Canada's Oil & Gas Challenge

A Summary Analysis of Rising Oil and Gas Industry Emissions in Canada and Progress Towards Meeting Climate Targets

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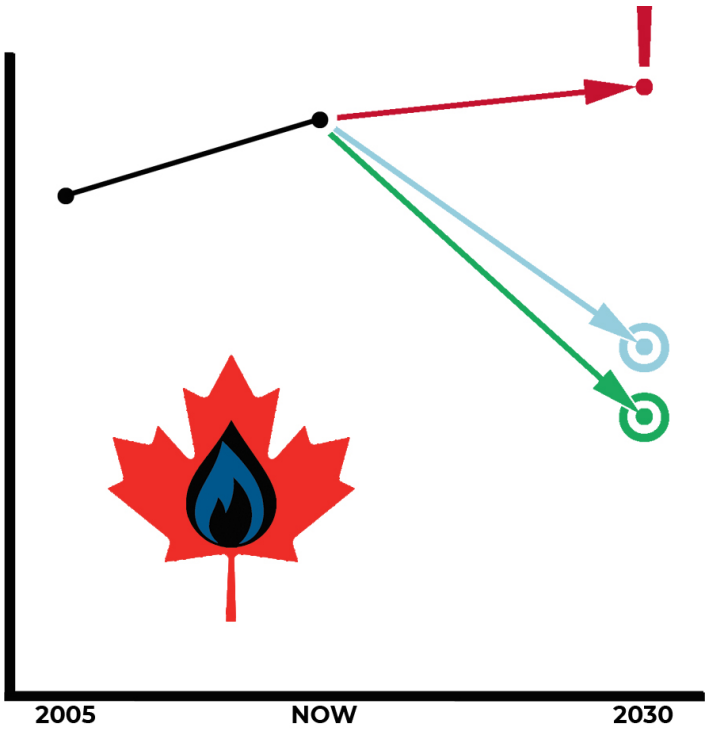

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Executive Summary

Canada's existing 2030 greenhouse gas (GHG) reduction target under the Paris Agreement is highly insufficient. As such, it is welcome that Canada's Environment and Climate Change Minister has committed to strengthen it. However, the level of ambition and action will have to be at least doubled for Canada to be in line with what the latest science suggests is required to avoid catastrophic impacts from climate change.

The current growth trajectory for oil and gas production in Canada is wholly inconsistent with the country meeting even its existing target.

This is the problematic contradiction that exists within Canada. On the one hand, federal and provincial governments want to be seen as climate leaders, and on the other hand have introduced policies, spent billions of taxpayer dollars, and used significant political capital to facilitate and support the continued expansion of oil and gas production.

The oil and gas sector is the largest and fastest growing source of GHG emissions in Canada. Because policies to adequately address these emissions have not been a major part of Canada's Pan-Canadian Framework on Clean Growth and Climate Change (PCF), any emission reductions from the plan are predicted to be overwhelmed by increased emissions from expanded production of oil and gas.

Canada should be doing much more than its current target. The Intergovernmental Panel on Climate Change (IPCC) Special Report on 1.5 degrees highlights the many reasons for limiting warming to that temperature. They state that the additional global impacts that will occur between 1.5 degrees and 2 degrees Celsius of average global warming significant and dire, potentially beyond the point where changes are irreversible. It is why the Canadian government supported and even fought for the reference to a 1.5 degree limit in the Paris Agreement.

In contrast to allowing increased production and GHG emissions from Canadian oil and gas, the IPCC estimates that global oil production needs to shrink by 37% by 2030 and by 87% by 2050 (all reductions are from 2010

baselines). Natural gas production must decline by 25% by 2030 and 74% by 2050.[1]

GHG reductions for Canada's 2030 Paris Agreement target would therefore have to be at least doubled (from -30% to -60% below 2005 by 2030) in order for Canada to take on the same emission reductions as the global average under the safest IPCC 1.5 degree scenario. That's because, contrary to industry claims, the average carbon intensity of Canadian oil has gradually increased from 1990 until 2016 (latest available data).

Under the Canadian government's current plan, by 2030 oil and gas will be responsible for 38% of Canada's total emissions. This in turn would force steep cuts in other sectors, and provinces without oil and gas development.

The Canadian climate framework has some ambitious policies to reduce, and in some cases eliminate, GHGs from emitting sectors, including coal power, road transportation, and buildings. But the federal and provincial governments have proposed much less for the upstream oil and gas sector. As the industry faces stiff headwinds due to high cost structures, low oil and gas prices, and opposition from First Nations and Canadian citizens, governments have facilitated and supported oil and gas expansion. Significant, new government subsidies totaling in the billions of dollars have been introduced by the federal, Alberta, and British Columbia governments.

The Alberta government has increased the already billions of dollars it extended in subsidies to oil and gas companies. It has also weakened regulatory oversight in several ways. Despite commitments to the contrary, Alberta has failed to pass regulations to cap GHG emissions from oil sands projects. It has accepted the oil sands industry's plans, which violate the government's own framework, by allowing continued increases in the volume of tailings ponds and delaying land reclamation by up to a century.

