office/2015/11/30/remarks-president-obama-first-session-cop21.
[95] An open letter to President Obama and Prime Minister Trudeau on Climate Change (undated), *Chiefs of Ontario*. Retrieved from http://www.chiefs-of-ontario.org/node/1343.

government. We give young people, those with most at stake in the climate crisis, a voice to favorably impact their futures."[96]

- **Canadian Youth Climate Coalition**: "… [t]he Canadian Youth Climate Coalition is a united front of youth from across Canada tackling the biggest challenge of our generation, the emerging climate crisis. Acting locally, provincially, federally, and internationally, we combine our forces to organize actions, influence government and implement concrete solutions."[97]

The federal government should abide by its legal and moral obligations, and in taking direction from the statements above, shift its approach to climate change. The remainder of this document will outline the actions we suggest the government should undertake to reflect the spirit of intergenerational equality in climate change regulation in Canada.

[96] Our Mission. *Our Children's Trust*. Retrieved from http://ourchildrenstrust.org/Mission.
[97] Who Are We? *Our Climate.ca Canadian Youth Climate Coalition*. Retrieved from http://www.ourclimate.ca/about.

6. The Government of Canada should do more to reduce emissions

Here we set out actions the federal government could take to bring about emission reductions, both through working with the provinces and by itself. We first report on recommendations for federal action made by some other Canadian environmental organizations.

6.1 Canadian ENGO recommendations for federal action

The following is a list of recommended federal actions made by five Canadian ENGOs.

Pembina Institute

The Pembina Institute is a Canadian non-profit energy think tank.

Building a Pan-Canadian Climate Plan: Policy options to meet or exceed Canada's 2030 emissions target, June 2016 [98]

- Develop and implement a stringent national price on carbon
- Accelerate the phase-out of coal-fired electricity
- Support renewables in Northern and remote communities by removing downstream federal diesel fuel subsidies
- Accelerate the expansion of low-carbon transportation by implementing a national land freight strategy and a national Low Carbon Fuel Standard
- Retrofit Canada's existing buildings and require new buildings to be ultralow carbon
- Implement national methane reduction regulations for the oil and gas sector
- Implement a permanent upstream greenhouse gas assessment in federal environmental assessments

David Suzuki Foundation and The Academy of Engineering

The David Suzuki Foundation is a science-based environmental organization that aims to protect nature and quality of life now and for future generations. The Canadian Academy of Engineering (CAE) is a group of accomplished and dedicated engineers working to apply science and engineering principles to the country's interests.

Canada's Challenge and Opportunity, Transformations for major reductions in GHG emissions

The report defines low GHG pathways to achieve the goal of reducing GHG emissions by 80% from 1990 levels by 2050. [99]

- Main options for reducing combustion GHG emissions and priorities for action

[98] The Pembina Institute. (2016). *Building a Pan-Canadian Climate Plan: Policy options to meet or exceed Canada's 2030 emissions target*. Retrieved from https://www.pembina.org/reports/submission-pan-canadian-climate-change-working-groups.pdf.

[99] Trottier Energy Futures Project Partners. (2016). Canada's Challenge and Opportunity: Transformations for major reductions in GHG emissions. Retrieved from http://www.davidsuzuki.org/publications/downloads/2016/Trottier-Energy-Futures-Project-March31.pdf.

- Reducing fossil fuel use through conversion to electricity and biomass/biofuels
- Reduction of dependence on fossil fuels for end uses by switching to greater use of electricity derived from low-carbon sources or biofuels
- Enabling transfers of electricity among jurisdictions and provinces
- Implementation of a program for energy conservation and efficiency
- Implementation of a national program for carbon pricing for GHG mitigation
- Advancement and investment is required in production of biomass/biofuels, heavy freight transport, industrial emissions, oil and natural gas production, upgrading and refining, fugitive emissions, urban form, and net-negative emissions

Canadian Parks and Wilderness Society

CPAWS (Canadian Parks and Wilderness Society) is a non-profit organization that focuses on public land and marine conservation as well as sustainable resource use in Canada. CPAWS published a letter addressed to Minister McKenna, Mr. Perry and Mr. Jones with recommendations to the federal government, part of which (shown below) addressed where to reduce emissions and how to prepare for climate change. [100]

- Include emissions from terrestrial and marine ecosystem degradation into GHG accounts and regulatory programs across Canada
- Improve GHG accounting rules to better quantify and regulate such emissions
- Include emission reduction and biodiversity conservation goals into environmental assessments
- Adjust subsidies that drive unnecessary land and marine use emissions and redirect funding to promote sustainable practices and protect ecosystems
- Do not assume carbon neutrality when looking at biomass for energy

Canadian Environmental Law Association

The Canadian Environmental Law Association (CELA) is a not for profit organization that aims to use existing laws to protect the environment but also to advocate for environmental law reform. In 2016, CELA published a letter to the Prime Minister titled "Letter to the Prime Minister Acting on Climate Change: a Path for Canada." It detailed specific actions the federal government should take to reduce all included below:[101]

- A science-based emissions reduction target consistent with a 1.5^{o} C temperature rise
- Eliminating subsidies to fossil fuel industries and investing in a green economy

[100] Canadian Parks and Wilderness Society. Letter to Minister McKenna, Mr. Perry, and Mr. Jones. 6 June, 2016. Retrieved from http://cpaws.org/uploads/CPAWS-climate-change-submission-June-2016.pdf.

[101] Adamson, Lyn, and John Dillon on behalf of 56 organizations. "Acting on Climate Change: A Path for Canada - It is Time for Canada to Take Decisive Action, Positive Action to Arrest Climate Change." Letter to Prime Minister and Premiers of Canada. 24 Feb. 2016. Retrieved from http://www.cela.ca/publications/acting-climate-change-path-canada-it-time-canada-take-decisive-positive-action-arrest-c.

- A carbon fee set at 30$ per tonne of GHGs and a commitment to increase it over time

Canadian Climate Action Network

The Canadian Climate Action Network consists of over 100 organizations across Canada that share a dedication to addressing how a changing climate affects people and the environment. *Expectations: Pan-Canadian Framework on Climate Change* [102]

- Showing leadership in sustainable governance through mechanisms such as carbon neutral federal procurement practices
- Accelerate the phase-out of coal-fired power
- Facilitate the creation and implementation of a pan-Canadian electrification strategy
- Develop federal zero emissions vehicle (ZEV) legislation
- Implement a national Low Carbon Fuel Standard (LCFS)
- Update national building codes to meet near zero energy standards by 2025
- Eliminate federal and provincial subsidies to fossil fuels by 2020
- Implement a pan-Canadian price on carbon that increases and has broad coverage

We believe this is a very useful list of possible federal actions. We provide them here to supplement our own actions.

6.2 Government of Canada action using its own jurisdictional authority

This section looks at some actions to combat climate change that the Government of Canada can take that lie almost entirely in its own jurisdiction. This means the federal government can take these actions with little need for collaboration with other levels of government. We look at two main areas: oil and gas extraction in offshore and northern regions, and international oil and gas exports. The Government of Canada issues regulatory approvals both for out-of-province extraction and for international export.

Legislative Framework for Extraction

One must understand the division of powers as it relates to fossil fuel extraction in order to understand the extent of the federal government's regulatory abilities in this area. Under section 92A and 92 (13) of the *Constitution Act, 1867* most fossil fuel production is under the provincial governments' control. However, areas beyond the provinces are under federal jurisdiction. Accordingly, the federal government establishes general legislations to oversee federal fossil fuel extraction. This includes:

- The Canada Petroleum Resources Act (CPRA)
- The Canada Oil and Gas Operations Act (COGOA)
- The Canada-Newfoundland Atlantic Accord Implementation Act
- The Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act

[102] Climate Action Network. (2016). Expectations: Pan-Canadian Framework on Climate change. Retrieved from http://climateactionnetwork-28b0.kxcdn.com/wp-content/uploads/2016/10/Expectations-Pan-Canadian-Framework.pdf.