The oil and gas industry is aggressively lobbying Ottawa to weaken government policies on climate change. The industry has actively attempted to weaken, kill, or delay an improved environmental impact assessment for energy projects, the federal Clean Fuel Standard, methane regulations at the federal and provincial levels, and carbon pricing.

Canada appears intent on finally addressing climate change and building a low carbon economy, but the idea that this can be done without extensive cuts in oil and gas production is a fallacy. The solution for Canadian governments is to take seriously the IPCC Special Report on 1.5 degrees, and implement policies that will get Canada on a low carbon trajectory by 2030 and to a zero carbon goal by 2050. That would include:

- Implementing policies that restrict the supply of oil and gas from Canada, including a climate test for new energy projects, the retirement of approved licenses, and the near-term elimination of all fossil fuel subsidies
- Developing a just transition strategy for workers and communities in all fossil fuel sectors that is based on production levels aligned with achieving a zero carbon goal by 2050
- Strengthening climate policies including methane regulations, carbon pricing, and measures to reduce emissions in emitting sectors such as transportation and buildings
- Developing an accountability mechanism that tracks progress on climate action and ensures course corrections
- Fully implementing the U.N. Declaration on the Rights of Indigenous Peoples

Chapter 1: Avoiding dangerous impacts of climate change

The urgency of acting quickly and decisively on climate change was reiterated and strengthened with the release in October 2018 of the Intergovernmental Panel on Climate Change's (IPCC) special report on 1.5 degrees.[2] The special report highlights the many reasons for the international community "to pursue efforts to limit the temperature increase even further to 1.5 degrees," as articulated in the Paris Agreement.[3]

CANADA'S CURRENT CLIMATE PLAN DOES NOT MEET THE NEW IPCC REPORT RECOMMENDATIONS IN ORDER TO LIMIT TEMPERATURE RISE TO 1.5 DEGREES

Though the global impacts and their costs will continue to mount as warming continues, the impacts that occur as the planet warms from 1.5 degrees to 2 degrees are very significant. To name a few:[4]

- The most disadvantaged people on earth face the greatest impacts, and an additional "several hundred million" would be both exposed to climate-related risks and susceptible to poverty by 2050
- Water stress increases by 50% globally
- Food availability is more precarious because of reduced crop yields, impacts on livestock, and a doubling of the decline in fish yields
- Increased risks to human and natural systems from extreme weather events such as heat waves, heavy rain, drought and associated wildfires, and coastal flooding
- Twice as much land undergoing ecosystem change
- More threatened ecosystems, with some such as coral reefs predicted to disappear entirely
- Ten million additional people displaced by sea level rise
- Increased risk of large-scale, irreversible damages, such as the disintegration of the Greenland or Antarctic ice sheets, creating multi-metre rise in sea level and many more millions affected

To avoid the world warming beyond 1.5 degrees, much more urgent global action is needed to reduce greenhouse gas (GHG) emissions. The most secure 1.5 degree scenario is one that does not rely on carbon dioxide removal (CDR) technologies such as bioenergy with carbon capture and storage. CDR technologies would in theory reduce the mitigation efforts required to limit warming to 1.5 degrees. However, carbon dioxide removal technologies are unproven, especially at the massive scale that would be required.[5]

There are other factors that suggest that a precautionary approach to scenario planning is warranted. For example, most models used in the IPCC special report do not fully capture potential GHGs from bioenergy, including carbon release from disturbed soil.[6] The models also make unrealistic assumptions such as ideal land management.[7]

Under the safer 1.5 degree scenario, global GHG emissions would need to be reduced by 58% from the 2010 level by 2030, and be eliminated entirely by shortly after 2050. **To meet the Canadian government's stated goal of keeping the world well below two degrees, the IPCC report concludes that global oil production would have to decline by 37% by 2030 and by 87% by 2050. Emissions from natural gas would have to decline by 25% by 2030 and 74% by 2050. (All reductions are from 2010 baselines.)**

For Canada, this would mean reducing production at least as much, since Canada's oil is one of the most carbon-intensive in the world.[8] Though the Canadian industry has discussed the possibility of breakthrough technologies that would significantly reduce GHG emissions from the production and use of oil and gas, the emissions intensity of Canadian oil has worsened since 1990.[9] Emissions intensity has increased from 65 kg-CO2eq per barrel in 1990 to 69 kg- CO2eq per barrel in 2005 to 71 kg-CO2eq per barrel in 2016.[10]

IN ORDER FOR CANADA TO MEET THE RECOMMENDATIONS OF THE UNFCC SPECIAL REPORT ON REACHING 1.5 DEGREES, CANADA MUST DOUBLE OUR LEVEL OF AMBITION.

So what would the requisite global GHG reductions in a 1.5 degree scenario mean for Canada? The bare minimum would be for Canada to match these economy-wide GHG reductions and production cuts in the oil and gas sector. By 2030 that would be a 58% reduction in national GHGs from 2010 levels, or 60% from 2005. In other words,

Canada needs to double emission reductions by 2030 compared to its current target under the Paris Agreement of a 30% reduction from 2005 levels by 2030). A 1.5 degree scenario would mean a 37% reduction in Canadian oil production, and a 25% decline in natural gas production.

However, every analysis of effort sharing and Canada's fair share of global action on climate change finds that industrialized countries like Canada need to do more than the global average.[11] That's because Canada and other industrialized countries have both greater historic responsibility for the problem of climate change, and a greater capacity to address the problem.

For example, one analysis of global effort sharing estimated that Canada's fair share of climate mitigation would involve the country's GHG emissions reaching zero shortly after 2030.[12] Scientific and economic research published in *Nature* found that Canadian oil production was both more carbon-intensive and more costly than global reserves.[13] In order to limit global temperature increases, the analysis concludes that Canadian oil should be phased out more quickly than global production.[14]

Chapter 2: Canadian ambition on climate change

Canada's Nationally Determined Contribution (NDC) under the Paris Agreement was set at 30% reduction in greenhouse gas (GHG) emissions from 2005 levels by 2030. This was the target set by the previous Conservative government in Ottawa, and adopted by the current Liberal one.

Climate Action Tracker has described this target as "highly insufficient"[15] and Environment and Climate Change Minister Catherine McKenna has acknowledged this as well, stating that "We all know we have to be more ambitious. The first thing you have to do is have a plan; you have to implement your plan, and then you have to ratchet up ambition. That's part of the Paris Agreement, and that's what we're absolutely committed to doing." [16]However, even the existing 2030 target will be impossible to meet if oil and gas production and GHG emissions continue to grow unhindered (see below).

The Government of Canada's mid-century low-carbon strategy[17] looks at pathways that would reduce GHGs in Canada by 80% below 2005 levels in 2050, with one scenario that achieves 88% reductions over the same time. As Canada continues to develop its mid-century decarbonization plans, it is reasonable given Paris Agreement commitments that it will move to considering net zero emissions by 2050, in line with the recently published IPCC special report on 1.5 degrees.[18]

Paris commitments are being implemented in Canadian domestic policy through the Pan Canadian Framework on Clean Growth and Climate Change (PCF).[19] The PCF is a historic agreement, forged between the federal government and most provinces and territories. It is Canada's most ambitious climate plan to date, with the aim of meeting Paris commitments for 2030.

The Framework has many important policy proposals that address all sources of GHG emissions. In many cases, the explicit or implicit vision laid out in the PCF is for the decarbonization of Canadian economic sectors. For example, phasing out of coal-fired power in Canada by 2030 is one of the more concrete decarbonization policies. Establishing a net-zero energy building code by 2030 is a good plan toward reducing and eventually eliminating natural gas use and carbon emissions from Canada's building stock. Developing a zero emission vehicle strategy will put Canada on the path to decarbonising the transportation sector.

Where the strategy falls short is with respect to GHG emissions from the industrial sector and, in particular, emissions from oil and gas production. **Though upstream oil and gas represent the largest and fastest growing source of GHGs in Canada, it is clear that measures to reduce emissions from this sector—most notably regulations to reduce methane emissions from oil and gas—would be overwhelmed by increased emissions from expanded production.**

IF CURRENT OIL AND GAS PRODUCTION INCREASES ARE ALLOWED TO CONTINUE IT WILL BE NEXT TO IMPOSSIBLE FOR CANADA TO MEET ITS PARIS TARGETS

This is the main reason that, even though the Framework was intended to be Canada's path to fulfilling its commitments under the Paris Agreement, there was an admission within the PCF itself that "additional measures" would be needed. The gap between policies found in the PCF and Canada's 2030 Paris target was estimated at 44 million tonnes (Mt).[20] Within a year, according to the Canadian government, the gap had grown to 66 Mt.[21]

Chapter 3: Canada's current emissions and trajectory

According to Canada's communication on national GHG emissions to the U.N., delivered and published in December 2017, Canadian emissions in 2015 were 722 Mt.[22] The report estimated that Canada's emissions would be 583 Mt in 2030 because of climate policies introduced in the PCF.[23]

That same analysis shows that oil sands emissions for 2015 were 71 Mt and rising.[24] That figure does not include emissions from conventional oil and natural gas production, processing, and transmission. In all, the oil and gas sector is responsible for 189 Mt of emissions, the highest and fastest growing source of GHG emissions in Canada.[25]