- The Canada-Quebec Gulf of St Lawrence Petroleum Resources Accord Implementation Act[103]
- National Energy Board Act
- Indian Act
- Indian Oil and Gas Act

Through these laws the federal government has the sole jurisdiction in arctic and territorial mining of fossil fuel. This includes licensing of exploration, production, processing and transportation of fossil fuel.[104]

There are particular exceptions to this ruling and in the case of offshore mining, the Federal Government signed three Accords with Newfoundland, Nova Scotia, and Quebec. Through these Accords Acts, the federal and provincial government establishes a joint administrative tribunal to oversee the daily operations of the oil and gas industry in the Atlantic Canada. The tribunal for Quebec has not yet been established.[105]

Additionally, under section 91(24) of the *Constitution Act, 1867*, the Parliament of Canada has exclusive jurisdiction over the "Indians, and Lands reserved for Indians" and has legislated the indigenous peoples and their land under the *Indian Act*.[106] Under the *Indian Act*, indigenous communities must first surrender their land to the federal government before exploring or developing their land for petroleum production.[107] The Parliament regulates indigenous petroleum activities under the Department of Indigenous and Northern Affairs Canada and, under the *Indian Oil and Gas Act*, the Indian Oil and Gas Canada.[108] The sole jurisdiction of the Parliament of Canada over the petroleum resources on indigenous land extends to all onshore activities below the 60th parallel and excludes any land derogated to the indigenous communities through treaties and the constitutional indigenous rights claims.[109]

The Federal Government also has jurisdiction over the fossil fuel industry in the Northwest Territories and Nunavut through the National Energy Board (NEB).[110] The NEB is an administrative tribunal that oversees compliance of CRPA, COGOA and other environmental legislations.[111] The NEB also has jurisdiction over all "area of land not within a province" such as Sable Island, Hudson Bay, and offshore of British Columbia. The territorial and provincial governments conduct most of the onshore and territorial natural resources operations.[112]

---

[103] Currently pending
[104] Natural Resources Canada. (2016, January 20). *Legislations and Regulations – Offshore Oil and Gas*. Retrieved from http://www.nrcan.gc.ca/energy/offshore-oil-gas/5837.
[105] Bill C-74. *An Act to implement the accord between the Government of Canada and the Government of Quebec for the joint management of petroleum resources in the Gulf of St. Lawrence and to make consequential amendments to other Acts*, 2nd Sess, 41st Parl, 2015 (first reading 18 June 2015).
[106] *Constitution Act*, 1867 (U.K.), 30 & 31 Vict., c. 3, reprinted in R.S.C. 1985, App. II, No. 5 [hereinafter Constitution Act, 1867].
[107] *Indian Act*, R.S.C. 1970, c. I-6, consolidated since 1876.
[108] *Indian Oil and Gas Act*, RSC 1985, c I-7.
[109] Delgamuukw v. British Columbia, [1997] S.C.J. No. 108, [1997] 3 S.C.R. 1010 (S.C.C.).
[110] *National Energy Board Act*, RSC 1985, c N-7, [NEB] ss. 11-12
[111] *Ibid*, ss. 12.1(1), 28.2(1), 58(6)(a)
[112] Organisation for Economic Co-operation and Development. (2013). *Canada: Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil-Fuels*. Retrieved from http://www.oecd.org/site/tadffss/CAN.pdf.

Under the CPRA, the Governor in Council regulates the terms and conditions in exploration licences in all frontier lands.[113] This licence grants explorers the right to explore, exclusive right to drill, test, and develop petroleum, and the exclusive right to obtain a production licence subject to minor compliance.[114] Furthermore, the minister has the right to issue a drilling order, to force the interest owner of the significant discovery to drill a well.[115] The Act also confers the Minister of Natural Resources to issue production licences for commercial exploration, right to drill, develop and produce petroleum.[116] COGOA supplements the CPRA by licencing the day-to-day operations of petroleum development, including the details of the development contracts and the employments that follow oil and gas developments.[117] The COGOA establishes a 5 member Oil and Gas Committee, who, under direction of the Minister of Indian Affairs and Northern Development and Minister of Natural Resources, enforces the COGOA.[118]
The Governor in Council regulates "granting of leases, permits and licences for the exploitation of oil and gas in Indian lands, and the terms and conditions thereof".[119] There are number of amendments not in force.[120] This includes broad regulation of oil or gas situated in first nations land, from regulations of terms and conditions of the contracts to the determination of oil or gas recovered under the contract.[121]

Magnitude of Frontier Region Extraction
According to the Environment Canada, frontier oil production was responsible for 2 Mt of carbon dioxide equivalents.[122] Recently, the Trudeau G[123]overnment announced plans to not issue any new permits for off-shore drilling in Arctic waters. This is a step in the right direction, but has limited effect since there currently is no off-shore Arctic drilling. Furthermore, the Trudeau government failed to promise not to renew existing licenses. We call upon the Prime Minister to take the next step and decrease extraction in all northern areas, which are directly regulated by his government.

Recommendations
1. Further to the recently announced moratorium on new oil and gas leasing in the Arctic, the Government of Canada should use its regulatory approvals powers to put a cap on total annual extraction of oil and gas in the north where it holds exclusive jurisdiction, followed in subsequent years by percentage reductions in that total.

2. The Government of Canada should initiate discussions with the provinces of Newfoundland and Labrador and Nova Scotia, with a view to jointly putting a cap on total annual extraction of

---

[113] *Canadian Petroleum Resources Act,* RSC 1985, c. 36 (2nd Supp.), s. 24(2)
[114] Ibid, s 29.
[115] Ibid, s 33.
[116] Ibid, s 37.
[117] *Canada Oil and Gas Operations* Act, RSC 1985 c O7, s (5).
[118] Ibid, s 10.
[119] *Indian Oil and Gas Act*, RSC 1985, c I-7, s 3(a)
[120] 2009, c. 7, s. 1; 1999, c. 31, s. 137(E)
[121] Ibid, s 4.1.
[122] Environment Canada. (2014). *Canada's Emission Trends*. Retrieved from http://ec.gc.ca/Publications/E998D465-B89F-4E0F-8327-01D5B0D66885/ETR_E-2014.pdf.
[123] Imperial Oil, BP in limbo after Canada freezes Arctic drilling (2016, December 22), *Calgary Herald*. Retrieved from http://calgaryherald.com/business/energy/imperial-oil-bp-in-limbo-after-canada-freezes-arctic-drilling.

oil and gas in the areas in which they hold shared jurisdiction, followed in subsequent years by percentage reductions in that total.

Legislative Framework for Fossil Fuel Exports
Under section 91(2) of the *Constitution Act of 1867*, the Federal Government has the constitutional jurisdiction to regulate trade and commerce. Because of the broad wording, the Supreme Court of Canada restricted the 91(2) to specific areas of trade and commerce, in particular the international trade.[124] This includes the export and imports of fossil fuels from and to Canada.

The two laws that regulate export of fossil fuel are *National Energy Board Act* and the *Export and Import Permits Act*.

Federal governments regulate exports and imports primarily through the permits issued through the *Exports and Imports Permits Act*.[125] One specific provision in the Act allows for the establishment of a control list. This includes a list of goods and technologies established by the Governor in Council deemed necessary to control.[126]
(b) To ensure that any action taken to promote the further processing in Canada of a natural resource that is produced in Canada is not rendered ineffective by reason of the unrestricted exportation of that natural resource;
(c) To limit or keep under surveillance the export of any raw or processed material that is produced in Canada in circumstances of surplus supply and depressed prices and that is not a produce of agriculture;

Furthermore, the federal government has the jurisdiction to amend the legislation and delineate various areas where the Minister of Foreign Affairs may or may not issue the import and export permits.[127] The NEB also has the jurisdiction over the export of oil and natural gas. In particular, the NEB "evaluate whether the oil and natural gas proposed to be exported is surplus to reasonably foreseeable Canadian requirements, having regard to the trends in the discovery of oil or gas in Canada."[128] Through this evaluation, the NEB can control the volume of Canada's oil and natural gas imports and exports.

The NEB also regulates the pipelines through which Canada exports fossil fuel.[129] NEB certifies the construction[130] and operation[131] of the pipelines. It also has the power to decide the location of the pipelines. NEB regulates pipeline operations if it connects fossil fuels from provinces or

[124] Reference re legislative jurisdiction of Parliament of Canada to enact the Natural Products Marketing Act, 1934, and The Natural Products Marketing Act Amendment Act, 1935, R. v. Dominion Stores Ltd., [1979] S.C.J. No. 131, [1980] 1 S.C.R. 844 (S.C.C.). See also Fédération des producteurs de volailles du Québec v. Pelland, [2005] S.C.J. No. 19, [2005] 1 S.C.R. 292 (S.C.C.).
[125] *Export and Import Permits Act*, RSC 1985, c E-19
[126] Ibid, s 3(1), (b) and (c).
[127] Ibid, s 7-8.
[128] National Energy Board. (2016). *Canada's Energy Future 2016: Energy Supply and Demand Projections to 2040*. Retrieved from https://www.neb-one.gc.ca/nrg/ntgrtd/ftr/2016/2016nrgftr-eng.pdf.
[129] *National Energy Board Act*, R.S.C., 1985, c. N-7.
[130] Ibid.
[131] Ibid.

Canada to interprovincial or international sources. There are approximately 840,000 km of transmission, gathering and distribution pipelines, which mostly belong to the provinces.[132] Of these pipelines, 117,000km are large diameter transmission lines with 73,000km are federally regulated pipelines.[133] Canadian pipelines connect the Canadian fossil fuel market to the markets in the US.[134] Across the US and Canadian border, there are 70 operating fossil fuel pipelines, 31 oil and 39 natural gas pipelines. All of these pipelines are under the NEB's regulation meaning the NEB can regulate the amount of oil and gas being exported to the US and across Canada through these pipelines. This document later goes into a deeper discussion about the federal government's decisions to approve pipelines.