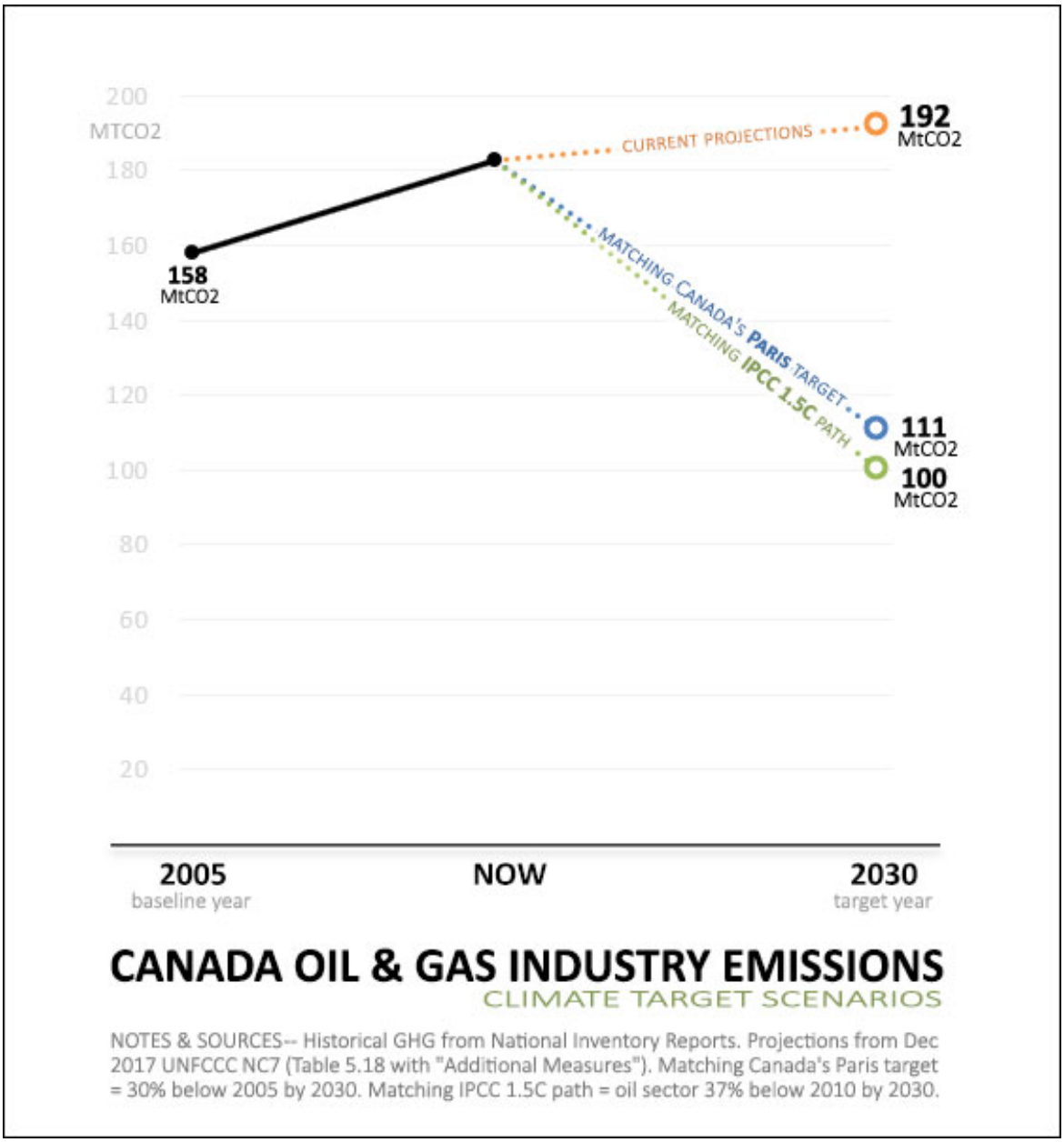
THE OIL AND GAS INDUSTRY CANNOT SIGNIFICANTLY CONTRIBUTE TO EMISSIONS REDUCTIONS THROUGH EMISSIONS INTENSITY. PRODUCTION MUST BE CAPPED AND THEN DECREASED.

As noted earlier, the average GHG intensity of oil production in Canada has gradually worsened from 1990 to 2016 (Table 1).[26] That increase has been due to a move from conventional to oil sands production and, within oil sands production, a shift from mining operations toward *in situ* production. Between now and 2030, the Government of Canada foresees no improvement in GHG emissions per barrel in oil sands production, since improvements in technology will be offset by "declining reservoir quality, aging of existing facilities, and shifts from mining operations to more emissions-intensive *in situ* extraction processes."[27] If oil production in Canada continues to shift from conventional oil production to oil sands operations, as projected,[28] GHG emissions per barrel may continue to rise in the oil sector generally.

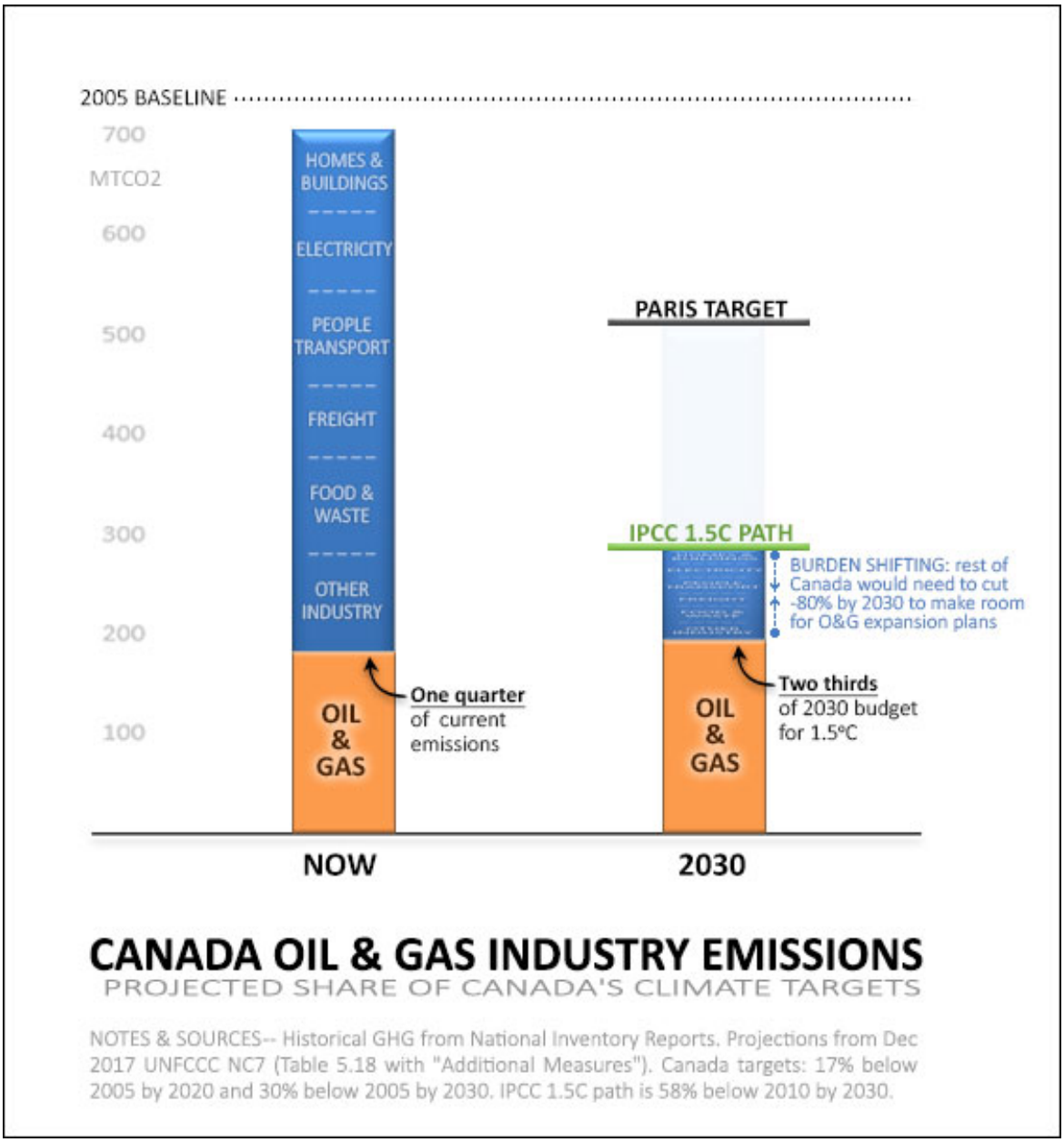
Table 1: Average emissions intensity of Canadian oil production[29]

	Emissions intensity (kg-CO2-eq't per barrel)
1990	65
2005	69
2016	71

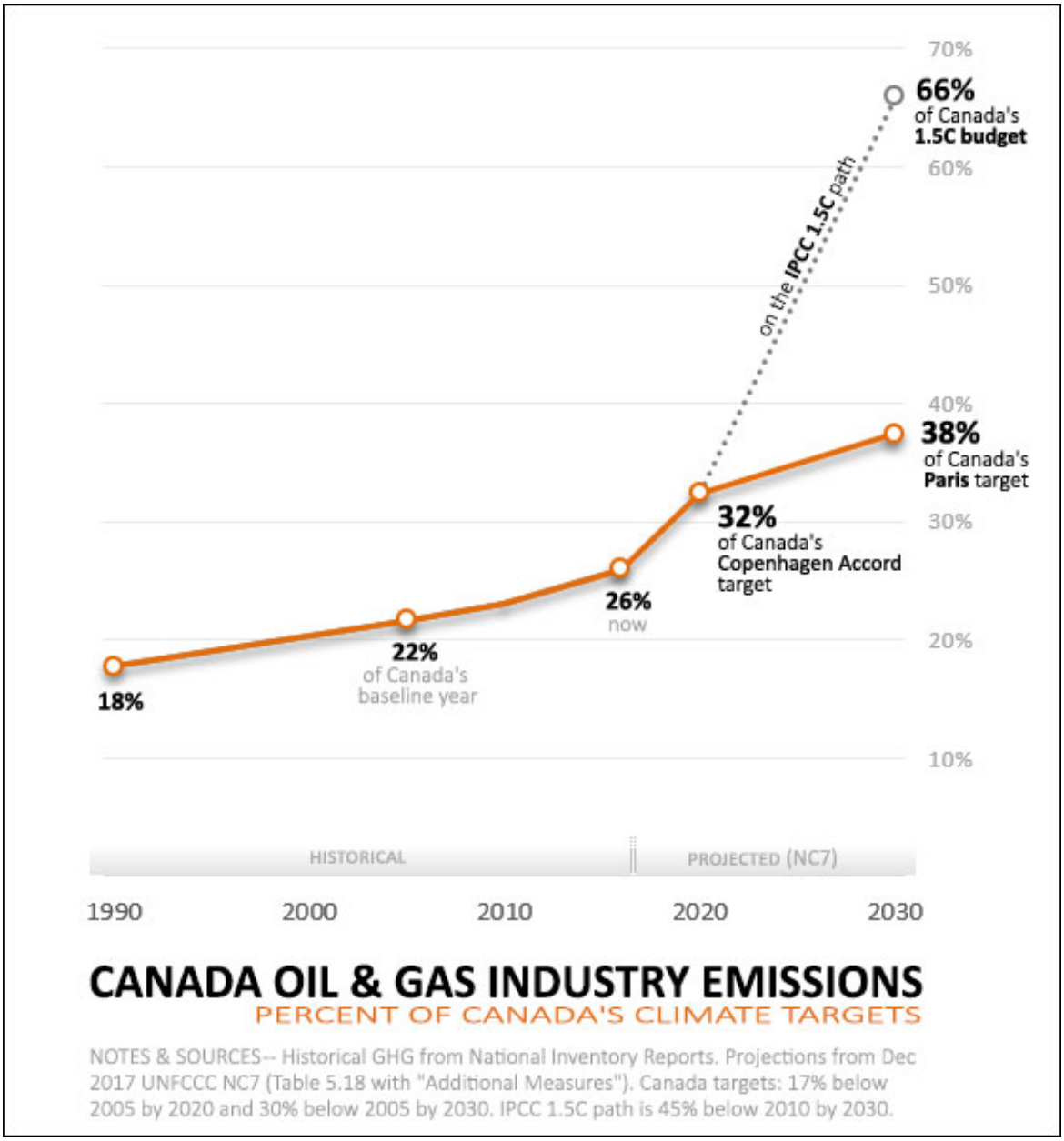
Emission projections from Environment and Climate Change Canada show that, including measures from the Pan-Canadian Framework (PCF) on climate change that had been put into place by October 2017, oil sands emissions will grow to 115 Mt in 2030, and oil and gas emissions (including those from oil sands operations) will grow to 215 Mt that same year.[30] Additional measures would be needed to keep GHG emissions from oil and gas production at 192 Mt.