Magnitude of Fossil Fuel Exports

In 2015, Canada exported 484 000 m^3 of crude oil every day. This is equivalent to 2.9M barrels per day in exports.[135] That same year, Canada exported 76 000 000m^3 of natural gas. In 2014, Canada exported 34 Mt of coal, 90% of which is coking coal (coal that is high in carbon content).[136] In total, the 73,000 km of oil and natural gas pipeline under federal jurisdiction moves over $100 billion of hydrocarbons each year.[137]

Reducing fossil fuel exports

Fossil fuel exported to other countries and combusted there counts as their emissions, not as part of Canadian emissions. However, Canada has moral responsibility for those emissions of fuels originally extracted in this country. One way Canada could contribute to the global effort is to reduce the quantity of fossil fuels it exports. While beyond the scope of this report, such action may have implications the North American Free Trade Agreement. Those would have to be considered, along with implications for provincial revenues, in implementing this recommendation.

Recommendation

3. The Government of Canada should use its regulatory approval power over fossil fuel exports to place a cap on the total of such exports, followed in subsequent years by percentage reductions in that total.

6.3 Trudeau Government Climate Change and Energy Policy

Throughout this report, we call upon the Government of Canada to do more to reduce GHG emissions. However, there is no doubt this government certainly is acting to combat climate change. This sub-section examines the actions and initiatives the Trudeau government has taken

[132] Natural Resources Canada. (2016). *Frequently Asked Questions (FAQs) Concerning Federally-Regulated Petroleum Pipelines in Canada*. Retrieved from http://www.nrcan.gc.ca/energy/infrastructure/5893.
[133] Ibid.
[134] Ibid.
[135] National Energy Board. (2016). *2015 Oil Exports and Imports Summary*. Retrieved from https://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmprdct/stt/crdlsmmr/2015/smmry2015-eng.html.
[136] National Energy Board. (2016). *2015 Oil Exports and Imports Summary*. Retrieved from https://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmprdct/stt/crdlsmmr/2015/smmry2015-eng.html.
[137] Natural Resources Canada. (2015). *Energy Fact Book 2015-2016*. Retrieved from https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/files/pdf/EnergyFactBook2015-Eng_Web.pdf.

on energy and climate policy in two areas - pipeline approvals and the December 9, 2016 Pan Canadian Framework Agreement.

In their 2015 federal election platform, the Liberal Party promised to:

- "…attend the Paris climate conference, and within 90 days formally meet to establish a pan-Canadian framework for combatting climate change"
- "…fulfill our G20 commitment and phase out subsidies for the fossil fuel industry over the medium term"
- "…work in partnership with the United States and Mexico to develop an ambitious North American clean energy and environmental agreement"[138]
- "…create a new Low Carbon Economy Trust with $2 billion in our mandate"

Soon after winning the federal election on October 19, 2015, the Trudeau government attended the Paris climate conference and signed the Paris Climate Accord. At the time it said it was intending to commit Canada to a more stringent target than that of the previous Harper government. At Paris, however, the federal government committed to that same target: a 30% reduction of emissions below 2005 levels by 2030.[139]

The federal government kept one of its election promises and held a First Ministers meeting on March 3, 2016 to discuss a pan-Canadian framework for combatting climate change. The First Ministers released the "Vancouver Declaration on Clean Growth and Climate Change". It should be noted that on December 9, 2015 the First Ministers released a communiqué about this framework. They ended the statement by addressing intergenerational equity and promised the framework would be "…a major step towards building a prosperous, low-carbon future for our children and grandchildren."[140]

However, just weeks after the First Ministers Meeting, the Trudeau government broke a G20 commitment and election promise by locking in subsides for liquefied natural gas until at least 2025.[141]

Then, on September 27, 2016 the Trudeau government approved the Pacific NorthWest Liquid Natural Gas (LNG) project. The Canadian Environmental Assessment Agency has estimated the project will adds roughly 6.5 to 8.7 megatonnes of GHG pollution each year. It increases GHG emissions at the provincial level in B.C. by roughly 8.5% and it increases national GHG emissions by 0.75%.[142] Furthermore, the approval expands an entirely new fossil fuel sector in Canada – the LNG sector. Canadian reliance on and fostering of the oil industry must come to an

---

[138] Liberal Party of Canada. (2015). *Real Change: A New Plan for a Strong Middle Class*, 39-40. Retrieved from https://www.liberal.ca/files/2015/10/New-plan-for-a-strong-middle-class.pdf.

[139] Sagan, Aleksandra. (2015, Dec 10). COP21: Canada's new goal for limiting global warming 'perhaps a dream'. *CBC*. Retrieved from: http://www.cbc.ca/news/technology/climate-change-talks-canada-emissions-goal-1.3357770

[140] Government of Canada. (2015, Dec 9). *Communiqué of Canada's First Ministers*. Retrieved from http://pm.gc.ca/eng/news/2016/12/09/communique-canadas-first-ministers.

[141] Government of Canada. (2016). *Growing the Middle Class*, 221. Retrieved from http://www.budget.gc.ca/2016/docs/plan/budget2016-en.pdf.

[142] Federal government approves liquefied natural gas on B.C. coast with 190 conditions. (2016, Sept 27). *CBC*. Retrieved from http://www.cbc.ca/news/politics/pacific-northwest-lng-project-1.3780758

end if there is hope for mitigating climate change; the last thing to do is to encourage the growth of a new fossil fuel sector.

Although, on October 3, 2016 the federal government announced its plan to have all Canadian jurisdictions price carbon pollution by 2018. They also proposed to have a $50 per tonne tax on carbon emissions by 2022. Nevertheless, estimates by EnviroEconomics show that the reduction in GHG emissions from the carbon pricing mechanism will only deliver one tenth of the reductions needed for Canada to reach our goal for 2030.[143]

On November 21, 2016 the Liberal government presented a plan to phase out coal-powered electricity by 2030. However, Canada already has policies in place to phase it out and we do not currently have a great reliance on coal. The policy provides less than 3% of what is needed to reach our 2030 GHG emission goals.[144]

The potential GHG emission reductions arising from these two mitigation initiatives, if not already offset by the Pacific NorthWest LNG approval will certainly be offset by what the federal government did next. On November 30, 2016 the Trudeau government approved the construction of the Kinder Morgan Trans Mountain and Enbridge Line 3 pipeline. This adds to the estimated 825,000 kilometers of pipelines already existing in Canada, 73,000 kilometers of which is federally regulated.[145] The 1,150-kilometer Kinder Morgan expansion alone will increase oil transportation to the British Columbian coast from 300,000 barrels per day to 890,000 barrels per day. The approval of any pipeline in Canada not only undermines the fight against climate change but also directly aids in progressing climate change. The Liberal Party's 2015 election campaign claims to "…recognize the economic cost and catastrophic impact that a greater-than-two-degree increase in average global temperatures would represent, as well as the need for Canada to do its part to prevent that from happening" are not present in this decision to support the oil industry over the welfare of Canada's environment.[146] The increasing presence of pipelines in Canada has both immediate and future detrimental effects on the environment, climate and people of Canada and the world.

This brings the conversation to a wider discussion about pipelines in general. The danger of pollution is present at all points along the pipeline process: in creation, extraction, and transport. In Alberta, the land affected by the development of tar sands is over 50 times larger than the mining sites themselves. The creation of new pipelines threatens even more of this pristine Canadian environment through clear-cutting, diversion of rivers and mass soil movement.[147] The current Trans Mountain pipeline has reported 78 spills over the last 50 years, resulting in the loss

---

[143] Saxifrage, Barry. (2016, Nov 24). Opinion: Trudeau's carbon tsunami by the numbers. *The National Observer*. Retrieved from http://www.nationalobserver.com/2016/11/24/opinion/opinion-trudeaus-carbon-tsunami-numbers.
[144] Ibid.
[145] Natural Resources Canada. (2014). *Pipeline Safety*. Retrieved from https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/files/pdf/14-0277-%20PS_pipelines_across_canada_e.pdf.
[146] Liberal Party of Canada. (2015). *Real Change: A New Plan for a Strong Middle Class*, 40. Retrieved from https://www.liberal.ca/files/2015/10/New-plan-for-a-strong-middle-class.pdf.
[147] Sierra Club Canada. (2008, February 12). *Tar Sands and the Boreal Forest*. Retrieved from http://www.sierraclub.ca/en/tar-sands/publications/tar-sands-boreal-forest.

of over 40,000 barrels of oil into Canadian land.[148] Experts link exposure to oil spills with a multitude of physical health effects, particularly in the respiratory system, as well as mental health effects.[149] Oil spills can also have a disastrous effect on the plant and wildlife in proximity. The heavy crude oil coming from the Tar Sands physically smothers wildlife while also increasing toxicity to lethal levels.[150] This new pipeline will not only affect the terrestrial ecosystems but also bring over 4 times the number of tankers in the Burnaby inlet, a sensitive marine ecosystem (NPP). Canada cannot take the risk new pipelines present to our delicate ecosystems, to our homes, and to our land.