If Canada were to keep its existing 2030 target, national emissions would have to shrink to 512 Mt., and additional measures currently not on the table would be needed to get there. Under this scenario, the oil and gas industry as a whole would be responsible for 38% of Canada's GHG emissions in 2030. This means that if Canada were to reach its existing 2030 target, the rest of the Canadian economy would have to cut its emissions almost in half to make room for increased emissions from oil and gas.[31]



No policies have even been proposed that would allow non-oil and gas emissions to be cut that deeply. That would be the equivalent of taking all Canadian vehicles off the road, shutting down all Canadian manufacturing, and eliminating all GHGs from non-oil and gas industries combined.[32] Even if that were possible, for the rest of the Canadian economy to cut emissions to that extent would put an unfair burden on other sectors.



Comparing projected emissions from the oil and gas sector to Canada's fair share of a 1.5 degree scenario highlights the disparity even more. Assuming that Canada only achieves the global average in terms of emission reductions required by 2030 in a 1.5 degree scenario, emissions from the oil and gas sector would use up 66% of Canada's total GHG allocation. **Growth in the production of Canadian oil and gas would be incompatible with a 1.5 degree scenario that requires a 25-37% reduction in emissions from those sub-sectors.**

Mid-century goals are even more challenging for an industry that hopes and expects to grow. If GHG emissions for the entire oil and gas industry stay flat between 2030 and 2050, those emissions (192 Mt) alone would exceed Canada's least aspirational 2050 emissions reduction goal of -80%. And those emissions would be approximately 4 to 8 times the allowable GHG emissions from Canada's oil and gas sector (depending on carbon-intensity) in a 1.5-degree compatible world, given the 74-87% reductions in production required.

GROWTH IN THE OIL SECTOR IS INCOMPATIBLE WITH THE THE MOST RECENT IPCC RECOMMENDATIONS

Chapter 4: Government response to industry challenges

As the industry faces stiff headwinds due to high cost structures, low oil and gas prices, and opposition from First Nations and Canadian citizens, governments have spent significant political and financial capital to prop up the industry. The Prime Minister, Alberta premier, and many of their ministers have repeatedly and frequently claimed the vital importance the industry plays in the Canadian economy.

Recent policy developments have actively encouraged industry expansion through continued project approvals, exemptions from climate policies, significant government subsidies, and even the nationalization of an oil sands pipeline. Though it is not possible to present an exhaustive list of government support initiatives, a partial list is instructive.

DESPITE PROMISES TO END SUBSIDIES TO THE OIL AND GAS INDUSTRY, THE FEDERAL GOVERNMENT HAS INTRODUCED MORE SUBSIDIES TO LNG AND OIL SANDS

In the last election, the current federal government promised, "We will fulfill Canada's G20 commitment to phase out subsidies for the fossil fuel industry."[33] This reiterates a commitment made by Canada and its G20 partners in 2009.[34] In its first budget, it extended a subsidy to liquefied natural gas (LNG) facilities until 2025.[35] More subsidies have been introduced since then, including $275 million for infrastructure construction to support the LNG Canada facility in B.C.[36] The federal government first committed to indemnify Kinder Morgan for delays in final approval of the Trans Mountain Pipeline expansion; then, it bought the existing pipeline for $4.5 billion, with billions more committed to complete the expansion.[37] The federal government's recent Fall Fiscal Update included a provision allowing the full cost of new machinery and equipment to be immediately written off, a benefit the federal Finance Minister called "advantageous" to the oil and gas sector.[38]

Climate policies have also been weakened or delayed due to industry pressure. **Regulations to reduce methane emissions from oil and gas facilities were weakened and their implementation delayed by two to three years. The Clean Fuel Standard, intended to be passed in this mandate, has now been delayed such that regulations will not be in place until after the next federal election; full implementation will be**

completed in 2023 alone. A price on carbon will be implemented across the country starting on January 1st, 2019, but the oil and gas industry, like many other industrial sectors, will have on average 80% of its emissions exempt from the carbon price.[39]

The Alberta government has also facilitated oil and gas expansion and extended more subsidies and concessions to the industry. First, approvals for oil sands projects have continued[40] even though currently approved projects will exceed the 100 Mt emissions limit placed on the sector.[41] Though the emissions cap has been legislated, it is not enforceable due to the lack of regulations to uphold the limit. The Alberta government has also approved several tailings management plans from major oil sands companies despite those plans being at odds with the goals of the government's Tailings Management Framework.[42]

Meanwhile, the liability for cleaning up the damage created by oil and gas development in Alberta has been estimated by the Alberta Energy Regulator to be $260 billion.[43] Only $1.6 billion has been collected in securities, meaning that the Alberta and Canadian public may have to pay for a majority of the clean up cost.[44]

New oil and gas subsidies have also been proposed and extended by Alberta. In the last three years fossil fuel subsidies- the vast majority to oil and gas- have increased from $1.2 billion per year to $2 billion per year.[45] The government extended $900 million in carbon tax revenue to industry, including three separate programs specifically designed for the oil sands sector or include the industry among its recipients.[46] The government committed itself to taking a stake in the Trans Mountain pipeline, if needed to make the project viable. It has also committed up to $1 billion in direct subsidies to build new oil sands upgraders in the province[47] and an estimated $1 billion to buy up to 7,000 rail cars to deliver oil to market.[48]

The British Columbia government has also provided financial support to the oil and gas sector, most specifically the LNG industry. For example, emissions from LNG terminals have been exempted from the B.C. carbon tax, dating back to the previous provincial government. The approval of the LNG Canada terminal also came with $5.35 billion in subsidies (tax breaks, preferential electricity rates, and incentive programs) from the B.C. government,[49] complementing the $275 million from the federal government.

Chapter 5: Industry response to government initiatives

THE OIL AND GAS LOBBY IS THE LARGEST OBSTACLE TO CARBON REDUCTIONS IN CANADA

The oil and gas industry clearly has government allies in Ottawa, Edmonton, and Victoria, and the industry has stated, "Canada's oil and natural gas producers are ready and willing to do our part to contribute to the overallCanadian plan on climate change."[50] Nonetheless, the oil and gas industry has put significant resources into publicly and privately advocating for weaker government policies on climate change and other environmental protection. Documents obtained through access to information requests showed that this strategy successfully delayed and weakened policies on climate change from the previous federal government.[51]

Bill C-69: Impact assessment of projects

A policy strongly opposed by industry is Bill C-69, a bill to update and strengthen impact assessments for industrial projects. The environmental assessment process was significantly weakened in 2012 under the previous federal government, and this new bill was intended to redraw the balance between environmental protection and industry interests. As such it underwent extensive consultations, with compromises made from Alberta First Nations, environmental advocates, and industry representatives. The Mining Association of Canada supports the new bill,[52] and it should be noted that 60% of projects that have undergone environmental assessments since the 2012 changes have been mining projects.

The Canadian Association of Petroleum Producers (CAPP) has nonetheless undertaken a public campaign to significantly weaken the bill, now being considered by the Canadian Senate.[53] CAPP also proposed a long list of amendments that would undermine the effectiveness of future impact assessments and, since April of this year, have met with federal officials 139 times on Bill C-69, on average more than once per work day.[54]

SINCE APRIL, THE OIL & GAS LOBBY HAS MET WITH GOVERNMENT 139 TIMES TO SUGGEST WEAKENING NEW ENVIRONMENTAL IMPACT LEGISLATION (ON AVERAGE MORE THAN ONCE PER WEEK)

Clean Fuel Standard

The Clean Fuel Standard (CFS) has also faced opposition from the oil and gas sector, and been rewarded with delays and weakenings. The first victory for the oil sands sector came when the federal government decided that all crude oil would be considered equal in terms of carbon intensity, despite the fact that the regulation is intended to push fuel users towards lower carbon fuels, and that oil from different sources have significant differences in carbon content.[55] The Canadian oil industry successfully lobbied for the same provision in the European Union's fuel quality directive, and opposed similar measures in California's low carbon fuel standard, because oil sands crude is more carbon-intensive than most other domestic and international sources of oil.[56]

However, CAPP continues to push for more concessions. The industry association is in fact arguing that upstream oil and gas should be entirely exempted from the Clean Fuel Standard.[57]

Methane regulations

As mentioned, the industry was granted important delays in the implementation of federal regulations to reduce methane emissions from oil and gas facilities. But delays were not the only concessions being requested by the industry. Documents obtained under freedom of information requests in Saskatchewan show that the industry advocated for changes that would lead to higher emissions, take longer to achieve emission reductions, and would make parts of the regulations entirely voluntary.[58] The federal regulations were finalized in April 2018, but the delays and changes will lead to an estimated 55 Mt in additional GHG emissions between now and 2023.[59]

The battle over methane emissions does not stop there, however. Under the Canadian Environmental Protection Act (CEPA), the three Western provinces have the option of developing their own regulations and have them supersede federal regulations, but only if their regulations will match or exceed the environmental benefit of federal ones.