The true cost of approving new pipelines lies not in the immediate effects it will cause, but in the intensified upstream of greenhouse gas emissions it will produce. Should not one drop of the oil spill from these new pipelines; the disaster they will cause will still be detrimental to Canada's future. As the planet soars towards two-degree warming, we cannot continue to support industries that foster carbon reliance in our economy. The Ministry of the Environment and Climate Change produced a report on the carbon the new Kinder Morgan pipeline will produce stating that if "considering only the 590,000 barrels per day capacity added by the expansion project, the upstream GHG emissions could range from 14 to 17 megatonnes of carbon dioxide equivalent per year".[151] If Canada is to be a leader in reducing carbon emissions, the government must stop supporting the oil industry and turn it's focus to sustainable energy production. Canada's commitment in the 2015 Paris Agreement of a 30% reduction in emissions by 2030 will be incredibly difficult to honour whilst also increasing pipeline activity. The ECCC predicts "GHG emissions from the oil sands could increase from 62 Mt in 2013, to 90 Mt in 2020 and up to 116 Mt in 2030," and that, "the growth in emissions to 2030 is driven largely by growth in the upstream oil and gas sector and, in particular, from the oil sands".[152] Yet, the construction of new pipelines promotes increased activity in the Tar Sands and of fossil fuel use worldwide. The ECCC recommends that these emission projections "must be addressed in some way by new policies mandating dramatic reductions outside the oil and gas sector, and/or by limiting emissions growth in that sector".[153] The Kinder Morgan pipeline alone will increase carbon into the atmosphere every year that exceeds all of British Columbia's carbon cutting measures to date, four times over.[154] Furthermore, the approval of new pipelines locks Canada into a fossil fuel reliant economy for the 50+ year life of this infrastructure. Directing government spending

[148] Conservations for Responsible Economic Development (CRED). (2013, May). *Assessing the risks of Kinder Morgan's proposed new Trans Mountain pipeline*. Retrieved from http://credbc.ca/wp-content/uploads/2013/11/Trans-Mountain-Risks.pdf.
[149] Laffon, Blanca. (2016). Effects of exposure to oil spills on human health: Updated review, *Journal of Toxicology and Environmental Health, Part B,* 19, 105-128.
[150] The International Tanker Owners Pollution Federation Limited (ITOPF). (2011). *Effects of Oil Pollution on the Marine Environment*. Retrieved from http://www.itopf.com/fileadmin/data/Documents/TIPS%20TAPS/TIP13EffectsofOilPollutiononthеMarineEnvironment.pdf .
[151] Environment and Climate Change Canada. (2016, May 19). *Trans Mountain Pipeline ULC – Trans Mountain Expansion Project*, 5. Retrieved from http://www.itopf.com/fileadmin/data/Documents/TIPS%20TAPS/TIP13EffectsofOilPollutiononthеMarineEnvironment.pdf.
[152] Ibid, 17.
[153] Ibid, 17.
[154] Greenpeace. (N.d.) *The Kinder Morgan Pipeline.* Retrieved from http://www.greenpeace.org/canada/en/campaigns/Energy/tarsands/Kinder-Morgan-pipeline/.

towards oil development reduces support for the sustainable energy sector, which Canada should be focusing on.

The oil industry is the way of the past and for a healthy future, Canada must leave it behind. The Trudeau government must stop approving new pipelines to diminish reliance on the oil industry, further support the sustainable energy sector and promote a carbon-free Canada. The Trudeau government's efforts to expand the LNG sector and their pipeline approvals have erased the progress from the few actions they have taken. While they may commend themselves for creating a carbon-pricing plan and trying to phase out coal, the reality is they have done many actions that contribute to climate change. The Trudeau government must to commit to drastic climate mitigation measures and refrain from any further actions that will heavily contribute to our GHG emissions if they are to meet our 2030 emission goals.

Recommendations
4. The Government of Canada should reverse or slow down its plans to expand the LNG sector.

5. The Government of Canada should not issue any new regulatory approvals for interprovincial oil or gas pipeline construction.

We would like to congratulate the Trudeau government and participating provinces for the important step taken on December 9, 2016 of signing the Pan Canadian Framework Agreement. However, the agreement is weakened by the fact neither Saskatchewan or Manitoba have signed. In addition, Saskatchewan plans to take legal action to prevent a federal government carbon price in that province. Another problem is the fact that due to a last minute amendment, unlike other participating provinces BC is not obligated to increase its carbon tax from the current $30 level to the federal backstop level of $50 by 2022. If BC is exempted from the Agreement it is almost certain other provinces will ask for the same treatment.

The Agreement document says that the agreement "when implemented will allow us to achieve Canada's international commitments".[155] However, it does not provide specific data to support that claim. The one clear thing is does say is that "Emissions reductions from the Pan Canadian Framework…" total 89 Mt;[156] the total required to meet the 2030 target is 219 Mt. Accordingly, the Pan Canadian plan only accomplishes 40% of the goal the remainder is to come from is to come from other unspecified "announced" and future "additional" measures (p. 44). Thus we are not sure the Agreement will achieve the 2030 target.

Beyond these issues, the Trudeau government has set the emissions reduction target to 30% below 2005 levels, the same target the Harper government announced. Even if the government reached these levels, the Trudeau government should aim for higher emission reduction goals. One way to achieve these more ambitious reduction levels is by increasing the benchmark carbon price.

[155] Government of Canada. (2016). *Pan-Canadian Framework on Clean Growth and Climate Change*, foreword. Retrieved from https://www.canada.ca/content/dam/themes/environment/documents/weather1/20170125-en.pdf.
[156] Ibid, 44.

Recommendations

6. The Government of Canada should work with the provinces to develop plans for meeting a more ambitious target than the Harper government target of 30% below 2005 levels by 2030.

7. As part of that effort, the Government of Canada should work with the provinces to increase the federal benchmark carbon price for all Canadian jurisdictions from $50 in 2022 to $200 by 2030.

7. The Government of Canada should stop contributing to emissions

The previous section set out policy actions the Government of Canada should take now to reduce Canadian GHG emissions and thereby protect Canadian children from the types of future harms set out above. Since jurisdiction in many of these areas is shared with the provinces, some of the actions recommended in Section 6 will require time to negotiate co-ordinated federal-provincial programs. In some areas, however, such as northern and off-shore oil and gas extraction, the federal government has sole regulatory authority and can act immediately. The ban on Arctic oil drilling announced in December 2016 is an excellent example of the Trudeau government using its own jurisdictional authority to take action as it should continue to do so.

While Section 6 dealt with policy actions the Government of Canada can take to induce *others* to reduce emissions, this section deals with a very different topic – ways in which the Government of Canada *itself* is facilitating emissions. We examine three ways in which this is currently being done. The first is giving subsidies to the airplane manufacturing and oil and gas industries, increasing the ability of those firms to emit greenhouse gases. Subsidy is defined by the Agreement on Subsidies and Countervailing Measures, to which Canada is a member, as provision of a benefit by government through direct transfer of funds; foregone tax revenue; government provision of goods and services other than infrastructure.[157] Secondly, emissions from buildings and vehicles owned and operated by the Government of Canada contribute to total Canadian emissions. Thirdly, to the extent the Canada Pension Plan invests in fossil fuel industries, the activity of those industries and associated increased emissions.

7.1 Giving financial assistance to the airplane manufacture industry

Aviation contributes to roughly 2% of global human-induced CO_2 emissions and is expected to grow to 4.5% by 2020.[158] In 2014, Canadian air carriers used 6.58 billion litres of fuel and emitted 16.987 megatonnes of CO_2 eq.[159] Thus the aviation industry presents the government with bountiful opportunities to reduce its overall emissions. The federal government and Canadian aviation industry have already engaged in efforts to reduce aviation emissions both through the International Civil Aviation Organization (ICAO), and on its own accord though not to the extent necessary to mitigate climate change. This section summarizes the commitments and results the ICAO and Canada have made to aviation emission reductions.