All three provinces intend to develop their own regulations. Alberta's draft regulations from April 2018 have been shown to be demonstrably weaker than the final CEPA regulations.[60] This is at least partly due to the Alberta government adopting the industry's preferred weaker approach, including

requiring fewer inspections at oil and gas sites, establishing higher limits for emissions from some equipment, and allowing the industry itself to determine whether they are in compliance or not.[61]

Carbon pricing

CAPP has also advocated for an approach to pricing carbon that would undermine the effectiveness of the policy in reducing GHG emissions. In this case, the position that CAPP has pushed is that its members in the oil and gas sector should get back all the revenue it pays in carbon taxes.[62] This reduces the incentive that the industry has—and the incentive to consumers, businesses, and investors—to reduce emissions and move towards lower or zero-carbon fuels.

Both the federal government and Alberta government have reduced the proportion of the carbon price that the industry needs to pay. Both have implemented an Output Based Pricing System that exempts a major portion of the GHGs emitted by the oil and gas and other sectors.

Chapter 6: Policy recommendations for Canada to address oil and gas emissions

Globally, there have been a number of initiatives from governments, the private sector, and multilateral institutions that show that the Paris Agreement, and climate action more generally, is being taken seriously. The world's three largest financial institutions (the World Bank, AxA and ING) have committed to no longer financing or insuring new oil and gas projects and infrastructure.[63] In addition, 140 of the world's leading economists called for an immediate end to investments in new fossil fuel production and infrastructure, and encourage a dramatic increase in investments in renewable energy.[64]

Earlier this year, the European Union strengthened its emission reduction commitment under the Paris Agreement, as part of the Talanoa Dialogue. The IPCC's special report on 1.5 degrees is likely to further increase the sense of urgency and the commitments and action coming from both governments and non-state actors.

Canada committed to strengthen its ambition under the Paris Agreement by 2020.[65] There are a number of ways that Canada could both increase the ambition of its international commitments and enhance domestic action. The most important component will be to strengthen its approach to the oil and gas sector:

- Use supply side policies to immediately cap the growth of Canadian oil and gas production and gradually phase down the industry, including:
    - Implement a robust climate test that approves only energy projects that get Canada closer to its commitments under the Paris Agreement. This test must be applied to any not yet built fossil fuel projects and infrastructure including Trans Mountain, Teck Frontier Mine, and LNG Canada.
    - Enact legislation that retires licenses inactive for a period of one year.
    - Buy back leases and licenses for fossil fuel projects and infrastructure, and retire them.
    - Phase out subsidies to the oil and gas sector on an accelerated timeline

- Develop a just transition strategy for workers and communities dependent on fossil fuel production, especially oil and gas
- Strengthen the carbon pricing system so that exemptions are gradually eliminated and many sectors, including oil and gas, pay for an increasing portion of their GHG emissions
- Continue increasing the federal carbon price after 2022, at least on the same current trajectory of $10/tonne increases every year, and adjusted based on progress on emission reductions
- Develop and implement a Clean Fuel Standard that gives strong incentives to move towards low carbon fuels and achieves or surpasses the 30 Mt target
- Develop and implement a zero emission vehicle strategy that puts Canada on track to phasing out the sale of internal combustion engines entirely by 2040
- Ensure that provincial methane regulations are as strong as federal regulations, and that they are strengthened after 2025
- Implement an accountability mechanism that sets 5-year carbon budgets for Canada, tracks progress on GHG reductions, and ensures course corrections
- Fully implement the U.N. Declaration on the Rights of Indigenous Peoples

End Notes

[1] These figures are from the IPCC Special Report scenario that does not rely on negative net emissions from bioenergy with carbon capture and storage, given that this approach has not been proven to be viable at the enormous scale required. Intergovernmental Panel on Climate Change. (2018). "Global Warming of 1.5o: Summary for Policymakers." Accessed at: http://www.ipcc.ch/pdf/special–reports/sr15/sr15_spm_final.pdf.

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[9] Government of Canada. (2018). "National Inventory Report 1990–2016: Greenhouse Gas Sources and Sinks in Canada (NIR)." Figure 2–24. [Draft]

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[19] Government of Canada and provincial governments. (2016). “Pan Canadian Framework on Clean Growth and Climate Change.” Accessed at: https://www.canada.ca/content/dam/themes/environment/documents/weather1/20170125-en.pdf

[20] Ibid. p. 44.

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[22] Ibid. p. 6.

[23] Ibid. p. 10.

[24] Ibid. p. 138.

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