In October 2010, the ICAO Assembly adopted Resolution A37-19, an environmental protection resolution specifically dedicated to climate change in the aviation industry. It establishes the goal to improve global annual average fuel efficiency by 2% every year until 2020 and to stabilize

[157] World Trade Organization. (2016). *WTO Agreement on Subsidies and Countervailing Measures*. Retrieved from https://www.wto.org/english/docs_e/legal_e/24-scm.pdf.
[158] Air Transport Action Group . (2016). *Facts and Figures*. Retreived from http://www.atag.org/facts-and-figures.html.
[159] Government of Canada. (2014). *Canada's Action Plan to Reduce Greenhouse Gas Emissions from Aviation – 2014 Annual Report*. Retrieved from https://www.tc.gc.ca/media/documents/policy/TC_ActionPlanGasEmiss2014-E.pdf.

global net carbon emissions from international aviation from 2020 onwards.[160] Furthermore, it called for states to submit action plans outlining how they hope to alleviate emissions from aviation for which 101 states submitted action plans. Aviation thus became the first transport sector with a shared global commitment to reducing CO_2.[161] At the next ICAO Assembly in 2013, they adopted Resolution A38-18. It invited ICAO states to develop and implement a "basket of measures" to achieve CO_2 emissions, split into four categories: aircraft technologies, operational measures, alternative fuels, and market-based measures. Aircraft technologies refer to technological innovations that may make aircrafts themselves more fuel-efficient. Operational measures refer using better routes and flight methods on the aircraft in order to reduce fuel spent. Alternative fuels refer to the use and development of substitute fuels that are more efficient with greenhouse gasses. Market-based measures primarily refer to the work the ICAO has initiated towards the creation of a global market-based measure (GMBM) for international aviation.[162] At the latest Assembly in October 2016, the ICAO came to an agreement on a GMBM. It is set to begin in 2021 and 66 states, including Canada, representing 86.5% international aviation activities stated intent to join. The GMBM is expected to be mandatory by 2027 and emissions may include carbon-offsetting measures.[163]

The Government of Canada began to act on aviation carbon emissions even before the ICAO's global commitments. In 2005, Transport Canada and the Air Transport Association of Canada (ATAC) agreed to a voluntary target of a 1.1% average annual improvement in fuel efficiency every year until 2012 from the 1990 baseline level. In response to Resolution A37-19 in 2010 the Canadian government formed a joint government-industry working group on Aviation Emissions to share information, best practices, and developed a 2012 action plan for aviation emission reductions. [164] These strides towards aviation sustainability are honourable in their intentions but do not translate to real world emission reductions.

The problem with the ICAO and Canadian emission reduction goals is that they focus more on fuel efficiency than overall emissions. Canada reached an average 1.4% efficiency increase between 2005 and 2014, thus overshooting its 2005 target. Yet, air carriers released 4.2% more emissions in 2014 over 2013. This is due to an increase in the volume of flights for passenger and cargo travel, yet there is little to no discussion about curbing total air travel. Airplane-related emissions are expected to rise until 2030 and beyond due to increased passenger travel.[165]

---

[160] Government of Canada. (2012). *Canada's Action Plan to Reduce Greenhouse Gas Emissions from Aviation – 2012 Annual Report.* Retrieved from http://tc.gc.ca/media/documents/policy/6121_TC_ActionPlanGasEmiss-EN_ACCESS.pdf.

[161] International Civil Aviation Organization. (2016). *Climate Change: Action Plan*. Retrieved from http://www.icao.int/environmental-protection/Pages/action-plan.aspx .

[162] Philippe Novelli. (2014.) *Sustainable Alternative Fuels for Aviation*. Retrieved from http://www.icao.int/Meetings/EnvironmentalWorkshops/Documents/2014-Kenya/6-1_AlternativeFuels-ICAO.pdf .

[163] International Civil Aviation Organization. (2016). *ICAO Assembly achieves historic consensus on sustainable future for global civil aviation*. Retrieved from http://www.icao.int/Newsroom/Pages/ICAO-Assembly-achieves-historic-consensus-on-sustainable-future-for-global-civil-aviation.aspx.

[164] Government of Canada. (2014). *Canada's Action Plan to Reduce Greenhouse Gas Emissions from Aviation – 2014 Annual Report*. Retrieved from https://www.tc.gc.ca/media/documents/policy/TC_ActionPlanGasEmiss2014-E.pdf.

[165]Specific Mitigation Opportunities Working Group. (2016). *Specific Mitigation Opportunities Working Group Interim Report.* Retrieved from http://www.policynote.ca/wp-content/uploads/2016/09/Mitigation-WG-interim-Rpt-2016-06-15.pdf.

The Government of Canada is to be congratulated for recognizing the problem of aviation emissions a decade ago and for the actions it has taken to date. However, it must now take action to end subsidies to the Canadian airplane manufacturing industry. The capital cost of the Canadian airplane fleet is ultimately paid by the tickets purchased by air travellers but this subsidy further reduces the cost of air travel. The lower the travel cost, the greater will be the total volume of air traffic and therefore the volume of associated GHG emissions. By giving subsidy to Canadian airplane manufacturers, the Government of Canada is facilitating greater air travel emissions.

7.1.1 Financial assistance for export sales

Export Development Canada (EDC) is the largest source of Government of Canada subsidy[166]. The EDC provides financial assistance in support of sales by Canadian companies, or their foreign affiliates via: 1) insurance on a variety of business dealings such as trade and investment insurance[167]. 2) financial services such as buyer financing and direct loans[168]. 3) bonding and guarantees such as security guarantees[169]. Collectively, EDC services provide a substantial incentive to purchase aerospace goods from Canadian companies.

These services collectively amount to a substantial subsidy of the aerospace industry. In 2015 alone, the EDC reported exposure as a result of services to the aerospace industry at $8.162 billion. Canada further supports the international sales of Canadian aerospace industry by providing market intelligence, and introducing Canadian companies to foreign buyers.[170]. These subsidies further support an industry that irresponsibly aids in the progression of climate change.

7.1.2 Subsidy to Bombardier

It is difficult to find information on the history of subsidy provided by the Government of Canada to the major Canadian company Bombardier. This is in part due to Bombardier attempts, in federal court, to block multiple Access to Information requests which would highlight their history of loans to the federal government[171].

Bombardier first received funds from the federal government in 1966, totalling $36.9 million (adjusted for inflation in 2015 dollars) in subsidies[172]. According to a report by the Fraser institute, Bombardier has received over $1.1 billion (adjusted for inflation in 2014 dollars) in 48

---

[166] Aerospace Review. (2012). *Volume 1: Beyond the Horizon: Canada's Interests and Future in Aerospace – November 2012.* Retrieved from http://aerospacereview.ca/eic/site/060.nsf/eng/00053.html?Open&pv=1

[167] Export Development Canada. (2016a). *Managing the risks of international trade*.Retrieved from http://www.edc.ca/EN/Our-Solutions/Insurance/Pages/default.aspx

[168] Export Development Canada. (2016b). *Trade Finance Solutions for Canadian Businesses.* Retrieved from http://www.edc.ca/EN/Our-Solutions/Financing/Pages/default.aspx

[169] Export Development Canada. (2016c). *Post Bonds and Guarantees – without tying up your working capital*. Retrieved from http://www.edc.ca/EN/Our-Solutions/Bonding-and-Guarantees/Pages/default.aspx

[170] Ibid

[171] Milke, Mark. (2015). *Quebec's Bombardier bailout is not an investment; it's corporate welfare*. Retrieved from http://www.theglobeandmail.com/report-on-business/rob-commentary/quebecs-bombardier-bailout-is-not-an-investment-its-corporate-welfare/article27081111/.

[172] Ibid.

separate disbursements from the federal government, including two cheques worth $233 (adj.2014) million in 2009[173]. Of the 48 disbursements, 17 (totalling almost $300 million(adj.2014) were government contributions, which need not be repaid. Another $79 million (adj.2014) was given to Bombardier in the form of repayable loans. Majority of the funds given to bombardier however, of approximately $759 million (adj.2014), was given in the form of "conditionally repayable contributions"[174]. If these conditions are met and the business demonstrates profitability, then the business is obligated to start paying back the loan[175]. This potentially implicates that these conditional repayable contributions to Bombardier need not be paid back in full for an extended period of time[176].

Alternatively, Industry Canada has reported that Bombardier has received $1.3 billon (adj 2015) in repayable contributions since 1966 (to 2015), of which it has paid $584.6 million (adj.2015) to date (2015). A source document from Industry Canada shows that the total amount in conditionally repayable contributions given to Bombardier entities between the April 1, 1982 and August 20, 2010 was over $690 million (adj.2010)[177].[5]

Recommendation
8. The Government of Canada should end all subsidies to the airplane manufacturing industry other than those intended to increase efficiency and thus reduce emissions, within its current mandate, that is before 2019.

7.2 Giving financial assistance to the oil and gas industry

A 2010 study done by the Global Subsidies Initiative found that there were a total of 17 notable Canadian federal subsidies to the oil and gas industry operating in Alberta, Saskatchewan, and Newfoundland and Labrador in the taxation year 2008.[178] Of these, 10 programs were in the form of direct or indirect transfer of funds, while the other 7 programs were government revenue foregone such as reduced tax payable, otherwise known as tax expenditures[179]. Information supplied by the Department of Finance of the Canadian federal government revealed that the majority of the federal subsidies consisted of foregone tax revenues - approximately 84 to 85

[173] Milke, Mark. (2014). *Bombardier and Canada's Corporate Welfare Trap*. Retrieved from http://www.huffingtonpost.ca/mark-milke/bombardier-corporate-welfare-trap_b_4705751.html.
[174] Milke, Mark. (2013). *Mark Milke: Grants still count as corporate welfare*. Retrieved from http://news.nationalpost.com/full-comment/mark-milke-grants-still-count-as-corporate-welfare
[175] Small Business Grants Canada. (2016). *Conditionally Repayable Contribution*. Retrieved from http://www.canadagovernmentgrants.org/conditionally-repayable-contribution.php.
[176] Milke, Mark. (2013). *Mark Milke: Grants still count as corporate welfare*. Retrieved from http://news.nationalpost.com/full-comment/mark-milke-grants-still-count-as-corporate-welfare.
[177] Owram, Kristine. (2016). *How Bombardier Inc suppresses information about how much government funding it receives*. Retrieved from http://business.financialpost.com/news/transportation/how-bombardier-inc-suppresses-information-about-how-much-government-funding-it-receives.
[178] Sawyer, D., Stiebert, S., and EnviroEconomics Inc. (2010) "Fossil Fuels - At What Cost? Government support for upstream oil activities in three Canadian provinces: Alberta, Saskatchewan, and Newfoundland and Labrador." *The Global Subsidies Initiative*, November 2010.
[179] Ibid, 40.

percent of the total value of the subsidies examined. [180], The GSI reports states that total federal government subsidy to the industry in the year 2008/09 were in the amount of $1,380,000,000.[181]

The Fall 2012 report of the federal Commissioner of Environment and Sustainable Development, provided a total of $508 million in direct spending to the fossil fuel sector over the five-year period 2007-08 to 2011-12 fiscal years inclusive. Approximately half was devoted to clean technology. Finance Canada provided the Commissioner with an estimate of $1,470,000,000 of foregone revenue over the five-year period 2006-07 to 2010-11.[182] Below, various similar studies outline similar subsidy estimations.

- A CESD study found that from 1996 to 2002, the federal government spent about $8.3 billion on subsidies to the oil and gas industries. The federal government directly spent $166 million, and $227 million was spent on program expenditures to the energy sector. A variety of tax expenditures constituted the remaining amount, equalling about $7.93 billion during the period covered by the study.[183]
- A review of federal subsidies to the energy sector between 1970-71 and 1998-99 by the CESD found that federal direct spending on non-renewable sources of energy was $40.4 billion, from 1970-99, but the study did not calculate for tax expenditures, which would have far exceeded the amount of direct spending.[184]
- A 2001 Department of Finance study provided an estimate of the tax expenditures associated with oil sands development. It calculated and projected expenditure from 1996 to 2010. As its concern was largely with the implications of tax expenditures as government support for the energy sector, it did not calculate direct spending. Its findings were as follows; 1) ACCA (Accelerated Capital Cost Allowance): $478 million; 2) Resource Allowance: $1.16 billion; 2) Royalty Non-Deductibility: -$1.01 billion; 4) CDE/CEE (Canadian Development and Exploration Expenses): $120 million.[185]
- A 2005 Pembina Institute study detailed a program of "huge corporate welfare" where large sums of public money are supporting the energy sector through subsidies and direct spending. It found $1,446 million was spent in 2002 alone on non-renewable sources of energy. There was also a 33% increase in spending from 1996 to 2000. From 1996 to 2002, total expenditures were estimated to be t$8,324 million.[186]

---

[180] Ibid, 40.
[181] Ibid, 29.
[182] Commissioner of Environment and Sustainable Development. (2012). A Study of Federal Support to the Fossil Fuel Sector. *Office of the Auditor General of Canada*. Retrieved from: http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201212_04_e_37713.html.
[183] KAIROS: Canadian Ecumenical Justice Initiatives. (2007, Nov 12). "Subsidies to the Oil and Gas Industry and Federal Initiatives for Greenhouse Gas Emission Reductions," *Petition No. 222 to Interim Commissioner of the Environment and Sustainable Development.* Retrieved from http://www.oag-bvg.gc.ca/internet/English/pet_222_e_30317.html.
[184]Commissioner of the Environment and Sustainable Development. (2000). "Government Support of Energy Investments," Report of the Commissioner of the Environment and Sustainable Development. *Office of the Auditor General of Canada*. Retrieved from: http://www.oagbvg.gc.ca/internet/English/parl_cesd_200005_03_e_11230.html
[185] Ketchum, K., Lavigne, R., Plummer Reg. (2001)."Oil Sands Expenditures," Department of Finance Working Paper. Retrieved from: http://publications.gc.ca/collections/collection_2008/fin/F21-8-2001-17E.pdf
[186]Taylor, A., Bramley, M., Winfield, M. (2005). "Government Spending on Canada's Oil and Gas Industry." Pembina Institute, Drayton Valley, Alberta. Retrieved from: https://www.pembina.org/reports/GovtSpendingOnOilAndGasFullReport.pdf

- An undated Natural Resources Canada report states that, indirect spending through tax deductions and exemptions totalled to $928 million in 2009. Government support of exploration ventures in 2011 was $284 million through tax deductions. In 2012, the Government of Canada provided $30 million in direct funding for the exploration, research and development of fossil fuels.[187]

Additionally, a 2014 report by Oil Change International provides this picture of current subsidies. [188]

- The Canadian government offers a variety of subsidies for currently operating fossil fuel companies, and for future fossil fuel exploration. Majority of subsidies are in the form of tax deductions and exemptions, totalling $928 million.
- Canadian exploration expense allows oil, gas, and mining companies can fully deduct their exploration expenses, including exploratory drilling and geological surveys, totalling an estimated $214 million. Any unclaimed deductions can be carried forward indefinitely. (Time Frame: 2009)
- Exploration ventures that do not turn a significant profit are allowed to pass explorations expenses on to their investors, who then can deduct from their personal income taxes. The subsidy of $284 million encourages investment in exploration to take advantage of this tax deduction. (Time Frame: 2011)
- There is further encouragement to invest in that the profits of exploration of limited partnerships are taxed as capital gains, at only half the rate of regular income tax.
- The earned depletion allowance to promote resource exploration and development, worth $9 million in 2011 was phased out in 1990. However companies continue to claim expense from before that year. It allows companies a 33.3% deduction of certain expenses. (Time Frame: 2011)
- The Canadian oil and gas property expense allows companies to take a 10% deduction for the costs of acquiring oil and gas well rights.
- The Accelerated Capital Cost Allowance (ACCA) for the tar sands projects costs the government $276 million by allowing companies to deduct 100% of asset costs. However there is a plan to phase this out between 2011-2014. (Time Frame: 2007-2011)
- The Atlantic Investment Tax Credit is worth $115 million each year through tax credits for certain oil, gas, and mining investments, including exploration activities. There will be a full phase-out by 2017, however a tax credit rate of 5% will continue to apply to assets acquired through 2015, and companies will still be able to benefit from it until 2017. (Time Frame: 2012)
- On top of tax incentives the Government of Canada also provides $30 million in direct funding each year for the exploration of fossil fuels and research and development. (Time Frame: 2012)

As can be seen, because of differing definitions and methodologies there is no unanimity in the existing publicly available literature on federal subsidies to the industry. However, what we can say is that: 1) they exist; and, 2) they are not insignificant amounts.

[187]Natural Resources Canada. *Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation*. By Donald S. Lemmen. N.p.: n.p., n.d. Print.

[188] Shakuntala, M. (2014).“Unburnable Carbon: Taxpayer Support for Fossil Fuel Exploration in G7 Nations.” Washington D.C.: Oil Change International, 2014. Print.

7.2.1 The Liberal promise to end these subsidies

In 2009 at the Pittsburgh G20 Summit, the Stephen Harper government agreed to the G20 commitment to "rationalize and phase out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption." Canada and other G20 members reaffirmed this goal in 2013 at the St. Petersburg G20 summit.[189] The 2015 election platform the Trudeau Liberals provided this commitment: "We will fulfill our G20 commitment and phase out subsidies for the fossil-fuel industry over the medium-term."[190] After taking office, the Trudeau government stated that it defined "medium-term" as meaning by 2025. The 2016 Budget tabled on March 22, 2016, locked in a liquefied natural gas subsidy until at least 2025. Companies will be allowed to write off 30% of the cost of equipment and 10% of the cost of buildings. Furthermore, the budget says nothing about phasing out subsidies to any area of the oil and gas industry.[191]

On April 19th, 2016, during the Standing Committee on Environment and Sustainable Development, NDP MP Nathan Cullen said to The Minister of Environment and Climate Change Catherine McKenna, "Your party committed to removing the subsidy to oil and gas…Yet budget 2016 locks in those very same subsidies until 2025." Catherine McKenna responded, by defending the Canadian Government's commitment to phase out fossil fuels stating, "We are looking at how we can eliminate fossil fuel subsidies… You can't bend a curve overnight."[192]

The Trudeau government then confirmed that it defined "medium-term" as meaning by 2025 – ten years after the date of its election promise - at the North American Leaders' Summit that took place in on June 29th, 2016. In the Leaders' Statement on a North American Climate, Clean Energy, and Environment Partnership, Canada alongside Mexico and the U.S. said "We commit to phase out inefficient fossil fuel subsidies by 2025 and call on the other members of the G-20 to do the same."[193]

In September of 2016 at the 2016 G20 Summit in Hangzhou, China, the Federal Government reaffirmed its commitment to the phase out, but again using the term "inefficient" fossil fuel subsidies. [194] Use of that term, of course, allows some subsidies to remain. The 2009 G20

[189] Kirsch, Alison and Roberts, Timmons. (2014, Nov 14). Ghosts of Resolutions Past: the G20 Agreements on Phasing Out Inefficient Fossil Fuel Subsidies. *The Brookings Institution.* Retrieved from https://www.brookings.edu/blog/planetpolicy/2014/11/14/ghosts-of-resolutions-past-the-g20-agreement-on-phasing-out-inefficient-fossil-fuel-subsidies/.
[190] Liberal Party of Canada. (2015). *Real Change: A New Plan for a Strong Middle Class*, 40. Retrieved from https://www.liberal.ca/files/2015/10/New-plan-for-a-strong-middle-class.pdf.
[191] Government of Canada. (2016). *Growing the Middle Class*, 221. Retrieved from http://www.budget.gc.ca/2016/docs/plan/budget2016-en.pdf.
[192] Government of Canada (2016, April 19). *Standing Committee on Environment and Sustainable Development*, 7. Retrieved from http://www.parl.gc.ca/content/hoc/Committee/421/ENVI/Evidence/EV8202107/ENVIEV11-E.PDF.
[193] Government of Canada. (2016, June 29). *Leader's Statement on a North American Climate, Clean Energy, and Environment Partnership*. Retrieved from http://pm.gc.ca/eng/news/2016/06/29/leaders-statement-north-american-climate-clean-energy-and-environment-partnership.
[194] http://news.nationalpost.com/news/canada/canadian-politics/canada-recommits-itself-to-ending-fossil-fuel-subsidy-with-g20-agreement-but-attaches-no-timeline

statement refers to "inefficient subsidies" but the election platform simply said "subsidies for the fossil fuel industry".[195]

There is no mention of plans to phase out oil and gas subsidies in reports by any of the four federal-provincial working groups that were discussed in the March 2016 Vancouver Declaration on Clean Growth and Climate Change.[196]

Additionally, the Pan-Canadian Framework on Clean Growth and Climate Change was released on December 9th, 2016 and is meant to be a "developed with the provinces and territories and in consultation with Indigenous peoples – to meet our emissions reduction target and grow the economy."[197] Yet, the Pan-Canadian Framework itself gives no plan to phase out fossil fuels subsidies. In fact, the single time it mentions phasing out subsidies is in reference to the September 2016 G20 Commitment and the North American Leaders Summit commitment under the section, "Other Recent Federal Measures."[198]

Thus, the current status of the Trudeau government's promise to end fossil-fuel subsidies is as follows:

- It will not happen during this mandate, before the next federal election in 2019;
- Since we cannot predict the result of that election, there is no guarantee it will ever happen;
- The promise has been weakened by adding the term "inefficient";
- The promise was not incorporated into the Liberals major climate initiative to date, the December 9, 2016 Pan-Canadian Framework Agreement.

Essentially, the Liberal government has broken its promise to end fossil-fuel subsidies.

Recommendation

9. The Government of Canada should immediately implement the 2015 Liberal Party election platform commitment to phase out subsidies for the fossil fuel industry "over the medium-term" - that is within its mandate, before 2019. This includes subsides to the liquid natural gas (LNG) sector.

7.3 Emitting greenhouse gases itself

Government of Canada GHG emissions come mostly from its 30,000 buildings, owned or leased, and 16,000 on-road vehicles. The government is committed to reducing emissions associated with buildings by energy audits and building retrofits.

[195] Liberal Party of Canada. (2015). *Real Change: A New Plan for a Strong Middle Class*, 40. Retrieved from https://www.liberal.ca/files/2015/10/New-plan-for-a-strong-middle-class.pdf.
[196] Government of Canada. (2016, June). *Working Group on Carbon Pricing Mechanisms Interim Report.* Retrieved from http://www.policynote.ca/wp-content/uploads/2016/09/Carbon-Pricing-WG-Interim-Report-20160615.pdf
[197] Government of Canada. (2016). *Pan-Canadian Framework on Clean Growth and Climate Change*. Retrieved from https://www.canada.ca/en/services/environment/weather/climatechange/pan-canadian-framework.html.
[198] Ibid, 50.

Under the Sustainable Development Act, the federal Sustainable Development Office of Environment Canada publishes and implements the Federal Sustainable Development Strategy. An important part of that strategy is the objective of reducing the environmental impact of the federal government's own operations, such as energy used to heat and cool buildings and to power the vehicle fleet. Under the 2016–2019 FSDS, the Government has set these targets for reduction of its own emissions: [199]

- Reduce by 17% below 2005 levels by 2020;
- Reduce by 40% below 2005 levels by 2030 (with an aspiration to achieve by 2025).

The first is presumably based on Canada's commitment to the Copenhagen accord Canada, which was a commitment to reduce total GHG emissions by 17% below 2005 levels by 2020. Outlined in the initial 2010 FSDS, the government committed to reduce emissions for its own operations by 17% below 2005 levels by 2020 to match country levels.[200] This number was maintained in the 2013 FSDS, with a minor clarification of goals, whereby the government would reduce the GHG emissions of its buildings and fleets by 17% below 2005 levels by 2020.[201] In the most recent strategy the Government of Canada has changed its target, stating it's new goal is now to reduce GHG emission by 40% by 2040, with an aspiration of reaching this goal by 2025(Government of Canada, 2016). This aspiration is contingent on capital investment. Currently, Canada has reduced its GHG emissions by 4.6%, which has recently been revised to 15%, based on "internationally accepted best practises in accounting for GHG emissions".[202] This new number is likely to be the one referenced by the government moving forward. Such a substantial recalculation wholly obfuscates the meaning of previous and existing targets, as well as current progress. For consistency, the government should either retain usage of its original methodology, or submit its current methodology to transparent and independent scientific review. The government should also be held to its previous commitments to achieve a reduction of 17% GHG emissions by 2020.

Recommendation

10. The Government of Canada should accelerate plans to reduce its own emissions from its buildings and motor vehicles, in order to achieve its goal of reducing to 17% below 2005 levels by 2020 and reducing to 40% below 2005 levels by 2025.

---

[199] Environment and Climate Change Canada. (2016). *Achieving a Sustainable Future*, 22. Retrieved from https://www.ec.gc.ca/dd-sd/CD30F295-F19D-4FF9-8E03-EAE8965BE446/3130_FSDS_Eng_FINAL.pdf.

[200] Environment Canada. (2010). *Planning for a Sustainable Future*: *A Federal Sustainable Development Strategy for Canada*, 20. Retrieved from https://www.ec.gc.ca/dd-sd/F93CD795-0035-4DAF-86D1-53099BD303F9/FSDS_v4_EN.pdf.

[201] Environment Canada. (2013) *Planning for a Sustainable Future*, 24. Retrieved from https://www.ec.gc.ca/dd-sd/A22718BA-0107-4B32-BE17-A438616C4F7A/1339_FSDS2013-2016_e_v10.pdf.

[202] May, Kathryn. (2016, November 3). Low-carbon government promised by 2025, *Ottawa Sun*. Retrieved from http://www.ottawasun.com/2016/11/02/low-carbon-government-promised-by-2025.

7. 4 Canada Pension Plan investments in fossil fuel industries

For some time now, students have been calling upon their universities to no longer put endowment fund investments in fossil-fuel industries. They argue universities should do this in part for self-interested reasons, since climate change policy is making fossil fuel investment increasingly risky. More importantly, they argue is the moral argument that universities should not give financial support to an industry that is endangering the planet. He we apply that same argument to Government of Canada investments, made through the Canadian Pension Plan (CPP).

Current CCP fossil fuel investments

The Canadian Centre for Policy Alternatives in late 2015 stated that: "at the end of 2012, CPP investments included $2.9 billion in fossil fuel companies out of $13 billion in all Canadian equities, and $2.4 billion out of $43 billion in all foreign equities".[203] The Centre says that these numbers are probably underestimates as CPP holds, in large proportion, private equities. The Canadian Pension Plan Investment Board's (CPPIB's) private equity section is extremely focused on the fossil fuel sector.[204] CPPIB has investments in more than 30 coal polluting companies.[205]

Furthermore, there seems to be few signs of switching paths. On September 30, the CPPIB announced plans to invest a further $1 billion of savers' money into western Canadian fossil fuel production.[206] It announced the formation of a new partnership with Wolf Infrastructure Inc. to establish a "midstream energy infrastructure vehicle." Wolf's role will be to help the vehicle acquire and develop infrastructure (including pipelines) for the natural gas, oil and natural gas liquids production industries. [207] In the statement, CPPIB Managing Director, Head of Natural Resources Avik Dey explains ""As a long-term investor, we see midstream as an attractive sector given the significant investment required in Western Canada to support growth in natural gas and natural gas liquids production in new areas,"[208] This approach of seeking to build the fossil fuel sector though investment, contradicts the position of environmentalists that the industry already has too much product (in terms of existing reserves), and thus needs to be shrunk (not developed) for consensus global climate targets to be met.

---

[203] Canadian Centre for Policy Alternatives. (2015*). Pension Funds and Fossil Fuels: The Economic Case for Divestment.* Retrieved from: https://www.policyalternatives.ca/sites/default/files/uploads/publications/National%20Office%2C%20BC%20Office/2015/11/Pension_Funds_and_Fossil_Fuels.pdf

[204] Stewart, H. (2016, August 8). The Canada Pension Plan's love affair with big oil. *National Observer.* Retrieved from: http://www.nationalobserver.com/2016/08/01/news/canada-pension-plan-shell-companies-and-busiest-man-canada

[205] Fillmore, Nick. (2016, November 4). Canada Pension Plan Knee-Deep in Unethical Fossil Fuel Stocks. *The Huffington Post*. http://www.huffingtonpost.ca/nick-fillmore/canada-pension-plan-fossil-fuels_b_12913508.html.

[206] Stewart, Hamish. (2015, October 9). Canadian pension funds bet on a high-carbon future. *National Observer*. http://www.nationalobserver.com/2015/10/09/opinion/canadian-pension-funds-bet-high-carbon-future.

[207] Canadian Pension Plan Investment Board (cppib). (2015, September 30). *Wolf Infrastructure and Canada Pension Plan Investment Board Sign Agreement to Establish Midstream Energy Infrastructure Vehicle in Western Canada* [News Release]. Retrieved from http://www.cppib.com/en/public-media/headlines/2015/cppib-wolf-2015.html

[208] Ibid.

Other fossil fuel-related assets held by the CPP include Private equity investments in, for instance, the EnCap Energy Capital Fund IX-C, an energy sector investment fund that "invests in companies engaged in acquisition and exploitation of oil and gas reserves, the development of low-risk drilling opportunities in known producing regions and/or the application of advanced drilling and completion technologies to conventional and unconventional reservoirs in the United States and Canada,"[209] and the Quantum Energy Partner Fund VI [210]

The CPP also has numerous shares in publically traded fossil fuel companies including: Advantage Oil and Gas, Bankers Petroleum, Bonterra Energy Company, Canadian Natural Resources Limited, Cenovus Energy Inc., Crescent point Energy Co.,Gibson Energy Inc., Gran Tierra Energy Inc., Imperial Oil Ltd., Interoil Corp, MEG energy corp., Spartan Energy Corp Suncor Energy Inc, TORC Oil & Gas Ltd. Tourmaline Oil Corp, TransAlta, TransCanada, Transglobe Energy Corporation, , Vermillion Energy,[211] Exxon Mobil, British Petroleum, ConocoPhillips, Royal Dutch Shell (PLC A and PLC B), Chevron Corp, Marathon Oil Corp, oil search Ltd. Etc.[212]

Actions being taken by CPPIB

The Canada Pension Plan Investment Board (CPPIB)is an arms-length crown corporation that has holdings in real-estate and shares in privately and publicly-traded corporations.[213] According to section 5 of the CPPIB act, the board's objects include "to manage any amounts transferred to it under section 108.1 of the Canada Pension Plan, and its right, title or interest in any designated securities, in the best interests of the contributors and beneficiaries under that Act" (subsection 2) and "to invest its assets with a view to achieving a maximum rate of return, without undue risk of loss, having regard to the factors that may affect the funding of the Canada Pension Plan and the ability of the Canada Pension Plan to meet its financial obligations on any given business day." (subsection 3) [214] Section 6 of the act clarifies the CPPIB "shall not, directly or indirectly, carry on any business or activity or exercise any power that is inconsistent with the Board's objects".[215]

---

[209] Bloomberg. (2016). *EnCap Energy Capital Fund VIII, L.P.: Private Company Information*. Retrieved from http://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=99160328

[210] Canada Pension Plan Investment Board (cppib). (2016). *Private Equity Relationships Established as of June 30, 2016.* Retrieved from http://www.cppib.com/documents/1118/Q2_2017_Private_Equity_Relationships.htm.

[211] Canada Pension Plan Investment Board (cppib). (2016). *Canadian Publicly-Traded Equity Holdings As of March 31, 2016*. Retrieved from http://www.cppib.com/content/dam/cppib/What%20We%20Do/Our%20Investment/Q4%202016%20Canadian%20Public%20Equity%20Holdings%20(EN).htm

[212] Canada Pension Plan Investment Board (cppib). (2016). *Foreign Publicly-Traded Equity Holdings As of March 31, 2016*. Retrieved from http://www.cppib.com/content/dam/cppib/What%20We%20Do/Our%20Investment/Q4%202016%20Foreign%20Public%20Equity%20Holdings%20(EN).htm

[213] Canadian Pension Plan Investment Board (cppib). (2016). *Our Investments*. Retrieved from http://www.cppib.com/en/what-we-do/our-investments.html

[214] Government of Canada Justice Laws. (1997). *Canada Pension Plan Investment Board Act, §5 (a)-(b) (2014).* Retrieved from http://laws-lois.justice.gc.ca/eng/acts/C-8.3/page-1.html#h-5

[215] Ibid, s 6(2).

The CPPIB applies ESG (Environmental, Social and Governance) factors as criteria in its investment decisions, but does not "eliminate[e] investments based on ESG factors alone."[216] The absence of criteria specifically related to climate change means that even if it did eliminate investments based on ESG factors there is no guarantee it would divest from fossil fuels. The CCPIB's ESG statement does not appear to take the problem of "unburnable carbon assets" into consideration. "Unburnable assets" is a term used, by amongst others bank of England head Mark Carney, who argues that fossil fuel reserves can be bad investments given that meeting global climate change targets will means leaving significant amounts of known reserves (80% according to 350.org's "Do the Math" campaign)[217] in the ground.[218]

In 2015, the CPPIB established the Climate Change Working Group used to review their investment and asset management practices while considering climate change risks and opportunities.[219] As well, Stephanie Leaist, the Head of Sustainable Investment in the CPPIB is in the Advisory board group of Hermes Equity Ownership Services, a collaborative engagement platform, which claims to offer a platform so their ESG activities can spread across other public equity portfolio companies.[220] Hermes EOS has worked with CPPIB on initiatives and has cofiled climate change-related shareholder proposals with the Aiming for A coalition. CPPIB, a founding member of Focusing Capital in the Long-Term (FCLT), in collaboration with Dow Jones Indices and RobecoSAM, created the S&P Long-Term Value Creation index in companies that bases long-term value and sustainability and financial-quality criteria. It has invested $1 billion dollars in this Index.[221]

While the activities relating to ethical investing within CPPIB, especially in the past year, are heading in the right direction, not enough has been done. Referring back to its mandate, the CPPIB maintains its anti-divestment position that keeping existing oil and gas and mining related investments is better than selling all holdings because they have "more power impact as a responsible, engaged owner that presses for change."[222]

What can the Government of Canada do?
The Government of Canada could amend the Canadian Pension Plan Investment Board Act to require an end to fossil fuel investment but only with consent from "two-thirds of the

[216] Canada Pension Plan Investment Board (cppib). (2015). *Report on Sustainable Investing*. Retrieved from http://www.cppib.com/documents/11/CPPIB_Sustainable_Investing_2015.pdf
[217] Do the Math. (2016). *Do The Math*. Retrieved from http://math.350.org/.
[218] Carney, M. (2015, September 29). *Breaking the tragedy of the horizon - climate change and financial stability - speech by Mark Carney given at Lloyd's of London*. Retrieved from http://www.bankofengland.co.uk/publications/Pages/speeches/2015/844.aspx.
[219] Canadian Pension Plan Investment Board (cppib). (2016). *Addressing climate change for contributors and beneficiaries.* Retrieved from http://www.cppib.com/content/dam/cppib/How%20we%20invest/Responsible%20Investing/11141%20CPPIB%20Climate%20Change_Final.pdf.
[220] Canadian Pension Plan Investment Board (cppib). (2016). *2016 Annual Report: Corporate Profile.* Retrieved from http://www.cppib.com/content/dam/cppib/Our%20Performance/Financial%20results/CPPIB%20F2016%20Annual%20Report%20-%20ENGLISH%20(May%2019,%202016).pdf.
[221] Ibid.
[222] Ibid.

participating provinces representing two-thirds of the population."[223] As set out above, the focus of this secure is upon actions the Government of Canada can take now to stop facilitating emissions, by itself, without need for provincial agreement. Accordingly, we recommend that the Government of Canada issue a statement now recommending that the CPPIB give greater priority to climate change as its applies its ESG criteria.

Recommendation

11. The Government of Canada should urge the Canada Pensions Plan Investment to divest its fossil fuel investments.

[223] Canadian Pension Plan Investment Board (cppib). (2016). *Legal & Regulatory.* Retrieved from: http://m.cppib.com/en/who-we-are/governance-overview/legal-regulatory/.

8. Conclusion

In summary, we have shown here that the physical nature of climate change means that emissions today will have serious consequences for Canadian children in a future year such as 2050. This violates Canadian values concerning the need to protect our children. The Government of Canada has an obligation to act to protect those children, because of Canadian international commitments and also under the Charter of Rights and Freedoms. It is to be congratulated on the actions it has taken. Now it must meet its legal obligations and do more.

Recommendation
12. In recognition of its moral and legal obligations, the Government of Canada should take these and all other steps necessary to protect Canadian children from future climate change impacts.